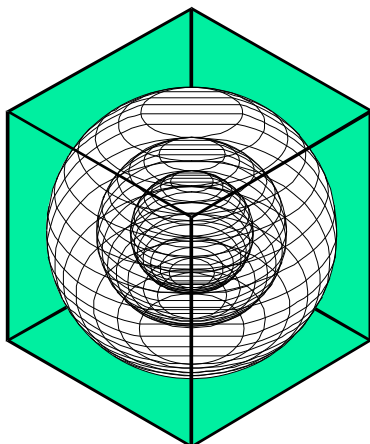


**BASELINE REPORT FOR THE FORT HOOD ARMY BASE:
SEPT. 1ST, 2002 TO AUG. 31ST, 2003**

A Research Project for the U.S. Army C.E.R.L.
and the Ft. Hood Energy Office

Jeff S. Haberl, Ph.D., P.E.
Juan-Carlos Baltazar Cervantes, Zi Liu
David E. Claridge, Ph.D., P.E.
W. Dan Turner, Ph.D., P.E.

December 2003



**ENERGY SYSTEMS
LABORATORY**

Texas Engineering Experiment Station
Texas A&M University System

PREFACE

This report is the 2002/2003 baseline report for a multi-year Research Project performed for the U.S. Army Construction Engineering Research Laboratory, and the Ft. Hood Energy Office. This project was carried out in several phases. The first phase included the development of a Preliminary Monitoring and Analysis Plan (PreMAP), and the purchase and the installation of data monitoring equipment, which was delivered in the Spring of 2001. The data recorded for the buildings (logger data and manual data), as well as the whole-base natural gas use over a several year period are also reported in this baseline report.

In 2001, additional data loggers were installed in the main and west-base electrical substations, and a steam/temperature channel was installed in the thermal plant. Installation of the III Corp building was also initiated in November of 2001 and completed in 2002. The data from the III Corp building are analyzed and reported in this report. Data were also obtained from the Darnall Hospital¹, the Main Substation, West Substation, and North Substation were verified, analyzed and reported in this report.

Finally, a CDROM has been prepared to accompany this report that contains all data collected at Ft. Hood since the beginning of this effort. The files on the CDROM include all the data (in ASCII format) from the ESL's database that was collected from Ft. Hood, and all analysis files used in this report.

¹ These data are from a separate contract to perform Continuous Commissioning for the Darnall Hospital.

ABSTRACT

This report presents electricity, natural gas and cooling baselines for the thermal plant, buildings located in the 87000 block, III Corp building and other buildings that were determined to be part of the ESPC project at Ft. Hood. A baseline analysis is also presented for the natural gas consumption for the Ft. Hood Army base. The weather-independent analysis, which utilizes 24-hour profiles that were developed using ASHRAE's 1093-RP diversity factor procedures are presented for data obtained from portable loggers attached to Watt-hour meters in selected buildings as well as data from the Main, West and North Substations.

The baselines developed for this report include data measured during the period from September 2002 through August 2003 for the thermal plant, 87000 block buildings, and III Corp building and natural gas data. Baseline analyses are presented for individual channels and groups of channels that represent loads determined to be of value to Ft. Hood. Preliminary baselines are also presented on buildings for which manual data were provided for 2003 (see Appendix). The weather-independent analysis is also presented for 87000 block buildings and new buildings.

This report is divided into different sections that correspond to the different baseline analysis that were performed on the measured loads, including: an analysis of the chiller performance, an analysis of the weather-dependent channels at the thermal plant, baseline models for the 87000 block manual readings, III Corp building, a whole-base natural gas baseline analysis, and a whole-base electricity analysis. A description of the analysis methods is provided in the introduction. Additional details that pertain to the data that were collected are provided in each section. An appendix is also provided that includes information about the data logger parameter sets, the daily data recorded manually for the 87000 block buildings, and daily data recorded manually for the new buildings, the hourly data recorded by ACR loggers for the 87000 block buildings and the new buildings.

ACKNOWLEDGEMENTS

This project would not have been possible without the support that was provided by Dave Schwenk (USACERL), David Underwood (USACERL), and Bobby Lynn, Danny Shaff and Myron Cook (Ft. Hood Energy Office). Thanks also to the following individuals who helped keep the computers running, the data flowing, and the printers printing at the ESL, including: Mr. Jim Sweeney, Mr. Peter Klima, and Mr. Stephen O'Neal, and thanks to Yong Hoon Song and Sopa Visitsak for providing weekly inspection plots. Thanks also to Ms. Shelly Price (SiTEX), and Mr. John McBride (NHT) who diligently installed the monitoring equipment under contract to the Energy Systems Laboratory (ESL). Thanks also to Mr. Brandon Dooley, Mr. Kelly Milligan, Mr. Mike Davis, and Ms. Tehesia Powell for assistance coordinating the metering equipment installation.

TABLE OF CONTENTS

PREFACE.....	1
ACKNOWLEDGEMENTS	3
1. INTRODUCTION	16
2. METHODOLOGY.....	16
2.1. Weather dependency.....	16
2.2. Analysis of chiller cooling production data.....	16
2.3. Data Collection	17
2.3.1. 87000 Block Thermal Plant.....	17
2.3.2. III Corp Building.....	21
2.3.3. Darnall Hospital	23
2.3.4. Main Electrical Substation	28
2.3.5. West Electrical Substation	32
2.3.6. North Fort Hood Substation	36
3. DATA COLLECTED DURING THE PERIOD SEPTEMBER 2001 TO AUGUST 2002.....	37
3.1. Loggers reported on in this report.....	37
3.1.1. Logger #938 - 3279 - Ft Hood - Central Thermal Power Plant (87000)	37
3.1.1.1. Electricity use monitoring.....	37
3.1.1.2. Thermal energy use monitoring	37
3.1.1.3. Ambient conditions monitoring.....	38
3.1.1.4. Chiller monitoring.....	38
3.1.1.5. Natural gas monitoring.....	39
3.1.2. Logger: #947 - 10043 - III Corp Building.....	39
3.1.3. Loggers: #939 - 3832 - Darnall Hospital #1 and #940 - 3831 - Darnall Hospital #2	39
3.1.4. Loggers: #941 - 10147 - Main Electrical Substation #1, #946 - 10148 - Main Electrical Substation #2 and #948 - 10149 - Main Electrical Substation #3.....	39
3.1.5. Loggers: #944 - 10076 - West Electrical Substation #1 and #949 - 10150 - West Electrical Substation #2	39
3.1.6. Loggers: #937 - 10146 - North Electrical Substation.....	39
3.2. Whole-base Natural Gas Use.....	39
4. ANALYSIS OF THE CHILLER PERFORMANCE.....	53
4.1. Chiller performance using kW/ton curves.....	53
4.2. Quadratic Models of Chiller Analysis.....	60
5. BASELINE MODELS FOR WEATHER-DEPENDENT CHANNELS AT THE THERMAL PLANT. ..	64
6. BASELINE MODELS FOR WEATHER-DEPENDENT CHANNELS AT THE III CORP BUILDING.....	73
7. SUMMARY OF BASELINE MODELS: THERMAL PLANT, 87000, III CORP AND OTHER BUILDINGS	82
7.1. Baseline Models of Energy Use: Thermal Plant, 87000, III Corp, and Other Buildings.	82
7.2. Demand Models for Baseline Electric Demand Savings.....	83
8. WHOLE-BASE NATURAL GAS ANALYSIS	85
8.1. Monthly and Daily Natural Gas Data.....	85
8.2. Baseline models.....	86
9. WHOLE-BASE ELECTRICITY ANALYSIS	141
9.1. Main Electrical Substation	141
9.1.1. Daily Electricity Use.....	141
9.1.2. 24-hour Profiles of Weather-Independent Electricity Loads.....	142
9.2. West Electrical Substation	145
9.2.1. Daily Electricity Use.....	145
9.2.2. 24-hour Profiles of Weather-Independent Electricity Loads.....	146
9.3. North Electrical Substation	151
9.3.1. Daily Electricity Use.....	151
9.3.2. 24-hour Profiles of Weather-Independent Electricity Loads.....	152
10. REFERENCES.....	155
11. APPENDIX.....	156

11.1.	ESL Polling and Database Information.....	156
11.1.1.	Channel Identification Tables Istaraxp% listchid #938 - 3279 - Ft Hood - Central Thermal Power Plant (87000).....	156
11.1.2.	Parameter set for the Logger #938 - 3279 - Ft Hood - Central Thermal Power Plant (87000)	157
11.1.3.	Channel Identification Tables Istaraxp% listchid #947 - 10043 - III Corps	161
11.1.4.	Parameter set for the Logger #947 - 10043 - III Corps	162
11.1.5.	Channel Identification Tables Istaraxp% listchid# 939 - 3832 - Darnall Hospital #1	166
11.1.6.	Parameter set for the Logger # 939 - 3832 - Darnall Hospital #1	167
11.1.7.	Channel Identification Tables Istaraxp% listchid# 940 - 3831 - Darnall Hospital #2	170
11.1.8.	Parameter set for the Logger # 940 - 3831 - Darnall Hospital #2	171
11.1.9.	Channel Identification Tables Istaraxp% listchid#941 - 10147 - Main Electrical Substation #1	175
11.1.10.	Parameter set for the Logger #941 - 10147 - Main Electrical Substation #1	177
11.1.11.	Channel Identification Tables Istaraxp% listchid#946 - 10148 - Main Electrical Substation #2	181
11.1.12.	Parameter set for the Logger #946 - 10148 - Main Electrical Substation #2	183
11.1.13.	Channel Identification Tables Istaraxp% listchid#948 - 10149 - Central Elect Power Plant (Main Substation #3)	187
11.1.14.	Parameter set for the Logger #948 - 10149 - Central Elect Power Plant (Main Substation #3).....	189
11.1.15.	Channel Identification Tables Istaraxp% listchid #949 - 10150 - Ft Hood West Substation	193
11.1.16.	Parameter set for the Logger #949 - 10150 - Ft Hood West Substation.....	194
11.1.17.	Channel Identification Tables Istaraxp% listchid#944 - 10076 Ft Hood - Clear Creek Substation 198	
11.1.18.	Parameter set for the Logger #944 - 10076 Ft Hood - Clear Creek Substation.....	199
11.1.19.	Channel Identification Tables Istaraxp% listchid#937 - 10146 North Electrical Substation.....	203
11.1.20.	Parameter set for the Logger #937 - 10146 North Electrical Substation.....	204
11.1.21.	87000 Block Building Electricity Use From Manual Readings	208
11.1.22.	87003 BN HQ Building.....	209
11.1.22.1.	Electricity Use From Manual Readings	209
11.1.22.2.	Baseline Model From Manual Readings	212
11.1.23.	87004 CO HQ Building.....	214
11.1.23.1.	Electricity Use From Manual Readings	214
11.1.24.	87005 BDE HQ Building	216
11.1.24.1.	Electricity Use From Manual Readings	216
11.1.24.2.	Baseline Model From Manual Readings	219
11.1.25.	87006 Health Clinic Building	221
11.1.25.1.	Electricity Use From Manual Readings	221
11.1.25.2.	Baseline Model From Manual Readings	224
11.1.26.	87007 Enlisted UPH Building.....	226
11.1.26.1.	Electricity Use From Manual Readings	226
11.1.26.2.	Baseline Model From Manual Readings	229
11.1.27.	87008 BN HQ Building.....	231
11.1.27.1.	Electricity Use From Manual Readings	231
11.1.27.2.	Baseline Model From Manual Readings	234
11.1.28.	87009 BN HQ Building.....	235
11.1.28.1.	Electricity Use From Manual Readings	235
11.1.28.2.	Baseline Model From Manual Readings	238
11.1.29.	87010 PHYS FIT CTR Building	240
11.1.29.1.	Electricity Use From Manual Readings	240
11.1.29.2.	Baseline Model From Manual Readings	243
11.1.30.	87011 CO HQ Building.....	245
11.1.30.1.	Electricity Use From Manual Readings	245
11.1.30.2.	Baseline Model From Manual Readings	248
11.1.31.	87012 Enlisted UPH Building.....	250
11.1.31.1.	Electricity Use From Manual Readings	250
11.1.31.2.	Baseline Model From Manual Readings	253
11.1.32.	87014 CO HQ Building.....	255
11.1.32.1.	Electricity Use From Manual Readings	255

11.1.32.2.	Baseline Model From Manual Readings	258
11.1.33.	87015 Enlisted UPH Building	260
11.1.33.1.	Electricity Use From Manual Readings	260
11.1.33.2.	Baseline Model From Manual Readings	263
11.1.34.	87016 CO HQ Building	265
11.1.34.1.	Electricity Use From Manual Readings	265
11.1.34.2.	Baseline Model From Manual Readings	268
11.1.35.	87017 Dining Facility	270
11.1.35.1.	Electricity Use From Manual Readings	270
11.1.35.2.	Baseline Model From Manual Readings	273
11.1.36.	87018 Electricity Use	275
11.1.36.1.	Electricity Use From Manual Readings	275
11.1.36.2.	Natural Gas Use From Manual Readings	278
11.1.36.3.	Baseline Model From Manual Readings	281
11.1.37.	87018 Comparison of manual gas vs logger readings for the thermal plant	283
11.2.	Additional buildings where manual readings are being made	285
11.2.1.	194 NCO Club (Phantom Warrior Club)	286
11.2.1.1.	Electricity Use From Manual Readings	286
11.2.1.1.1.	Baseline Model From Manual Readings	288
11.2.1.2.	Natural Gas From Manual Readings	290
11.2.1.2.1.	Baseline Model From Manual Readings	292
11.2.2.	410 Headquarters Building	294
11.2.2.1.	Electricity Use From Manual Readings	294
11.2.2.1.1.	Baseline Model From Manual Readings	296
11.2.2.2.	Natural Gas From Manual Readings	298
11.2.2.2.1.	Baseline Model From Manual Readings	300
11.2.3.	1001 Third Corp Headquarters	302
11.2.3.1.	Electricity Use From Manual Readings	302
11.2.3.1.1.	Baseline Model From Manual Readings	304
11.2.3.1.2.	Baseline Model From Manual Readings	308
11.2.3.2.	Natural Gas From Manual Readings	310
11.2.3.2.1.	Baseline Model From Manual Readings	312
11.2.4.	4351 Motor Pool	314
11.2.4.1.	Electricity Use From Manual Readings	314
11.2.4.1.1.	Baseline Model From Manual Readings	315
11.2.4.2.	Natural Gas From Manual Readings	316
11.2.4.2.1.	Baseline Model From Manual Readings	318
11.2.5.	5485 Pershing Youth Center	320
11.2.5.1.	Electricity Use From Manual Readings	320
11.2.5.1.1.	Baseline Model From Manual Readings	322
11.2.5.2.	Natural Gas From Manual Readings	324
11.2.5.2.1.	Baseline Model From Manual Readings	326
11.2.6.	5764 Officers Club	328
11.2.6.1.	Electricity Use From Manual Readings	328
11.2.6.1.1.	Baseline Model From Manual Readings	330
11.2.6.1.2.	Baseline Model From Manual Readings	334
11.2.6.2.	Natural Gas From Manual Readings	336
11.2.6.2.1.	Baseline Model From Manual Readings	338
11.2.7.	6602 Bronco Youth Center	340
11.2.7.1.	Electricity Use From Manual Readings	340
11.2.7.1.1.	Baseline Model From Manual Readings	342
11.2.7.2.	Natural Gas From Manual Readings	344
11.2.7.2.1.	Baseline Model From Manual Readings	346
11.2.8.	9212 Patton Inn	348
11.2.8.1.	Electricity Use From Manual Readings	348
11.2.8.1.1.	Baseline Model From Manual Readings	350

11.2.8.2.	Natural Gas From Manual Readings	352
11.2.8.2.1.	Baseline Model From Manual Readings	354
11.2.9.	22020 Admin.....	356
11.2.9.1.	Electricity Use From Manual Readings	356
11.2.9.1.1.	Baseline Model From Manual Readings	357
11.2.9.2.	Natural Gas From Manual Readings	358
11.2.9.2.1.	Baseline Model From Manual Readings	358
11.2.10.	28000 Headquarters Bldg.....	359
11.2.10.1.	Electricity Use From Manual Readings	359
11.2.10.1.1.	Baseline Model From Manual Readings	361
11.2.10.2.	Natural Gas From Manual Readings	363
11.2.10.2.1.	Baseline Model From Manual Readings	365
11.2.11.	42000 Sports USA.....	367
11.2.11.1.	Electricity Use From Manual Readings	367
11.2.11.1.1.	Baseline Model From Manual Readings	367
11.2.11.2.	Natural Gas From Manual Readings	368
11.2.11.2.1.	Baseline Model From Manual Readings	368
11.2.12.	50012 Community Event Center.....	369
11.2.12.1.	Electricity Use From Manual Readings	369
11.2.12.1.1.	Baseline Model From Manual Readings	371
11.2.12.2.	Natural Gas From Manual Readings	373
11.2.12.2.1.	Baseline Model From Manual Readings	375
11.2.13.	52024 COMMAND Child Care	377
11.2.13.1.	Electricity Use From Manual Readings	377
11.2.13.1.1.	Baseline Model From Manual Readings	379
11.2.13.2.	Natural Gas From Manual Readings	381
11.2.13.2.1.	Baseline Model From Manual Readings	383
11.2.14.	52381 Golf Pro Shop.....	385
11.2.14.1.	Electricity Use From Manual Readings	385
11.2.14.1.1.	Baseline Model From Manual Readings	387
11.2.14.2.	Natural Gas From Manual Readings	389
11.2.14.2.1.	Baseline Model From Manual Readings	391
11.2.15.	70005 Longhorn Saloon	393
11.2.15.1.	Electricity Use From Manual Readings	393
11.2.15.1.1.	Baseline Model From Manual Readings	395
11.2.15.2.	Natural Gas From Manual Readings	397
11.2.15.2.1.	Baseline Model From Manual Readings	399
11.2.16.	85018 Walker Youth Service Center.....	401
11.2.16.1.	Electricity Use From Manual Readings	401
11.2.16.1.1.	Baseline Model From Manual Readings	403
11.2.16.2.	Natural Gas From Manual Readings	405
11.2.16.2.1.	Baseline Model From Manual Readings	407
11.2.17.	85020 Commissary.....	409
11.2.17.1.	Electricity Use From Manual Readings	409
11.2.17.1.1.	Baseline Model From Manual Readings	411
11.2.17.2.	Natural Gas From Manual Readings	413
11.2.17.2.1.	Baseline Model From Manual Readings	415
11.2.18.	91012 Admin/ Operational Testing.....	417
11.2.18.1.	Electricity Use From Manual Readings	417
11.2.18.1.1.	Baseline Model From Manual Readings	419
11.2.18.2.	Natural Gas From Manual Readings	421
11.2.18.2.1.	Baseline Model From Manual Readings	423
11.2.19.	91014 Admin.....	425
11.2.19.1.	Electricity Use From Manual Readings	425
11.2.19.1.1.	Baseline Model From Manual Readings	427
11.2.19.2.	Natural Gas From Manual Readings	429

11.2.19.2.1.	Baseline Model From Manual Readings	430
11.3.	Baseline Models for Electric Demand Using 1093-RP Diversity Factor Analysis	433
11.3.1.	87003 BN HQ Building	434
11.3.2.	87005 BDE HQ Building	439
11.3.3.	87006 Health Clinic Building	444
11.3.4.	87007 Enlisted UPH Building.....	447
11.3.5.	87008 BN HQ Building	452
11.3.6.	87009 BN HQ Building	457
11.3.7.	87010 PHYS FIT CTR Building.....	460
11.3.8.	87011 CO HQ Building	465
11.3.9.	87012 Enlisted UPH Building.....	470
11.3.10.	87014 CO HQ Building.....	473
11.3.11.	87015 Enlisted UPH Building.....	476
11.3.12.	87016 CO HQ Building.....	481
11.3.13.	87017 dining Facility	486
11.3.14.	194 NCO Club (Phantom Warrior Club).....	491
11.3.15.	410 Headquarters Building.....	494
11.3.16.	1001 Third Corp Headquarters.....	497
11.3.17.	5764 Officers Club.....	500
11.3.18.	6602 Bronco Youth Center	503
11.3.19.	9112 Motor Pool	506
11.3.20.	9122 Motor Pool	509
11.3.21.	15060 Motor Pool	512
11.3.22.	22020 Admin.....	515
11.3.23.	28000 Headquarters Building.....	518
11.3.24.	42000 Sports USA.....	521
11.3.25.	52024 COMMAND Child Care	524
11.3.26.	85020 Commissary.....	529
11.3.27.	91002 Headquarters Bldg.....	532
11.3.28.	91012 Admin/Operational Testing	535
11.3.29.	91014 Admin.....	538
11.4.	Cross Check of Electric Data for Fort Hood Main, West and North Electrical Substation.....	541
11.4.1.	Main Electrical Substation	541
11.4.1.1.	Consistency Check of Main Electrical Substation Utility Data.....	541
11.4.1.2.	Cross Check of Utility Data and Logger Data.....	542
11.4.2.	West Electrical Substation	546
11.4.2.1.	Consistency Check of West Electrical Substation Utility Data.....	546
11.4.2.2.	Cross Check of Utility Data and Logger Data.....	547
11.4.3.	North Electrical Substation	550
11.4.3.1.	Consistency Check of North Electrical Substation Utility Data.....	550
11.4.3.2.	Cross Check of Utility Data and Logger Data.....	551
11.5.	Resolution of Steam Metering Problem at 87000 Block.....	553
11.6.	List of Data Files.....	561

LIST OF TABLES

Table 2.1-1: ASHRAE Guideline 14P Regression Models.....	16
Table 5-1: Thermal Plant Natural Gas Weather-dependent Model (9/1/2002 to 8/31/2003).....	65
Table 5-2: Chilled Water Weather-dependent Model.....	67
Table 5-3: Chiller Electricity Use Weather-dependent Model.....	69
Table 5-4: Chiller Misc Loads Model.....	71
Table 6-1: Weekday, Weather Independent Model for III Corp Building.....	74
Table 6-2: Whole-building Chiller Electricity Use Model for III Corp.....	76
Table 6-3: Whole-building MCC Electricity Use Model for III Corp.....	78
Table 6-4: Whole-building Natural Gas Use Model for III Corp.....	80
Table 7.1-1: Summary of Buildings Affected by Energy Services Contract.....	83
Table 7.2-1: List of Buildings with Demand Baseline Models.....	84
Table 8.2-1: Three-parameter Model for 1999-2002 Daily Average Monthly Gas Use for All Meters vs Temperature.....	108
Table 8.2-2: Three-parameter Model for 2001 Daily Gas Use for West Meter vs Temperature.....	110
Table 8.2-3: Three-parameter Model for 2001 Daily Gas Use for South Meter vs Temperature.....	112
Table 8.2-4: Three-parameter Model for 2001 Daily Gas Use for North Meter vs Temperature.....	114
Table 8.2-5: Three-parameter Model for 2001 Daily Gas Use for All Meters vs Temperature.....	116
Table 8.2-6: Three-parameter Model for 2002 Daily Gas Use for West Meter vs Temperature.....	118
Table 8.2-7: Three-parameter Model for 2002 Daily Gas Use for South Meter vs Temperature.....	120
Table 8.2-8: Three-parameter Model for 2002 Daily Gas Use for North Meter vs Temperature.....	122
Table 8.2-9: Three-parameter Model for 2002 Daily Gas Use for All Meters vs Temperature.....	124
Table 8.2-10: Three-parameter Model for 2003 Daily Gas Use for West Meter vs. Temperature.....	126
Table 8.2-11: Three-parameter Model for 2003 Daily Gas Use for South Meter vs. Temperature.....	128
Table 8.2-12: Three-parameter Model for 2003 Daily Gas Use for North Meter vs. Temperature.....	130
Table 8.2-13: Three-parameter Model for 2003 Daily Gas Use for All Meters vs. Temperature.....	132
Table 8.2-14: Three-parameter Model for 1999, 2000, 2001 and 2002 Daily Gas Use for All Meters vs Temperature.....	134
Table 8.2-15: Three-parameter Model for Combined 1999, 2000, 2001 and 2002 Daily Gas Use for All Meters vs Temperature.....	139
Table 9.1.2-1: 24-hour weekday, weekend profiles for whole-building electricity use for Main Electrical Substation.....	144
Table 9.2.2-1: 24-hour weekday, weekend profiles for whole-building electricity use for West Electrical Substation in Period 1.....	148
Table 9.2.2-2: 24-hour weekday, weekend profiles for whole-building electricity use for West Electrical Substation in Period 2.....	150
Table 9.3.2-1: 24-hour weekday, weekend profiles for whole-building electricity use for North Electrical Substation.....	154
Table 11.3-1: List of Buildings with Electric Demand Baseline Models.....	433
Table 11.3.1-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87003 in Period 1.....	436
Table 11.3.1-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87003 in Period 2.....	438
Table 11.3.2-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87005 when the temperature is below 65F.....	441
Table 11.3.2-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87005 when the outdoor temperature is below 65F.....	443
Table 11.3.3-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87006.....	446
Table 11.3.4-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87007 in Period 1.....	449
Table 11.3.4-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87007 in Period 2.....	451
Table 11.3.5-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87007 in Period 1.....	454

Table 11.3.5-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87008 in
 Period 2456
 Table 11.3.6-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87009 .459
 Table 11.3.7-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87010 in
 Period 1462
 Table 11.3.7-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87010 in
 Period 2464
 Table 11.3.8-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87011 in
 Period 1467
 Table 11.3.8-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87011 in
 Period 2469
 Table 11.3.9-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87012 .472
 Table 11.3.10-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87014475
 Table 11.3.11-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87015 in
 Period 1478
 Table 11.3.11-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87015 in
 Period 2480
 Table 11.3.12-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87016 in
 Period 1483
 Table 11.3.12-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87016 in
 Period 2485
 Table 11.3.13-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87017 in
 Period 1488
 Table 11.3.13-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87017 in
 Period 2490
 Table 11.3.14-1: 24-hour weekday, weekend profiles for whole-building electricity use for #194 ...493
 Table 11.3.15-1: 24-hour weekday, weekend profiles for whole-building electricity use for #410 ...496
 Table 11.3.16-1: 24-hour weekday, weekend profiles for whole-building electricity use for #1001 .499
 Table 11.3.17-1: 24-hour weekday, weekend profiles for whole-building electricity use for #5764 .502
 Table 11.3.18-1: 24-hour weekday, weekend profiles for whole-building electricity use for #6602 .505
 Table 11.3.19-1: 24-hour weekday, weekend profiles for whole-building electricity use for #9112 .508
 Table 11.3.20-1: 24-hour weekday, weekend profiles for whole-building electricity use for #9122 .511
 Table 11.3.21-1: 24-hour weekday, weekend profiles for whole-building electricity use for #15060514
 Table 11.3.22-1: 24-hour weekday, weekend profiles for whole-building electricity use for #22020517
 Table 11.3.23-1: 24-hour weekday, weekend profiles for whole-building electricity use for #28000520
 Table 11.3.24-1: 24-hour weekday, weekend profiles for whole-building electricity use for #42000523
 Table 11.3.25-1: 24-hour weekday, weekend profiles for whole-building electricity use for #52024 in
 Period 1526
 Table 11.3.25-2: 24-hour weekday, weekend profiles for whole-building electricity use for #52024 in
 Period 2528
 Table 11.3.26-1: 24-hour weekday, weekend profiles for whole-building electricity use for #85020531
 Table 11.3.27-1: 24-hour weekday, weekend profiles for whole-building electricity use for #91002534
 Table 11.3.28-1: 24-hour weekday, weekend profiles for whole-building electricity use for #91012537
 Table 11.3.29-1: 24-hour weekday, weekend profiles for whole-building electricity use for #91014540
 Table 11.4.1.1-1: Comparison of Utility Bills and Oncor 15-minute Data for Main Electrical
 Substation.....541
 Table 11.4.1.2-1: Main Electrical Substation and Schools Monthly Energy Usage544
 Table 11.4.2.1-1: Comparison of Utility Bills and Oncor 15-minute Data for West Electrical
 Substation.....546
 Table 11.4.2.2-1: West Electrical Substation and Schools Monthly Energy Usage547
 Table 11.4.3.1-1: Comparison of Utility Bills and Oncor 15-minute Data for North Electrical
 Substation.....550
 Table 11.5-1: Boiler Specification Information554

LIST OF FIGURES

Figure 2.3.1-1: Electrical Monitoring Diagram for 87000 Block Thermal Plant.....	18
Figure 2.3.1-2: Ambient Conditions Monitored at 87000 Block Thermal Plant.....	19
Figure 2.3.1-3: Thermal Monitoring Diagram for 87000 Block Thermal Plant	20
Figure 2.3.2-1: Electrical Monitoring Diagram for III Corp Building	21
Figure 2.3.2-2: Thermal Monitoring Diagram for III Corps	22
Figure 2.3.3-1: Electrical Monitoring Diagram for Darnall Hospital	24
Figure 2.3.3-2: Electrical Monitoring Diagram for Darnall Hospital	25
Figure 2.3.3-3: Thermal Monitoring Diagram for Darnall Hospital	26
Figure 2.3.3-4: Thermal Monitoring Diagram for Darnall Hospital	27
Figure 2.3.4-1: Electrical Monitoring Diagram for Main Electrical Substation (Logger #941)	29
Figure 2.3.4-2: Electrical Monitoring Diagram for Main Electrical Substation (Logger #946)	30
Figure 2.3.4-3: Electrical Monitoring Diagram for Main Electrical Substation (Logger #948)	31
Figure 2.3.5-1: Electrical Monitoring Diagram for West Electrical Substation (Logger #944).....	33
Figure 2.3.5-2: Electrical Monitoring Diagram for West Electrical Substation (Logger #949).....	34
Figure 2.3.5-3: Ambient Conditions Monitored at West Electrical Substation (Logger #949)	35
Figure 2.3.6-1: Electrical Monitoring Diagram for North Electrical Substation	36
Figure 3.2-1: 87000 Block Thermal Plant Electricity Use: Total, Chiller & Pump Use.....	40
Figure 3.2-2: 87000 Block Thermal Plant Gas use and Chilled Water Production.	41
Figure 3.2-3: 87000 Block Thermal Plant Ambient Conditions.	42
Figure 3.2-4: 87000 Block Thermal Plant Measured Ambient Conditions vs NWS Ambient Conditions (Waco): Temperature and Humidity.....	43
Figure 3.2-5: 87000 Block Thermal Plant Chiller Monitoring Flow, and Supply and Return Temperatures.....	44
Figure 3.2-6: 87000 Block Thermal Plant Chiller Electricity Use vs. Ambient Conditions (hourly and daily data).....	45
Figure 3.2-7: 87000 Block Thermal Plant Chilled Water Production vs Ambient Conditions (hourly and daily data).....	46
Figure 3.2-8: 87000 Block Thermal Plant Natural Gas Consumption vs Ambient Conditions (hourly data).	47
Figure 3.2-9: III Corp Electricity Use: Whole-building, Chiller and MCC Use.....	48
Figure 3.2-10: III Corp Natural Gas Use	49
Figure 3.2-11: III Corp Natural Gas Use vs Temperature.....	49
Figure 3.2-12: III Corp Chiller Electricity Use vs Temperature.	49
Figure 3.2-13: Darnall Hospital Electricity Use: Total, Chiller Electricity and MCC Use.....	50
Figure 3.2-14: Darnall Hospital Electricity Use -Small MCC Use.....	51
Figure 3.2-15: Darnall Hospital Natural Gas Use.....	51
Figure 3.2-16: Main Electrical Substation Electricity Use.	52
Figure 3.2-17: West Electrical Substation Electricity Use.....	52
Figure 3.2-18: North Electrical Substation Electricity Use.....	52
Figure 4.1-1: 87000 Block Thermal Plant Chiller Performance: All Data & Chiller #1.	54
Figure 4.1-2: 87000 Block Thermal Plant Chiller Performance: Chiller #2 and periods when both chillers were running.....	55
Figure 4.1-3: 87000 Block Thermal Plant Chiller Performance: All chiller data as a time series and as a kW/ton vs tonnage plot.	56
Figure 4.1-4: 87000 Block Thermal Plant Chiller Performance: Chiller #1 performance data as a time series and as a kW/ton vs tonnage plot.	57
Figure 4.1-5: 87000 Block Thermal Plant Chiller Performance: Chiller #2 performance data as a time series and as a kW/ton vs tonnage plot.	58
Figure 4.1-6: 87000 Block Thermal Plant Chiller Performance: Performance data for chiller #1 & #2 when both chillers operate as a time series and as a kW/ton vs tonnage plot.	59
Figure 4.2-1: Quadratic analysis for chiller #1.	61
Figure 4.2-2: Quadratic analysis for chiller #2.	62
Figure 4.2-3: Quadratic analysis for both chiller #1 and #2.....	63
Figure 5-1: Thermal Plant Natural Gas Weather-dependent Model (9/1/2002 to 8/31/2003).	66

Figure 5-2: Chilled Water Weather-dependent Model.....68

Figure 5-3: Chiller Electricity Use Weather-dependent Model.70

Figure 5-4: Chiller Miscellaneous Loads Model.72

Figure 6-1: Weekday, Weather Independent Model for III Corp Building.....75

Figure 6-2: Whole-building Chiller Electricity Use Model.77

Figure 6-3: Whole-building Model for MCC Electricity Use.....79

Figure 6-4: Baseline Model for the Whole-Building Natural Gas use.....81

Figure 8.2-1: 1999-2000, 2001, 2002, and 2003 Monthly Total Gas Use.87

Figure 8.2-2: 1999-2000, 2001, 2002, and 2003 Monthly Total Gas Use (cont.).....88

Figure 8.2-3: 1999, 2000, 2001, 2002 and 2003 Monthly Total Gas Use as a Function of Outside Dry-bulb Temperature.....89

Figure 8.2-4: 1999 Daily Gas Use for West, South and North Meters..90

Figure 8.2-5: 1999 Daily Gas Use for All Meters.....91

Figure 8.2-6: 2000 Daily Gas Use for West, South and North Meters.92

Figure 8.2-7: 2000 Daily Gas Use for All Meters.....93

Figure 8.2-8: 2001 Daily Gas Use for West, South and North Meters.94

Figure 8.2-9: 2001 Daily Gas Use for All Meters.....95

Figure 8.2-10: 2002 Daily Gas Use for West, South and North Meters.96

Figure 8.2-11: 2002 Daily Gas Use for All Meters.....97

Figure 8.2-12: 2003 Daily Gas Use for West, South and North Meters.98

Figure 8.2-13: 2003 Daily Gas Use for All Meters.....99

Figure 8.2-14: 1999, 2000, and 2001 Daily Gas Use for West Meter vs Temperature.....100

Figure 8.2-15: 2002 and 2003 Daily Gas Use for West Meter vs Temperature (cont.)101

Figure 8.2-16: 1999, 2000, 2001 and 2002 Daily Gas Use for South Meter vs Temperature.....102

Figure 8.2-17: 2002 and 2003 Daily Gas Use for South Meter vs Temperature (cont.)103

Figure 8.2-18: 1999, 2000, and 2001 Daily Gas Use for North Meter vs Temperature.....104

Figure 8.2-19: 2002 and 2003 Daily Gas Use for North Meter vs Temperature (cont.)105

Figure 8.2-20: 1999, 2000, and 2001 Daily Gas Use for All Meters vs Temperature.106

Figure 8.2-21: 2002 and 2003 Daily Gas Use for All Meters vs Temperature (cont.).....107

Figure 8.2-22: Three-parameter Model for 1999-2002 Daily Average Monthly Gas Use for All Meters vs Temperature.....109

Figure 8.2-23: Three-parameter Model for 2001 Daily Gas Use for West Meter vs Temperature.111

Figure 8.2-24: Three-parameter Model for 2001 Daily Gas Use for South Meter vs Temperature....113

Figure 8.2-25: Three-parameter Model for 2001 Daily Gas Use for North Meter vs Temperature....115

Figure 8.2-26: Three-parameter Model for 2001 Daily Gas Use for All Meters vs Temperature.117

Figure 8.2-27: Three-parameter Model for 2002 Daily Gas Use for West Meter vs Temperature....119

Figure 8.2-28: Three-parameter Model for 2002 Daily Gas Use for South Meter vs Temperature...121

Figure 8.2-29: Three-parameter Model for 2002 Daily Gas Use for North Meter vs Temperature...123

Figure 8.2-30: Three-parameter Model for 2002 Daily Gas Use for All Meters vs Temperature.125

Figure 8.2-31: Three-parameter Model for 2003 Daily Gas Use for West Meter vs. Temperature....127

Figure 8.2-32: Three-parameter Model for 2003 Daily Gas Use for South Meter vs. Temperature...129

Figure 8.2-33: Three-parameter Model for 2003 Daily Gas Use for North Meter vs. Temperature...131

Figure 8.2-34: Three-parameter Model for 2003 Daily Gas Use for All Meters vs. Temperature.133

Figure 8.2-35: Three-parameter models for 1999, 2000, 2001, 2002 and 2003 Daily Gas Use for All Meters vs Temperature.....138

Figure 8.2-36: Three-parameter Model for Combined 1999, 2000, 2001, 2002 and 2003 Daily Gas Use for All Meters vs Temperature.....140

Figure 9.1.1-1: Time series plot of daily electricity use of Main Electrical Substation.....141

Figure 9.1.1-2: Daily electricity use of Main Electrical Substation vs. temperature141

Figure 9.1.2-1: Time series plot of hourly electricity use of Main Electrical Substation142

Figure 9.1.2-2: 24-hour weekday, weekend profiles for Main Electrical Substation.....143

Figure 9.2.1-1: Time series plot of daily electricity use of West Electrical Substation145

Figure 9.2.1-2: Daily electricity use of West Electrical Substation vs. temperature.....145

Figure 9.2.2-1: Time series plot of hourly electricity use of West Electrical Substation.....146

Figure 9.2.2-2: 24-hour weekday, weekend profiles for West Electrical Substation in Period 1147

Figure 9.2.2-3: 24-hour weekday, weekend profiles for West Electrical Substation in Period 2149

Figure 9.3.1-1: Time series plot of daily electricity use of North Electrical Substation 151

Figure 9.3.1-2: Daily electricity use of North Electrical Substation vs. temperature..... 151

Figure 9.3.2-1: Time series plot of hourly electricity use of North Electrical Substation..... 152

Figure 9.3.2-2: 24-hour weekday, weekend profiles for North Electrical Substation..... 153

Figure 11.3.1-1: Building #87003 Electricity Usage 434

Figure 11.3.1-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87003 in
 Period 1 435

Figure 11.3.1-3: 24-hour weekday, weekend profiles for whole-building electricity use for #87003 in
 Period 2 437

Figure 11.3.2-1: Building #87005 Electricity Usage 439

Figure 11.3.2-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87005
 when the outdoor temperature is below 65F 440

Figure 11.3.2-3: 24-hour weekday, weekend profiles for whole-building electricity use for #87005
 when the outdoor temperature is above 65F 442

Figure 11.3.3-1: Building #87006 Electricity Usage 444

Figure 11.3.3-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87006 445

Figure 11.3.4-1: Building #87007 Electricity Usage 447

Figure 11.3.4-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87007 in
 Period 1 448

Figure 11.3.4-3: 24-hour weekday, weekend profiles for whole-building electricity use for #87007 in
 Period 2 450

Figure 11.3.5-1: Building #87008 Electricity Usage 452

Figure 11.3.5-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87008 in
 Period 1 453

Figure 11.3.5-3: 24-hour weekday, weekend profiles for whole-building electricity use for #87008 in
 Period 2 455

Figure 11.3.6-1: Building #87009 Electricity Usage 457

Figure 11.3.6-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87009 458

Figure 11.3.7-1: Building #87010 Electricity Usage 460

Figure 11.3.7-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87010 in
 Period 1 461

Figure 11.3.7-3: 24-hour weekday, weekend profiles for whole-building electricity use for #87010 in
 Period 2 463

Figure 11.3.8-1: Building #87011 Electricity Usage 465

Figure 11.3.8-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87011 in
 Period 1 466

Figure 11.3.8-3: 24-hour weekday, weekend profiles for whole-building electricity use for #87011 in
 Period 2 468

Figure 11.3.9-1: Building #87012 Electricity Usage 470

Figure 11.3.9-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87012 471

Figure 11.3.10-1: Building #87014 Electricity Usage 473

Figure 11.3.10-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87014
 474

Figure 11.3.11-1: Building #87015 Electricity Usage 476

Figure 11.3.11-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87015 in
 Period 1 477

Figure 11.3.11-3: 24-hour weekday, weekend profiles for whole-building electricity use for #87015 in
 Period 2 479

Figure 11.3.12-1: Building #87016 Electricity Usage 481

Figure 11.3.12-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87016 in
 Period 1 482

Figure 11.3.12-3: 24-hour weekday, weekend profiles for whole-building electricity use for #87016 in
 Period 2 484

Figure 11.3.13-1: Building #87017 Electricity Usage 486

Figure 11.3.13-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87017 in
 Period 1 487

Figure 11.3.13-3: 24-hour weekday, weekend profiles for whole-building electricity use for #87017 in
 Period 2489
 Figure 11.3.14-1: Building #194 Electricity Usage491
 Figure 11.3.14-2: 24-hour weekday, weekend profiles for whole-building electricity use for #194 ..492
 Figure 11.3.15-1: Building #410 Electricity Usage494
 Figure 11.3.15-2: 24-hour weekday, weekend profiles for whole-building electricity use for #410 ..495
 Figure 11.3.16-1: Building #1001 Electricity Usage497
 Figure 11.3.16-2: 24-hour weekday, weekend profiles for whole-building electricity use for #1001 498
 Figure 11.3.17-1: Building #5764 Electricity Usage500
 Figure 11.3.17-2: 24-hour weekday, weekend profiles for whole-building electricity use for #5764 501
 Figure 11.3.18-1: Building #6602 Electricity Usage503
 Figure 11.3.18-2: 24-hour weekday, weekend profiles for whole-building electricity use for #6602 504
 Figure 11.3.19-1: Building #9112 Electricity Usage506
 Figure 11.3.19-2: 24-hour weekday, weekend profiles for whole-building electricity use for #9112 507
 Figure 11.3.20-1: Building #9122 Electricity Usage509
 Figure 11.3.20-2: 24-hour weekday, weekend profiles for whole-building electricity use for #9122 510
 Figure 11.3.21-1: Building #15060 Electricity Usage512
 Figure 11.3.21-2: 24-hour weekday, weekend profiles for whole-building electricity use for #15060
513
 Figure 11.3.22-1: Building #22020 Electricity Usage515
 Figure 11.3.22-2: 24-hour weekday, weekend profiles for whole-building electricity use for #22020
516
 Figure 11.3.23-1: Building #28000 Electricity Usage518
 Figure 11.3.23-2: 24-hour weekday, weekend profiles for whole-building electricity use for #28000
519
 Figure 11.3.24-1: Building #42000 Electricity Usage521
 Figure 11.3.24-2: 24-hour weekday, weekend profiles for whole-building electricity use for #42000
522
 Figure 11.3.25-1: Building #52024 Electricity Usage524
 Figure 11.3.25-2: 24-hour weekday, weekend profiles for whole-building electricity use for #52024 in
 Period 1525
 Figure 11.3.25-3: 24-hour weekday, weekend profiles for whole-building electricity use for #52024 in
 Period 2527
 Figure 11.3.26-1: Building #85020 Electricity Usage529
 Figure 11.3.26-2: 24-hour weekday, weekend profiles for whole-building electricity use for #85020
530
 Figure 11.3.27-1: Building #91002 Electricity Usage532
 Figure 11.3.27-2: 24-hour weekday, weekend profiles for whole-building electricity use for #91002
533
 Figure 11.3.28-1: Building #91012 Electricity Usage535
 Figure 11.3.28-2: 24-hour weekday, weekend profiles for whole-building electricity use for #91012
536
 Figure 11.3.29-1: Building #91014 Electricity Usage538
 Figure 11.3.29-2: 24-hour weekday, weekend profiles for whole-building electricity use for #91014
539
 Figure 11.4.1.1-1: Cross Check of Utility Bills and Oncor 15-minute Data for Main Electrical
 Substation.....541
 Figure 11.4.1.2-1: Main Electrical Substation Electricity Use from Utility Data and Logger Data ...542
 Figure 11.4.1.2-2: Main Electrical Substation Electricity Use -The Difference Between Utility and
 Logger Data543
 Figure 11.4.1.2-3: Main Electrical Substation Electricity Use – Comparison of Utility and Logger
 Data543
 Figure 11.4.1.2-4: Main Electrical Substation Electricity Use – Utility and Scaled Logger Data544
 Figure 11.4.1.2-5: Main Electrical Substation Electricity Use – Comparison of Utility and Scaled
 Logger Data545

Figure 11.4.1.2-6: Main Electrical Substation Electricity Use -The Difference Between Utility and Scaled Logger Data.....545

Figure 11.4.2.1-1: Cross Check of Utility Bills and Oncor 15-minute Data for West Electrical Substation.....546

Figure 11.4.2.2-1: West Electrical Substation Electricity Use from Utility Data and Logger Data ...547

Figure 11.4.2.2-2: West Electrical Substation Electricity Use – Comparison of Utility Data and Logger Data548

Figure 11.4.2.2-3: West Electrical Substation Electricity Use - Difference Between Utility Data and Logger Data548

Figure 11.4.2.2-4: West Electrical Substation Electricity Use - Difference Between Utility Data and Logger Data549

Figure 11.4.3.1-1: Cross Check of Utility Bills and Oncor 15-minute Data for North Electrical Substation.....550

Figure 11.4.3.2-1: North Electrical Substation Electricity Use from Utility Data and Logger Data ..551

Figure 11.4.3.2-2: North Electrical Substation Electricity Use- Comparison of Utility Data and Logger Data.....551

Figure 11.4.3.2-3: North Electrical Substation Electricity Use – Difference between Utility Data and Logger Data552

Figure 11.5-1: Measured Steam and Gas Consumption Data as a Time Series.554

Figure 11.5-2: Measured Steam Temperature, Pressure, and Ambient Temperature Data as a Time Series.....555

Figure 11.5-3: Measured Gas and Steam Btu Consumption vs Temperature.555

Figure 11.5-4: Boiler Performance.556

Figure 11.5-5: Original Gas and Steam Btu Data as a Time Series.556

Figure 11.5-6: Boiler Performance (Feb 03-Mar 03) Before Scaling Gas data.557

Figure 11.5-7: Boiler Performance (Feb 03-Mar 03) After Scaling Gas data.....557

Figure 11.5-8: Steam and Scaled Gas Btu Data as a Time Series.....558

Figure 11.5-9: Steam and Scaled Gas Btu Consumption vs Temperature.558

Figure 11.5-10: Boiler Performance Plots After Scaling Gas Data (Nov 02 to Mar 03).560

Figure 11.6-1 Organization of Files on the Accompanying CDROM.561

1. INTRODUCTION

This report presents electricity, natural gas and cooling baselines for the thermal plant, buildings located in the 87000 block, the III Corp building and preliminary baselines on buildings added to the manual polling procedures at Ft. Hood. A baseline analysis is also presented for the natural gas consumption for the Ft. Hood Army base. The weather-independent analysis, which utilizes 24-hour profiles that were developed using ASHRAE's 1093-RP diversity factor procedures, is presented for data from portable loggers and data from the Main, West and North electrical Substations. The baselines developed for this report include data measured during the period September 2002 to August 2003 for the thermal plant and 87000 block buildings, natural gas data and data for the Darnall Hospital recorded over a several year period. Baseline analysis is presented for individual channels and groups of channels that represent loads determined to be of value to Ft. Hood.

2. METHODOLOGY

Several analysis methodologies have been used to develop the characteristic baselines for the buildings and the thermal plant. In general, these methodologies have been carefully chosen to be consistent with the methodologies recommended by ASHRAE and the USDOE, specifically, ASHRAE Guideline 14 (ASHRAE 2002), the USDOE 2001 IPMVP (IPMVP 2001). Additional relevant references are provided in the Reference section of this report.

2.1. Weather dependency.

The analysis used for weather normalization consists of linear and change-point linear models calculated with the Emodel program (Kissock 1993; Kissock et al. 1992) as shown below in Table 2.1-1. These models are consistent with ASHRAE's Proposed Guideline 14 (ASHRAE 2002).

Name	Section	Independent Variable(s)	Form	Examples
No Adjustment /Constant Model	6.1.4.1	None	$E = E_b$	Non weather sensitive demand
Day Adjusted Model	6.1.4.2	None	$E = E_b \times \frac{\text{day}_b}{\text{day}_c}$	Non weather sensitive use (fuel in summer, electricity in summer)
Two Parameter Model	6.1.4.3	Temperature	$E = C + B_1(T)$	
Three Parameter Models	6.1.4.4	Degree days/Temperature	$E = C + B_1(DD_{BT})$ $E = C + B_1(B_2 - T)^+$ $E = C + B_1(T - B_2)^+$	Seasonal weather sensitive use (fuel in winter, electricity in summer for cooling) Seasonal weather sensitive demand
Four Parameter, Change Point Model	6.1.4.5	Temperature	$E = C + B_1(B_3 - T)^+ - B_2(T - B_3)^+$ $E = C - B_1(B_3 - T)^+ + B_2(T - B_3)^+$	
Five Parameter Models	6.1.4.6	Degree days/Temperature	$E = C - B_1(DD_{TH}) + B_2(DD_{TC})$ $E = C + B_1(B_3 - T)^+ + B_2(T - B_4)^+$	Heating and cooling supplied by same meter.
Multi-Variate Models	6.1.4.7	Degree days/Temperature, other independent variables	Combination form	Energy use dependent non-temperature based variables (occupancy, production, etc.).

Table 2.1-1: ASHRAE Guideline 14P Regression Models.

For each of the channels that were found to exhibit a weather dependency, the appropriate linear or change-point linear model was chosen from the models indicated in Table 2.1-1. The models chosen and the results of the regressions are presented later in this report.

2.2. Analysis of chiller cooling production data.

The analysis of the recorded chiller cooling production data uses the quadratic functional form used in the DOE-2 energy simulation program to model part-load equipment and plant performance characteristics (Haberl et al. 1997, LBNL, 1980, 1981, 1982, 1989). This quadratic functional form is also compatible with ASHRAE's Guideline 14.

When the chiller electricity use, chilled water production, chilled water supply temperature, and condenser water temperature returning to the chiller are available, the functional form for the tri-quadratic model is as follows:

$$\begin{aligned} \text{Quadratic: kW/ton} = & a + b \times \text{Tons} + c \times \text{Tcond} + d \times \text{Tevap} + e \times \text{Tons}^2 + f \times \text{Tcond}^2 \\ & + g \times \text{Tevap}^2 + h \times \text{Tons} \times \text{Tcond} + i \times \text{Tevap} \times \text{Tons} \\ & + j \times \text{Tcond} \times \text{Tevap} + k \times \text{Tons} \times \text{Tcond} \times \text{Tevap}. \end{aligned}$$

When the chiller electricity use, chilled water production, and chilled water supply temperature are available, the functional form for the bi-quadratic model is as follows:

$$\begin{aligned} \text{Quadratic: kW/ton} = & a + b \times \text{Tons} + c \times \text{Tevap} + d \times \text{Tons}^2 \\ & + e \times \text{Tevap}^2 + f \times \text{Tevap} \times \text{Tons} \end{aligned}$$

During the 2001/2002 period, the condenser water temperature channel was added to the thermal plant at the 87000 block complex. Therefore, the tri-quadratic model was used from this period to the present period. The analysis for each of the chillers is presented later in this report.

2.3. Data Collection

2.3.1. 87000 Block Thermal Plant

In order to provide Ft. Hood with baseline models of the 87000 block one data logger was installed in 2001 in the thermal plant. This section of the report contains the electrical and thermal monitoring diagrams for the loggers that were installed. Appendix 11.1 contains the logger parameter sets that are used to configure the logger.

The electrical loads for logger #938 are shown in Figure 2.3.1-1. These loads include the main electric loads on CT0, CT1 and CT2, and the chiller submetering on CT3, CT4, CT5 and CT6. The ambient conditions monitored by logger #938 are shown in Figure 2.3.1-2, which include the ambient temperature and relative humidity. The thermal loads monitored by Logger #938 are shown in Figure 2.3.1-3, and includes the chilled water flow, and chilled water supply and return temperatures for chillers 1 and 2, and the natural gas used by the plant.

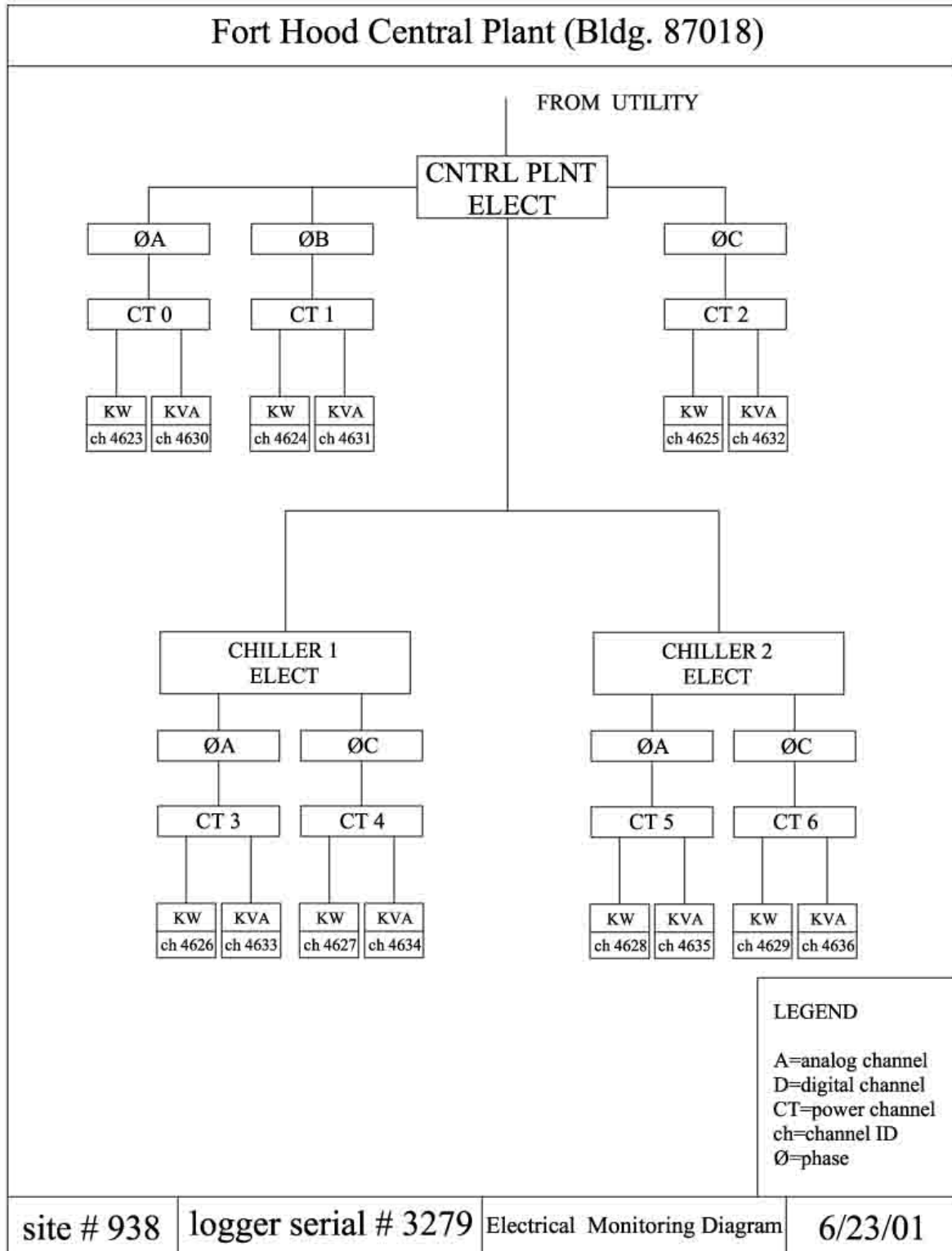


Figure 2.3.1-1: Electrical Monitoring Diagram for 87000 Block Thermal Plant

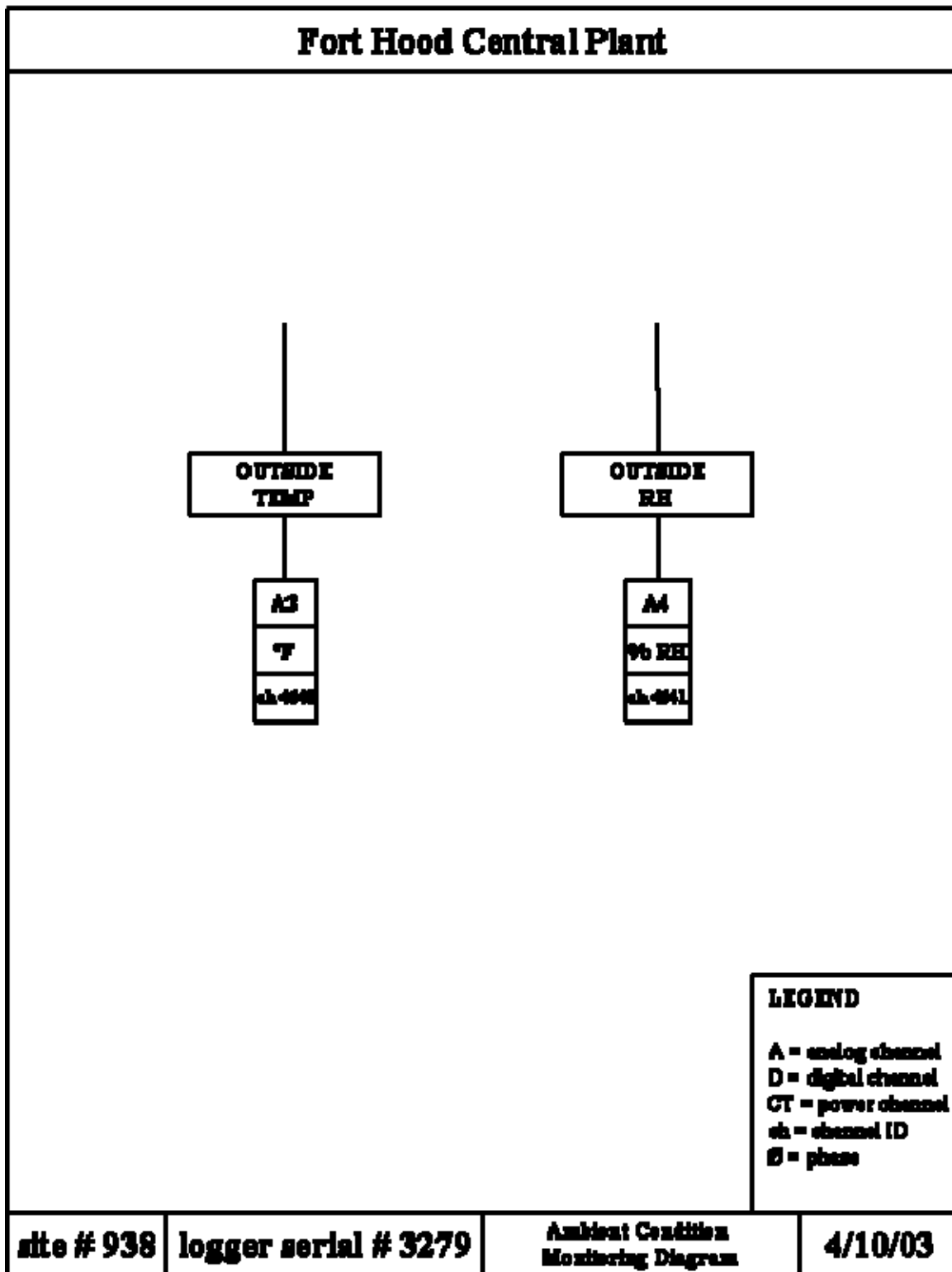


Figure 2.3.1-2: Ambient Conditions Monitored at 87000 Block Thermal Plant

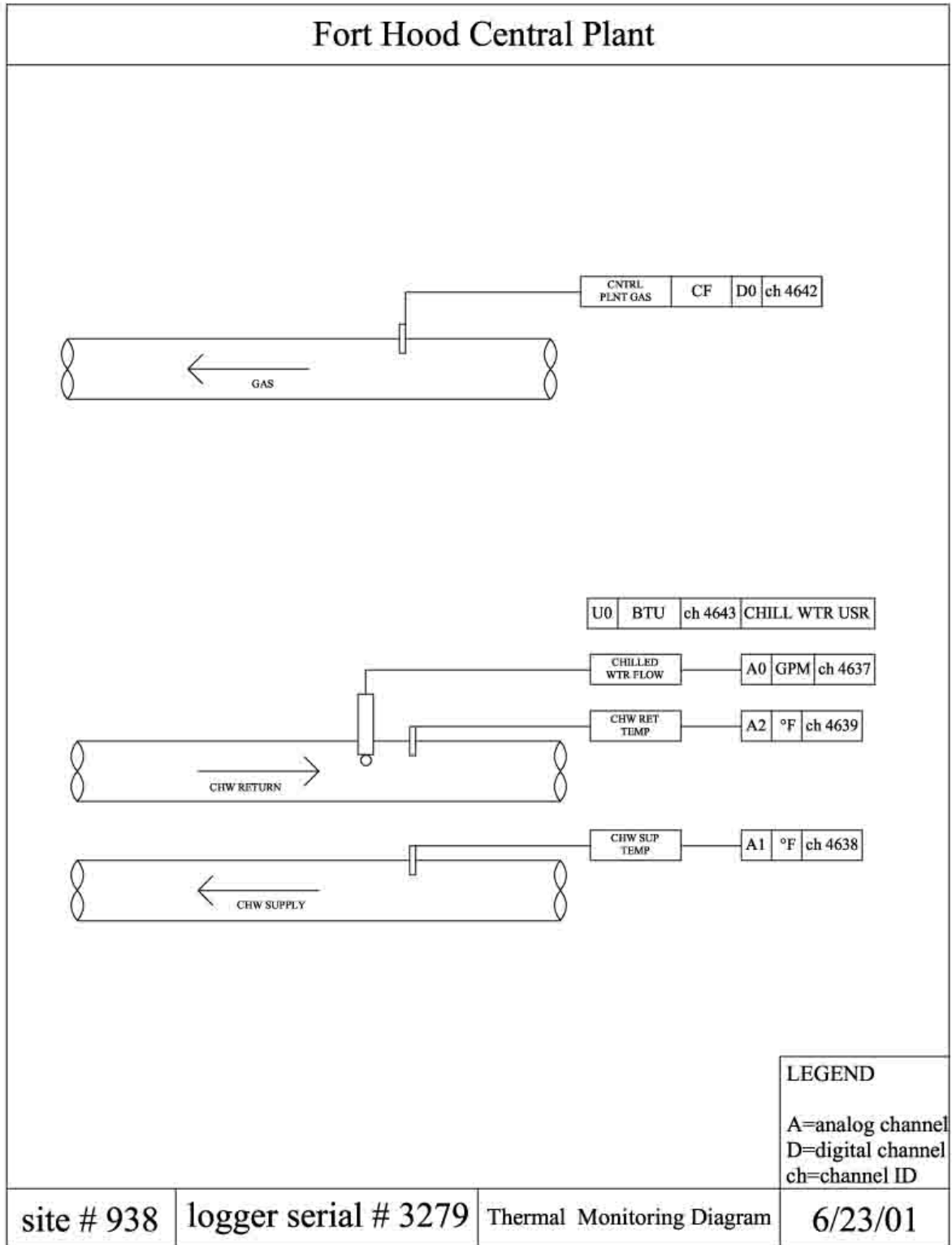


Figure 2.3.1-3: Thermal Monitoring Diagram for 87000 Block Thermal Plant

2.3.2. III Corp Building

This section of the report contains the electrical and thermal monitoring diagrams for the logger that was installed in III Corp Building. Appendix 11.1 contains the logger parameter set that is used to configure the logger.

The electrical loads for logger #947 are shown in Figure 2.3.2-1. These loads include the main electric loads on CT0, CT1, CT2, CT3, CT4, and CT5, the chiller submetering on CT6, CT7, CT8, CT9, CT10, CT11, CT12 and CT13, and MCC submetering on CT14 and CT15. The thermal loads monitored by Logger #947 are shown in Figure 2.3.2-2 and include the natural gas used by the plant.

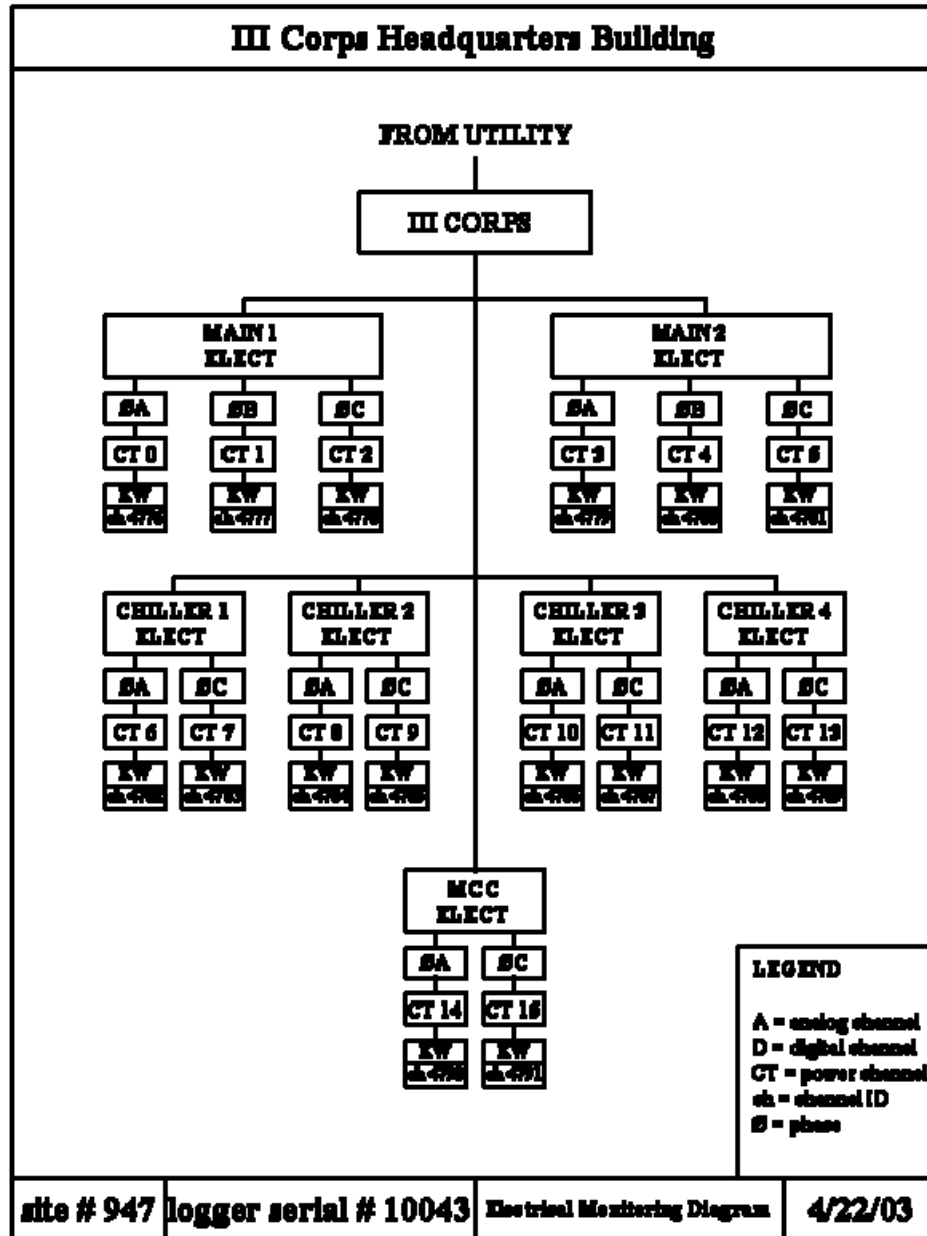


Figure 2.3.2-1: Electrical Monitoring Diagram for III Corp Building

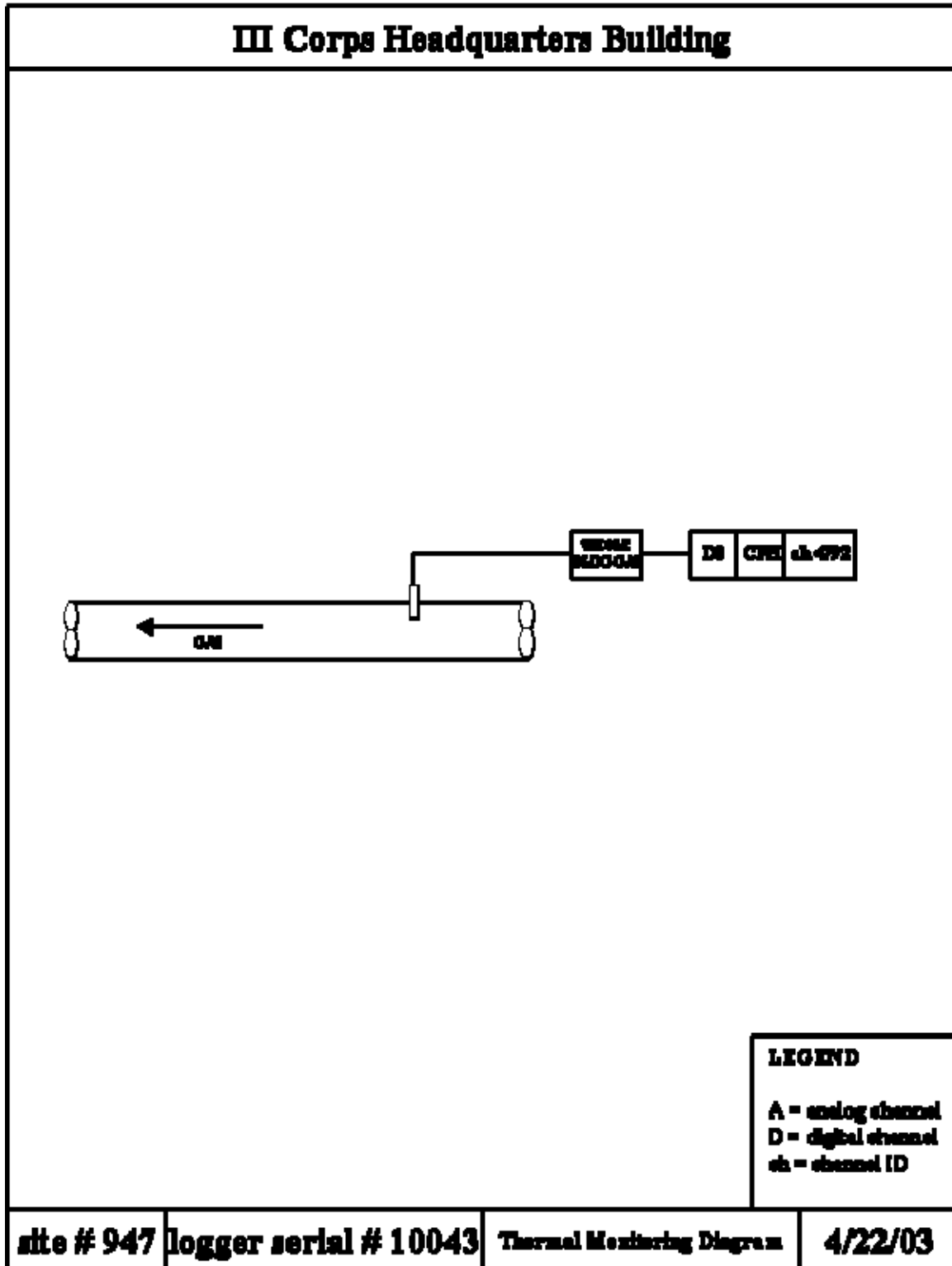


Figure 2.3.2-2: Thermal Monitoring Diagram for III Corps

2.3.3. Darnall Hospital

In order to provide Ft. Hood with baseline models of the Darnall Hospital two data loggers were installed. This section of the report contains the electrical and thermal monitoring diagrams for the loggers that were installed. Appendix 11.1 contains the logger parameter sets that are used to configure the logger.

The electrical loads for logger #940 are shown in Figure 2.3.3-1. These loads include the main electric loads of Darnall Hospital whole-building electricity meter #1 and #2 on D0 and D1, the chiller submetering on CT0, CT1, CT2, CT3, CT4, and CT5, and MCC submetering on CT6, CT7, CT8, and CT9. The electrical loads for logger #939 are shown in Figure 2.3.3-2. These loads include the main electric loads of Darnall Hospital whole-building electricity meter #3 and #4 on D0 and D1. The thermal loads monitored by Logger #940 are shown in Figure 2.3.3-3 and Figure 2.3.3-4, including the chilled water supply and return temperatures for chillers 1, 2, and 3, and the natural gas used by the boiler and other natural gas use in Darnall Hospital.

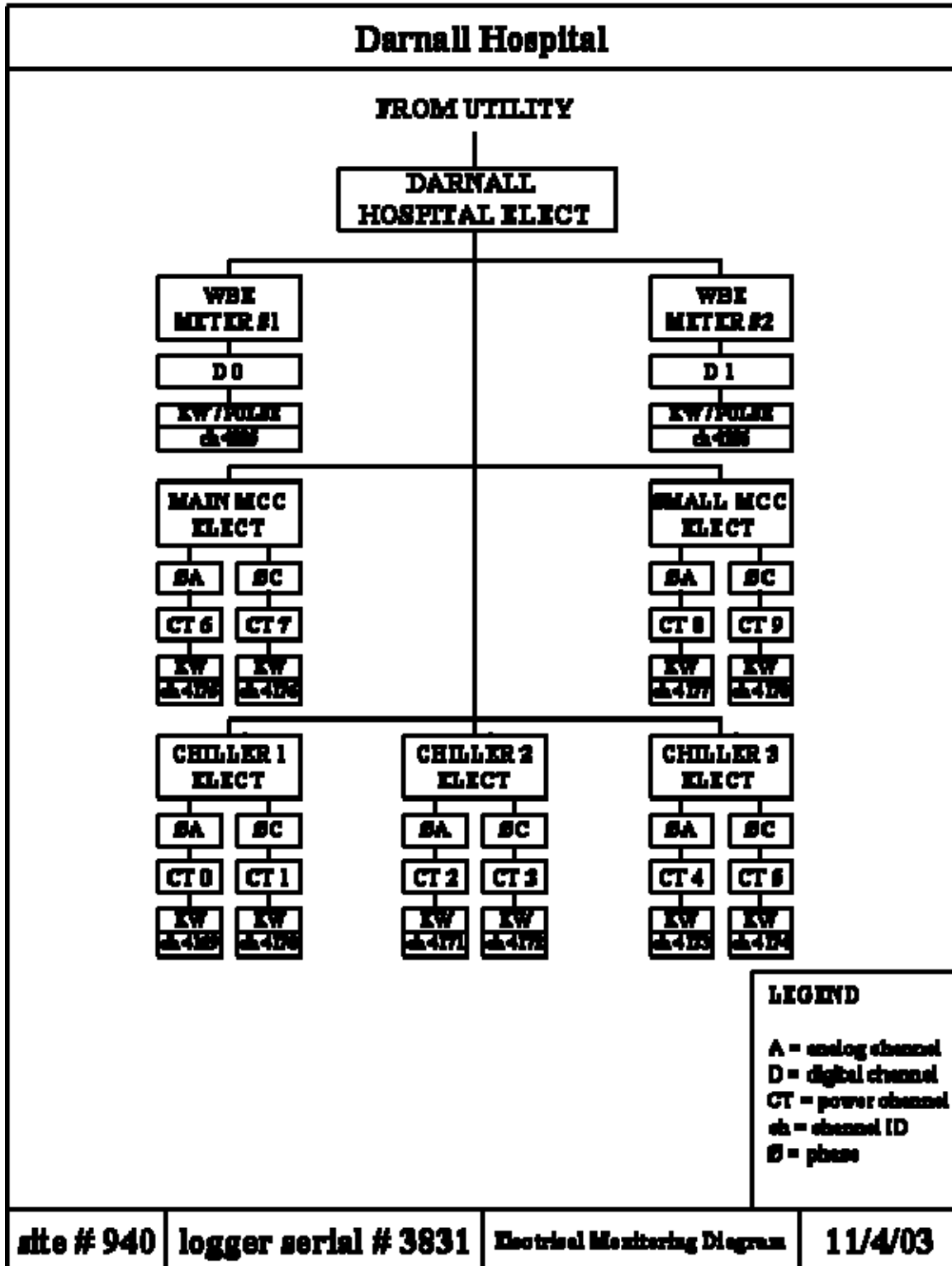


Figure 2.3.3-1: Electrical Monitoring Diagram for Darnall Hospital

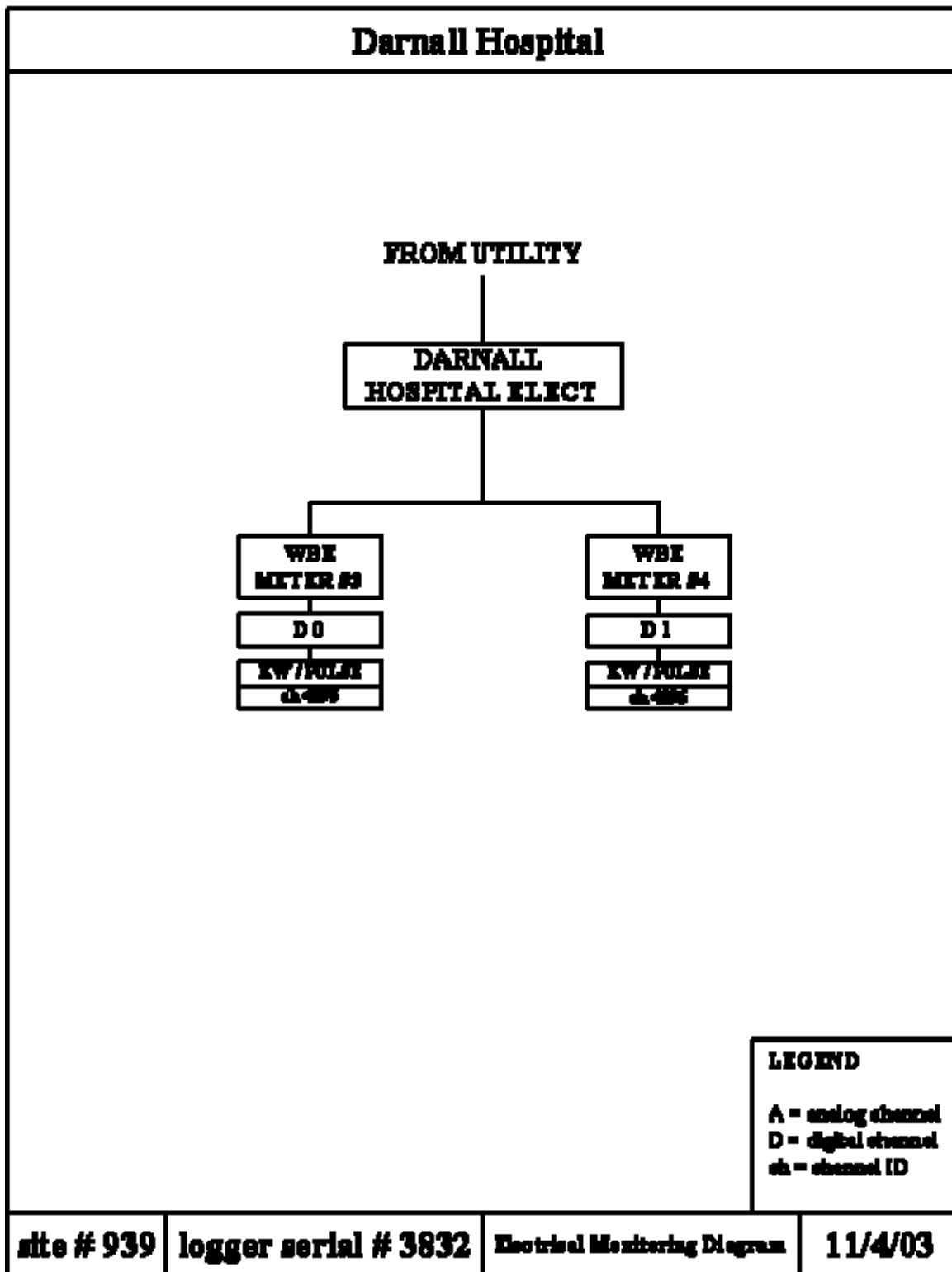


Figure 2.3.3-2: Electrical Monitoring Diagram for Darnall Hospital

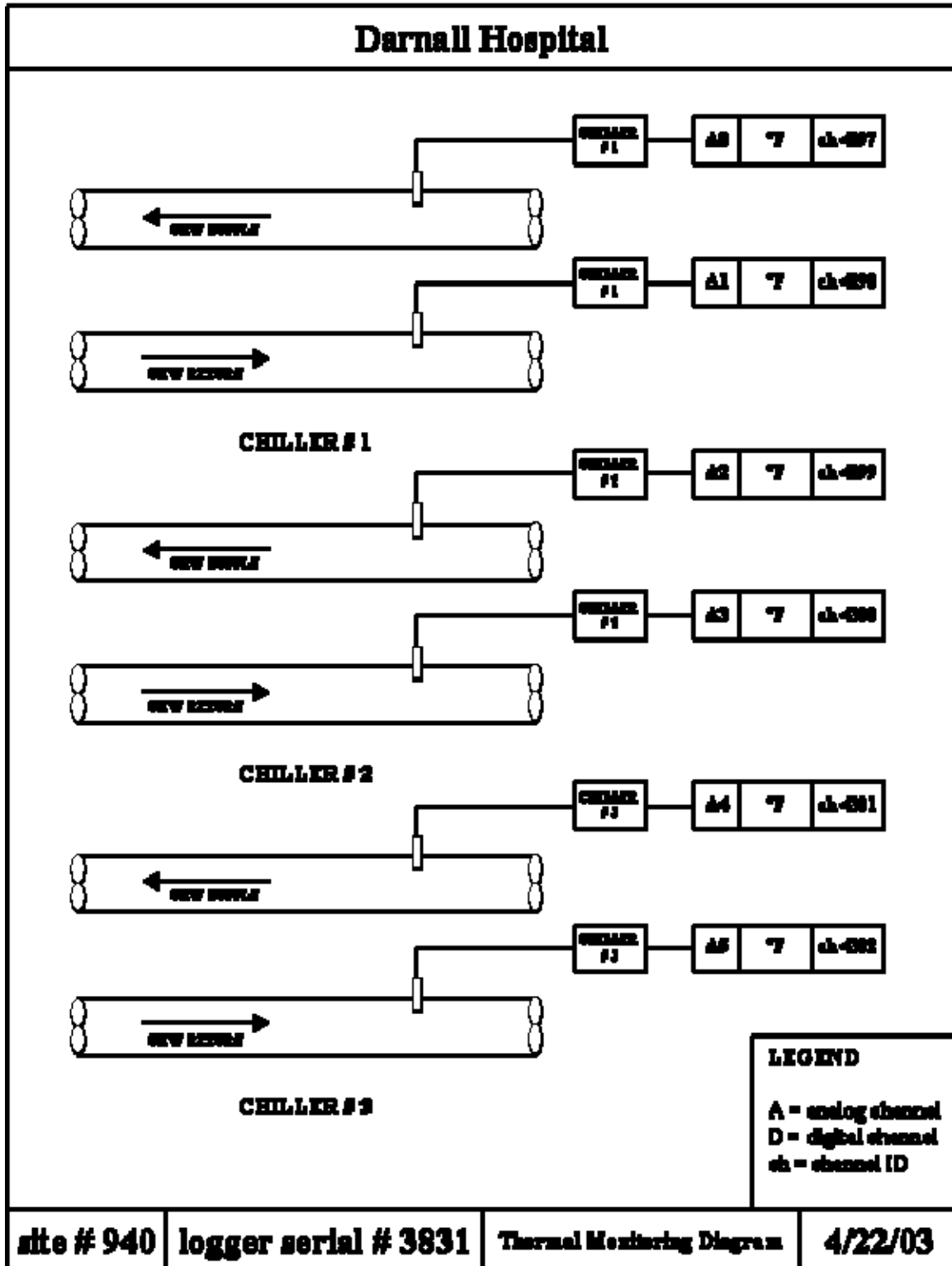


Figure 2.3.3-3: Thermal Monitoring Diagram for Darnall Hospital

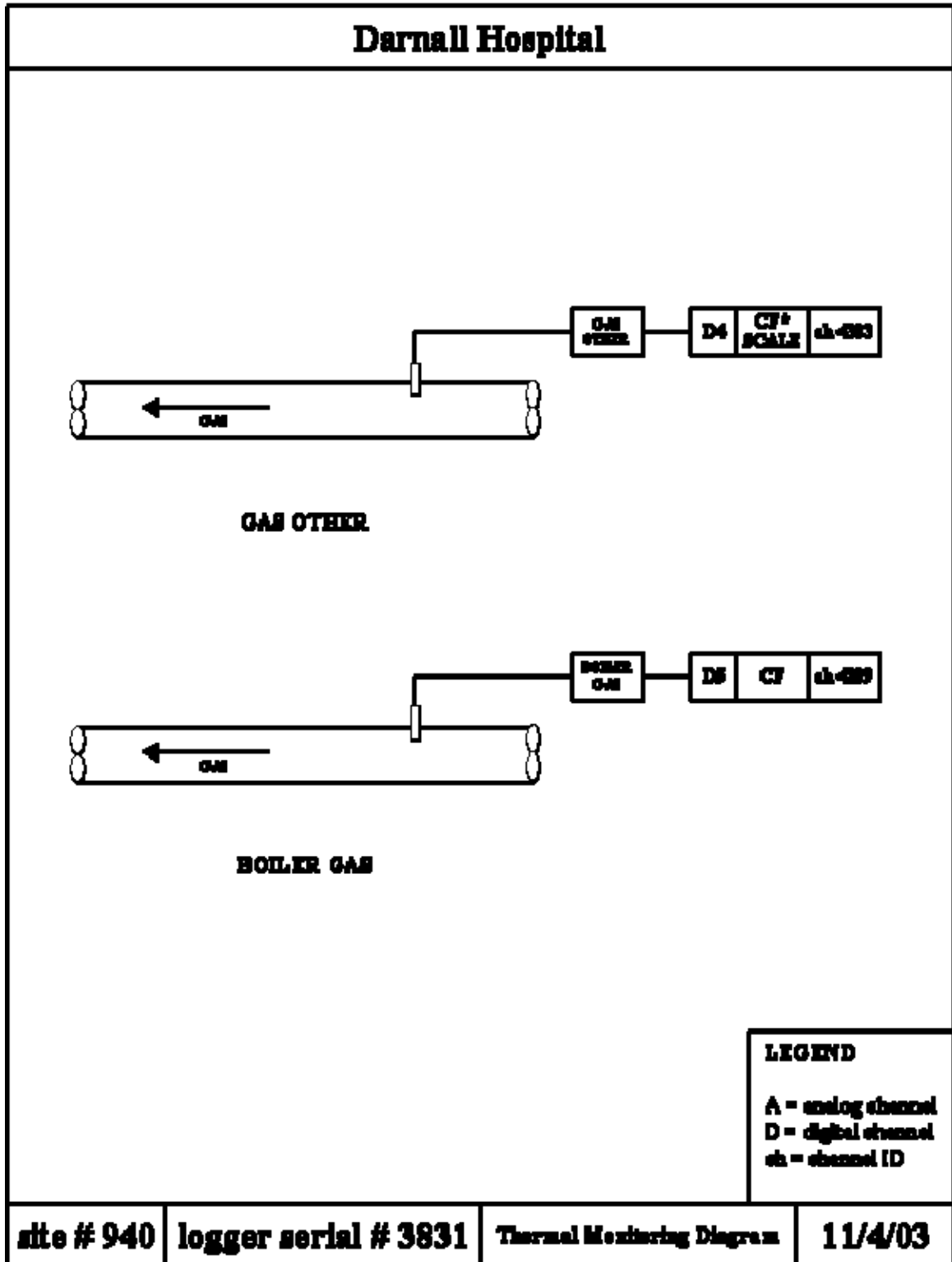


Figure 2.3.3-4: Thermal Monitoring Diagram for Darnall Hospital

2.3.4. Main Electrical Substation

Three data loggers were installed in the Main Electrical Substation and this section of the report contains the electrical and thermal monitoring diagrams for the loggers that were installed. Appendix 11.1 contains the logger parameter sets that are used to configure the logger.

The electrical loads for logger #941 are shown in Figure 2.3.4-1. These loads include the main electric loads of the circuit breaker #5 on CT0, CT1 and CT2, the circuit breaker #4 on CT3, CT4, and CT5, the circuit breaker #8 on CT6, CT7 and CT8, the circuit breaker #15 on CT9, CT10, and CT11, the circuit breaker #12 on CT12, CT13, and CT14, and the circuit breaker #3 on CT15.

The electrical loads for logger #946 are shown in Figure 2.3.4-2. These loads include the main electric loads of the circuit breaker #3 on CT0 and CT1, the circuit breaker #10 on CT2, CT3, and CT4, the circuit breaker #2 on CT5, CT6 and CT7, the circuit breaker #11 on CT8, CT9, and CT10, the circuit breaker #9 on CT11, CT12, and CT13, and the circuit breaker #13 on CT14 and CT15.

The electrical loads for logger #948 are shown in Figure 2.3.4-3. These loads include the main electric loads of the circuit breaker #13 on CT0, the circuit breaker #1 on CT1, CT2, and CT3, the circuit breaker #6 on CT4, CT5 and CT6, the circuit breaker #7 on CT7, CT8, and CT9, the circuit breaker #14 on CT10, CT11, and CT12, and the circuit breaker #16 on CT13, CT14 and CT15.

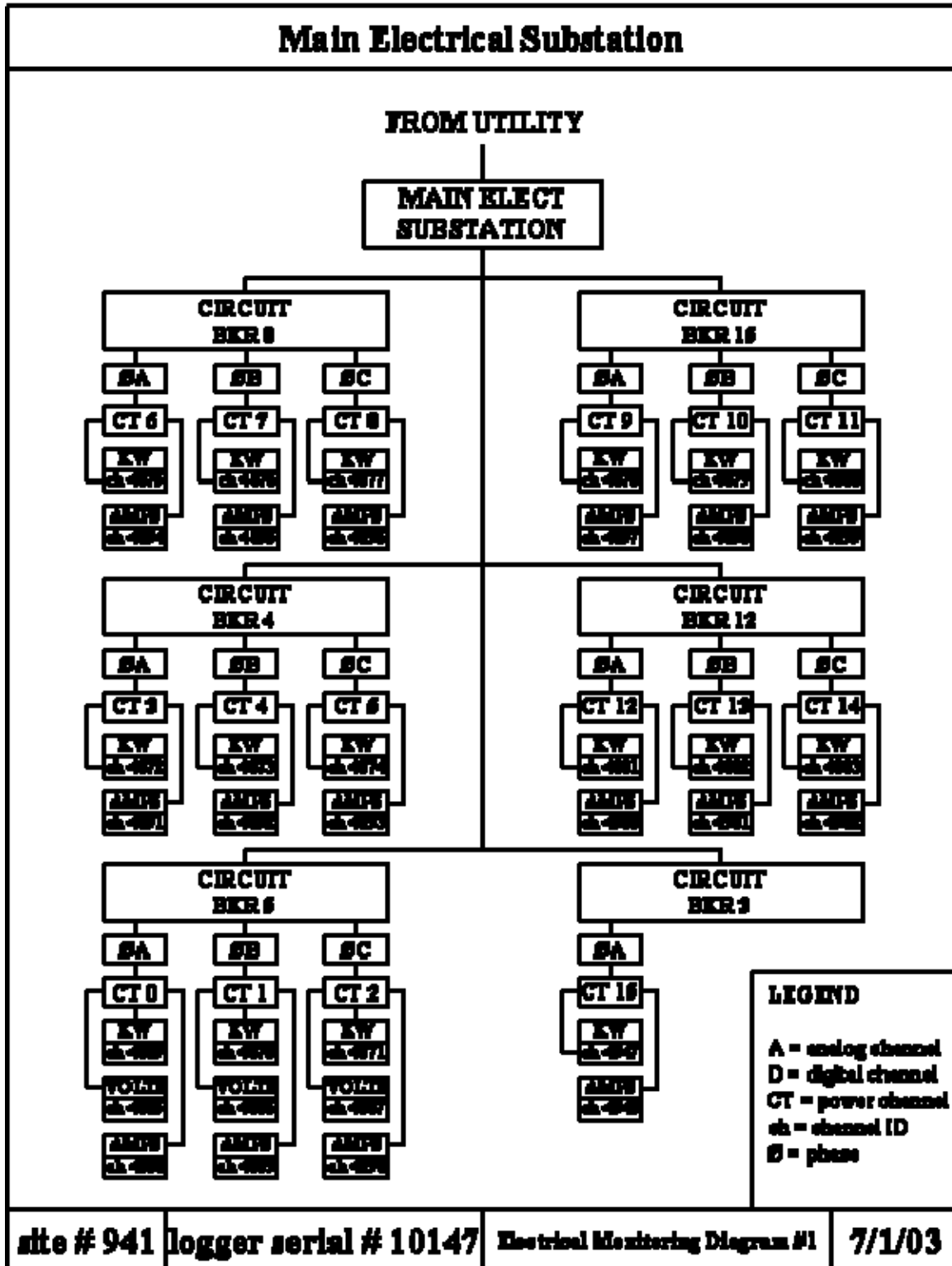


Figure 2.3.4-1: Electrical Monitoring Diagram for Main Electrical Substation (Logger #941)

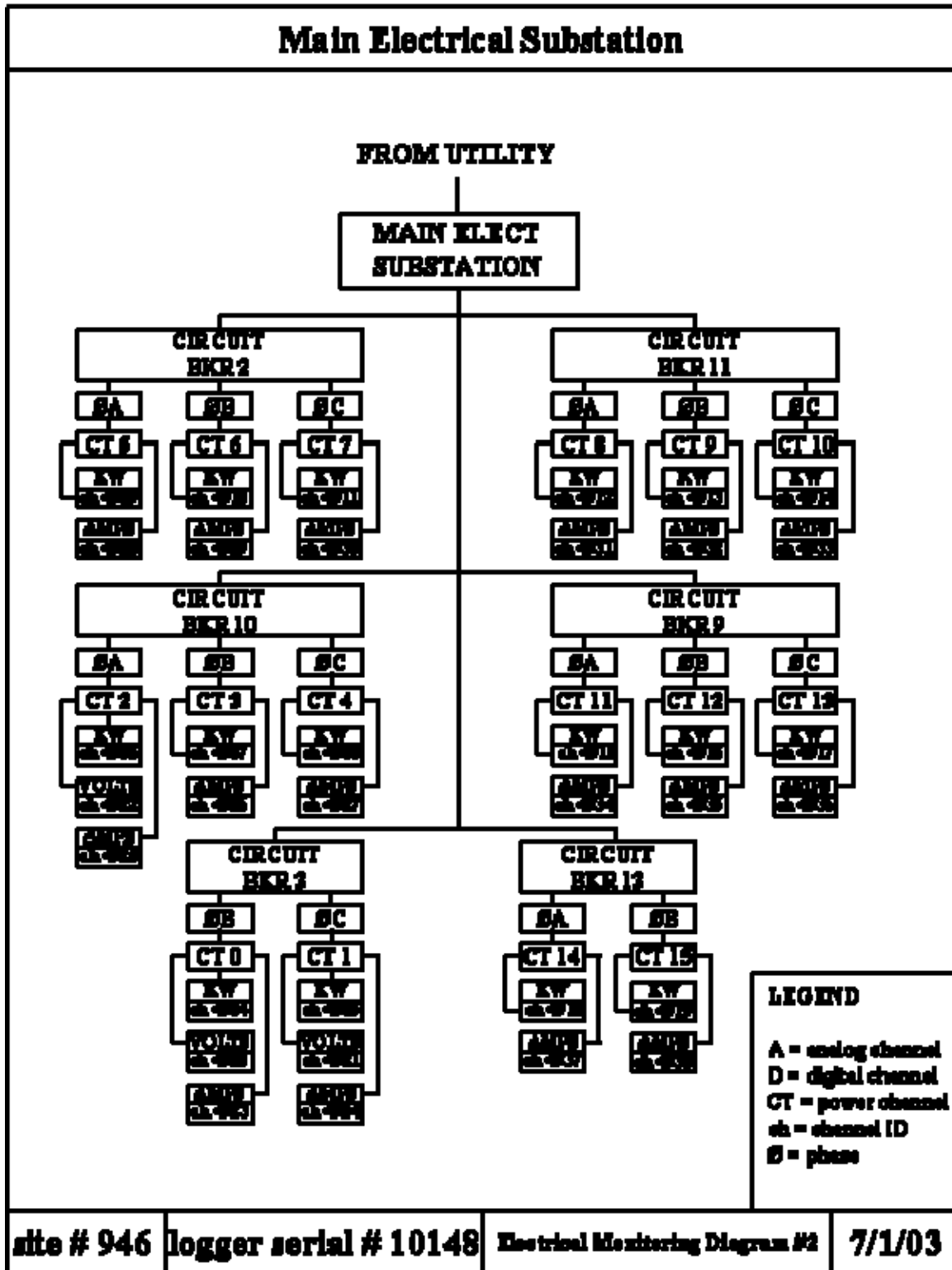


Figure 2.3.4-2: Electrical Monitoring Diagram for Main Electrical Substation (Logger #946)

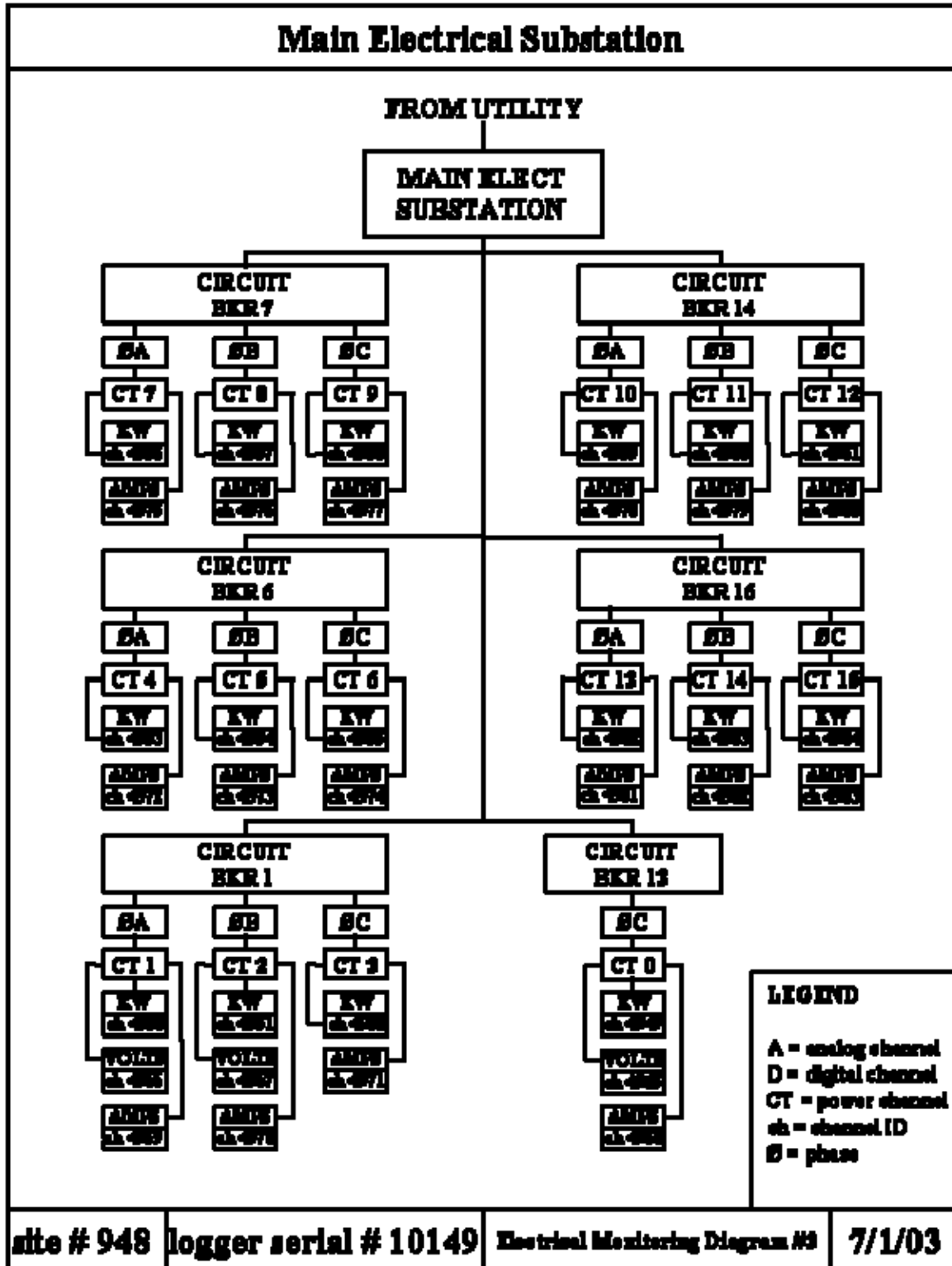


Figure 2.3.4-3: Electrical Monitoring Diagram for Main Electrical Substation (Logger #948)

2.3.5. West Electrical Substation

Three data loggers were installed in the Main Electrical Substation and this section of the report contains the electrical and thermal monitoring diagrams for the loggers that were installed. Appendix 11.1 contains the logger parameter sets that are used to configure the logger.

The electrical loads for logger #941 are shown in Figure 2.3.5-1. These loads include the electric loads of the circuit breaker #1 on CT0, CT1 and CT2, the circuit breaker #2 on CT3, CT4, and CT5, and the circuit breaker #3 on CT6, CT7 and CT8.

The electrical loads for logger #949 are shown in Figure 2.3.5-2. . These loads include the electric loads of the circuit breaker #4 on CT0, CT1 and CT2, the circuit breaker #5 on CT3, CT4, and CT5, the circuit breaker #6 on CT6, CT7 and CT8, the circuit breaker #7 on CT9, CT10, and CT11, and the circuit breaker #8 on CT12, CT13, and CT14.

The ambient conditions monitored by logger #949 are shown in Figure 2.3.5-3, which include the ambient temperature, relative humidity, and solar.

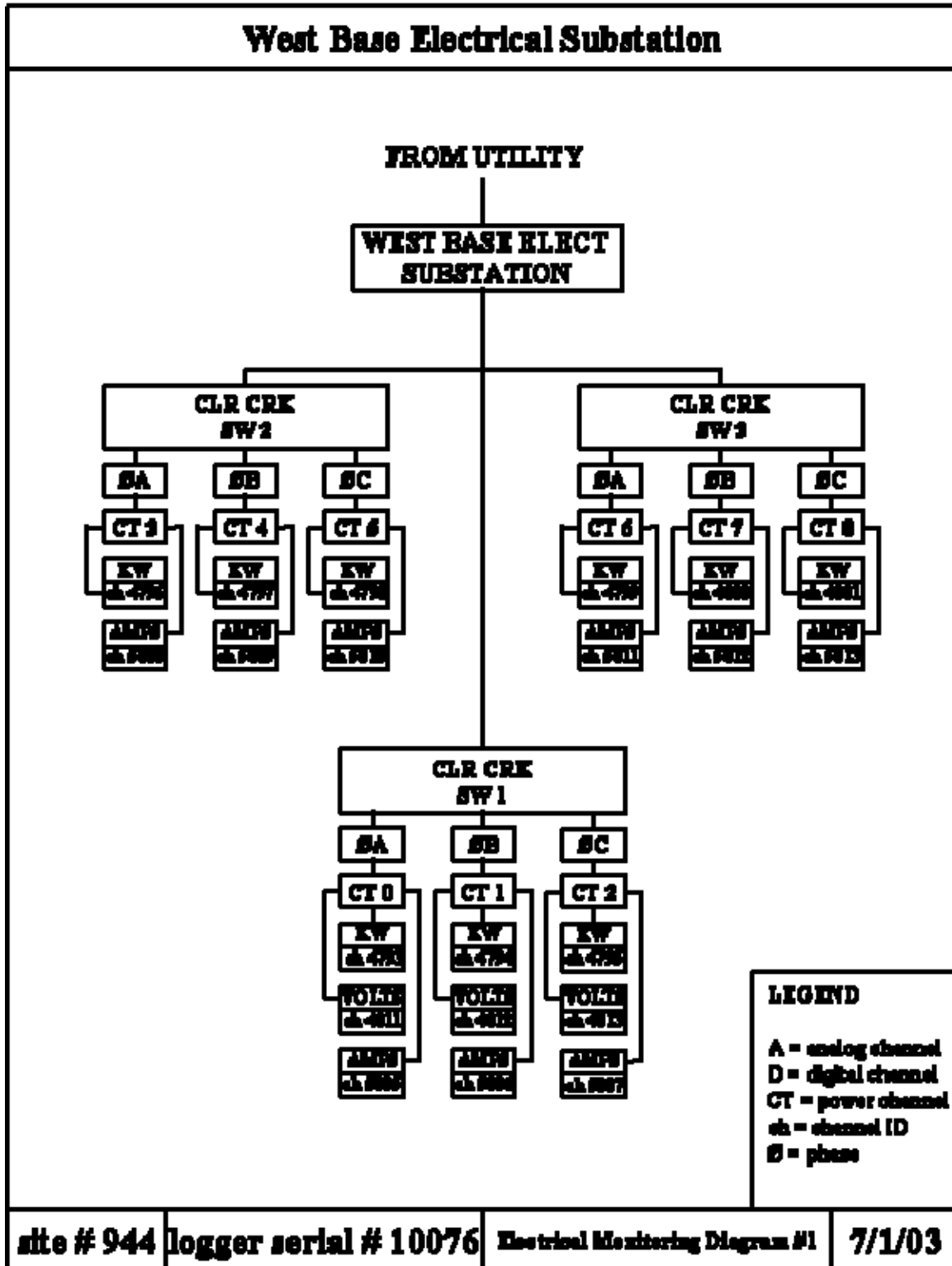


Figure 2.3.5-1: Electrical Monitoring Diagram for West Electrical Substation (Logger #944)

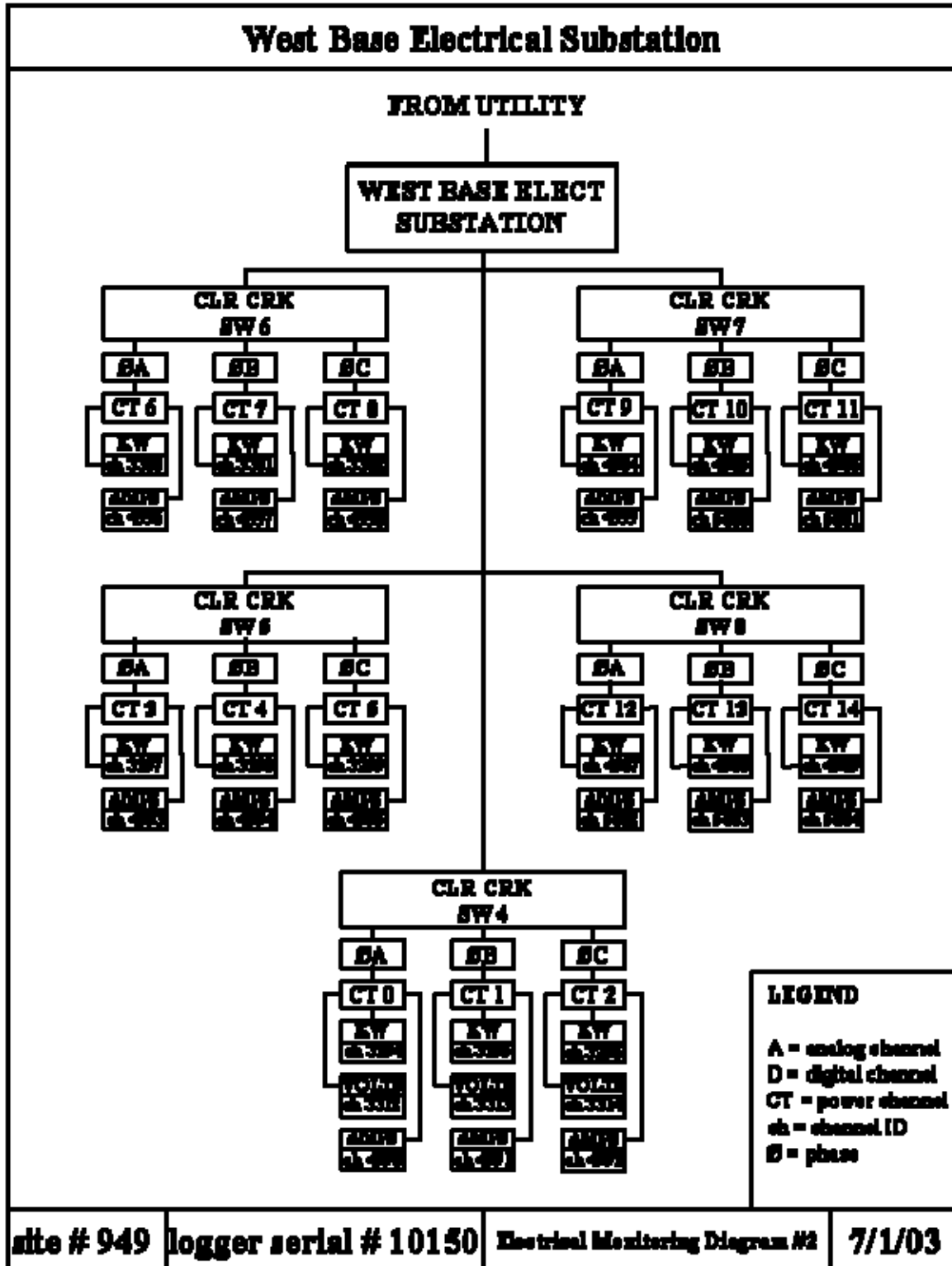


Figure 2.3.5-2: Electrical Monitoring Diagram for West Electrical Substation (Logger #949)

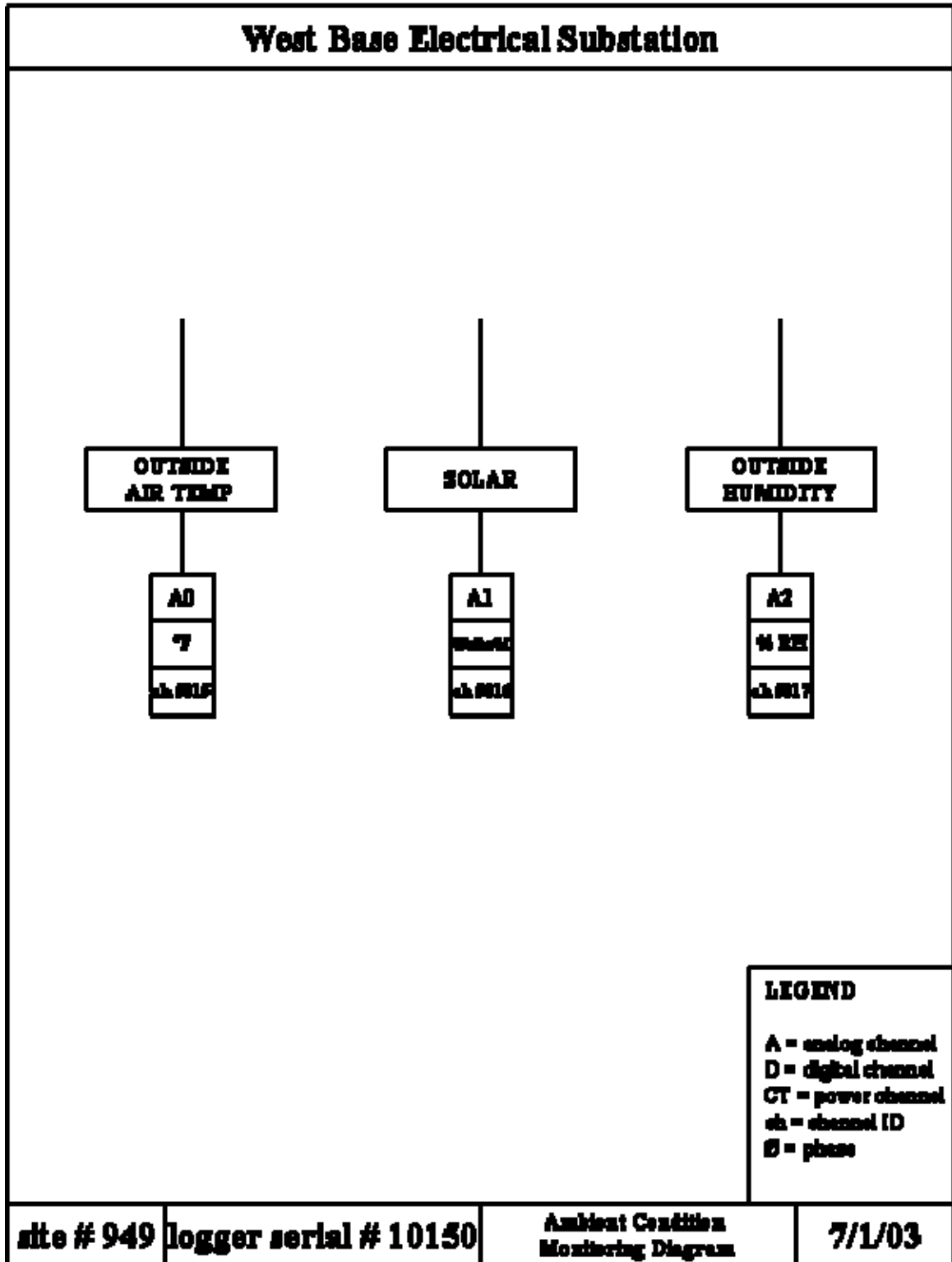


Figure 2.3.5-3: Ambient Conditions Monitored at West Electrical Substation (Logger #949)

2.3.6. North Fort Hood Substation

A new data logger was installed in the North Electrical Substation by SiTEX under direct contract to the Ft. Hood Energy Office. This section of the report contains the electrical and thermal monitoring diagrams for the logger that was installed. Appendix 11.1 contains the logger parameter sets that are used to configure the logger. A calibration report for this logger was provided directly to the Ft. Hood Energy Office.

The electrical loads for logger #937 are shown in Figure 2.3.5-1. These loads include the main electric loads of the feeder #1 on CT0, CT1 and CT2, the feeder #2 on CT3, CT4, and CT5, and the feeder #3 on CT6, CT7 and CT8.

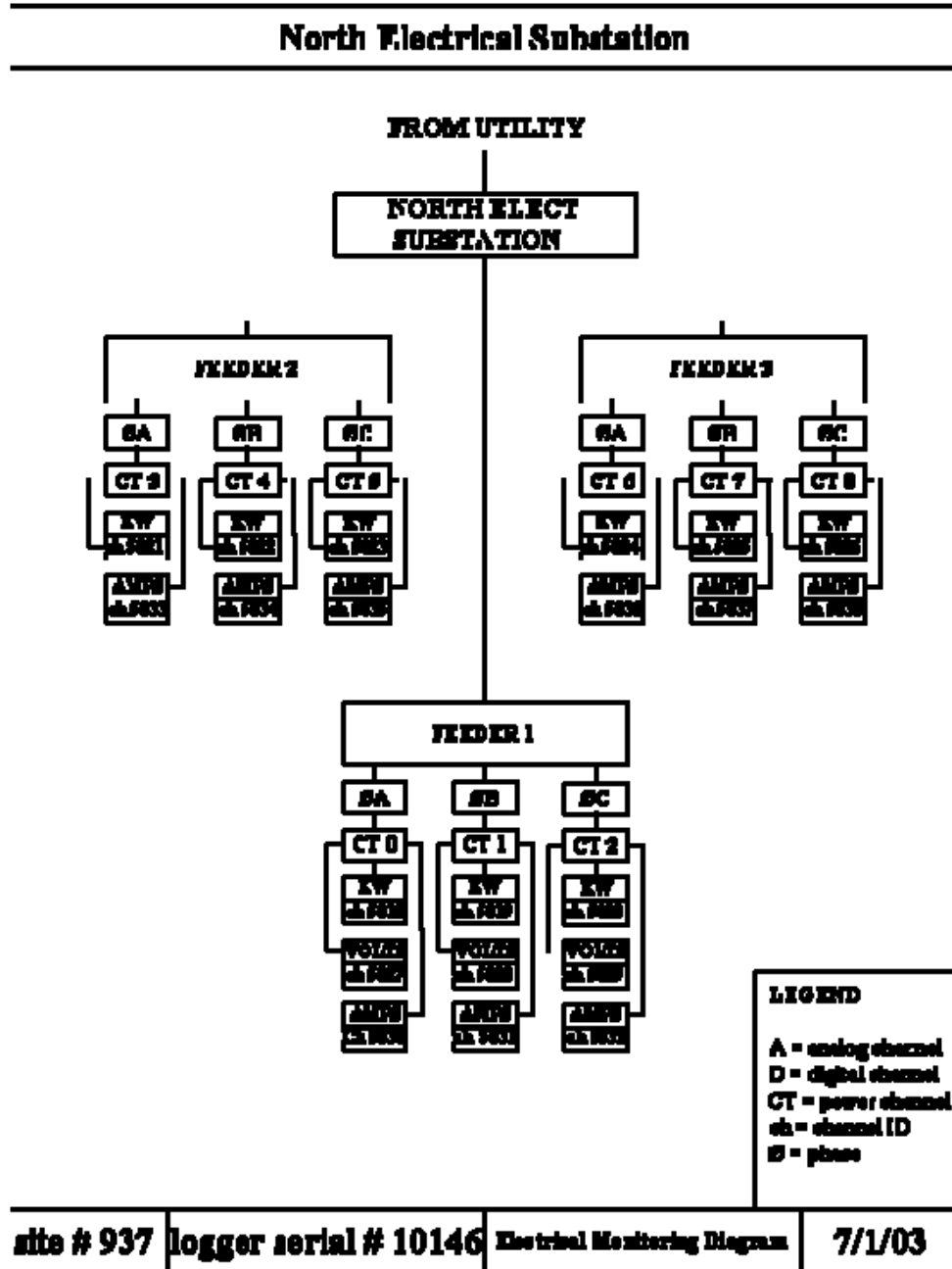


Figure 2.3.6-1: Electrical Monitoring Diagram for North Electrical Substation

3. DATA COLLECTED DURING THE PERIOD SEPTEMBER 2001 TO AUGUST 2002.

3.1. Loggers reported on in this report.

The loggers currently being polled at Ft. Hood include the following sites. A complete listing of all the channels if provided in the appendix to this report. A brief explanation of the loggers at the Thermal plant and the III Corp building is provided in this section.

Loggers installed and verified by the ESL:

938 - 3279 - Ft Hood - Central Thermal Power Plant (87000)
 947 - 10043 - III Corps
 939 - 3832 - Darnall Hospital #1
 940 - 3831 - Darnall Hospital #2
 941 - 10147 - Main Electrical Substation #1
 946 - 10148 - Main Electrical Substation #2
 948 - 10149 - Central Elect Power Plant (Main Substation #3)
 944 - 10076 - Ft Hood - Clear Creek Substation
 949 - 10050 - Ft Hood West Substation

Loggers installed and verified by SiTEX:

937 - 10146 - North Fort Hood

3.1.1. Logger #938 - 3279 - Ft Hood - Central Thermal Power Plant (87000)

3.1.1.1. Electricity use monitoring

Figure 3.2-1 displays a time series plot of the electricity data that were recorded for the period from September 2002 to August 2003. The upper graph of this figure shows the whole-plant electricity use and the electricity used by the chiller, which represents a significant portion of the plant's electricity use, as expected. The second graph in this figure shows the chiller electricity and the lower graph in this figure shows the derived electricity use, which is calculated by subtracting the chiller electricity use from the whole-plant electricity use, and represents electricity use of the chilled water pumps, and other parasitic loads in the plant. This has been labeled as chiller pump electricity since the chiller pumps are felt to account for the largest portion of this use.

Several features are worth noting in these plots. First, the chiller clearly represents the largest portion of the plants electricity use. The plant's electricity use is less than 100 kWh/hr when the chillers are not running. Second, aside from start up transients, the plant operates at a relatively constant load when the chillers are running (depending on the number of chillers running), and consumes very little power when the chillers, and associated loads, are not running. Finally, the pumps and other loads represent a sizeable portion of the plant's load, which offers an opportunity for energy savings if these can be minimized when cooling is not required by the buildings served in the 87000 block.

3.1.1.2. Thermal energy use monitoring

The thermal energy of the plant is shown in Figure 3.2-2. In the upper graph the natural gas use is shown. The calculated chilled water production is shown in the lower graph (i.e., this is calculated by multiplying the recorded flow rate times the recorded temperature difference for each hour).

Several features are worth noting in these plots. First, in the upper plot of Figure 3.2-2, a significant amount of natural gas continues to be consumed in the summer time when the plant is providing relatively small heating loads. A large portion of this load would appear to be heat that is lost to the piping network that delivers the steam to the buildings. Hence, this presents an energy conserving opportunity of the loads served in the summer can be provided by more efficient means than running the thermal plant boilers.

Chilled water production stopped in December of 2002 and started again in March of 2003 as the cooling loads became more significant. During periods when the plant is not operating the chillers the electricity use is less than 25 kW.

3.1.1.3. Ambient conditions monitoring

Figure 3.2-3 the data that represent the ambient conditions are shown, and in Figure 3.2-4 the measured ambient temperature and humidity at Ft. Hood are compared against similar hourly data from the National Weather Service (NWS). Although there is significant scatter in the temperature and humidity comparison graphs, the scatter in the data shown are similar to comparisons at other sites. There are several reasons for this large amount of scatter. First, the NWS data represent a 3 to 5 minute recording window centered at 15 minutes before the hour. Hence, for example, the readings at 10:00 a.m. would represent the average of measurements taken from 9:42 to 9:45 a.m. Whereas, the 10:00 a.m. measurements on the data logger would represent the average of measurements taken from 9:00 a.m. to 10:00 a.m. Second, in the case of the humidity measurements, the large amount of scatter is caused in part by the error in several instruments (i.e., the wet bulb reading and dry bulb reading needed to compute the RH measurements compared to the RH measurement at the thermal plant).

3.1.1.4. Chiller monitoring

Additional data regarding the chiller monitoring can be seen in Figure 3.2-5. Throughout the entire period from September 2002 to August 2003 the flow remained at 2,800 gpm. This is in contrast to the previous year when the flow varied from 1,200 – 1,600 gpm in September and October 2001, increasing to 2,800 gpm in May of 2002. The large amount of chilled water flow during the period when the chillers are not operating is a phantom flow signal, since there is the pumping electricity use dropped below the levels expected for 2,800 gpm (i.e., 150 kW). This is also confirmed by the chilled water supply and return temperatures that indicate reversed temperatures during this period (i.e., the supply becomes higher than the return temperature), and both temperatures would seem to be indicating mechanical room temperatures, versus the expected chilled water temperatures of 40 – 50 F.

In difference to the operation in 2001/2002, the chilled water temperature difference and supply and return temperatures in 2002/2003 were relatively constant at 2 to 7 F, which indicates an opportunity to save pumping energy and chiller energy if the temperature difference could be maintained at a more optimal 10 to 15 F.

The hourly and daily chiller electricity use are plotted against the ambient temperature as shown in Figure 3.2-6. In the upper graph, that represent the hourly chiller data, it is clear to see that there are two different groups of data representing the operation of one or both chillers. From this graph it appears that the operation of one chiller begins in the 45 F range. From about 65 F to the hottest conditions there significant periods when either one or two chillers are used. Hence, hourly data were felt to be not appropriate for modeling.

In the lower graph, that represents the daily electricity use of both chillers, there is a considerable consolidation of the data trends versus ambient temperatures. However, there is still a clear upper group of data that represent fully loaded chillers at 5,000 to 12,000 kWh/day and data in other areas representing other combinations of one or more chillers. This is one of the reasons for the low R2 and high CV(RMSE) calculated by the regressions performed later in this report.

The hourly and daily cooling loads as measured by the chilled water are shown in Figure 3.2-7. In the upper graph, that represents the hourly chilled water loads, there is considerable scatter. However, when the data are consolidated into daily data there is considerable less scatter, and hence the data are more appropriate for modeling with the regressions performed later in this report. In the lower graph the lack of a difference in weekday and weekend data indicate continuous 7 day per week operation.

3.1.1.5. Natural gas monitoring

In Figure 3.2-8 the natural gas use of the plant is shown (NOTE: this has been rescaled since the 2002 and 2001 reports x 10). In the upper graph is a time series trace, with the hourly and daily data plotted against ambient temperature in the middle and lower graphs respectively.

3.1.2. Logger: #947 - 10043 - III Corp Building

Figure 3.2-9 shows the whole-building electricity use, chiller electricity use and motor control center electricity use (MCC) for the III Corp building. Figure 3.2-10 shows the whole-building natural gas use. Figure 3.2-11 shows the whole-building natural gas use versus ambient temperature and Figure 3.2-12 shows the whole-building chiller electricity use versus temperature.

3.1.3. Loggers: #939 - 3832 - Darnall Hospital #1 and #940 - 3831 - Darnall Hospital #2

Data loggers have also been installed in the Darnall Hospital. Figure 3.2-13 shows the whole-building electricity use and the chiller electricity use. Chiller electricity use in the Darnall Hospital was interrupted in September 2002 and from April to August 2003 due to hardware failures. Figure 3.2-14 shows the electricity use of several motor control centers. Figure 3.2-15 shows the whole-building natural gas use. The whole-building natural gas data from the Darnall Hospital also was interrupted for large periods due to hardware failures.

3.1.4. Loggers: #941 - 10147 - Main Electrical Substation #1, #946 - 10148 - Main Electrical Substation #2 and #948 - 10149 - Main Electrical Substation #3

Three existing data loggers were recalibrated and restarted in the Main Electrical Substation. In Figure 3.2-16 the electricity use of these three loggers and the total electricity use of the Main Substation are shown. The total electricity use data is available only from June 2003 to August 2003. This is because one of the loggers (#948) was down prior to June 2003. Appendix Section 11.4.1.2 contains an analysis of the cross-check that was performed on the data from the main substation versus the utility billing data for similar periods.

3.1.5. Loggers: #944 - 10076 - West Electrical Substation #1 and #949 - 10150 - West Electrical Substation #2

Two new data loggers were installed in West Electrical Substation. Figure 3.2-17 shows the electricity use from the two loggers and the total electricity use of the West Substation. Unfortunately, metering problems remained with the two loggers until July 2003 when they were finally fixed. Appendix Section 11.4.1.2 contains an analysis of the cross-check that was performed on the data from the main substation versus the utility billing data for similar periods.

3.1.6. Loggers: #937 - 10146 - North Electrical Substation

One new data logger was installed in North Electrical Substation in June 2003. Figure 3.2-18 shows the electricity use of the North Substation. Appendix Section 11.4.1.2 contains an analysis of the cross-check that was performed on the data from the main substation versus the utility billing data for similar periods.

3.2. Whole-base Natural Gas Use.

The whole-base natural gas use consists of three meters, which were installed and maintained by the natural gas utility supplier. The readings from the three meters can be combined into a total natural gas use for the whole-base. Data collected to date were modeled with change-point linear models, including monthly and daily energy use. This analysis is discussed later in Section 8 of this report.

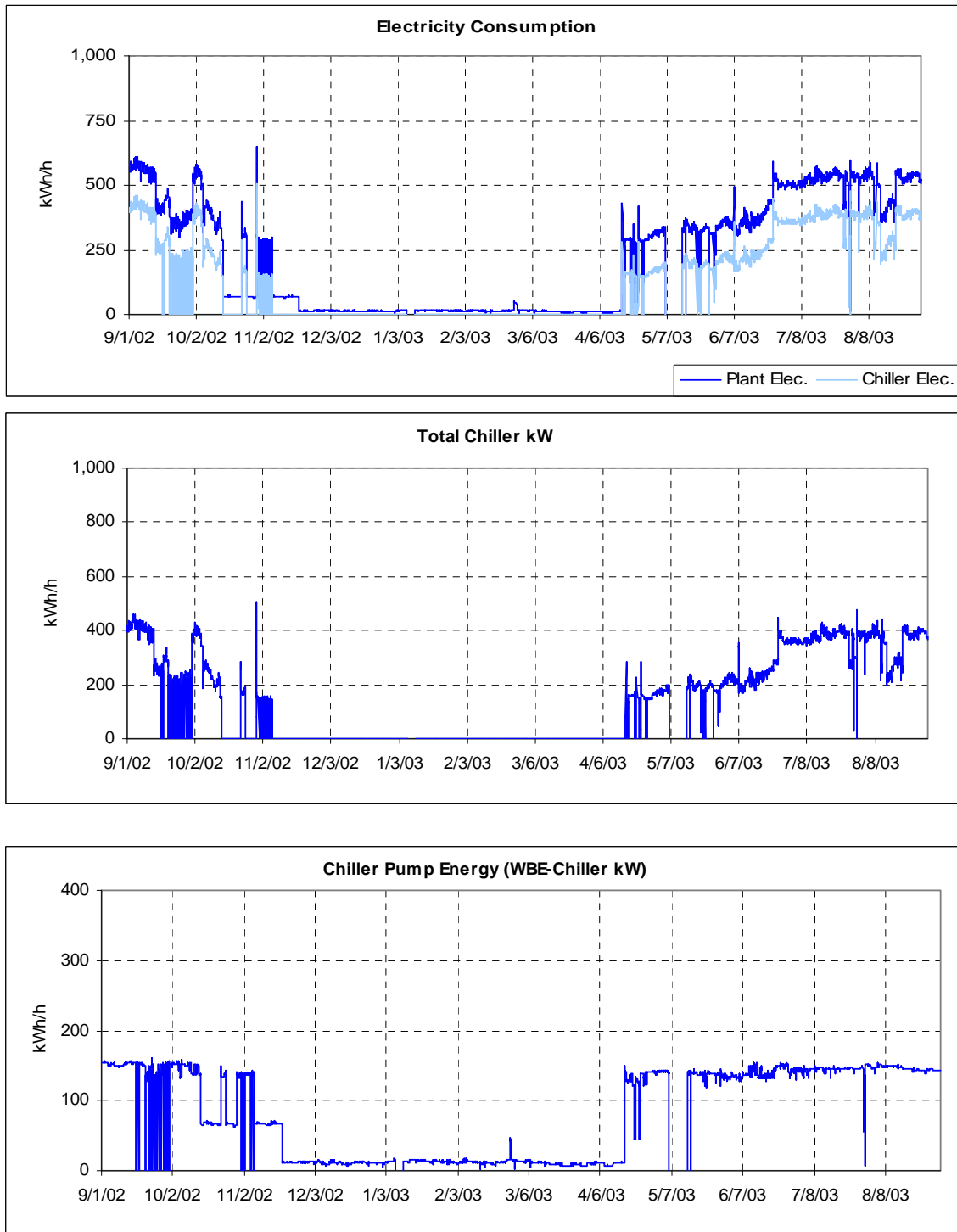


Figure 3.2-1: 87000 Block Thermal Plant Electricity Use: Total, Chiller & Pump Use.

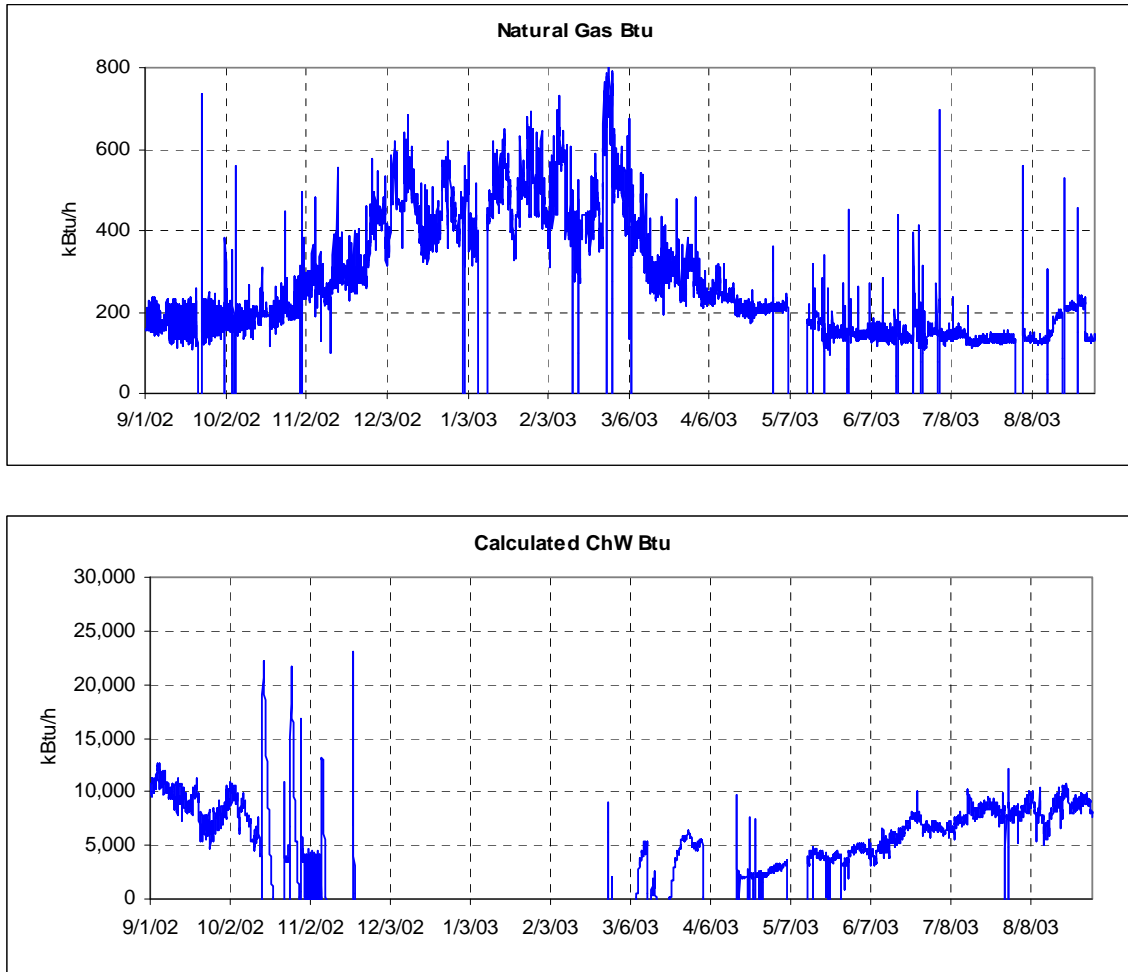


Figure 3.2-2: 87000 Block Thermal Plant Gas use and Chilled Water Production.

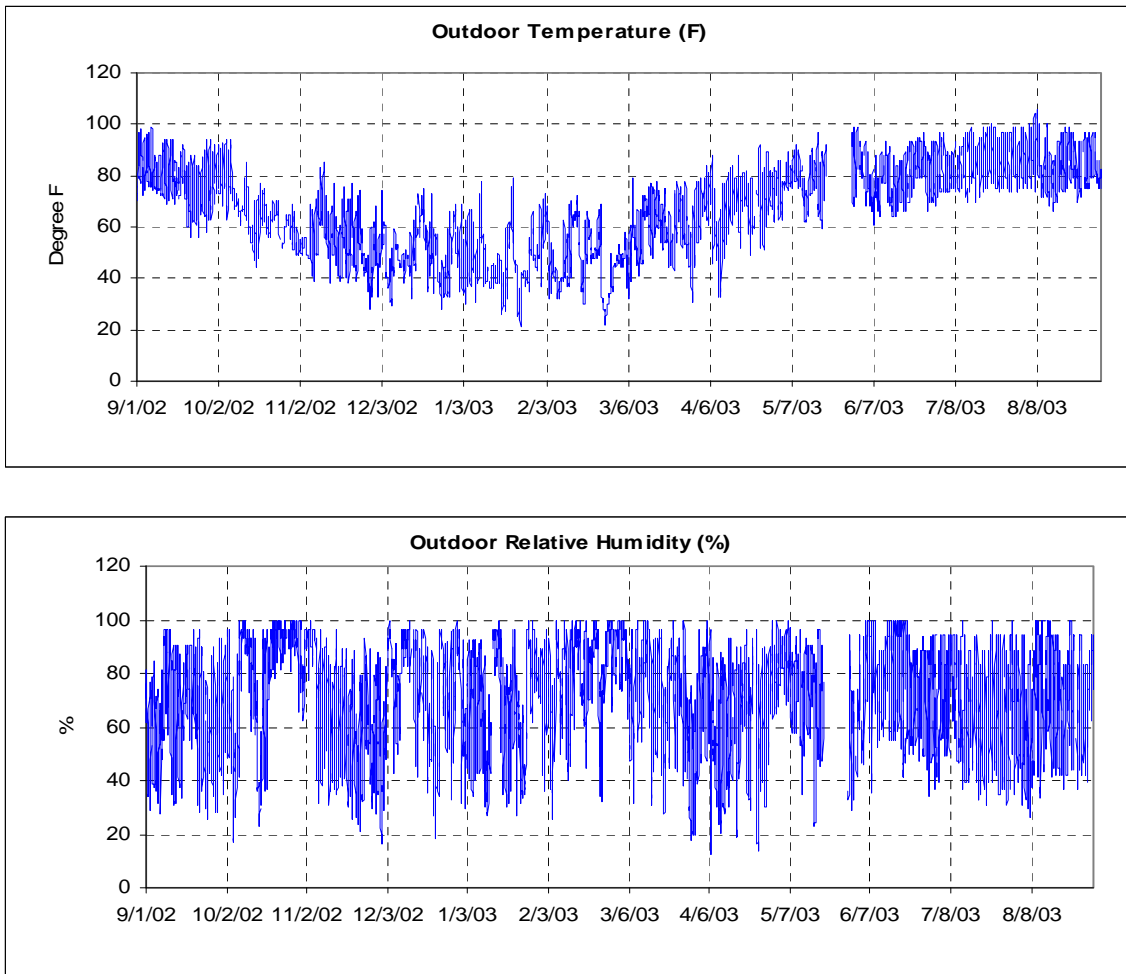


Figure 3.2-3: 87000 Block Thermal Plant Ambient Conditions.

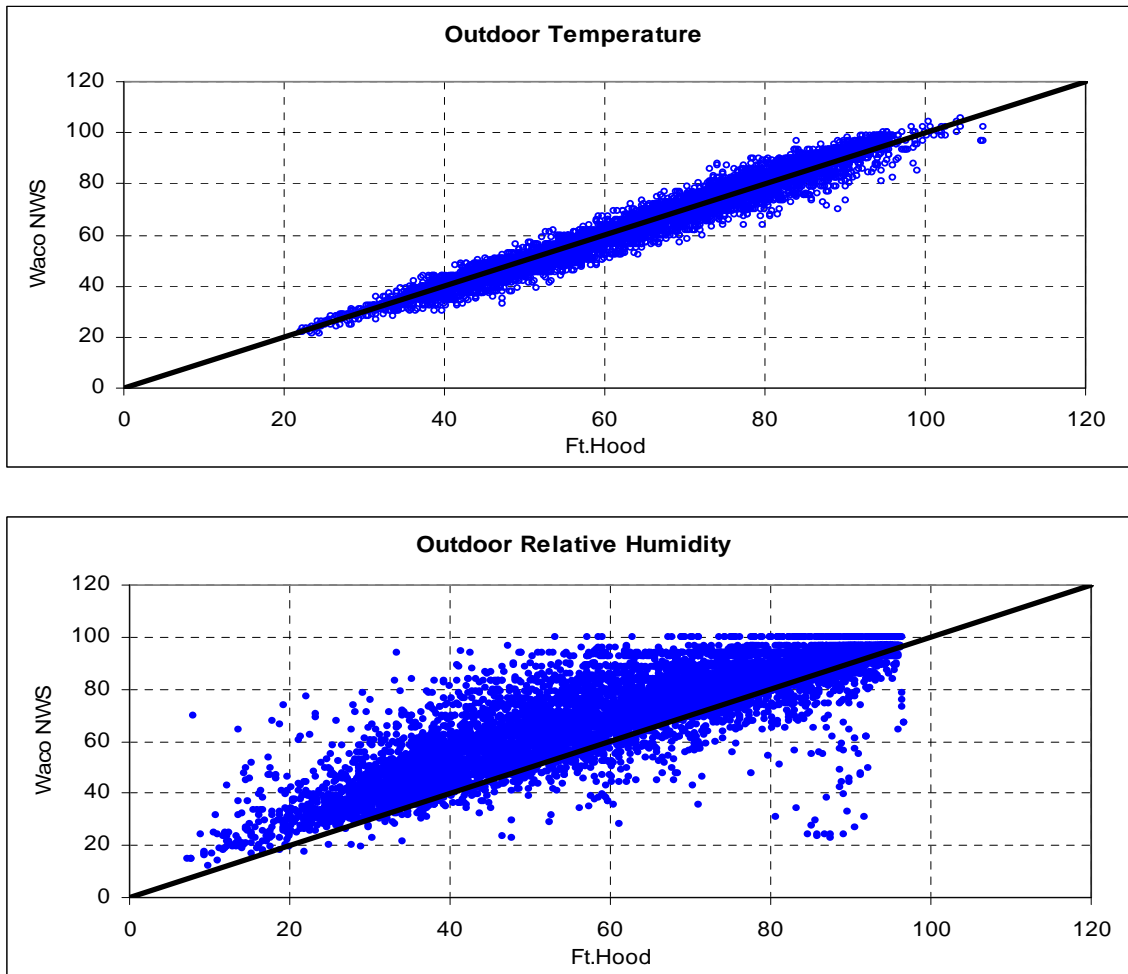


Figure 3.2-4: 87000 Block Thermal Plant Measured Ambient Conditions vs NWS Ambient Conditions (Waco): Temperature and Humidity.

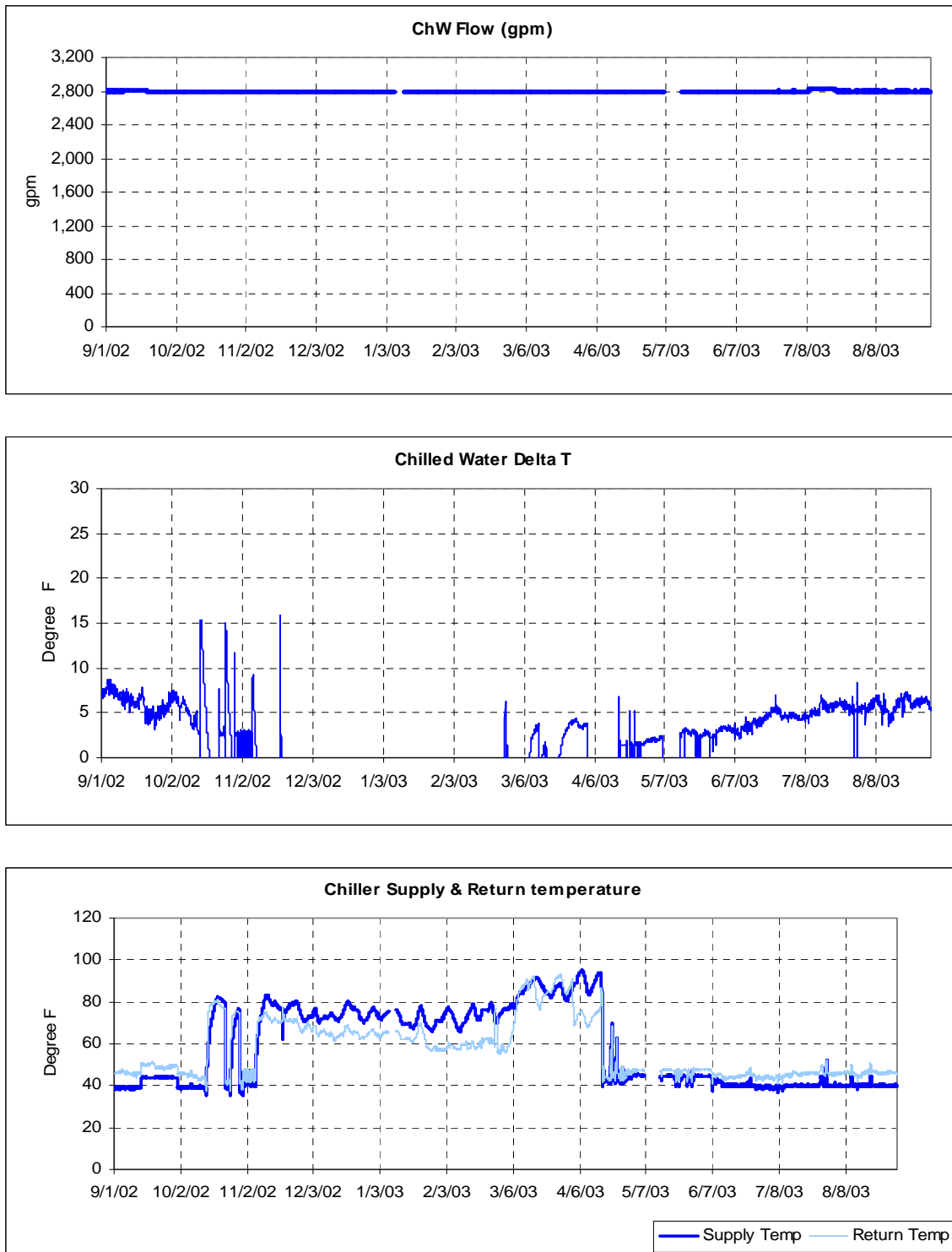


Figure 3.2-5: 87000 Block Thermal Plant Chiller Monitoring Flow, and Supply and Return Temperatures.

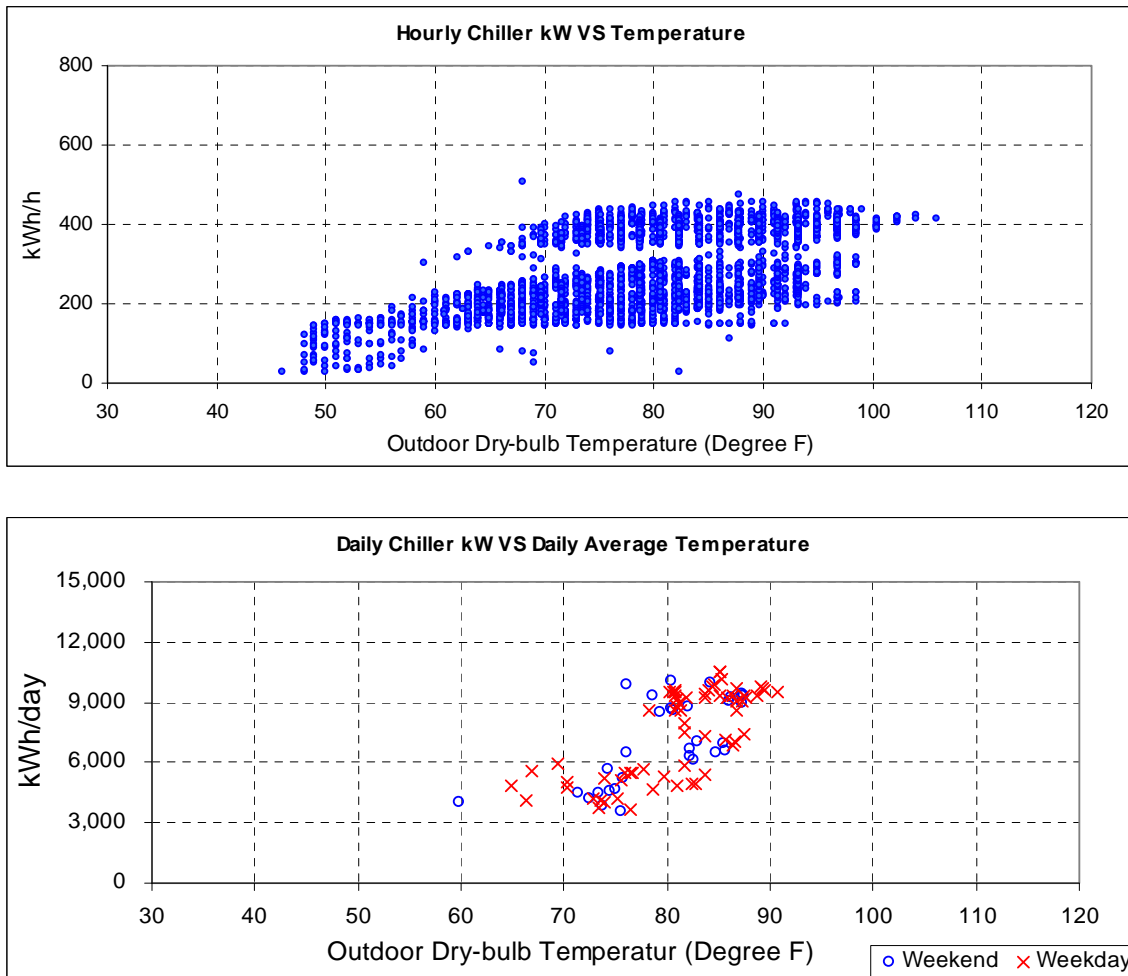


Figure 3.2-6: 87000 Block Thermal Plant Chiller Electricity Use vs. Ambient Conditions (hourly and daily data).

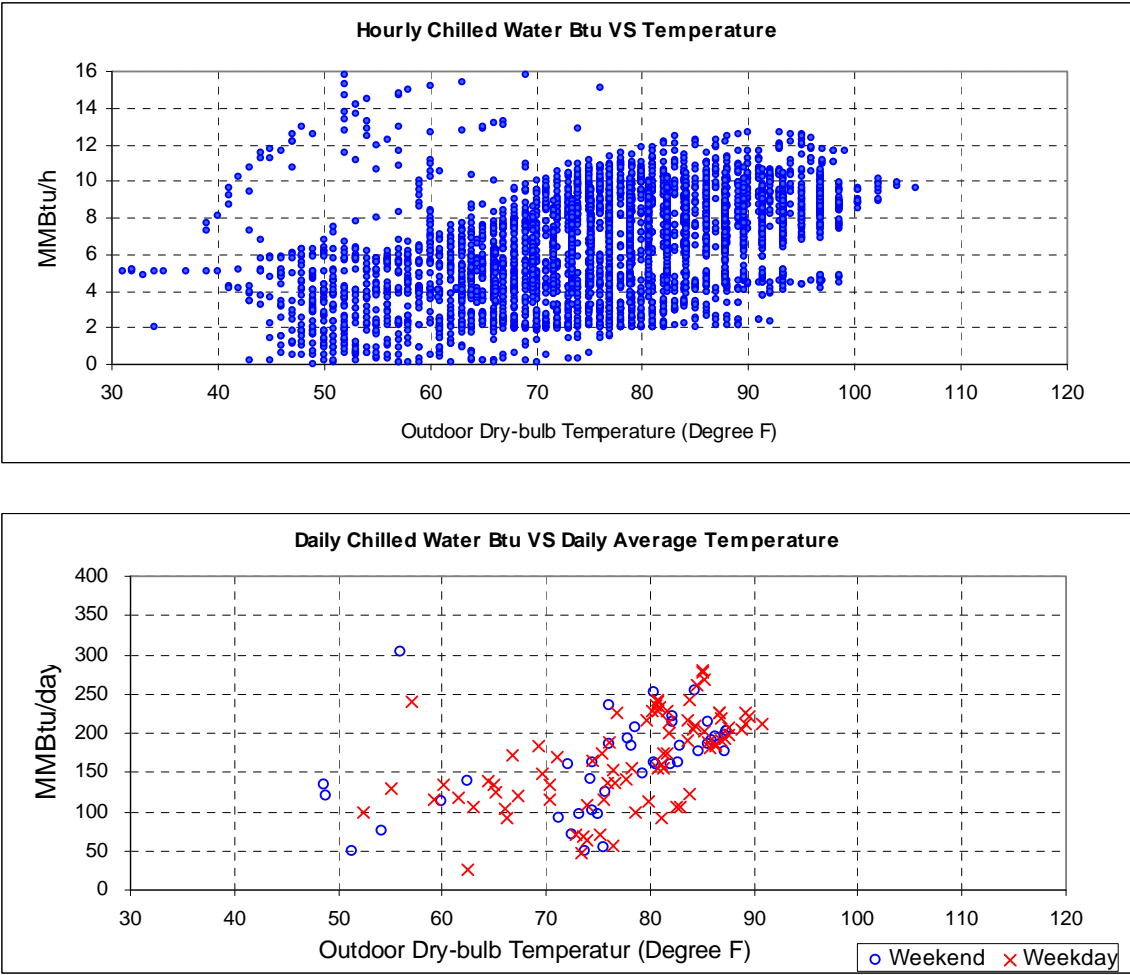


Figure 3.2-7: 87000 Block Thermal Plant Chilled Water Production vs Ambient Conditions (hourly and daily data).

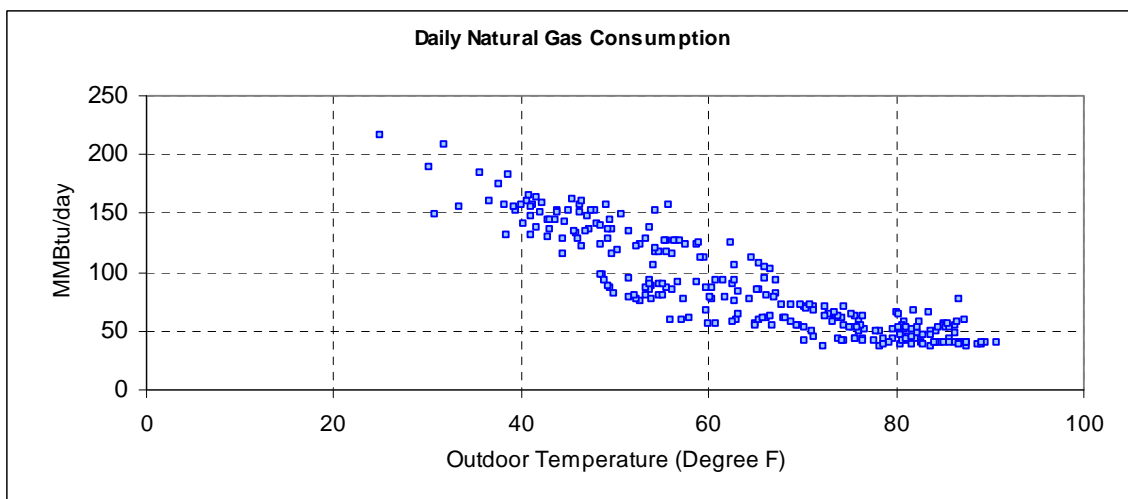
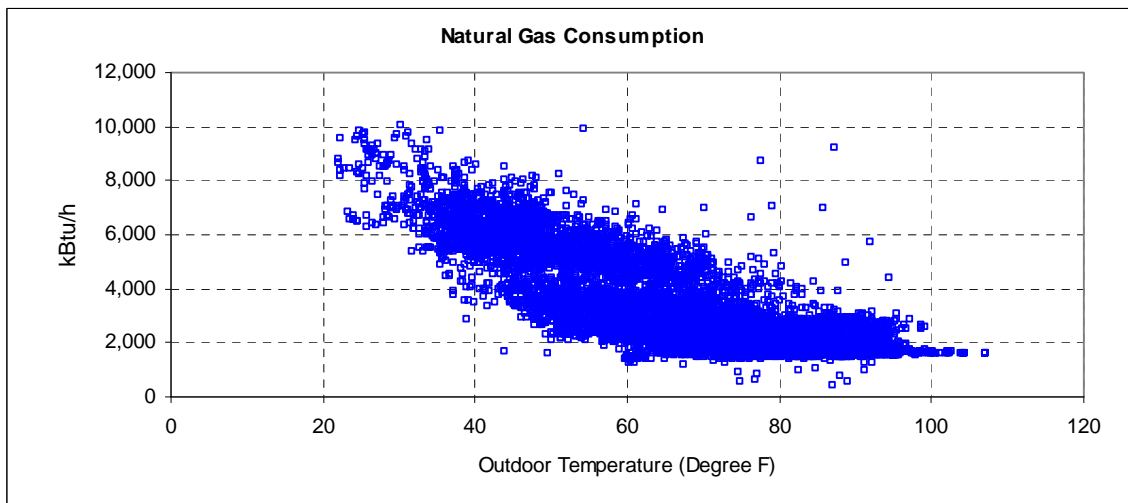
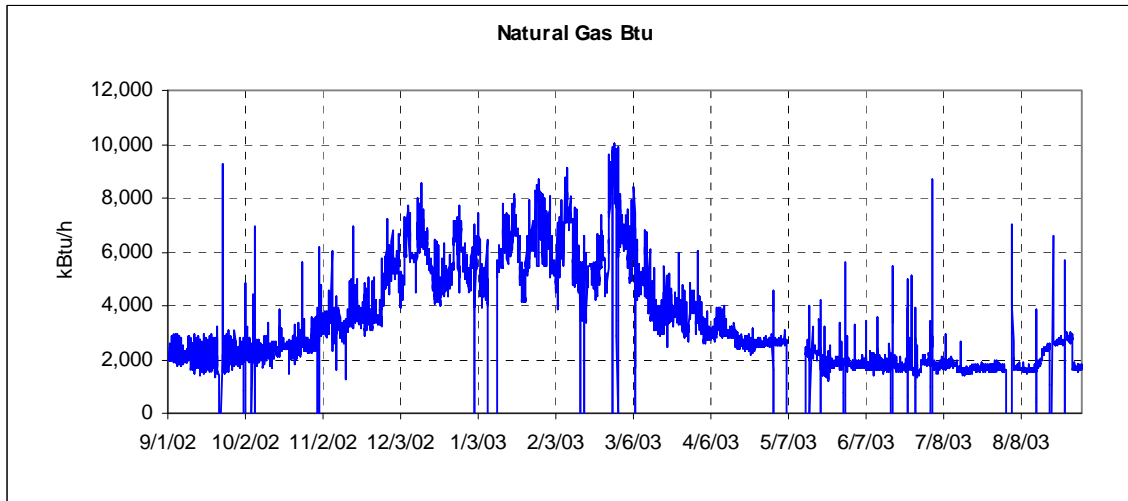


Figure 3.2-8: 87000 Block Thermal Plant Natural Gas Consumption vs Ambient Conditions (hourly data).

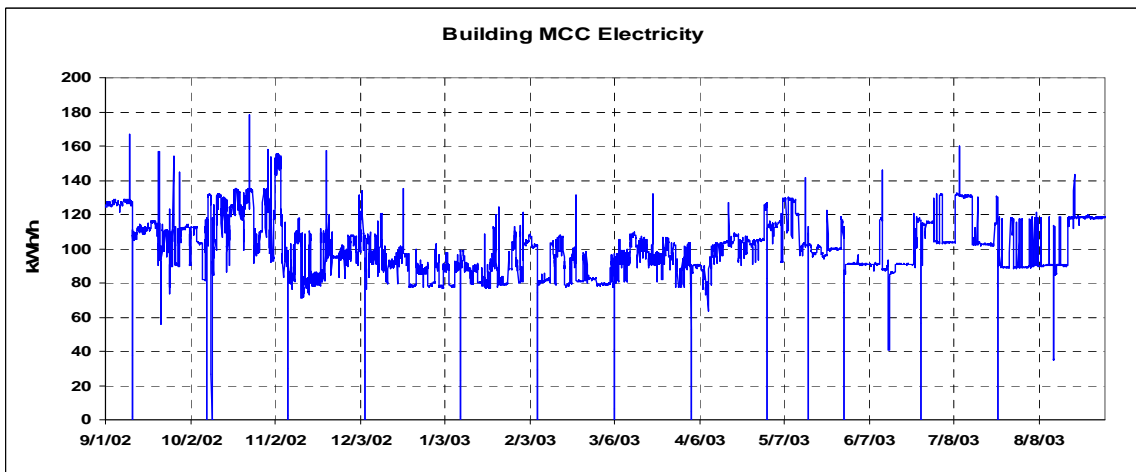
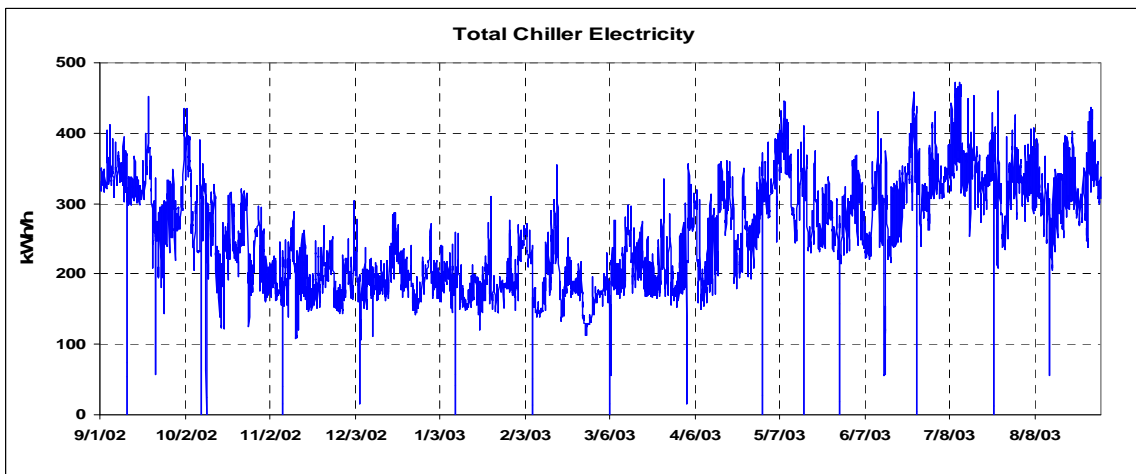
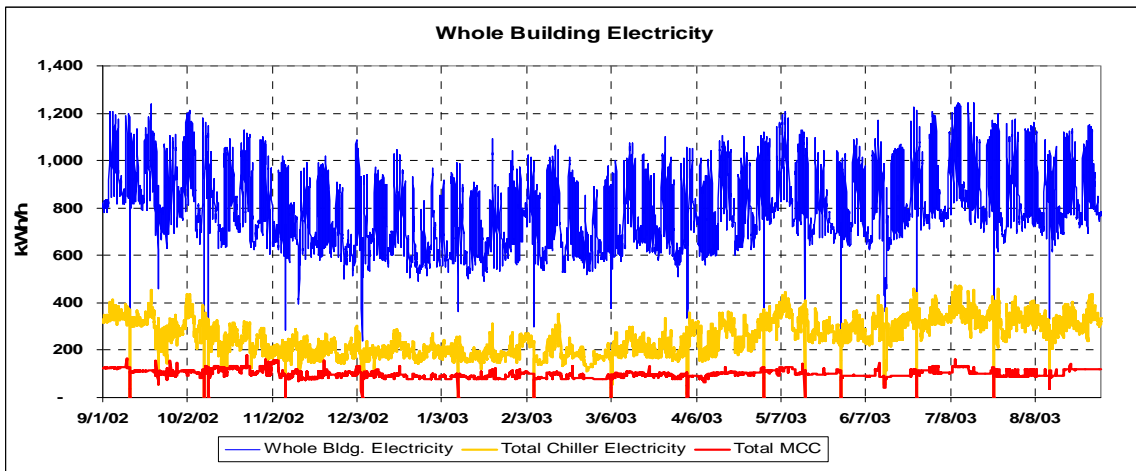


Figure 3.2-9: III Corp Electricity Use: Whole-building, Chiller and MCC Use.

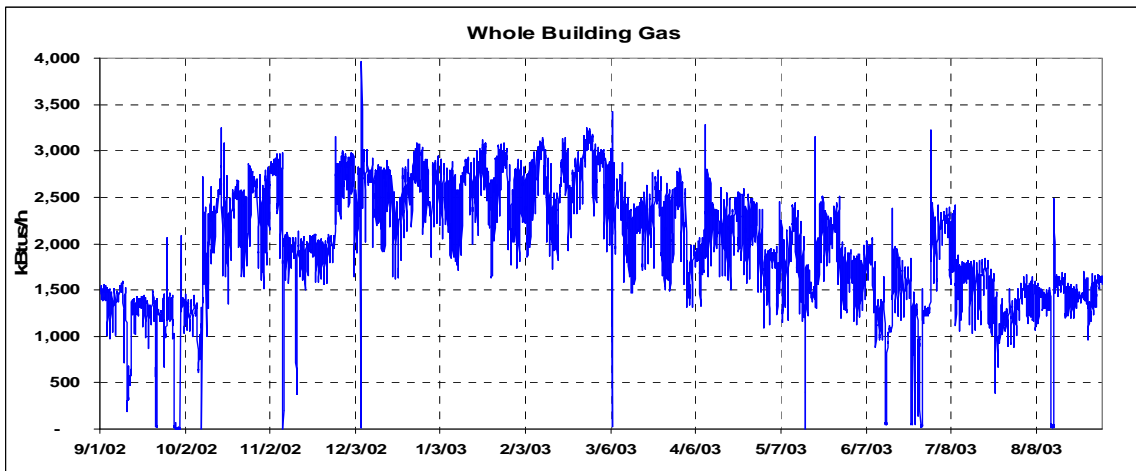


Figure 3.2-10: III Corp Natural Gas Use

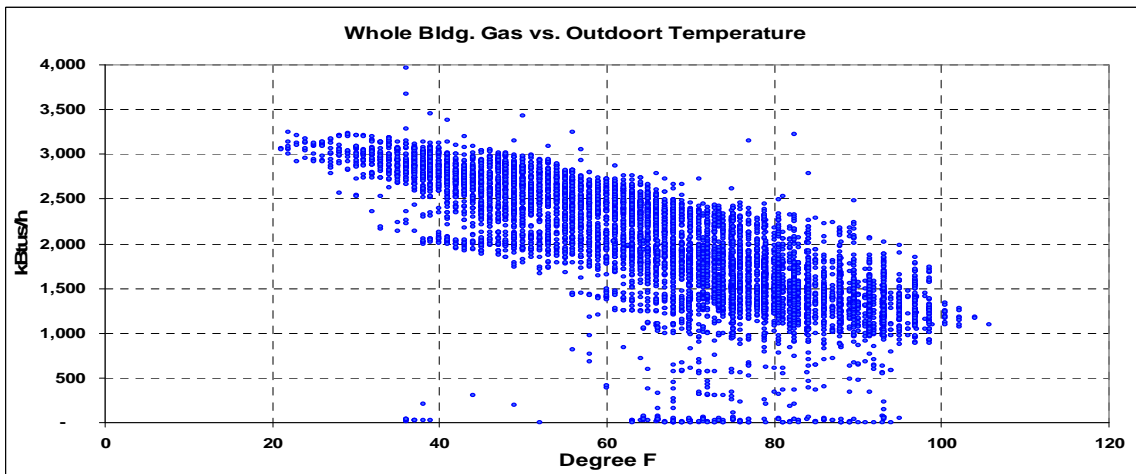


Figure 3.2-11: III Corp Natural Gas Use vs Temperature.

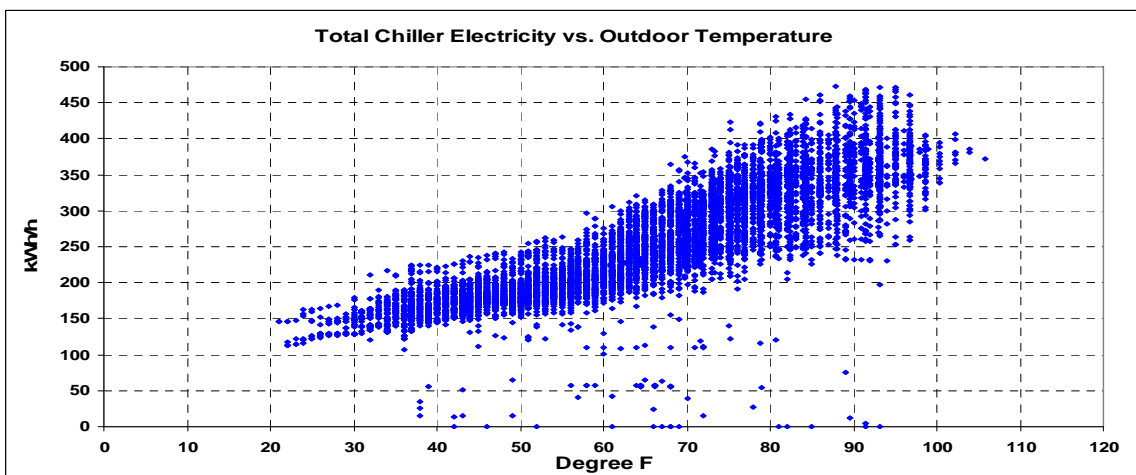


Figure 3.2-12: III Corp Chiller Electricity Use vs Temperature.

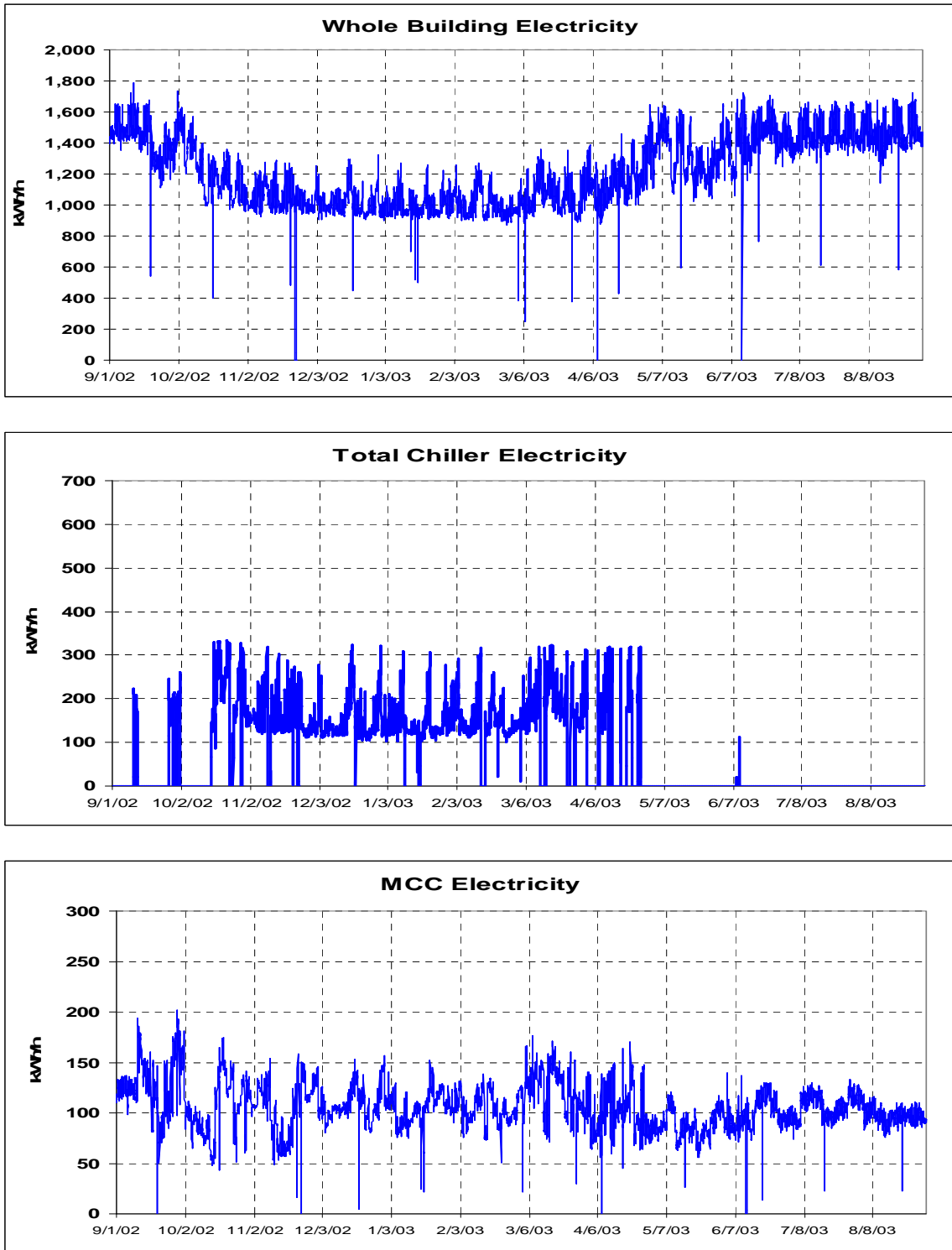


Figure 3.2-13: Damall Hospital Electricity Use: Total, Chiller Electricity and MCC Use.

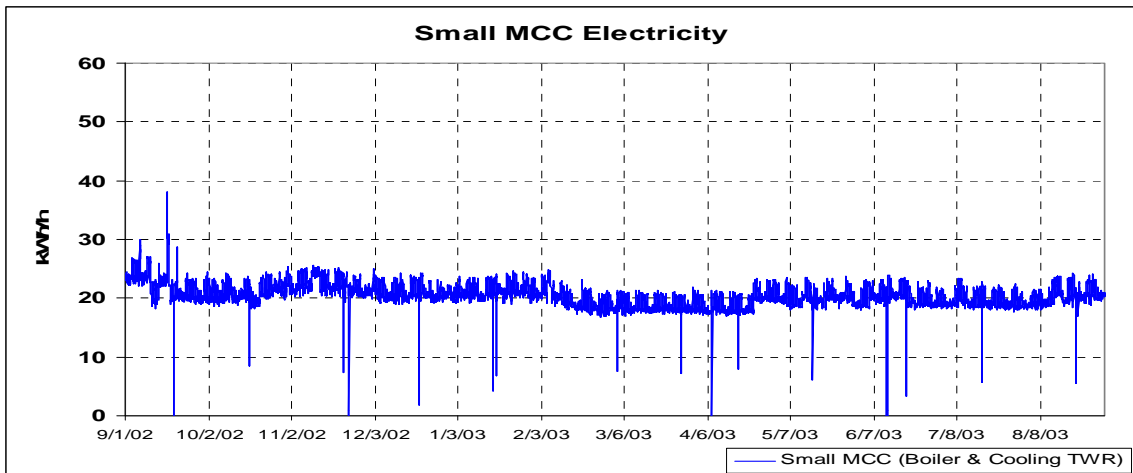


Figure 3.2-14: Darnall Hospital Electricity Use -Small MCC Use.

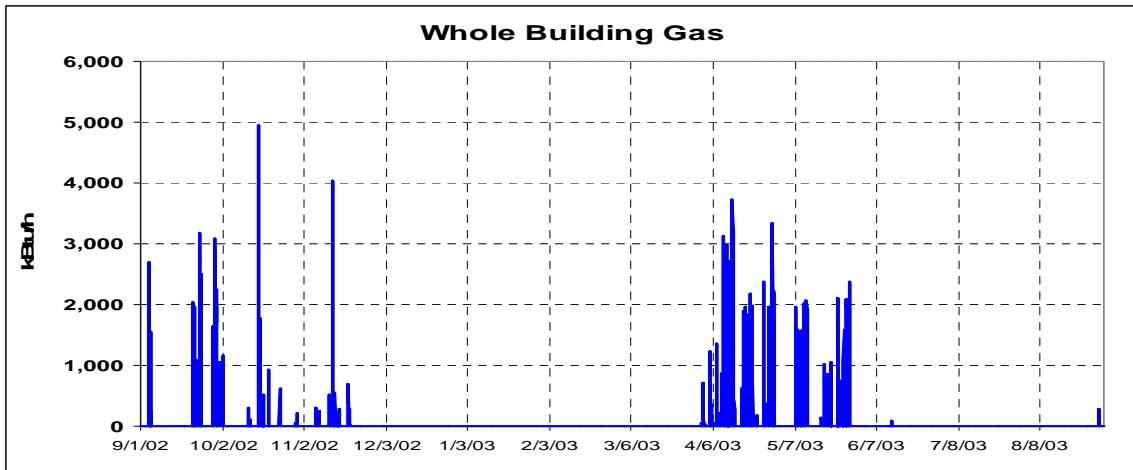


Figure 3.2-15: Darnall Hospital Natural Gas Use.

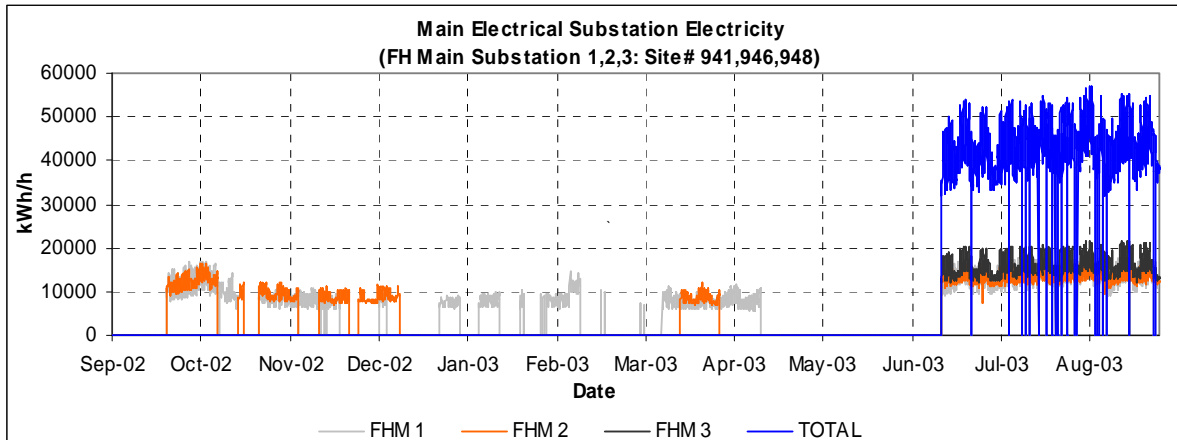


Figure 3.2-16: Main Electrical Substation Electricity Use.

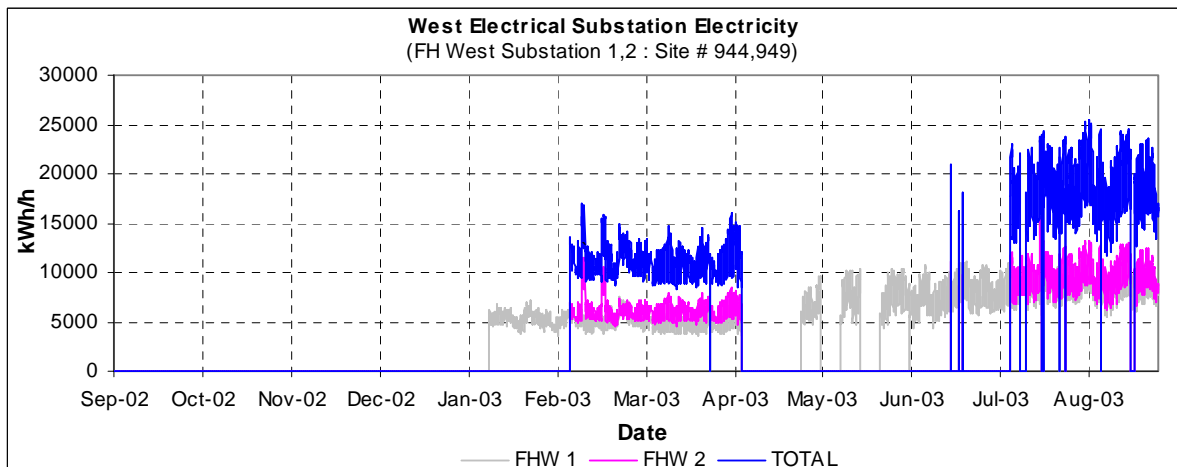


Figure 3.2-17: West Electrical Substation Electricity Use.

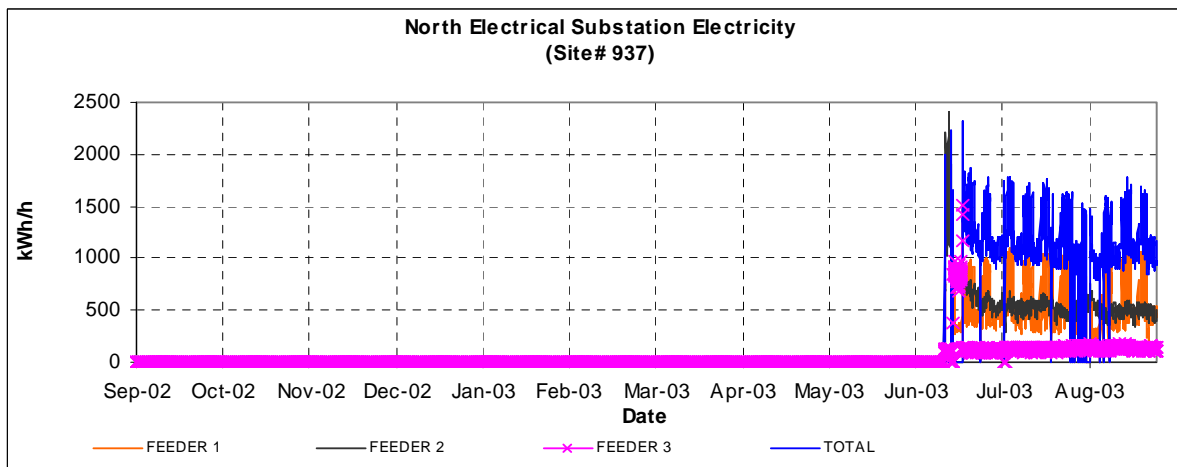


Figure 3.2-18: North Electrical Substation Electricity Use.

4. ANALYSIS OF THE CHILLER PERFORMANCE

4.1. Chiller performance using kW/ton curves

In this section an analysis of the chiller performance is presented, which utilizes tri-quadratic curve-fits to characterize the chiller performance. The coefficients of these tri-quadratic curve fits can be used in later periods to determine if there has been a degradation in chiller performance.

In Figure 4.1-1 a time series plot is shown of the kW/ton of both chillers and of chiller #1. Figure 4.1-2 shows a time series plot when chiller #2 was running and chillers #1 and #2 were running.

Figure 4.1-3 through Figure 4.1-6 shows various kW/ton plots versus the tonnage of chilled water produced.

Figure 4.1-3 shows all the different periods combined onto one plot. Figure 4.1-4 shows data when only chiller #1 was being run. Figure 4.1-5 shows data when only chiller #2 was being run. Finally, Figure 4.1-6 shows periods when both chillers were run.

In Figure 4.1-3, at low loads, it is clear that the most efficient operation of the chillers is when only chiller #2 runs. Chiller #1 appears to be slightly less efficient at lower loads. Chiller #1 and #2 are roughly equal in efficiency at higher loads. Clearly, operating both chillers is much less efficient than operating one chiller (if the loads can be met).

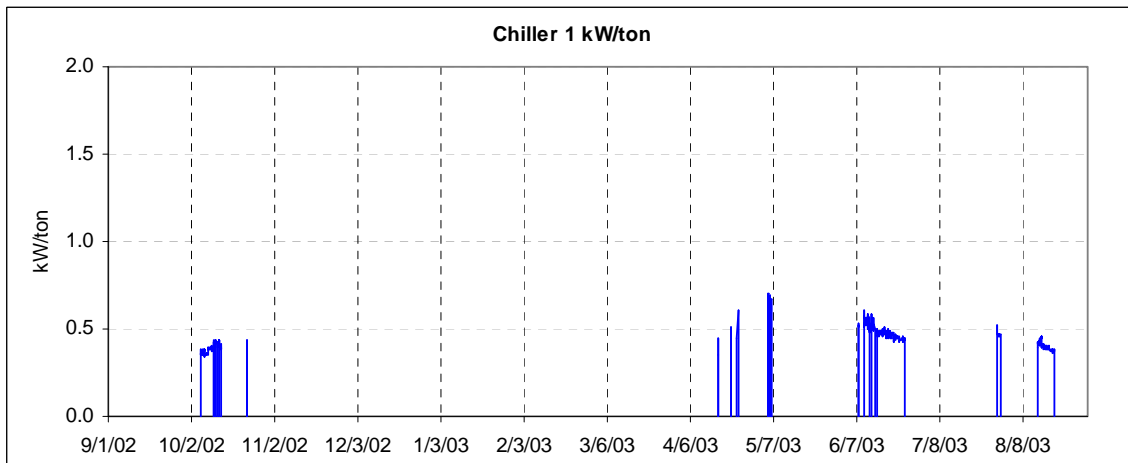
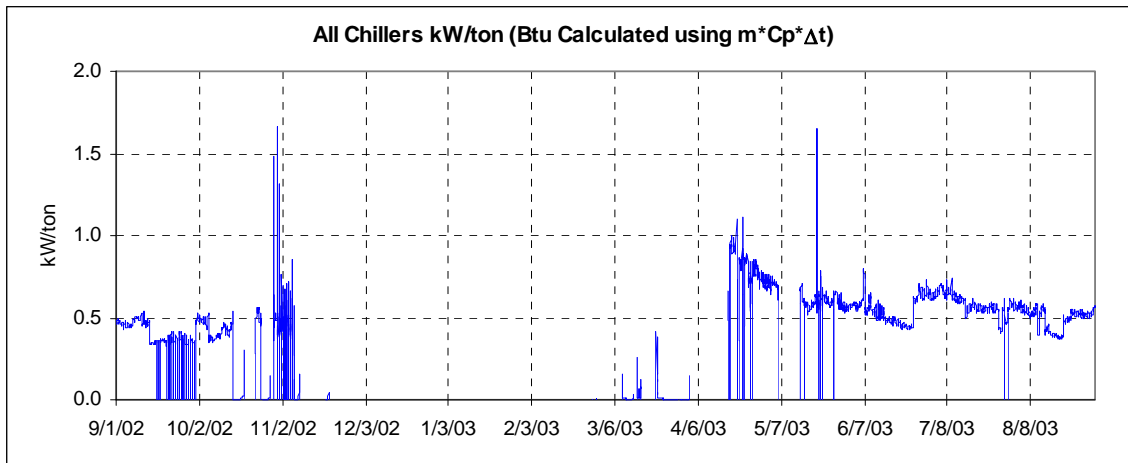


Figure 4.1-1: 87000 Block Thermal Plant Chiller Performance: All Data & Chiller #1.

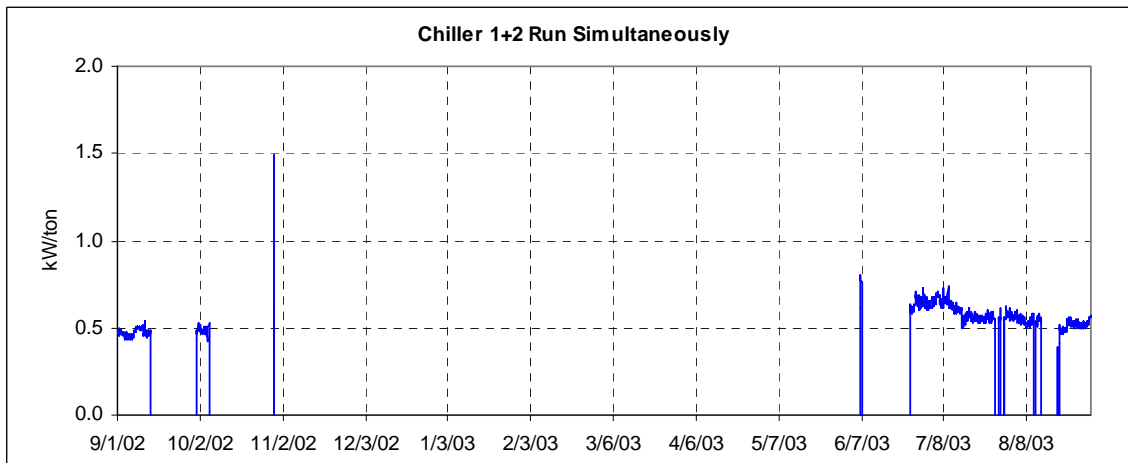
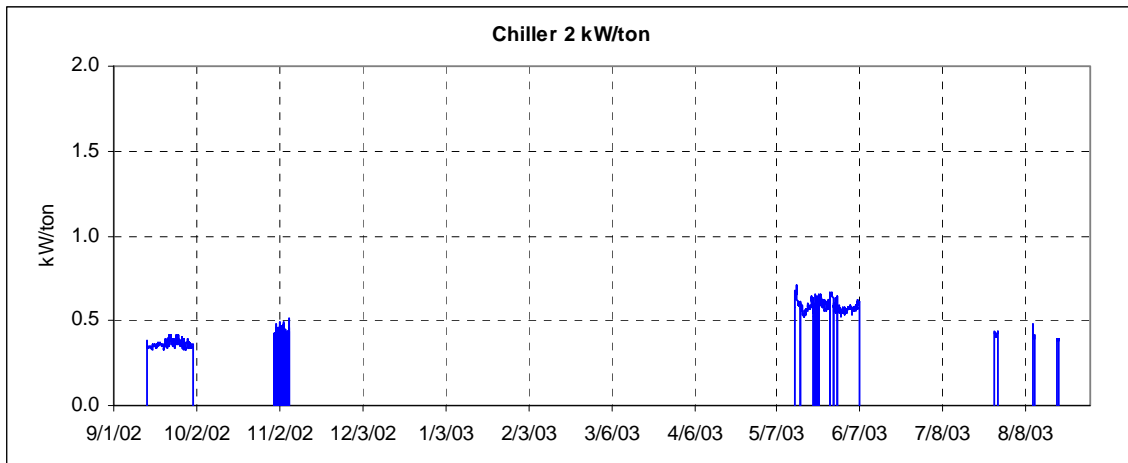


Figure 4.1-2: 87000 Block Thermal Plant Chiller Performance: Chiller #2 and periods when both chillers were running.

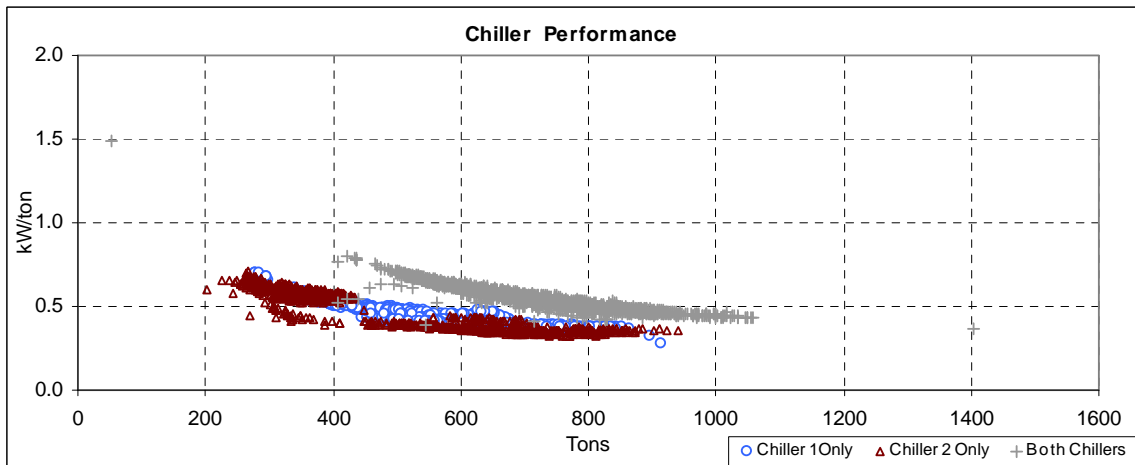
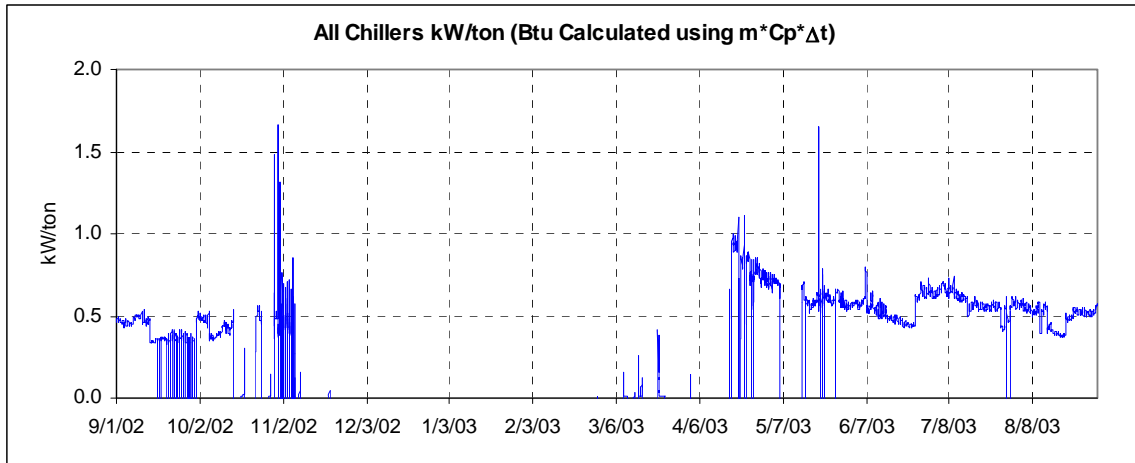


Figure 4.1-3: 87000 Block Thermal Plant Chiller Performance: All chiller data as a time series and as a kW/ton vs tonnage plot.

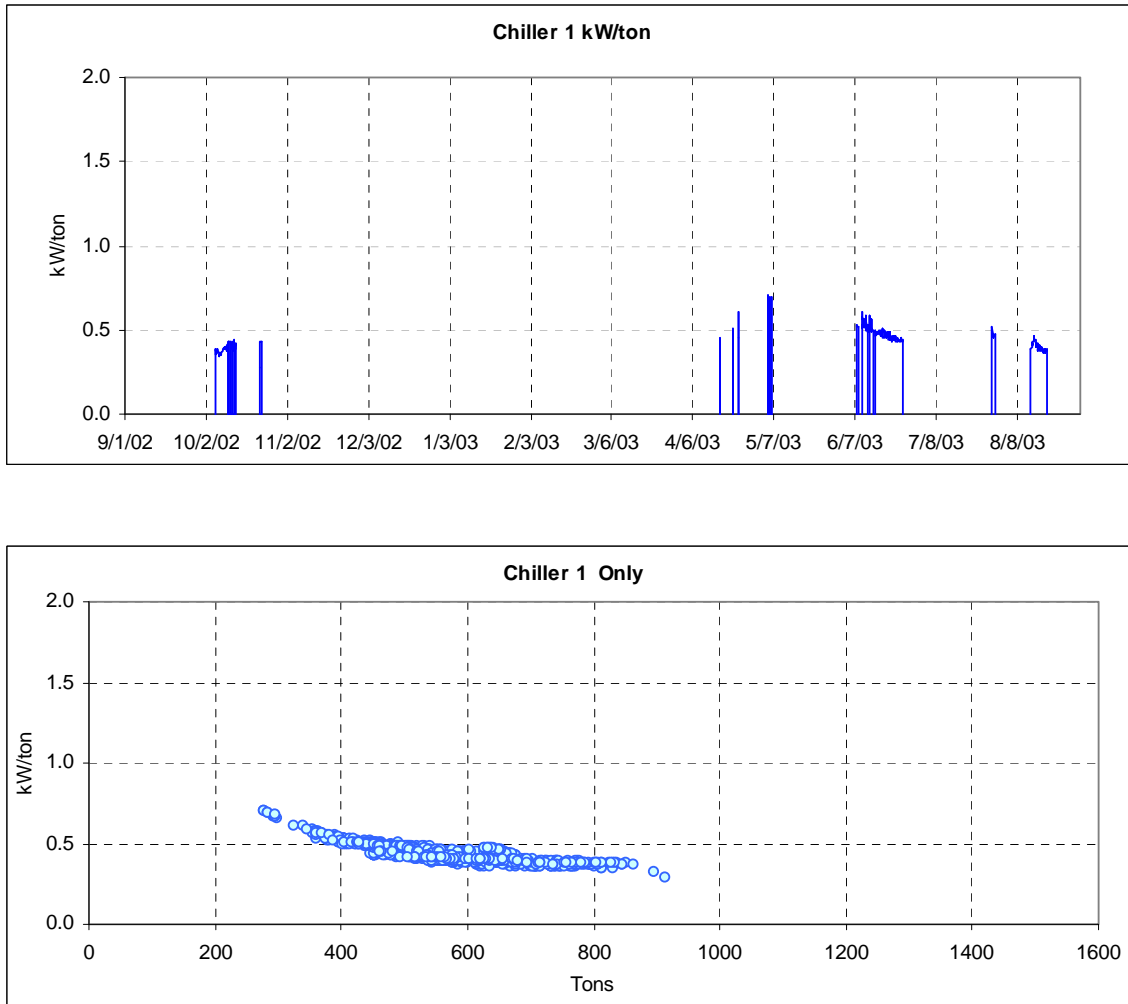


Figure 4.1-4: 87000 Block Thermal Plant Chiller Performance: Chiller #1 performance data as a time series and as a kW/ton vs tonnage plot.

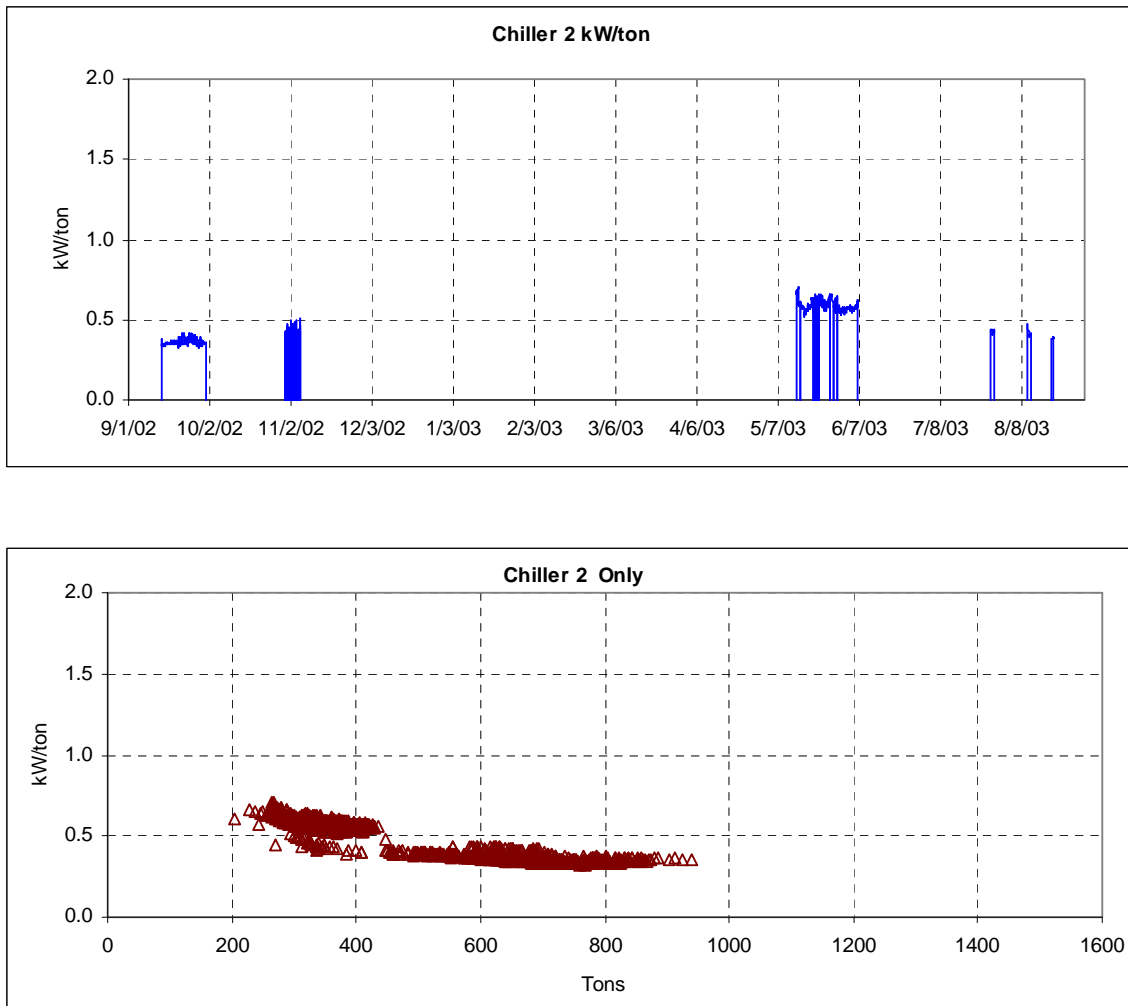


Figure 4.1-5: 87000 Block Thermal Plant Chiller Performance: Chiller #2 performance data as a time series and as a kW/ton vs tonnage plot.

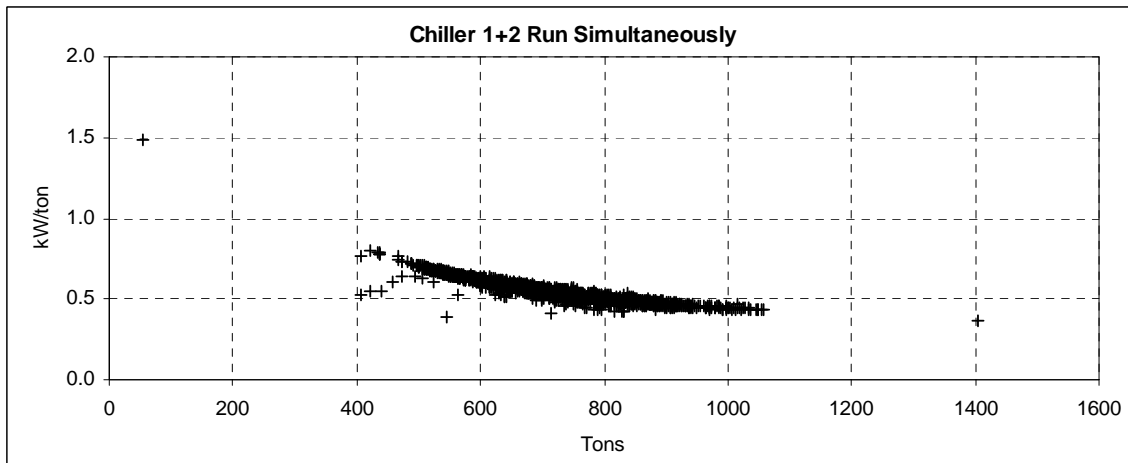
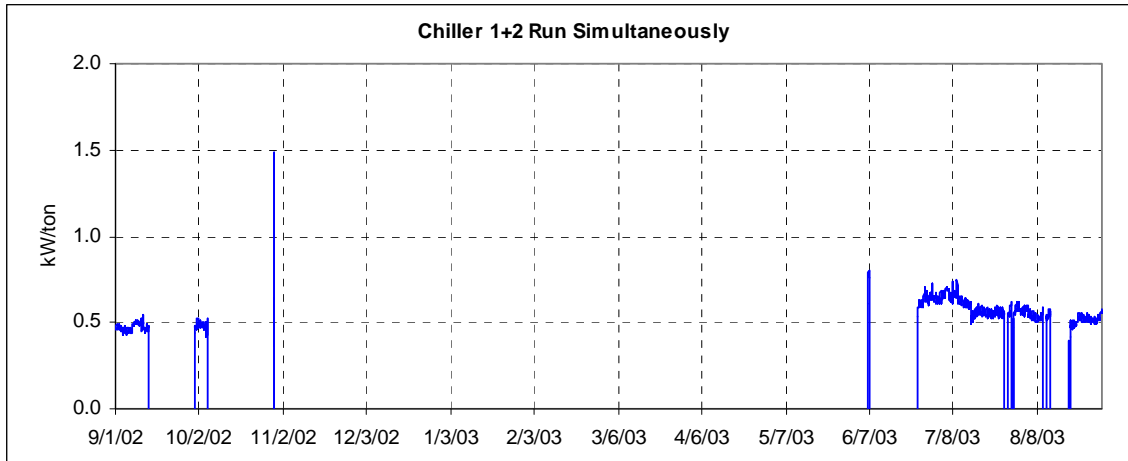


Figure 4.1-6: 87000 Block Thermal Plant Chiller Performance: Performance data for chiller #1 & #2 when both chillers operate as a time series and as a kW/ton vs tonnage plot.

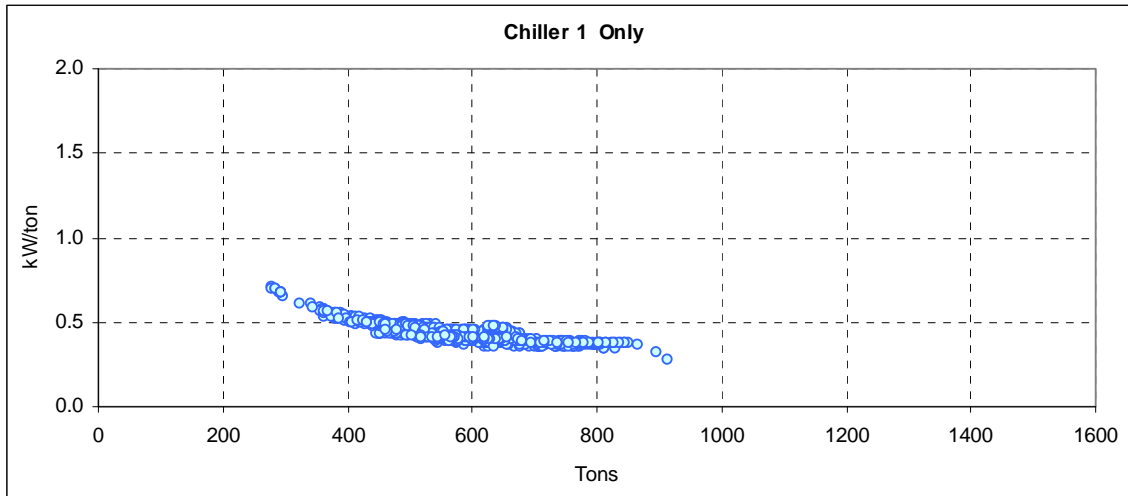
4.2. Quadratic Models of Chiller Analysis

In this section, regression models of the chiller performance are developed using the quadratic functional form outlined in the DOE-2 energy simulation program to model part-load equipment and plant performance characteristics (Haberl et al. 1997, LBNL, 1980, 1981, 1982, 1989).

To model the chiller efficiency the following tri-quadratic model was used:

$$\begin{aligned} \text{Quadratic: kW/ton} = & a + b \times \text{Tons} + c \times \text{Tcond} + d \times \text{Tevap} + e \times \text{Tons}^2 + f \times \text{Tcond}^2 \\ & + g \times \text{Tevap}^2 + h \times \text{Tons} \times \text{Tcond} + I \times \text{Tevap} \times \text{Tons} \\ & + j \times \text{Tcond} \times \text{Tevap} + k \times \text{Tons} \times \text{Tcond} \times \text{Tevap}. \end{aligned}$$

In the tables provided for each chiller the regressed coefficients for coefficients a, b, c, d, e, and f are given. As mentioned previously, the coefficients for these models can be used to detect chiller degradation in future periods.



Regression Statistics						
Multiple R	0.996075					
R Square	0.992165					
Adjusted R Square	0.992092					
Standard Error	0.009955					
Observations	1081					
	a	B	c	d	e	f
X Coefficient(s)	3.64523	-0.00812	-0.059263	-0.059252	3.81E-07	-0.000252
Std Err of Coef.	0.671093	0.00112	0.016634	0.009194	2.25E-08	3.54E-05
	g	H	I	j	k	
X Coefficient(s)	0.000151	0.00019	9.99E-05	0.001158	-2.59E-06	
Std Err of Coef.	3.52E-05	2.68E-05	1.47E-05	0.000216	3.46E-07	

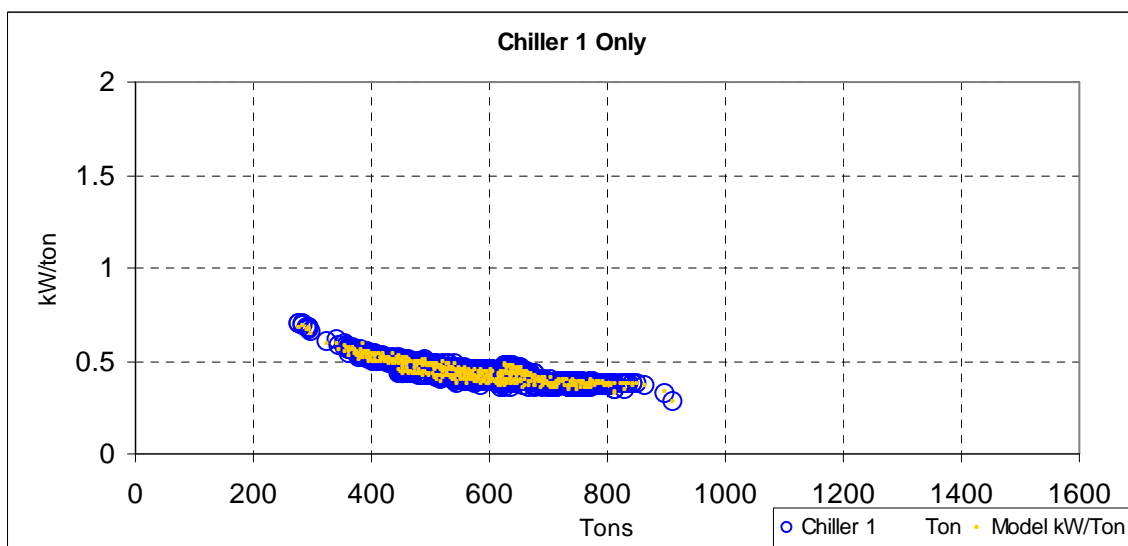
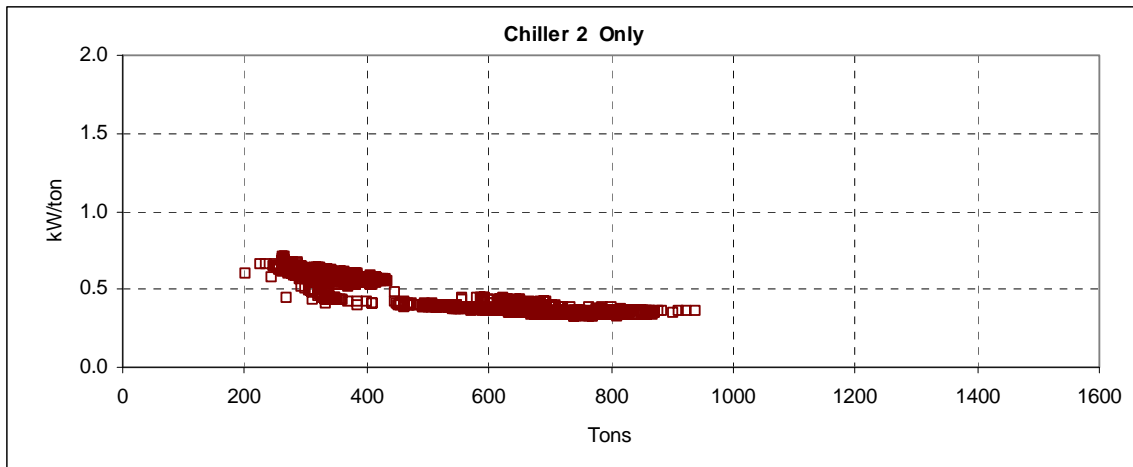


Figure 4.2-1: Quadratic analysis for chiller #1.



Regression Statistics						
Multiple R	0.996075					
R Square	0.992165					
Adjusted R Square	0.992092					
Standard Error	0.009955					
Observations	1081					
	a	b	c	d	e	f
X Coefficient(s)	-13.26643	0.02712	0.40568	0.153364	9.43E-07	-0.00261
Std Err of Coef.	1.517602	0.004994	0.036571	0.022799	1.9E-08	0.000374
	g	h	I	j	k	
X Coefficient(s)	-0.000137	-0.000647	-0.00042	-0.002813	9.5E-06	
Std Err of Coef.	1.32E-05	0.000114	6.55E-05	0.000513	1.49E-06	

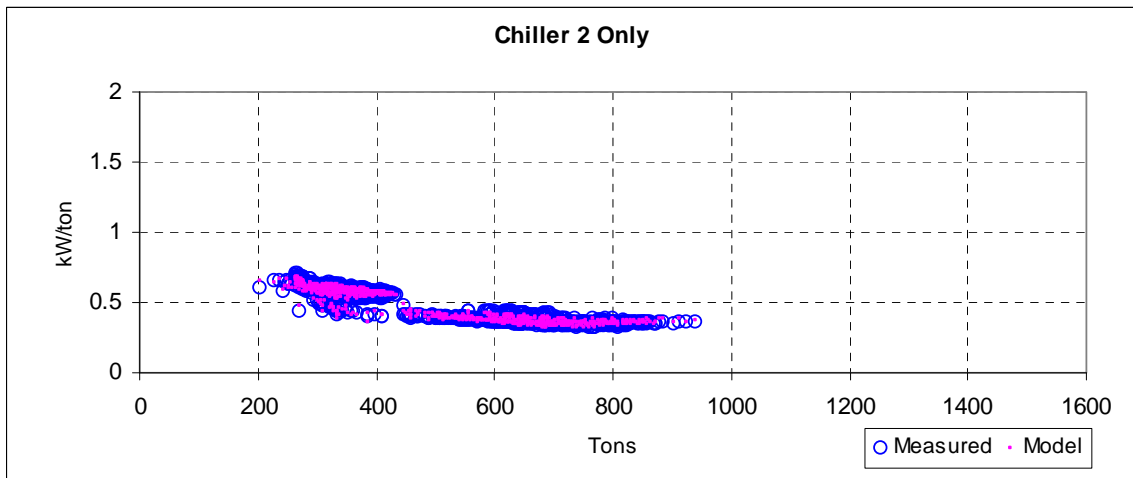
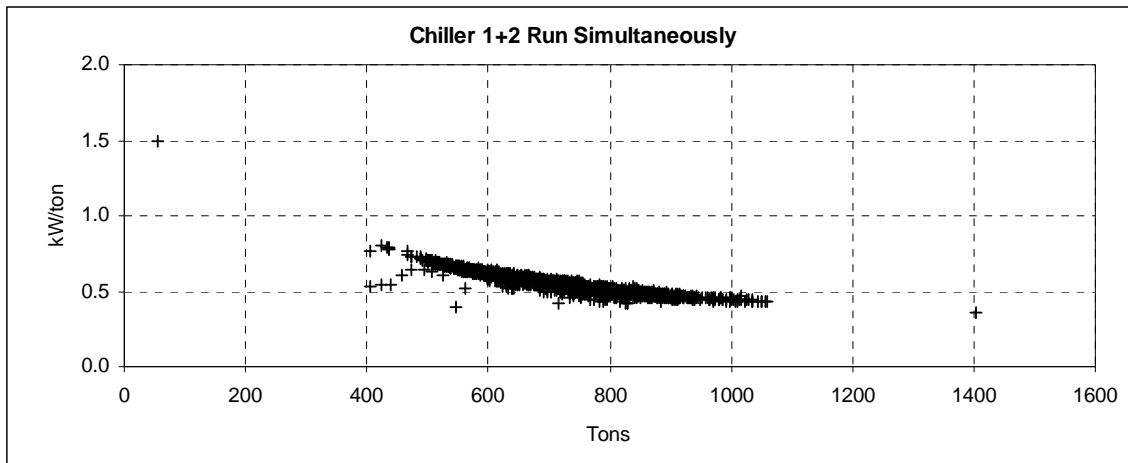


Figure 4.2-2: Quadratic analysis for chiller #2.



Regression Statistics						
Multiple R	0.866607					
R Square	0.751008					
Adjusted R Square	0.739691					
Standard Error	0.019743					
Observations	231					
	a	b	c	d	e	f
X Coefficient(s)	-40.68403	0.048635	1.182869	0.468824	6.93E-07	-0.004004
Std Err of Coef.	1.142252	0.001702	0.034643	0.012452	1.41E-08	0.000148
	g	h	I	j	k	
X Coefficient(s)	-4.56E-05	-0.001255	-0.00065	-0.011292	1.62E-05	
Std Err of Coef.	3.96E-05	4.32E-05	2.15E-05	0.000289	5.41E-07	

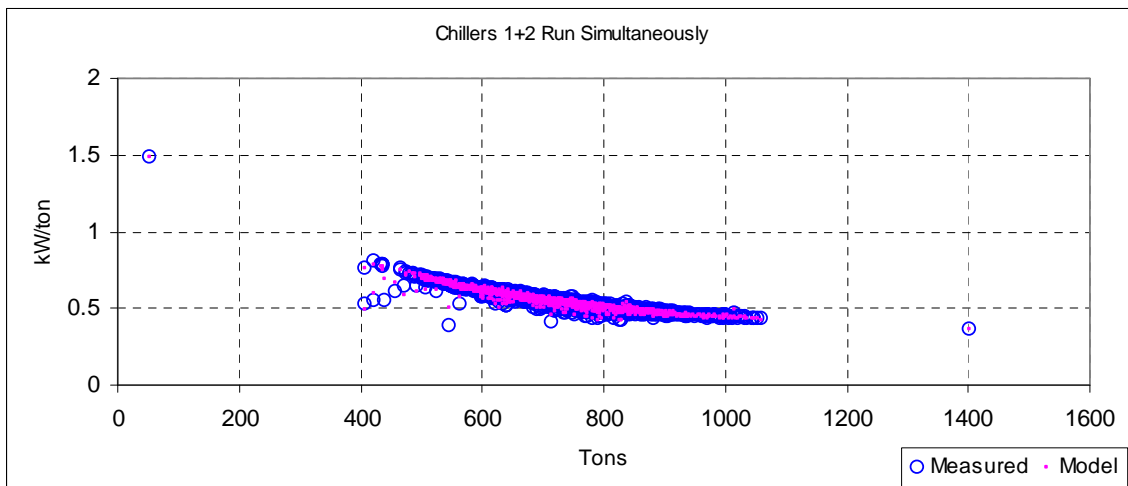


Figure 4.2-3: Quadratic analysis for both chiller #1 and #2.

5. BASELINE MODELS FOR WEATHER-DEPENDENT CHANNELS AT THE THERMAL PLANT.

In this section the regression analysis for the weather dependent channels of the thermal plant are presented.

In Table 5-1 and Figure 5-1 the weather-dependent three-parameter model is shown for the daily natural gas use of the thermal plant. In Table 5-2 and Figure 5-2 the weather-dependent three-parameter model is shown for the thermal plant's chilled water loads.

Table 5-3 and Figure 5-3 contain the weather-dependent three-parameter model for the plant's electric chiller loads. Table 5-4 and Figure 5-4 show the slightly weather-dependent three-parameter model for the plant's misc. electric loads.

Table 5-1: Thermal Plant Natural Gas Weather-dependent Model (9/1/2002 to 8/31/2003).

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILYTHERMPLT.PRN

Model type = 3P Heating

Grouping column No = 1

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 8

X1 column number = 3

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 341

R2 = 0.738

AdjR2 = 0.738

RMSE = 21479.7031

CV-RMSE = 26.349%

p = 0.550

DW = 0.899 (p>0)

N1 = 232

N2 = 109

Ycp = 45298.6602 (1650.6660)

LS = -2792.1582 (90.2847)

RS = 0.0000 (0.0000)

Xcp = 75.0088 (1.3226)

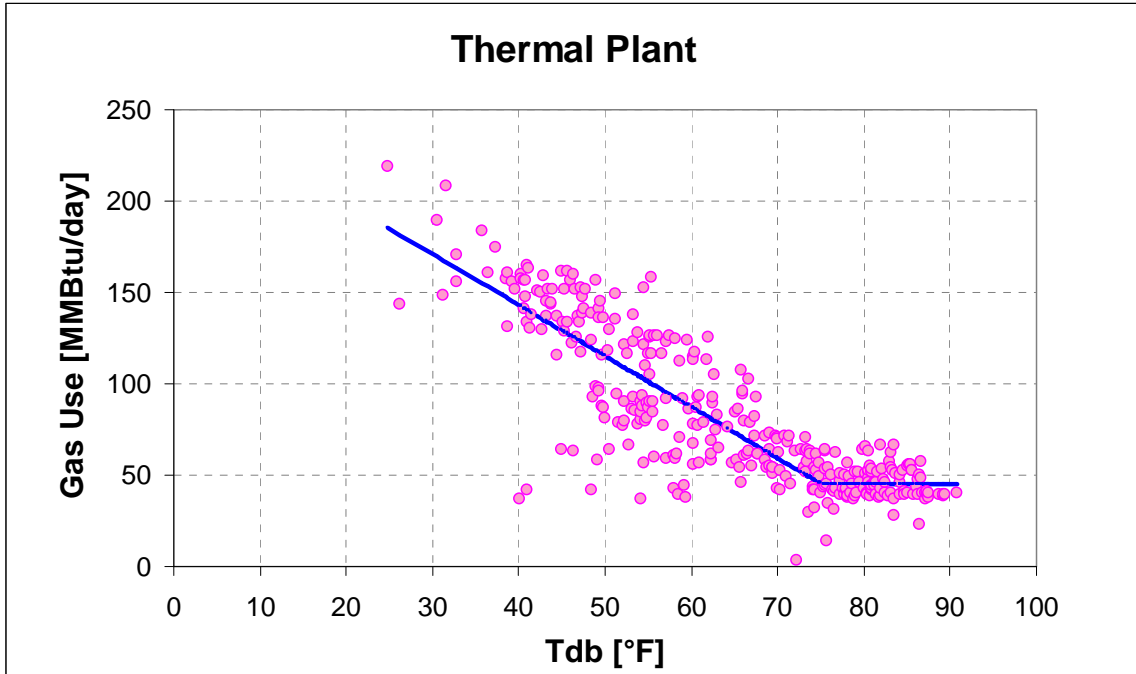


Figure 5-1: Thermal Plant Natural Gas Weather-dependent Model (9/1/2002 to 8/31/2003).

Table 5-2: Chilled Water Weather-dependent Model.

```

*****
ASHRAE INVERSE MODELING TOOLKIT (1.9)
*****
Output file name = IMT.Out
*****
Input data file name = DAILYTHERMPLT.PRN
Model type =      3P Cooling
Grouping column No = 1
Value for grouping = 1
Residual mode = 1
# of X(Indep.) Var = 1
Y1 column number = 7
X1 column number = 3
X2 column number = 0 (unused)
X3 column number = 0 (unused)
X4 column number = 0 (unused)
X5 column number = 0 (unused)
X6 column number = 0 (unused)
*****
Regression Results
-----
N = 176
-----
R2 = 0.346
-----
AdjR2 = 0.346
-----
RMSE = 47.6266
-----
CV-RMSE = 29.390%
-----
p = 0.801
-----
DW = 0.398 (p>0)
-----
N1 = 43
-----
N2 = 133
-----
Ycp = 120.6386 ( 5.6165)
-----
LS = 0.0000 ( 0.0000)
-----
RS = 6.1709 ( 0.6436)
-----
Xcp = 71.5798 ( 1.0158)
-----

```

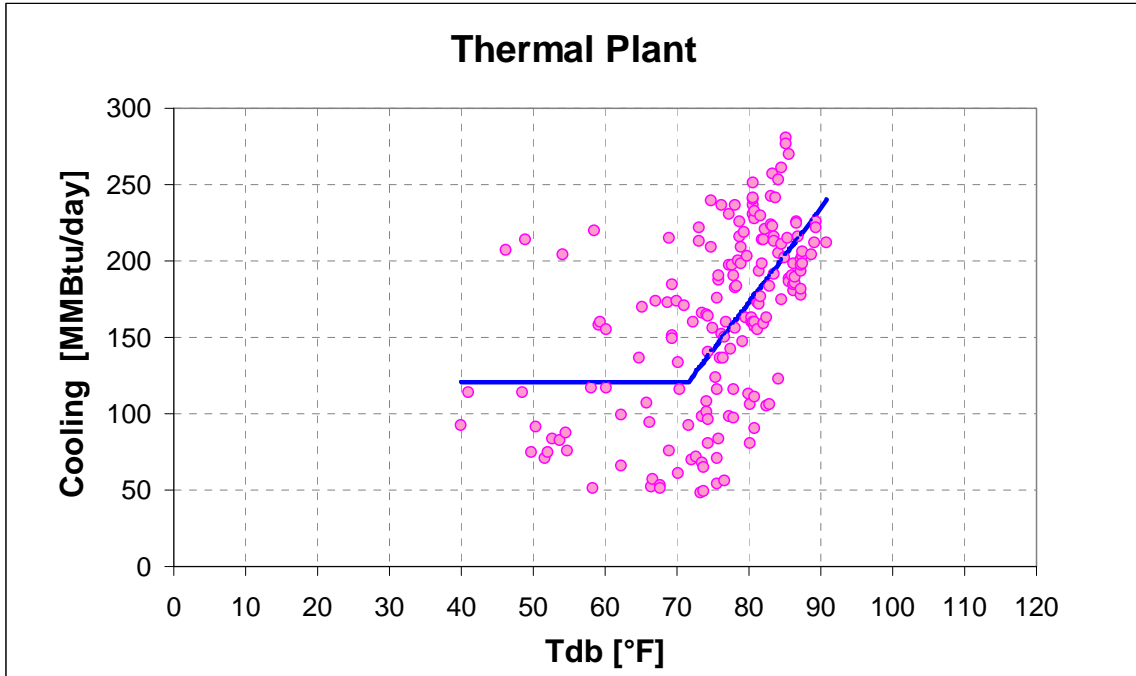


Figure 5-2: Chilled Water Weather-dependent Model.

Table 5-3: Chiller Electricity Use Weather-dependent Model.

```

*****
ASHRAE INVERSE MODELING TOOLKIT (1.9)
*****
Output file name = IMT.Out
*****
Input data file name = DAILYTHERMPLT.PRN
Model type =      3P Cooling
Grouping column No =  1
Value for grouping =  1
Residual mode =     1
# of X(Indep.) Var =  1
Y1 column number =   6
X1 column number =   3
X2 column number =  0 (unused)
X3 column number =  0 (unused)
X4 column number =  0 (unused)
X5 column number =  0 (unused)
X6 column number =  0 (unused)
*****
Regression Results
-----
N =  176
-----
R2 =  0.442
-----
AdjR2 =  0.442
-----
RMSE = 1698.9055
-----
CV-RMSE = 24.771%
-----
p =  0.683
-----
DW =  0.624 (p>0)
-----
N1 =  43
-----
N2 = 133
-----
Ycp = 5050.6909 ( 200.3479)
-----
LS =  0.0000 ( 0.0000)
-----
RS = 269.3553 ( 22.9586)
-----
Xcp = 71.5798 ( 1.0158)
-----

```

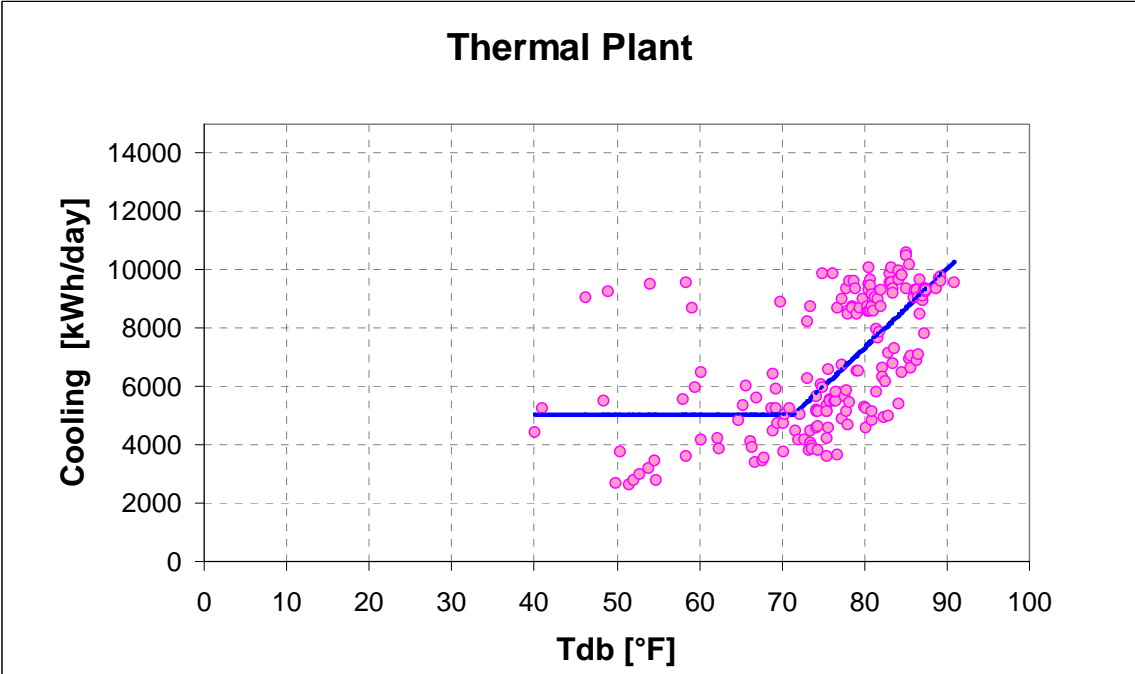


Figure 5-3: Chiller Electricity Use Weather-dependent Model.

Table 5-4: Chiller Misc Loads Model.

```

*****
ASHRAE INVERSE MODELING TOOLKIT (1.9)
*****
Output file name = IMT.Out
*****
Input data file name = DAILYTHERMPLT.PRN
Model type =      3P Cooling
Grouping column No =  1
Value for grouping =  1
Residual mode =      1
# of X(Indep.) Var =  1
Y1 column number =   5
X1 column number =   3
X2 column number =  0 (unused)
X3 column number =  0 (unused)
X4 column number =  0 (unused)
X5 column number =  0 (unused)
X6 column number =  0 (unused)
*****
Regression Results
-----
N = 176
-----
R2 = 0.271
-----
AdjR2 = 0.271
-----
RMSE = 126.3188
-----
CV-RMSE = 3.669%
-----
p = 0.734
-----
DW = 0.537 (p>0)
-----
N1 = 23
-----
N2 = 153
-----
Ycp = 3313.7390 ( 18.6393)
-----
LS = 0.0000 ( 0.0000)
-----
RS = 10.3080 ( 1.2808)
-----
Xcp = 64.4692 ( 1.0158)
-----

```

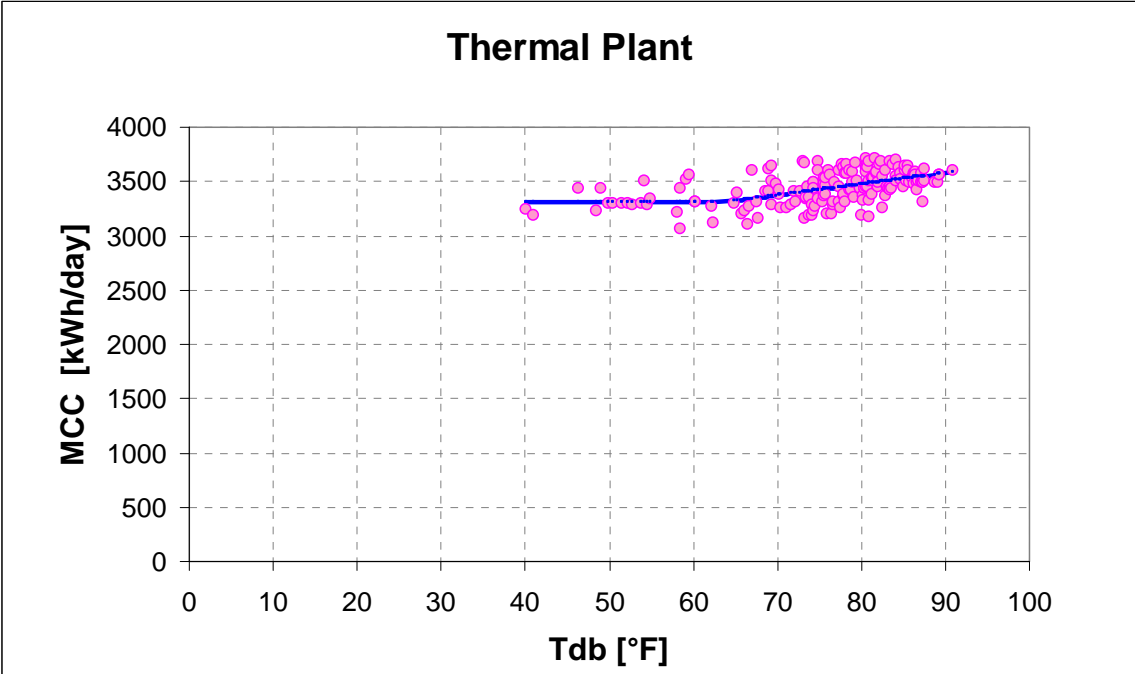



Figure 5-4: Chiller Miscellaneous Loads Model.

6. BASELINE MODELS FOR WEATHER-DEPENDENT CHANNELS AT THE III CORP BUILDING

In this section of the report the baseline models are presented for the III Corp building. In Table 6-1 and Figure 6-1 the two-parameter weekday/weekend models are presented for the building's weather-independent loads that consist of the whole-building electricity channel minus the (chiller + MCC) loads.

In Table 6-2 and Figure 6-2 the three-parameter model is presented for the building's chiller electricity use. In Table 6-3 and Figure 6-3 the three-parameter model is presented for the building's MCC electricity use. In Table 6-4 and Figure 6-4 the three-parameter model is presented for the building's natural gas use.

Table 6-1: Weekday, Weather Independent Model for III Corp Building

WEEKDAYS

```

*****
ASHRAE INVERSE MODELING TOOLKIT (1.9)
*****
Output file name = IMT.Out
*****
Input data file name = DAILYIII Corp_03.dat
Model type =      2P
Grouping column No =  9
Value for grouping =  1
Residual mode =     1
# of X(Indep.) Var =  1
Y1 column number =   4
X1 column number =   3
X2 column number =  0 (unused)
X3 column number =  0 (unused)
X4 column number =  0 (unused)
X5 column number =  0 (unused)
X6 column number =  0 (unused)
*****

```

Regression Results

```

-----
N = 253
-----
R2 = 0.096
-----
AdjR2 = 0.096
-----
RMSE = 955.8250
-----
CV-RMSE = 8.202%
-----
p = 0.477
-----
DW = 1.023 (p>0)
-----
a = 10371.7041 ( 254.7593)
-----
X1 = 19.4353 ( 3.7557)
-----

```

WEEKENDS

```

*****
ASHRAE INVERSE MODELING TOOLKIT (1.9)
*****
Output file name = IMT.Out
*****
Input data file name = DAILYIII Corp_03.dat
Model type =      2P
Grouping column No =  9
Value for grouping =  0

```

Residual mode = 1
 # of X(Indep.) Var = 1
 Y1 column number = 4
 X1 column number = 3
 X2 column number = 0 (unused)
 X3 column number = 0 (unused)
 X4 column number = 0 (unused)
 X5 column number = 0 (unused)
 X6 column number = 0 (unused)

Regression Results

 N = 103

 R2 = 0.056

 AdjR2 = 0.056

 RMSE = 699.0246

 CV-RMSE = 8.240%

 p = 0.514

 DW = 0.966 (p>0)

 a = 7725.6235 (316.6590)

 X1 = 11.4426 (4.6684)

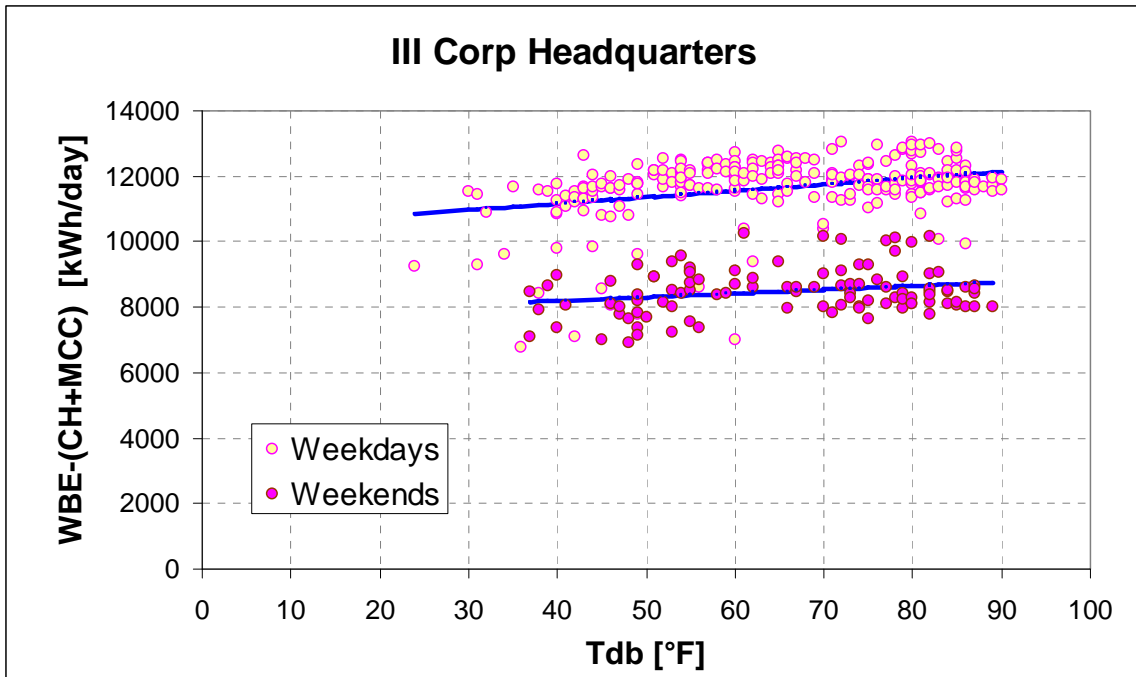


Figure 6-1: Weekday, Weather Independent Model for III Corp Building.

Table 6-2: Whole-building Chiller Electricity Use Model for III Corp

```

*****
ASHRAE INVERSE MODELING TOOLKIT (1.9)
*****
Output file name = IMT.Out
*****
Input data file name = DAILYIIICorp_03.dat
Model type =      3P Cooling
Grouping column No = 1
Value for grouping = 1
Residual mode = 1
# of X(Indep.) Var = 1
Y1 column number = 7
X1 column number = 3
X2 column number = 0 (unused)
X3 column number = 0 (unused)
X4 column number = 0 (unused)
X5 column number = 0 (unused)
X6 column number = 0 (unused)
*****
Regression Results
-----
N = 356
-----
R2 = 0.846
-----
AdjR2 = 0.846
-----
RMSE = 636.5134
-----
CV-RMSE = 10.361%
-----
p = 0.641
-----
DW = 0.717 (p>0)
-----
N1 = 60
-----
N2 = 296
-----
Ycp = 4163.6377 ( 56.1350)
-----
LS = 0.0000 ( 0.0000)
-----
RS = 106.8050 ( 2.4202)
-----
Xcp = 48.5568 ( 1.3226)
-----

```

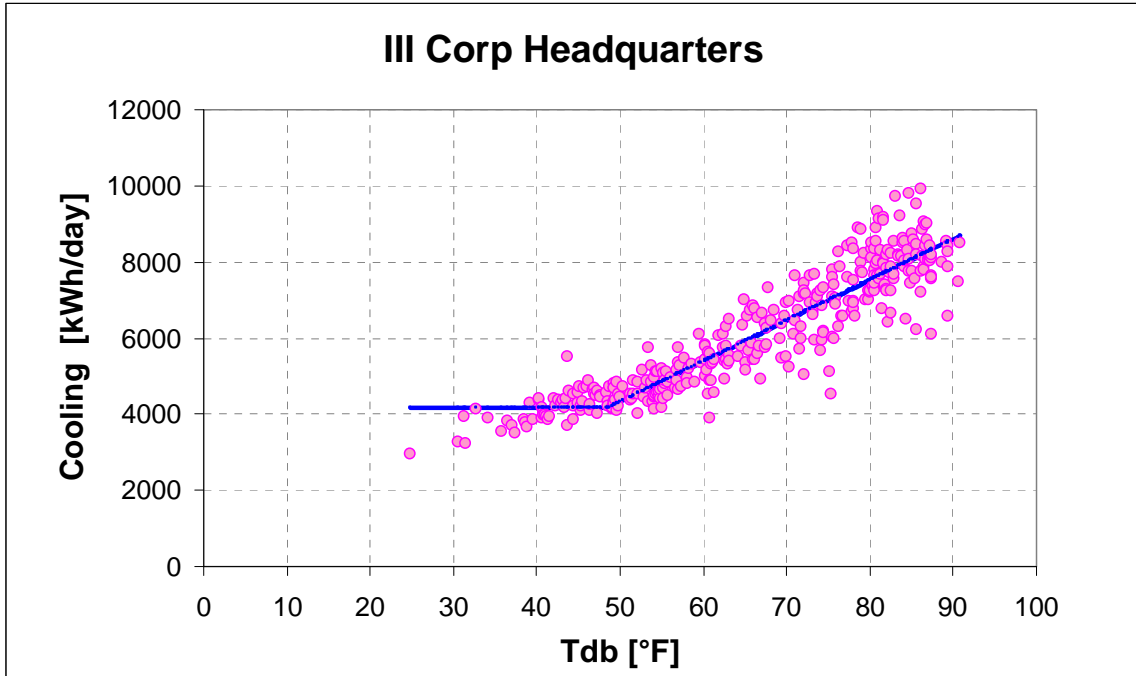


Figure 6-2: Whole-building Chiller Electricity Use Model.

Table 6-3: Whole-building MCC Electricity Use Model for III Corp

```

*****
ASHRAE INVERSE MODELING TOOLKIT (1.9)
*****
Output file name = IMT.Out
*****
Input data file name = DAILYIII Corp_03.dat
Model type =      3P Cooling
Grouping column No =  1
Value for grouping =  1
Residual mode =      1
# of X(Indep.) Var =  1
Y1 column number =   6
X1 column number =   3
X2 column number =  0 (unused)
X3 column number =  0 (unused)
X4 column number =  0 (unused)
X5 column number =  0 (unused)
X6 column number =  0 (unused)
*****
Regression Results
-----
N =  356
-----
R2 =  0.242
-----
AdjR2 =  0.242
-----
RMSE =  302.1826
-----
CV-RMSE =  12.553%
-----
p =  0.826
-----
DW =  0.349 (p>0)
-----
N1 =  1
-----
N2 =  355
-----
Ycp =  1972.7739 ( 43.9149)
-----
LS =  0.0000 ( 0.0000)
-----
RS =  10.8821 ( 1.0240)
-----
Xcp =  26.0726 ( 1.3226)
-----

```

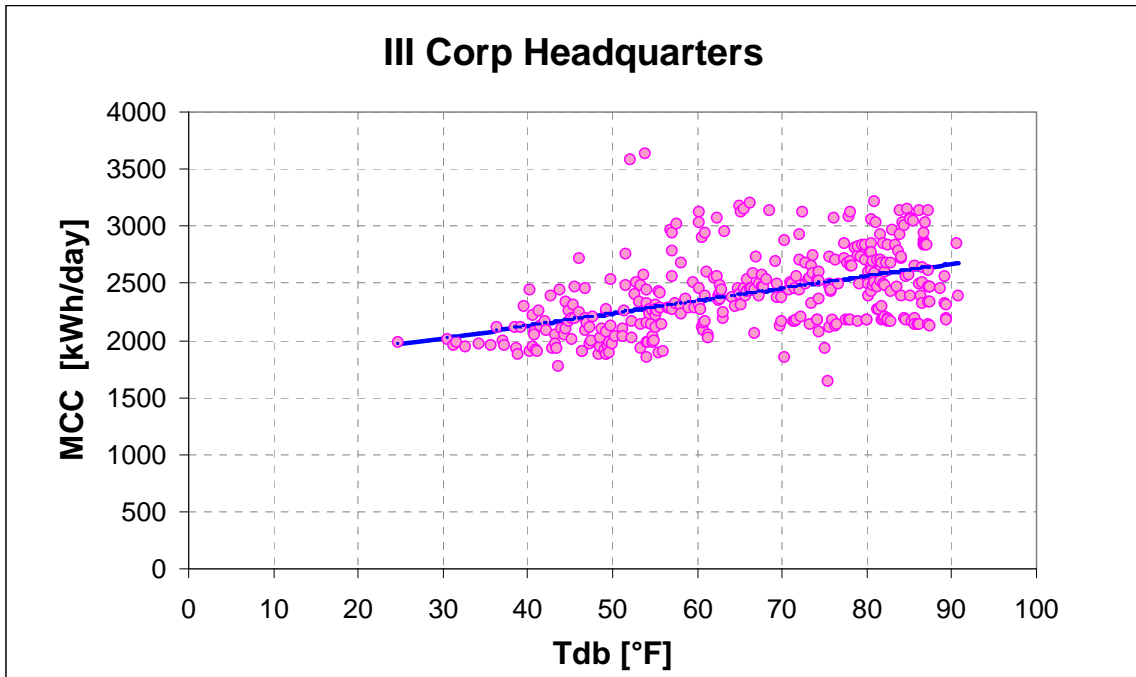


Figure 6-3: Whole-building Model for MCC Electricity Use.

Table 6-4: Whole-building Natural Gas Use Model for III Corp

```

*****
ASHRAE INVERSE MODELING TOOLKIT (1.9)
*****
Output file name = IMT.Out
*****
Input data file name = DAILYIII Corp_03.dat
Model type =      3P Heating
Grouping column No = 1
Value for grouping = 1
Residual mode = 1
# of X(Indep.) Var = 1
Y1 column number = 5
X1 column number = 3
X2 column number = 0 (unused)
X3 column number = 0 (unused)
X4 column number = 0 (unused)
X5 column number = 0 (unused)
X6 column number = 0 (unused)
*****
Regression Results
-----
N = 354
-----
R2 = 0.715
-----
AdjR2 = 0.715
-----
RMSE = 7332.3726
-----
CV-RMSE = 15.381%
-----
p = 0.733
-----
DW = 0.535 (p>0)
-----
N1 = 279
-----
N2 = 75
-----
Ycp = 34736.8242 ( 584.3969)
-----
LS = -786.0089 ( 26.4650)
-----
RS = 0.0000 ( 0.0000)
-----
Xcp = 81.6218 ( 1.3226)
-----

```

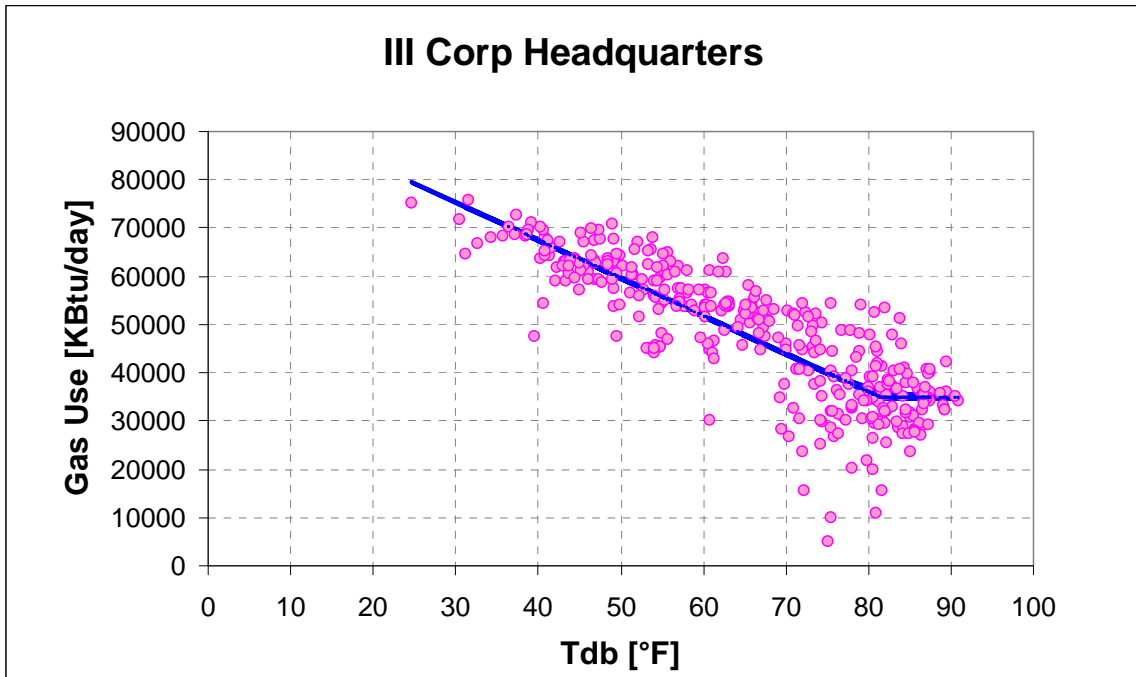


Figure 6-4: Baseline Model for the Whole-Building Natural Gas use.

7. SUMMARY OF BASELINE MODELS: THERMAL PLANT, 87000, III CORP AND OTHER BUILDINGS

7.1. Baseline Models of Energy Use: Thermal Plant, 87000, III Corp, and Other Buildings.

This section of the report contains a summary of the baseline models completed as of August 31st, 2003. This summary is presented in Table 7.1-1. This table contains a summary of the models for the 87000 block thermal plant (logger), 87000 block building (manual readings), III Corp building (logger), and other buildings. Rows marked in the rose color were determined to be the most important buildings in 2002 for purposes of verifying the maximum amount of expected tables. Rows in the yellow color indicate buildings that contained meters as indicated in the 2002 Baseline report.

In column 1 the building number is given, followed by the building name in column 2. Column 3 contains the type of regression model used to model the building's energy use (i.e., 1P = mean model, 2P = 2 parameter, 3P = 3 parameter, etc.). Column 4 gives the predicted annual energy use for the meter that was modeled, and column 5 gives the daily uncertainty of the model in kWh/day, and column 6 gives the daily uncertainty as a percentage. Column 7 gives the number of data points that were modeled for each meter. Column 8 and 9 give the RMSE and CV(RMSE) or CV(STDEV) for the model. Column 10 gives the average daily value of the energy use for each meter. Column 11 shows the slope of the model on the left of the change point (if any). Column 12 shows the slope of the model on the right side of the change point, and column 13 shows the value of the change point (if any). Column 14 gives the units for the model. Column 15 gives the annual uncertainty of the model, and column 16 gives the combined uncertainty if there was more than one meter per building.

In general the value in column 15 and 16 should be less than the expected savings for a given building for the model to be useful in predicting the savings. If column 15 or 16 is significantly greater than the expected savings then the validity of the model for predicted savings becomes less certain.

Building Number	Building Name	model	WBE -Consumption (kWh) or Natural Gas										Yearly Uncertainty	Combined Uncertainty
			Predicted Ann 9/2002-8/2003	Model Uncertainty kWh/day	Model Uncertainty %	Npre	RMSEpre or STDDevpre	CV-RMSE or CV-StdDev	Ymean or Ycp	LS	RS	Xcp		
1001 (Third)	Wbele-(MCC+Wbcool) week	2P	3,029,893	1,881	0.06%	253	956	8.20%	10372	19.4		kWh/day	1.19%	
1001 (Third)	Wbele-(MCC+Wbcool) week	2P	891,092	1,383	0.16%	103	899	8.24%	7726	11.4		kWh/day	2.97%	0.09%
Third Corp	MCC	3P	879,097	594	0.07%	356	302	12.55%	1973	0.0	10.9	26.1	kWh/day	1.29%
Third Corp	Chiller	3P	2,245,076	1,251	0.06%	356	637	10.36%	4164	0.0	106.8	48.6	kWh/day	1.06%
Third Corp	Gas	3P	17,326,519	14,412	0.08%	354	7332	15.38%	34737	-786.0	0.0	81.6	kBtu/day	1.59%
87003	BN HQ Building and Org Cl	1P	186,930	128	0.07%	117	65	12.63%	512				kWh/day	1.31%
87005	BDE HQ Building	3P	160,804	187	0.12%	114	95	21.29%	406	0.0	50.5	81.7	kWh/day	2.22%
87006	Offices	1P	47,522	41	0.09%	117	21	15.84%	130				kWh/day	1.64%
87007	Enlisted UPH	4P	307,002	136	0.04%	81	69	8.06%	729	-3.7	9.1	59.0	kWh/day	0.85%
87008	BN HQ Building	1P	131,272	94	0.07%	117	47	13.18%	360				kWh/day	1.36%
87009	BN HQ Building and Org Cl	1P	237,153	343	0.14%	116	174	26.72%	650				kWh/day	2.76%
87010	Physical Fitness Center	1P	375,705	380	0.10%	106	192	18.86%	1029				kWh/day	1.93%
87011	CO HQ Building	2P	191,261	176	0.09%	107	89	16.97%	343	2.7			kWh/day	1.76%
87012	Enlisted UPH	2P	439,891	236	0.05%	117	119	9.99%	903	4.5			kWh/day	1.03%
87014	CO HQ Building	2P	122,668	118	0.10%	108	59	17.71%	182	2.3			kWh/day	1.83%
87015	Enlisted UPH	3P	143,475	105	0.07%	105	53	13.57%	371	0.0	5.9	72.5	kWh/day	1.40%
87016	CO HQ Building	3P	178,875	237	0.13%	117	120	24.87%	433	0.0	4.9	57.9	kWh/day	2.53%
87017	Dining Facility	3P	504,854	331	0.07%	106	167	12.18%	1292	0.0	13.0	65.5	kWh/day	1.25%
87018	REF/A-C Building	3P	3,337,348	5,409	0.16%	79	2726	31.98%		-280.9	0.0	79.7	kBtu/day	3.10%
194	Phantom Warrior Club	2P	788,038	2,187	0.28%	23	1070	51.88%	448	25.9			kWh/day	5.30%
410	Headquarters Building	3P	2,789,054	2,926	0.10%	20	1424	19.28%	6894	0.0	63.7	57.7	kWh/day	2.00%
1001(1)	Third Corp Headquarters	1P	4,149,246	7,007	0.17%	31	3485	30.48%	11368				kWh/day	3.23%
1001(2)	Third Corp Headquarters	1P	2,946,317	10,490	0.36%	24	5137	63.64%	8072				kWh/day	6.80%
5485	Pershing Youth Center	3P	217,521	871	0.31%	31	332	67.07%	318	0.0	28.4	80.6	kWh/day	5.90%
5764(1)	Officers Club	1P	466,315	1,094	0.23%	31	541	42.33%	1278				kWh/day	4.48%
5764(2)	Officers Club	2P	487,063	2,557	0.52%	24	1253	125.18%	-1384	41.1			kWh/day	10.03%
6602	Bronco Youth Center	3P	486,315	613	0.13%	24	301	36.16%	572	0.0	65.4	71.1	kWh/day	2.51%
9212	Patton Inn	3P	189,399	563	0.30%	30	278	63.35%	258	0.0	36.7	65.4	kWh/day	5.88%
28000	Headquarters Bldg	1P	3,929,322	28,630	0.73%	22	19985	129.91%	10765				kWh/day	13.92%
50012	Community Event Center	3P	316,032	460	0.15%	29	227	32.21%	452	0.0	33.5	56.8	kWh/day	2.78%
52024	COMMAND Child Care	3P	7,804	16	0.20%	22	8	39.00%	13	0.0	0.5	50.1	kWh/day	3.81%
52381	Golf Pro Shop	3P	376,020	851	0.23%	31	421	44.94%	733	0.0	48.7	67.3	kWh/day	4.32%
70005	Longhorn Saloon	3P	272,733	338	0.12%	30	167	24.43%	548	0.0	57.6	73.0	kWh/day	2.37%
85018	Walker Youth Service Cente	3P	300,681	591	0.20%	30	292	39.97%	455	0.0	95.4	72.0	kWh/day	3.75%
85020	Commissary	1P	28,470	42	0.15%	11	20	26.37%	78				kWh/day	2.83%
91012	Admin/ Operational Testing	3P	2,684,248	3,491	0.13%	22	1706	23.51%	6878	0.0	407.4	79.7	kWh/day	2.49%
91014	Admin	3P	814,329	1,714	0.21%	21	836	40.51%	1648	0.0	38.6	53.0	kWh/day	4.02%
194	Phantom Warrior Club	3P	13,536,592	33,290	0.25%	31	16462	36.12%	12716	-1577.8	0.0	80.6	kBtu/day	4.70%
410	Headquarters Building	3P	8,479,200	26,390	0.31%	31	13050	40.63%	3002	-1755.3	0.0	74.9	kBtu/day	5.95%
1001(1)	Third Corp Headquarters	3P	16,358	34	0.21%	31	17	33.25%	29	-0.9	0.0	82.6	kBtu/day	3.93%
4351		3P	1,285,079	2,453	0.19%	31	1213	24.31%	295	-295.0	0.0	74.0	kBtu/day	3.85%
5485	Pershing Youth Center	3P	219,134	769	0.35%	31	380	46.91%	122	-41.5	0.0	74.9	kBtu/day	6.71%
5764(1)	Officers Club	3P	22,942,385	33,007	0.14%	31	16322	23.44%	46862	-1318.7	0.0	75.9	kBtu/day	2.75%
6602	Bronco Youth Center	3P	329,931	1,108	0.34%	31	548	45.36%	321	-133.6	0.0	60.6	kBtu/day	6.41%
9212	Patton Inn	3P	422,879	988	0.23%	30	488	30.99%	186	-93.9	0.0	73.0	kBtu/day	4.46%
28000	Headquarters Bldg	3P	770,668	3,773	0.49%	30	1864	57.06%	-1	-227.8	0.0	71.1	kBtu/day	9.35%
50012	Community Event Center	3P	305,593	992	0.32%	31	490	42.74%	270	-110.7	0.0	82.5	kBtu/day	6.20%
52024	COMMAND Child Care	3P	1,716,769	5,874	0.34%	23	2875	43.67%	1504	-675.8	0.0	81.5	kBtu/day	6.54%
52381	Golf Pro Shop	3P	297,260	950	0.32%	31	470	39.94%	153	-129.1	0.0	62.5	kBtu/day	6.11%
70005	Longhorn Saloon	3P	848,252	1,674	0.20%	31	828	28.57%	1278	-164.1	0.0	65.4	kBtu/day	3.77%
85018	Walker Youth Service Cente	3P	29,029	63	0.22%	31	31	37.22%	67	-0.9	0.0	78.7	kBtu/day	4.17%
85020	Commissary	1P	3,885,755	8,651	0.22%	31	4278	40.18%	10646				kBtu/day	4.25%
91012	Admin/ Operational Testing	3P	52,430,689	118,074	0.23%	29	58266	33.11%	67638	-4695.6	0.0	81.6	kBtu/day	4.30%
91014	Admin	3P	566,885	2,103	0.37%	28	1037	46.88%	303	-103.1	0.0	75.9	kBtu/day	7.09%
Physical Plant	MCC	3P	1,238,149	249	0.02%	176	126	3.67%	3314	0.0	10.3	64.5	kWh/day	0.38%
Physical Plant	Chiller	3P	2,243,730	3,349	0.15%	176	1699	24.77%	5051	0.0	269.4	71.6	kWh/day	2.85%
Physical Plant	Gas	3P	28,340,328	42,223	0.15%	341	21480	26.35%	45299	-2792.2	0.0	75.0	kBtu/day	2.85%

Table 7.1-1: Summary of Buildings Affected by Energy Services Contract.

7.2. Demand Models for Baseline Electric Demand Savings.

Appendix 11.3 contains the weather-independent analysis, which utilizes 24-hour profiles that were developed using ASHRAE’s 1093-RP diversity factor procedures (Abushakra 2001). The methodology used to derive the 24-hour weekday, weekend profiles is based on an analysis developed for ASHRAE research project 1093-RP that uses percentiles, where the 10th, 25th, 50th, 75th, and 90th percentiles are reported for each hour of the day by day type (i.e., weekday, weekend).

Building Number	Building Name	Building Size (ft2)	Electricity Meter Status		Total Annual kW Savings	Total Annual kW Savings (\$)	Diversity Factor Analysis
			Type	ACR Data?			
194	NCO Club (Phantom Warrior Club)	19,023	Man & ACR	YES	47	\$207	*
410	Headquarters Building	102,391	Man & ACR	YES	1,025	\$4,537	*
1001	Third Corp Headquarters	312,800	Logger	YES	2,363	\$10,459	*
4351	Motor Pool	16,317	Manual	NO	75	\$332	
5485	Pershing Youth Center	17,519	Manual	NO	68	\$300	
5764	Officers Club	36,649	Man & ACR	YES	152	\$673	*
6602	Bronco Youth Center	22,100	Man & ACR	YES	125	\$552	*
9112	Motor Pool	20,832	Man & ACR	YES	431	\$1,906	*
9122	Motor Pool	20,832	Man & ACR	YES	477	\$2,112	*
9127	Motor Pool	20,240	BLINK	NO	222	\$984	
9212	Patton Inn	1,612	Manual	NO	53	\$235	
9513	Motor Pool	20,832	Man & ACR	NO	362	\$1,600	
9535	Motor Pool	20,240	BLINK	NO	260	\$1,149	
9553	Motor Pool	24,560	BLINK	NO	140	\$621	
15060	Motor Pool	20,240	Man & ACR	YES	329	\$1,455	*
19012	Motor Pool	20,240	BLINK	NO	150		
22020	Admin	21,096	Man & ACR	YES	180	\$798	*
28000	Headquarters Bldg	129,635	Man & ACR	YES	0	\$0	*
30015	Motor Pool	20,240	BLINK	NO	218	\$963	
30017	Motor Pool	20,240	BLINK	NO	219	\$970	
30033	Motor Pool	20,240	BLINK	NO	256	\$1,132	
35014	Motor Pool	20,480	BLINK	NO	191	\$845	
35023	Motor Pool	23,040	BLINK	NO	135	\$598	
38003	Motor Pool	20,240	BLINK	NO	247	\$1,093	
38014	Motor Pool	20,240	BLINK	NO	183	\$811	
42000	Sports USA	23,341	Man & ACR	YES	92	\$409	*
50012	Community Event Center	4,203	Manual	NO	0	\$0	
52019	Comanche Community Activity Center	13,450	Manual	NO	108	\$479	
52381	Golf Pro Shop	3,061	Manual	NO		\$0	
52024	COMMAND Child Care	34,779	Man & ACR	YES	217	\$960	*
70005	Longhorn Saloon	5,718	Manual	NO	53	\$234	
85018	Walker Youth Service Center	15,652	Manual	NO	113	\$498	
85020	Commissary	105,659	Man & ACR	YES	470	\$2,082	*
87003	BN HQ Building and Org Classroom	12,314	87000 Block	YES	146	\$647	*
87004	CO HQ Building	18,818	87000 Block	BROKEN	126	\$557	
87005	BDE HQ Building	9,840	87000 Block	YES	114	\$504	*
87006	Offices	4,073	87000 Block	YES	44	\$196	*
87007	Enlisted UPH	31,470	87000 Block	YES	0	\$0	*
87008	BN HQ Building	6,371	87000 Block	YES	70	\$308	*
87009	BN HQ Building and Org Classroom	12,381	87000 Block	YES	162	\$717	*
87010	Physical Fitness Center	23,631	87000 Block	YES	172	\$759	*
87011	CO HQ Building	25,618	87000 Block	YES	157	\$697	*
87012	Enlisted UPH	42,306	87000 Block	YES	5	\$23	*
87013	Enlisted UPH	31,740	87000 Block	NO	0	\$0	
87014	CO HQ Building	14,162	87000 Block	YES	96	\$425	*
87015	Enlisted UPH	42,306	87000 Block	YES	3	\$15	*
87016	CO HQ Building	25,168	87000 Block	YES	157	\$697	*
87017	Dining Facility	15,695	87000 Block	YES	89	\$393	*
87018	Physical Plant - 87000 Block	3,327	Logger	NO	15	\$68	
87019	CO HQ Building	18,818	BLINK	NO	126	\$557	
87020	Enlisted UPH	42,306	BLINK	NO	79	\$349	
87021	Enlisted UPH	87,021	BLINK	NO	1	\$4	
87022	Enlisted UPH	42,306	BLINK	NO	54	\$238	
91002	Headquarters Bldg	38,462	Man & ACR	YES	121	\$534	*
91012	Admin/ Operational Testing	86,292	Man & ACR	YES	388	\$1,715	*
91014	Admin	26,224	Man & ACR	YES	184	\$814	*
Total Annual kW Savings						\$49,214	
kW Savings Covered by Demand Model:						\$35,153	71.4%

Table 7.2-1: List of Buildings with Demand Baseline Models.

8. WHOLE-BASE NATURAL GAS ANALYSIS

8.1. Monthly and Daily Natural Gas Data.

The Ft. Hood base is served by three gas meters, including west, south and north meters. Data from these meters are recorded by TXU and transferred to the Ft. Hood energy office in daily format. The monthly data are shown in Figure 8.2-1 and Figure 8.2-2, which shows the monthly total gas use for 1999 and 2000, along with the average monthly temperature. In Figure 8.2-3 these same data are plotted as a scatter plot versus average monthly temperature. In these plots is clear that there is a strong weather dependency in the natural gas use, as expected.

In Figure 8.2-4 the daily gas data for the west, south and north meters for 1999 are shown as a time series plot along with the corresponding daily temperature data. In Figure 8.2-5 the total natural gas consumption for Ft. Hood are shown as a time series plot and as a scatter plot versus average daily temperatures for 1999 from the National Weather Service (NWS). In Figure 8.2-6 the daily gas data for the west, south and north meters for 2000 are shown as a time series plot along with the corresponding daily temperature data. In Figure 8.2-7 the total natural gas consumption for Ft. Hood are shown as a time series plot and as a scatter plot versus average daily temperatures for 2000 from the National Weather Service (NWS). In Figure 8.2-8 the total natural gas consumption for Ft. Hood are shown as a time series plot and as a scatter plot versus average daily temperatures for 2001 from the National Weather Service (NWS).

In Figure 8.2-9 the daily gas data for all meters for 2001 are shown as a time series plot along with the corresponding daily temperature data. In Figure 8.2-10 the daily gas data for all meters for 2002 are shown as a time series plot. In Figure 8.2-11 the daily gas data for all meters for 2002 are shown as a time series plot along with the corresponding daily temperature data. In Figure 8.2-12 the daily gas data for all meters for 2003 are shown as a time series plot. In Figure 8.2-13 the daily gas data for all meters for 2003 are shown as a time series plot along with the corresponding daily temperature data.

In Figure 8.2-14 a scatter plot is shown for the daily gas use for the years 1999, 2000 and 2001 for the west base gas meter. Figure 8.2-15 shows the daily gas use for the years 2002 and 2003 for the west base gas meter. In Figure 8.2-16 a scatter plot is shown for the daily gas use for the years 1999, 2000 and 2001 for the south gas meter. Figure 8.2-17 shows the daily gas use for the years 2002 and 2003 for the south gas meter. In Figure 8.2-18 a scatter plot is shown for the daily gas use for the years 1999, 2000 and 2001 for the north gas meter. Figure 8.2-19 shows the daily gas use for the years 2002 and 2003 for the north gas meter. In Figure 8.2-20 a scatter plot is shown for the daily gas use for the years 1999, 2000 and 2001 for the north gas meter. Figure 8.2-21 shows the daily gas use for the years 2002 and 2003 for the north gas meter.

8.2. Baseline models.

In Table 8.2-1 through Table 8.2-14 and Figure 8.2-22 through Figure 8.2-36 the three parameter models are shown for the daily average natural gas use for the whole-base. In Table 8.2-1 the results of the IMT modeling are shown and in Figure 8.2-22 the three parameter model is shown for the 1999 – 2002 daily average monthly gas use for all meters versus temperature. In Figure 8.2-35 and the accompanying tables for the IMT models a reduction in energy use in 2002 and 2003 can be clearly seen in temperatures below 70F.

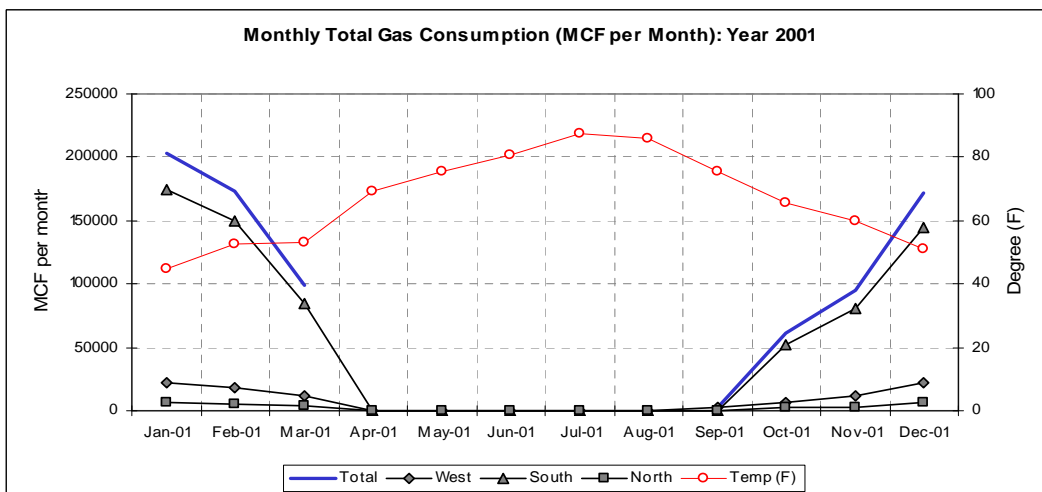
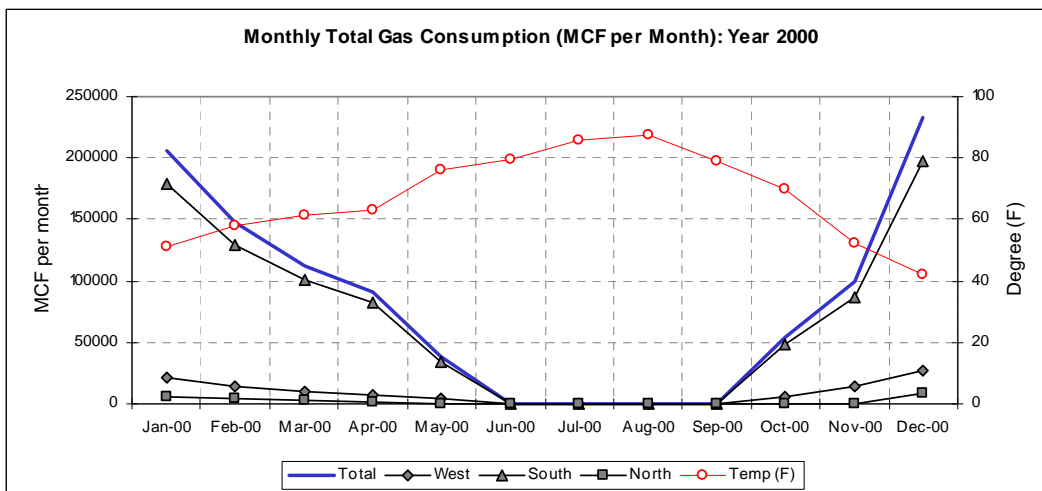
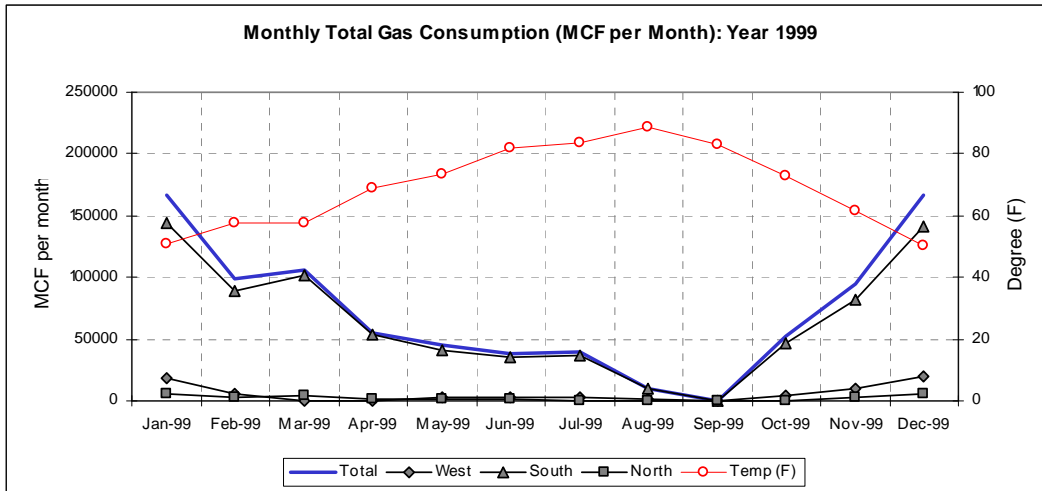


Figure 8.2-1: 1999-2000, 2001, 2002, and 2003 Monthly Total Gas Use.

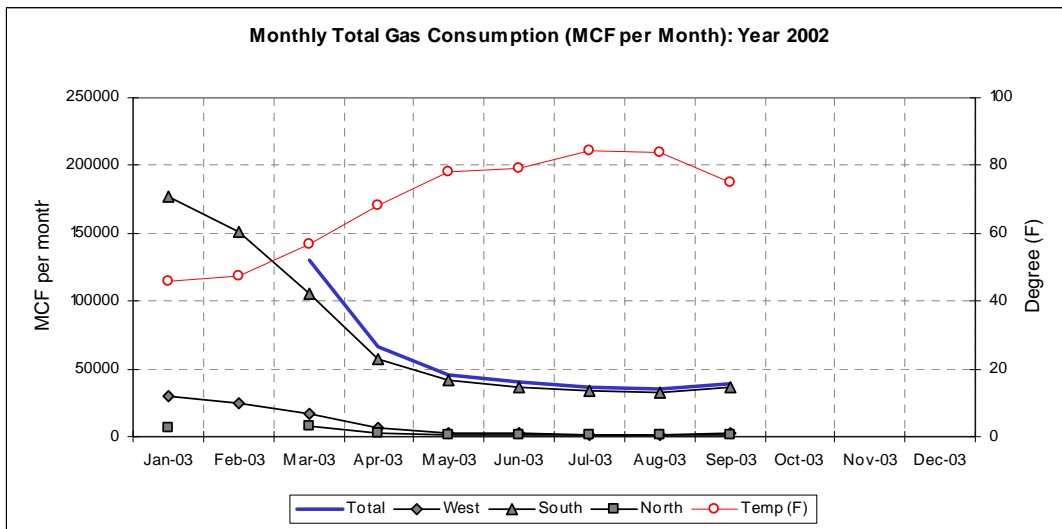
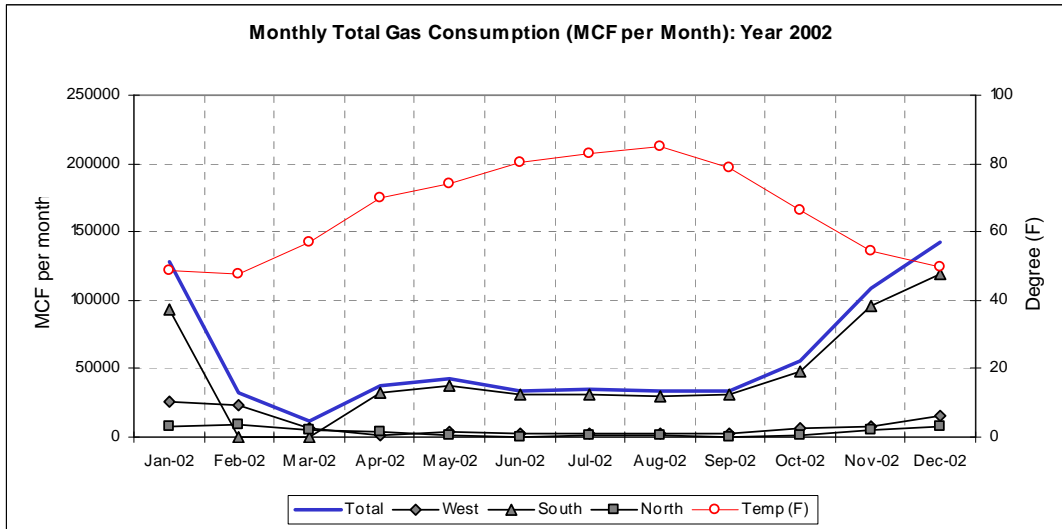


Figure 8.2-2: 1999-2000, 2001, 2002, and 2003 Monthly Total Gas Use (cont).

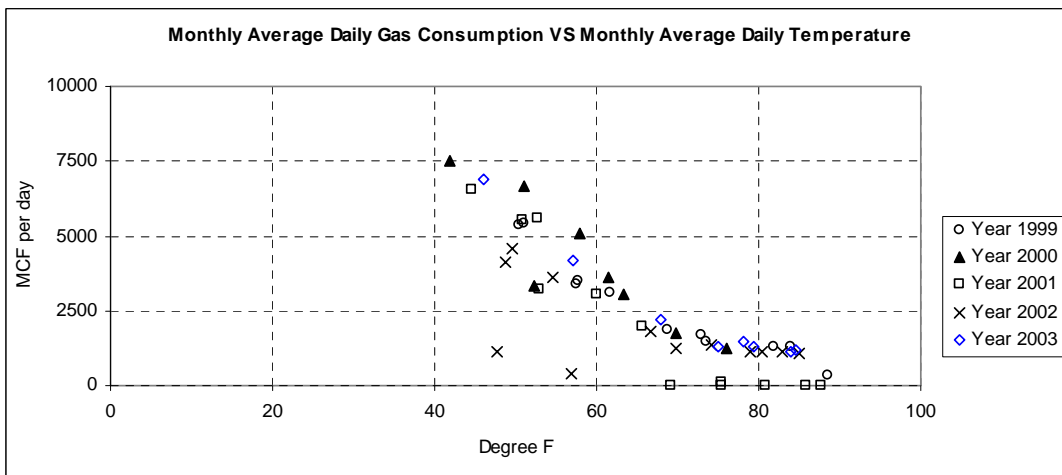
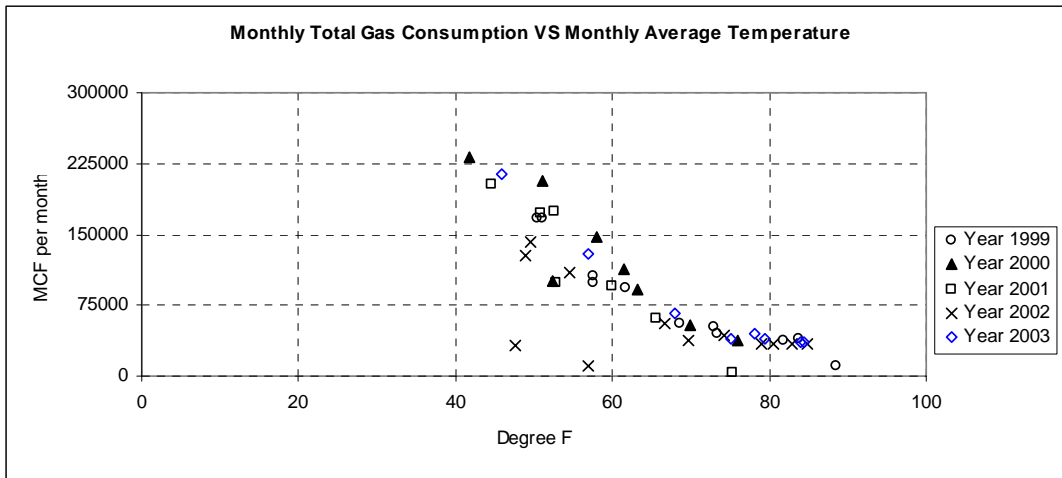


Figure 8.2-3: 1999, 2000, 2001, 2002 and 2003 Monthly Total Gas Use as a Function of Outside Dry-bulb Temperature.

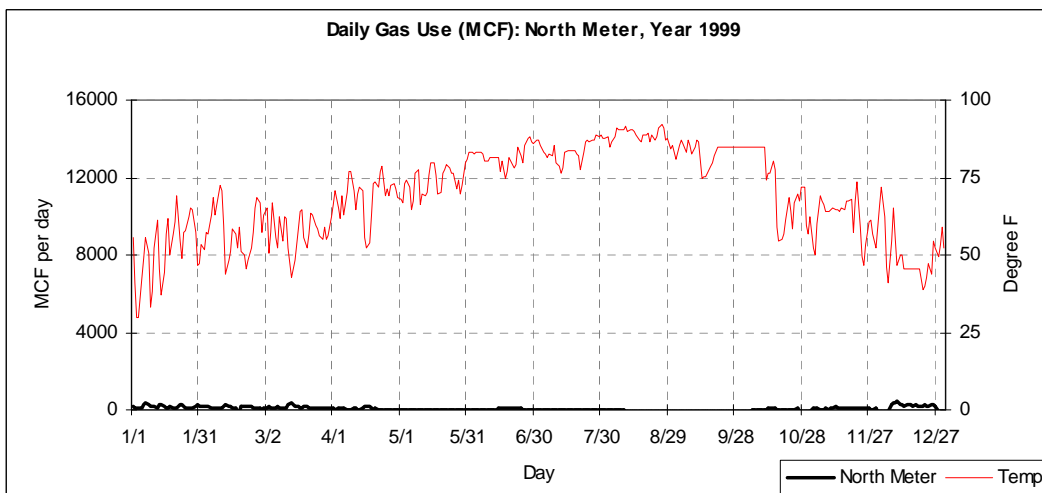
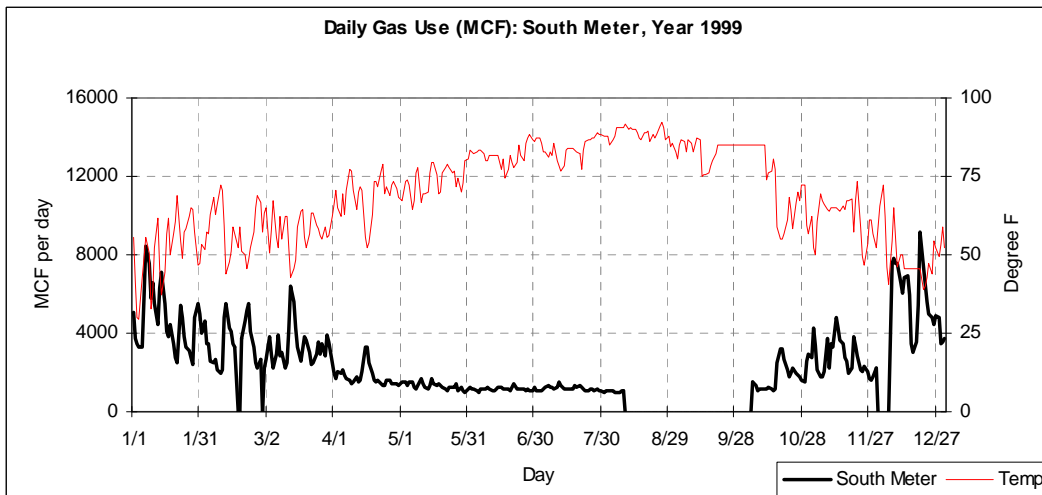
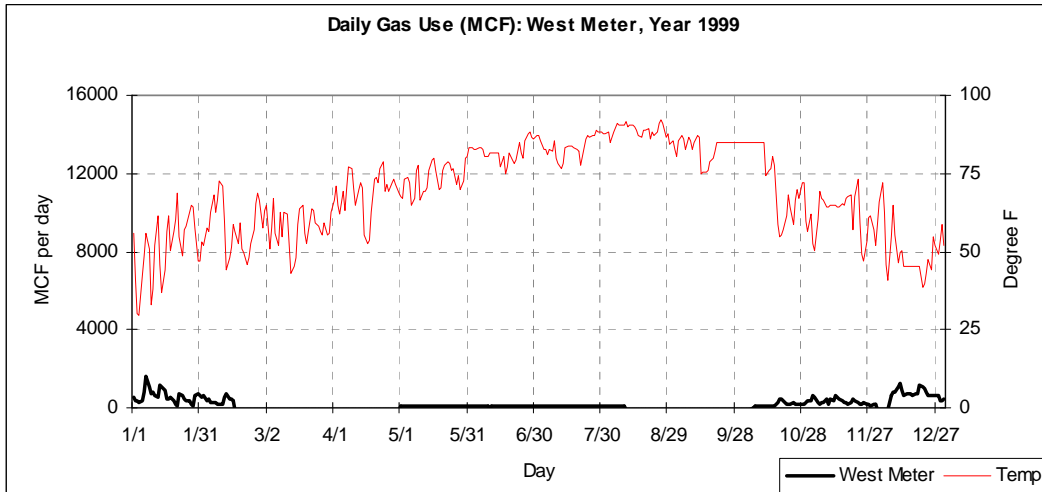


Figure 8.2-4: 1999 Daily Gas Use for West, South and North Meters..

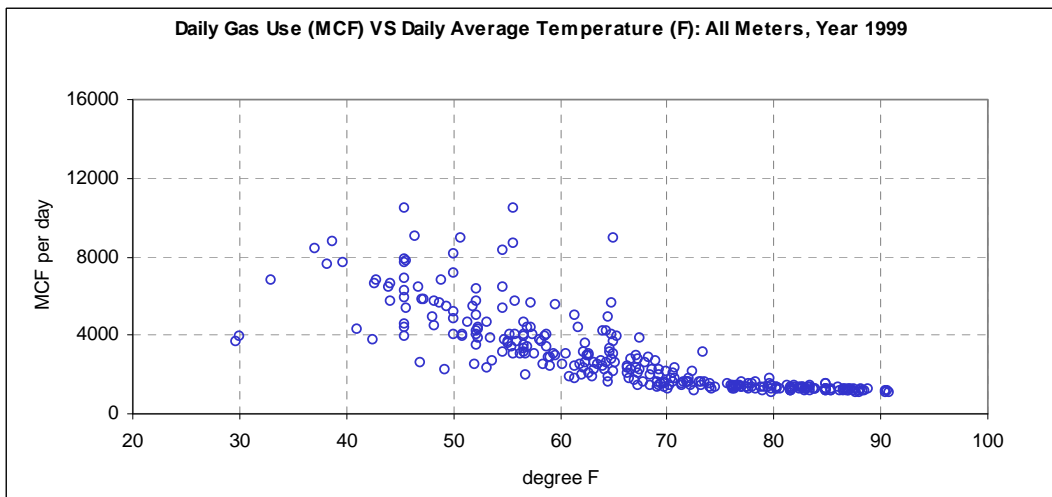
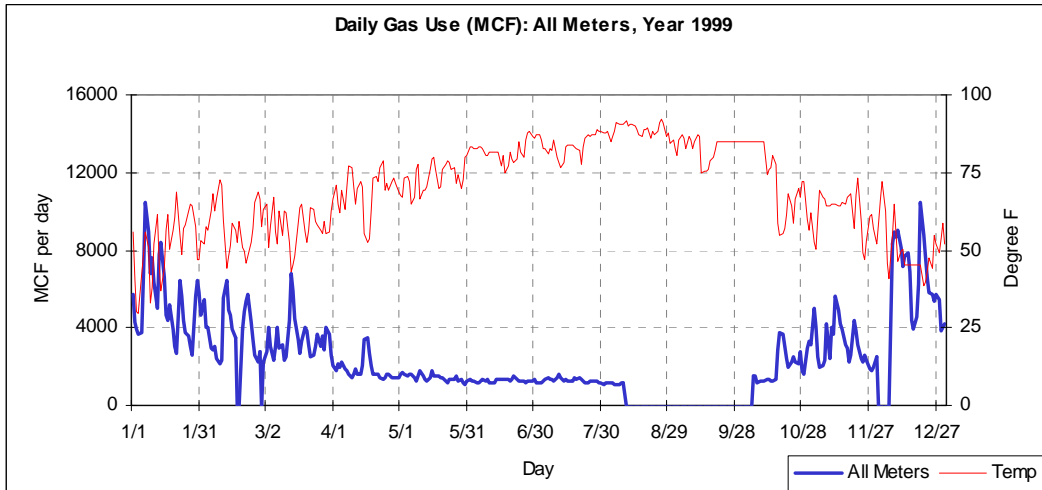


Figure 8.2-5: 1999 Daily Gas Use for All Meters.

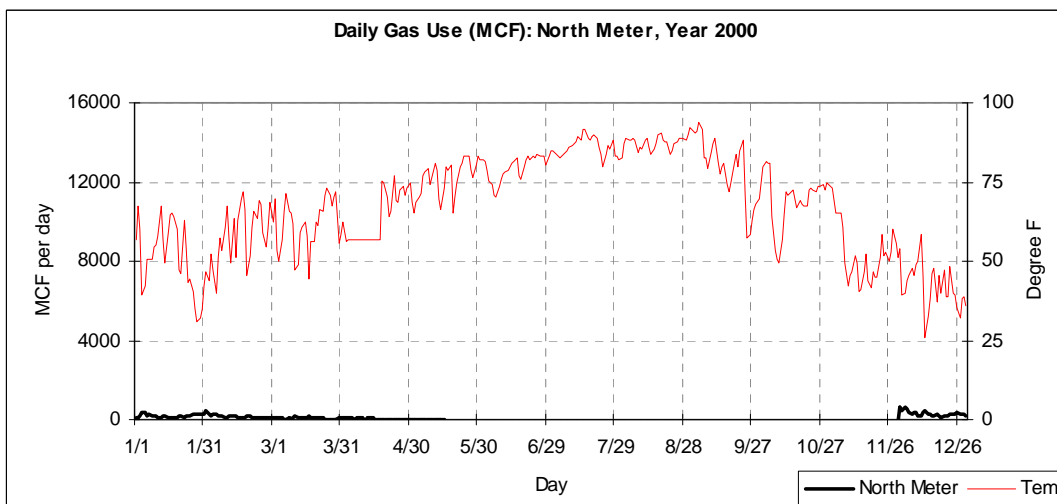
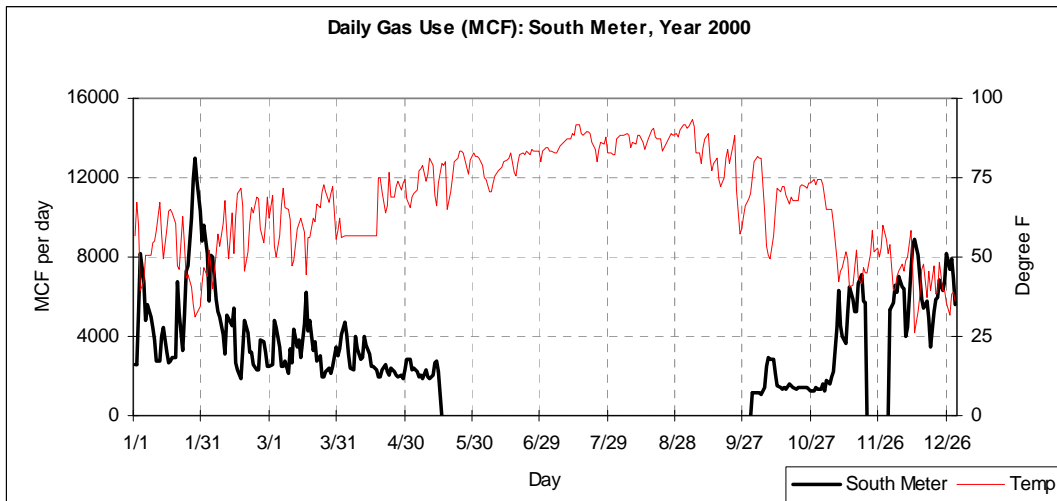
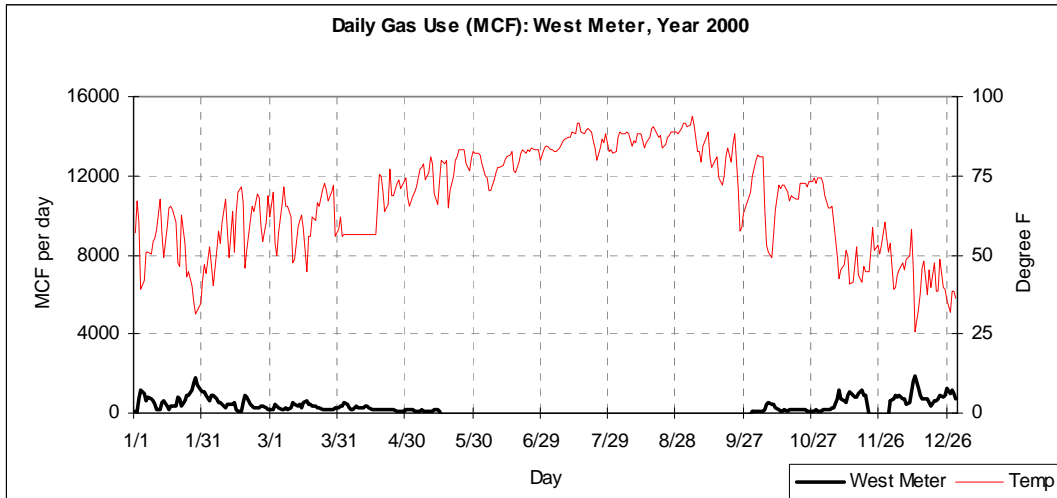


Figure 8.2-6: 2000 Daily Gas Use for West, South and North Meters.

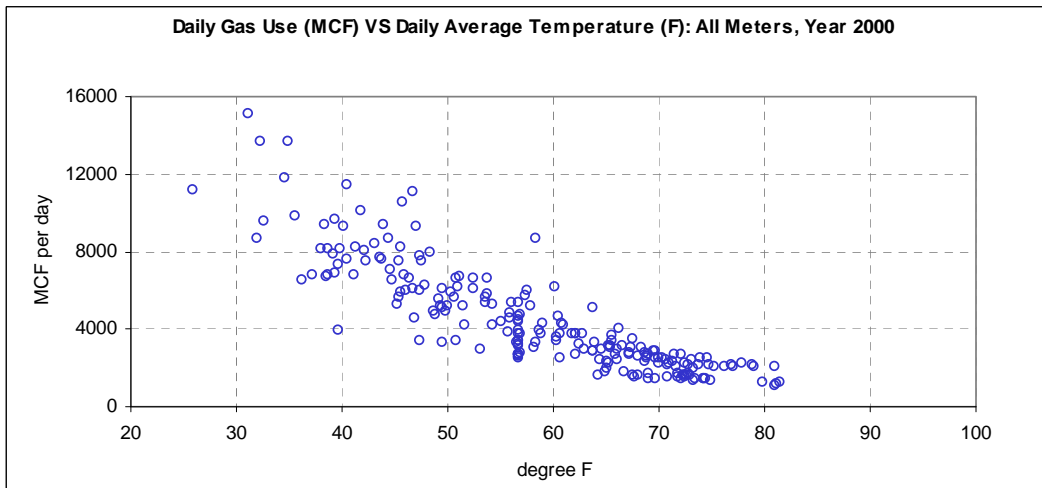
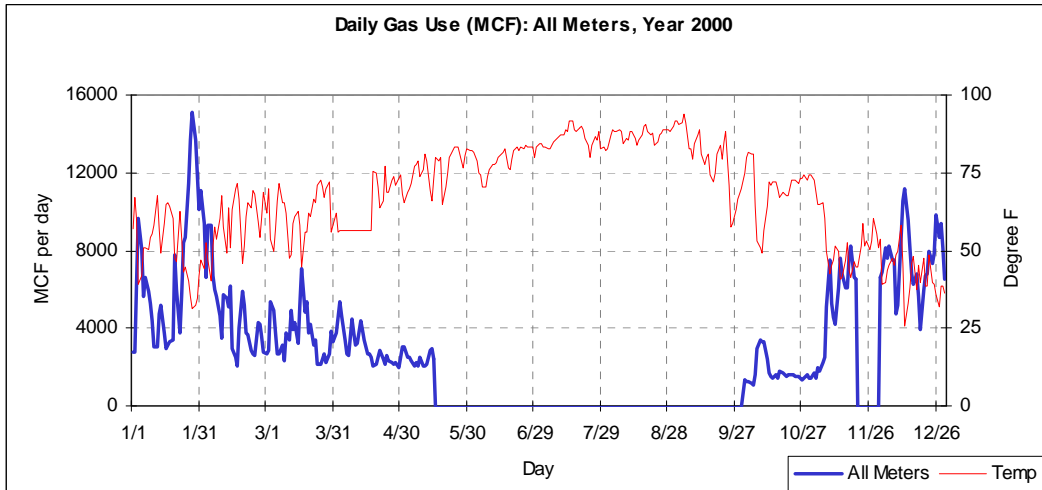


Figure 8.2-7: 2000 Daily Gas Use for All Meters.

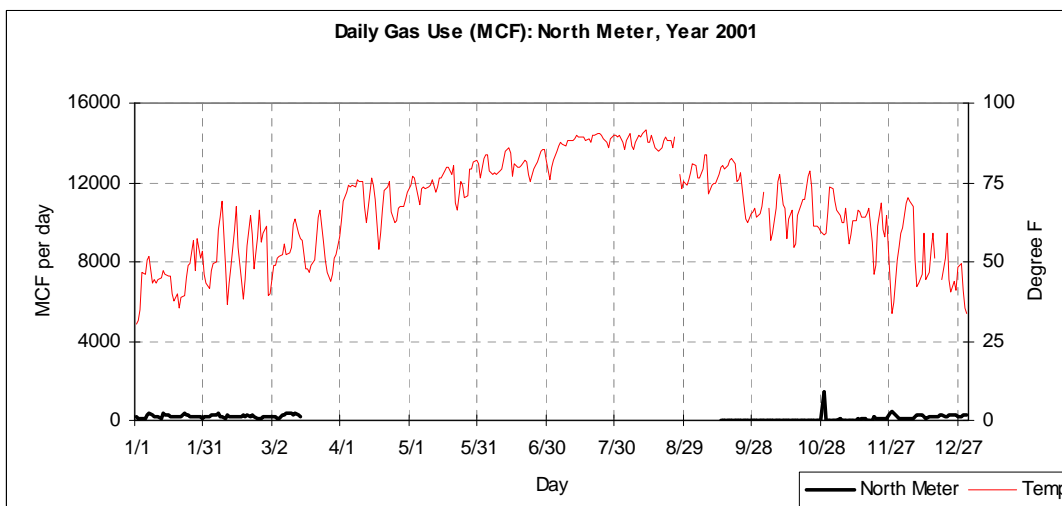
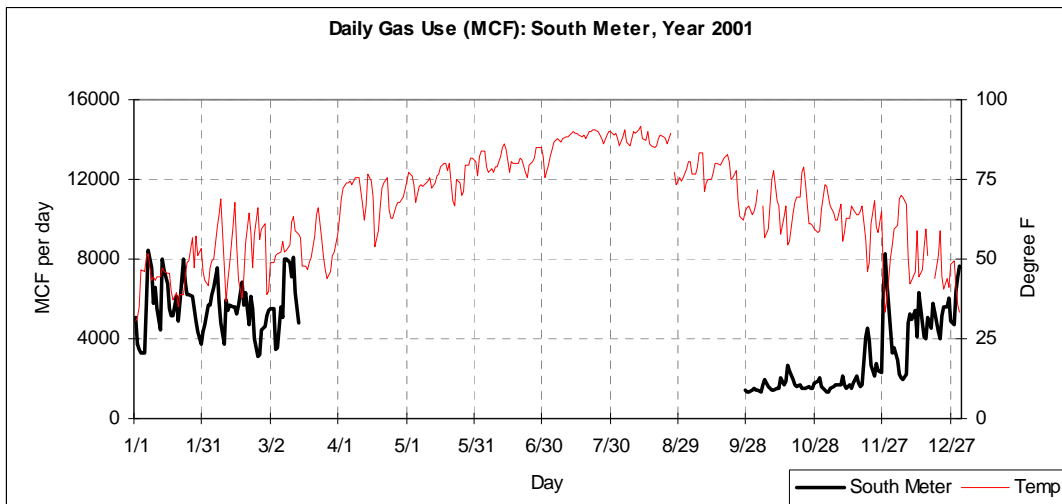
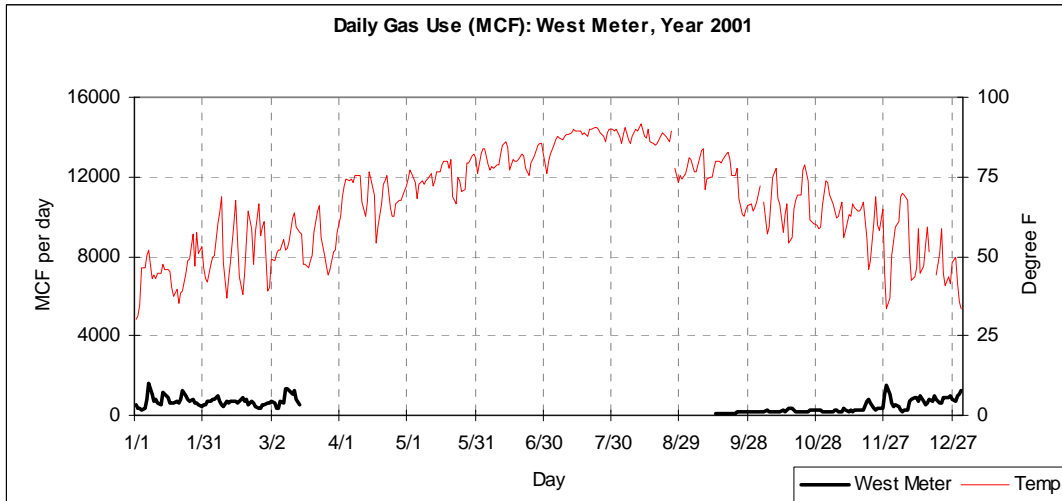


Figure 8.2-8: 2001 Daily Gas Use for West, South and North Meters.

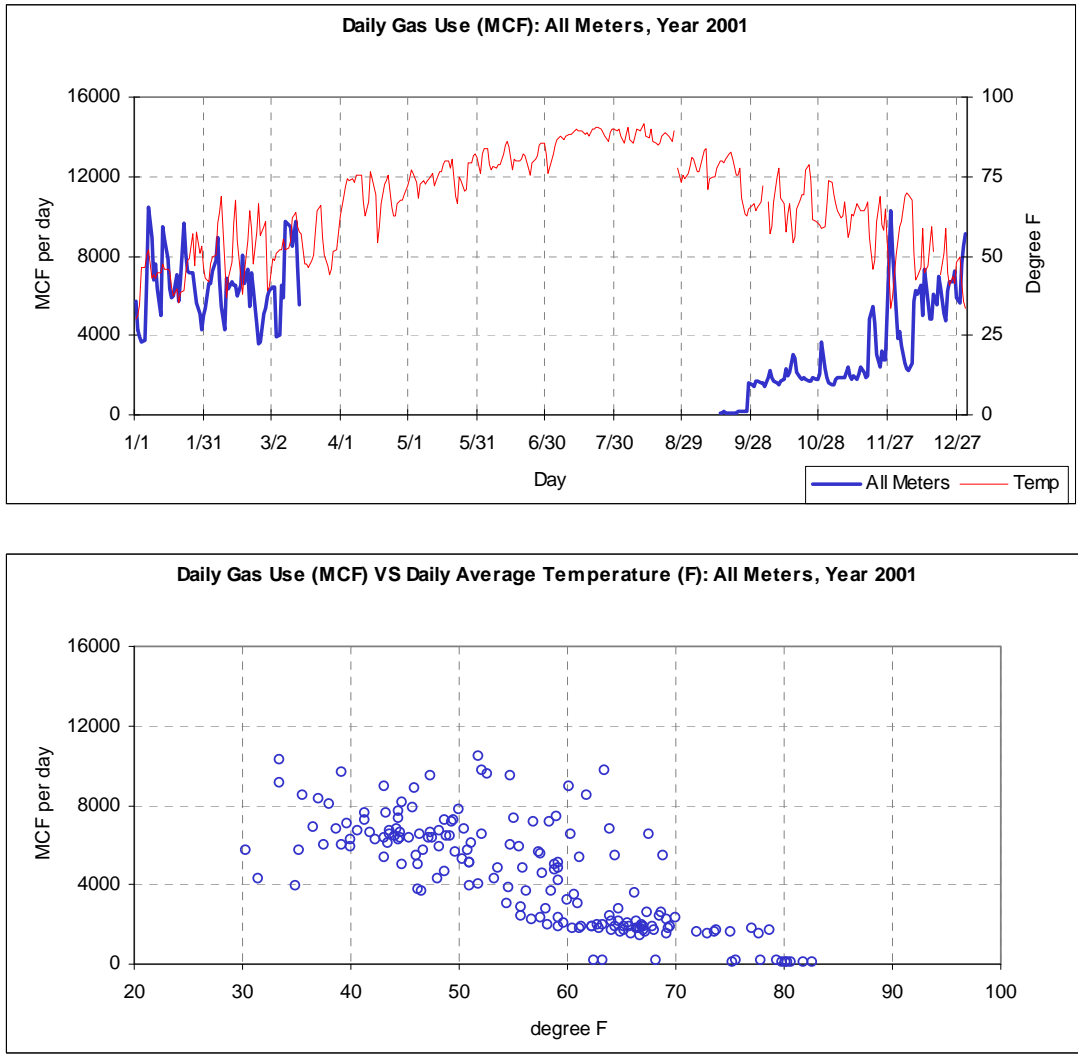


Figure 8.2-9: 2001 Daily Gas Use for All Meters.

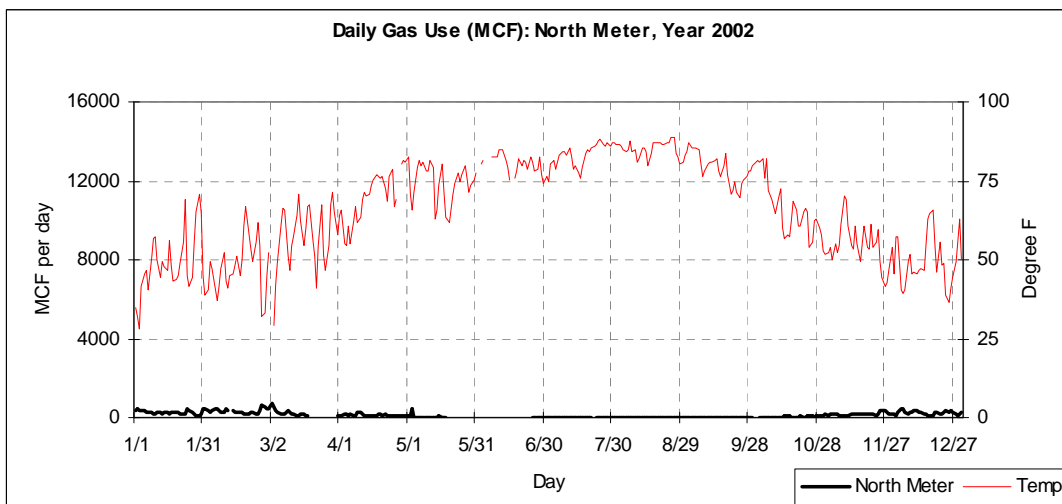
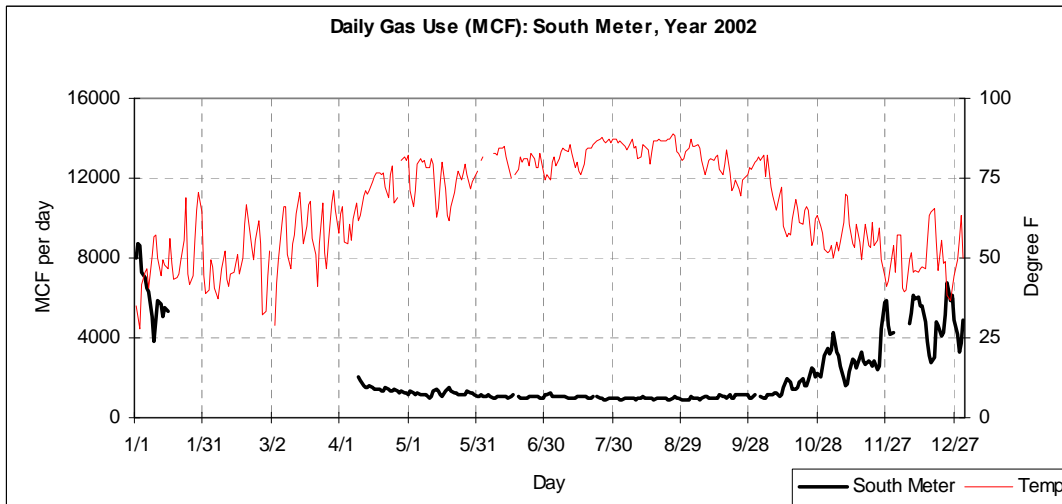
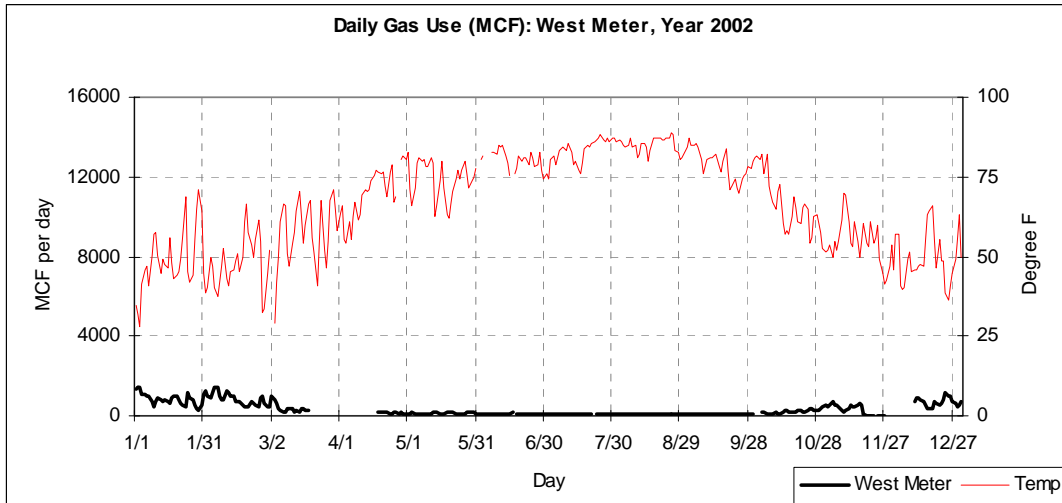


Figure 8.2-10: 2002 Daily Gas Use for West, South and North Meters.

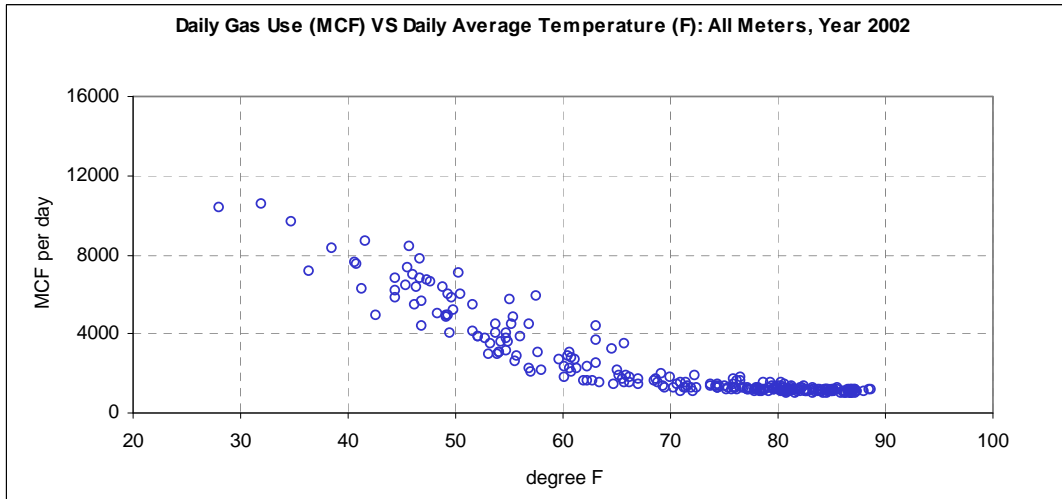
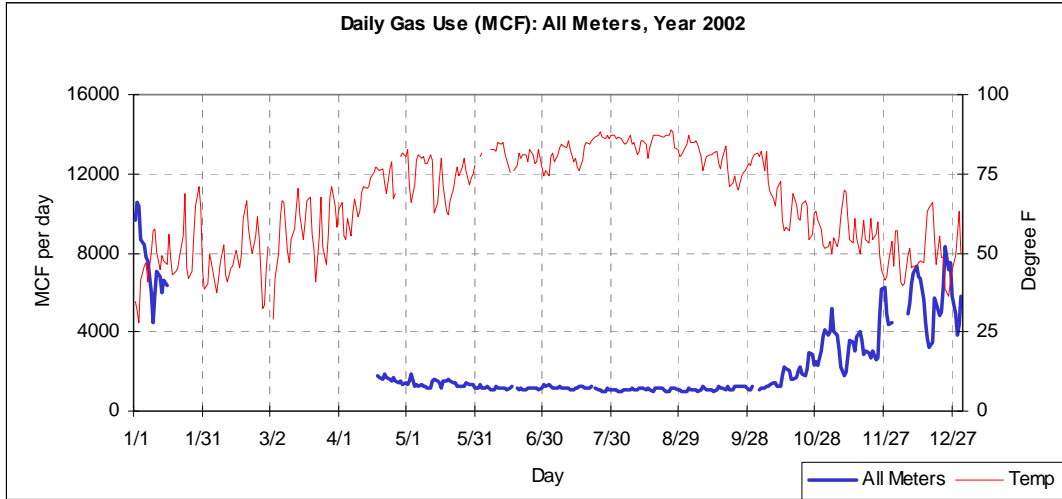


Figure 8.2-11: 2002 Daily Gas Use for All Meters.

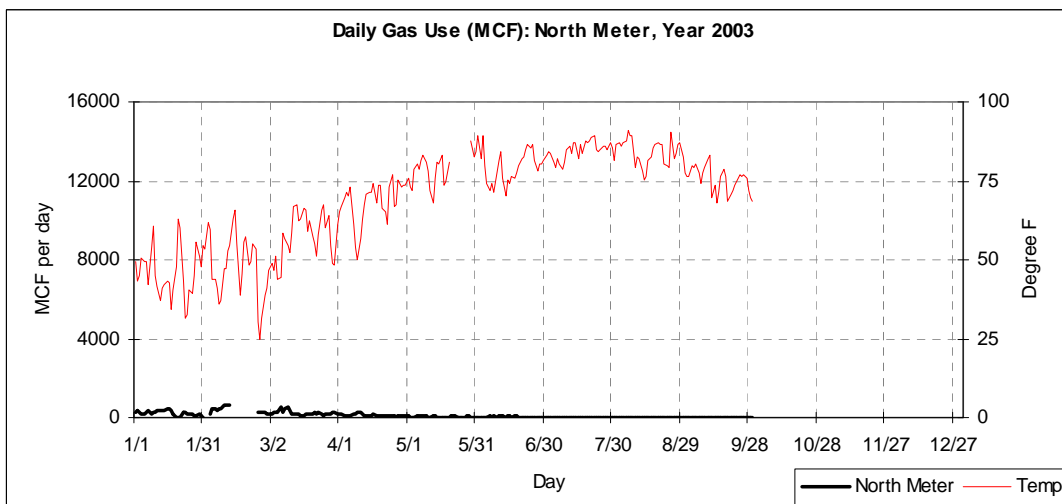
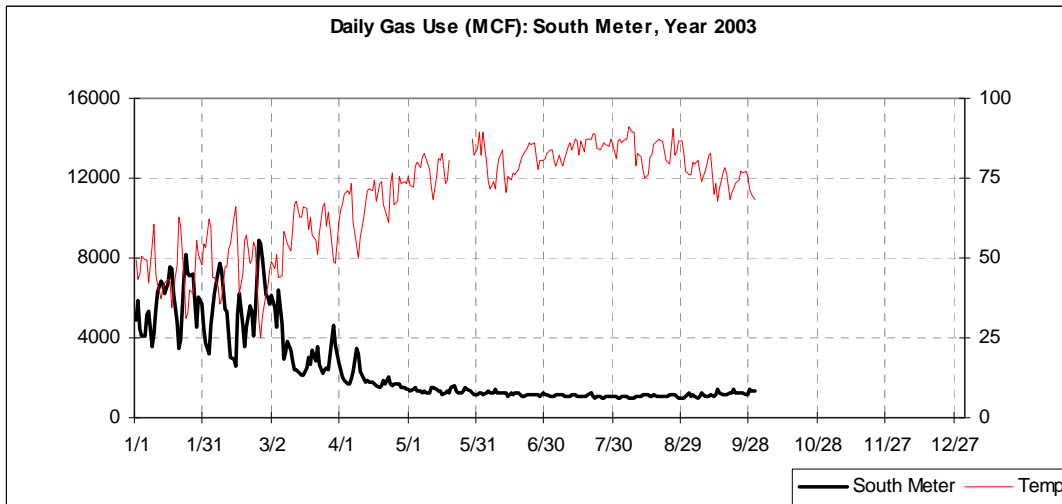
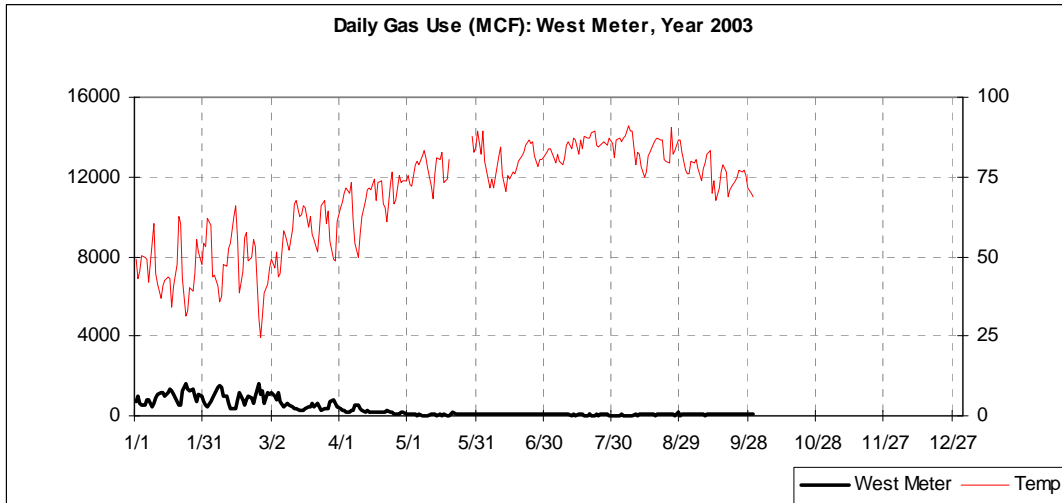


Figure 8.2-12: 2003 Daily Gas Use for West, South and North Meters.

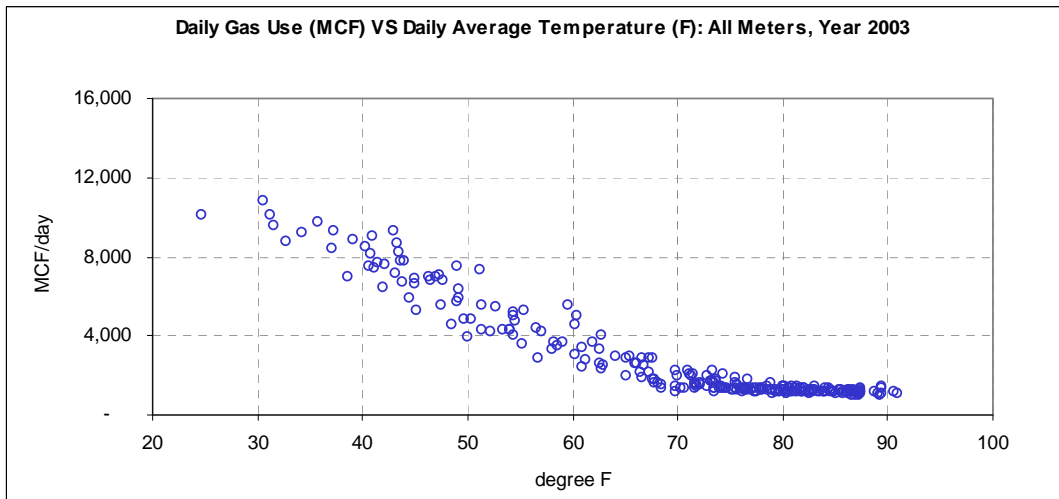
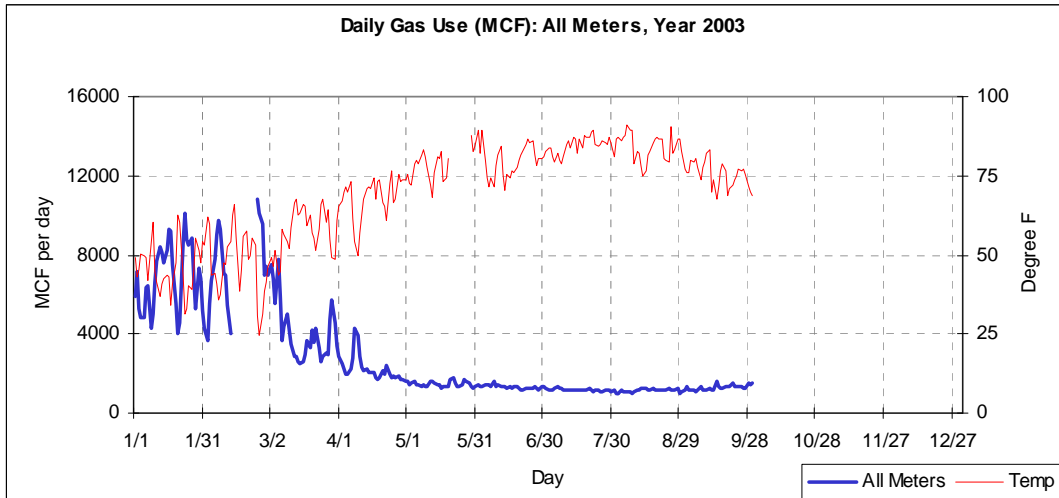


Figure 8.2-13: 2003 Daily Gas Use for All Meters.

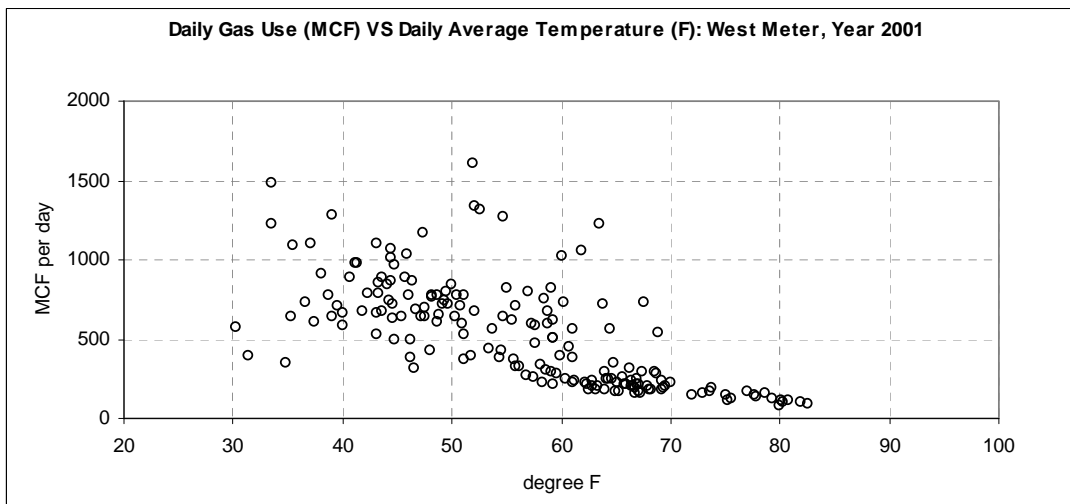
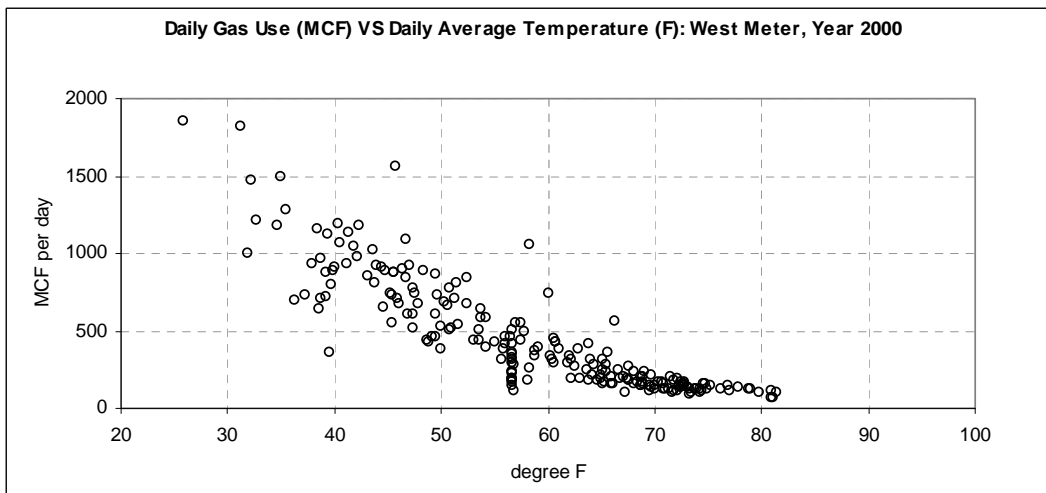
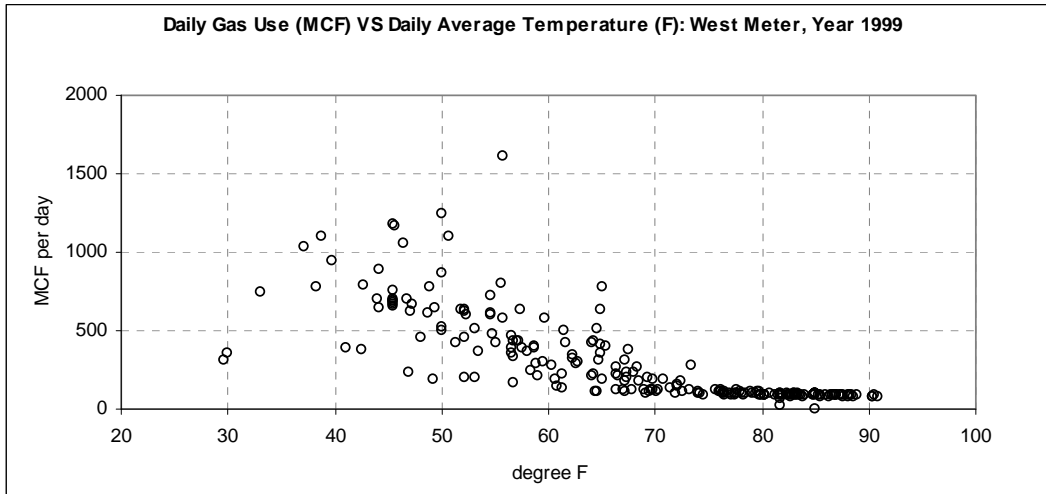


Figure 8.2-14: 1999, 2000, and 2001 Daily Gas Use for West Meter vs Temperature.

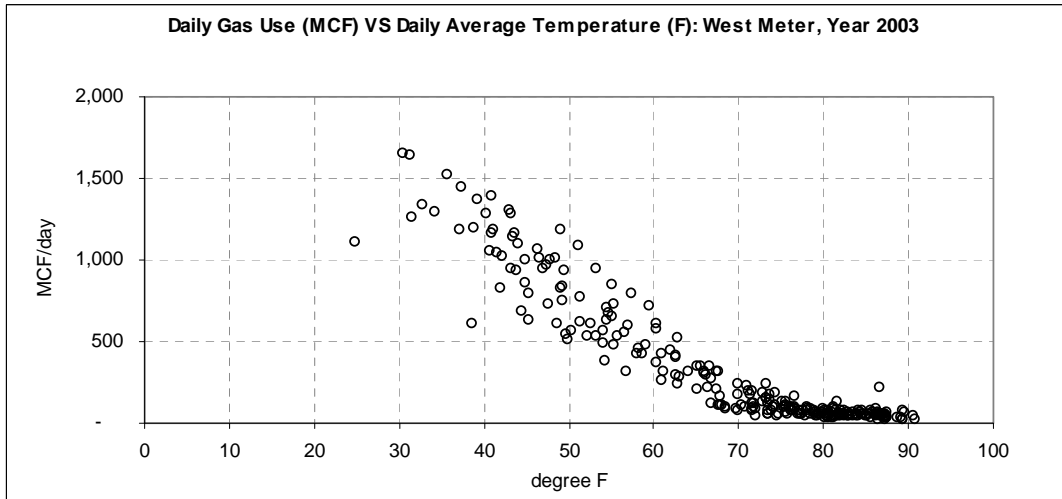
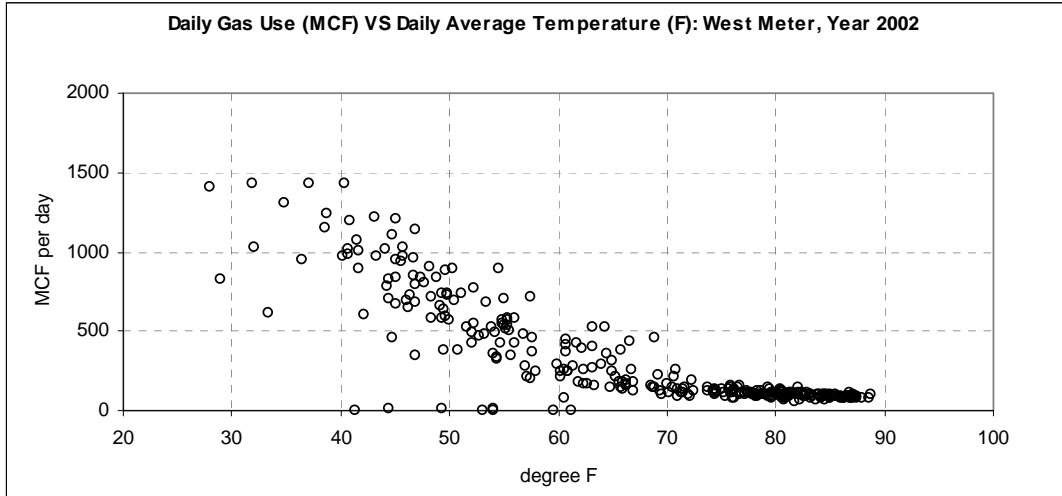


Figure 8.2-15: 2002 and 2003 Daily Gas Use for West Meter vs Temperature (cont.)

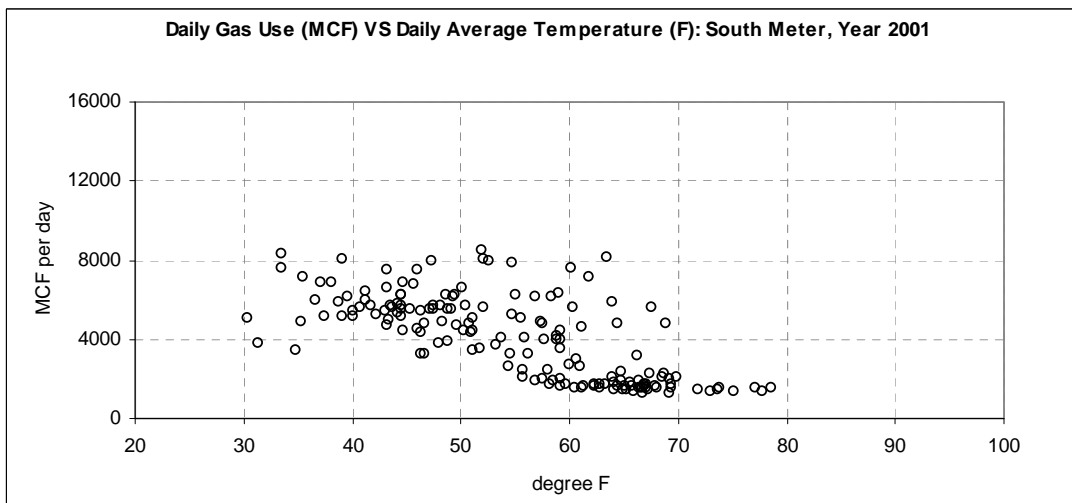
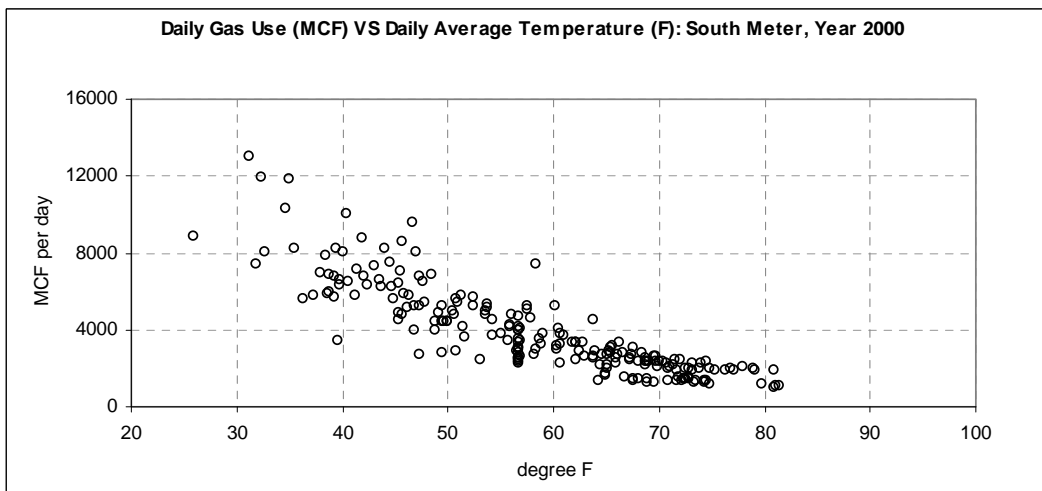
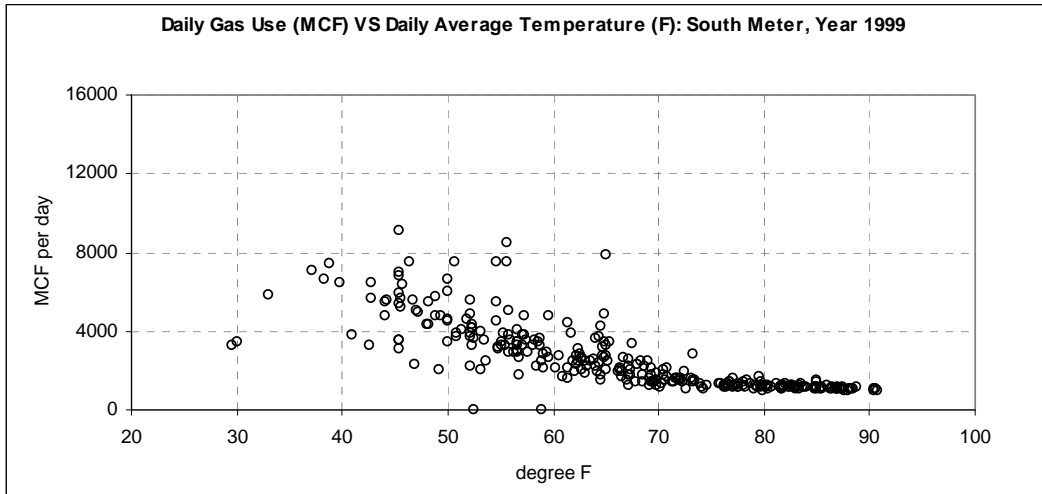


Figure 8.2-16: 1999, 2000, 2001 and 2002 Daily Gas Use for South Meter vs Temperature.

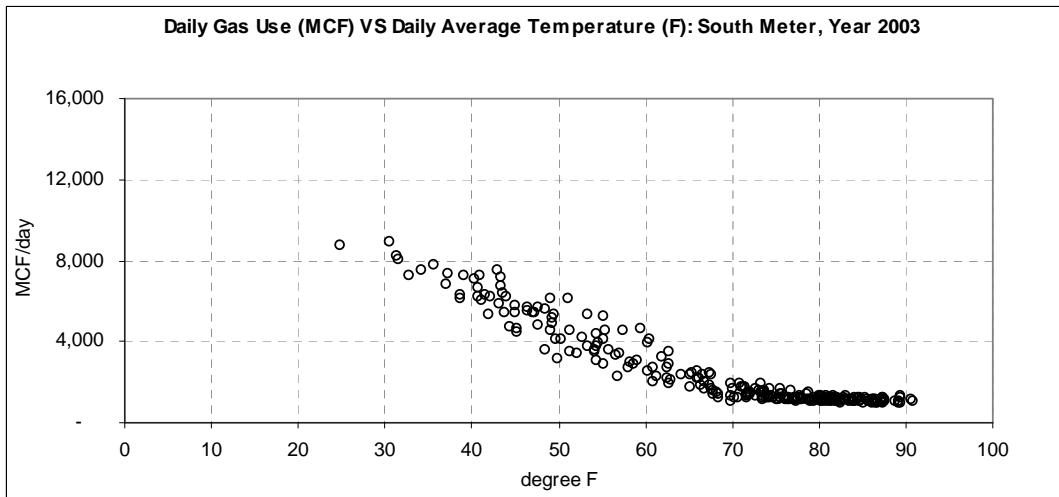
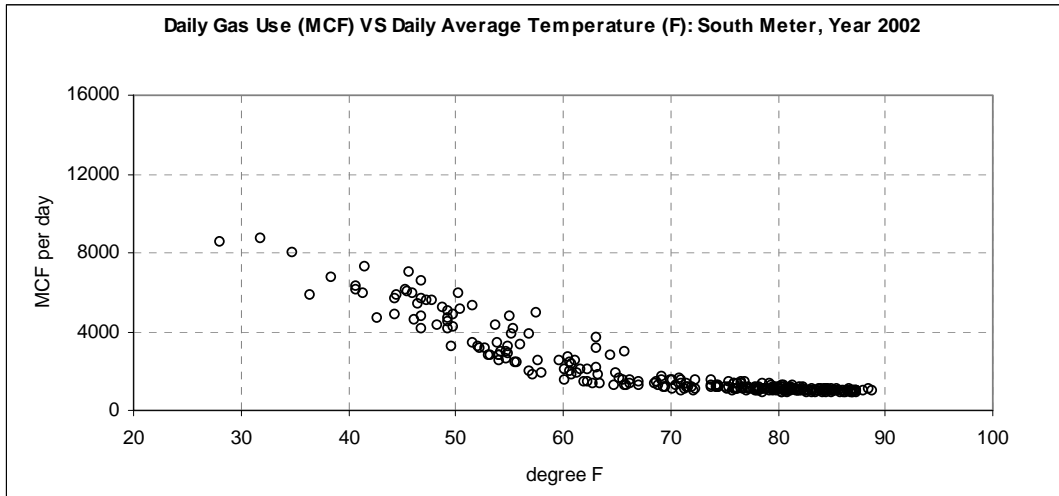


Figure 8.2-17: 2002 and 2003 Daily Gas Use for South Meter vs Temperature (cont.).

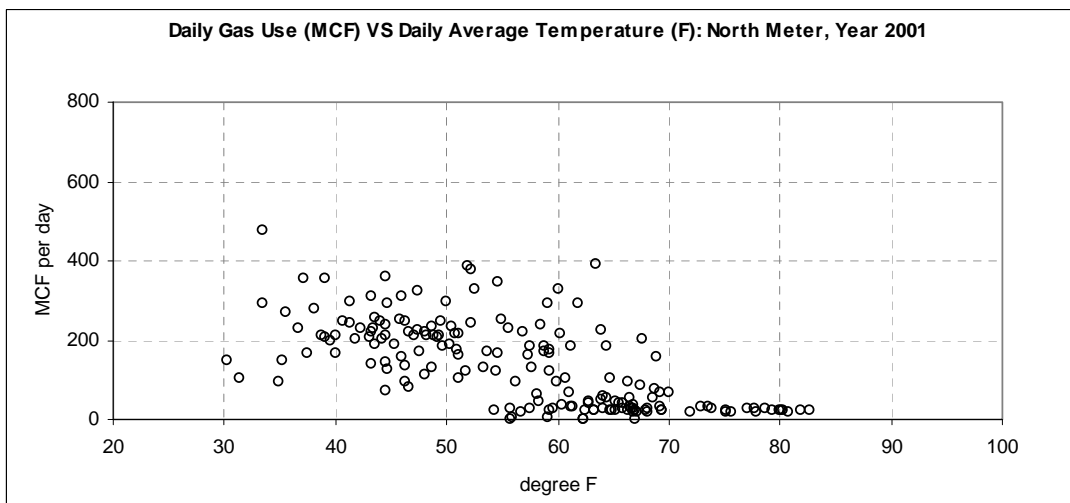
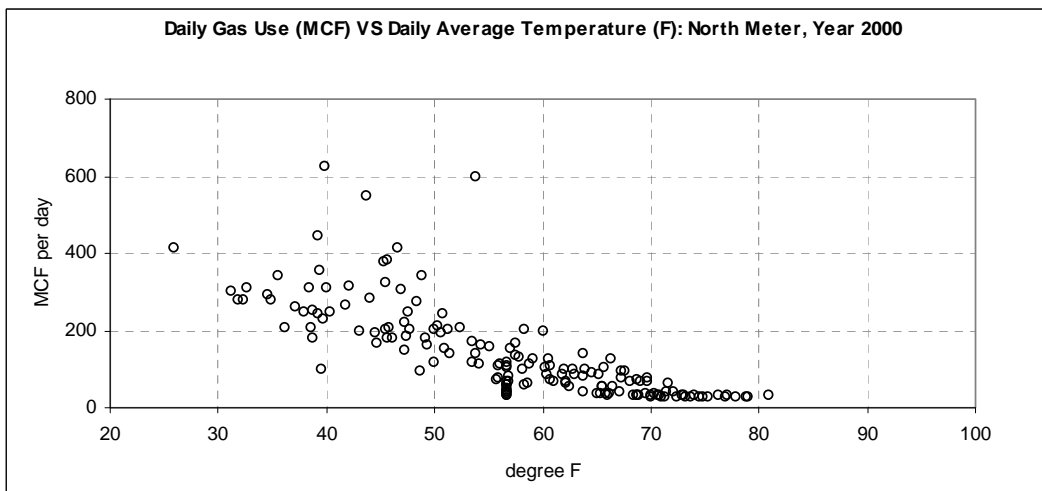
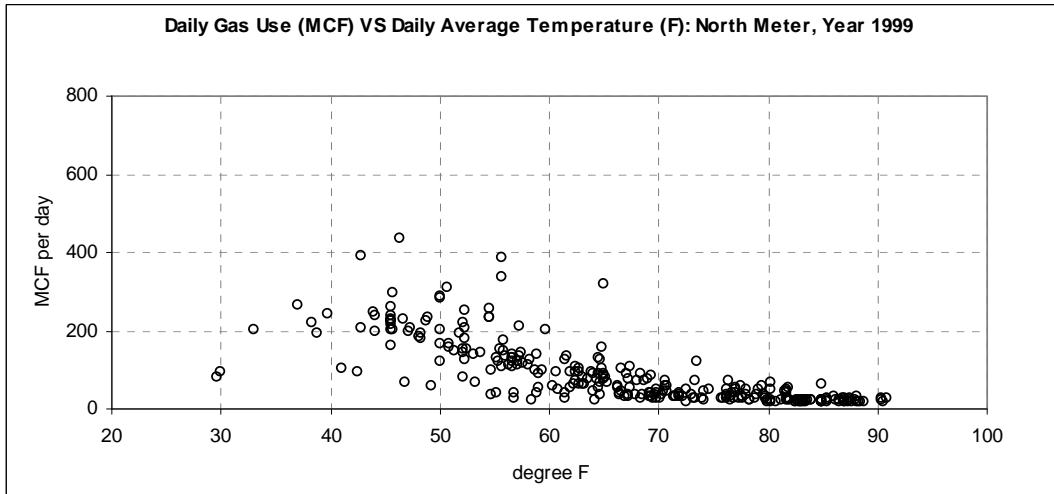


Figure 8.2-18: 1999, 2000, and 2001 Daily Gas Use for North Meter vs Temperature.

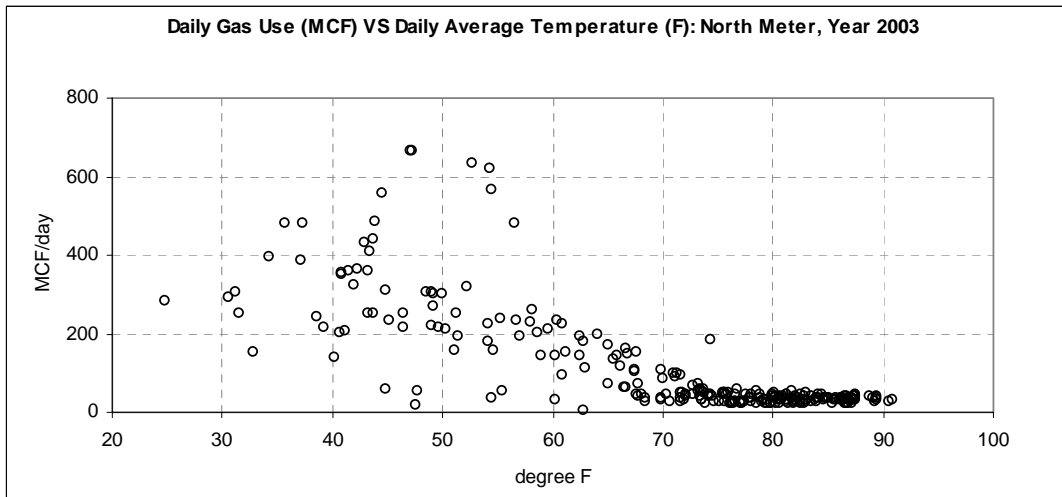
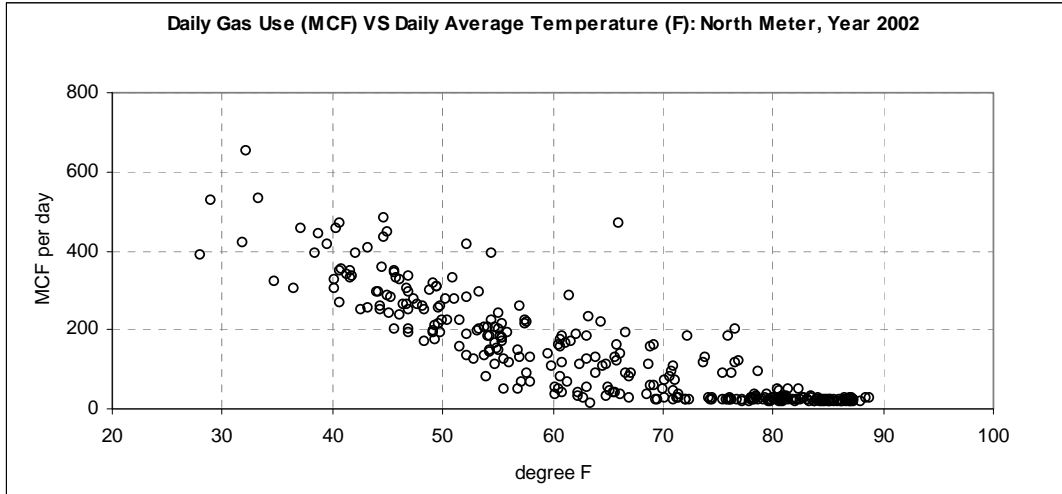


Figure 8.2-19: 2002 and 2003 Daily Gas Use for North Meter vs Temperature (cont.)

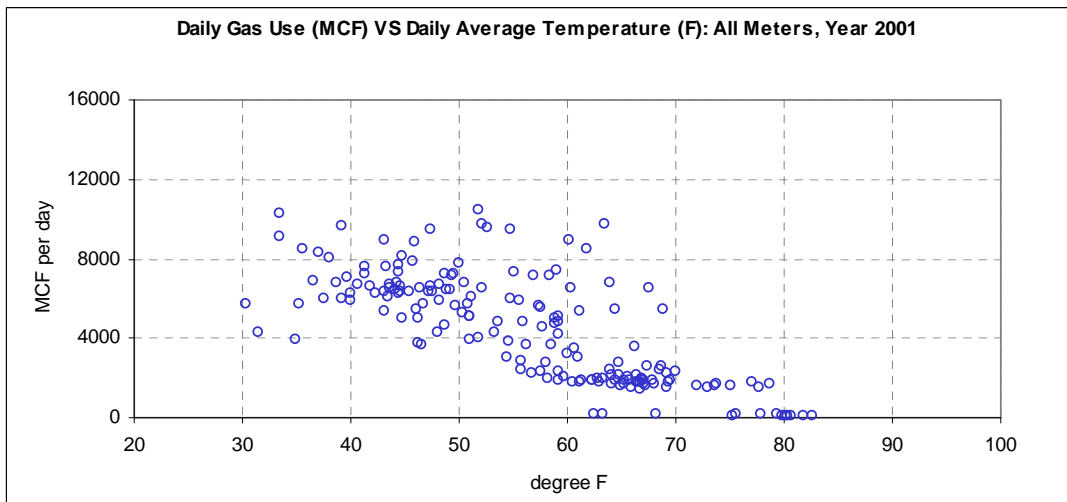
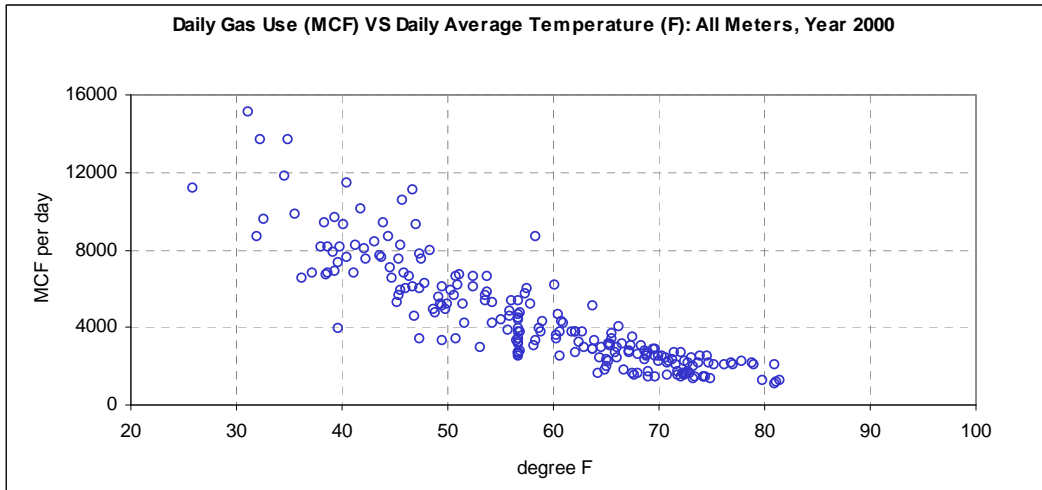
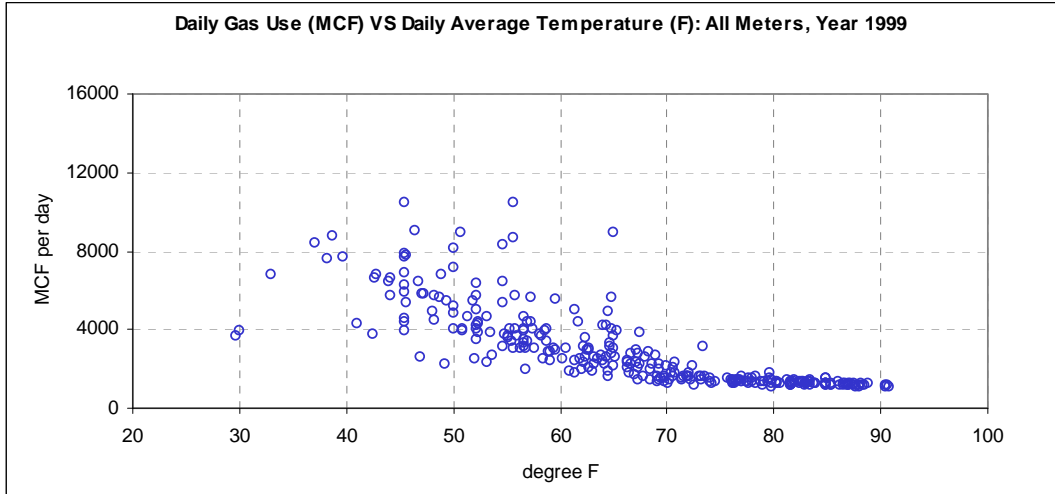


Figure 8.2-20: 1999, 2000, and 2001 Daily Gas Use for All Meters vs Temperature.

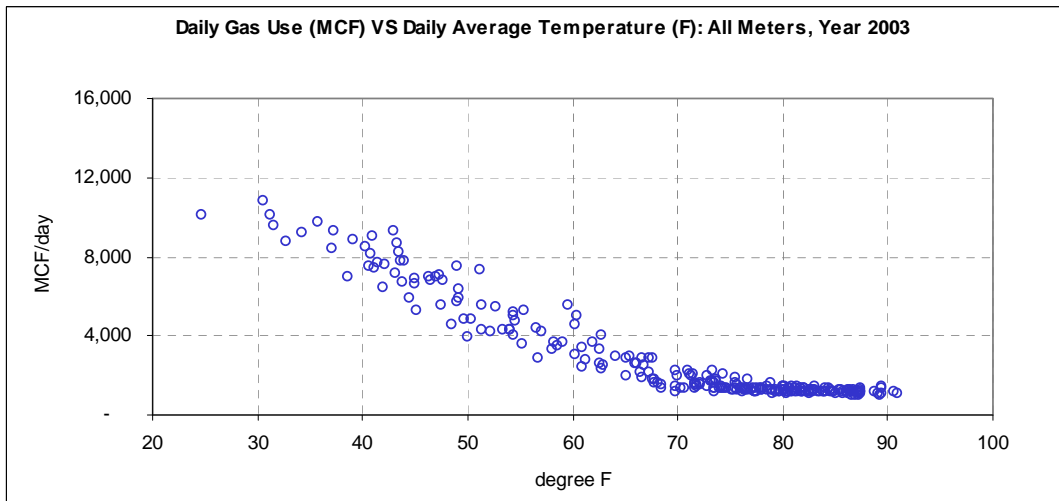
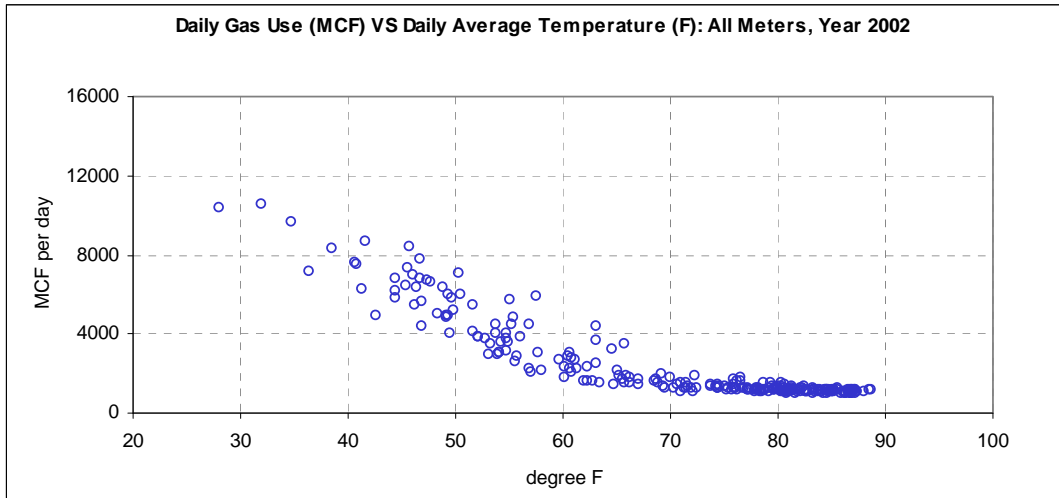


Figure 8.2-21: 2002 and 2003 Daily Gas Use for All Meters vs Temperature (cont.)

Table 8.2-1: Three-parameter Model for 1999-2002 Daily Average Monthly Gas Use for All Meters vs Temperature.

Path and name of input data file = Gas_Month.prn
 Value of no-data flag = -99
 Column number of group field = 3
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 2
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 1
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = Gas_Month.prn

Model type = 3P Heating

Grouping column No = 3

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 2

X1 column number = 1

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 35

R2 = 0.669

AdjR2 = 0.669

RMSE = 1182.5442

CV-RMSE = 41.524%

p = 0.524

DW = 0.952 (p>0)

N1 = 26

N2 = 9

Ycp = 979.5070 (303.6754)

LS = -153.9850 (18.8415)

RS = 0.0000 (0.0000)

Xcp = 74.5980 (0.9351)

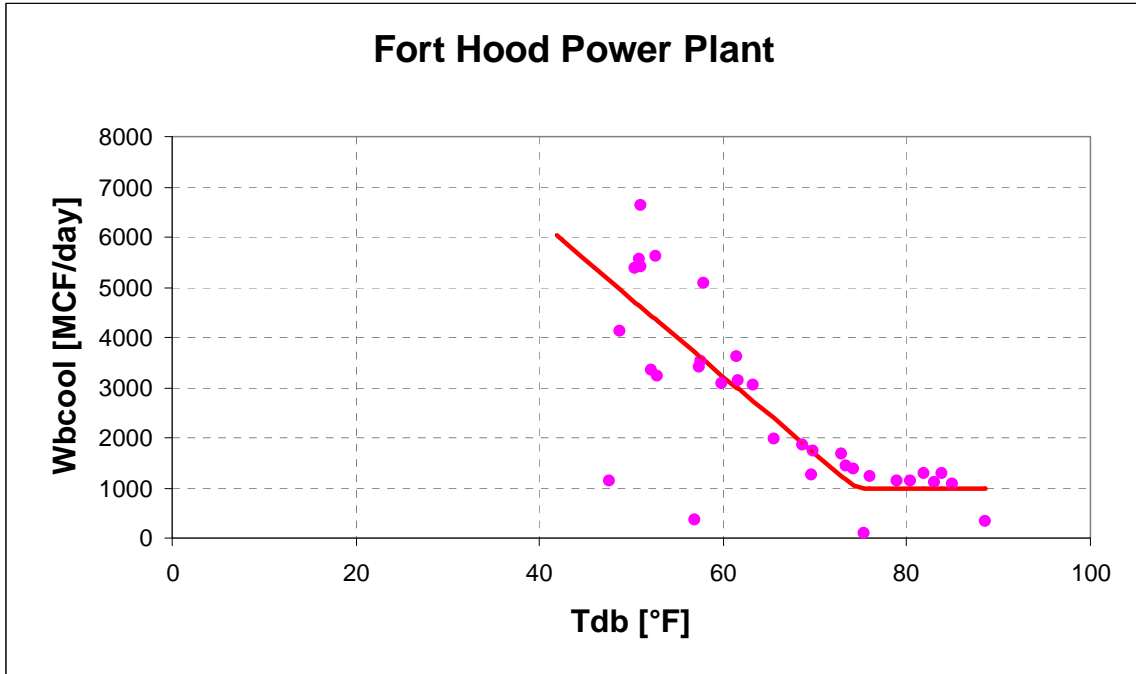


Figure 8.2-22: Three-parameter Model for 1999-2002 Daily Average Monthly Gas Use for All Meters vs Temperature.

Table 8.2-2: Three-parameter Model for 2001 Daily Gas Use for West Meter vs Temperature.

Path and name of input data file = Gas_DailyYear.prn
 Value of no-data flag = -99
 Column number of group field = 11
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 2
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 5
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = Gas_DailyYear.prn

Model type = 3P Heating

Grouping column No = 11

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 2

X1 column number = 5

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 179

R2 = 0.492

AdjR2 = 0.492

RMSE = 236.4809

CV-RMSE = 44.980%

p = 0.690

DW = 0.623 (p>0)

N1 = 168

N2 = 11

Ycp = 123.1954 (35.4512)

LS = -19.9884 (1.5259)

RS = 0.0000 (0.0000)

Xcp = 76.3504 (1.0466)

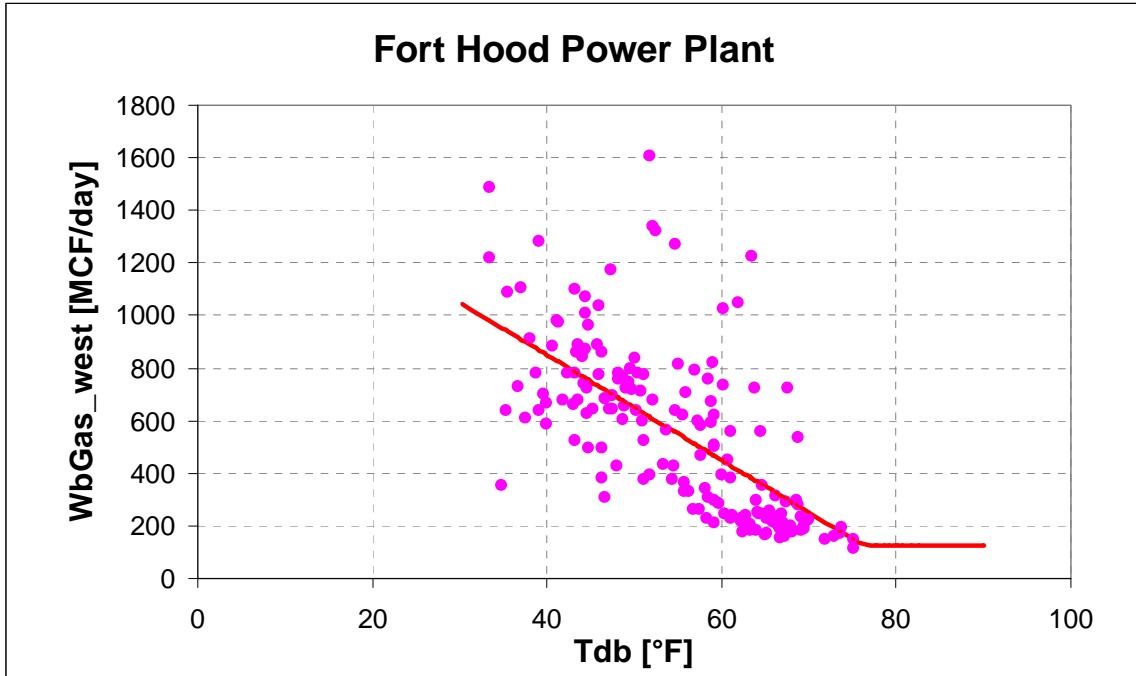


Figure 8.2-23: Three-parameter Model for 2001 Daily Gas Use for West Meter vs Temperature.

Table 8.2-3: Three-parameter Model for 2001 Daily Gas Use for South Meter vs Temperature.

Path and name of input data file = Gas_DailyYear.prn
 Value of no-data flag = -99
 Column number of group field = 11
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 3
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 5
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = Gas_DailyYear.prn

Model type = 3P Heating

Grouping column No = 11

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 3

X1 column number = 5

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 166

R2 = 0.500

AdjR2 = 0.500

RMSE = 1475.5438

CV-RMSE = 36.070%

p = 0.749

DW = 0.509 (p>0)

N1 = 162

N2 = 4

Ycp = 1490.3719 (233.0165)

LS = -136.6563 (10.6642)

RS = 0.0000 (0.0000)

Xcp = 73.8330 (0.9674)

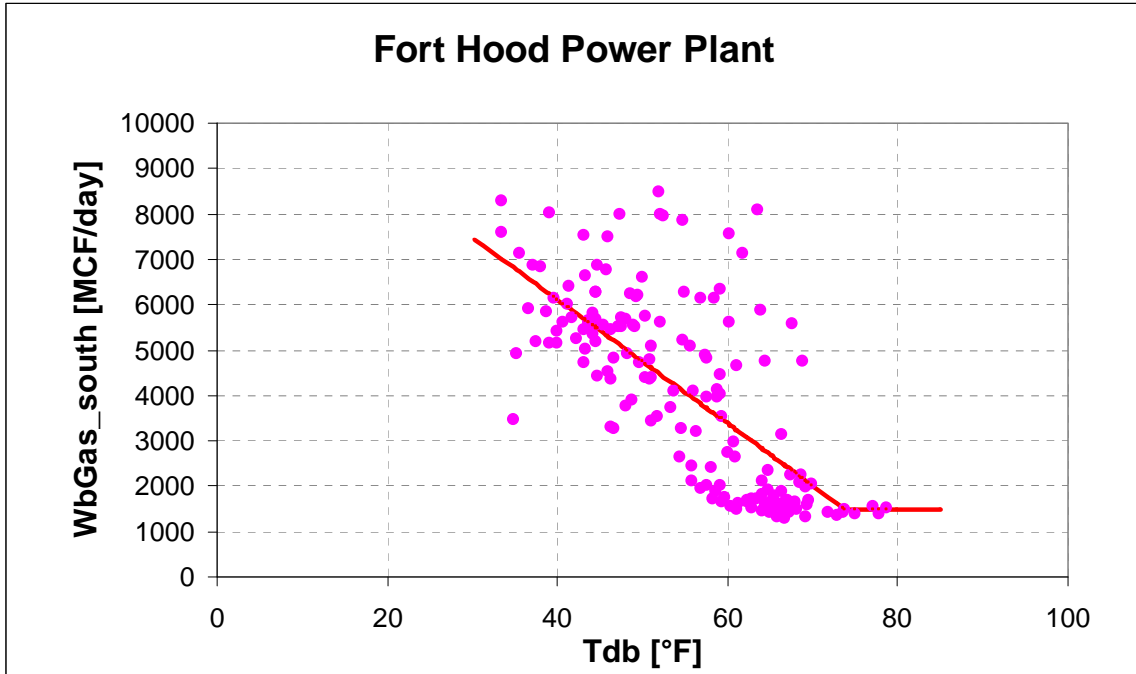


Figure 8.2-24: Three-parameter Model for 2001 Daily Gas Use for South Meter vs Temperature.

Table 8.2-4: Three-parameter Model for 2001 Daily Gas Use for North Meter vs Temperature.

Path and name of input data file = Gas_DailyYear.prn
 Value of no-data flag = -99
 Column number of group field = 11
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 4
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 5
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = Gas_DailyYear.prn

Model type = 3P Heating

Grouping column No = 11

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 4

X1 column number = 5

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 179

R2 = 0.232

AdjR2 = 0.232

RMSE = 128.3171

CV-RMSE = 88.394%

p = 0.178

DW = 1.640 (p>0)

N1 = 168

N2 = 11

Ycp = 23.3006 (19.2362)

LS = -6.0510 (0.8280)

RS = 0.0000 (0.0000)

Xcp = 76.3504 (1.0466)

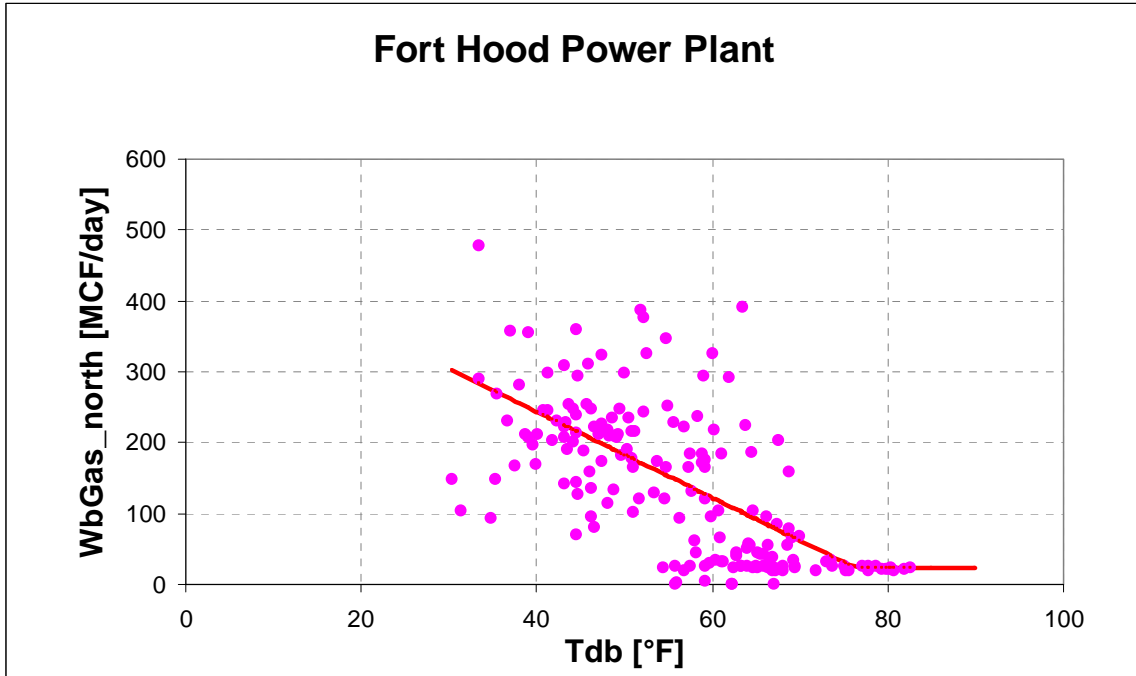


Figure 8.2-25: Three-parameter Model for 2001 Daily Gas Use for North Meter vs Temperature.

Table 8.2-5: Three-parameter Model for 2001 Daily Gas Use for All Meters vs Temperature.

Path and name of input data file = Gas_DailyYear.prn
 Value of no-data flag = -99
 Column number of group field = 11
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 1
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 5
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = Gas_DailyYear.prn

Model type = 3P Heating

Grouping column No = 11

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 1

X1 column number = 5

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 166

R2 = 0.494

AdjR2 = 0.494

RMSE = 1776.2854

CV-RMSE = 36.984%

p = 0.737

DW = 0.533 (p>0)

N1 = 162

N2 = 4

Ycp = 1573.2291 (290.2404)

LS = -161.6982 (12.7874)

RS = 0.0000 (0.0000)

Xcp = 74.8004 (0.9674)

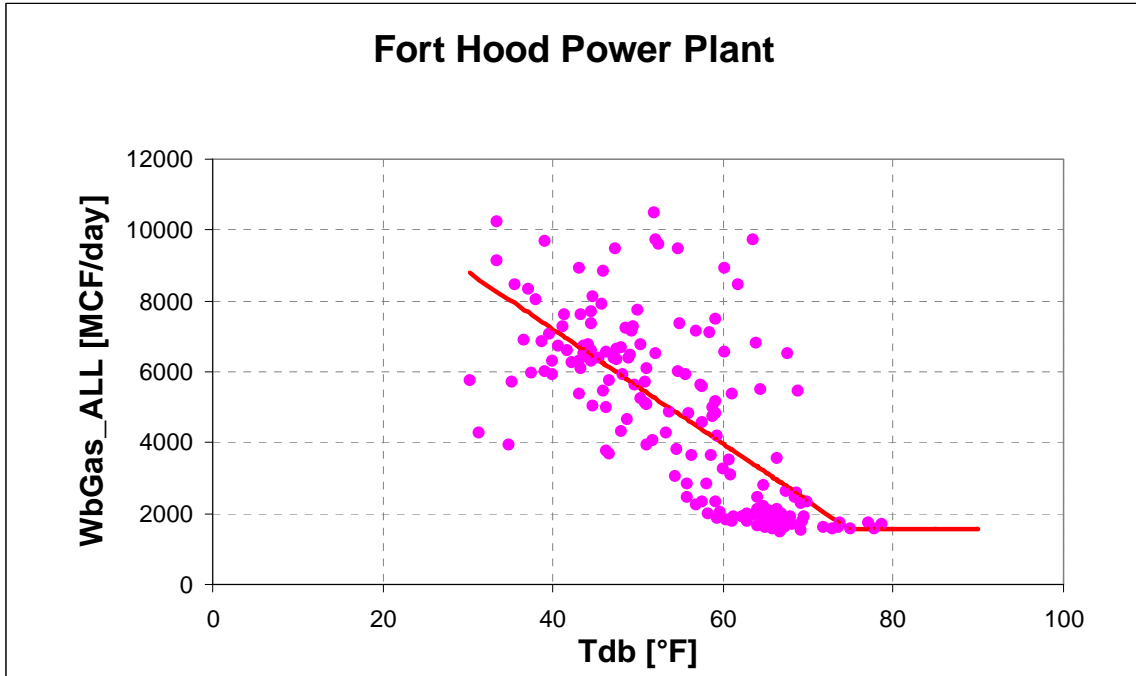


Figure 8.2-26: Three-parameter Model for 2001 Daily Gas Use for All Meters vs Temperature.

Table 8.2-6: Three-parameter Model for 2002 Daily Gas Use for West Meter vs Temperature.

Path and name of input data file = GasALLD_99_03.prn
 Value of no-data flag = -99
 Column number of group field = 6
 Value of valid group field = 3
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 2
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 5
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

```

*****
ASHRAE INVERSE MODELING TOOLKIT (1.9)
*****
Output file name = IMT.Out
*****
Input data file name = GasALLD_99_03.prn
Model type =      3P Heating
Grouping column No = 6
Value for grouping = 3
Residual mode = 1
# of X(Indep.) Var = 1
Y1 column number = 2
X1 column number = 5
X2 column number = 0 (unused)
X3 column number = 0 (unused)
X4 column number = 0 (unused)
X5 column number = 0 (unused)
X6 column number = 0 (unused)
*****
Regression Results
-----

```

```

N = 310
R2 = 0.785
AdjR2 = 0.785
RMSE = 154.7273
CV-RMSE = 47.720%
p = 0.713
DW = 0.575 (p>0)
N1 = 146
N2 = 164
Ycp = 106.9932 ( 10.9227)
LS = -29.6011 ( 0.8839)
RS = 0.0000 ( 0.0000)
Xcp = 68.1120 ( 1.2140)
-----

```

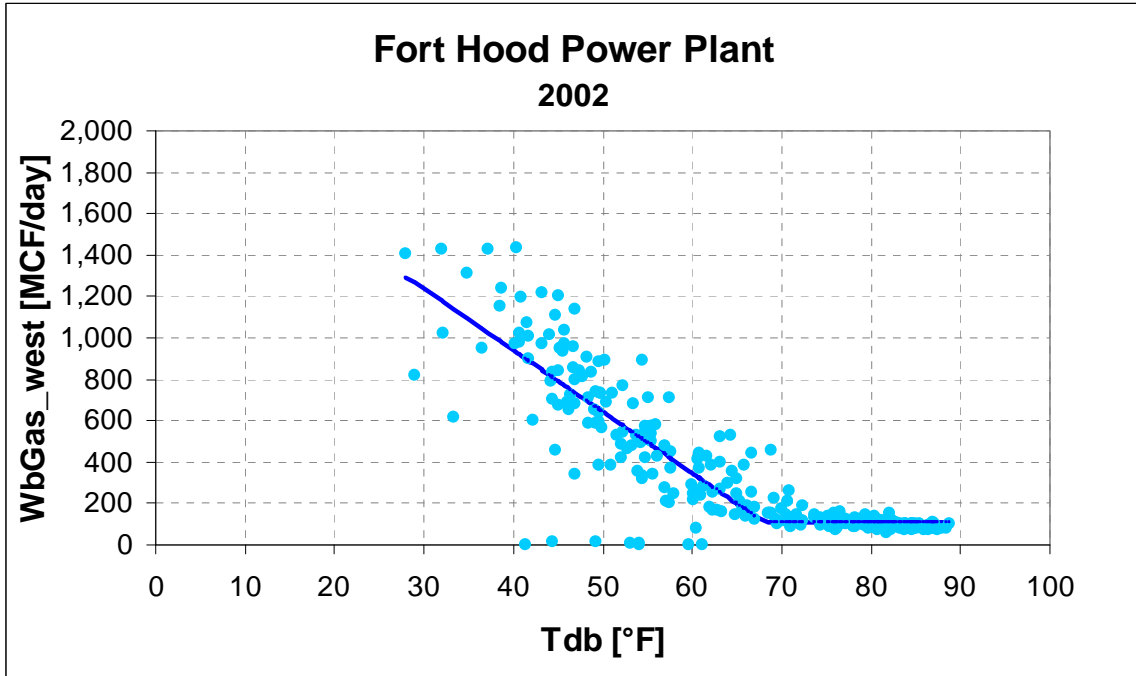


Figure 8.2-27: Three-parameter Model for 2002 Daily Gas Use for West Meter vs Temperature.

Table 8.2-7: Three-parameter Model for 2002 Daily Gas Use for South Meter vs Temperature.

Path and name of input data file = GasALLD_99_03.prn
 Value of no-data flag = -99
 Column number of group field = 6
 Value of valid group field = 3
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 3
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 5
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

```
*****
ASHRAE INVERSE MODELING TOOLKIT (1.9)
*****
Output file name = IMT.Out
*****
Input data file name = GasALLD_99_03.prn
Model type =      3P Heating
Grouping column No =  6
Value for grouping =  3
Residual mode =     1
# of X(Indep.) Var =  1
Y1 column number =   3
X1 column number =   5
X2 column number =  0 (unused)
X3 column number =  0 (unused)
X4 column number =  0 (unused)
X5 column number =  0 (unused)
X6 column number =  0 (unused)
*****
```

Regression Results

```
-----
N = 266
R2 = 0.918
AdjR2 = 0.918
RMSE = 481.1573
CV-RMSE = 23.562%
p = 0.541
DW = 0.917 (p>0)
N1 = 95
N2 = 171
Ycp = 1101.0870 ( 34.2039)
LS = -197.4647 ( 3.6320)
RS = 0.0000 ( 0.0000)
Xcp = 66.8980 ( 1.2140)
-----
```

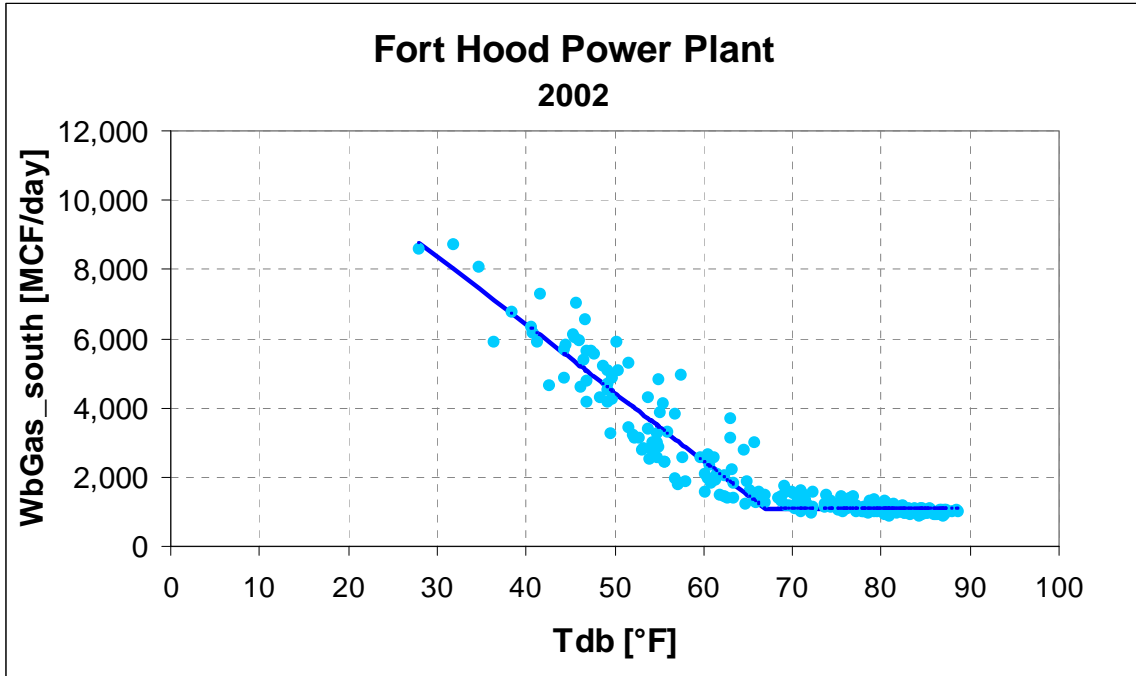


Figure 8.2-28: Three-parameter Model for 2002 Daily Gas Use for South Meter vs Temperature.

Table 8.2-8: Three-parameter Model for 2002 Daily Gas Use for North Meter vs Temperature.

Path and name of input data file = GasALLD_99_03.prn
 Value of no-data flag = -99
 Column number of group field = 6
 Value of valid group field = 3
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 4
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 5
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

```

*****
ASHRAE INVERSE MODELING TOOLKIT (1.9)
*****
Output file name = IMT.Out
*****
Input data file name = GasALLD_99_03.prn
Model type =      3P Heating
Grouping column No =  6
Value for grouping =  3
Residual mode =     1
# of X(Indep.) Var =  1
Y1 column number =   4
X1 column number =   5
X2 column number =  0 (unused)
X3 column number =  0 (unused)
X4 column number =  0 (unused)
X5 column number =  0 (unused)
X6 column number =  0 (unused)
*****
  
```

Regression Results

```

-----
N = 310
R2 = 0.792
AdjR2 = 0.792
RMSE = 59.5065
CV-RMSE = 43.859%
p = 0.578
DW = 0.844 (p>0)
N1 = 178
N2 = 132
Ycp = 34.0432 ( 4.4986)
LS = -10.4875 ( 0.3064)
RS = 0.0000 ( 0.0000)
Xcp = 70.5400 ( 1.2140)
-----
  
```

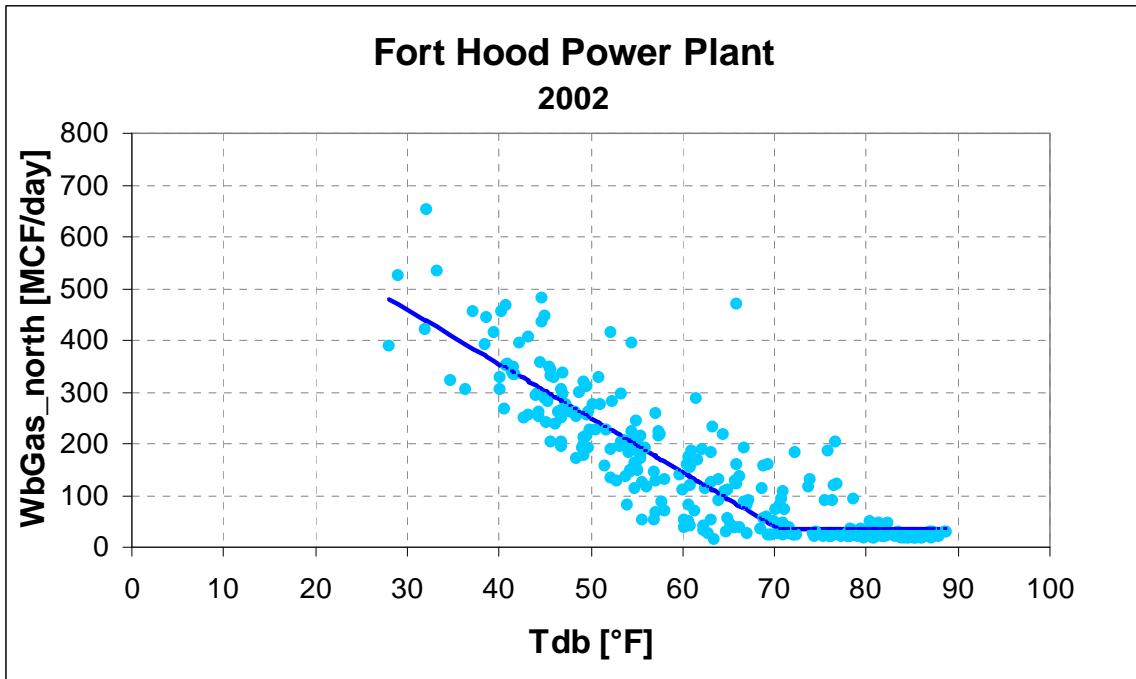


Figure 8.2-29: Three-parameter Model for 2002 Daily Gas Use for North Meter vs Temperature.

Table 8.2-9: Three-parameter Model for 2002 Daily Gas Use for All Meters vs Temperature.

Path and name of input data file = GasALLD_99_03.prn
 Value of no-data flag = -99
 Column number of group field = 6
 Value of valid group field = 3
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 1
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 5
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

```
*****
ASHRAE INVERSE MODELING TOOLKIT (1.9)
*****
Output file name = IMT.Out
*****
Input data file name = GasALLD_99_03.prn
Model type =      3P Heating
Grouping column No =  6
Value for grouping =  3
Residual mode =     1
# of X(Indep.) Var =  1
Y1 column number =   1
X1 column number =   5
X2 column number =  0 (unused)
X3 column number =  0 (unused)
X4 column number =  0 (unused)
X5 column number =  0 (unused)
X6 column number =  0 (unused)
*****
```

Regression Results

```
-----
N = 275
R2 = 0.859
AdjR2 = 0.859
RMSE = 755.4579
CV-RMSE = 33.158%
p = 0.617
DW = 0.764 (p>0)
N1 = 92
N2 = 183
Ycp = 1248.0197 ( 52.0960)
LS = -260.2773 ( 6.3838)
RS = 0.0000 ( 0.0000)
Xcp = 64.4700 ( 1.2140)
-----
```

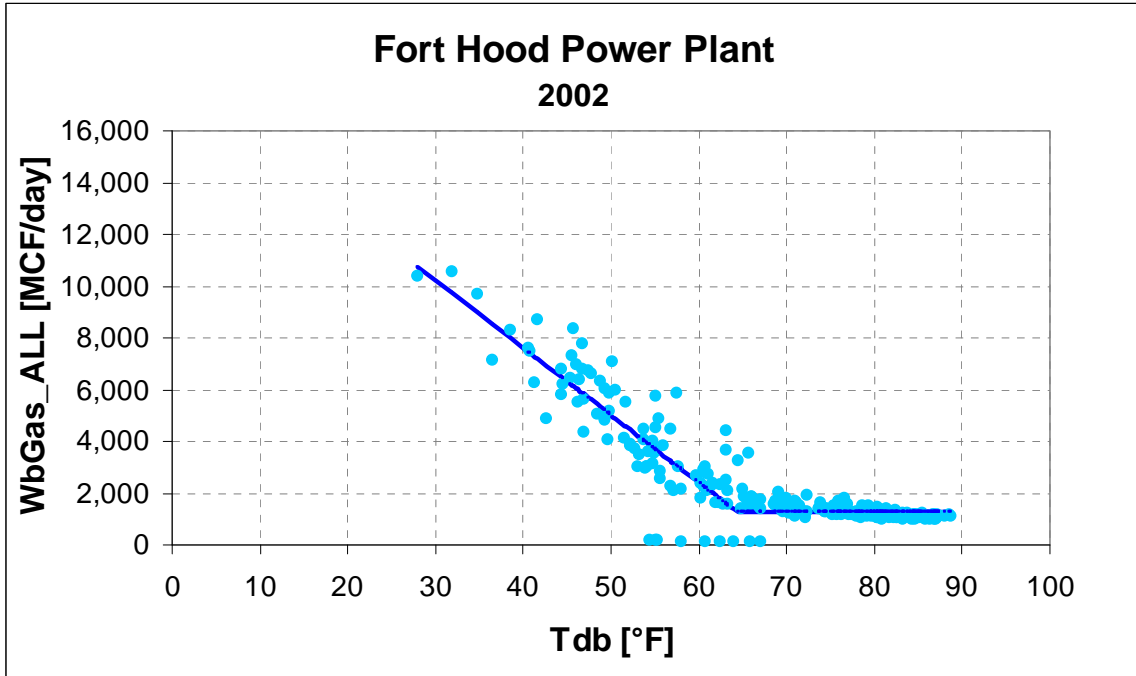


Figure 8.2-30: Three-parameter Model for 2002 Daily Gas Use for All Meters vs Temperature.

Table 8.2-10: Three-parameter Model for 2003 Daily Gas Use for West Meter vs. Temperature

Path and name of input data file = GasALLD_99_03.prn
 Value of no-data flag = -99
 Column number of group field = 6
 Value of valid group field = 4
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 2
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 5
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = GasALLD_99_03.prn

Model type = 3P Heating

Grouping column No = 6

Value for grouping = 4

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 2

X1 column number = 5

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 253

R2 = 0.924

AdjR2 = 0.924

RMSE = 108.4132

CV-RMSE = 34.458%

p = 0.312

DW = 1.374 (p>0)

N1 = 104

N2 = 149

Ycp = 74.1743 (8.0823)

LS = -33.5851 (0.6067)

RS = 0.0000 (0.0000)

Xcp = 71.0410 (1.3226)

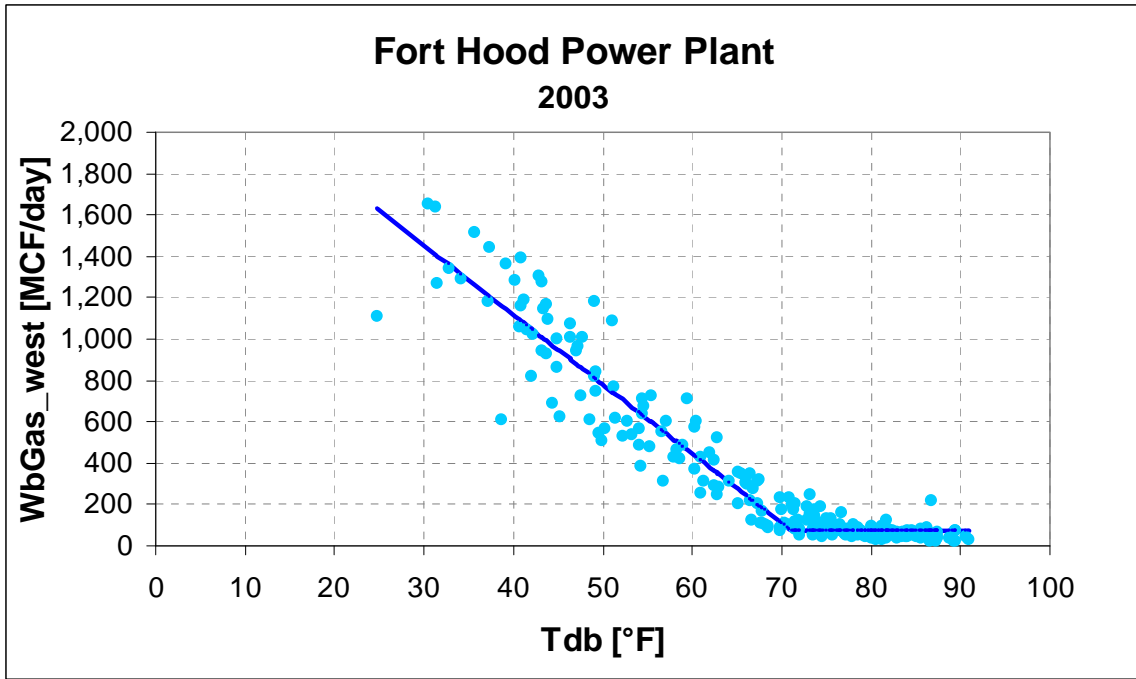


Figure 8.2-31: Three-parameter Model for 2003 Daily Gas Use for West Meter vs. Temperature.

Table 8.2-11: Three-parameter Model for 2003 Daily Gas Use for South Meter vs. Temperature

Path and name of input data file = GasALLD_99_03.prn
 Value of no-data flag = -99
 Column number of group field = 6
 Value of valid group field = 4
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 3
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 5
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = GasALLD_99_03.prn
 Model type = 3P Heating
 Grouping column No = 6
 Value for grouping = 4
 Residual mode = 1
 # of X(Indep.) Var = 1
 Y1 column number = 3
 X1 column number = 5
 X2 column number = 0 (unused)
 X3 column number = 0 (unused)
 X4 column number = 0 (unused)
 X5 column number = 0 (unused)
 X6 column number = 0 (unused)

Regression Results

 N = 253
 R2 = 0.953
 AdjR2 = 0.953
 RMSE = 426.9682
 CV-RMSE = 17.756%
 p = 0.363
 DW = 1.273 (p>0)
 N1 = 97
 N2 = 156
 Ycp = 1222.7375 (31.5479)
 LS = -178.2902 (2.5001)
 RS = 0.0000 (0.0000)
 Xcp = 69.7184 (1.3226)

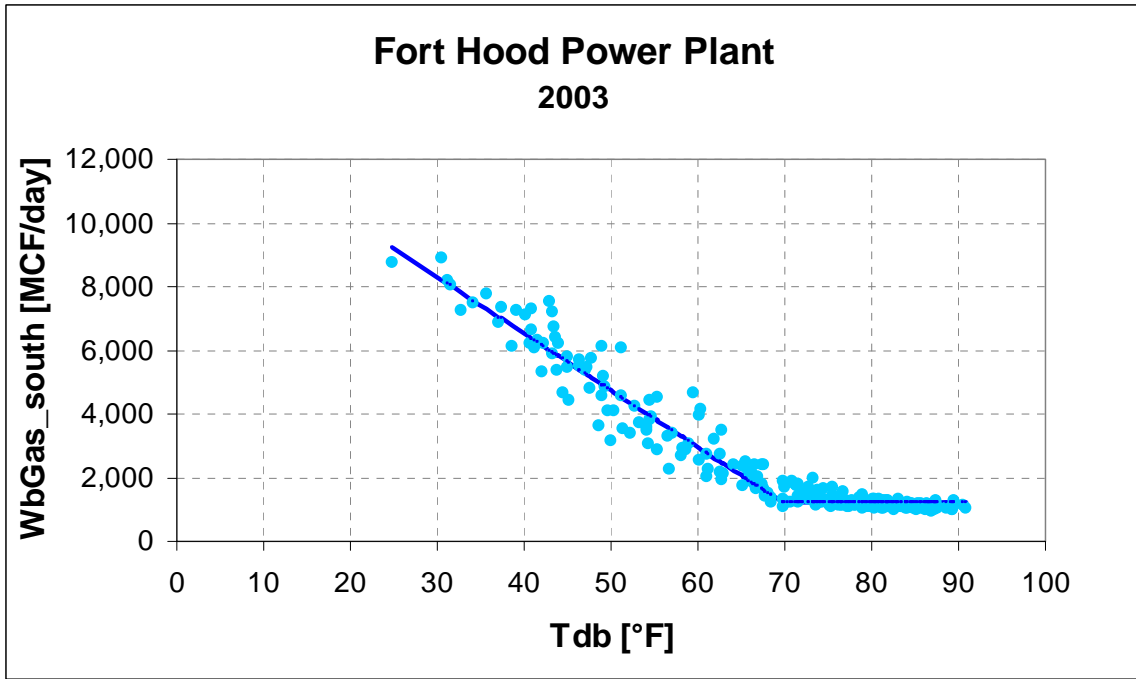


Figure 8.2-32: Three-parameter Model for 2003 Daily Gas Use for South Meter vs. Temperature.

Table 8.2-12: Three-parameter Model for 2003 Daily Gas Use for North Meter vs. Temperature

Path and name of input data file = GasALLD_99_03.prn
 Value of no-data flag = -99
 Column number of group field = 6
 Value of valid group field = 4
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 4
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 5
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = GasALLD_99_03.prn
 Model type = 3P Heating
 Grouping column No = 6
 Value for grouping = 4
 Residual mode = 1
 # of X(Indep.) Var = 1
 Y1 column number = 4
 X1 column number = 5
 X2 column number = 0 (unused)
 X3 column number = 0 (unused)
 X4 column number = 0 (unused)
 X5 column number = 0 (unused)
 X6 column number = 0 (unused)

Regression Results

 N = 251
 R2 = 0.634
 AdjR2 = 0.634
 RMSE = 82.3311
 CV-RMSE = 72.136%
 p = 0.689
 DW = 0.620 (p>0)
 N1 = 141
 N2 = 110
 Ycp = 34.7166 (6.4535)
 LS = -8.2231 (0.3962)
 RS = 0.0000 (0.0000)
 Xcp = 76.3314 (1.3226)

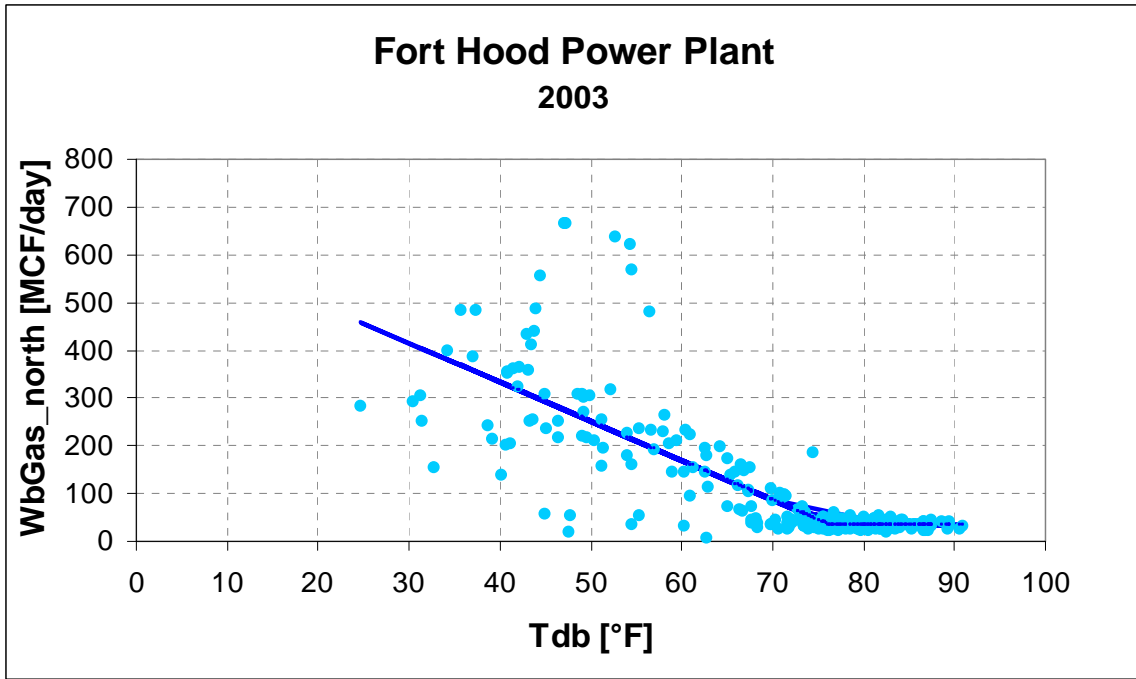


Figure 8.2-33: Three-parameter Model for 2003 Daily Gas Use for North Meter vs. Temperature.

Table 8.2-13: Three-parameter Model for 2003 Daily Gas Use for All Meters vs. Temperature.

Path and name of input data file = GasALLD_99_03.prn
 Value of no-data flag = -99
 Column number of group field = 6
 Value of valid group field = 4
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 1
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 5
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = GasALLD_99_03.prn

Model type = 3P Heating

Grouping column No = 6

Value for grouping = 4

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 1

X1 column number = 5

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 253

R2 = 0.955

AdjR2 = 0.955

RMSE = 524.4490

CV-RMSE = 18.515%

p = 0.337

DW = 1.325 (p>0)

N1 = 104

N2 = 149

Ycp = 1305.1030 (39.0983)

LS = -213.3494 (2.9350)

RS = 0.0000 (0.0000)

Xcp = 71.0410 (1.3226)

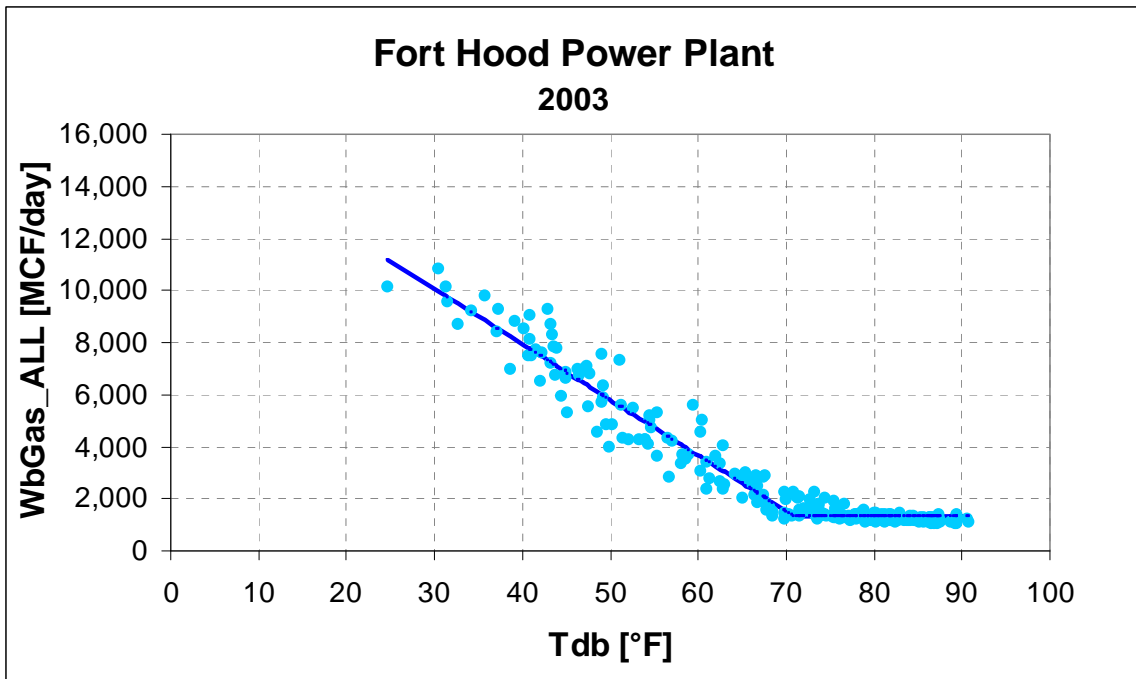


Figure 8.2-34: Three-parameter Model for 2003 Daily Gas Use for All Meters vs. Temperature.

Table 8.2-14: Three-parameter Model for 1999, 2000, 2001 and 2002 Daily Gas Use for All Meters vs Temperature.

Path and name of input data file = GasALLDaily.prn
 Value of no-data flag = -99
 Column number of group field = 9
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 1
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 2
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = GasALLDaily.prn

Model type = 3P Heating

Grouping column No = 9

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 1

X1 column number = 2

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 299

R2 = 0.672

AdjR2 = 0.672

RMSE = 1152.5748

CV-RMSE = 39.487%

p = 0.656

DW = 0.689 (p>0)

N1 = 202

N2 = 97

Ycp = 1299.4341 (93.5349)

LS = -150.4830 (6.0975)

RS = 0.0000 (0.0000)

Xcp = 74.8884 (1.2232)

Path and name of input data file = GasALLDaily.prn

Value of no-data flag = -99

Column number of group field = 9

Value of valid group field = 1

Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 3
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 4
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = GasALLDaily.prn

Model type = 3P Heating

Grouping column No = 9

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 3

X1 column number = 4

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 218

R2 = 0.785

AdjR2 = 0.785

RMSE = 1269.1332

CV-RMSE = 28.238%

p = 0.587

DW = 0.814 (p>0)

N1 = 160

N2 = 58

Ycp = 1982.2001 (123.9997)

LS = -222.1120 (7.9017)

RS = 0.0000 (0.0000)

Xcp = 68.0856 (1.1112)

Path and name of input data file = GasALLDaily.prn

Value of no-data flag = -99

Column number of group field = 9

Value of valid group field = 1

Residual file needed (1 yes, 0 no) = 1

Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4

Column number of dependent Y variable = 5

Number of independent X variables (0 to 6) = 1

Column number of independent variable X1 = 6

Column number of independent variable X2 = 0

Column number of independent variable X3 = 0

Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = GasALLDaily.prn

Model type = 3P Heating

Grouping column No = 9

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 5

X1 column number = 6

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 166

R2 = 0.494

AdjR2 = 0.494

RMSE = 1776.2854

CV-RMSE = 36.984%

p = 0.737

DW = 0.533 (p>0)

N1 = 162

N2 = 4

Ycp = 1573.2291 (290.2404)

LS = -161.6982 (12.7874)

RS = 0.0000 (0.0000)

Xcp = 74.8004 (0.9674)

Path and name of input data file = GasALLD_99_03.prn

Value of no-data flag = -99

Column number of group field = 6

Value of valid group field = 3

Residual file needed (1 yes, 0 no) = 1

Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4

Column number of dependent Y variable = 1

Number of independent X variables (0 to 6) = 1

Column number of independent variable X1 = 5

Column number of independent variable X2 = 0

Column number of independent variable X3 = 0

Column number of independent variable X4 = 0

Column number of independent variable X5 = 0

Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = GasALLD_99_03.prn

Model type = 3P Heating

Grouping column No = 6

Value for grouping = 3

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 1

X1 column number = 5

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 275
 R2 = 0.859
 AdjR2 = 0.859
 RMSE = 755.4579
 CV-RMSE = 33.158%
 p = 0.617
 DW = 0.764 (p>0)
 N1 = 92
 N2 = 183
 Ycp = 1248.0197 (52.0960)
 LS = -260.2773 (6.3838)
 RS = 0.0000 (0.0000)
 Xcp = 64.4700 (1.2140)

Path and name of input data file = GasALLD_99_03.prn

Value of no-data flag = -99

Column number of group field = 6

Value of valid group field = 4

Residual file needed (1 yes, 0 no) = 1

Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4

Column number of dependent Y variable = 1

Number of independent X variables (0 to 6) = 1

Column number of independent variable X1 = 5

Column number of independent variable X2 = 0

Column number of independent variable X3 = 0

Column number of independent variable X4 = 0

Column number of independent variable X5 = 0

Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = GasALLD_99_03.prn
 Model type = 3P Heating
 Grouping column No = 6
 Value for grouping = 4
 Residual mode = 1
 # of X(Indep.) Var = 1
 Y1 column number = 1
 X1 column number = 5
 X2 column number = 0 (unused)
 X3 column number = 0 (unused)
 X4 column number = 0 (unused)
 X5 column number = 0 (unused)
 X6 column number = 0 (unused)

Regression Results

 N = 253
 R2 = 0.955
 AdjR2 = 0.955
 RMSE = 524.4490
 CV-RMSE = 18.515%
 p = 0.337
 DW = 1.325 (p>0)
 N1 = 104
 N2 = 149
 Ycp = 1305.1030 (39.0983)
 LS = -213.3494 (2.9350)
 RS = 0.0000 (0.0000)
 Xcp = 71.0410 (1.3226)

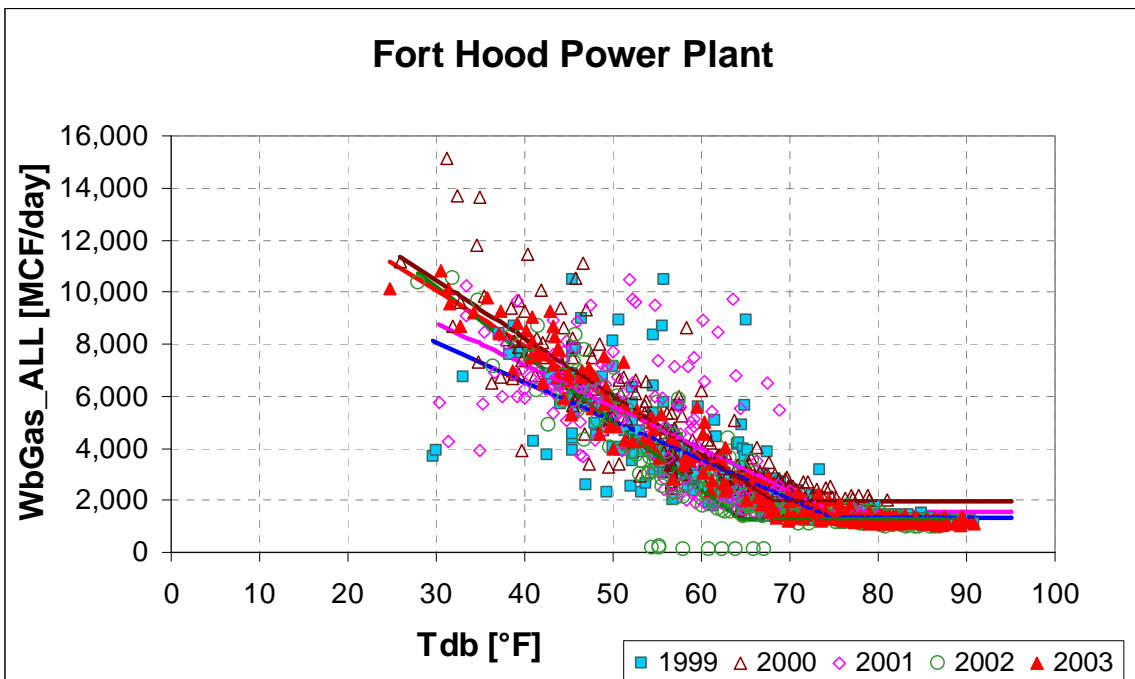


Figure 8.2-35: Three-parameter models for 1999, 2000, 2001, 2002 and 2003 Daily Gas Use for All Meters vs Temperature.

Table 8.2-15: Three-parameter Model for Combined 1999, 2000, 2001 and 2002 Daily Gas Use for All Meters vs Temperature.

Path and name of input data file = GasALLD_99_03.prn
 Value of no-data flag = -99
 Column number of group field = 7
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 1
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 5
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = GasALLD_99_03.prn

Model type = 3P Heating

Grouping column No = 7

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 1

X1 column number = 5

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 1223

R2 = 0.776

AdjR2 = 0.776

RMSE = 1185.8409

CV-RMSE = 36.337%

p = 0.681

DW = 0.638 (p>0)

N1 = 781

N2 = 442

Ycp = 1263.9291 (45.7591)

LS = -191.6127 (2.9444)

RS = 0.0000 (0.0000)

Xcp = 72.3636 (1.3226)

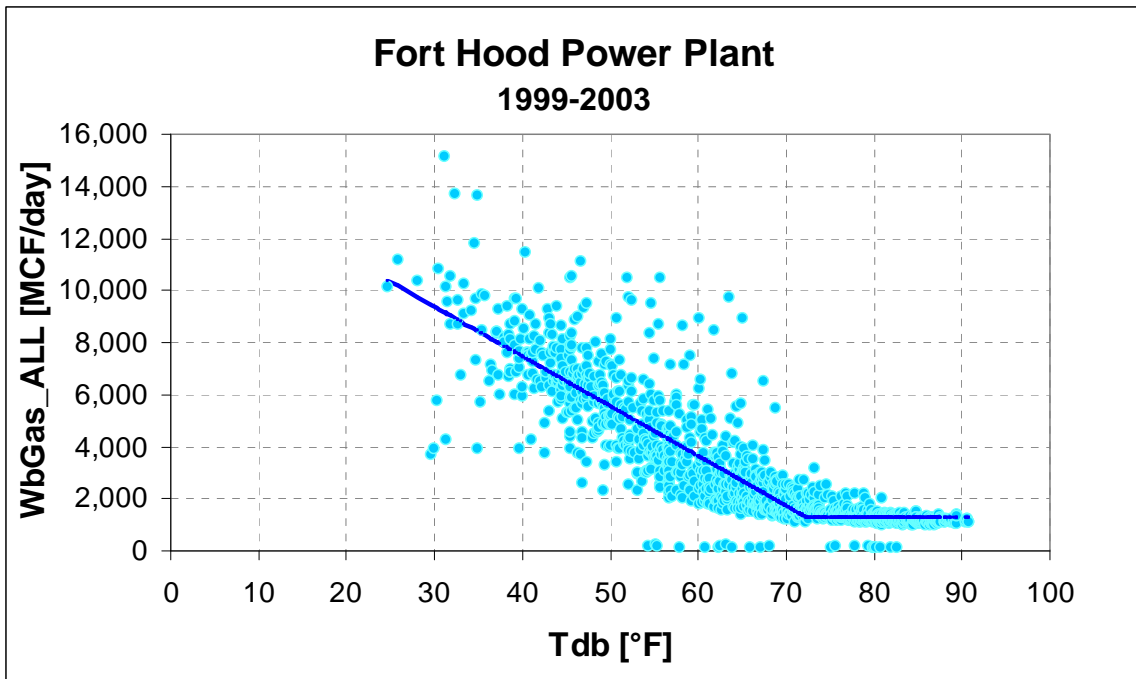


Figure 8.2-36: Three-parameterModel for Combined 1999, 2000, 2001,2002 and 2003 Daily Gas Use for All Meters vs Temperature.

9. WHOLE-BASE ELECTRICITY ANALYSIS

In this section an analysis is provided for the corrected electricity use from the main, west and north electrical substations (logger #941, 946, and 948).

9.1. Main Electrical Substation

9.1.1. Daily Electricity Use

Figure 9.1.1-1 shows the time series plot of the daily electricity use of Main Electrical Substation for the period June 2003 through August 2003. The daily electricity use versus temperature for the same period is plotted in Figure 9.1.1-2. Given the short duration of data that were available for analysis in 2002/2003, an additional recording period is recommended to provide a more meaningful weather dependent model.

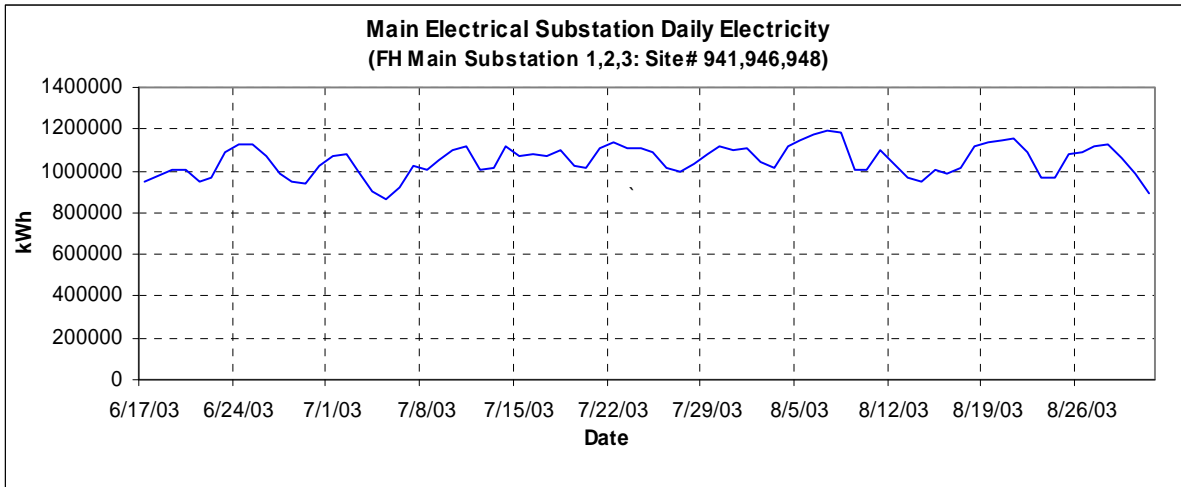


Figure 9.1.1-1: Time series plot of daily electricity use of Main Electrical Substation

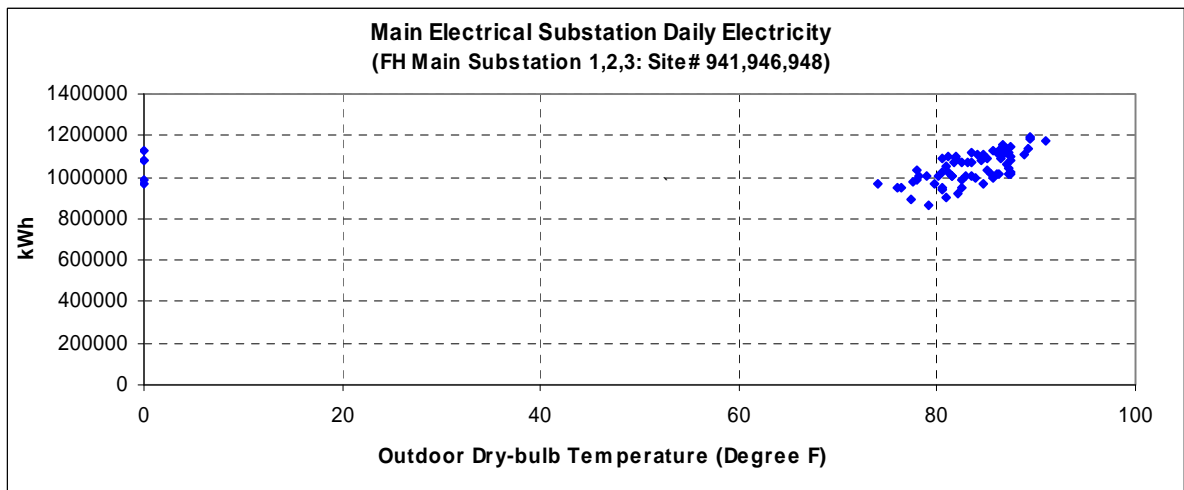


Figure 9.1.1-2: Daily electricity use of Main Electrical Substation vs. temperature

9.1.2. 24-hour Profiles of Weather-Independent Electricity Loads

This section contains the weather-independent analysis for the Main Electrical Substation, which utilizes 24-hour profiles that were developed using ASHRAE's 1093-RP diversity factor procedures. The methodology used to derive the 24-hour weekday, weekend profiles is based on an analysis developed for ASHRAE research project 1093-RP that uses percentiles, where the 10th, 25th, 75th, and 90th percentiles are reported for each hour of the day by daytype (i.e., weekday, weekend).

Figure 9.1.2-1 shows the rescaled time series plot of the Main Electrical Substation hourly electricity data collected by the loggers for the period June 2003 through August 2003, which is used to plot the 24-hour profiles. In Figure 9.1.2-2 the 24-hour weekday, weekend profiles are presented for the electricity use, and in Table 9.1.2-1 the data values shown in Figure 9.1.2-2 are displayed. In general, using the 10th and 90th percentiles as a guide, the electricity use for the main substation is very well described by a 24 hour profile, varying by less than 10 MW from the predicted profiles.

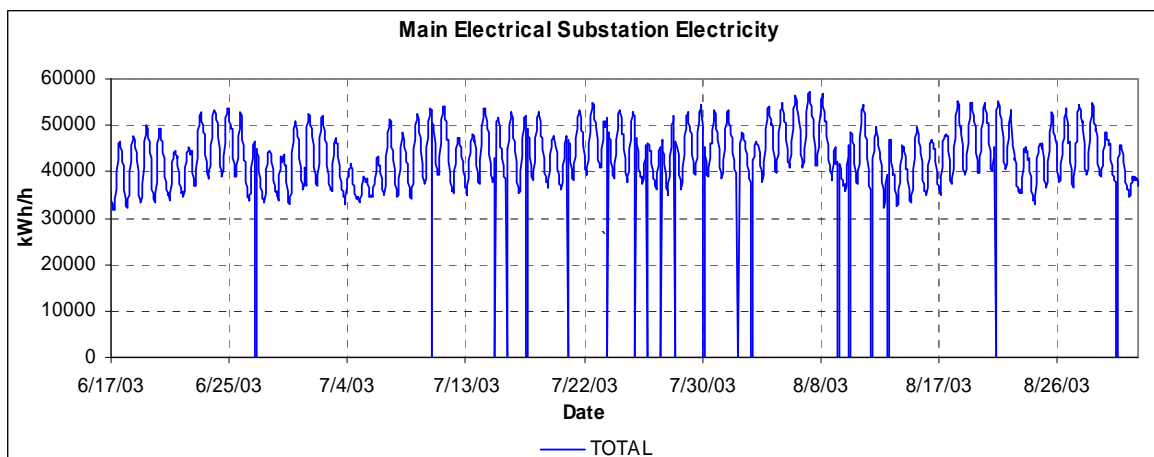


Figure 9.1.2-1: Time series plot of hourly electricity use of Main Electrical Substation

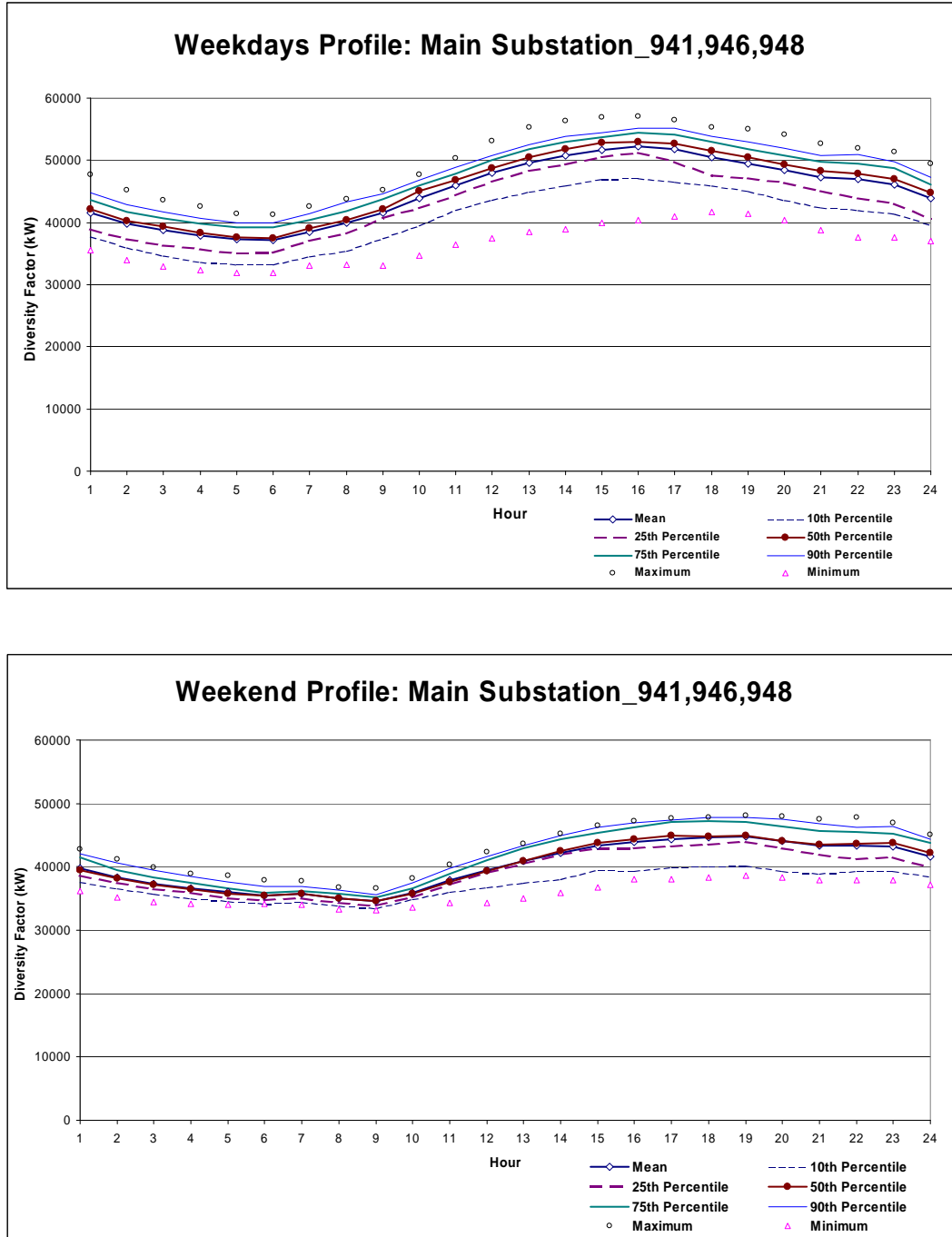


Figure 9.1.2-2: 24-hour weekday, weekend profiles for Main Electrical Substation

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS

Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	41595.92	44551.98	38639.86	37799.97	38899.30	42189.69	43620.60	44727.73	47758.46	35589.70
2	39822.22	42604.51	37039.93	36037.06	37383.04	40193.68	41711.54	42868.49	45188.02	33935.67
3	38740.34	41442.82	36037.87	34734.63	36348.36	39332.46	40644.21	41649.56	43672.41	32871.17
4	37889.03	40536.01	35242.05	33725.01	35706.18	38374.08	39855.37	40631.90	42579.10	32288.04
5	37281.57	39857.81	34705.34	33267.41	34957.48	37664.73	39268.67	39961.75	41485.21	31898.75
6	37190.16	39776.28	34604.04	33241.46	35099.87	37394.24	39147.86	39964.58	41303.16	31874.50
7	38547.09	41149.67	35944.51	34486.80	36964.28	39045.07	40449.41	41343.28	42600.56	33096.38
8	39880.67	42771.39	36989.95	35457.93	38243.13	40445.74	41901.95	43255.81	43756.11	33252.40
9	41622.66	44516.75	38728.57	37443.24	40728.21	42208.31	43726.05	44625.20	45222.87	33041.96
10	43930.70	46947.26	40914.15	39468.86	42328.71	45016.82	45945.50	46826.30	47741.56	34729.13
11	46000.40	48905.05	43095.75	41947.42	44292.10	46842.97	47896.68	48930.91	50335.00	36501.30
12	47941.77	51003.70	44879.83	43544.14	46507.53	48754.36	50090.53	50792.67	53154.42	37480.08
13	49602.26	52830.17	46374.36	44943.24	48301.23	50444.38	51793.29	52560.53	55330.00	38467.15
14	50815.22	54128.80	47501.63	45892.98	49259.66	51823.88	53040.01	53783.53	56299.82	38960.65
15	51701.55	55011.13	48391.98	47015.11	50439.75	52870.59	53684.86	54421.22	56941.34	39882.10
16	52176.03	55537.89	48814.16	47144.44	51189.27	53022.34	54453.24	55192.74	57025.46	40437.73
17	51775.06	55201.11	48349.01	46538.83	49697.57	52676.39	54132.17	55176.57	56433.37	40977.48
18	50470.41	53750.54	47190.28	45953.56	47618.11	51442.89	52985.95	53824.63	55275.28	41665.01
19	49459.23	52683.81	46234.65	45114.88	47085.81	50454.04	51876.76	52992.59	55019.78	41433.82
20	48411.99	51721.83	45102.15	43616.24	46364.73	49323.45	50711.49	51895.99	54204.86	40432.58
21	47253.51	50636.66	43870.36	42395.15	45050.67	48281.43	49710.79	50751.91	52611.53	38783.47
22	46935.56	50493.72	43377.40	42038.36	43945.45	47785.85	49495.72	50905.03	51982.75	37658.03
23	46149.94	49572.11	42727.78	41425.08	43060.46	46990.19	48798.82	49745.86	51304.71	37548.90
24	43925.47	47060.69	40790.25	39705.97	40592.81	44725.52	46154.04	47217.49	49521.09	37030.67
Daily Values	1073543.39	1147745.69	999341.08	981224.26	1025064.01	1092783.82	1120538.18	1143563.92	1189249.69	836527.94
Hourly Daily Sum	1079118.77	1152691.67	1005545.87	972937.76	1030063.69	1097303.06	1131095.51	1154046.27	1196746.89	879836.66

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND

Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	39718.38	41651.50	37785.27	37595.48	38632.26	39500.01	41480.48	42096.05	42771.82	36208.52
2	38303.93	40002.90	36604.96	36553.33	37445.83	38184.23	39504.15	40649.34	41131.13	35195.96
3	37348.40	38892.37	35804.44	35773.13	36505.60	37168.17	38367.05	39469.54	39959.64	34416.55
4	36574.71	37930.58	35218.84	35007.18	35896.71	36399.49	37452.51	38515.34	38839.01	34229.10
5	35978.55	37256.42	34700.67	34659.84	35014.68	35807.28	36643.53	37628.64	38605.57	34073.67
6	35524.90	36650.58	34399.22	34174.75	34666.00	35454.51	35942.26	36912.69	37930.31	34098.15
7	35681.15	36723.63	34638.67	34386.91	35046.56	35735.55	36122.48	36830.24	37780.39	33971.47
8	35030.70	36065.37	33996.02	33815.75	34330.83	35085.70	35731.26	36266.88	36816.56	33301.61
9	34586.41	35533.74	33639.08	33402.66	33920.82	34659.45	35099.58	35548.41	36538.24	33178.60
10	35954.84	37144.72	34764.97	34872.37	35196.42	35741.36	36621.95	37419.34	38120.00	33645.31
11	37828.99	39442.10	36215.88	36095.19	37220.07	37609.99	38850.53	39727.97	40329.13	34294.19
12	39451.04	41659.02	37243.06	36815.48	39028.16	39348.64	41025.51	41675.83	42353.54	34240.42
13	40866.62	43422.17	38311.06	37521.09	40489.56	40853.23	42909.09	43316.61	43590.36	35024.11
14	42212.59	45139.31	39285.88	37988.73	41914.49	42526.64	44413.44	44957.92	45223.35	35900.98
15	43408.48	46303.45	40513.52	39431.78	42938.98	43770.51	45369.83	46263.04	46485.12	36809.98
16	43946.67	46876.41	41016.93	39374.81	42982.18	44354.04	46250.79	46869.87	47260.80	38048.81
17	44399.46	47429.49	41369.43	39927.32	43140.38	44870.22	47047.60	47315.32	47621.22	38008.20
18	44664.35	47723.49	41605.20	40041.62	43534.82	44802.99	47270.09	47730.50	47796.57	38352.56
19	44782.30	47796.96	41767.63	40168.72	43944.23	44930.59	47035.67	47868.74	48113.37	38578.06
20	44116.99	47240.23	40993.76	39265.04	42981.45	44132.83	46404.62	47544.68	47991.49	38359.20
21	43406.13	46411.47	40400.78	38958.96	41850.23	43465.34	45594.86	46723.49	47565.26	37953.49
22	43317.36	46298.04	40336.67	39263.95	41190.60	43629.67	45528.11	46270.68	47866.29	37924.74
23	43242.72	46077.48	40407.97	39319.07	41472.08	43750.24	45216.61	46428.04	46969.80	37962.67
24	41698.29	44214.13	39182.45	38464.87	39870.66	42129.53	43752.58	44419.17	45074.56	37137.32
Daily Values	962043.96	1009022.23	915065.70	903572.62	943020.74	964574.64	1002595.54	1016971.80	1024120.04	865575.62
Hourly Daily Sum	962043.96	1013885.57	910202.35	892878.02	939213.59	963910.23	999634.58	1018448.34	1032733.54	860913.66

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 9.1.2-1: 24-hour weekday, weekend profiles for whole-building electricity use for Main Electrical Substation

9.2. West Electrical Substation

9.2.1. Daily Electricity Use

Figure 9.2.1-1 shows the time series plot of the daily electricity use of West Electrical Substation for the periods February 2003 through April 2003 and July 2003 to August 2003. The daily electricity use versus temperature for the same period is plotted in Figure 9.2.1-2. Even though there was missing data from the period of April through July, the weather dependency of the west substation is surprisingly well represented and appears to be mostly driven by a baseline load at about 25 to 30 MW below 70 F, rising in a linear fashion as temperatures rise above 70 F. There appears to be a small amount of heating electrical use in the data as well, although more data would be needed to confirm these trends.

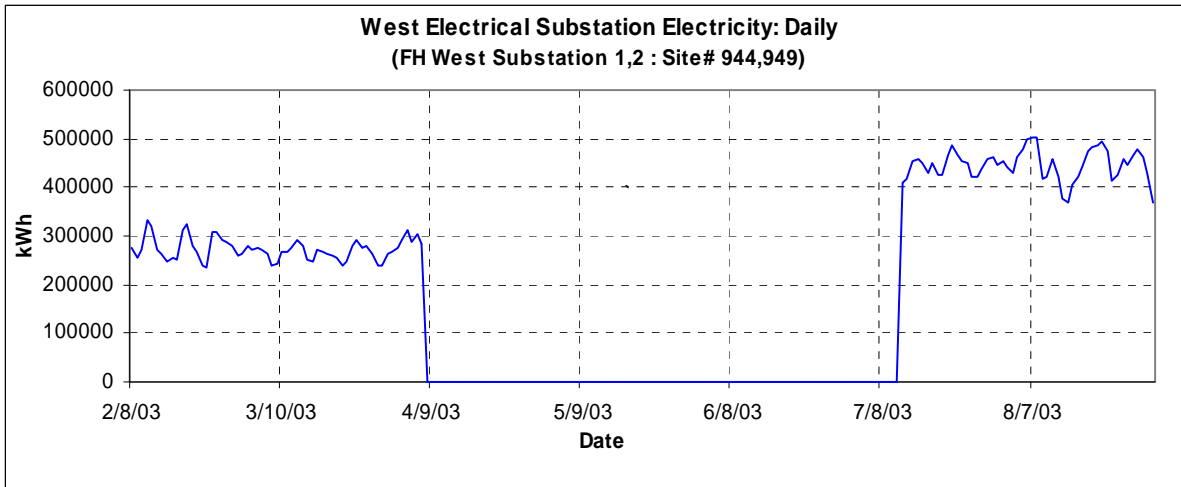


Figure 9.2.1-1: Time series plot of daily electricity use of West Electrical Substation

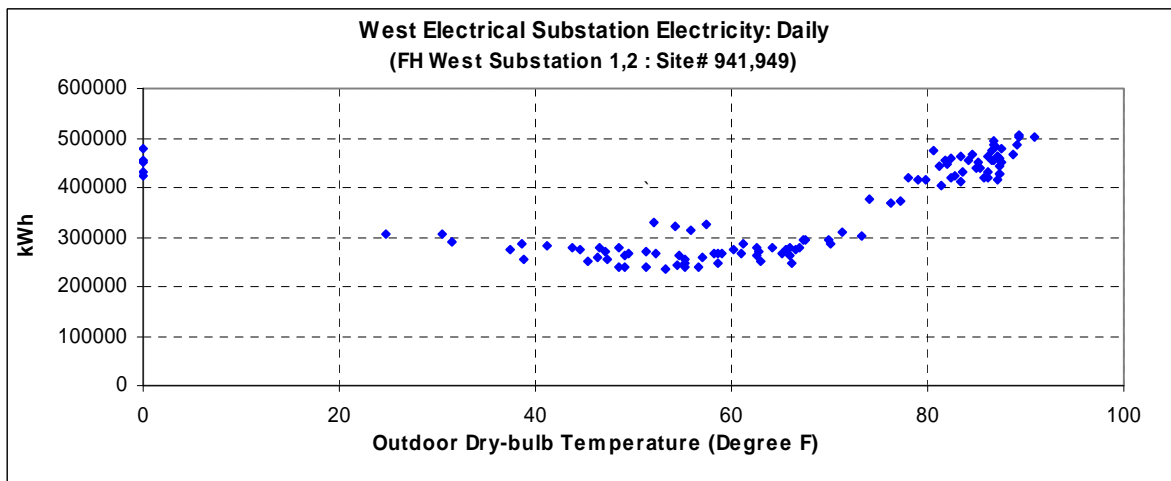


Figure 9.2.1-2: Daily electricity use of West Electrical Substation vs. temperature

9.2.2. 24-hour Profiles of Weather-Independent Electricity Loads

This section contains the weather-independent analysis for the West Electrical Substation, which utilizes 24-hour profiles that were developed using ASHRAE's 1093-RP diversity factor procedures.

Figure 9.2.2-1 shows the time series plot of the West Electrical Substation hourly electricity data collected by the loggers in 2003, which is used to plot the 24-hour profiles. The usage is distinctively different for the two periods as shown in Figure 9.2.2-1, which correspond the non-cooling period (February through April 2003), and cooling period (July and August 2003). In Figure 9.2.2-2 and Figure 9.2.2-3 24-hour weekday, weekend profiles are presented for the electricity use in these two periods respectively, and in Table 9.2.2-1 and Table 9.2.2-2 the values shown in Figure 9.2.2-2 and Figure 9.2.2-3 are displayed.

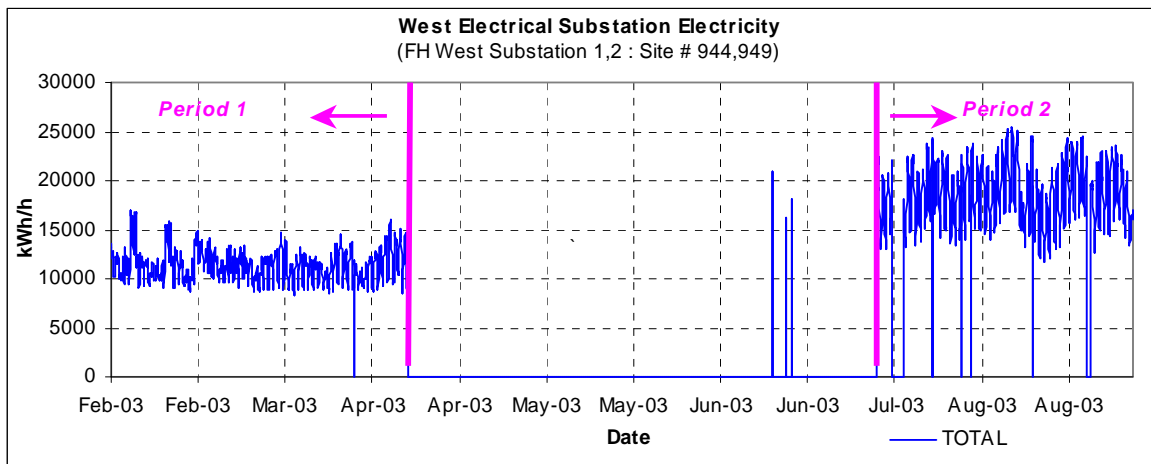


Figure 9.2.2-1: Time series plot of hourly electricity use of West Electrical Substation

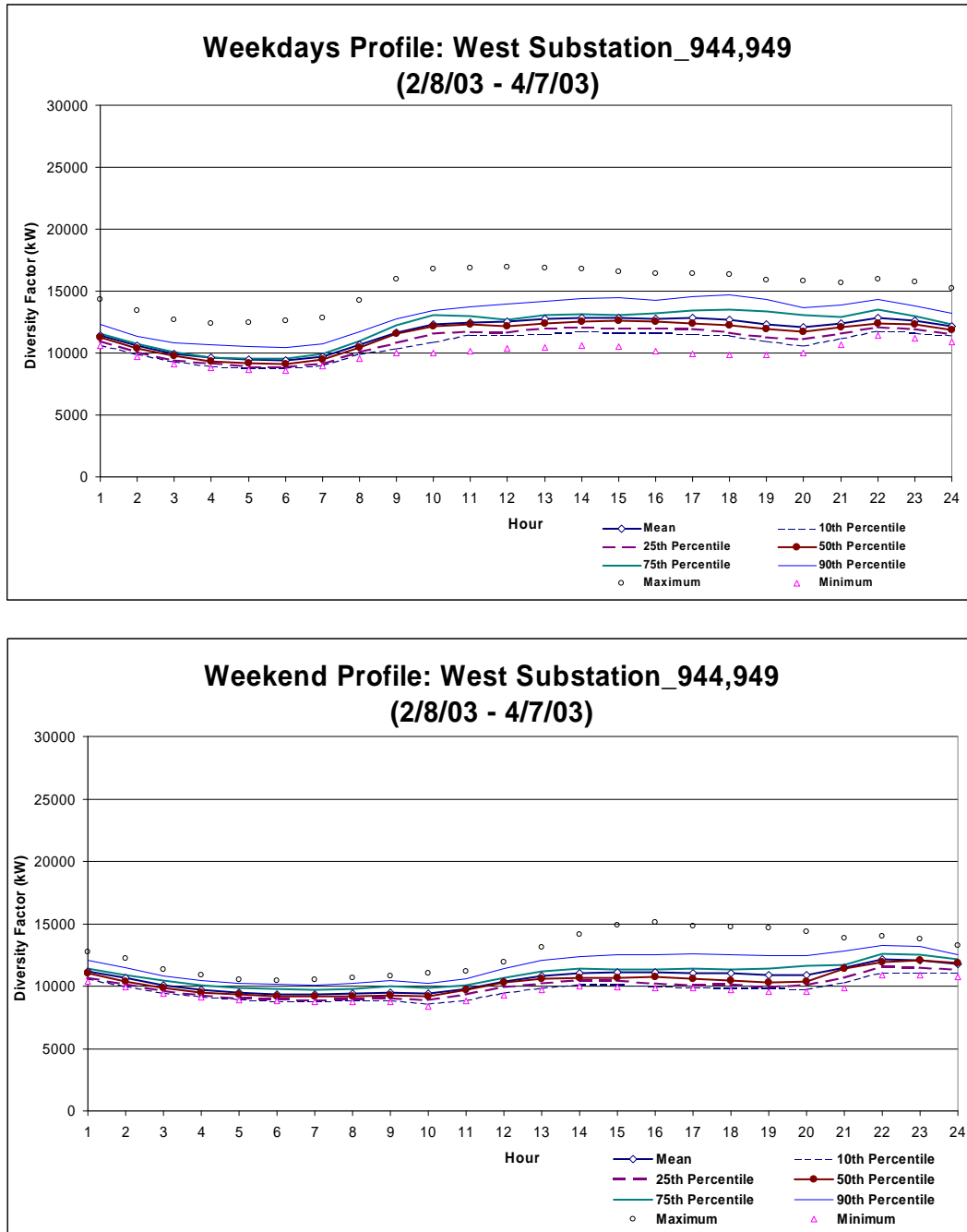


Figure 9.2.2-2: 24-hour weekday, weekend profiles for West Electrical Substation in Period 1

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	11436.61	12255.70	10617.51	10698.88	10941.27	11293.75	11543.09	12293.00	14365.08	10603.05
2	10569.87	11364.26	9775.48	9916.83	10058.86	10388.91	10741.38	11379.68	13427.57	9697.45
3	9931.30	10727.45	9135.15	9327.55	9437.80	9746.01	10087.35	10824.61	12657.06	9082.45
4	9608.98	10424.74	8793.22	8954.07	9142.90	9299.83	9658.24	10663.27	12423.14	8790.31
5	9446.03	10288.28	8603.78	8822.57	8897.50	9147.97	9563.65	10544.83	12449.87	8636.62
6	9427.58	10284.62	8570.53	8795.49	8870.43	9122.30	9546.88	10478.97	12584.19	8575.88
7	9706.36	10553.09	8859.62	9064.56	9130.89	9457.29	9919.01	10737.84	12820.99	8926.64
8	10669.08	11580.24	9757.91	9937.78	10068.99	10462.13	10963.00	11704.49	14234.46	9539.52
9	11637.61	12819.61	10455.61	10405.68	10814.25	11547.56	12263.51	12758.72	15958.49	9992.53
10	12302.82	13640.11	10965.53	10885.83	11549.00	12128.30	13024.54	13468.24	16812.00	10007.83
11	12487.02	13764.86	11209.19	11466.09	11741.63	12331.97	13003.47	13733.25	16854.86	10130.50
12	12527.15	13937.42	11116.88	11474.69	11677.06	12192.22	12716.34	13972.35	16959.69	10377.13
13	12742.31	14098.50	11386.12	11598.06	11980.55	12396.59	13038.43	14160.48	16870.74	10416.81
14	12807.50	13997.63	11617.38	11700.01	12071.44	12532.33	13148.62	14373.62	16784.33	10614.71
15	12843.40	14096.36	11590.44	11617.96	11998.21	12575.77	13095.88	14497.76	16571.72	10535.47
16	12792.45	14113.55	11471.34	11667.34	12007.16	12500.72	13219.14	14284.79	16422.98	10172.06
17	12804.57	14189.11	11420.03	11647.09	11915.92	12354.92	13407.73	14584.17	16417.15	9954.85
18	12722.95	14178.43	11267.46	11396.40	11664.34	12225.07	13539.83	14714.37	16337.27	9841.01
19	12343.05	13762.58	10923.52	10972.71	11266.43	11951.01	13328.27	14308.34	15885.62	9875.51
20	12067.32	13439.89	10694.75	10560.55	11118.10	11694.01	13077.16	13835.34	15830.52	9970.04
21	12411.80	13595.39	11228.22	11212.40	11550.62	12099.46	12883.39	13872.28	15636.63	10689.58
22	12823.55	13897.34	11749.76	11819.86	12098.04	12400.12	13472.72	14335.06	15966.14	11417.94
23	12576.40	13583.63	11569.17	11678.23	11944.88	12320.66	12994.41	13799.06	15757.30	11184.02
24	12141.28	13069.06	11213.51	11385.57	11520.37	11865.89	12323.13	13225.73	15213.64	10888.06
Daily Values	280526.91	300337.23	260716.59	261937.71	266463.84	277360.27	291516.98	311758.56	330747.58	246006.01
Hourly Daily Sum	280826.98	307661.87	253992.09	256906.20	263466.65	274034.77	290559.17	312408.27	365241.44	239919.98

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	11204.79	11869.55	10540.03	10580.06	10695.31	11021.21	11405.11	12109.49	12705.39	10377.37
2	10643.11	11273.62	10012.60	9989.07	10171.63	10385.20	10868.29	11469.07	12187.63	9957.21
3	10073.61	10642.30	9504.93	9516.34	9640.45	9838.22	10426.92	10835.34	11364.02	9436.15
4	9705.55	10264.91	9146.20	9153.19	9255.54	9501.02	10050.83	10469.82	10889.59	9094.52
5	9472.79	9999.10	8946.48	8955.51	9021.76	9305.22	9855.51	10231.99	10546.54	8921.52
6	9367.40	9893.48	8841.33	8813.10	8943.43	9216.45	9743.08	10138.74	10440.12	8805.68
7	9318.48	9857.84	8779.11	8790.69	8895.78	9180.34	9691.22	10081.13	10525.64	8713.44
8	9397.90	9966.62	8829.18	8855.52	8969.79	9216.48	9763.86	10186.25	10668.09	8734.34
9	9507.61	10142.45	8872.76	8923.26	9037.58	9269.10	9967.14	10422.82	10803.07	8714.91
10	9372.56	10108.86	8636.27	8593.86	8900.00	9158.82	9822.65	10238.05	11070.83	8348.78
11	9771.53	10440.05	9103.01	8868.60	9335.85	9698.48	10105.45	10584.25	11204.45	8813.80
12	10374.23	11131.45	9617.02	9496.78	9937.00	10319.27	10700.17	11386.09	11949.24	9227.78
13	10809.90	11707.41	9912.39	9881.82	10207.28	10582.56	11190.17	12069.46	13090.00	9721.11
14	11065.70	12107.58	10023.81	10177.32	10471.40	10656.85	11381.68	12368.20	14135.52	10032.43
15	11135.29	12405.30	9865.28	10138.90	10413.54	10697.11	11350.28	12538.76	14921.57	9923.42
16	11127.64	12499.40	9755.89	10027.59	10249.34	10704.26	11362.55	12548.31	15143.71	9877.04
17	11071.86	12529.84	9613.89	9961.48	10085.97	10602.52	11422.07	12595.34	14844.57	9858.61
18	11013.82	12500.41	9527.22	9871.97	10134.93	10450.36	11352.52	12546.20	14766.29	9693.86
19	10895.22	12360.14	9430.31	9837.94	9960.65	10321.54	11392.01	12433.55	14692.59	9575.54
20	10924.83	12294.06	9555.61	9800.67	10070.81	10395.38	11597.92	12442.93	14347.18	9533.81
21	11453.65	12534.87	10372.43	10311.93	10679.10	11388.22	11684.06	12844.53	13833.20	9855.49
22	12131.58	13020.26	11242.91	11097.56	11590.23	11959.19	12598.99	13229.59	14036.86	10896.89
23	12096.98	12912.97	11280.99	11138.63	11466.47	12046.07	12481.59	13167.61	13752.79	10873.23
24	11807.08	12445.20	11168.97	11097.15	11303.75	11866.48	12130.45	12494.63	13292.37	10734.90
Daily Values	253743.12	272252.65	235233.60	238355.39	239742.94	247827.20	257606.81	279596.86	302934.09	237041.93
Hourly Daily Sum	253743.12	274907.64	232578.60	233878.94	239437.62	247780.33	262344.53	279432.14	305211.26	229721.84

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 9.2.2-1: 24-hour weekday, weekend profiles for whole-building electricity use for West Electrical Substation in Period 1

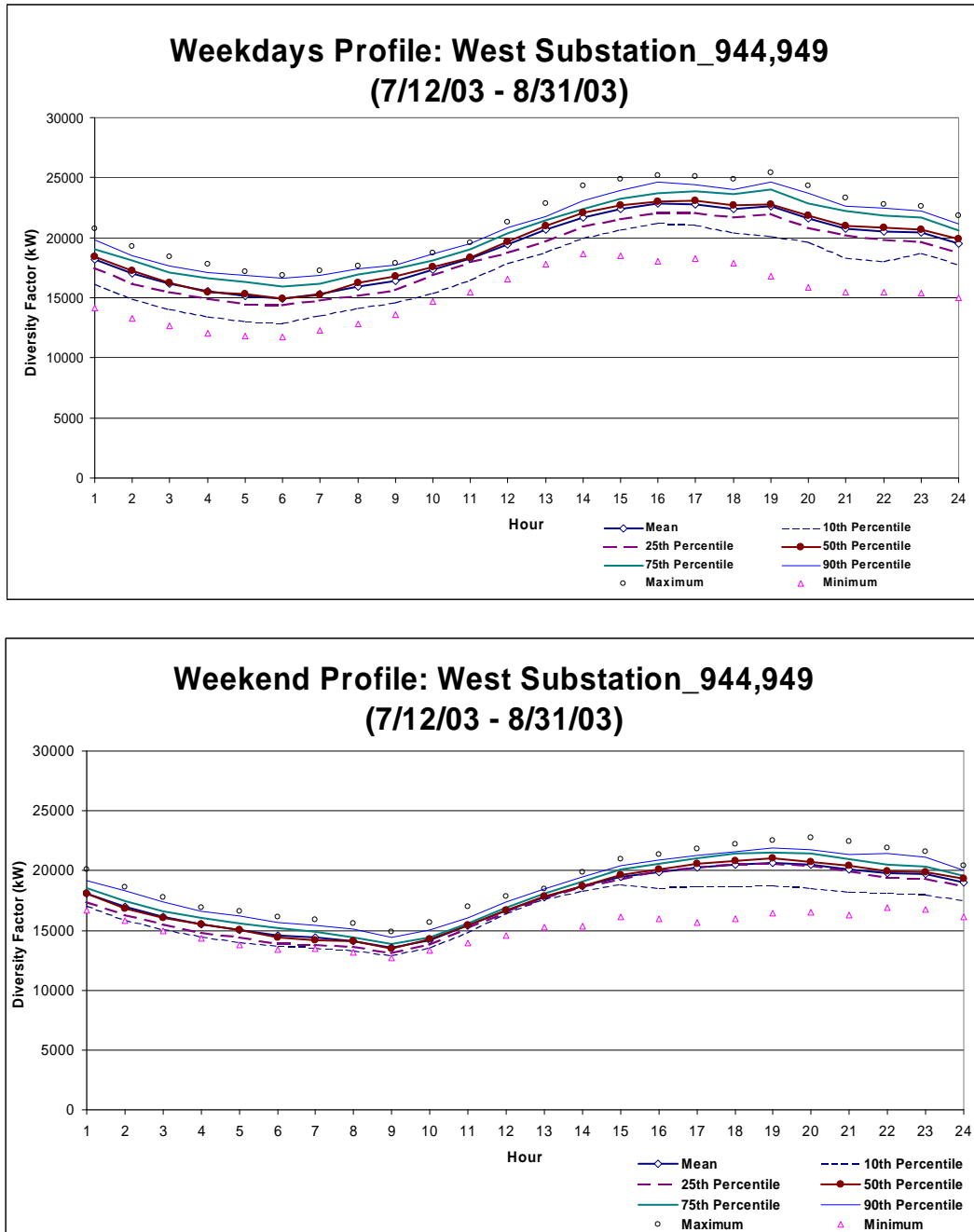


Figure 9.2.2-3: 24-hour weekday, weekend profiles for West Electrical Substation in Period 2

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	18212.16	19758.78	16665.54	16188.55	17505.28	18387.05	19068.68	19804.88	20726.49	14135.87
2	17017.50	18518.27	15516.74	14915.00	16201.12	17224.63	18078.37	18503.83	19287.88	13305.91
3	16161.56	17600.58	14722.55	14071.57	15475.35	16272.82	17133.51	17647.47	18404.94	12643.94
4	15566.52	17051.68	14081.37	13431.71	14910.27	15484.65	16612.22	17132.38	17833.74	12060.02
5	15175.39	16617.78	13733.00	13036.93	14492.11	15272.74	16309.43	16844.14	17156.81	11795.02
6	14913.94	16313.69	13514.19	12911.08	14342.71	14940.64	15960.73	16632.54	16854.97	11745.69
7	15278.70	16611.63	13945.77	13547.19	14739.33	15234.60	16140.50	16883.03	17236.52	12268.16
8	15898.93	17241.87	14555.99	14162.73	15126.41	16227.49	16964.81	17415.62	17605.12	12844.54
9	16364.10	17649.50	15078.70	14644.33	15594.25	16767.97	17393.68	17710.01	17900.96	13575.97
10	17307.03	18478.27	16135.79	15378.46	16836.72	17558.38	18134.41	18618.40	18721.39	14663.51
11	18247.51	19396.25	17098.77	16438.34	17949.70	18312.41	19040.89	19546.31	19598.68	15462.28
12	19455.78	20708.48	18203.08	17855.19	18765.89	19648.83	20373.54	20802.44	21326.18	16543.82
13	20640.78	21915.27	19366.30	18819.05	19701.33	20995.61	21443.43	21783.85	22829.29	17809.14
14	21685.73	23019.33	20352.12	19942.67	20880.24	22035.83	22389.47	23116.08	24334.29	18627.56
15	22391.29	23823.84	20958.74	20681.37	21536.91	22675.54	23223.68	23944.30	24892.31	18492.76
16	22836.51	24427.77	21245.24	21203.30	22078.38	23006.82	23670.44	24625.90	25173.91	18067.19
17	22785.47	24331.44	21239.51	21069.91	22100.28	23056.86	23861.80	24400.86	25126.12	18251.31
18	22364.70	24024.69	20704.70	20458.68	21700.01	22720.64	23633.30	24002.50	24843.81	17873.53
19	22598.60	24697.33	20499.87	20104.10	21983.85	22784.79	24050.17	24600.94	25402.06	16788.22
20	21631.68	23619.69	19643.68	19688.48	20845.98	21833.57	22829.18	23672.63	24329.82	15891.51
21	20768.67	22696.17	18841.17	18362.48	20171.11	21009.97	22213.65	22603.03	23309.38	15460.98
22	20511.82	22386.64	18636.99	18066.86	19811.99	20827.61	21818.39	22427.45	22765.96	15455.22
23	20424.70	22157.66	18691.74	18750.96	19681.02	20701.18	21658.52	22194.57	22630.10	15351.97
24	19531.31	21153.04	17909.57	17786.65	18706.97	19925.60	20580.98	21166.75	21804.14	14987.38
Daily Values	450353.66	496651.62	404055.70	399275.63	444961.81	458910.26	476738.82	494215.82	504086.64	280720.74
Hourly Daily Sum	457770.39	494199.64	421341.14	411515.57	441137.20	462906.21	482583.76	496079.91	510094.86	364101.46

Daily Values: The Daily results as the statistics are applied on daily data.
 Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	18095.43	19019.29	17171.58	17068.43	17389.56	18079.08	18507.13	19201.37	20109.84	16672.50
2	16963.05	17871.67	16054.43	15934.43	16285.77	16809.76	17417.17	18303.27	18595.42	15798.39
3	16140.61	17012.34	15268.88	15121.54	15509.60	16038.55	16628.47	17342.05	17735.67	14975.60
4	15490.46	16314.26	14666.65	14482.17	14796.72	15513.49	16022.06	16562.73	16896.41	14364.84
5	15056.28	15907.84	14204.72	14050.99	14385.27	15049.06	15591.54	16171.69	16581.85	13813.65
6	14583.08	15399.66	13766.50	13708.06	13902.89	14386.74	15159.20	15657.02	16117.30	13424.34
7	14395.48	15156.11	13634.84	13558.66	13803.29	14179.19	14850.75	15402.99	15903.28	13472.13
8	14139.27	14850.23	13428.30	13320.34	13645.37	14115.39	14449.67	15142.70	15545.63	13190.30
9	13552.63	14168.50	12936.75	12964.93	13082.11	13449.88	13861.22	14412.81	14847.87	12716.34
10	14204.28	14839.37	13569.20	13549.36	13777.81	14232.87	14405.05	15001.32	15652.88	13320.03
11	15400.58	16078.74	14722.41	14823.03	15198.75	15389.76	15567.70	16079.23	16960.57	13921.25
12	16681.32	17382.44	15980.20	16430.62	16540.41	16688.27	16884.75	17351.77	17846.69	14595.35
13	17775.99	18539.07	17012.91	17600.40	17686.11	17814.67	18064.24	18466.63	18481.93	15244.84
14	18683.86	19714.56	17653.17	18338.12	18605.55	18716.44	19064.91	19511.28	19904.06	15314.77
15	19489.40	20601.00	18377.79	18825.83	19235.02	19598.91	20099.01	20393.32	20969.94	16105.77
16	19901.23	21252.30	18550.15	18549.93	19978.46	20080.64	20565.91	20847.04	21332.53	15984.04
17	20247.20	21814.64	18679.77	18672.11	20277.83	20588.04	21041.75	21266.23	21837.50	15696.32
18	20500.89	22127.99	18873.79	18729.11	20504.34	20813.13	21443.43	21595.02	22186.19	15961.91
19	20672.25	22262.84	19081.66	18815.38	20584.75	21006.91	21539.61	21871.62	22549.09	16422.21
20	20511.29	22102.42	18920.16	18566.93	20379.55	20701.76	21430.95	21743.25	22757.01	16545.82
21	20129.41	21674.87	18583.95	18264.97	19921.36	20392.61	20927.26	21330.65	22446.21	16281.41
22	19809.91	21155.89	18463.93	18194.09	19368.64	19963.39	20476.91	21450.02	21894.09	16902.65
23	19678.49	20968.67	18388.32	18036.60	19329.44	19892.99	20339.29	21138.81	21578.58	16715.35
24	18977.46	20107.03	17847.88	17540.04	18682.66	19288.35	19566.30	20022.39	20424.17	16118.60
Daily Values	421079.84	437347.81	404811.87	413107.88	418402.97	421706.11	427713.52	436412.25	442424.24	370895.15
Hourly Daily Sum	421079.84	446321.75	395837.93	395146.06	412871.23	422789.89	433904.28	446265.22	459154.70	363558.39

Daily Values: The Daily results as the statistics are applied on daily data.
 Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 9.2.2-2: 24-hour weekday, weekend profiles for whole-building electricity use for West Electrical Substation in Period 2

9.3. North Electrical Substation

9.3.1. Daily Electricity Use

Figure 9.3.1-1 shows the time series plot of the daily electricity use of North Electrical Substation for the period June 2003 through August 2003. The daily electricity use versus temperature for the same period is plotted in Figure 9.3.1-2. During the period from June through August it appears that the majority of the variation in the electricity use was due to the weekday/weekend and diurnal profiles, which is more clear when one views the diversity factors for this meter.

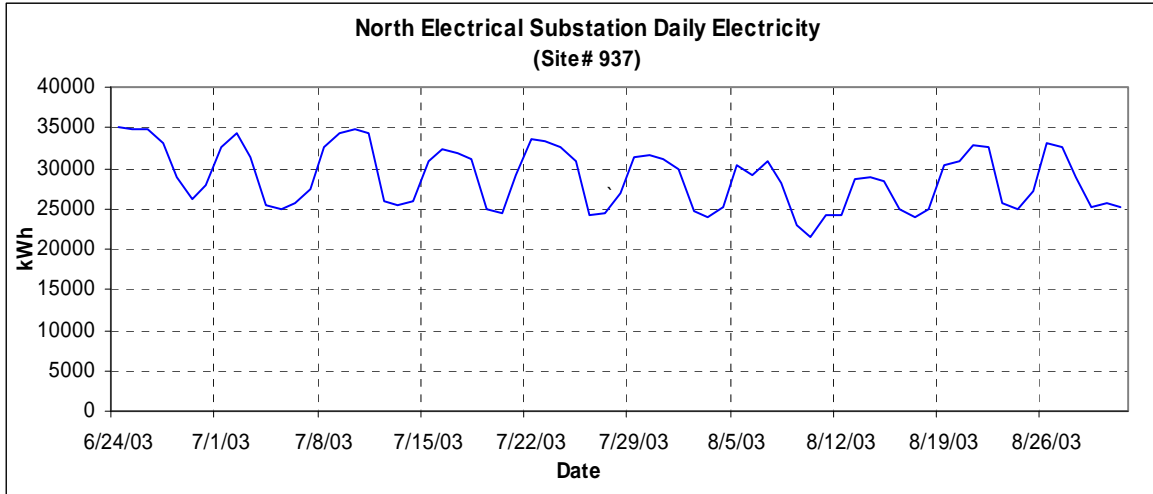


Figure 9.3.1-1: Time series plot of daily electricity use of North Electrical Substation

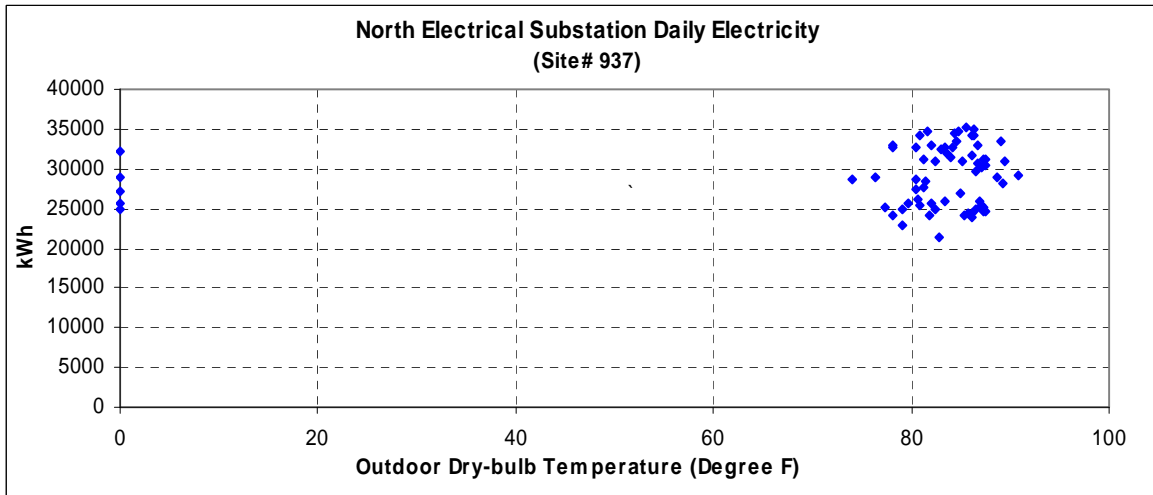


Figure 9.3.1-2: Daily electricity use of North Electrical Substation vs. temperature

9.3.2. 24-hour Profiles of Weather-Independent Electricity Loads

This section contains the weather-independent analysis for the West Electrical Substation, which utilizes 24-hour profiles that were developed using ASHRAE's 1093-RP diversity factor procedures.

Figure 9.3.2-1 shows the time series plot of the North Electrical Substation hourly electricity data collected by the logger for the period June 2003 through August 2003, which is used to plot the 24-hour profiles. In Figure 9.3.2-2 the 24-hour weekday, weekend profiles are presented for the electricity use, and in Table 9.3.2-1 the values shown in Figure 9.3.2-2 are displayed. In these plots it is clear that there is a sharp rise in electricity use at 8:00, flattening out at 9:00 and continuing through the day until 6:00 p.m., when the electricity use drops rapidly. On the weekends, the variation in electricity use would appear to be somewhat related to evening security lighting that turns on at dusk and off at dawn. Although one would expect the evening rise to occur at 8:00 p.m., versus 10:00 p.m.

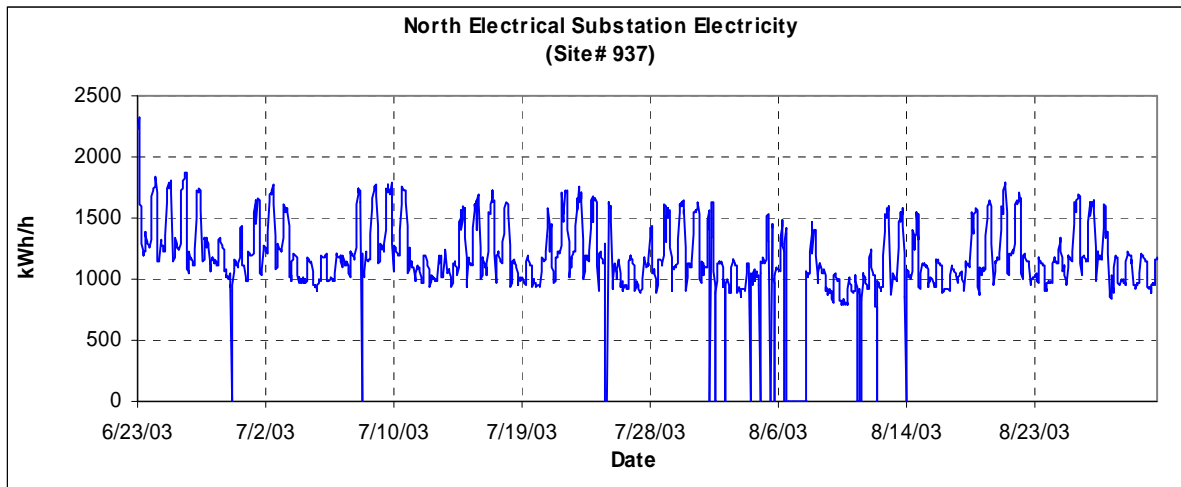


Figure 9.3.2-1: Time series plot of hourly electricity use of North Electrical Substation

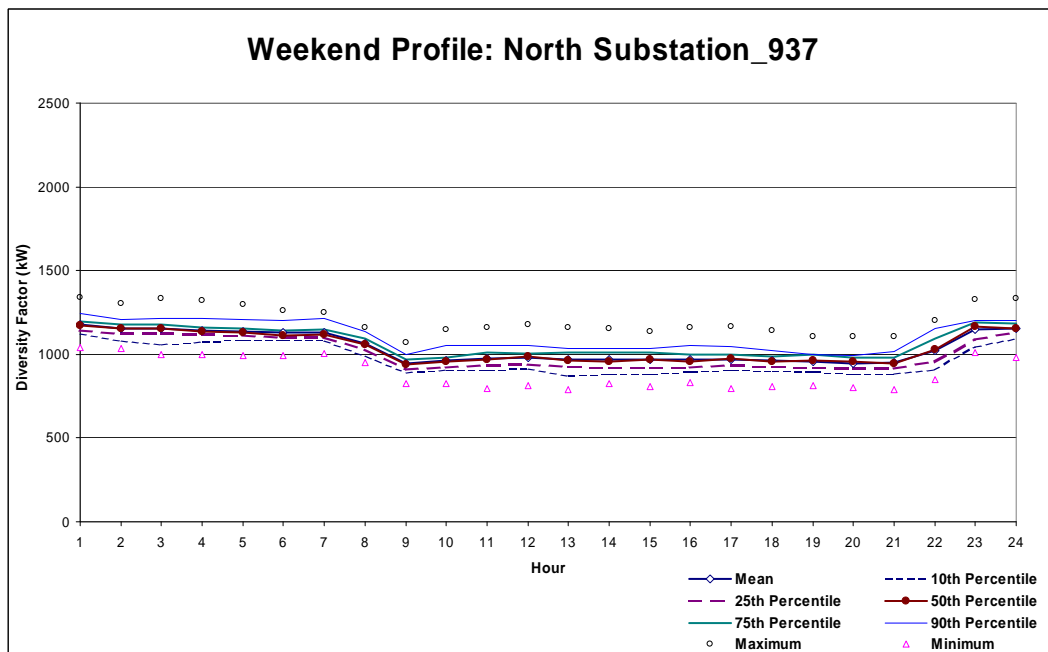
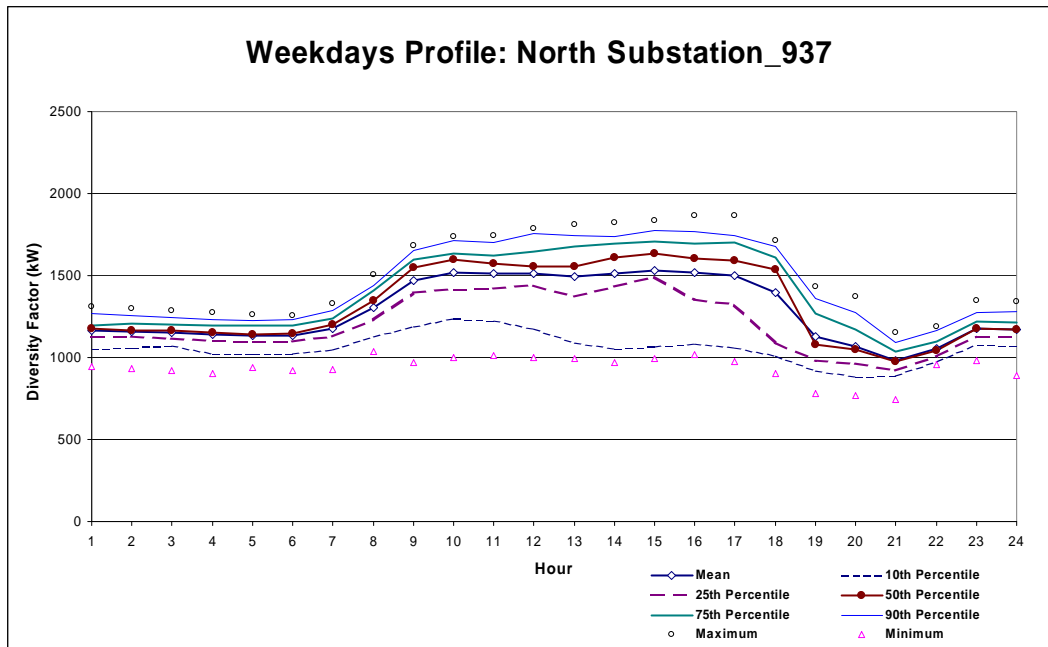


Figure 9.3.2-2: 24-hour weekday, weekend profiles for North Electrical Substation

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	1164.02	1242.18	1085.86	1052.27	1128.24	1173.92	1196.19	1269.46	1312.76	942.43
2	1159.65	1238.64	1080.67	1063.73	1126.59	1166.89	1208.28	1258.84	1298.28	931.21
3	1152.22	1230.82	1073.63	1073.84	1113.50	1163.01	1199.79	1242.06	1284.66	919.67
4	1139.74	1223.37	1056.11	1021.89	1100.94	1149.67	1197.86	1234.51	1273.67	904.15
5	1135.43	1216.68	1054.19	1021.88	1099.59	1141.97	1198.02	1226.61	1264.10	935.98
6	1133.07	1216.84	1049.29	1023.95	1099.58	1146.33	1196.24	1230.74	1258.60	922.10
7	1175.44	1269.82	1081.06	1047.26	1130.20	1199.03	1237.35	1289.44	1330.63	924.61
8	1305.81	1436.97	1174.66	1126.68	1231.80	1348.97	1410.48	1439.65	1508.89	1034.73
9	1471.73	1657.42	1286.04	1186.21	1395.81	1550.31	1595.16	1651.90	1681.51	969.11
10	1515.33	1708.21	1322.46	1235.52	1416.62	1597.73	1634.07	1713.22	1736.62	999.25
11	1509.51	1700.60	1318.43	1224.28	1420.73	1574.85	1622.62	1702.54	1741.35	1012.81
12	1509.88	1722.89	1296.86	1176.72	1438.03	1553.98	1646.23	1755.08	1785.25	998.78
13	1491.01	1731.49	1250.52	1089.94	1372.51	1553.58	1678.33	1746.13	1812.60	994.45
14	1513.21	1767.29	1259.12	1052.35	1433.28	1611.89	1693.17	1735.06	1821.62	969.74
15	1533.14	1790.27	1276.02	1064.36	1491.19	1633.79	1706.02	1776.09	1835.95	991.76
16	1520.70	1775.58	1265.81	1082.51	1354.60	1606.28	1694.29	1769.82	1864.87	1015.26
17	1502.64	1768.98	1236.29	1063.97	1324.30	1592.00	1699.26	1744.16	1866.54	975.41
18	1396.15	1666.98	1125.33	1012.12	1094.33	1535.83	1612.59	1677.06	1715.14	903.76
19	1125.07	1305.00	945.15	923.17	980.29	1081.74	1270.82	1357.73	1432.72	778.24
20	1069.18	1216.26	922.10	885.20	962.49	1051.56	1170.00	1273.44	1370.87	766.26
21	980.02	1067.10	892.94	887.89	919.90	976.16	1035.39	1090.94	1150.12	745.28
22	1056.41	1124.37	988.44	973.04	1006.87	1042.50	1095.03	1166.38	1186.36	955.03
23	1176.14	1257.20	1095.08	1078.87	1129.50	1176.19	1221.97	1275.14	1346.70	979.20
24	1169.23	1258.71	1079.75	1071.65	1129.85	1170.05	1212.67	1283.06	1343.88	891.99
Daily Values	30852.51	33976.37	27728.64	26728.00	28560.81	31380.39	33026.76	34482.81	35179.47	23082.80
Hourly Daily Sum	30904.72	34593.63	27215.81	25439.27	28900.74	31798.23	33431.81	34909.04	36223.65	22461.21

Daily Values: The Daily results as the statistics are applied on daily data.
 Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	1175.93	1243.68	1108.17	1123.84	1141.68	1169.50	1193.23	1242.65	1342.19	1041.20
2	1155.51	1218.92	1092.09	1079.79	1124.57	1153.75	1180.63	1208.87	1305.85	1036.98
3	1151.71	1228.13	1075.29	1058.68	1125.26	1152.63	1175.47	1215.88	1333.00	1000.41
4	1143.90	1214.79	1073.02	1077.27	1117.21	1137.70	1161.89	1214.62	1319.13	1000.49
5	1138.47	1205.85	1071.09	1081.26	1112.51	1132.20	1154.79	1210.32	1297.65	991.52
6	1129.86	1192.09	1067.62	1083.60	1102.56	1113.45	1144.47	1202.25	1263.00	995.29
7	1129.90	1187.43	1072.37	1085.29	1103.00	1117.41	1146.38	1213.54	1252.62	1007.51
8	1061.85	1117.02	1006.68	995.65	1031.69	1057.84	1095.72	1134.22	1159.83	952.40
9	943.64	1000.23	887.04	891.95	906.78	938.25	966.16	999.66	1070.08	828.26
10	964.46	1034.43	894.49	907.89	920.75	954.77	981.17	1054.28	1149.39	825.04
11	976.36	1054.01	898.71	908.84	935.51	968.29	1008.01	1050.59	1158.52	793.22
12	982.63	1059.32	905.93	917.69	940.93	984.30	1003.40	1054.10	1176.33	814.11
13	967.56	1048.63	886.50	873.08	928.34	965.70	1010.42	1032.59	1158.65	790.19
14	966.14	1043.59	888.69	884.87	920.76	957.91	1010.39	1032.11	1152.22	822.37
15	966.13	1043.94	888.31	886.66	919.76	967.39	1009.31	1033.63	1136.17	805.65
16	971.21	1046.60	895.82	897.24	919.70	955.44	1000.85	1050.67	1163.23	832.00
17	971.20	1046.74	895.65	906.92	935.09	972.06	996.64	1043.88	1164.46	796.12
18	962.00	1029.27	894.73	903.43	927.76	958.19	984.59	1025.27	1142.74	805.09
19	958.54	1020.15	896.94	895.70	923.26	963.31	997.58	1000.51	1105.21	814.23
20	947.49	1013.87	881.10	882.78	914.09	954.67	979.55	990.64	1107.44	800.61
21	949.46	1022.72	876.21	883.40	915.54	945.26	983.29	1018.91	1106.83	792.21
22	1025.30	1121.70	928.91	910.05	959.53	1027.63	1093.49	1156.74	1202.88	847.43
23	1146.03	1222.02	1070.04	1048.24	1087.88	1167.56	1192.11	1201.54	1326.02	1011.32
24	1154.05	1225.97	1082.13	1092.49	1128.71	1154.81	1186.87	1203.26	1332.30	979.87
Daily Values	24889.46	26307.51	23471.41	23667.83	24414.14	24981.13	25470.96	25763.87	28794.23	21463.42
Hourly Daily Sum	24939.33	26641.12	23237.54	23276.64	24042.86	24870.00	25656.38	26590.75	28925.72	21383.51

Daily Values: The Daily results as the statistics are applied on daily data.
 Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 9.3.2-1: 24-hour weekday, weekend profiles for whole-building electricity use for North Electrical Substation

10. REFERENCES

Abushakra, B., Sreshthaputra, A., Haberl, J., Claridge, D. 2001. "Compilation of Diversity Factors and Schedules for Energy and Cooling Load Calculations", ASHRAE Research Project 1093RP, Final Report, (April).

ASHRAE 2001. "Guideline 14P: Measurement of Energy and Demand Savings", ASHRAE, Atlanta Georgia, (January 2001).

Enernet 2001. Enernet Corporation, 307 Dewittshire Road, Syracuse, New York, 13214.

Haberl, J. S., Reddy, T. A., Figueroa, I., Medina, M. 1997. "Overview of LoanSTAR ` Monitoring and Analysis of In-Situ Chiller Diagnostics Using ASHRAE RP827 Test Method", Proceedings of the PG&E Cool Sense National Integrated Chiller Retrofit Forum (September).

Highland 2001. Highland Technologies, Inc. , 320 Judah Street, San Francisco, CA 94122, Phone: (415) 753-5814 Fax: (415) 753-3301, contact: Mr. John Larkin.

IPMVP 2001 "International Performance Measurement and Verification Protocols - IPMVP", United States Department of Energy.

Kissock, J.K., 1993. "A Methodology to Measure Energy Savings in Commercial Buildings", Ph.D dissertation, Department of Mechanical Engineering, Texas A&M University, College Station, TX

Kissock, J.K., Claridge, D.E., Haberl, J.S. and Reddy, T.A., 1992. "Measuring Retrofit Savings for the Texas LoanSTAR Program: Preliminary Methodology and Results", Proceedings of the ASME/JSES/KSES International Solar Energy Conference, pp.299-308, Hawaii, April.

LBL. 1980. DOE-2 User Guide, Ver. 2.1. Lawrence Berkeley Laboratory and Los Alamos National Laboratory, Rpt No. LBL-8689 Rev. 2; DOE-2 User Coordination Office, LBL, Berkeley, CA.

LBL. 1981. DOE-2 Engineers Manual, Ver. 2.1A, Lawrence Berkeley Laboratory and Los Alamos National Laboratory, Rpt No. LBL-11353; DOE-2 User Coordination Office, LBL, Berkeley, CA.

LBL. 1982. DOE-2.1 Reference Manual Rev. 2.1A. Lawrence Berkeley Laboratory and Los Alamos National Laboratory, Rpt No. LBL-8706 Rev. 2; DOE-2 User Coordination Office, LBL, Berkeley, CA.

LBL. 1989. DOE-2 Supplement, Ver 2.1D. Lawrence Berkeley Laboratory, Rpt No. LBL-8706 Rev. 5 Supplement. DOE-2 User Coordination Office, LBL, Berkeley, CA.

Synergistic. 1990. Software, Installation, and Technical Specifications for the Model C180 Survey Meter/Recorder, 5725 Bundy Rd., New Orleans, LA 70127.

11. APPENDIX

This section of the report contains information about the channels that were being monitored at the thermal plant, III Corp building, Darnall Hospital, Main, West and North Electrical Substations and the baseline models for the manual readings from buildings that did not have data loggers.

11.1. ESL Polling and Database Information.

The following information contains the ESL's Channel Identification Table (CHID) for loggers that have been assigned to the each logger. The numbers in the first column are the channel number of the individual data channels in the ESL's Informix database. The "cp" indicates if the channel is current, followed by the channel description and other information.

The parameter sets for the loggers at the Fort Hood, which were used to collect the data presented in this report are also presented in this section. These parameter sets are current as of 12/2003.

11.1.1. Channel Identification Tables lstarxp% listchid #938 - 3279 - Ft Hood - Central Thermal Power Plant (87000)

Chid	cp	Description
4342	-1	CHIL 1 ELECTRIC (power, B1C1/B1C1)
4343	-1	CHIL 2 ELECTRIC (power, A1C1/A1C1)
4341	-1	CHIL 1 ELECTRIC (power, A1C1/A1C1)
4344	-1	CHIL 2 ELECTRIC (power, B1C1/B1C1)
4346	-1	BOILER 1 GAS
4345	-1	WHOLE BLDG ELECT
4623	1	CNTRL PLNT ELECT (power, A1N1/A1N1)
4624	2	CNTRL PLNT ELECT (power, B1N1/B1N1)
4625	3	CNTRL PLNT ELECT (power, C1N1/C1N1)
4626	4	CHILLER 1 ELECT (power, A1B1/A1B1)
4627	5	CHILLER 1 ELECT (power, C1B1/C1B1)
4628	6	CHILLER 2 ELECT (power, A1B1/A1B1)
4629	7	CHILLER 2 ELECT (power, C1B1/C1B1)
4630	8	CNTRL PLNT ELECT (kva, A1N1/A1N1)
4631	9	CNTRL PLNT ELECT (kva, B1N1/B1N1)
4632	10	CNTRL PLNT ELECT (kva, C1N1/C1N1)
4633	11	CHILLER 1 ELECT (kva, A1B1/A1B1)
4634	12	CHILLER 1 ELECT (kva, C1B1/C1B1)
4635	13	CHILLER 2 ELECT (kva, A1B1/A1B1)
4636	14	CHILLER 2 ELECT (kva, C1B1/C1B1)
4637	15	CHILLED WTR FLOW
4638	16	CHW SUPPLY TEMP
4639	17	CHW RET TEMP
4640	18	OUTSIDE TEMP
4641	19	OUTSIDE RH
4774	20	STEAM FLOW ENRGY
4775	21	STEAM TEMP
4850	22	STEAM PRESSURE
4851	23	COND WTR RETURN
4642	24	CNTRL PLNT GAS
4643	25	CHILL WTR BTU USR

CT14 PHONE #254-287-2972
 CT15

***** Configuration for Logger: 03279 Parameter Set Code: a *****

----- ANALOG CHANNELS -----

Chan	Description	Search String	STA	Scale	Offset	Units	T S G
A 0	CHILLED WTR FLOW		ON	531.25	-425.00	Volts DC	*
A 1	CHW SUPPLY TEMP		ON	1.00	-1.80	Deg F	*
A 2	CHW RET TEMP		ON	1.00	-1.80	Deg F	*
A 3	OUTSIDE TEMP		ON	56.25	-85.00	Volts DC	*
A 4	OUTSIDE RH		ON	31.25	-25.00	Volts DC	*
A 5	STEAM FLOW ENRGY		ON	7812.50	-6250.00	Volts DC	*
A 6	STEAM TEMP		ON	1.00	-1.80	Deg F	*
A 7	STEAM PRESSURE		ON	15.63	-12.50	Volts DC	*
A 8	COND WTR RETURN		ON	1.00	0.00	Deg F	*
A 9		OFF	1.00	0.00			
A 10		OFF	1.00	0.00			
A 11		OFF	1.00	0.00			
A 12		OFF	1.00	0.00			
A 13		OFF	1.00	0.00			
A 14		OFF	1.00	0.00			
A 15	NOT USED!		OFF	-999.00	-999.00		

Chan	CType	Field Notes
A 0	4-20ma	ONICON CHW FLOWMETER 4-20MA OUTPUT
A 1	1K RTD	STD 1000 OHM RTD
A 2	1K RTD	STD 1000 OHM RTD
A 3	4-20ma	VAISALA HUM AND TEMP XMTR MODEL HMD0600Y
A 4	4-20ma	VAISALA HUM AND TEMP XMTR MODEL HMD0600Y
A 5	4-20ma	EMCO VORTEX STEAM METER - VOLUME FLOW OUTPUT 4-20 MA
A 6	1K RTD	1000 OHM RTD INTEGRATED FROM EMCO VORTEX METER
A 7	4-20ma	EMCO VORTEX INTEGRATED PRESSURE XDCR 0-50 PSI
A 8	1K RTD	STD 1000 OHM RTD
A 9	OFF	
A 10	OFF	
A 11	OFF	FORT HOOD ARMY BASE, KILLEEN, TEXAS
A 12	OFF	CENTRAL PLANT - BUILDING # 87018
A 13	OFF	SITE #938 SERIAL# 3279
A 14	OFF	PHONE #254-287-2972
A 15	OFF	

***** Configuration for Logger: 03279 Parameter Set Code: a *****

----- DIGITAL CHANNELS -----

Chan	Description	Search String	STA	Scale	Units	TSR	AVG	RTS
D 0	CNTRL PLNT GAS		ON	1.00	CF			*
D 1		OFF	1.00					
D 2		OFF	1.00					
D 3		OFF	1.00					
D 4		OFF	1.00					
D 5		OFF	1.00					
D 6		OFF	1.00					
D 7		OFF	1.00					
D 8		OFF	1.00					
D 9		OFF	1.00					
D 10		OFF	1.00					
D 11		OFF	1.00					
D 12		OFF	1.00					
D 13		OFF	1.00					
D 14		OFF	1.00					
D 15		OFF	1.00					

Chan	Field Notes
D 0	
D 1	
D 2	
D 3	
D 4	
D 5	
D 6	
D 7	
D 8	
D 9	
D 10	
D 11	
D 12	
D 13	
D 14	
D 15	

Description	Variable	Measurement #
CNTRL PLNT ELECT	KW 0	0
CNTRL PLNT ELECT	KW 1	0
CNTRL PLNT ELECT	KW 2	0
CHILLER 1 ELECT	KW 3	0
CHILLER 1 ELECT	KW 4	0
CHILLER 2 ELECT	KW 5	0
CHILLER 2 ELECT	KW 6	0
CNTRL PLNT ELECT	KV 0	0
CNTRL PLNT ELECT	KV 1	0

CNTRL PLNT ELECT	KV 2	0
CHILLER 1 ELECT	KV 3	0
CHILLER 1 ELECT	KV 4	0
CHILLER 2 ELECT	KV 5	0
CHILLER 2 ELECT	KV 6	0
CHILLED WTR FLOW	AN 0	0
CHW SUPPLY TEMP	AN 1	0
CHW RET TEMP	AN 2	0
OUTSIDE TEMP	AN 3	0
OUTSIDE RH	AN 4	0
STEAM FLOW ENRGY	AN 5	0
STEAM TEMP	AN 6	0
STEAM PRESSURE	AN 7	0
COND WTR RETURN	AN 8	0
CNTRL PLNT GAS	DIG 0	0

11.1.3. Channel Identification Tables Istarxp% listchid #947 - 10043 - III Corps

Chid	cp	Description
4776	1	MAIN 1 ELECT (power, A1N1/A1N1)
4777	2	MAIN 1 ELECT (power, B1N1/B1N1)
4778	3	MAIN 1 ELECT (power, C1N1/C1N1)
4779	4	MAIN 2 ELECT (power, A2N2/A2N2)
4780	5	MAIN 2 ELECT (power, B2N2/B2N2)
4781	6	MAIN 2 ELECT (power, C2N2/C2N2)
4782	7	CHILLER 1 ELECT (power, A1B1/A1B1)
4783	8	CHILLER 1 ELECT (power, C1B1/C1B1)
4784	9	CHILLER 2 ELECT (power, A1B1/A1B1)
4785	10	CHILLER 2 ELECT (power, C1B1/C1B1)
4786	11	CHILLER 3 ELECT (power, A1B1/A1B1)
4787	12	CHILLER 3 ELECT (power, C1B1/C1B1)
4788	13	CHILLER 4 ELECT (power, A1B1/A1B1)
4789	14	CHILLER 4 ELECT (power, C1B1/C1B1)
4790	15	MCC ELECT (power, A2B2/A2B2)
4791	16	MCC ELECT (power, C2B2/C2B2)
4792	17	WHOLE BLDG GAS

11.1.4. Parameter set for the Logger #947 - 10043 - III Corps

***** Configuration for Logger: 10043 Parameter Set Code: a *****

----- INTEGRATION PERIODS -----

	AM		PM																						
From:	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	
To:	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
Flag:	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mins:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

----- WATT CHANNELS -----

Chan	Description	STA	Load	Hi	Lo	VMult	Amps	Vlt	Amp	PR	KW	KVA	KWH	KVAH
CT 0	MAIN 1 ELECT	ON	3P	A1	N1	1.00	4000		0	*				
CT 1	MAIN 1 ELECT	ON	3P	B1	N1	1.00	4000		1	*				
CT 2	MAIN 1 ELECT	ON	3P	C1	N1	1.00	4000		2	*				
CT 3	MAIN 2 ELECT	ON	3P	A2	N2	1.00	4000		3	*				
CT 4	MAIN 2 ELECT	ON	3P	B2	N2	1.00	4000		4	*				
CT 5	MAIN 2 ELECT	ON	3P	C2	N2	1.00	4000		5	*				
CT 6	CHILLER 1 ELECT	ON	3P	A1	B1	1.00	400		6	*				
CT 7	CHILLER 1 ELECT	ON	3P	C1	B1	1.00	400		7	*				
CT 8	CHILLER 2 ELECT	ON	3P	A1	B1	1.00	800		8	*				
CT 9	CHILLER 2 ELECT	ON	3P	C1	B1	1.00	800		9	*				
CT10	CHILLER 3 ELECT	ON	3P	A1	B1	1.00	800		10	*				
CT11	CHILLER 3 ELECT	ON	3P	C1	B1	1.00	800		11	*				
CT12	CHILLER 4 ELECT	ON	3P	A1	B1	1.00	800		12	*				
CT13	CHILLER 4 ELECT	ON	3P	C1	B1	1.00	800		13	*				
CT14	MCC ELECT	ON	3P	A2	B2	1.00	800		14	*				
CT15	MCC ELECT	ON	3P	C2	B2	1.00	800		15	*				

Chan	Search String	Field Notes
CT 0	MAIN CIRCUIT BREAKER #1 A PHASE	
CT 1	MAIN CIRCUIT BREAKER #1 B PHASE	
CT 2	MAIN CIRCUIT BREAKER #1 C PHASE	
CT 3	MAIN CIRCUIT BREAKER #2 A PHASE	
CT 4	MAIN CIRCUIT BREAKER #2 B PHASE	
CT 5	MAIN CIRCUIT BREAKER #2 C PHASE	
CT 6	CHILLER #1 FROM ATS-4 CIRCUIT A PHASE	
CT 7	CHILLER #1 FROM ATS-4 CIRCUIT C PHASE	
CT 8	CHILLER #2 FROM ATS-5 CIRCUIT A PHASE	
CT 9	CHILLER #2 FROM ATS-5 CIRCUIT C PHASE	
CT10	CHILLER #3 FROM ATS-6 CIRCUIT A PHASE	
CT11	CHILLER #3 FROM ATS-6 CIRCUIT C PHASE	
CT12	CHILLER #4 FROM ATS-7 CIRCUIT A PHASE	
CT13	CHILLER #4 FROM ATS-7 CIRCUIT C PHASE	

CT14 MCC FROM ATS-17 CIRCUIT A PHASE
 CT15 MCC FROM ATS-17 CIRCUIT C PHASE

***** Configuration for Logger: 10043 Parameter Set Code: a *****

----- ANALOG CHANNELS -----

Chan	Description	Search String	STA	Scale	Offset	Units	T S G
A 0		OFF	1.00	0.00			
A 1		OFF	1.00	0.00			
A 2		OFF	1.00	0.00			
A 3		OFF	1.00	0.00			
A 4		OFF	1.00	0.00			
A 5		OFF	1.00	0.00			
A 6		OFF	1.00	0.00			
A 7		OFF	1.00	0.00			
A 8		OFF	1.00	0.00			
A 9		OFF	1.00	0.00			
A 10		OFF	1.00	0.00			
A 11		OFF	1.00	0.00			
A 12		OFF	1.00	0.00			
A 13		OFF	1.00	0.00			
A 14		OFF	1.00	0.00			
A 15	NOT USED!	OFF	-999.00	-999.00			

Chan	CType	Field Notes
A 0	OFF	
A 1	OFF	
A 2	OFF	
A 3	OFF	
A 4	OFF	
A 5	OFF	
A 6	OFF	
A 7	OFF	
A 8	OFF	
A 9	OFF	
A 10	OFF	
A 11	OFF	
A 12	OFF	
A 13	OFF	
A 14	OFF	
A 15	OFF	

***** Configuration for Logger: 10043 Parameter Set Code: a *****

---- DIGITAL CHANNELS ----

Chan	Description	Search String	STA	Scale	Units	TSR	AVG	RTS
D 0	WHOLE BLDG GAS		ON	10.00	CFH			*
D 1		OFF	1.00					
D 2		OFF	1.00					
D 3		OFF	1.00					
D 4		OFF	1.00					
D 5		OFF	1.00					
D 6		OFF	1.00					
D 7		OFF	1.00					
D 8		OFF	1.00					
D 9		OFF	1.00					
D 10		OFF	1.00					
D 11		OFF	1.00					
D 12		OFF	1.00					
D 13		OFF	1.00					
D 14		OFF	1.00					
D 15		OFF	1.00					

Chan	Field Notes
D 0	
D 1	
D 2	
D 3	
D 4	
D 5	
D 6	
D 7	
D 8	
D 9	

D 10 FORT HOOD ARMY BASE - III CORPS HEADQUARTERS BUILDING
 D 11 SITE #942 SN 10043
 D 12 PHONE # 254-285-6175
 D 13
 D 14
 D 15

Description Variable Measurement #

MAIN 1 ELECT	KW 0	0
MAIN 1 ELECT	KW 1	0
MAIN 1 ELECT	KW 2	0
MAIN 2 ELECT	KW 3	0
MAIN 2 ELECT	KW 4	0
MAIN 2 ELECT	KW 5	0
CHILLER 1 ELECT	KW 6	0
CHILLER 1 ELECT	KW 7	0
CHILLER 2 ELECT	KW 8	0
CHILLER 2 ELECT	KW 9	0
CHILLER 3 ELECT	KW 10	0
CHILLER 3 ELECT	KW 11	0
CHILLER 4 ELECT	KW 12	0
CHILLER 4 ELECT	KW 13	0
MCC ELECT	KW 14	0
MCC ELECT	KW 15	0
WHOLE BLDG GAS	DIG 0	0

11.1.5. Channel Identification Tables Istarxp% listchid# 939 - 3832 - Darnall Hospital #1

Chid	cp	Description
4295	1	WBE METER #3
4296	2	WBE METER #4

11.1.6. Parameter set for the Logger # 939 - 3832 - Darnall Hospital #1

***** Configuration for Logger: 03832 Parameter Set Code: a *****

----- INTEGRATION PERIODS -----

	AM		PM																					
From:	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
To:	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Flag:	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mins:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

----- WATT CHANNELS -----

Chan	Description	STA	Load	Hi	Lo	VMult	Amps	Vlt	Amp	PR	KW	KVA	KWH	KVAH
CT 0	OFF 3P A1 N1	1.00	100	0										
CT 1	OFF 3P B1 N1	1.00	100	1										
CT 2	OFF 3P C1 N1	1.00	100	2										
CT 3	OFF 3P A1 N1	1.00	100	3										
CT 4	OFF 3P B1 N1	1.00	100	4										
CT 5	OFF 3P C1 N1	1.00	100	5										
CT 6	OFF 3P A1 N1	1.00	100	6										
CT 7	OFF 3P B1 N1	1.00	100	7										
CT 8	OFF 3P C1 N1	1.00	100	8										
CT 9	OFF 3P A1 N1	1.00	100	9										
CT10	OFF 3P B1 N1	1.00	100	10										
CT11	OFF 3P C1 N1	1.00	100	11										
CT12	OFF 3P A1 N1	1.00	100	12										
CT13	OFF 3P B1 N1	1.00	100	13										
CT14	OFF 3P C1 N1	1.00	100	14										
CT15	OFF 3P A1 N1	1.00	100	15										

Chan	Search String	Field Notes
CT 0		
CT 1		
CT 2		
CT 3		
CT 4		
CT 5		
CT 6		
CT 7		
CT 8		
CT 9		
CT10		
CT11		
CT12		
CT13		
CT14		
CT15		

***** Configuration for Logger: 03832 Parameter Set Code: a *****

---- ANALOG CHANNELS ----

Chan	Description	Search String	STA	Scale	Offset	Units	T S G
A 0		OFF	1.00	0.00			
A 1		OFF	1.00	0.00			
A 2		OFF	1.00	0.00			
A 3		OFF	1.00	0.00			
A 4		OFF	1.00	0.00			
A 5		OFF	1.00	0.00			
A 6		OFF	1.00	0.00			
A 7		OFF	1.00	0.00			
A 8		OFF	1.00	0.00			
A 9		OFF	1.00	0.00			
A 10		OFF	1.00	0.00			
A 11		OFF	1.00	0.00			
A 12		OFF	1.00	0.00			
A 13		OFF	1.00	0.00			
A 14		OFF	1.00	0.00			
A 15	NOT USED!	OFF	-999.00	-999.00			

Chan	CType	Field Notes
A 0	OFF	
A 1	OFF	
A 2	OFF	
A 3	OFF	
A 4	OFF	
A 5	OFF	
A 6	OFF	
A 7	OFF	
A 8	OFF	
A 9	OFF	
A 10	OFF	
A 11	OFF	
A 12	OFF	
A 13	OFF	
A 14	OFF	
A 15	OFF	

***** Configuration for Logger: 03832 Parameter Set Code: a *****

----- DIGITAL CHANNELS -----

Chan	Description	Search String	STA	Scale	Units	TSR	AVG	RTS
D 0	WBE METER #3		ON	0.86	kW/pulse	*		
D 1	WBE METER #4		ON	0.86	kW/pulse	*		
D 2		OFF	1.00					
D 3		OFF	1.00					
D 4		OFF	1.00					
D 5		OFF	1.00					
D 6		OFF	1.00					
D 7		OFF	1.00					
D 8		OFF	1.00					
D 9		OFF	1.00					
D 10		OFF	1.00					
D 11		OFF	1.00					
D 12		OFF	1.00					
D 13		OFF	1.00					
D 14		OFF	1.00					
D 15		OFF	1.00					

Chan	Field Notes
D 0	Incoming 480vac LINE #3
D 1	Incoming 480vac LINE #4
D 2	Need to verify the 0.864 KW/pulse
D 3	
D 4	
D 5	SSI splitters to share signal from each Electric Meter.
D 6	Transmitter was removed in room EG3, B80 installed
D 7	Data between Jun-Oct 99 used 0.648 and not 0.864
D 8	Hosp Mang Mr. G (RIC) Hodges 286-7318 V, 286-8375 F, 903-2665 P
D 9	B80 Data Logger, Room EG3, Modem Line (254)286-7821
D 10	Darnall Army Hospital @ Fort Hood in Killeen, Tx.
D 11	Plant contact: Mr. Leslie (NEIL) Matther (254)288-8770, room 215
D 12	JJ Maintenance from Austin, E. Steiner or D Keller 532-5603
D 13	Chief Operator Larry Norton control room 286-7088
D 14	Need to register in Room 0407, 288-8770, request a badge
D 15	Carlos Ortiz

Description	Variable	Measurement #
WBE METER #3	DIG 0	0
WBE METER #4	DIG 1	0

11.1.7. Channel Identification Tables Istarxp% listchid# 940 - 3831 - Darnall Hosptial #2

Chid	cp	Description
4202	-1	CHILLER#2 RT-TMP
4179	-1	CHILLER #1 ELE A (kva, A1B1/A1B1)
4180	-1	CHILLER #1 ELE C (kva, C1B1/C1B1)
4183	-1	CHILLER #3 ELE A (kva, A1B1/A1B1)
4184	-1	CHILLER #3 ELE C (kva, C1B1/C1B1)
4185	-1	MCC PHASE A (kva, A1B1/A1B1)
4186	-1	MCC PHASE C (kva, C1B1/C1B1)
4187	-1	LIL' MCC PHASE A (kva, A1B1/A1B1)
4188	-1	LIL' MCC PHASE C (kva, C1B1/C1B1)
4189	-1	CHILLER #1 ELE A (volts, A1B1/A1B1)
4190	-1	CHILLER #1 ELE C (volts, C1B1/C1B1)
4191	-1	CHILLER #2 ELE A (volts, A1B1/A1B1)
4192	-1	CHILLER #2 ELE C (volts, C1B1/C1B1)
4193	-1	CHILLER #3 ELE A (volts, A1B1/A1B1)
4194	-1	CHILLER #3 ELE C (volts, C1B1/C1B1)
4195	-1	MCC PHASE A (volts, A1B1/A1B1)
4196	-1	MCC PHASE C (volts, C1B1/C1B1)
4197	-1	LIL' MCC PHASE A (volts, A1B1/A1B1)
4198	-1	LIL' MCC PHASE C (volts, C1B1/C1B1)
4181	-1	CHILLER #2 ELE A (kva, A1B1/A1B1)
4201	-1	CHILLER#2 SP-TMP
4199	-1	CHILLER#1 SP-TMP
4200	-1	CHILLER#1 RT-TMP
4182	-1	CHILLER #2 ELE C (kva, C1B1/C1B1)
4208	-1	WBE METER #4
4207	-1	WBE METER #3
4204	-1	CHILLER#3 RT-TMP
4203	-1	CHILLER#3 SP-TMP
4169	1	CHILLER #1 ELE A (power, A1B1/A1B1)
4170	2	CHILLER #1 ELE C (power, C1B1/C1B1)
4171	3	CHILLER #2 ELE A (power, A1B1/A1B1)
4172	4	CHILLER #2 ELE C (power, C1B1/C1B1)
4173	5	CHILLER #3 ELE A (power, A1B1/A1B1)
4174	6	CHILLER #3 ELE C (power, C1B1/C1B1)
4175	7	MCC PHASE A (power, A1B1/A1B1)
4176	8	MCC PHASE C (power, C1B1/C1B1)
4177	9	LIL' MCC PHASE A (power, A1B1/A1B1)
4178	10	LIL' MCC PHASE C (power, C1B1/C1B1)
4297	11	CHILLER#1 SP-TMP
4298	12	CHILLER#1 RT-TMP
4299	13	CHILLER#2 SP-TMP
4300	14	CHILLER#2 RT-TMP
4301	15	CHILLER#3 SP-TMP
4302	16	CHILLER#3 RT-TMP
4205	17	WBE METER #1
4206	18	WBE METER #2
4303	19	GAS OTHER
4209	20	WBGAS

11.1.8. Parameter set for the Logger # 940 - 3831 - Darnall Hospital #2

***** Configuration for Logger: 03831 Parameter Set Code: a *****

----- INTEGRATION PERIODS -----

	AM						PM																	
From:	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
To:	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Flag:	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mins:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

----- WATT CHANNELS -----

Chan	Description	STA	Load	Hi	Lo	VMult	Amps	Vlt	Amp	PR	KW	KVA	KWH	KVAH
CT 0	CHILLER #1 ELE A ON	3P	A1	B1	1.00	400	400	0	*					
CT 1	CHILLER #1 ELE C ON	3P	C1	B1	1.00	400	400	1	*					
CT 2	CHILLER #2 ELE A ON	3P	A1	B1	1.00	400	400	2	*					
CT 3	CHILLER #2 ELE C ON	3P	C1	B1	1.00	400	400	3	*					
CT 4	CHILLER #3 ELE A ON	3P	A1	B1	1.00	800	800	4	*					
CT 5	CHILLER #3 ELE C ON	3P	C1	B1	1.00	800	800	5	*					
CT 6	MCC PHASE A ON	3P	A1	B1	1.00	1000	1000	6	*					
CT 7	MCC PHASE C ON	3P	C1	B1	1.00	1000	1000	7	*					
CT 8	LIL' MCC PHASE A ON	3P	A1	B1	1.00	600	600	8	*					
CT 9	LIL' MCC PHASE C ON	3P	C1	B1	1.00	600	600	9	*					
CT10	OFF	3P	B1	N1	1.00	100	100							
CT11	OFF	3P	C1	N1	1.00	100	100							
CT12	OFF	3P	A1	N1	1.00	100	100							
CT13	OFF	3P	B1	N1	1.00	100	100							
CT14	OFF	3P	C1	N1	1.00	100	100							
CT15	OFF	3P	A1	N1	1.00	100	100							

Chan	Search String	Field Notes
CT 0	CHILLER #1 ELECTRIC ENERGY PHASE A	
CT 1	CHILLER #1 ELECTRIC ENERGY PHASE C	
CT 2	CHILLER #2 ELECTRIC ENERGY PHASE A	
CT 3	CHILLER #2 ELECTRIC ENERGY PHASE C	
CT 4	CHILLER #3 ELECTRIC ENERGY PHASE A	
CT 5	CHILLER #3 ELECTRIC ENERGY PHASE C	
CT 6	MAIN MCC #2 (CHW PUMPS & FANS) PHASE A	
CT 7	MAIN MCC #2 (CHW PUMPS & FANS) PHASE C	
CT 8	SMALL MCC #1 (BOILERS & COOLING TOWER) PHASE A	
CT 9	SMALL MCC #1 (BOILERS & COOLING TOWER) PHASE C	
CT10	Temp Loggers 1687a-940A, 3827a,b,c-940B	
CT11	Permanent Logger 3831a, site 940-C	
CT12	Fort Hood Darnall Hospital, Dec 9,1999	

CT13 Log 1687A Jun to Oct, 3827B Nov5-22, 3827C Nov25-Dec9
 CT14 Site 940C upgrade Dec9 new parm 03831A, DOE money
 CT15 Carlos Ortiz

***** Configuration for Logger: 03831 Parameter Set Code: a *****

----- ANALOG CHANNELS -----

Chan	Description	Search String	STA	Scale	Offset	Units	T S G
A 0	CHILLER#1 SP-TMP		ON	20.00	0.00	Deg F	*
A 1	CHILLER#1 RT-TMP		ON	20.00	0.00	Deg F	*
A 2	CHILLER#2 SP-TMP		ON	20.00	0.00	Deg F	*
A 3	CHILLER#2 RT-TMP		ON	20.00	0.00	Deg F	*
A 4	CHILLER#3 SP-TMP		ON	20.00	0.00	Deg F	*
A 5	CHILLER#3 RT-TMP		ON	20.00	0.00	Deg F	*
A 6		OFF	1.00	0.00			
A 7		OFF	1.00	0.00			
A 8		OFF	1.00	0.00			
A 9		OFF	1.00	0.00			
A 10		OFF	1.00	0.00			
A 11		OFF	1.00	0.00			
A 12		OFF	1.00	0.00			
A 13		OFF	1.00	0.00			
A 14		OFF	1.00	0.00			
A 15	NOT USED!		OFF	-999.00	-999.00		

Chan	CType	Field Notes
A 0	0-5VDC	CHILLER #1 SUPPLY TEMPERATURE
A 1	0-5VDC	CHILLER #1 RETURN TEMPERATURE
A 2	0-5VDC	CHILLER #2 SUPPLY TEMPERATURE
A 3	0-5VDC	CHILLER #2 RETURN TEMPERATURE
A 4	0-5VDC	CHILLER #3 SUPPLY TEMPERATURE
A 5	0-5VDC	CHILLER #3 RETURN TEMPERATURE
A 6	OFF	Offset values may need to be included ???
A 7	OFF	EQUATION=20*INPUT
A 8	OFF	0.5V= 10 Deg F
A 9	OFF	5.0V=100 Deg F
A 10	OFF	Chiller #1 are in same Direct Digital Control Center, YORK
A 11	OFF	Chiller #4 is by itself in a YORK DD Control Center
A 12	OFF	
A 13	OFF	Facilities temperature signal shared using a DT13 ESL hardware
A 14	OFF	Located in the two auxiliary ISN panel box.
A 15	OFF	

***** Configuration for Logger: 03831 Parameter Set Code: a *****

----- DIGITAL CHANNELS -----

Chan	Description	Search String	STA	Scale	Units	TSR AVG RTS
D 0	WBE METER #1		ON	0.65	kW/pulse	*
D 1	WBE METER #2		ON	0.65	kW/pulse	*
D 2	METER#3 SITE939		OFF	1.00		
D 3	METER#4 SITE939		OFF	1.00		
D 4	GAS OTHER		ON	1.00	CFxScale	*
D 5	WBGAS		ON	10.00	CF	*
D 6		OFF	1.00			
D 7		OFF	1.00			
D 8		OFF	1.00			
D 9		OFF	1.00			
D 10		OFF	1.00			
D 11		OFF	1.00			
D 12		OFF	1.00			
D 13		OFF	1.00			
D 14		OFF	1.00			
D 15		OFF	1.00			

Chan	Field Notes
------	-------------

D 0	Incoming 480vac LINE #1
D 1	Incoming 480vac LINE #2
D 2	See site 939 in room EG3
D 3	See site 939 in room EG3
D 4	Bldg Gas,CI#??, SSI-splitter. Turbometer/Pulsmatic 300-2P-1
D 5	Boiler,CI#10, SSI-splitter. American Meter Co. 1 Rev= 100CF/10pul,Larry
D 6	Three boilers
D 7	Logger site 940 located in Plant by Meter #1-#2
D 8	Logger site 939 located in Elect. room EG3 opposite corner of site 940
D 9	REGISTER in Room 0407, see Ms. Sherry Bearden 288-8770
D 10	Hosp Manag Mr. G (RIC) Hodges 286-7318 V, 286-8375 F, 903-2665 P
D 11	C180E Data Logger, NEW PHONE LINE (254) 286-7619
D 12	Darnall Army Hospital @ Fort Hood in Killeen, Tx.
D 13	Plant contact: Mr. Leslie (Neil) Matther (254) 288-8770,room 215
D 14	J&J Maintenance from Austin. E Steiner or D Keller, 532-5603
D 15	Chief operator Larry Norton control room 286-7088, NEED BADGE

Description	Variable	Measurement #
-------------	----------	---------------

CHILLER #1 ELE A	KW 0	0
CHILLER #1 ELE C	KW 1	0
CHILLER #2 ELE A	KW 2	0
CHILLER #2 ELE C	KW 3	0
CHILLER #3 ELE A	KW 4	0
CHILLER #3 ELE C	KW 5	0
MCC PHASE A	KW 6	0
MCC PHASE C	KW 7	0
LIL' MCC PHASE A	KW 8	0
LIL' MCC PHASE C	KW 9	0
CHILLER#1 SP-TMP	AN 0	0
CHILLER#1 RT-TMP	AN 1	0
CHILLER#2 SP-TMP	AN 2	0

CHILLER#2 RT-TMP AN 3 0
CHILLER#3 SP-TMP AN 4 0
CHILLER#3 RT-TMP AN 5 0
WBE METER #1 DIG 0 0
WBE METER #2 DIG 1 0
GAS OTHER DIG 4 0
WBGAS DIG 5 0

11.1.9. Channel Identification Tables Istarxp% listchid#941 - 10147 - Main Electrical Substation #1

Chid	cp	Description
1867	-1	SW 5 B PHASE (power, B1N1/B1N1)
1868	-1	SW 5 C PHASE (power, C1N1/C1N1)
1869	-1	SW 4 A PHASE (power, A1N1/A1N1)
1870	-1	SW 4 B PHASE (power, B1N1/B1N1)
1871	-1	SW 4 C PHASE (power, C1N1/C1N1)
1872	-1	SW 15 A PHASE (power, A1N1/A1N1)
1873	-1	SW 15 C PHASE (power, B1N1/B1N1)
1874	-1	SW 15 C PHASE (power, C1N1/C1N1)
1875	-1	SW 12 A PHASE (power, A1N1/A1N1)
1876	-1	SW 12 B PHASE (power, B1N1/B1N1)
1877	-1	SW 12 C PHASE (power, C1N1/C1N1)
1878	-1	SW 3 A PHASE (power, A2N1/A2N1)
1879	-1	SW 3 B PHASE (power, B2N1/B2N1)
1880	-1	SW 3 C PHASE (power, C2N1/C2N1)
1881	-1	SW 5 A PHASE (kva, A1N1/A1N1)
1882	-1	SW 5 B PHASE (kva, B1N1/B1N1)
1883	-1	SW 5 C PHASE (kva, C1N1/C1N1)
1884	-1	SW 4 A PHASE (kva, A1N1/A1N1)
1885	-1	SW 4 B PHASE (kva, B1N1/B1N1)
1886	-1	SW 4 C PHASE (kva, C1N1/C1N1)
1887	-1	SW 15 A PHASE (kva, A1N1/A1N1)
1888	-1	SW 15 C PHASE (kva, B1N1/B1N1)
1889	-1	SW 15 C PHASE (kva, C1N1/C1N1)
1890	-1	SW 12 A PHASE (kva, A1N1/A1N1)
1891	-1	SW 12 B PHASE (kva, B1N1/B1N1)
1892	-1	SW 12 C PHASE (kva, C1N1/C1N1)
1893	-1	SW 3 A PHASE (kva, A2N1/A2N1)
1894	-1	SW 3 B PHASE (kva, B2N1/B2N1)
1895	-1	SW 3 C PHASE (kva, C2N1/C2N1)
1896	-1	SW 5 A PHASE (volts, A1N1/A1N1)
1897	-1	SW 5 B PHASE (volts, B1N1/B1N1)
1898	-1	SW 5 C PHASE (volts, C1N1/C1N1)
1899	-1	SW 3 A PHASE (volts, A2N1/A2N1)
1900	-1	SW 3 B PHASE (volts, B2N1/B2N1)
1901	-1	SW 3 C PHASE (volts, C2N1/C2N1)
4826	-1	CIRCUIT BKR 6
4814	-1	CIRCUIT BKR 5
4815	-1	CIRCUIT BKR 4
4816	-1	CIRCUIT BKR 8
4817	-1	CIRCUIT BKR 15
4818	-1	CIRCUIT BKR 12
4819	-1	CIRCUIT BKR 3
4820	-1	CIRCUIT BKR 10
1866	-1	SW 5 A PHASE (power, A1N1/A1N1)
4821	-1	CIRCUIT BKR 2
4903	-1	CIRCUIT BKR 13 (amps, A1N1/A1N1)
4822	-1	CIRCUIT BKR 11
4823	-1	CIRCUIT BKR 9
4824	-1	CIRCUIT BKR 13
4825	-1	CIRCUIT BKR 1
4827	-1	CIRCUIT BKR 7
4828	-1	CIRCUIT BKR 14

4829 -1 CIRCUIT BKR 16
4884 -1 CIRCUIT BKR 13 (power, A1N1/A1N1)
4869 1 CIRCUIT BKR 5 (power, A1N1/A1N1)
4870 2 CIRCUIT BKR 5 (power, B1N1/B1N1)
4871 3 CIRCUIT BKR 5 (power, C1N1/C1N1)
4872 4 CIRCUIT BKR 4 (power, A1N1/A1N1)
4873 5 CIRCUIT BKR 4 (power, B1N1/B1N1)
4874 6 CIRCUIT BKR 4 (power, C1N1/C1N1)
4875 7 CIRCUIT BKR 8 (power, A1N1/A1N1)
4876 8 CIRCUIT BKR 8 (power, B1N1/B1N1)
4877 9 CIRCUIT BKR 8 (power, C1N1/C1N1)
4878 10 CIRCUIT BKR 15 (power, A1N1/A1N1)
4879 11 CIRCUIT BKR 15 (power, B1N1/B1N1)
4880 12 CIRCUIT BKR 15 (power, C1N1/C1N1)
4881 13 CIRCUIT BKR 12 (power, A1N1/A1N1)
4882 14 CIRCUIT BKR 12 (power, B1N1/B1N1)
4883 15 CIRCUIT BKR 12 (power, C1N1/C1N1)
4947 16 CIRCUIT BKR 3 (power, A1N1/A1N1)
4885 17 CIRCUIT BKR 5 (volts, A1N1/A1N1)
4886 18 CIRCUIT BKR 5 (volts, B1N1/B1N1)
4887 19 CIRCUIT BKR 5 (volts, C1N1/C1N1)
4888 20 CIRCUIT BKR 5 (amps, A1N1/A1N1)
4889 21 CIRCUIT BKR 5 (amps, B1N1/B1N1)
4890 22 CIRCUIT BKR 5 (amps, C1N1/C1N1)
4891 23 CIRCUIT BKR 4 (amps, A1N1/A1N1)
4892 24 CIRCUIT BKR 4 (amps, B1N1/B1N1)
4893 25 CIRCUIT BKR 4 (amps, C1N1/C1N1)
4894 26 CIRCUIT BKR 8 (amps, A1N1/A1N1)
4895 27 CIRCUIT BKR 8 (amps, B1N1/B1N1)
4896 28 CIRCUIT BKR 8 (amps, C1N1/C1N1)
4897 29 CIRCUIT BKR 15 (amps, A1N1/A1N1)
4898 30 CIRCUIT BKR 15 (amps, B1N1/B1N1)
4899 31 CIRCUIT BKR 15 (amps, C1N1/C1N1)
4900 32 CIRCUIT BKR 12 (amps, A1N1/A1N1)
4901 33 CIRCUIT BKR 12 (amps, B1N1/B1N1)
4902 34 CIRCUIT BKR 12 (amps, C1N1/C1N1)
4948 35 CIRCUIT BKR 3 (amps, A1N1/A1N1)

11.1.10. Parameter set for the Logger #941 - 10147 - Main Electrical Substation #1

***** Configuration for Logger: 01141 Parameter Set Code: B *****

----- INTEGRATION PERIODS -----

```

      AM                PM
From: 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11
To:   1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12

Flag: 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Mins: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
    
```

----- WATT CHANNELS -----

Chan	Description	Search String	STA	Hi	Lo	VMult	Amps	V	C	PR	P	A
CT 0	CIRCUIT BKR 5	CB5 A POWER	ON	A1	N1	1.0	600	*	*	0	*	
CT 1	CIRCUIT BKR 5	CB5 B POWER	ON	B1	N1	1.0	600	*	*	1	*	
CT 2	CIRCUIT BKR 5	CB5 C POWER	ON	C1	N1	1.0	600	*	*	2	*	
CT 3	CIRCUIT BKR 4	CB4 A POWER	ON	A1	N1	1.0	600	*		3	*	
CT 4	CIRCUIT BKR 4	CB4 B POWER	ON	B1	N1	1.0	600	*		4	*	
CT 5	CIRCUIT BKR 4	CB4 C POWER	ON	C1	N1	1.0	600	*		5	*	
CT 6	CIRCUIT BKR 8	CB8 A POWER	ON	A1	N1	1.0	600	*		6	*	
CT 7	CIRCUIT BKR 8	CB8 B POWER	ON	B1	N1	1.0	600	*		7	*	
CT 8	CIRCUIT BKR 8	CB8 C POWER	ON	C1	N1	1.0	600	*		8	*	
CT 9	CIRCUIT BKR 15	CB15 A POWER	ON	A1	N1	1.0	600	*		9	*	
CT10	CIRCUIT BKR 15	CB15 B POWER	ON	B1	N1	1.0	600	*		10	*	
CT11	CIRCUIT BKR 15	CB15 C POWER	ON	C1	N1	1.0	600	*		11	*	
CT12	CIRCUIT BKR 12	CB12 A POWER	ON	A1	N1	1.0	600	*		12	*	
CT13	CIRCUIT BKR 12	CB12 B POWER	ON	B1	N1	1.0	600	*		13	*	
CT14	CIRCUIT BKR 12	CB12 C POWER	ON	C1	N1	1.0	600	*		14	*	
CT15	CIRCUIT BKR 3	CB13 A POWER	ON	A1	N1	1.0	600	*		15	*	

Chan	Field Notes
CT 0	
CT 1	
CT 2	
CT 3	
CT 4	
CT 5	
CT 6	
CT 7	
CT 8	
CT 9	
CT10	

CT11
 CT12
 CT13
 CT14
 CT15

***** Configuration for Logger: 01141 Parameter Set Code: B *****

---- ANALOG CHANNELS ----

Chan	Description	Search String	STA	Scale	Offset	Units	T S G
A 0		OFF	1.00	0.00			
A 1		OFF	1.00	0.00			
A 2		OFF	1.00	0.00			
A 3		OFF	1.00	0.00			
A 4		OFF	1.00	0.00			
A 5		OFF	1.00	0.00			
A 6		OFF	1.00	0.00			
A 7		OFF	1.00	0.00			
A 8		OFF	1.00	0.00			
A 9		OFF	1.00	0.00			
A 10		OFF	1.00	0.00			
A 11		OFF	1.00	0.00			
A 12		OFF	1.00	0.00			
A 13		OFF	1.00	0.00			
A 14		OFF	1.00	0.00			
A 15	NOT USED!	OFF	-999.00	-999.00			

Chan	CType	Field Notes
A 0	OFF	
A 1	OFF	
A 2	OFF	
A 3	OFF	
A 4	OFF	
A 5	OFF	
A 6	OFF	
A 7	OFF	
A 8	OFF	
A 9	OFF	
A 10	OFF	
A 11	OFF	
A 12	OFF	
A 13	OFF	
A 14	OFF	
A 15	OFF	

***** Configuration for Logger: 01141 Parameter Set Code: B *****

----- DIGITAL CHANNELS -----

Chan	Description	Search String	STA	Scale	Units	TSR	AVG	RTS
D 0	CIRCUIT BKR 5	CB5		OFF	120.00	KWH		
D 1	CIRCUIT BKR 4	CB4		OFF	120.00	KWH		
D 2	CIRCUIT BKR 8	CB8		OFF	120.00	KWH		
D 3	CIRCUIT BKR 15	CB15		OFF	120.00	KWH		
D 4	CIRCUIT BKR 12	CB12		OFF	120.00	KWH		
D 5	CIRCUIT BKR 3	CB3		OFF	120.00	KWH		
D 6	CIRCUIT BKR 10	CB10		OFF	120.00	KWH		
D 7	CIRCUIT BKR 2	CB2		OFF	120.00	KWH		
D 8	CIRCUIT BKR 11	CB11		OFF	120.00	KWH		
D 9	CIRCUIT BKR 9	CB9		OFF	120.00	KWH		
D 10	CIRCUIT BKR 13	CB13		OFF	120.00	KWH		
D 11	CIRCUIT BKR 1	CB1		OFF	120.00	KWH		
D 12	CIRCUIT BKR 6	CB6		OFF	120.00	KWH		
D 13	CIRCUIT BKR 7	CB7		OFF	120.00	KWH		
D 14	CIRCUIT BKR 14	CB14		OFF	120.00	KWH		
D 15	CIRCUIT BKR 16	CB16		OFF	120.00	KWH		

Chan	Field Notes
D 0	
D 1	
D 2	
D 3	
D 4	
D 5	
D 6	
D 7	
D 8	
D 9	
D 10	
D 11	FORT HOOD ARMY BASE, KILLEEN, TEXAS
D 12	SITE #941 SERIAL # 1141 REVISED 05/21/02
D 13	MAIN ELECTRICAL SUBSTATION
D 14	LOGGER 1 OF 3
D 15	PHONE # 254-288-6122

Description	Variable	Measurement #
CIRCUIT BKR 5	KW 0	1
CIRCUIT BKR 5	KW 1	2
CIRCUIT BKR 5	KW 2	3
CIRCUIT BKR 4	KW 3	4
CIRCUIT BKR 4	KW 4	5
CIRCUIT BKR 4	KW 5	6
CIRCUIT BKR 8	KW 6	7
CIRCUIT BKR 8	KW 7	8
CIRCUIT BKR 8	KW 8	9
CIRCUIT BKR 15	KW 9	10
CIRCUIT BKR 15	KW 10	11

CIRCUIT BKR 15	KW 11	12
CIRCUIT BKR 12	KW 12	13
CIRCUIT BKR 12	KW 13	14
CIRCUIT BKR 12	KW 14	15
CIRCUIT BKR 3	KW 15	0
CIRCUIT BKR 5	VOLT 0	1
CIRCUIT BKR 5	VOLT 1	2
CIRCUIT BKR 5	VOLT 2	3

11.1.11. Channel Identification Tables Istarxp% listchid#946 - 10148 - Main Electrical Substation
#2

Chid	cp	Description
1903	-1	SW 10 B PHASE (power, B2N2/B2N2)
1904	-1	SW 10 B PHASE (power, C2N2/C2N2)
1905	-1	SW 2 A PHASE (power, A2N2/A2N2)
1906	-1	SW 2 B PHASE (power, B2N2/B2N2)
1907	-1	SW 2 C PHASE (power, C2N2/C2N2)
1908	-1	SW 11 A PHASE (power, A1N1/A1N1)
1909	-1	SW 11 B PHASE (power, B1N1/B1N1)
1910	-1	SW 11 C PHASE (power, C1N1/C1N1)
1911	-1	SW 9 A PHASE (power, A1N1/A1N1)
1912	-1	SW 9 B PHASE (power, B1N1/B1N1)
1913	-1	SW 9 C PHASE (power, C1N1/C1N1)
1914	-1	SW 13 C PHASE (power, C1N1/C1N1)
1915	-1	SW 13 B PHASE (power, B1N1/B1N1)
1916	-1	SW 13 A PHASE (power, A1N1/A1N1)
1917	-1	SW 10 A PHASE (kva, A2N2/A2N2)
1918	-1	SW 10 B PHASE (kva, B2N2/B2N2)
1919	-1	SW 10 B PHASE (kva, C2N2/C2N2)
1920	-1	SW 2 A PHASE (kva, A2N2/A2N2)
1921	-1	SW 2 B PHASE (kva, B2N2/B2N2)
1922	-1	SW 2 C PHASE (kva, C2N2/C2N2)
1923	-1	SW 11 A PHASE (kva, A1N1/A1N1)
1924	-1	SW 11 B PHASE (kva, B1N1/B1N1)
1925	-1	SW 11 C PHASE (kva, C1N1/C1N1)
1926	-1	SW 9 A PHASE (kva, A1N1/A1N1)
1927	-1	SW 9 B PHASE (kva, B1N1/B1N1)
1928	-1	SW 9 C PHASE (kva, C1N1/C1N1)
1929	-1	SW 13 C PHASE (kva, C1N1/C1N1)
1930	-1	SW 13 B PHASE (kva, B1N1/B1N1)
1931	-1	SW 13 A PHASE (kva, A1N1/A1N1)
1932	-1	SW 10 A PHASE (volts, A2N2/A2N2)
1933	-1	SW 10 B PHASE (volts, B2N2/B2N2)
1934	-1	SW 10 B PHASE (volts, C2N2/C2N2)
1935	-1	SW 11 A PHASE (volts, A1N1/A1N1)
1936	-1	SW 11 B PHASE (volts, B1N1/B1N1)
1937	-1	SW 11 C PHASE (volts, C1N1/C1N1)
4830	-1	TOTALIZING CB 1
1902	-1	SW 10 A PHASE (power, A2N2/A2N2)
4831	-1	TOTALIZING CB 3
4833	-1	TOTALIZING CB 4
4832	-1	TOTALIZING CB 2
4904	1	CIRCUIT BKR 3 (power, B1N1/B1N1)
4905	2	CIRCUIT BKR 3 (power, C1N1/C1N1)
4906	3	CIRCUIT BKR 10 (power, A1N1/A1N1)
4907	4	CIRCUIT BKR 10 (power, B1N1/B1N1)
4908	5	CIRCUIT BKR 10 (power, C1N1/C1N1)
4909	6	CIRCUIT BKR 2 (power, A1N1/A1N1)
4910	7	CIRCUIT BKR 2 (power, B1N1/B1N1)
4911	8	CIRCUIT BKR 2 (power, C1N1/C1N1)
4912	9	CIRCUIT BKR 11 (power, A1N1/A1N1)
4913	10	CIRCUIT BKR 11 (power, B1N1/B1N1)
4914	11	CIRCUIT BKR 11 (power, C1N1/C1N1)

4915 12 CIRCUIT BKR 9 (power, A1N1/A1N1)
4916 13 CIRCUIT BKR 9 (power, B1N1/B1N1)
4917 14 CIRCUIT BKR 9 (power, C1N1/C1N1)
4918 15 CIRCUIT BKR 13 (power, A1N1/A1N1)
4919 16 CIRCUIT BKR 13 (power, B1N1/B1N1)
4920 17 CIRCUIT BKR 3 (volts, B1N1/B1N1)
4921 18 CIRCUIT BKR 3 (volts, C1N1/C1N1)
4922 19 CIRCUIT BKR 10 (volts, A1N1/A1N1)
4923 20 CIRCUIT BKR 3 (amps, B1N1/B1N1)
4924 21 CIRCUIT BKR 3 (amps, C1N1/C1N1)
4925 22 CIRCUIT BKR 10 (amps, A1N1/A1N1)
4926 23 CIRCUIT BKR 10 (amps, B1N1/B1N1)
4927 24 CIRCUIT BKR 10 (amps, C1N1/C1N1)
4928 25 CIRCUIT BKR 2 (amps, A1N1/A1N1)
4929 26 CIRCUIT BKR 2 (amps, B1N1/B1N1)
4930 27 CIRCUIT BKR 2 (amps, C1N1/C1N1)
4931 28 CIRCUIT BKR 11 (amps, A1N1/A1N1)
4932 29 CIRCUIT BKR 11 (amps, B1N1/B1N1)
4933 30 CIRCUIT BKR 11 (amps, C1N1/C1N1)
4934 31 CIRCUIT BKR 9 (amps, A1N1/A1N1)
4935 32 CIRCUIT BKR 9 (amps, B1N1/B1N1)
4936 33 CIRCUIT BKR 9 (amps, C1N1/C1N1)
4937 34 CIRCUIT BKR 13 (amps, A1N1/A1N1)
4938 35 CIRCUIT BKR 13 (amps, B1N1/B1N1)

11.1.12. Parameter set for the Logger #946 - 10148 - Main Electrical Substation #2

***** Configuration for Logger: 10148 Parameter Set Code: a *****

----- INTEGRATION PERIODS -----

	AM		PM																					
From:	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
To:	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Flag:	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Mins:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

----- WATT CHANNELS -----

Chan	Description	STA	Load	Hi	Lo	VMult	Amps	Vlt	Amp	PR	KW	KVA	KWH	KVAH
CT 0	CIRCUIT BKR 3	ON	3P	B1	N1	1.00	600	*	*	0	*			
CT 1	CIRCUIT BKR 3	ON	3P	C1	N1	1.00	600	*	*	1	*			
CT 2	CIRCUIT BKR 10	ON	3P	A1	N1	1.00	600	*	*	2	*			
CT 3	CIRCUIT BKR 10	ON	3P	B1	N1	1.00	600			3	*			
CT 4	CIRCUIT BKR 10	ON	3P	C1	N1	1.00	600			4	*			
CT 5	CIRCUIT BKR 2	ON	3P	A1	N1	1.00	600			5	*			
CT 6	CIRCUIT BKR 2	ON	3P	B1	N1	1.00	600			6	*			
CT 7	CIRCUIT BKR 2	ON	3P	C1	N1	1.00	600			7	*			
CT 8	CIRCUIT BKR 11	ON	3P	A1	N1	1.00	600			8	*			
CT 9	CIRCUIT BKR 11	ON	3P	B1	N1	1.00	600			9	*			
CT10	CIRCUIT BKR 11	ON	3P	C1	N1	1.00	600			10	*			
CT11	CIRCUIT BKR 9	ON	3P	A1	N1	1.00	600			11	*			
CT12	CIRCUIT BKR 9	ON	3P	B1	N1	1.00	600			12	*			
CT13	CIRCUIT BKR 9	ON	3P	C1	N1	1.00	600			13	*			
CT14	CIRCUIT BKR 13	ON	3P	A1	N1	1.00	600			14	*			
CT15	CIRCUIT BKR 13	ON	3P	B1	N1	1.00	600			15	*			

Chan	Search String	Field Notes
CT 0		
CT 1		
CT 2		
CT 3		
CT 4		
CT 5		
CT 6		
CT 7		
CT 8		
CT 9		
CT10		FORT HOOD MAIN SUBSTATION BLDG 100
CT11		SITE # 952 SERIAL # 10148

CT12 PHONE # 254-288-6122
 CT13 LOGGER 2 OF 3
 CT14
 CT15

***** Configuration for Logger: 10148 Parameter Set Code: a *****

----- ANALOG CHANNELS -----

Chan	Description	Search String	STA	Scale	Offset	Units	T S G
A 0		OFF	1.00	0.00			
A 1		OFF	1.00	0.00			
A 2		OFF	1.00	0.00			
A 3		OFF	1.00	0.00			
A 4		OFF	1.00	0.00			
A 5		OFF	1.00	0.00			
A 6		OFF	1.00	0.00			
A 7		OFF	1.00	0.00			
A 8		OFF	1.00	0.00			
A 9		OFF	1.00	0.00			
A 10		OFF	1.00	0.00			
A 11		OFF	1.00	0.00			
A 12		OFF	1.00	0.00			
A 13		OFF	1.00	0.00			
A 14		OFF	1.00	0.00			
A 15	NOT USED!	OFF	-999.00	-999.00			

Chan	CType	Field Notes
A 0	OFF	
A 1	OFF	
A 2	OFF	
A 3	OFF	
A 4	OFF	
A 5	OFF	
A 6	OFF	
A 7	OFF	
A 8	OFF	
A 9	OFF	
A 10	OFF	
A 11	OFF	
A 12	OFF	
A 13	OFF	
A 14	OFF	
A 15	OFF	

***** Configuration for Logger: 10148 Parameter Set Code: a *****

----- DIGITAL CHANNELS -----

Chan	Description	Search String	STA	Scale	Units	TSR	AVG	RTS
------	-------------	---------------	-----	-------	-------	-----	-----	-----

Chan	Field Notes
D 0	OFF 1.00
D 1	OFF 1.00
D 2	OFF 1.00
D 3	OFF 1.00
D 4	OFF 1.00
D 5	OFF 1.00
D 6	OFF 1.00
D 7	OFF 1.00
D 8	OFF 1.00
D 9	OFF 1.00
D 10	OFF 1.00
D 11	OFF 1.00
D 12	OFF 1.00
D 13	OFF 1.00
D 14	OFF 1.00
D 15	OFF 1.00

Chan	Field Notes
D 0	
D 1	
D 2	
D 3	
D 4	
D 5	
D 6	
D 7	
D 8	
D 9	
D 10	
D 11	
D 12	
D 13	
D 14	
D 15	

Description	Variable	Measurement #
CIRCUIT BKR 3	KW 0	0
CIRCUIT BKR 3	KW 1	0
CIRCUIT BKR 10	KW 2	0
CIRCUIT BKR 10	KW 3	0
CIRCUIT BKR 10	KW 4	0
CIRCUIT BKR 2	KW 5	0
CIRCUIT BKR 2	KW 6	0
CIRCUIT BKR 2	KW 7	0
CIRCUIT BKR 11	KW 8	0
CIRCUIT BKR 11	KW 9	0
CIRCUIT BKR 11	KW 10	0
CIRCUIT BKR 9	KW 11	0
CIRCUIT BKR 9	KW 12	0
CIRCUIT BKR 9	KW 13	0

CIRCUIT BKR 13	KW 14	0
CIRCUIT BKR 13	KW 15	0
CIRCUIT BKR 3	VOLT 0	0
CIRCUIT BKR 3	VOLT 1	0
CIRCUIT BKR 10	VOLT 2	0
CIRCUIT BKR 3	AMP 0	0
CIRCUIT BKR 3	AMP 1	0
CIRCUIT BKR 10	AMP 2	0
CIRCUIT BKR 10	AMP 3	0
CIRCUIT BKR 10	AMP 4	0
CIRCUIT BKR 2	AMP 5	0
CIRCUIT BKR 2	AMP 6	0
CIRCUIT BKR 2	AMP 7	0
CIRCUIT BKR 11	AMP 8	0
CIRCUIT BKR 11	AMP 9	0
CIRCUIT BKR 11	AMP 10	0
CIRCUIT BKR 9	AMP 11	0
CIRCUIT BKR 9	AMP 12	0
CIRCUIT BKR 9	AMP 13	0
CIRCUIT BKR 13	AMP 14	0
CIRCUIT BKR 13	AMP 15	0

11.1.13. Channel Identification Tables Istarxp% listchid#948 - 10149 - Central Elect Power Plant
(Main Substation #3)

Chid	cp	Description	
1939	-1	SW 1 B PHASE	(power, B1N1/B1N1)
1940	-1	SW 1 C PHASE	(power, C1N1/C1N1)
1941	-1	SW 6 A PHASE	(power, A1N1/A1N1)
1942	-1	SW 6 B PHASE	(power, B1N1/B1N1)
1943	-1	SW 6 C PHASE	(power, C1N1/C1N1)
1944	-1	SW 7 A PHASE	(power, A2N1/A2N1)
1945	-1	SW 7 B PHASE	(power, B2N1/B2N1)
1946	-1	SW 7 C PHASE	(power, C2N1/C2N1)
1947	-1	SW 14 A PHASE	(power, A2N1/A2N1)
1948	-1	SW 14 B PHASE	(power, B2N1/B2N1)
1949	-1	SW 14 C PHASE	(power, C2N1/C2N1)
1950	-1	SW 16 A PHASE	(power, A2N1/A2N1)
1951	-1	SW 16 B PHASE	(power, B2N1/B2N1)
1952	-1	SW 16 C PHASE	(power, C2N1/C2N1)
1953	-1	SW 1 A PHASE	(kva, A1N1/A1N1)
1954	-1	SW 1 B PHASE	(kva, B1N1/B1N1)
1955	-1	SW 1 C PHASE	(kva, C1N1/C1N1)
1956	-1	SW 6 A PHASE	(kva, A1N1/A1N1)
1957	-1	SW 6 B PHASE	(kva, B1N1/B1N1)
1958	-1	SW 6 C PHASE	(kva, C1N1/C1N1)
1959	-1	SW 7 A PHASE	(kva, A2N1/A2N1)
1960	-1	SW 7 B PHASE	(kva, B2N1/B2N1)
1961	-1	SW 7 C PHASE	(kva, C2N1/C2N1)
1962	-1	SW 14 A PHASE	(kva, A2N1/A2N1)
1963	-1	SW 14 B PHASE	(kva, B2N1/B2N1)
1964	-1	SW 14 C PHASE	(kva, C2N1/C2N1)
1965	-1	SW 16 A PHASE	(kva, A2N1/A2N1)
1966	-1	SW 16 B PHASE	(kva, B2N1/B2N1)
1967	-1	SW 16 C PHASE	(kva, C2N1/C2N1)
1968	-1	SW 1 A PHASE	(volts, A1N1/A1N1)
1969	-1	SW 1 B PHASE	(volts, B1N1/B1N1)
1970	-1	SW 1 C PHASE	(volts, C1N1/C1N1)
1971	-1	SW 7 A PHASE	(volts, A2N1/A2N1)
1972	-1	SW 7 B PHASE	(volts, B2N1/B2N1)
1938	-1	SW 1 A PHASE	(power, A1N1/A1N1)
1973	-1	SW 7 C PHASE	(volts, C2N1/C2N1)
4949	1	CIRCUIT BKR 13	(power, C1N1/C1N1)
4950	2	CIRCUIT BKR 1	(power, A1N1/A1N1)
4951	3	CIRCUIT BKR 1	(power, B1N1/B1N1)
4952	4	CIRCUIT BKR 1	(power, C1N1/C1N1)
4953	5	CIRCUIT BKR 6	(power, A1N1/A1N1)
4954	6	CIRCUIT BKR 6	(power, B1N1/B1N1)
4955	7	CIRCUIT BKR 6	(power, C1N1/C1N1)
4956	8	CIRCUIT BKR 7	(power, A1N1/A1N1)
4957	9	CIRCUIT BKR 7	(power, B1N1/B1N1)
4958	10	CIRCUIT BKR 7	(power, C1N1/C1N1)
4959	11	CIRCUIT BKR 14	(power, A1N1/A1N1)
4960	12	CIRCUIT BKR 14	(power, B1N1/B1N1)
4961	13	CIRCUIT BKR 14	(power, C1N1/C1N1)
4962	14	CIRCUIT BKR 16	(power, A1N1/A1N1)
4963	15	CIRCUIT BKR 16	(power, B1N1/B1N1)

4964 16 CIRCUIT BKR 16 (power, C1N1/C1N1)
4965 17 CIRCUIT BKR 13 (volts, C1N1/C1N1)
4966 18 CIRCUIT BKR 1 (volts, A1N1/A1N1)
4967 19 CIRCUIT BKR 1 (volts, B1N1/B1N1)
4968 20 CIRCUIT BKR 13 (amps, C1N1/C1N1)
4969 21 CIRCUIT BKR 1 (amps, A1N1/A1N1)
4970 22 CIRCUIT BKR 1 (amps, B1N1/B1N1)
4971 23 CIRCUIT BKR 1 (amps, C1N1/C1N1)
4972 24 CIRCUIT BKR 6 (amps, A1N1/A1N1)
4973 25 CIRCUIT BKR 6 (amps, B1N1/B1N1)
4974 26 CIRCUIT BKR 6 (amps, C1N1/C1N1)
4975 27 CIRCUIT BKR 7 (amps, A1N1/A1N1)
4976 28 CIRCUIT BKR 7 (amps, B1N1/B1N1)
4977 29 CIRCUIT BKR 7 (amps, C1N1/C1N1)
4978 30 CIRCUIT BKR 14 (amps, A1N1/A1N1)
4979 31 CIRCUIT BKR 14 (amps, B1N1/B1N1)
4980 32 CIRCUIT BKR 14 (amps, C1N1/C1N1)
4981 33 CIRCUIT BKR 16 (amps, A1N1/A1N1)
4982 34 CIRCUIT BKR 16 (amps, B1N1/B1N1)
4983 35 CIRCUIT BKR 16 (amps, C1N1/C1N1)

11.1.14. Parameter set for the Logger #948 - 10149 - Central Elect Power Plant (Main Substation #3)

***** Configuration for Logger: 10149 Parameter Set Code: a *****

----- INTEGRATION PERIODS -----

	AM		PM																					
From:	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
To:	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Flag:	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mins:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

----- WATT CHANNELS -----

Chan	Description	STA	Load	Hi	Lo	VMult	Amps	Vlt	Amp	PR	KW	KVA	KWH	KVAH
CT 0	CIRCUIT BKR 13	ON	3P	C1	N1	1.00	600	*	*	0	*			
CT 1	CIRCUIT BKR 1	ON	3P	A1	N1	1.00	600	*	*	1	*			
CT 2	CIRCUIT BKR 1	ON	3P	B1	N1	1.00	600	*	*	2	*			
CT 3	CIRCUIT BKR 1	ON	3P	C1	N1	1.00	600		*	3	*			
CT 4	CIRCUIT BKR 6	ON	3P	A1	N1	1.00	600		*	4	*			
CT 5	CIRCUIT BKR 6	ON	3P	B1	N1	1.00	600		*	5	*			
CT 6	CIRCUIT BKR 6	ON	3P	C1	N1	1.00	600		*	6	*			
CT 7	CIRCUIT BKR 7	ON	3P	A1	N1	1.00	600		*	7	*			
CT 8	CIRCUIT BKR 7	ON	3P	B1	N1	1.00	600		*	8	*			
CT 9	CIRCUIT BKR 7	ON	3P	C1	N1	1.00	600		*	9	*			
CT10	CIRCUIT BKR 14	ON	3P	A1	N1	1.00	600		*	10	*			
CT11	CIRCUIT BKR 14	ON	3P	B1	N1	1.00	600		*	11	*			
CT12	CIRCUIT BKR 14	ON	3P	C1	N1	1.00	600		*	12	*			
CT13	CIRCUIT BKR 16	ON	3P	A1	N1	1.00	600		*	13	*			
CT14	CIRCUIT BKR 16	ON	3P	B1	N1	1.00	600		*	14	*			
CT15	CIRCUIT BKR 16	ON	3P	C1	N1	1.00	600		*	15	*			

Chan	Search String	Field Notes
CT 0		
CT 1		
CT 2		
CT 3		
CT 4		
CT 5		
CT 6		
CT 7		
CT 8		
CT 9		FORT HOOD MAIN SUBSTATION BLDG 100
CT10		SITE # 953 SERIAL # 10149
CT11		PHONE # 254-288-6122

CT12 LOGGER 3 OF 3
 CT13
 CT14
 CT15

***** Configuration for Logger: 10149 Parameter Set Code: a *****

----- ANALOG CHANNELS -----

Chan	Description	Search String	STA	Scale	Offset	Units	T S G
A 0		OFF	1.00	0.00			
A 1		OFF	1.00	0.00			
A 2		OFF	1.00	0.00			
A 3		OFF	1.00	0.00			
A 4		OFF	1.00	0.00			
A 5		OFF	1.00	0.00			
A 6		OFF	1.00	0.00			
A 7		OFF	1.00	0.00			
A 8		OFF	1.00	0.00			
A 9		OFF	1.00	0.00			
A 10		OFF	1.00	0.00			
A 11		OFF	1.00	0.00			
A 12		OFF	1.00	0.00			
A 13		OFF	1.00	0.00			
A 14		OFF	1.00	0.00			
A 15	NOT USED!	OFF	-999.00	-999.00			

Chan	CType	Field Notes
A 0	OFF	
A 1	OFF	
A 2	OFF	
A 3	OFF	
A 4	OFF	
A 5	OFF	
A 6	OFF	
A 7	OFF	
A 8	OFF	
A 9	OFF	
A 10	OFF	
A 11	OFF	
A 12	OFF	
A 13	OFF	
A 14	OFF	
A 15	OFF	

***** Configuration for Logger: 10149 Parameter Set Code: a *****

----- DIGITAL CHANNELS -----

Chan	Description	Search String	STA	Scale	Units	TSR	AVG	RTS
D 0		OFF	1.00					
D 1		OFF	1.00					
D 2		OFF	1.00					
D 3		OFF	1.00					
D 4		OFF	1.00					
D 5		OFF	1.00					
D 6		OFF	1.00					
D 7		OFF	1.00					
D 8		OFF	1.00					
D 9		OFF	1.00					
D 10		OFF	1.00					
D 11		OFF	1.00					
D 12		OFF	1.00					
D 13		OFF	1.00					
D 14		OFF	1.00					
D 15		OFF	1.00					

Chan	Field Notes
D 0	
D 1	
D 2	
D 3	
D 4	
D 5	
D 6	
D 7	
D 8	
D 9	
D 10	
D 11	
D 12	
D 13	
D 14	
D 15	

Description	Variable	Measurement #
CIRCUIT BKR 13	KW 0	0
CIRCUIT BKR 1	KW 1	0
CIRCUIT BKR 1	KW 2	0
CIRCUIT BKR 1	KW 3	0
CIRCUIT BKR 6	KW 4	0
CIRCUIT BKR 6	KW 5	0
CIRCUIT BKR 6	KW 6	0
CIRCUIT BKR 7	KW 7	0
CIRCUIT BKR 7	KW 8	0
CIRCUIT BKR 7	KW 9	0
CIRCUIT BKR 14	KW 10	0
CIRCUIT BKR 14	KW 11	0
CIRCUIT BKR 14	KW 12	0

CIRCUIT BKR 16	KW 13	0
CIRCUIT BKR 16	KW 14	0
CIRCUIT BKR 16	KW 15	0
CIRCUIT BKR 13	VOLT 0	0
CIRCUIT BKR 1	VOLT 1	0
CIRCUIT BKR 1	VOLT 2	0
CIRCUIT BKR 13	AMP 0	0
CIRCUIT BKR 1	AMP 1	0
CIRCUIT BKR 1	AMP 2	0
CIRCUIT BKR 1	AMP 3	0
CIRCUIT BKR 6	AMP 4	0
CIRCUIT BKR 6	AMP 5	0
CIRCUIT BKR 6	AMP 6	0
CIRCUIT BKR 7	AMP 7	0
CIRCUIT BKR 7	AMP 8	0
CIRCUIT BKR 7	AMP 9	0
CIRCUIT BKR 14	AMP 10	0
CIRCUIT BKR 14	AMP 11	0
CIRCUIT BKR 14	AMP 12	0
CIRCUIT BKR 16	AMP 13	0
CIRCUIT BKR 16	AMP 14	0
CIRCUIT BKR 16	AMP 15	0

11.1.15. Channel Identification Tables Istarxp% listchid #949 - 10150 - Ft Hood West Substation

Chid	cp	Description
3305	-1	CLR CRK SW4 C PH (kva, C1N1/C1N1)
3306	-1	CLR CRK SW5 A PH (kva, A1N1/A1N1)
3307	-1	CLR CRK SW5 B PH (kva, B1N1/B1N1)
3308	-1	CLR CRK SW5 C PH (kva, C1N1/C1N1)
3309	-1	CLR CRK SW6 A PH (kva, A1N1/A1N1)
3310	-1	CLR CRK SW6 B PH (kva, B1N1/B1N1)
3311	-1	CLR CRK SW6 C PH (kva, C1N1/C1N1)
3315	-1	TEMP
3303	-1	CLR CRK SW4 A PH (kva, A1N1/A1N1)
3316	-1	SOLAR
3304	-1	CLR CRK SW4 B PH (kva, B1N1/B1N1)
3317	-1	HUMIDITY
3294	1	CLR CRK SW4 A PH (power, A1N1/A1N1)
3295	2	CLR CRK SW4 B PH (power, B1N1/B1N1)
3296	3	CLR CRK SW4 C PH (power, C1N1/C1N1)
3297	4	CLR CRK SW5 A PH (power, A1N1/A1N1)
3298	5	CLR CRK SW5 B PH (power, B1N1/B1N1)
3299	6	CLR CRK SW5 C PH (power, C1N1/C1N1)
3300	7	CLR CRK SW6 A PH (power, A1N1/A1N1)
3301	8	CLR CRK SW6 B PH (power, B1N1/B1N1)
3302	9	CLR CRK SW6 C PH (power, C1N1/C1N1)
4984	10	CLR CRK SW7 A PH (power, A1N1/A1N1)
4985	11	CLR CRK SW7 B PH (power, B1N1/B1N1)
4986	12	CLR CRK SW7 C PH (power, C1N1/C1N1)
4987	13	CLR CRK SW8 A PH (power, A1N1/A1N1)
4988	14	CLR CRK SW8 B PH (power, B1N1/B1N1)
4989	15	CLR CRK SW8 C PH (power, C1N1/C1N1)
3312	16	CLR CRK SW4 A PH (volts, A1N1/A1N1)
3313	17	CLR CRK SW4 B PH (volts, B1N1/B1N1)
3314	18	CLR CRK SW4 C PH (volts, C1N1/C1N1)
4990	19	CLR CRK SW4 A PH (amps, A1N1/A1N1)
4991	20	CLR CRK SW4 B PH (amps, B1N1/B1N1)
4992	21	CLR CRK SW4 C PH (amps, C1N1/C1N1)
4993	22	CLR CRK SW5 A PH (amps, A1N1/A1N1)
4994	23	CLR CRK SW5 B PH (amps, B1N1/B1N1)
4995	24	CLR CRK SW5 C PH (amps, C1N1/C1N1)
4996	25	CLR CRK SW6 A PH (amps, A1N1/A1N1)
4997	26	CLR CRK SW6 B PH (amps, B1N1/B1N1)
4998	27	CLR CRK SW6 C PH (amps, C1N1/C1N1)
4999	28	CLR CRK SW7 A PH (amps, A1N1/A1N1)
5000	29	CLR CRK SW7 B PH (amps, B1N1/B1N1)
5001	30	CLR CRK SW7 C PH (amps, C1N1/C1N1)
5002	31	CLR CRK SW8 A PH (amps, A1N1/A1N1)
5003	32	CLR CRK SW8 B PH (amps, B1N1/B1N1)
5004	33	CLR CRK SW8 C PH (amps, C1N1/C1N1)
5015	34	OUTSIDE AIR TEMP
5016	35	SOLAR
5017	36	OUTSIDE HUMIDITY

CT12
 CT13 FORT HOOD ARMY BASE
 CT14 LOGGER SITE # 954 SERIAL # 10150
 CT15 PHONE # 254-288-1111 LOGGER 2 OF 2

***** Configuration for Logger: 10150 Parameter Set Code: a *****

----- ANALOG CHANNELS -----

Chan	Description	Search String	STA	Scale	Offset	Units	T S G
A 0	OUTSIDE AIR TEMP		ON	55.50	-47.98	DEG F	*
A 1	SOLAR	ON	393.17	-326.09	WATTS/M		*
A 2	OUTSIDE HUMIDITY		ON	31.25	-25.00	% RH	*
A 3		OFF	1.00	0.00			
A 4		OFF	1.00	0.00			
A 5		OFF	1.00	0.00			
A 6		OFF	1.00	0.00			
A 7		OFF	1.00	0.00			
A 8		OFF	1.00	0.00			
A 9		OFF	1.00	0.00			
A 10		OFF	1.00	0.00			
A 11		OFF	1.00	0.00			
A 12		OFF	1.00	0.00			
A 13		OFF	1.00	0.00			
A 14		OFF	1.00	0.00			
A 15	NOT USED!		OFF	-999.00	-999.00		

Chan	CType	Field Notes
A 0	4-20ma	OUTSIDE AIR TEMPERATURE
A 1	4-20ma	PYR SN 4787 LICOR SENSOR (WATTS/METER SQUARED)
A 2	4-20ma	OUTSIDE AIR HUMIDITY
A 3	OFF	
A 4	OFF	
A 5	OFF	
A 6	OFF	
A 7	OFF	
A 8	OFF	
A 9	OFF	
A 10	OFF	
A 11	OFF	
A 12	OFF	
A 13	OFF	
A 14	OFF	
A 15	OFF	

***** Configuration for Logger: 10150 Parameter Set Code: a *****

----- DIGITAL CHANNELS -----

Chan	Description	Search String	STA	Scale	Units	TSR AVG RTS
D 0		OFF		1.00		
D 1		OFF		1.00		
D 2		OFF		1.00		
D 3		OFF		1.00		
D 4		OFF		1.00		
D 5		OFF		1.00		
D 6		OFF		1.00		
D 7		OFF		1.00		
D 8		OFF		1.00		
D 9		OFF		1.00		
D 10		OFF		1.00		
D 11		OFF		1.00		
D 12		OFF		1.00		
D 13		OFF		1.00		
D 14		OFF		1.00		
D 15		OFF		1.00		

Chan	Field Notes
D 0	
D 1	
D 2	
D 3	
D 4	
D 5	
D 6	
D 7	
D 8	
D 9	
D 10	
D 11	
D 12	
D 13	
D 14	
D 15	

Description	Variable	Measurement #
CLR CRK SW4 A PH KW	0	0
CLR CRK SW4 B PH KW	1	0
CLR CRK SW4 C PH KW	2	0
CLR CRK SW5 A PH KW	3	0
CLR CRK SW5 B PH KW	4	0
CLR CRK SW5 C PH KW	5	0
CLR CRK SW6 A PH KW	6	0
CLR CRK SW6 B PH KW	7	0
CLR CRK SW6 C PH KW	8	0
CLR CRK SW7 A PH KW	9	0
CLR CRK SW7 B PH KW	10	0
CLR CRK SW7 C PH KW	11	0
CLR CRK SW8 A PH KW	12	0

CLR CRK SW8 B PH KW 13	0
CLR CRK SW8 C PH KW 14	0
CLR CRK SW4 A PH VOLT 0	0
CLR CRK SW4 B PH VOLT 1	0
CLR CRK SW4 C PH VOLT 2	0
CLR CRK SW4 A PH AMP 0	0
CLR CRK SW4 B PH AMP 1	0
CLR CRK SW4 C PH AMP 2	0
CLR CRK SW5 A PH AMP 3	0
CLR CRK SW5 B PH AMP 4	0
CLR CRK SW5 C PH AMP 5	0
CLR CRK SW6 A PH AMP 6	0
CLR CRK SW6 B PH AMP 7	0
CLR CRK SW6 C PH AMP 8	0
CLR CRK SW7 A PH AMP 9	0
CLR CRK SW7 B PH AMP 10	0
CLR CRK SW7 C PH AMP 11	0
CLR CRK SW8 A PH AMP 12	0
CLR CRK SW8 B PH AMP 13	0
CLR CRK SW8 C PH AMP 14	0
OUTSIDE AIR TEMP AN 0	0
SOLAR AN 1	0
OUTSIDE HUMIDITY AN 2	0

11.1.17. Channel Identification Tables Istarxp% listchid#944 - 10076 Ft Hood - Clear Creek Substation

Chid	cp	Description
4808	-1	CLR CRK SW3 A PH (kva, A1N1/A1N1)
4802	-1	CLR CRK SW1 A PH (kva, A1N1/A1N1)
4803	-1	CLR CRK SW1 B PH (kva, B1N1/B1N1)
4804	-1	CLR CRK SW1 C PH (kva, C1N1/C1N1)
4807	-1	CLR CRK SW2 C PH (kva, C1N1/C1N1)
4805	-1	CLR CRK SW2 A PH (kva, A1N1/A1N1)
4810	-1	CLR CRK SW3 C PH (kva, C1N1/C1N1)
4806	-1	CLR CRK SW2 B PH (kva, B1N1/B1N1)
4809	-1	CLR CRK SW3 B PH (kva, B1N1/B1N1)
4793	1	CLR CRK SW1 A PH (power, A1N1/A1N1)
4794	2	CLR CRK SW1 B PH (power, B1N1/B1N1)
4795	3	CLR CRK SW1 C PH (power, C1N1/C1N1)
4796	4	CLR CRK SW2 A PH (power, A1N1/A1N1)
4797	5	CLR CRK SW2 B PH (power, B1N1/B1N1)
4798	6	CLR CRK SW2 C PH (power, C1N1/C1N1)
4799	7	CLR CRK SW3 A PH (power, A1N1/A1N1)
4800	8	CLR CRK SW3 B PH (power, B1N1/B1N1)
4801	9	CLR CRK SW3 C PH (power, C1N1/C1N1)
4811	10	CLR CRK SW1 A PH (volts, A1N1/A1N1)
4812	11	CLR CRK SW1 B PH (volts, B1N1/B1N1)
4813	12	CLR CRK SW1 C PH (volts, C1N1/C1N1)
5005	13	CLR CRK SW1 A PH (amps, A1N1/A1N1)
5006	14	CLR CRK SW1 B PH (amps, B1N1/B1N1)
5007	15	CLR CRK SW1 C PH (amps, C1N1/C1N1)
5008	16	CLR CRK SW2 A PH (amps, A1N1/A1N1)
5009	17	CLR CRK SW2 B PH (amps, B1N1/B1N1)
5010	18	CLR CRK SW2 C PH (amps, C1N1/C1N1)
5011	19	CLR CRK SW3 A PH (amps, A1N1/A1N1)
5012	20	CLR CRK SW3 B PH (amps, B1N1/B1N1)
5013	21	CLR CRK SW3 C PH (amps, C1N1/C1N1)

11.1.18. Parameter set for the Logger #944 - 10076 Ft Hood - Clear Creek Substation

***** Configuration for Logger: 10076 Parameter Set Code: a *****

----- INTEGRATION PERIODS -----

	AM		PM																					
From:	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
To:	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Flag:	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mins:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

----- WATT CHANNELS -----

Chan	Description	STA	Load	Hi	Lo	VMult	Amps	Vlt	Amp	PR	KW	KVA	KWH	KVAH
CT 0	CLR CRK SW1 A PH ON	3P	A1	N1	60.00	600	*	* 0	*					
CT 1	CLR CRK SW1 B PH ON	3P	B1	N1	60.00	600	*	* 1	*					
CT 2	CLR CRK SW1 C PH ON	3P	C1	N1	60.00	600	*	* 2	*					
CT 3	CLR CRK SW2 A PH ON	3P	A1	N1	60.00	600		* 3	*					
CT 4	CLR CRK SW2 B PH ON	3P	B1	N1	60.00	600		* 4	*					
CT 5	CLR CRK SW2 C PH ON	3P	C1	N1	60.00	600		* 5	*					
CT 6	CLR CRK SW3 A PH ON	3P	A1	N1	60.00	600		* 6	*					
CT 7	CLR CRK SW3 B PH ON	3P	B1	N1	60.00	600		* 7	*					
CT 8	CLR CRK SW3 C PH ON	3P	C1	N1	60.00	600		* 8	*					
CT 9	OFF 3P A1 N1	1.00	100	9										
CT10	OFF 3P B1 N1	1.00	100	10										
CT11	OFF 3P C1 N1	1.00	100	11										
CT12	OFF 3P A1 N1	1.00	100	12										
CT13	OFF 3P B1 N1	1.00	100	13										
CT14	OFF 3P C1 N1	1.00	100	14										
CT15	OFF 3P A1 N1	1.00	100	15										

Chan	Search String	Field Notes
CT 0	SWITCH 1 FEEDS:	GRAY ARMY AIR BASE, RADAR HILL, AND
CT 1		HANGER EAST
CT 2		
CT 3	SWITCH 2 FEEDS:	91000, 92000, 90049, 90050, 90047 BLDGS
CT 4		
CT 5		
CT 6	SWITCH 3 FEEDS:	COMMANCHE II
CT 7		
CT 8	600:5 AMP CT'S /	7200:120 VOLT PT
CT 9		
CT10		
CT11		
CT12	FORT HOOD ARMY BASE,	KILLEEN, TEXAS

CT13 WEST BASE ELECTRICAL SUBSTATION
 CT14 SITE # 944 SERIAL # 10076
 CT15 PHONE # 254-288-1111 LOGGER 1 OF 2

***** Configuration for Logger: 10076 Parameter Set Code: a *****

----- ANALOG CHANNELS -----

Chan	Description	Search String	STA	Scale	Offset	Units	T S G
A 0		OFF	1.00	0.00			
A 1		OFF	1.00	0.00			
A 2		OFF	1.00	0.00			
A 3		OFF	1.00	0.00			
A 4		OFF	1.00	0.00			
A 5		OFF	1.00	0.00			
A 6		OFF	1.00	0.00			
A 7		OFF	1.00	0.00			
A 8		OFF	1.00	0.00			
A 9		OFF	1.00	0.00			
A 10		OFF	1.00	0.00			
A 11		OFF	1.00	0.00			
A 12		OFF	1.00	0.00			
A 13		OFF	1.00	0.00			
A 14		OFF	1.00	0.00			
A 15	NOT USED!	OFF	-999.00	-999.00			

Chan	CType	Field Notes
A 0	OFF	
A 1	OFF	
A 2	OFF	
A 3	OFF	
A 4	OFF	
A 5	OFF	
A 6	OFF	
A 7	OFF	
A 8	OFF	
A 9	OFF	
A 10	OFF	
A 11	OFF	
A 12	OFF	
A 13	OFF	
A 14	OFF	
A 15	OFF	

***** Configuration for Logger: 10076 Parameter Set Code: a *****

----- DIGITAL CHANNELS -----

Chan	Description	Search String	STA	Scale	Units	TSR	AVG	RTS
------	-------------	---------------	-----	-------	-------	-----	-----	-----

Chan	Field Notes
D 0	OFF 1.00
D 1	OFF 1.00
D 2	OFF 1.00
D 3	OFF 1.00
D 4	OFF 1.00
D 5	OFF 1.00
D 6	OFF 1.00
D 7	OFF 1.00
D 8	OFF 1.00
D 9	OFF 1.00
D 10	OFF 1.00
D 11	OFF 1.00
D 12	OFF 1.00
D 13	OFF 1.00
D 14	OFF 1.00
D 15	OFF 1.00

Chan	Field Notes
D 0	
D 1	
D 2	
D 3	
D 4	
D 5	
D 6	
D 7	
D 8	
D 9	
D 10	
D 11	
D 12	
D 13	
D 14	
D 15	

Description	Variable	Measurement #
CLR CRK SW1 A PH	KW	0
CLR CRK SW1 B PH	KW	1
CLR CRK SW1 C PH	KW	2
CLR CRK SW2 A PH	KW	3
CLR CRK SW2 B PH	KW	4
CLR CRK SW2 C PH	KW	5
CLR CRK SW3 A PH	KW	6
CLR CRK SW3 B PH	KW	7
CLR CRK SW3 C PH	KW	8
CLR CRK SW1 A PH	VOLT	0
CLR CRK SW1 B PH	VOLT	1
CLR CRK SW1 C PH	VOLT	2
CLR CRK SW1 A PH	AMP	0
CLR CRK SW1 B PH	AMP	1

CLR CRK SW1 C PH AMP 2	0
CLR CRK SW2 A PH AMP 3	0
CLR CRK SW2 B PH AMP 4	0
CLR CRK SW2 C PH AMP 5	0
CLR CRK SW3 A PH AMP 6	0
CLR CRK SW3 B PH AMP 7	0
CLR CRK SW3 C PH AMP 8	0

11.1.19. Channel Identification Tables Istarxp% listchid#937 - 10146 North Electrical Substation

Chid	cp	Description
5018	1	FEEDER 1 A PHASE (power, A1N1/A1N1)
5019	2	FEEDER 1 B PHASE (power, B1N1/B1N1)
5020	3	FEEDER 1 C PHASE (power, C1N1/C1N1)
5021	4	FEEDER 2 A PHASE (power, A1N1/A1N1)
5022	5	FEEDER 2 B PHASE (power, B1N1/B1N1)
5023	6	FEEDER 2 C PHASE (power, C1N1/C1N1)
5024	7	FEEDER 3 A PHASE (power, A1N1/A1N1)
5025	8	FEEDER 3 B PHASE (power, B1N1/B1N1)
5026	9	FEEDER 3 C PHASE (power, C1N1/C1N1)
5027	10	FEEDER 1 A PHASE (volts, A1N1/A1N1)
5028	11	FEEDER 1 B PHASE (volts, B1N1/B1N1)
5029	12	FEEDER 1 C PHASE (volts, C1N1/C1N1)
5030	13	FEEDER 1 A PHASE (amps, A1N1/A1N1)
5031	14	FEEDER 1 B PHASE (amps, B1N1/B1N1)
5032	15	FEEDER 1 C PHASE (amps, C1N1/C1N1)
5033	16	FEEDER 2 A PHASE (amps, A1N1/A1N1)
5034	17	FEEDER 2 B PHASE (amps, B1N1/B1N1)
5035	18	FEEDER 2 C PHASE (amps, C1N1/C1N1)
5036	19	FEEDER 3 A PHASE (amps, A1N1/A1N1)
5037	20	FEEDER 3 B PHASE (amps, B1N1/B1N1)
5038	21	FEEDER 3 C PHASE (amps, C1N1/C1N1)

11.1.20. Parameter set for the Logger #937 - 10146 North Electrical Substation

***** Configuration for Logger: 10146 Parameter Set Code: a *****

----- INTEGRATION PERIODS -----

	AM												PM											
From:	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
To:	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Flag:	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mins:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

----- WATT CHANNELS -----

Chan	Description	STA	Load	Hi	Lo	VMult	Amps	Vlt	Amp	PR	KW	KVA	KWH	KVAH
CT 0	FEEDER 1 A PHASE	ON	3P	A1	N1	60.00	200	*	*	0	*			
CT 1	FEEDER 1 B PHASE	ON	3P	B1	N1	60.00	200	*	*	1	*			
CT 2	FEEDER 1 C PHASE	ON	3P	C1	N1	60.00	200	*	*	2	*			
CT 3	FEEDER 2 A PHASE	ON	3P	A1	N1	60.00	200			3	*			
CT 4	FEEDER 2 B PHASE	ON	3P	B1	N1	60.00	200			4	*			
CT 5	FEEDER 2 C PHASE	ON	3P	C1	N1	60.00	200			5	*			
CT 6	FEEDER 3 A PHASE	ON	3P	A1	N1	60.00	200			6	*			
CT 7	FEEDER 3 B PHASE	ON	3P	B1	N1	60.00	200			7	*			
CT 8	FEEDER 3 C PHASE	ON	3P	C1	N1	60.00	200			8	*			
CT 9	OFF	3P	A1	N1	1.00	100	9							
CT10	OFF	3P	B1	N1	1.00	100	10							
CT11	OFF	3P	C1	N1	1.00	100	11							
CT12	OFF	3P	A1	N1	1.00	100	12							
CT13	OFF	3P	B1	N1	1.00	100	13							
CT14	OFF	3P	C1	N1	1.00	100	14							
CT15	OFF	3P	A1	N1	1.00	100	15							

Chan	Search String	Field Notes
CT 0		
CT 1		
CT 2		
CT 3		
CT 4		
CT 5		
CT 6		
CT 7		
CT 8		
CT 9		
CT10	FORT HOOD ARMY BASE	

CT11 NORTH FORT ELECTRICAL SUBSTATION
 CT12 LOGGER SN 10146, SITE # 950
 CT13
 CT14
 CT15

***** Configuration for Logger: 10146 Parameter Set Code: a *****

----- ANALOG CHANNELS -----

Chan	Description	Search String	STA	Scale	Offset	Units	T S G
A 0		OFF	1.00	0.00			
A 1		OFF	1.00	0.00			
A 2		OFF	1.00	0.00			
A 3		OFF	1.00	0.00			
A 4		OFF	1.00	0.00			
A 5		OFF	1.00	0.00			
A 6		OFF	1.00	0.00			
A 7		OFF	1.00	0.00			
A 8		OFF	1.00	0.00			
A 9		OFF	1.00	0.00			
A 10		OFF	1.00	0.00			
A 11		OFF	1.00	0.00			
A 12		OFF	1.00	0.00			
A 13		OFF	1.00	0.00			
A 14		OFF	1.00	0.00			
A 15	NOT USED!	OFF	-999.00	-999.00			

Chan	CType	Field Notes
A 0	OFF	
A 1	OFF	
A 2	OFF	
A 3	OFF	
A 4	OFF	
A 5	OFF	
A 6	OFF	
A 7	OFF	
A 8	OFF	
A 9	OFF	
A 10	OFF	
A 11	OFF	
A 12	OFF	
A 13	OFF	
A 14	OFF	
A 15	OFF	

***** Configuration for Logger: 10146 Parameter Set Code: a *****

----- DIGITAL CHANNELS -----

Chan	Description	Search String	STA	Scale	Units	TSR	AVG	RTS
------	-------------	---------------	-----	-------	-------	-----	-----	-----

```

-----
D 0          OFF  1.00
D 1          OFF  1.00
D 2          OFF  1.00
D 3          OFF  1.00
D 4          OFF  1.00
D 5          OFF  1.00
D 6          OFF  1.00
D 7          OFF  1.00
D 8          OFF  1.00
D 9          OFF  1.00
D 10         OFF  1.00
D 11         OFF  1.00
D 12         OFF  1.00
D 13         OFF  1.00
D 14         OFF  1.00
D 15         OFF  1.00

```

Chan Field Notes

```

-----
D 0
D 1
D 2
D 3
D 4
D 5
D 6
D 7
D 8
D 9
D 10
D 11
D 12
D 13
D 14
D 15

```

Description Variable Measurement #

```

-----
FEEDER 1 A PHASE KW 0      0
FEEDER 1 B PHASE KW 1      0
FEEDER 1 C PHASE KW 2      0
FEEDER 2 A PHASE KW 3      0
FEEDER 2 B PHASE KW 4      0
FEEDER 2 C PHASE KW 5      0
FEEDER 3 A PHASE KW 6      0
FEEDER 3 B PHASE KW 7      0
FEEDER 3 C PHASE KW 8      0
FEEDER 1 A PHASE VOLT 0    0
FEEDER 1 B PHASE VOLT 1    0
FEEDER 1 C PHASE VOLT 2    0
FEEDER 1 A PHASE AMP 0     0
FEEDER 1 B PHASE AMP 1     0

```

FEEDER 1 C PHASE AMP 2	0
FEEDER 2 A PHASE AMP 3	0
FEEDER 2 B PHASE AMP 4	0
FEEDER 2 C PHASE AMP 5	0
FEEDER 3 A PHASE AMP 6	0
FEEDER 3 B PHASE AMP 7	0
FEEDER 3 C PHASE AMP 8	0

11.1.21. 87000 Block Building Electricity Use From Manual Readings

This appendix contains a summary of the 2001/2002 electricity use for the buildings in the 87000 block of Ft. Hood, including:

- 87003 BN HQ Building
- 87004 CO HQ Building
- 87005 BDE HQ Building
- 87006 Health Clinic Building
- 87007 Enlisted UPH Building
- 87008 BN HQ Building
- 87009 BN HQ Building
- 87010 PHYS FIT CTR Building
- 87011 CO HQ Building
- 87012 Enlisted UPH Building
- 87014 CO HQ Building
- 87015 Enlisted UPH Building
- 87016 CO HQ Building
- 87017 Dining Facility
- 87018 Electricity Use
- 87018 Natural Gas Use

For each building a table of the electricity use is provided. These readings represent manual readings of the whole-building watt-hour meters, which are recorded approximately weekly by the Ft. Hood Energy Office. The readings were converted to daily readings by dividing the value by the number of days between readings. Average temperatures were then calculated for this period of time and are provided in the column next to the daily electricity use.

This table is then followed by a time series graph that shows the kWh/day for each building, and a scatter plot of the daily average data vs the average ambient temperature for that period, which was used to ascertain if there were any temperature dependent loads for each building.

Following this is the baseline analysis for each building. This analysis was performed using 1, 2, 3 or 4 parameter linear or change-point linear models (ASHRAE 2001; Kisoock 1993). For each building the results of the appropriate model are tabulated and a graph is provided that shows also electricity use for the building vs ambient temperature along with a line that represents the model.

In some cases the buildings had significant variations in the electricity use one or more models were chosen to more accurately characterize their use.

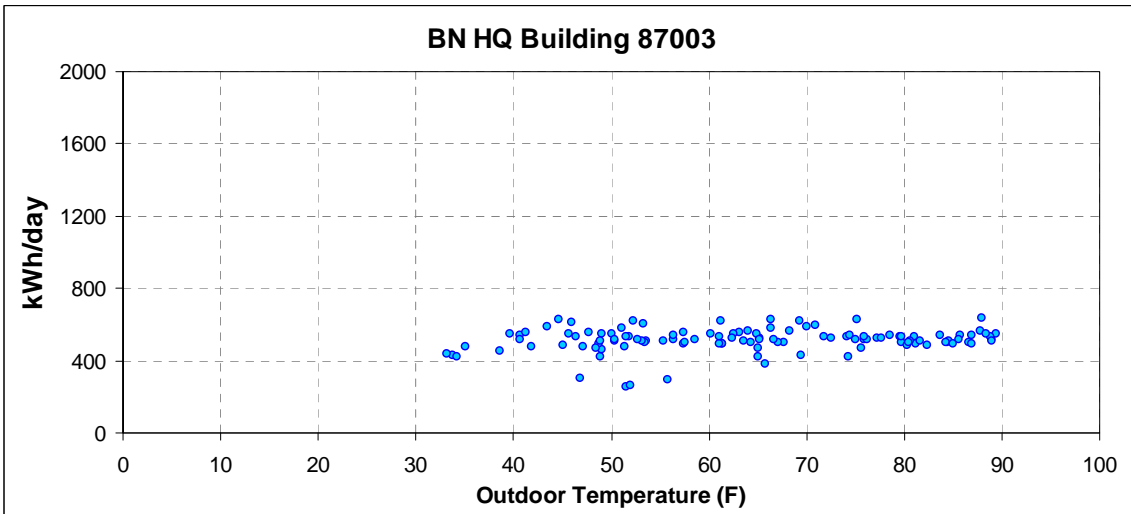
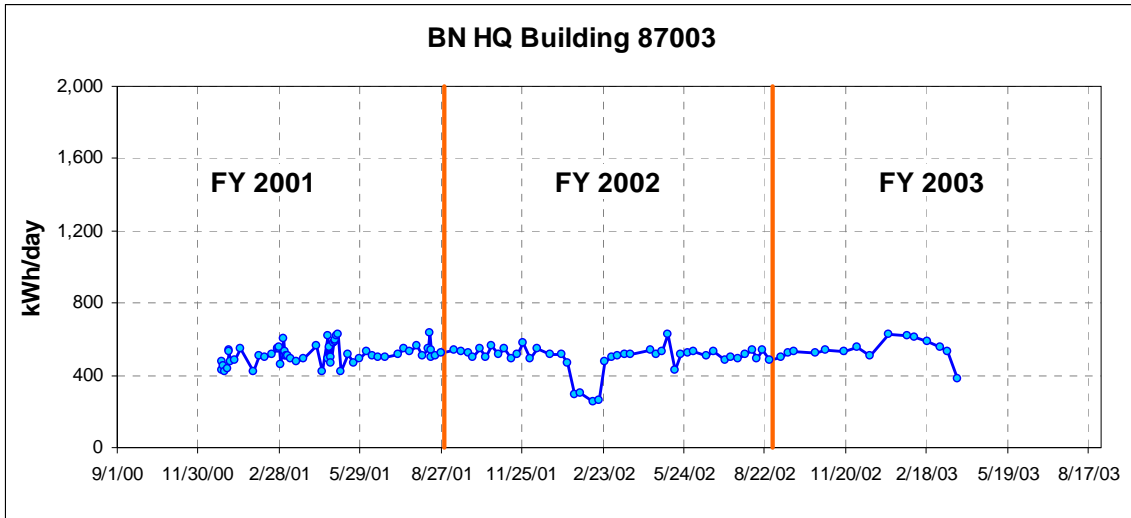
11.1.22. 87003 BN HQ Building

11.1.22.1. Electricity Use From Manual Readings

87003		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Use per period	Use per day	avg temp(F)
12/26/2000	36886	13316	12/26/2000	12/27/2000	1	13316	13742	426	426	33.71
12/27/2000	36887	13742	12/27/2000	12/28/2000	1	13742	14215	473	473	35.15
12/28/2000	36888	14215	12/28/2000	12/29/2000	1	14215	14671	456	456	38.57
12/29/2000	36889	14671	12/29/2000	1/2/2001	4	14671	16363	1692	423	34.29
1/2/2001	36893	16363	1/2/2001	1/3/2001	1	16363	16797	434	434	33.13
1/3/2001	36894	16797	1/3/2001	1/4/2001	1	16797	17335	538	538	40.73
1/4/2001	36895	17335	1/4/2001	1/5/2001	1	17335	17863	528	528	46.45
1/5/2001	36896	17863	1/5/2001	1/9/2001	4	17863	19768	1905	476	47.20
1/9/2001	36900	19768	1/9/2001	1/16/2001	7	19768	23156	3388	484	45.15
1/16/2001	36907	23156	1/16/2001	1/30/2001	14	23156	30876	7720	551	45.60
1/30/2001	36921	30876	1/30/2001	2/6/2001	7	30876	33841	2965	424	48.97
2/6/2001	36928	33841	2/6/2001	2/13/2001	7	33841	37418	3577	511	53.63
2/13/2001	36935	37418	2/13/2001	2/20/2001	7	37418	40899	3481	497	53.52
2/20/2001	36942	40899	2/20/2001	2/26/2001	6	40899	43983	3084	514	58.53
2/26/2001	36948	43983	2/26/2001	2/27/2001	1	43983	44529	546	546	60.17
2/27/2001	36949	44529	2/27/2001	2/28/2001	1	44529	45075	546	546	50.13
2/28/2001	36950	45075	2/28/2001	3/1/2001	1	45075	45621	546	546	39.58
3/1/2001	36951	45621	3/1/2001	3/2/2001	1	45621	46179	558	558	41.30
3/2/2001	36952	46179	3/2/2001	3/5/2001	3	46179	47571	1392	464	49.00
3/5/2001	36955	47571	3/5/2001	3/6/2001	1	47571	48173	602	602	53.30
3/6/2001	36956	48173	3/6/2001	3/7/2001	1	48173	48679	506	506	53.20
3/7/2001	36957	48679	3/7/2001	3/8/2001	1	48679	49211	532	532	51.84
3/8/2001	36958	49211	3/8/2001	3/9/2001	1	49211	49719	508	508	50.41
3/9/2001	36959	49719	3/9/2001	3/13/2001	4	49719	51751	2032	508	55.40
3/13/2001	36963	51751	3/13/2001	3/20/2001	7	51751	55220	3469	496	48.80
3/20/2001	36970	55220	3/20/2001	3/27/2001	7	55220	58569	3349	478	51.40
3/27/2001	36977	58569	3/27/2001	4/10/2001	14	58569	65449	6880	491	61.40
4/10/2001	36991	65449	4/10/2001	4/17/2001	7	65449	69384	3935	562	68.30
4/17/2001	36998	69384	4/17/2001	4/23/2001	6	69384	71890	2506	418	65.00
4/23/2001	37004	71890	4/23/2001	4/24/2001	1	71890	72506	616	616	61.30
4/24/2001	37005	72506	4/24/2001	4/25/2001	1	72506	73002	496	496	61.40
4/25/2001	37006	73002	4/25/2001	4/26/2001	1	73002	73554	552	552	63.17
4/26/2001	37007	73554	4/26/2001	4/27/2001	1	73554	74056	502	502	64.33
4/27/2001	37008	74056	4/27/2001	4/30/2001	3	74056	75466	1410	470	65.10
4/30/2001	37011	75466	4/30/2001	5/1/2001	1	75466	76044	578	578	66.40
5/1/2001	37012	76044	5/1/2001	5/2/2001	1	76044	76628	584	584	70.10
5/2/2001	37013	76628	5/2/2001	5/3/2001	1	76628	77222	594	594	70.92
5/3/2001	37014	77222	5/3/2001	5/4/2001	1	77222	77845	623	623	69.27
5/4/2001	37015	77845	5/4/2001	5/8/2001	4	77845	80341	2496	624	66.35
5/8/2001	37019	80341	5/8/2001	5/15/2001	7	80341	83281	2940	420	74.37
5/15/2001	37026	83281	5/15/2001	5/22/2001	7	83281	86911	3630	519	75.91
5/22/2001	37033	86911	5/22/2001	5/29/2001	7	86911	90188	3277	468	75.64
5/29/2001	37040	90188	5/29/2001	6/5/2001	7	90188	93647	3459	494	81.15
6/5/2001	37047	93647	6/5/2001	6/12/2001	7	93647	97346	3699	528	79.57
6/12/2001	37054	97346	6/12/2001	6/19/2001	7	97346	100927	3581	512	81.67
6/19/2001	37061	100927	6/19/2001	6/26/2001	7	100927	104409	3482	497	79.70
6/26/2001	37068	104409	6/26/2001	7/10/2001	14	104409	111378	6969	498	84.37
7/10/2001	37082	111378	7/10/2001	7/17/2001	7	111378	114998	3620	517	88.94
7/17/2001	37089	114998	7/17/2001	7/24/2001	7	114998	118809	3811	544	89.43
7/24/2001	37096	118809	7/24/2001	7/31/2001	7	118809	122518	3709	530	88.79

7/31/2001	37103	122518	7/31/2001	8/7/2001	7	122518	126470	3952	565	87.83
8/7/2001	37110	126470	8/7/2001	8/13/2001	6	126470	129517	3047	508	88.94
8/13/2001	37116	129517	8/13/2001	8/15/2001	2	129517	130611	1094	547	88.37
8/15/2001	37118	130611	8/15/2001	8/16/2001	1	130611	131245	634	634	88.00
8/16/2001	37119	131245	8/16/2001	8/17/2001	1	131245	131782	537	537	85.77
8/17/2001	37120	131782	8/17/2001	8/21/2001	4	131782	133784	2002	501	86.59
8/21/2001	37124	133784	8/21/2001	8/28/2001	7	133784	137350	3566	509	84.54
8/28/2001	37131	137350	8/28/2001	9/11/2001	14	137350	144677	7327	523	77.20
9/11/2001	37145	144677	9/11/2001	9/18/2001	7	144677	148473	3796	542	78.59
9/18/2001	37152	148473	9/18/2001	9/26/2001	8	148473	152721	4248	531	74.20
9/26/2001	37160	152721	9/26/2001	10/2/2001	6	152721	155879	3158	526	65.22
10/2/2001	37166	155879	10/2/2001	10/10/2001	8	155879	159900	4021	503	67.74
10/10/2001	37174	159900	10/10/2001	10/16/2001	6	159900	163174	3274	546	64.89
10/16/2001	37180	163174	10/16/2001	10/23/2001	7	163174	166670	3496	499	67.16
10/23/2001	37187	166670	10/23/2001	10/30/2001	7	166670	170609	3939	563	64.08
10/30/2001	37194	170609	10/30/2001	11/6/2001	7	170609	174244	3635	519	66.73
11/6/2001	37201	174244	11/6/2001	11/14/2001	8	174244	178623	4379	547	62.59
11/14/2001	37209	178623	11/14/2001	11/20/2001	6	178623	181563	2940	490	61.09
11/20/2001	37215	181563	11/20/2001	11/27/2001	7	181563	185170	3607	515	56.44
11/27/2001	37222	185170	11/27/2001	12/4/2001	7	185170	189201	4031	576	51.06
12/4/2001	37229	189201	12/4/2001	12/12/2001	8	189201	193141	3940	493	57.43
12/12/2001	37237	193141	12/12/2001	12/26/2001	14	193141	200793	7652	547	49.06
12/26/2001	37251	200793	12/26/2001	1/8/2002	13	200793	207467	6674	513	40.68
1/8/2002	37264	207467	1/8/2002	1/15/2002	7	207467	211066	3599	514	50.38
1/15/2002	37271	211066	1/15/2002	1/22/2002	7	211066	214368	3302	472	48.46
1/22/2002	37278	214368	1/22/2002	1/29/2002	7	214368	216443	2075	296	55.79
1/29/2002	37285	216443	1/29/2002	2/12/2002	14	216443	220640	4197	300	46.87
2/12/2002	37299	220640	2/12/2002	2/19/2002	7	220640	222393	1753	250	51.60
2/19/2002	37306	222393	2/19/2002	2/26/2002	7	222393	224215	1822	260	52.04
2/26/2002	37313	224215	2/26/2002	3/5/2002	7	224215	227543	3328	475	41.81
3/5/2002	37320	227543	3/5/2002	3/12/2002	7	227543	231057	3514	502	57.55
3/12/2002	37327	231057	3/12/2002	3/19/2002	7	231057	234596	3539	506	63.63
3/19/2002	37334	234596	3/19/2002	3/26/2002	7	234596	238227	3631	519	52.67
3/26/2002	37341	238227	3/26/2002	4/17/2002	22	238227	249531	11304	514	65.18
4/17/2002	37363	249531	4/17/2002	4/23/2002	6	249531	252754	3223	537	74.41
4/23/2002	37369	252754	4/23/2002	4/30/2002	7	252754	256374	3620	517	76.15
4/30/2002	37376	256374	4/30/2002	5/7/2002	7	256374	260078	3704	529	75.92
5/7/2002	37383	260078	5/7/2002	5/14/2002	7	260078	264452	4374	625	75.16
5/14/2002	37390	264452	5/14/2002	5/21/2002	7	264452	267444	2992	427	69.49
5/21/2002	37397	267444	5/21/2002	5/28/2002	7	267444	271042	3598	514	75.10
5/28/2002	37404	271042	5/28/2002	6/4/2002	7	271042	274716	3674	525	77.67
6/4/2002	37411	274716	6/4/2002	6/18/2002	14	274716	282154	7438	531	81.06
6/18/2002	37425	282154	6/18/2002	6/26/2002	8	282154	286244	4090	511	80.59
6/26/2002	37433	286244	6/26/2002	7/9/2002	13	286244	293108	6864	528	79.73
7/9/2002	37446	293108	7/9/2002	7/16/2002	7	293108	296476	3368	481	80.38
7/16/2002	37453	296476	7/16/2002	7/23/2002	7	296476	299992	3516	502	84.33
7/23/2002	37460	299992	7/23/2002	7/31/2002	8	299992	303947	3955	494	86.96
7/31/2002	37468	303947	7/31/2002	8/8/2002	8	303947	308075	4128	516	85.56
8/8/2002	37476	308075	8/8/2002	8/13/2002	5	308075	310760	2685	537	83.72
8/13/2002	37481	310760	8/13/2002	8/20/2002	7	310760	314224	3464	495	84.99
8/20/2002	37488	314224	8/20/2002	8/27/2002	7	314224	318006	3782	540	86.86
8/27/2002	37495	318006	8/27/2002	9/10/2002	14	318006	324778	6772	484	82.44
9/10/2002	37509	324778	9/10/2002	9/18/2002	8	324778	328784	4006	501	80.40
9/18/2002	37517	328784	9/18/2002	9/24/2002	6	328784	331931	3147	525	72.58
9/24/2002	37523	331931	9/24/2002	10/18/2002	24	331931	344627	12696	529	71.82
10/18/2002	37547	344627	10/18/2002	10/29/2002	11	344627	350376	5749	523	62.46

10/29/2002	37558	350376	10/29/2002	11/19/2002	21	350376	361638	11262	536	56.33
11/19/2002	37579	361638	11/19/2002	12/3/2002	14	361638	369042	7404	529	51.57
12/3/2002	37593	369042	12/3/2002	12/17/2002	14	369042	376871	7829	559	47.73
12/17/2002	37607	376871	12/17/2002	1/7/2003	21	376871	387536	10665	508	48.85
1/7/2003	37628	387536	1/7/2003	1/27/2003	20	387536	400070	12534	627	44.63
1/27/2003	37648	400070	1/27/2003	2/5/2003	9	400070	405643	5573	619	52.33
2/5/2003	37657	405643	2/5/2003	2/19/2003	14	405643	414186	8543	610	45.97
2/19/2003	37671	414186	2/19/2003	3/5/2003	14	414186	422444	8258	590	43.53
3/5/2003	37685	422444	3/5/2003	3/13/2003	8	422444	426862	4418	552	57.45
3/13/2003	37693	426862	3/13/2003	3/25/2003	12	426862	433267	6405	534	61.16
3/25/2003	37705	433267	3/25/2003	4/29/2003	35	433267	446616	13349	381	65.83



11.1.22.2. Baseline Model From Manual Readings

87003

Path and name of input data file = DModFY03_1.prn
 Value of no-data flag = -99
 Column number of group field = 1
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 1
 Column number of dependent Y variable = 3
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 2
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

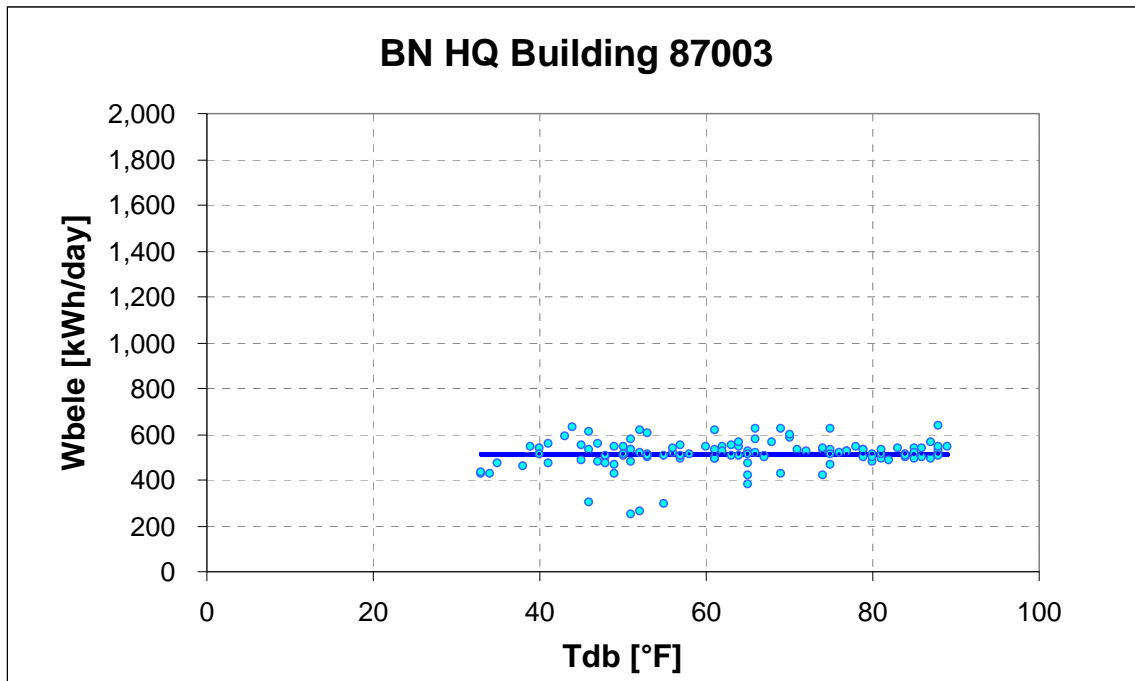
 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DModFY03_1.prn
 Model type = Mean
 Grouping column No = 1
 Value for grouping = 1
 Residual mode = 1
 # of X(Indep.) Var = 0
 Y1 column number = 3
 X1 column number = 0 (unused)
 X2 column number = 0 (unused)
 X3 column number = 0 (unused)
 X4 column number = 0 (unused)
 X5 column number = 0 (unused)
 X6 column number = 0 (unused)

Regression Results

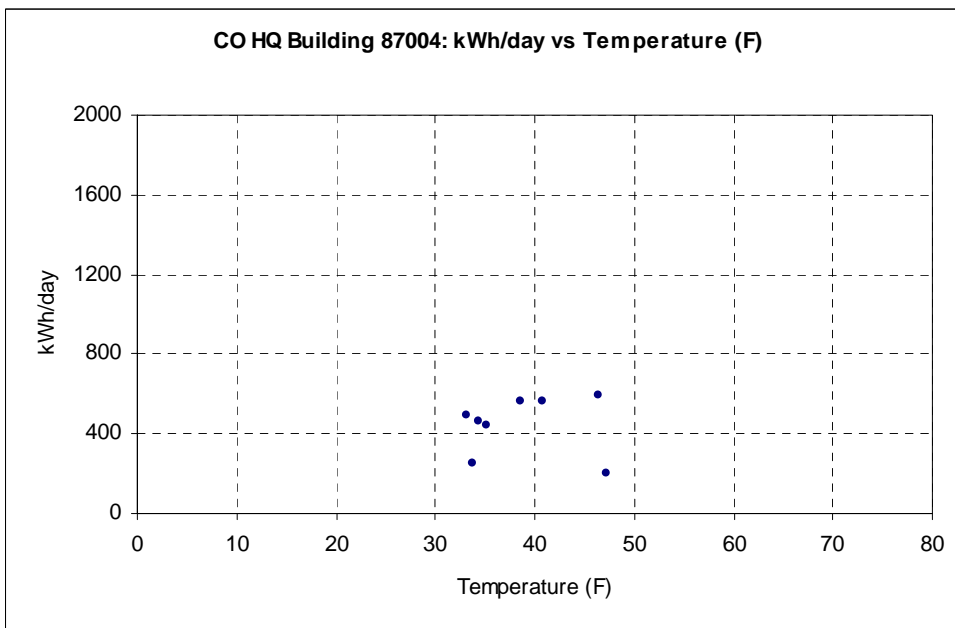
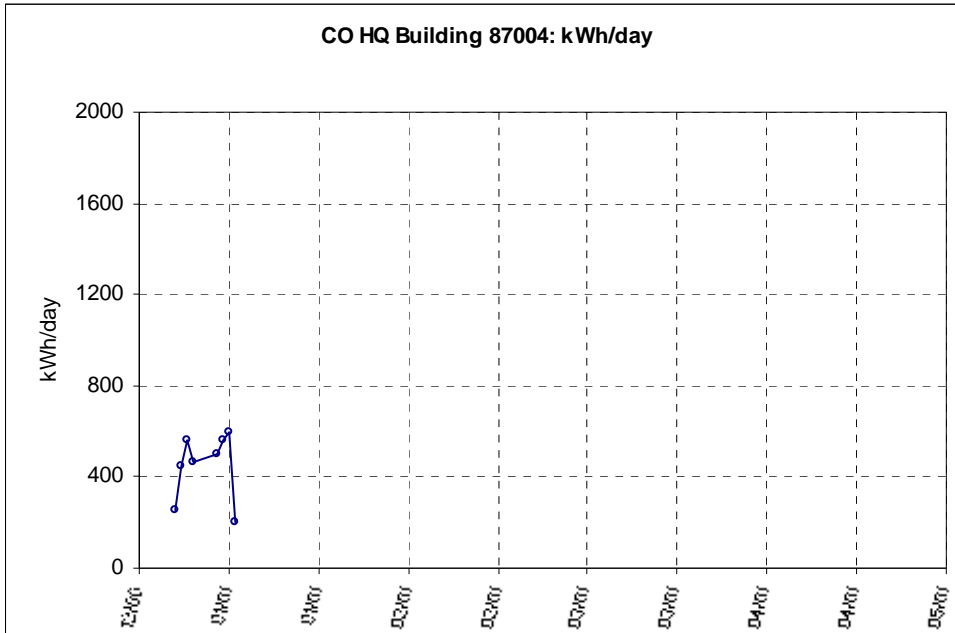
 N = 117
 Ymean = 512.137
 StdDev = 64.683
 CV-StDev = 12.630 %



11.1.23. 87004 CO HQ Building

11.1.23.1. Electricity Use From Manual Readings

87004		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Use per period	Use per day	avg temp(F)
12/26/2000	36886	10250	12/26/2000	12/27/2000	1	10250	10503	253	253	33.7
12/27/2000	36887	10503	12/27/2000	12/28/2000	1	10503	10947	444	444	35.2
12/28/2000	36888	10947	12/28/2000	12/29/2000	1	10947	11512	565	565	38.6
12/29/2000	36889	11512	12/29/2000	1/2/2001	4	11512	13358	1846	462	34.3
1/2/2001	36893	13358	1/2/2001	1/3/2001	1	13358	13854	496	496	33.1
1/3/2001	36894	13854	1/3/2001	1/4/2001	1	13854	14415	561	561	40.7
1/4/2001	36895	14415	1/4/2001	1/5/2001	1	14415	15012	597	597	46.4
1/5/2001	36896	15012	1/5/2001	1/9/2001	4	15012	15821	809	202	47.2
1/9/2001	36900	15821	1/9/2001	1/16/2001	7	15821				45.1
1/16/2001	36907		1/16/2001	1/30/2001	14					45.6
1/30/2001	36921		1/30/2001	2/6/2001	7					49.0
2/6/2001	36928		2/6/2001	2/13/2001	7					53.6
2/13/2001	36935		2/13/2001	2/20/2001	7					53.5
2/20/2001	36942		2/20/2001	2/26/2001	6					58.5
2/26/2001	36948		2/26/2001	2/27/2001	1					60.2
2/27/2001	36949		2/27/2001	2/28/2001	1					50.1
2/28/2001	36950		2/28/2001	3/1/2001	1					39.6
3/1/2001	36951		3/1/2001	3/2/2001	1					41.3
3/2/2001	36952		3/2/2001	3/5/2001	3					49.0
3/5/2001	36955		3/5/2001	3/6/2001	1					53.3
3/6/2001	36956		3/6/2001	3/7/2001	1					53.2
3/7/2001	36957		3/7/2001	3/8/2001	1					51.8
3/8/2001	36958		3/8/2001	3/9/2001	1					50.4
3/9/2001	36959		3/9/2001	3/13/2001	4					55.4
3/13/2001	36963		3/13/2001	3/20/2001	7					48.8
3/20/2001	36970		3/20/2001	3/27/2001	7					51.4
3/27/2001	36977		3/27/2001	4/10/2001	14					61.4
4/10/2001	36991		4/10/2001	4/17/2001	7					68.3
4/17/2001	36998		4/17/2001	4/23/2001	6					65.0
4/23/2001	37004		4/23/2001	4/24/2001	1					61.3
4/24/2001	37005		4/24/2001	4/25/2001	1					61.4
4/25/2001	37006		4/25/2001	4/26/2001	1					63.2
4/26/2001	37007		4/26/2001	4/27/2001	1					64.3
4/27/2001	37008		4/27/2001	4/30/2001	3					65.1
4/30/2001	37011		4/30/2001	5/1/2001	1					66.4
5/1/2001	37012		5/1/2001	5/2/2001	1					70.1
5/2/2001	37013		5/2/2001	5/3/2001	1					70.9
5/3/2001	37014		5/3/2001	5/4/2001	1					69.3
5/4/2001	37015		5/4/2001	5/8/2001	4					66.4
5/8/2001	37019		5/8/2001							



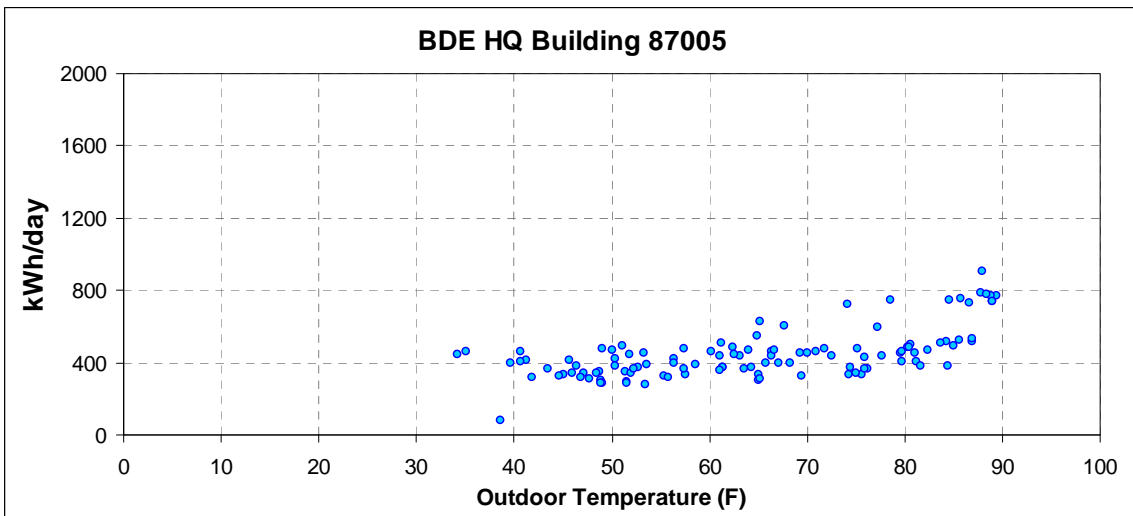
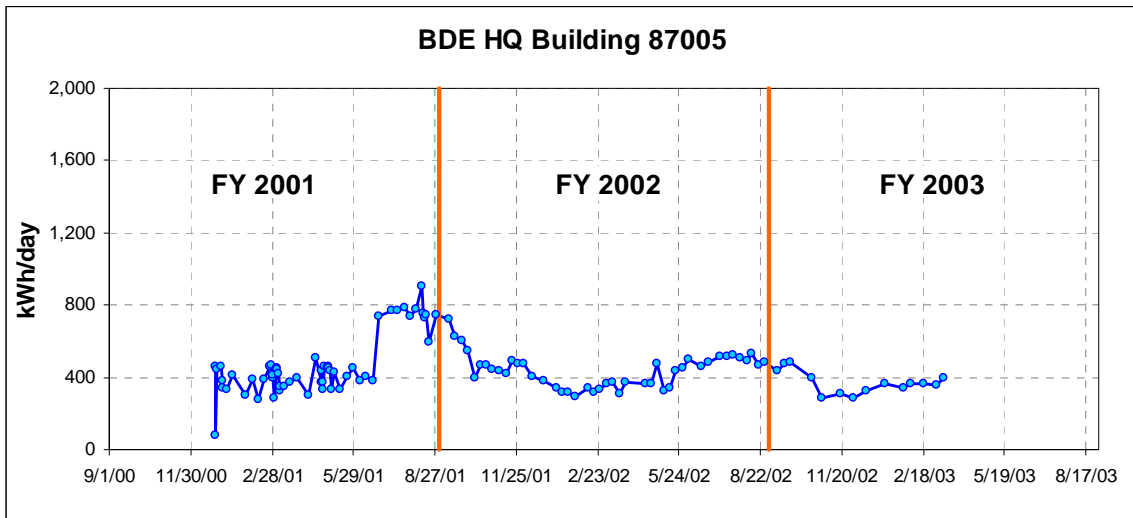
11.1.24. 87005 BDE HQ Building

11.1.24.1. Electricity Use From Manual Readings

87005		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Use per period	Use per day	avg temp(F)
12/26/2000	36886		12/26/2000	12/27/2000	1					33.71
12/27/2000	36887	9660	12/27/2000	12/28/2000	1	9660	10117	457	457	35.15
12/28/2000	36888	10117	12/28/2000	12/29/2000	1	10117	10195	78	78	38.57
12/29/2000	36889	10195	12/29/2000	1/2/2001	4	10195	11981	1786	447	34.29
1/2/2001	36893									33.13
1/3/2001	36894	11981	1/3/2001	1/4/2001	1	11981	12440	459	459	40.73
1/4/2001	36895	12440	1/4/2001	1/5/2001	1	12440	12818	378	378	46.45
1/5/2001	36896	12818	1/5/2001	1/9/2001	4	12818	14189	1371	343	47.20
1/9/2001	36900	14189	1/9/2001	1/16/2001	7	14189	16511	2322	332	45.15
1/16/2001	36907	16511	1/16/2001	1/30/2001	14	16511	22268	5757	411	45.60
1/30/2001	36921	22268	1/30/2001	2/6/2001	7	22268	24372	2104	301	48.97
2/6/2001	36928	24372	2/6/2001	2/13/2001	7	24372	27079	2707	387	53.63
2/13/2001	36935	27079	2/13/2001	2/20/2001	7	27079	29025	1946	278	53.52
2/20/2001	36942	29025	2/20/2001	2/26/2001	6	29025	31351	2326	388	58.53
2/26/2001	36948	31351	2/26/2001	2/27/2001	1	31351	31809	458	458	60.17
2/27/2001	36949	31809	2/27/2001	2/28/2001	1	31809	32281	472	472	50.13
2/28/2001	36950	32281	2/28/2001	3/1/2001	1	32281	32674	393	393	39.58
3/1/2001	36951	32674	3/1/2001	3/2/2001	1	32674	33086	412	412	41.30
3/2/2001	36952	33086	3/2/2001	3/5/2001	3	33086	33936	850	283	49.00
3/5/2001	36955	33936	3/5/2001	3/7/2001	2	33936	34839	903	452	53.30
3/6/2001	36956									53.20
3/7/2001	36957	34779	3/7/2001	3/8/2001	1	34779	35224	445	445	51.84
3/8/2001	36958	35224	3/8/2001	3/9/2001	1	35224	35644	420	420	50.41
3/9/2001	36959	35644	3/9/2001	3/13/2001	4	35644	36961	1317	329	55.40
3/13/2001	36963	36961	3/13/2001	3/20/2001	7	36961	39429	2468	353	48.80
3/20/2001	36970	39429	3/20/2001	3/27/2001	7	39429	41860	2431	347	51.40
3/27/2001	36977	41860	3/27/2001	4/10/2001	14	41860	47129	5269	376	61.40
4/10/2001	36991	47129	4/10/2001	4/17/2001	7	47129	49899	2770	396	68.30
4/17/2001	36998	49899	4/17/2001	4/23/2001	6	49899	51693	1794	299	65.00
4/23/2001	37004	51693	4/23/2001	4/24/2001	1	51693	52204	511	511	61.30
4/24/2001	37005	52204	4/24/2001	4/25/2001	1	52204	52580	376	376	61.40
4/25/2001	37006	52580	4/25/2001	4/26/2001	1	52580	53014	434	434	63.17
4/26/2001	37007	53014	4/26/2001	4/27/2001	1	53014	53387	373	373	64.33
4/27/2001	37008	53387	4/27/2001	4/30/2001	3	53387	54381	994	331	65.10
4/30/2001	37011	54381	4/30/2001	5/1/2001	1	54381	54842	461	461	66.40
5/1/2001	37012	54842	5/1/2001	5/2/2001	1	54842	55294	452	452	70.10
5/2/2001	37013	55294	5/2/2001	5/3/2001	1	55294	55758	464	464	70.92
5/3/2001	37014	55758	5/3/2001	5/4/2001	1	55758	56213	455	455	69.27
5/4/2001	37015	56213	5/4/2001	5/8/2001	4	56213	57965	1752	438	66.35
5/8/2001	37019	57965	5/8/2001	5/15/2001	7	57965	60296	2331	333	74.37
5/15/2001	37026	60296	5/15/2001	5/22/2001	7	60296	63315	3019	431	75.91
5/22/2001	37033	63315	5/22/2001	5/29/2001	7	63315	65637	2322	332	75.64
5/29/2001	37040	65637	5/29/2001	6/5/2001	7	65637	68488	2851	407	81.15
6/5/2001	37047	68488	6/5/2001	6/12/2001	7	68488	71646	3158	451	79.57
6/12/2001	37054	71646	6/12/2001	6/19/2001	7	71646	74338	2692	385	81.67
6/19/2001	37061	74338	6/19/2001	6/26/2001	7	74338	77172	2834	405	79.70
6/26/2001	37068	77172	6/26/2001	7/10/2001	14	77172	82522	5350	382	84.37
7/10/2001	37082	82522	7/10/2001	7/17/2001	7	82522	87682	5160	737	88.94
7/17/2001	37089	87682	7/17/2001	7/24/2001	7	87682	93065	5383	769	89.43

7/24/2001	37096	93065	7/24/2001	7/31/2001	7	93065	98458	5393	770	88.79
7/31/2001	37103	98458	7/31/2001	8/7/2001	7	98458	103970	5512	787	87.83
8/7/2001	37110	103970	8/7/2001	8/13/2001	6	103970	108405	4435	739	88.94
8/13/2001	37116	108405	8/13/2001	8/15/2001	2	108405	109956	1551	776	88.37
8/15/2001	37118	109956	8/15/2001	8/16/2001	1	109956	110864	908	908	88.00
8/16/2001	37119	110864	8/16/2001	8/17/2001	1	110864	111617	753	753	85.77
8/17/2001	37120	111617	8/17/2001	8/21/2001	4	111617	114530	2913	728	86.59
8/21/2001	37124	114530	8/21/2001	8/28/2001	7	114530	119753	5223	746	84.54
8/28/2001	37131	119753	8/28/2001	9/11/2001	14	119753	128124	8371	598	77.20
9/11/2001	37145	128124	9/11/2001	9/18/2001	7	128124	133367	5243	749	78.59
9/18/2001	37152	133367	9/18/2001	9/26/2001	8	133367	139124	5757	720	74.20
9/26/2001	37160	139124	9/26/2001	10/2/2001	6	139124	142893	3769	628	65.22
10/2/2001	37166	142893	10/2/2001	10/10/2001	8	142893	147705	4812	602	67.74
10/10/2001	37174	147705	10/10/2001	10/16/2001	6	147705	150986	3281	547	64.89
10/16/2001	37180	150986	10/16/2001	10/23/2001	7	150986	153773	2787	398	67.16
10/23/2001	37187	153773	10/23/2001	10/30/2001	7	153773	157032	3259	466	64.08
10/30/2001	37194	157032	10/30/2001	11/6/2001	7	157032	160288	3256	465	66.73
11/6/2001	37201	160288	11/6/2001	11/14/2001	8	160288	163860	3572	447	62.59
11/14/2001	37209	163860	11/14/2001	11/20/2001	6	163860	166501	2641	440	61.09
11/20/2001	37215	166501	11/20/2001	11/27/2001	7	166501	169438	2937	420	56.44
11/27/2001	37222	169438	11/27/2001	12/4/2001	7	169438	172882	3444	492	51.06
12/4/2001	37229	172882	12/4/2001	12/12/2001	8	172882	176678	3796	475	57.43
12/12/2001	37237	176678	12/12/2001	12/26/2001	14	176678	183367	6689	478	49.06
12/26/2001	37251	183367	12/26/2001	1/8/2002	13	183367	188580	5213	401	40.68
1/8/2002	37264	188580	1/8/2002	1/15/2002	7	188580	191259	2679	383	50.38
1/15/2002	37271	191259	1/15/2002	1/22/2002	7	191259	193669	2410	344	48.46
1/22/2002	37278	193669	1/22/2002	1/29/2002	7	193669	195878	2209	316	55.79
1/29/2002	37285	195878	1/29/2002	2/12/2002	14	195878	200362	4484	320	46.87
2/12/2002	37299	200362	2/12/2002	2/19/2002	7	200362	202432	2070	296	51.60
2/19/2002	37306	202432	2/19/2002	2/26/2002	7	202432	204845	2413	345	52.04
2/26/2002	37313	204845	2/26/2002	3/5/2002	7	204845	207078	2233	319	41.81
3/5/2002	37320	207078	3/5/2002	3/12/2002	7	207078	209402	2324	332	57.55
3/12/2002	37327	209402	3/12/2002	3/19/2002	7	209402	211934	2532	362	63.63
3/19/2002	37334	211934	3/19/2002	3/26/2002	7	211934	214530	2596	371	52.67
3/26/2002	37341	214530	3/26/2002	4/17/2002	22	214530	221418	6888	313	65.18
4/17/2002	37363	221418	4/17/2002	4/23/2002	6	221418	223652	2234	372	74.41
4/23/2002	37369	223652	4/23/2002	4/30/2002	7	223652	226221	2569	367	76.15
4/30/2002	37376	226221	4/30/2002	5/7/2002	7	226221	228790	2569	367	75.92
5/7/2002	37383	228790	5/7/2002	5/14/2002	7	228790	232097	3307	472	75.16
5/14/2002	37390	232097	5/14/2002	5/21/2002	7	232097	234350	2253	322	69.49
5/21/2002	37397	234350	5/21/2002	5/28/2002	7	234350	236748	2398	343	75.10
5/28/2002	37404	236748	5/28/2002	6/4/2002	7	236748	239807	3059	437	77.67
6/4/2002	37411	239807	6/4/2002	6/18/2002	14	239807	246093	6286	449	81.06
6/18/2002	37425	246093	6/18/2002	6/26/2002	8	246093	250087	3994	499	80.59
6/26/2002	37433	250087	6/26/2002	7/9/2002	13	250087	256100	6013	463	79.73
7/9/2002	37446	256100	7/9/2002	7/16/2002	7	256100	259483	3383	483	80.38
7/16/2002	37453	259483	7/16/2002	7/23/2002	7	259483	263082	3599	514	84.33
7/23/2002	37460	263082	7/23/2002	7/31/2002	8	263082	267215	4133	517	86.96
7/31/2002	37468	267215	7/31/2002	8/8/2002	8	267215	271408	4193	524	85.56
8/8/2002	37476	271408	8/8/2002	8/13/2002	5	271408	273962	2554	511	83.72
8/13/2002	37481	273962	8/13/2002	8/20/2002	7	273962	277411	3449	493	84.99
8/20/2002	37488	277411	8/20/2002	8/27/2002	7	277411	281112	3701	529	86.86
8/27/2002	37495	281112	8/27/2002	9/10/2002	14	281112	287628	6516	465	82.44
9/10/2002	37509	287628	9/10/2002	9/18/2002	8	287628	291513	3885	486	80.40
9/18/2002	37517	291513	9/18/2002	9/24/2002	6	291513	294142	2629	438	72.58
9/24/2002	37523	294142	9/24/2002	10/18/2002	24	294142	305492	11350	473	71.82

10/18/2002	37547	305492	10/18/2002	10/29/2002	11	305492	310790	5298	482	62.46
10/29/2002	37558	310790	10/29/2002	11/19/2002	21	310790	319171	8381	399	56.33
11/19/2002	37579	319171	11/19/2002	12/3/2002	14	319171	323220	4049	289	51.57
12/3/2002	37593	323220	12/3/2002	12/17/2002	14	323220	327542	4322	309	47.73
12/17/2002	37607	327542	12/17/2002	1/7/2003	21	327542	333612	6070	289	48.85
1/7/2003	37628	333612	1/7/2003	1/27/2003	20	333612	340177	6565	328	44.63
1/27/2003	37648	340177	1/27/2003	2/5/2003	9	340177	343460	3283	365	52.33
2/5/2003	37657	343460	2/5/2003	2/19/2003	14	343460	348209	4749	339	45.97
2/19/2003	37671	348209	2/19/2003	3/5/2003	14	348209	353285	5076	363	43.53
3/5/2003	37685	353285	3/5/2003	3/13/2003	8	353285	356198	2913	364	57.45
3/13/2003	37693	356198	3/13/2003	3/25/2003	12	356198	360459	4261	355	61.16
3/25/2003	37705	360459	3/25/2003	4/29/2003	35	360459	374303	13844	396	65.83



11.1.24.2. Baseline Model From Manual Readings

87005

Path and name of input data file = DModFY03_1.prn
 Value of no-data flag = -99
 Column number of group field = 1
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 3
 Column number of dependent Y variable = 4
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 2
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

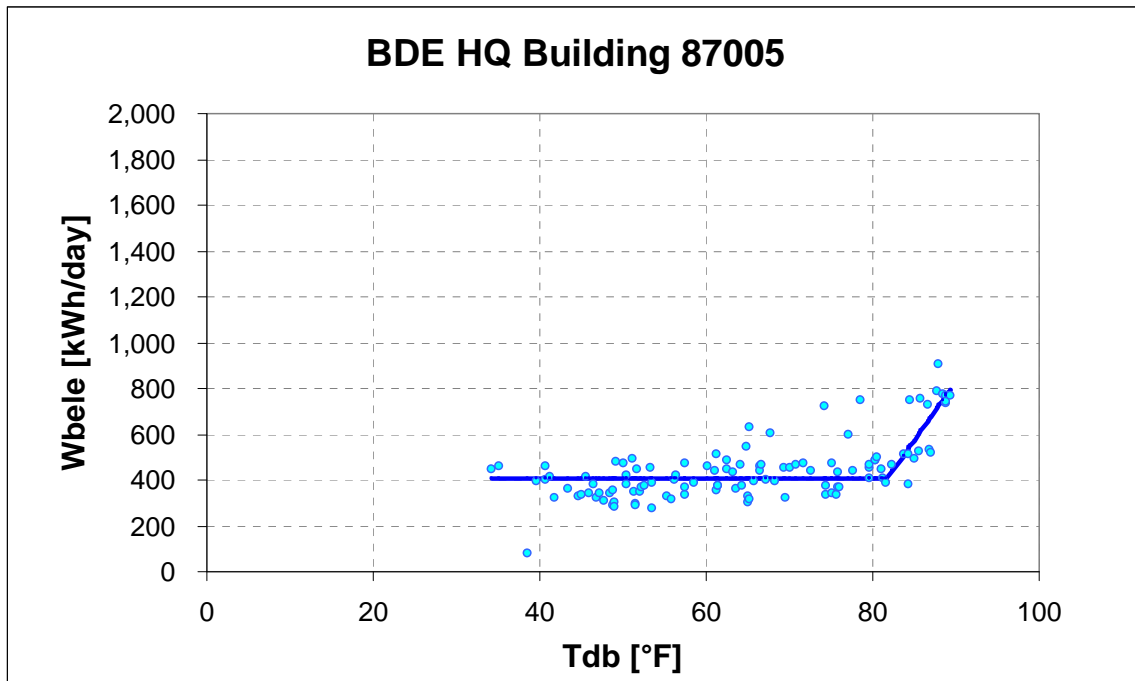
 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DModFY03_1.prn
 Model type = 3P Cooling
 Grouping column No = 1
 Value for grouping = 1
 Residual mode = 1
 # of X(Indep.) Var = 1
 Y1 column number = 4
 X1 column number = 2
 X2 column number = 0 (unused)
 X3 column number = 0 (unused)
 X4 column number = 0 (unused)
 X5 column number = 0 (unused)
 X6 column number = 0 (unused)

Regression Results

 N = 114
 R2 = 0.518
 AdjR2 = 0.518
 RMSE = 94.5913
 CV-RMSE = 21.287%
 p = 0.550
 DW = 0.899 (p>0)
 N1 = 95
 N2 = 19
 Ycp = 406.2017 (9.5184)
 LS = 0.0000 (0.0000)
 RS = 50.5428 (4.6099)
 Xcp = 81.6860 (1.1020)



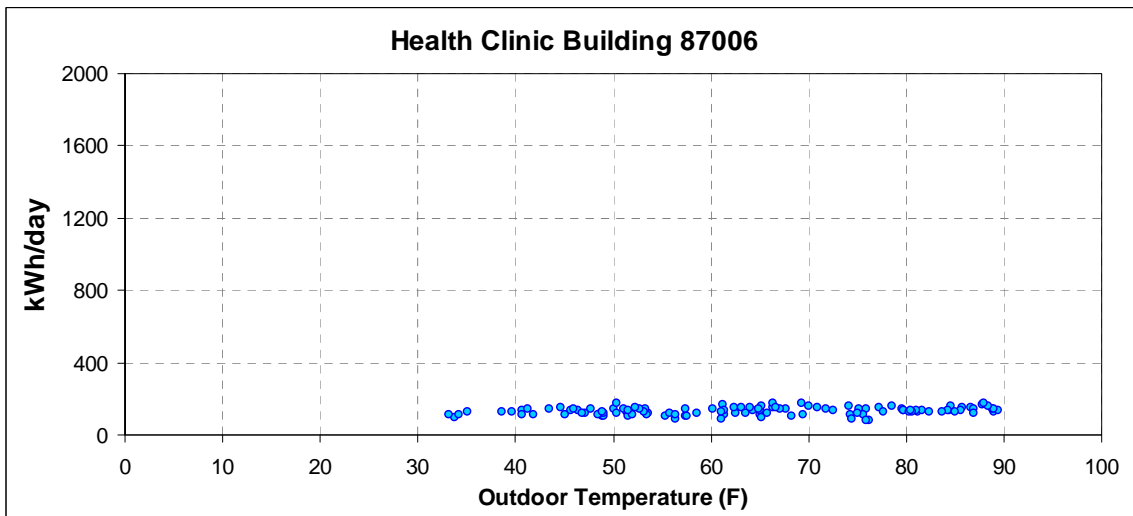
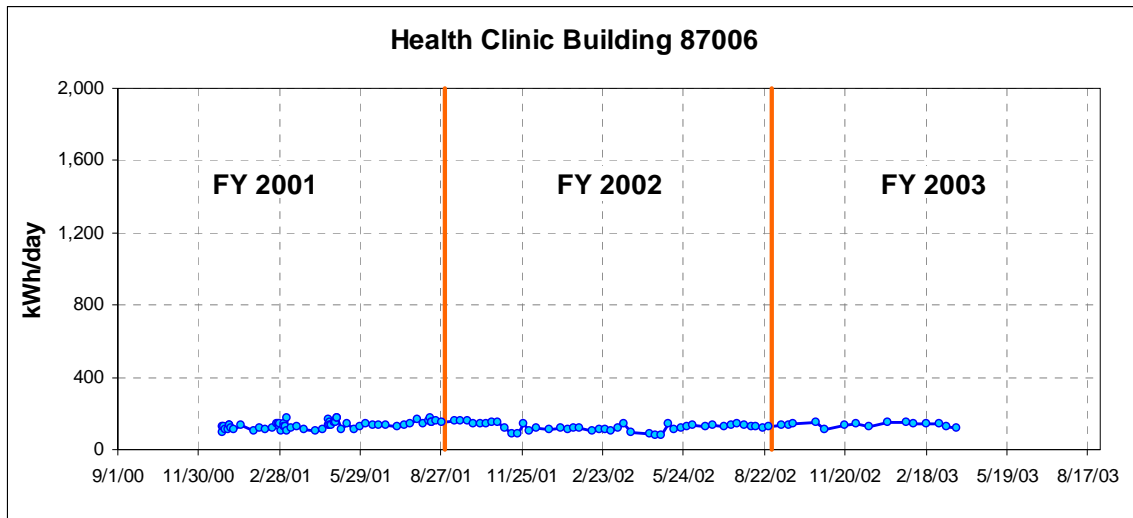
11.1.25. 87006 Health Clinic Building

11.1.25.1. Electricity Use From Manual Readings

87006		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Use per period	Use per day	avg temp(F)
12/26/2000	36886	3482	12/26/2000	12/27/2000	1	3482	3578	96	96	33.71
12/27/2000	36887	3578	12/27/2000	12/28/2000	1	3578	3705	127	127	35.15
12/28/2000	36888	3705	12/28/2000	12/29/2000	1	3705	3832	127	127	38.57
12/29/2000	36889	3832	12/29/2000	1/2/2001	4	3832	4262	430	108	34.29
1/2/2001	36893	4262	1/2/2001	1/3/2001	1	4262	4370	108	108	33.13
1/3/2001	36894	4370	1/3/2001	1/4/2001	1	4370	4504	134	134	40.73
1/4/2001	36895	4504	1/4/2001	1/5/2001	1	4504	4640	136	136	46.45
1/5/2001	36896	4640	1/5/2001	1/9/2001	4	4640	5128	488	122	47.20
1/9/2001	36900	5128	1/9/2001	1/16/2001	7	5128	5912	784	112	45.15
1/16/2001	36907	5912	1/16/2001	1/30/2001	14	5912	7760	1848	132	45.60
1/30/2001	36921	7760	1/30/2001	2/6/2001	7	7760	8481	721	103	48.97
2/6/2001	36928	8481	2/6/2001	2/13/2001	7	8481	9310	829	118	53.63
2/13/2001	36935	9310	2/13/2001	2/20/2001	7	9310	10102	792	113	53.52
2/20/2001	36942	10102	2/20/2001	2/26/2001	6	10102	10818	716	119	58.53
2/26/2001	36948	10818	2/26/2001	2/27/2001	1	10818	10957	139	139	60.17
2/27/2001	36949	10957	2/27/2001	2/28/2001	1	10957	11099	142	142	50.13
2/28/2001	36950	11099	2/28/2001	3/1/2001	1	11099	11225	126	126	39.58
3/1/2001	36951	11225	3/1/2001	3/2/2001	1	11225	11368	143	143	41.30
3/2/2001	36952	11368	3/2/2001	3/5/2001	3	11368	11688	320	107	49.00
3/5/2001	36955	11688	3/5/2001	3/6/2001	1	11688	11832	144	144	53.30
3/6/2001	36956	11832	3/6/2001	3/7/2001	1	11832	11958	126	126	53.20
3/7/2001	36957	11958	3/7/2001	3/8/2001	1	11958	12084	126	126	51.84
3/8/2001	36958	12084	3/8/2001	3/9/2001	1	12084	12257	173	173	50.41
3/9/2001	36959	12257	3/9/2001	3/13/2001	4	12257	12655	398	100	55.40
3/13/2001	36963	12655	3/13/2001	3/20/2001	7	12655	13504	849	121	48.80
3/20/2001	36970	13504	3/20/2001	3/27/2001	7	13504	14371	867	124	51.40
3/27/2001	36977	14371	3/27/2001	4/10/2001	14	14371	15940	1569	112	61.40
4/10/2001	36991	15940	4/10/2001	4/17/2001	7	15940	16652	712	102	68.30
4/17/2001	36998	16652	4/17/2001	4/23/2001	6	16652	17320	668	111	65.00
4/23/2001	37004	17320	4/23/2001	4/24/2001	1	17320	17487	167	167	61.30
4/24/2001	37005	17487	4/24/2001	4/25/2001	1	17487	17619	132	132	61.40
4/25/2001	37006	17619	4/25/2001	4/26/2001	1	17619	17772	153	153	63.17
4/26/2001	37007	17772	4/26/2001	4/27/2001	1	17772	17910	138	138	64.33
4/27/2001	37008	17910	4/27/2001	4/30/2001	3	17910	18306	396	132	65.10
4/30/2001	37011	18306	4/30/2001	5/1/2001	1	18306	18457	151	151	66.40
5/1/2001	37012	18457	5/1/2001	5/2/2001	1	18457	18613	156	156	70.10
5/2/2001	37013	18613	5/2/2001	5/3/2001	1	18613	18760	147	147	70.92
5/3/2001	37014	18760	5/3/2001	5/4/2001	1	18760	18932	172	172	69.27
5/4/2001	37015	18932	5/4/2001	5/8/2001	4	18932	19632	700	175	66.35
5/8/2001	37019	19632	5/8/2001	5/15/2001	7	19632	20392	760	109	74.37
5/15/2001	37026	20392	5/15/2001	5/22/2001	7	20392	21410	1018	145	75.91
5/22/2001	37033	21410	5/22/2001	5/29/2001	7	21410	22172	762	109	75.64
5/29/2001	37040	22172	5/29/2001	6/5/2001	7	22172	23079	907	130	81.15
6/5/2001	37047	23079	6/5/2001	6/12/2001	7	23079	24074	995	142	79.57
6/12/2001	37054	24074	6/12/2001	6/19/2001	7	24074	24998	924	132	81.67
6/19/2001	37061	24998	6/19/2001	6/26/2001	7	24998	25945	947	135	79.70
6/26/2001	37068	25945	6/26/2001	7/10/2001	14	25945	27791	1846	132	84.37
7/10/2001	37082	27791	7/10/2001	7/17/2001	7	27791	28706	915	131	88.94
7/17/2001	37089	28706	7/17/2001	7/24/2001	7	28706	29646	940	134	89.43

7/24/2001	37096	29646	7/24/2001	7/31/2001	7	29646	30662	1016	145	88.79
7/31/2001	37103	30662	7/31/2001	8/7/2001	7	30662	31824	1162	166	87.83
8/7/2001	37110	31824	8/7/2001	8/13/2001	6	31824	32703	879	147	88.94
8/13/2001	37116	32703	8/13/2001	8/15/2001	2	32703	33014	311	156	88.37
8/15/2001	37118	33014	8/15/2001	8/16/2001	1	33014	33188	174	174	88.00
8/16/2001	37119	33188	8/16/2001	8/17/2001	1	33188	33337	149	149	85.77
8/17/2001	37120	33337	8/17/2001	8/21/2001	4	33337	33927	590	148	86.59
8/21/2001	37124	33927	8/21/2001	8/28/2001	7	33927	35020	1093	156	84.54
8/28/2001	37131	35020	8/28/2001	9/11/2001	14	35020	37146	2126	152	77.20
9/11/2001	37145	37146	9/11/2001	9/18/2001	7	37146	38234	1088	155	78.59
9/18/2001	37152	38234	9/18/2001	9/26/2001	8	38234	39497	1263	158	74.20
9/26/2001	37160	39497	9/26/2001	10/2/2001	6	39497	40443	946	158	65.22
10/2/2001	37166	40443	10/2/2001	10/10/2001	8	40443	41612	1169	146	67.74
10/10/2001	37174	41612	10/10/2001	10/16/2001	6	41612	42490	878	146	64.89
10/16/2001	37180	42490	10/16/2001	10/23/2001	7	42490	43495	1005	144	67.16
10/23/2001	37187	43495	10/23/2001	10/30/2001	7	43495	44578	1083	155	64.08
10/30/2001	37194	44578	10/30/2001	11/6/2001	7	44578	45654	1076	154	66.73
11/6/2001	37201	45654	11/6/2001	11/14/2001	8	45654	46577	923	115	62.59
11/14/2001	37209	46577	11/14/2001	11/20/2001	6	46577	47118	541	90	61.09
11/20/2001	37215	47118	11/20/2001	11/27/2001	7	47118	47706	588	84	56.44
11/27/2001	37222	47706	11/27/2001	12/4/2001	7	47706	48711	1005	144	51.06
12/4/2001	37229	48711	12/4/2001	12/12/2001	8	48711	49539	828	104	57.43
12/12/2001	37237	49539	12/12/2001	12/26/2001	14	49539	51174	1635	117	49.06
12/26/2001	37251	51174	12/26/2001	1/8/2002	13	51174	52588	1414	109	40.68
1/8/2002	37264	52588	1/8/2002	1/15/2002	7	52588	53400	812	116	50.38
1/15/2002	37271	53400	1/15/2002	1/22/2002	7	53400	54180	780	111	48.46
1/22/2002	37278	54180	1/22/2002	1/29/2002	7	54180	54997	817	117	55.79
1/29/2002	37285	54997	1/29/2002	2/12/2002	14	54997	56618	1621	116	46.87
2/12/2002	37299	56618	2/12/2002	2/19/2002	7	56618	57318	700	100	51.60
2/19/2002	37306	57318	2/19/2002	2/26/2002	7	57318	58121	803	115	52.04
2/26/2002	37313	58121	2/26/2002	3/5/2002	7	58121	58916	795	114	41.81
3/5/2002	37320	58916	3/5/2002	3/12/2002	7	58916	59638	722	103	57.55
3/12/2002	37327	59638	3/12/2002	3/19/2002	7	59638	60445	807	115	63.63
3/19/2002	37334	60445	3/19/2002	3/26/2002	7	60445	61430	985	141	52.67
3/26/2002	37341	61430	3/26/2002	4/17/2002	22	61430	63591	2161	98	65.18
4/17/2002	37363	63591	4/17/2002	4/23/2002	6	63591	64108	517	86	74.41
4/23/2002	37369	64108	4/23/2002	4/30/2002	7	64108	64637	529	76	76.15
4/30/2002	37376	64637	4/30/2002	5/7/2002	7	64637	65177	540	77	75.92
5/7/2002	37383	65177	5/7/2002	5/14/2002	7	65177	66199	1022	146	75.16
5/14/2002	37390	66199	5/14/2002	5/21/2002	7	66199	66958	759	108	69.49
5/21/2002	37397	66958	5/21/2002	5/28/2002	7	66958	67801	843	120	75.10
5/28/2002	37404	67801	5/28/2002	6/4/2002	7	67801	68708	907	130	77.67
6/4/2002	37411	68708	6/4/2002	6/18/2002	14	68708	70570	1862	133	81.06
6/18/2002	37425	70570	6/18/2002	6/26/2002	8	70570	71604	1034	129	80.59
6/26/2002	37433	71604	6/26/2002	7/9/2002	13	71604	73386	1782	137	79.73
7/9/2002	37446	73386	7/9/2002	7/16/2002	7	73386	74286	900	129	80.38
7/16/2002	37453	74286	7/16/2002	7/23/2002	7	74286	75239	953	136	84.33
7/23/2002	37460	75239	7/23/2002	7/31/2002	8	75239	76361	1122	140	86.96
7/31/2002	37468	76361	7/31/2002	8/8/2002	8	76361	77416	1055	132	85.56
8/8/2002	37476	77416	8/8/2002	8/13/2002	5	77416	78060	644	129	83.72
8/13/2002	37481	78060	8/13/2002	8/20/2002	7	78060	78933	873	125	84.99
8/20/2002	37488	78933	8/20/2002	8/27/2002	7	78933	79787	854	122	86.86
8/27/2002	37495	79787	8/27/2002	9/10/2002	14	79787	81526	1739	124	82.44
9/10/2002	37509	81526	9/10/2002	9/18/2002	8	81526	82622	1096	137	80.40
9/18/2002	37517	82622	9/18/2002	9/24/2002	6	82622	83447	825	138	72.58
9/24/2002	37523	83447	9/24/2002	10/18/2002	24	83447	86915	3468	145	71.82

10/18/2002	37547	86915	10/18/2002	10/29/2002	11	86915	88581	1666	151	62.46
10/29/2002	37558	88581	10/29/2002	11/19/2002	21	88581	90994	2413	115	56.33
11/19/2002	37579	90994	11/19/2002	12/3/2002	14	90994	92863	1869	134	51.57
12/3/2002	37593	92863	12/3/2002	12/17/2002	14	92863	94847	1984	142	47.73
12/17/2002	37607	94847	12/17/2002	1/7/2003	21	94847	97593	2746	131	48.85
1/7/2003	37628	97593	1/7/2003	1/27/2003	20	97593	100557	2964	148	44.63
1/27/2003	37648	100557	1/27/2003	2/5/2003	9	100557	101910	1353	150	52.33
2/5/2003	37657	101910	2/5/2003	2/19/2003	14	101910	103945	2035	145	45.97
2/19/2003	37671	103945	2/19/2003	3/5/2003	14	103945	105931	1986	142	43.53
3/5/2003	37685	105931	3/5/2003	3/13/2003	8	105931	107045	1114	139	57.45
3/13/2003	37693	107045	3/13/2003	3/25/2003	12	107045	108554	1509	126	61.16
3/25/2003	37705	108554	3/25/2003	4/29/2003	35	108554	112744	4190	120	65.83



11.1.25.2. Baseline Model From Manual Readings

87006

Path and name of input data file = DModFY03_1.prn
 Value of no-data flag = -99
 Column number of group field = 1
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 1
 Column number of dependent Y variable = 5
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 2
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DModFY03_1.prn

Model type = Mean

Grouping column No = 1

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 0

Y1 column number = 5

X1 column number = 0 (unused)

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

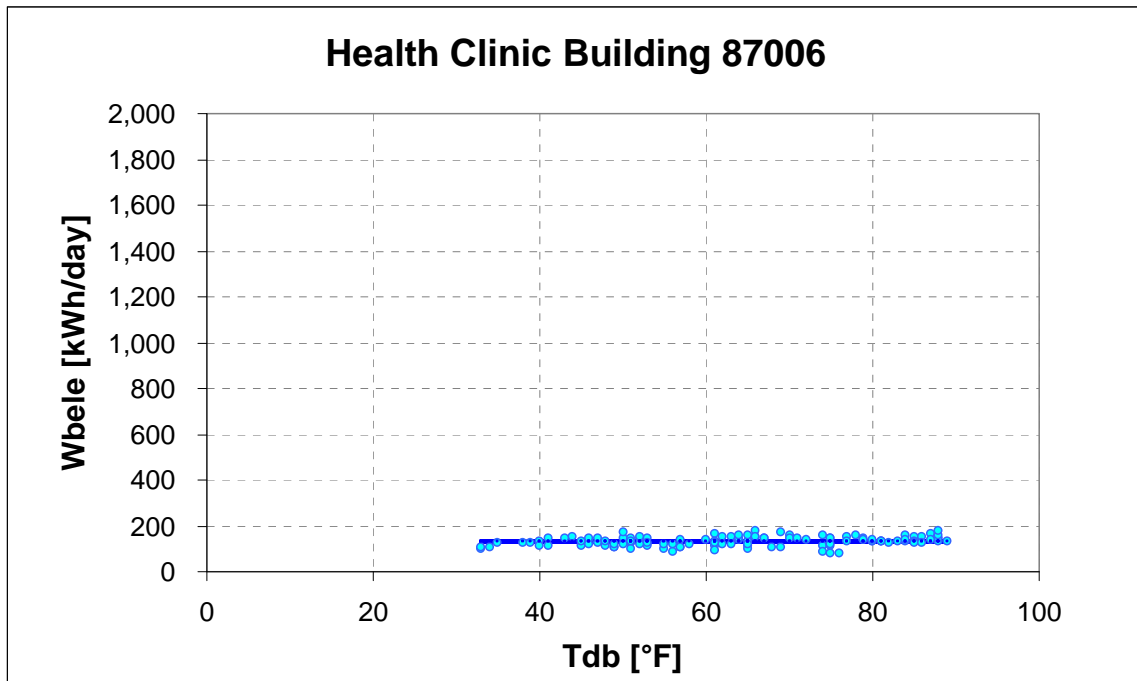
Regression Results

N = 117

Ymean = 130.197

StdDev = 20.617

CV-StDev = 15.836 %



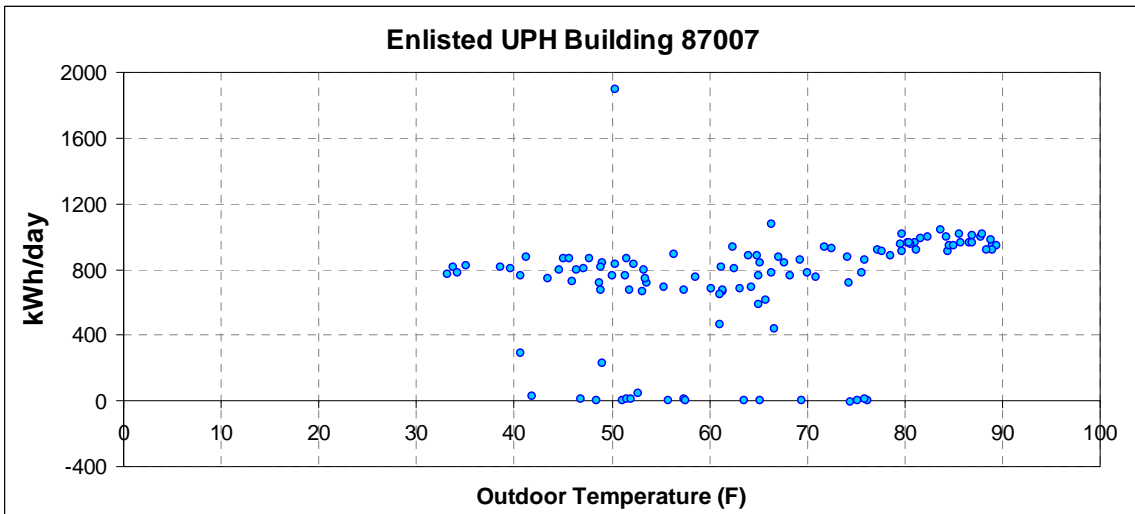
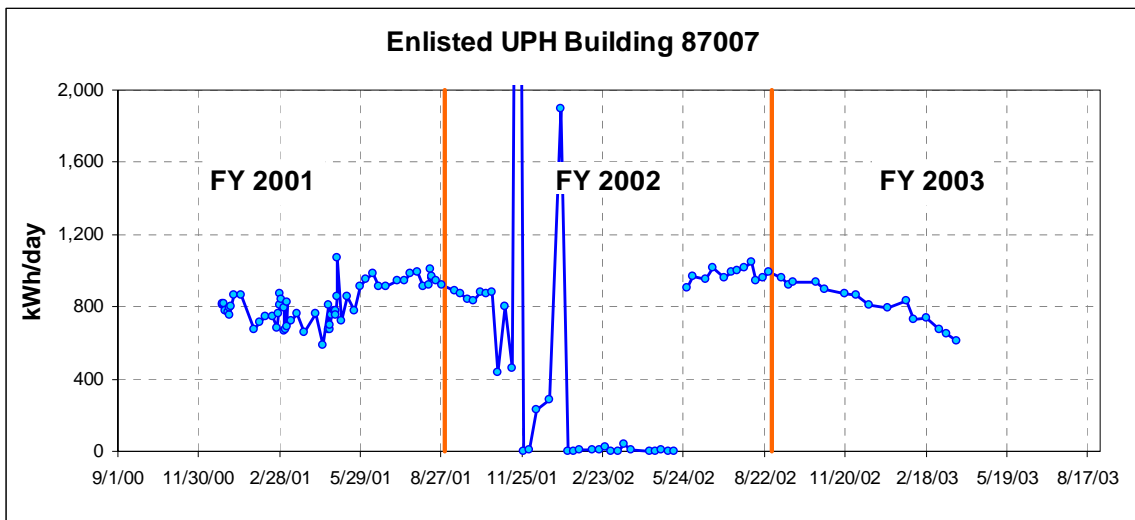
11.1.26. 87007 Enlisted UPH Building

11.1.26.1. Electricity Use From Manual Readings

	Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Use per period	Use per day	avg temp(F)
36886	22746	12/26/2000	12/27/2000	1	22746	23555	809	809	33.71
36887	23555	12/27/2000	12/28/2000	1	23555	24376	821	821	35.15
36888	24376	12/28/2000	12/29/2000	1	24376	25193	817	817	38.57
36889	25193	12/29/2000	1/2/2001	4	25193	28313	3120	780	34.29
36893	28313	1/2/2001	1/3/2001	1	28313	29080	767	767	33.13
36894	29080	1/3/2001	1/4/2001	1	29080	29837	757	757	40.73
36895	29837	1/4/2001	1/5/2001	1	29837	30629	792	792	46.45
36896	30629	1/5/2001	1/9/2001	4	30629	33848	3219	805	47.20
36900	33848	1/9/2001	1/16/2001	7	33848	39903	6055	865	45.15
36907	39903	1/16/2001	1/30/2001	14	39903	52054	12151	868	45.60
36921	52054	1/30/2001	2/6/2001	7	52054	56750	4696	671	48.97
36928	56750	2/6/2001	2/13/2001	7	56750	61744	4994	713	53.63
36935	61744	2/13/2001	2/20/2001	7	61744	66955	5211	744	53.52
36942	66955	2/20/2001	2/26/2001	6	66955	71452	4497	750	58.53
36948	71452	2/26/2001	2/27/2001	1	71452	72134	682	682	60.17
36949	72134	2/27/2001	2/28/2001	1	72134	72893	759	759	50.13
36950	72893	2/28/2001	3/1/2001	1	72893	73700	807	807	39.58
36951	73700	3/1/2001	3/2/2001	1	73700	74574	874	874	41.30
36952	74574	3/2/2001	3/5/2001	3	74574	77090	2516	839	49.00
36955	77090	3/5/2001	3/6/2001	1	77090	77885	795	795	53.30
36956	77885	3/6/2001	3/7/2001	1	77885	78552	667	667	53.20
36957	78552	3/7/2001	3/8/2001	1	78552	79229	677	677	51.84
36958	79229	3/8/2001	3/9/2001	1	79229	80058	829	829	50.41
36959	80058	3/9/2001	3/13/2001	4	80058	82807	2749	687	55.40
36963	82807	3/13/2001	3/20/2001	7	82807	87849	5042	720	48.80
36970	87849	3/20/2001	3/27/2001	7	87849	93198	5349	764	51.40
36977	93198	3/27/2001	4/10/2001	14	93198	102451	9253	661	61.40
36991	102451	4/10/2001	4/17/2001	7	102451	107777	5326	761	68.30
36998	107777	4/17/2001	4/23/2001	6	107777	111284	3507	585	65.00
37004	111284	4/23/2001	4/24/2001	1	111284	112094	810	810	61.30
37005	112094	4/24/2001	4/25/2001	1	112094	112770	676	676	61.40
37006	112770	4/25/2001	4/26/2001	1	112770	113448	678	678	63.17
37007	113448	4/26/2001	4/27/2001	1	113448	114143	695	695	64.33
37008	114143	4/27/2001	4/30/2001	3	114143	116414	2271	757	65.10
37011	116414	4/30/2001	5/1/2001	1	116414	117190	776	776	66.40
37012	117190	5/1/2001	5/2/2001	1	117190	117970	780	780	70.10
37013	117970	5/2/2001	5/3/2001	1	117970	118722	752	752	70.92
37014	118722	5/3/2001	5/4/2001	1	118722	119583	861	861	69.27
37015	119583	5/4/2001	5/8/2001	4	119583	123868	4285	1071	66.35
37019	123868	5/8/2001	5/15/2001	7	123868	128906	5038	720	74.37
37026	128906	5/15/2001	5/22/2001	7	128906	134904	5998	857	75.91
37033	134904	5/22/2001	5/29/2001	7	134904	140346	5442	777	75.64
37040	140346	5/29/2001	6/5/2001	7	140346	146757	6411	916	81.15
37047	146757	6/5/2001	6/12/2001	7	146757	153405	6648	950	79.57
37054	153405	6/12/2001	6/19/2001	7	153405	160294	6889	984	81.67
37061	160294	6/19/2001	6/26/2001	7	160294	166664	6370	910	79.70
37068	166664	6/26/2001	7/10/2001	14	166664	179427	12763	912	84.37
37082	179427	7/10/2001	7/17/2001	7	179427	186029	6602	943	88.94
37089	186029	7/17/2001	7/24/2001	7	186029	192614	6585	941	89.43

37096	192614	7/24/2001	7/31/2001	7	192614	199484	6870	981	88.79
37103	199484	7/31/2001	8/7/2001	7	199484	206430	6946	992	87.83
37110	206430	8/7/2001	8/13/2001	6	206430	211925	5495	916	88.94
37116	211925	8/13/2001	8/15/2001	2	211925	213762	1837	919	88.37
37118	213762	8/15/2001	8/16/2001	1	213762	214772	1010	1010	88.00
37119	214772	8/16/2001	8/17/2001	1	214772	215735	963	963	85.77
37120	215735	8/17/2001	8/21/2001	4	215735	219597	3862	966	86.59
37124	219597	8/21/2001	8/28/2001	7	219597	226191	6594	942	84.54
37131	226191	8/28/2001	9/11/2001	14	226191	239096	12905	922	77.20
37145	239096	9/11/2001	9/18/2001	7	239096	245306	6210	887	78.59
37152	245306	9/18/2001	9/26/2001	8	245306	252290	6984	873	74.20
37160	252290	9/26/2001	10/2/2001	6	252290	257316	5026	838	65.22
37166	257316	10/2/2001	10/10/2001	8	257316	263998	6682	835	67.74
37174	263998	10/10/2001	10/16/2001	6	263998	269271	5273	879	64.89
37180	269271	10/16/2001	10/23/2001	7	269271	275372	6101	872	67.16
37187	275372	10/23/2001	10/30/2001	7	275372	281526	6154	879	64.08
37194	281526	10/30/2001	11/6/2001	7	281526	284570	3044	435	66.73
37201	284570	11/6/2001	11/14/2001	8	284570	291010	6440	805	62.59
37209	291010	11/14/2001	11/20/2001	6	291010	293790	2780	463	61.09
37215	293790	11/20/2001	11/27/2001	7	293790	336281	42491	6070	56.44
37222	336281	11/27/2001	12/4/2001	7	336281	336281	0	0	51.06
37229	336281	12/4/2001	12/12/2001	8	336281	336342	61	8	57.43
37237	336342	12/12/2001	12/26/2001	14	336342	339541	3199	229	49.06
37251	339541	12/26/2001	1/8/2002	13	339541	343261	3720	286	40.68
37264	343261	1/8/2002	1/15/2002	7	343261	356538	13277	1897	50.38
37271	356538	1/15/2002	1/22/2002	7	356538	356538	0	0	48.46
37278	356538	1/22/2002	1/29/2002	7	356538	356539	1	0	55.79
37285	356539	1/29/2002	2/12/2002	14	356539	356697	158	11	46.87
37299	356697	2/12/2002	2/19/2002	7	356697	356743	46	7	51.60
37306	356743	2/19/2002	2/26/2002	7	356743	356786	43	6	52.04
37313	356786	2/26/2002	3/5/2002	7	356786	356964	178	25	41.81
37320	356964	3/5/2002	3/12/2002	7	356964	356964	0	0	57.55
37327	356964	3/12/2002	3/19/2002	7	356964	356970	6	1	63.63
37334	356970	3/19/2002	3/26/2002	7	356970	357266	296	42	52.67
37341	357266	3/26/2002	4/17/2002	22	357266	357366	100	5	65.18
37363	357366	4/17/2002	4/23/2002	6	357366	357343	-23	-4	74.41
37369	357343	4/23/2002	4/30/2002	7	357343	357346	3	0	76.15
37376	357346	4/30/2002	5/7/2002	7	357346	357407	61	9	75.92
37383	357407	5/7/2002	5/14/2002	7	357407	357416	9	1	75.16
37390	357416	5/14/2002	5/21/2002	7	357416	357416	0	0	69.49
37397	357416	5/21/2002	5/28/2002	7	357416	5238	-352178		75.10
37404	5238	5/28/2002	6/4/2002	7	5238	11589	6351	907	77.67
37411	11589	6/4/2002	6/18/2002	14	11589	25110	13521	966	81.06
37425	25110	6/18/2002	6/26/2002	8	25110	32746	7636	955	80.59
37433	32746	6/26/2002	7/9/2002	13	32746	45930	13184	1014	79.73
37446	45930	7/9/2002	7/16/2002	7	45930	52658	6728	961	80.38
37453	52658	7/16/2002	7/23/2002	7	52658	59616	6958	994	84.33
37460	59616	7/23/2002	7/31/2002	8	59616	67633	8017	1002	86.96
37468	67633	7/31/2002	8/8/2002	8	67633	75775	8142	1018	85.56
37476	75775	8/8/2002	8/13/2002	5	75775	80995	5220	1044	83.72
37481	80995	8/13/2002	8/20/2002	7	80995	87620	6625	946	84.99
37488	87620	8/20/2002	8/27/2002	7	87620	94359	6739	963	86.86
37495	94359	8/27/2002	9/10/2002	14	94359	108272	13913	994	82.44
37509	108272	9/10/2002	9/18/2002	8	108272	115944	7672	959	80.40
37517	115944	9/18/2002	9/24/2002	6	115944	121491	5547	925	72.58

37523	121491	9/24/2002	10/18/2002	24	121491	143990	22499	937	71.82
37547	143990	10/18/2002	10/29/2002	11	143990	154287	10297	936	62.46
37558	154287	10/29/2002	11/19/2002	21	154287	173054	18767	894	56.33
37579	173054	11/19/2002	12/3/2002	14	173054	185230	12176	870	51.57
37593	185230	12/3/2002	12/17/2002	14	185230	197392	12162	869	47.73
37607	197392	12/17/2002	1/7/2003	21	197392	214388	16996	809	48.85
37628	214388	1/7/2003	1/27/2003	20	214388	230299	15911	796	44.63
37648	230299	1/27/2003	2/5/2003	9	230299	237774	7475	831	52.33
37657	237774	2/5/2003	2/19/2003	14	237774	247989	10215	730	45.97
37671	247989	2/19/2003	3/5/2003	14	247989	258339	10350	739	43.53
37685	258339	3/5/2003	3/13/2003	8	258339	263745	5406	676	57.45
37693	263745	3/13/2003	3/25/2003	12	263745	271561	7816	651	61.16
37705	271561	3/25/2003	4/29/2003	35	271561	292970	21409	612	65.83



11.1.26.2. Baseline Model From Manual Readings

87007

Path and name of input data file = 8700BLCKbldg2_.prn
 Value of no-data flag = -99
 Column number of group field = 12
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 5
 Column number of dependent Y variable = 5
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 11
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = 8700BLCKbldg2_.prn
 Model type = 4P
 Grouping column No = 12
 Value for grouping = 1
 Residual mode = 1
 # of X(Indep.) Var = 1
 Y1 column number = 5
 X1 column number = 11
 X2 column number = 0 (unused)
 X3 column number = 0 (unused)
 X4 column number = 0 (unused)
 X5 column number = 0 (unused)
 X6 column number = 0 (unused)

Regression Results

N = 81
 R2 = 0.625
 AdjR2 = 0.625
 RMSE = 68.5684
 CV-RMSE = 8.062%
 p = 0.178
 DW = 1.624 (p>0)
 N1 = 25
 N2 = 56
 Ycp = 728.5020 (104.3004)
 LS = -3.7204 (1.3328)
 RS = 9.0576 (2.3762)
 Xcp = 59.0280 (1.1260)

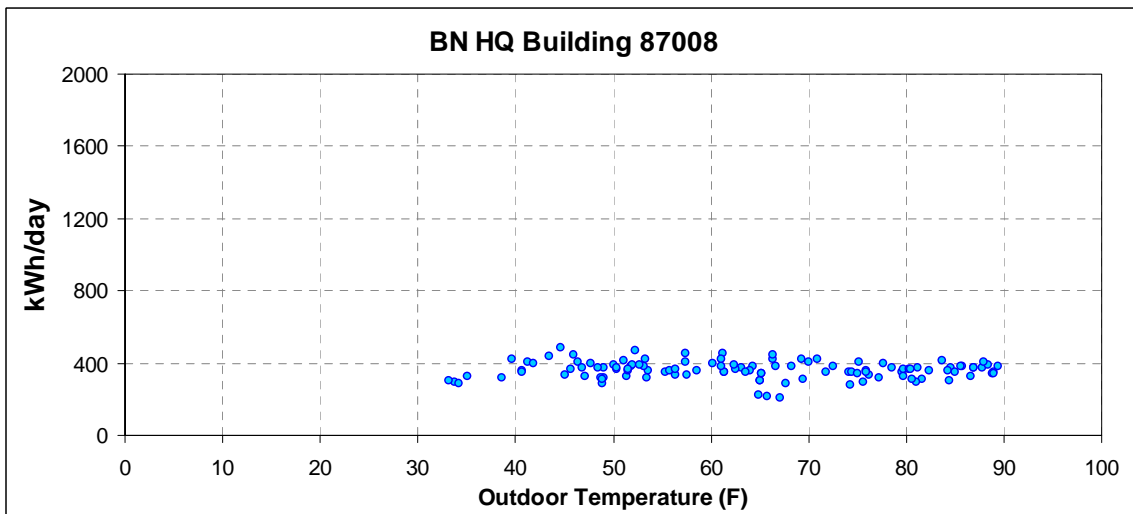
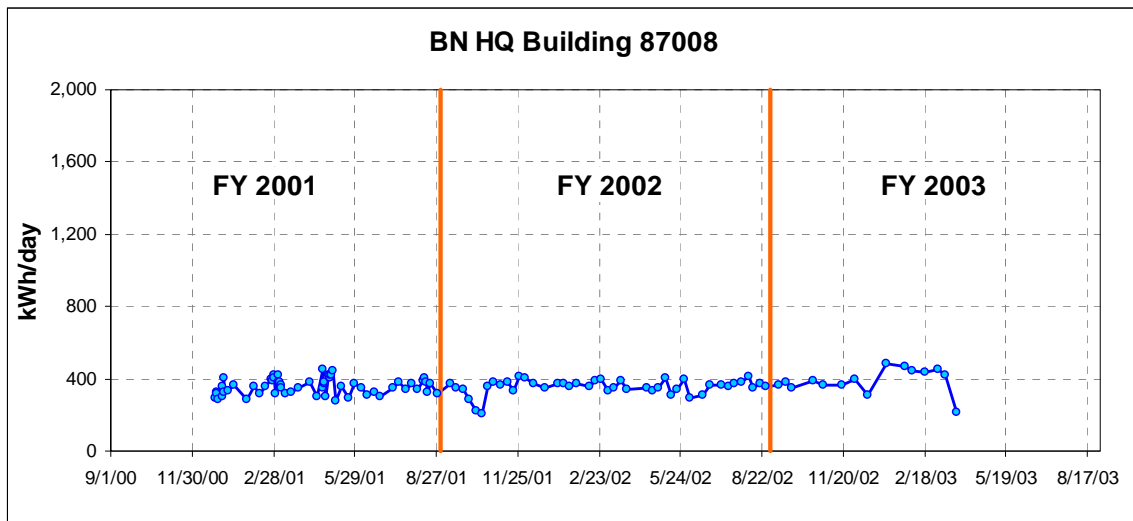
11.1.27. 87008 BN HQ Building

11.1.27.1. Electricity Use From Manual Readings

87008		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Use per period	Use per day	avg temp(F)
12/26/2000	36886	8286	12/26/2000	12/27/2000	1	8286	8580	294	294	33.71
12/27/2000	36887	8580	12/27/2000	12/28/2000	1	8580	8905	325	325	35.15
12/28/2000	36888	8905	12/28/2000	12/29/2000	1	8905	9225	320	320	38.57
12/29/2000	36889	9225	12/29/2000	1/2/2001	4	9225	10360	1135	284	34.29
1/2/2001	36893	10360	1/2/2001	1/3/2001	1	10360	10663	303	303	33.13
1/3/2001	36894	10663	1/3/2001	1/4/2001	1	10663	11019	356	356	40.73
1/4/2001	36895	11019	1/4/2001	1/5/2001	1	11019	11420	401	401	46.45
1/5/2001	36896	11420	1/5/2001	1/9/2001	4	11420	12724	1304	326	47.20
1/9/2001	36900	12724	1/9/2001	1/16/2001	7	12724	15033	2309	330	45.15
1/16/2001	36907	15033	1/16/2001	1/30/2001	14	15033	20171	5138	367	45.60
1/30/2001	36921	20171	1/30/2001	2/6/2001	7	20171	22160	1989	284	48.97
2/6/2001	36928	22160	2/6/2001	2/13/2001	7	22160	24639	2479	354	53.63
2/13/2001	36935	24639	2/13/2001	2/20/2001	7	24639	26884	2245	321	53.52
2/20/2001	36942	26884	2/20/2001	2/26/2001	6	26884	29031	2147	358	58.53
2/26/2001	36948	29031	2/26/2001	2/27/2001	1	29031	29427	396	396	60.17
2/27/2001	36949	29427	2/27/2001	2/28/2001	1	29427	29819	392	392	50.13
2/28/2001	36950	29819	2/28/2001	3/1/2001	1	29819	30236	417	417	39.58
3/1/2001	36951	30236	3/1/2001	3/2/2001	1	30236	30641	405	405	41.30
3/2/2001	36952	30641	3/2/2001	3/5/2001	3	30641	31598	957	319	49.00
3/5/2001	36955	31598	3/5/2001	3/6/2001	1	31598	32017	419	419	53.30
3/6/2001	36956	32017	3/6/2001	3/7/2001	1	32017	32397	380	380	53.20
3/7/2001	36957	32397	3/7/2001	3/8/2001	1	32397	32775	378	378	51.84
3/8/2001	36958	32775	3/8/2001	3/9/2001	1	32775	33141	366	366	50.41
3/9/2001	36959	33141	3/9/2001	3/13/2001	4	33141	34540	1399	350	55.40
3/13/2001	36963	34540	3/13/2001	3/20/2001	7	34540	36762	2222	317	48.80
3/20/2001	36970	36762	3/20/2001	3/27/2001	7	36762	39015	2253	322	51.40
3/27/2001	36977	39015	3/27/2001	4/10/2001	14	39015	43942	4927	352	61.40
4/10/2001	36991	43942	4/10/2001	4/17/2001	7	43942	46593	2651	379	68.30
4/17/2001	36998	46593	4/17/2001	4/23/2001	6	46593	48411	1818	303	65.00
4/23/2001	37004	48411	4/23/2001	4/24/2001	1	48411	48863	452	452	61.30
4/24/2001	37005	48863	4/24/2001	4/25/2001	1	48863	49212	349	349	61.40
4/25/2001	37006	49212	4/25/2001	4/26/2001	1	49212	49585	373	373	63.17
4/26/2001	37007	49585	4/26/2001	4/27/2001	1	49585	49969	384	384	64.33
4/27/2001	37008	49969	4/27/2001	4/30/2001	3	49969	50869	900	300	65.10
4/30/2001	37011	50869	4/30/2001	5/1/2001	1	50869	51289	420	420	66.40
5/1/2001	37012	51289	5/1/2001	5/2/2001	1	51289	51690	401	401	70.10
5/2/2001	37013	51690	5/2/2001	5/3/2001	1	51690	52112	422	422	70.92
5/3/2001	37014	52112	5/3/2001	5/4/2001	1	52112	52535	423	423	69.27
5/4/2001	37015	52535	5/4/2001	5/8/2001	4	52535	54304	1769	442	66.35
5/8/2001	37019	54304	5/8/2001	5/15/2001	7	54304	56252	1948	278	74.37
5/15/2001	37026	56252	5/15/2001	5/22/2001	7	56252	58778	2526	361	75.91
5/22/2001	37033	58778	5/22/2001	5/29/2001	7	58778	60828	2050	293	75.64
5/29/2001	37040	60828	5/29/2001	6/5/2001	7	60828	63457	2629	376	81.15
6/5/2001	37047	63457	6/5/2001	6/12/2001	7	63457	65913	2456	351	79.57
6/12/2001	37054	65913	6/12/2001	6/19/2001	7	65913	68088	2175	311	81.67
6/19/2001	37061	68088	6/19/2001	6/26/2001	7	68088	70345	2257	322	79.70
6/26/2001	37068	70345	6/26/2001	7/10/2001	14	70345	74526	4181	299	84.37
7/10/2001	37082	74526	7/10/2001	7/17/2001	7	74526	76949	2423	346	88.94

7/17/2001	37089	76949	7/17/2001	7/24/2001	7	76949	79590	2641	377	89.43
7/24/2001	37096	79590	7/24/2001	7/31/2001	7	79590	82005	2415	345	88.79
7/31/2001	37103	82005	7/31/2001	8/7/2001	7	82005	84589	2584	369	87.83
8/7/2001	37110	84589	8/7/2001	8/13/2001	6	84589	86640	2051	342	88.94
8/13/2001	37116	86640	8/13/2001	8/15/2001	2	86640	87419	779	390	88.37
8/15/2001	37118	87419	8/15/2001	8/16/2001	1	87419	87824	405	405	88.00
8/16/2001	37119	87824	8/16/2001	8/17/2001	1	87824	88202	378	378	85.77
8/17/2001	37120	88202	8/17/2001	8/21/2001	4	88202	89502	1300	325	86.59
8/21/2001	37124	89502	8/21/2001	8/28/2001	7	89502	92124	2622	375	84.54
8/28/2001	37131	92124	8/28/2001	9/11/2001	14	92124	96603	4479	320	77.20
9/11/2001	37145	96603	9/11/2001	9/18/2001	7	96603	99235	2632	376	78.59
9/18/2001	37152	99235	9/18/2001	9/26/2001	8	99235	102024	2789	349	74.20
9/26/2001	37160	102024	9/26/2001	10/2/2001	6	102024	104055	2031	339	65.22
10/2/2001	37166	104055	10/2/2001	10/10/2001	8	104055	106337	2282	285	67.74
10/10/2001	37174	106337	10/10/2001	10/16/2001	6	106337	107690	1353	226	64.89
10/16/2001	37180	107690	10/16/2001	10/23/2001	7	107690	109151	1461	209	67.16
10/23/2001	37187	109151	10/23/2001	10/30/2001	7	109151	111652	2501	357	64.08
10/30/2001	37194	111652	10/30/2001	11/6/2001	7	111652	114319	2667	381	66.73
11/6/2001	37201	114319	11/6/2001	11/14/2001	8	114319	117249	2930	366	62.59
11/14/2001	37209	117249	11/14/2001	11/20/2001	6	117249	119535	2286	381	61.09
11/20/2001	37215	119535	11/20/2001	11/27/2001	7	119535	121896	2361	337	56.44
11/27/2001	37222	121896	11/27/2001	12/4/2001	7	121896	124797	2901	414	51.06
12/4/2001	37229	124797	12/4/2001	12/12/2001	8	124797	128014	3217	402	57.43
12/12/2001	37237	128014	12/12/2001	12/26/2001	14	128014	133226	5212	372	49.06
12/26/2001	37251	133226	12/26/2001	1/8/2002	13	133226	137730	4504	346	40.68
1/8/2002	37264	137730	1/8/2002	1/15/2002	7	137730	140339	2609	373	50.38
1/15/2002	37271	140339	1/15/2002	1/22/2002	7	140339	142965	2626	375	48.46
1/22/2002	37278	142965	1/22/2002	1/29/2002	7	142965	145488	2523	360	55.79
1/29/2002	37285	145488	1/29/2002	2/12/2002	14	145488	150667	5179	370	46.87
2/12/2002	37299	150667	2/12/2002	2/19/2002	7	150667	153171	2504	358	51.60
2/19/2002	37306	153171	2/19/2002	2/26/2002	7	153171	155889	2718	388	52.04
2/26/2002	37313	155889	2/26/2002	3/5/2002	7	155889	158648	2759	394	41.81
3/5/2002	37320	158648	3/5/2002	3/12/2002	7	158648	160964	2316	331	57.55
3/12/2002	37327	160964	3/12/2002	3/19/2002	7	160964	163432	2468	353	63.63
3/19/2002	37334	163432	3/19/2002	3/26/2002	7	163432	166148	2716	388	52.67
3/26/2002	37341	166148	3/26/2002	4/17/2002	22	166148	173720	7572	344	65.18
4/17/2002	37363	173720	4/17/2002	4/23/2002	6	173720	175830	2110	352	74.41
4/23/2002	37369	175830	4/23/2002	4/30/2002	7	175830	178139	2309	330	76.15
4/30/2002	37376	178139	4/30/2002	5/7/2002	7	178139	180608	2469	353	75.92
5/7/2002	37383	180608	5/7/2002	5/14/2002	7	180608	183436	2828	404	75.16
5/14/2002	37390	183436	5/14/2002	5/21/2002	7	183436	185624	2188	313	69.49
5/21/2002	37397	185624	5/21/2002	5/28/2002	7	185624	188018	2394	342	75.10
5/28/2002	37404	188018	5/28/2002	6/4/2002	7	188018	190787	2769	396	77.67
6/4/2002	37411	190787	6/4/2002	6/18/2002	14	190787	194915	4128	295	81.06
6/18/2002	37425	194915	6/18/2002	6/26/2002	8	194915	197411	2496	312	80.59
6/26/2002	37433	197411	6/26/2002	7/9/2002	13	197411	202133	4722	363	79.73
7/9/2002	37446	202133	7/9/2002	7/16/2002	7	202133	204682	2549	364	80.38
7/16/2002	37453	204682	7/16/2002	7/23/2002	7	204682	207166	2484	355	84.33
7/23/2002	37460	207166	7/23/2002	7/31/2002	8	207166	210130	2964	371	86.96
7/31/2002	37468	210130	7/31/2002	8/8/2002	8	210130	213184	3054	382	85.56
8/8/2002	37476	213184	8/8/2002	8/13/2002	5	213184	215238	2054	411	83.72
8/13/2002	37481	215238	8/13/2002	8/20/2002	7	215238	217701	2463	352	84.99
8/20/2002	37488	217701	8/20/2002	8/27/2002	7	217701	220317	2616	374	86.86
8/27/2002	37495	220317	8/27/2002	9/10/2002	14	220317	225367	5050	361	82.44
9/10/2002	37509	225367	9/10/2002	9/18/2002	8	225367	228298	2931	366	80.40
9/18/2002	37517	228298	9/18/2002	9/24/2002	6	228298	230590	2292	382	72.58

9/24/2002	37523	230590	9/24/2002	10/18/2002	24	230590	239015	8425	351	71.82
10/18/2002	37547	239015	10/18/2002	10/29/2002	11	239015	243284	4269	388	62.46
10/29/2002	37558	243284	10/29/2002	11/19/2002	21	243284	250910	7626	363	56.33
11/19/2002	37579	250910	11/19/2002	12/3/2002	14	250910	256014	5104	365	51.57
12/3/2002	37593	256014	12/3/2002	12/17/2002	14	256014	261531	5517	394	47.73
12/17/2002	37607	261531	12/17/2002	1/7/2003	21	261531	267976	6445	307	48.85
1/7/2003	37628	267976	1/7/2003	1/27/2003	20	267976	277587	9611	481	44.63
1/27/2003	37648	277587	1/27/2003	2/5/2003	9	277587	281832	4245	472	52.33
2/5/2003	37657	281832	2/5/2003	2/19/2003	14	281832	288021	6189	442	45.97
2/19/2003	37671	288021	2/19/2003	3/5/2003	14	288021	294135	6114	437	43.53
3/5/2003	37685	294135	3/5/2003	3/13/2003	8	294135	297727	3592	449	57.45
3/13/2003	37693	297727	3/13/2003	3/25/2003	12	297727	302756	5029	419	61.16
3/25/2003	37705	302756	3/25/2003	4/29/2003	35	302756	310172	7416	212	65.83



11.1.27.2. Baseline Model From Manual Readings

87008

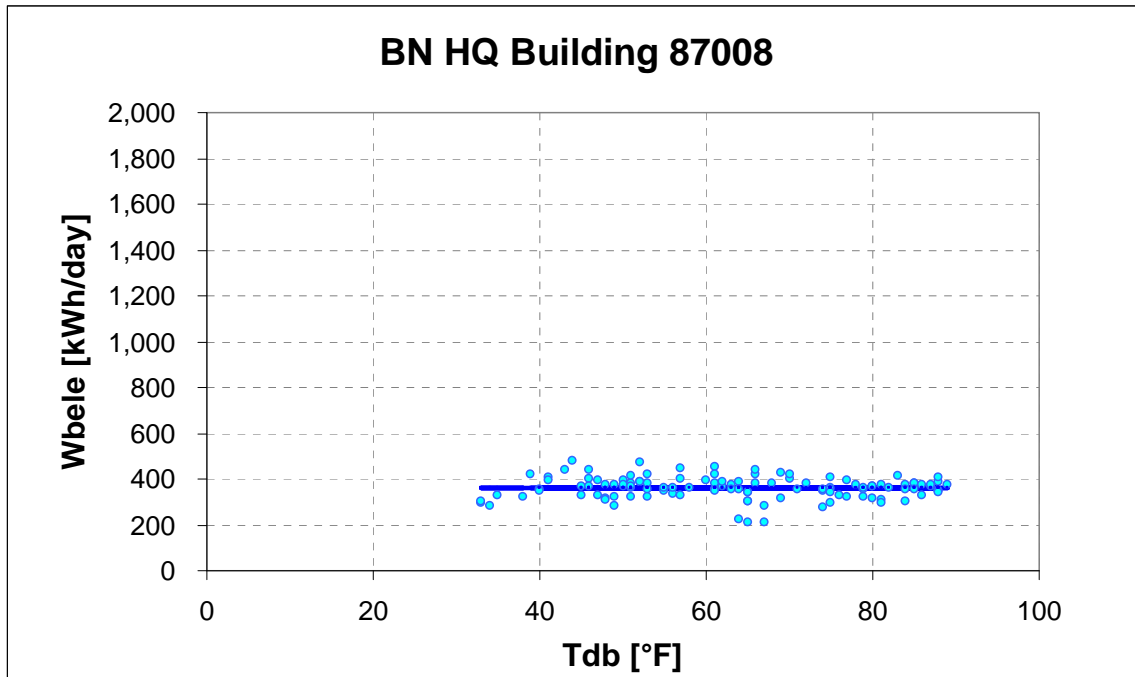
```

*****
ASHRAE INVERSE MODELING TOOLKIT (1.9)
*****
Output file name = IMT.Out
*****
Input data file name = DModFY03_1.prn
Model type = Mean
Grouping column No = 1
Value for grouping = 1
Residual mode = 1
# of X(Indep.) Var = 0
Y1 column number = 7
X1 column number = 0 (unused)
X2 column number = 0 (unused)
X3 column number = 0 (unused)
X4 column number = 0 (unused)
X5 column number = 0 (unused)
X6 column number = 0 (unused)
*****
    
```

Regression Results

```

-----
N = 117
Ymean = 359.650
StdDev = 47.397
CV-StDev = 13.179 %
-----
    
```



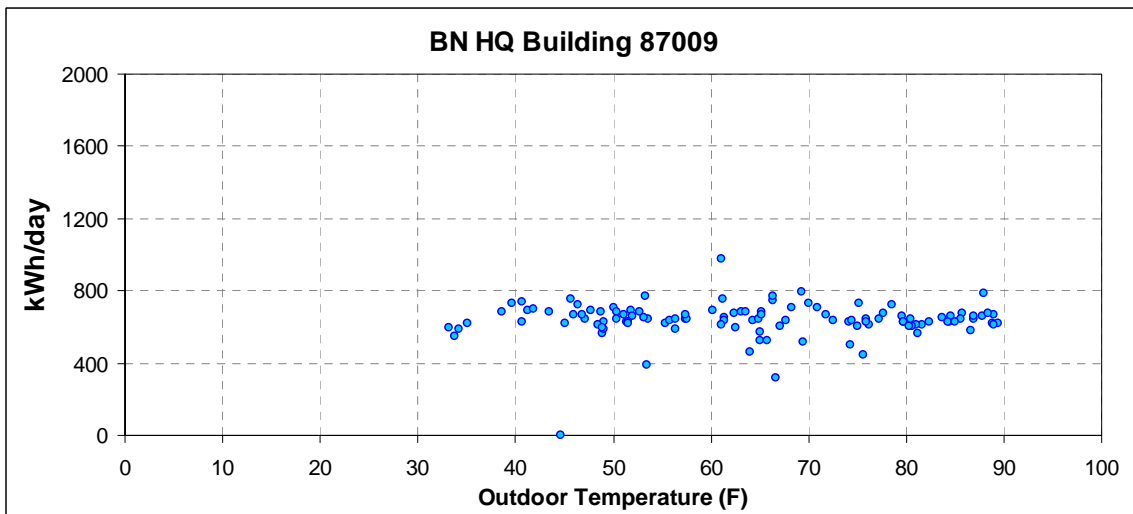
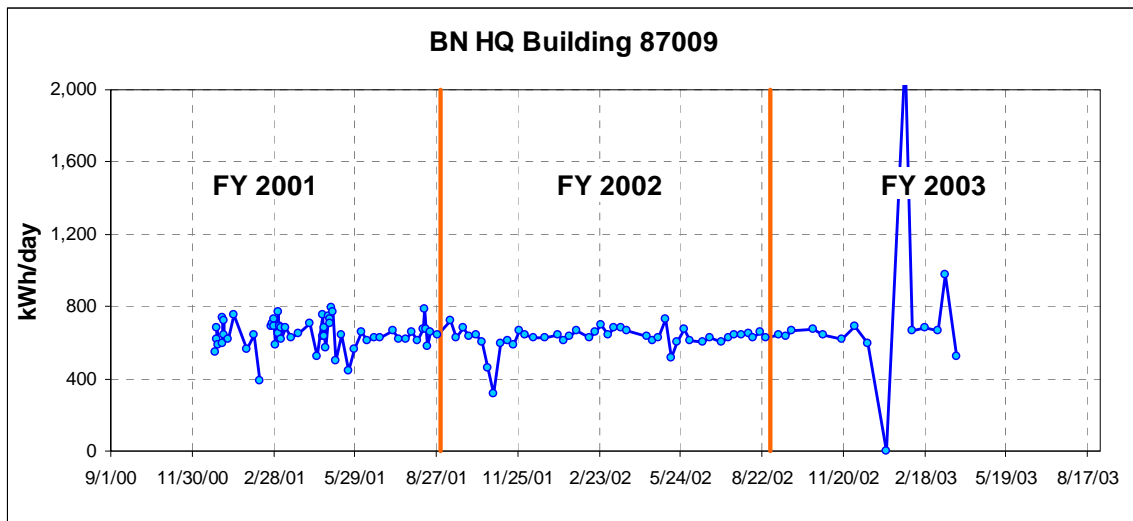
11.1.28. 87009 BN HQ Building

11.1.28.1. Electricity Use From Manual Readings

87009		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Use per period	Use per day	avg temp(F)
12/26/2000	36886	17066	12/26/2000	12/27/2000	1	17066	17611	545	545	33.71
12/27/2000	36887	17611	12/27/2000	12/28/2000	1	17611	18228	617	617	35.15
12/28/2000	36888	18228	12/28/2000	12/29/2000	1	18228	18910	682	682	38.57
12/29/2000	36889	18910	12/29/2000	1/2/2001	4	18910	21271	2361	590	34.29
1/2/2001	36893	21271	1/2/2001	1/3/2001	1	21271	21863	592	592	33.13
1/3/2001	36894	21863	1/3/2001	1/4/2001	1	21863	22600	737	737	40.73
1/4/2001	36895	22600	1/4/2001	1/5/2001	1	22600	23323	723	723	46.45
1/5/2001	36896	23323	1/5/2001	1/9/2001	4	23323	25899	2576	644	47.20
1/9/2001	36900	25899	1/9/2001	1/16/2001	7	25899	30253	4354	622	45.15
1/16/2001	36907	30253	1/16/2001	1/30/2001	14	30253	40788	10535	753	45.60
1/30/2001	36921	40788	1/30/2001	2/6/2001	7	40788	44750	3962	566	48.97
2/6/2001	36928	44750	2/6/2001	2/13/2001	7	44750	49239	4489	641	53.63
2/13/2001	36935	49239	2/13/2001	2/26/2001	13	49239	54340	5101	392	53.52
2/20/2001	36942									58.53
2/26/2001	36948	54340	2/26/2001	2/27/2001	1	54340	55027	687	687	60.17
2/27/2001	36949	55027	2/27/2001	2/28/2001	1	55027	55731	704	704	50.13
2/28/2001	36950	55731	2/28/2001	3/1/2001	1	55731	56460	729	729	39.58
3/1/2001	36951	56460	3/1/2001	3/2/2001	1	56460	57151	691	691	41.30
3/2/2001	36952	57151	3/2/2001	3/5/2001	3	57151	58902	1751	584	49.00
3/5/2001	36955	58902	3/5/2001	3/6/2001	1	58902	59670	768	768	53.30
3/6/2001	36956	59670	3/6/2001	3/7/2001	1	59670	60322	652	652	53.20
3/7/2001	36957	60322	3/7/2001	3/8/2001	1	60322	61011	689	689	51.84
3/8/2001	36958	61011	3/8/2001	3/9/2001	1	61011	61695	684	684	50.41
3/9/2001	36959	61695	3/9/2001	3/13/2001	4	61695	64157	2462	616	55.40
3/13/2001	36963	64157	3/13/2001	3/20/2001	7	64157	68916	4759	680	48.80
3/20/2001	36970	68916	3/20/2001	3/27/2001	7	68916	73283	4367	624	51.40
3/27/2001	36977	73283	3/27/2001	4/10/2001	14	73283	82343	9060	647	61.40
4/10/2001	36991	82343	4/10/2001	4/17/2001	7	82343	87269	4926	704	68.30
4/17/2001	36998	87269	4/17/2001	4/23/2001	6	87269	90391	3122	520	65.00
4/23/2001	37004	90391	4/23/2001	4/24/2001	1	90391	91143	752	752	61.30
4/24/2001	37005	91143	4/24/2001	4/25/2001	1	91143	91777	634	634	61.40
4/25/2001	37006	91777	4/25/2001	4/26/2001	1	91777	92456	679	679	63.17
4/26/2001	37007	92456	4/26/2001	4/27/2001	1	92456	93089	633	633	64.33
4/27/2001	37008	93089	4/27/2001	4/30/2001	3	93089	94802	1713	571	65.10
4/30/2001	37011	94802	4/30/2001	5/1/2001	1	94802	95545	743	743	66.40
5/1/2001	37012	95545	5/1/2001	5/2/2001	1	95545	96279	734	734	70.10
5/2/2001	37013	96279	5/2/2001	5/3/2001	1	96279	96989	710	710	70.92
5/3/2001	37014	96989	5/3/2001	5/4/2001	1	96989	97783	794	794	69.27
5/4/2001	37015	97783	5/4/2001	5/8/2001	4	97783	100875	3092	773	66.35
5/8/2001	37019	100875	5/8/2001	5/15/2001	7	100875	104384	3509	501	74.37
5/15/2001	37026	104384	5/15/2001	5/22/2001	7	104384	108859	4475	639	75.91
5/22/2001	37033	108859	5/22/2001	5/29/2001	7	108859	111992	3133	448	75.64
5/29/2001	37040	111992	5/29/2001	6/5/2001	7	111992	115921	3929	561	81.15
6/5/2001	37047	115921	6/5/2001	6/12/2001	7	115921	120511	4590	656	79.57
6/12/2001	37054	120511	6/12/2001	6/19/2001	7	120511	124769	4258	608	81.67
6/19/2001	37061	124769	6/19/2001	6/26/2001	7	124769	129135	4366	624	79.70
6/26/2001	37068	129135	6/26/2001	7/10/2001	14	129135	137871	8736	624	84.37
7/10/2001	37082	137871	7/10/2001	7/17/2001	7	137871	142512	4641	663	88.94
7/17/2001	37089	142512	7/17/2001	7/24/2001	7	142512	146861	4349	621	89.43
7/24/2001	37096	146861	7/24/2001	7/31/2001	7	146861	151187	4326	618	88.79

7/31/2001	37103	151187	7/31/2001	8/7/2001	7	151187	155800	4613	659	87.83
8/7/2001	37110	155800	8/7/2001	8/13/2001	6	155800	159447	3647	608	88.94
8/13/2001	37116	159447	8/13/2001	8/15/2001	2	159447	160802	1355	678	88.37
8/15/2001	37118	160802	8/15/2001	8/16/2001	1	160802	161584	782	782	88.00
8/16/2001	37119	161584	8/16/2001	8/17/2001	1	161584	162256	672	672	85.77
8/17/2001	37120	162256	8/17/2001	8/21/2001	4	162256	164574	2318	580	86.59
8/21/2001	37124	164574	8/21/2001	8/28/2001	7	164574	169204	4630	661	84.54
8/28/2001	37131	169204	8/28/2001	9/11/2001	14	169204	178171	8967	641	77.20
9/11/2001	37145	178171	9/11/2001	9/18/2001	7	178171	183200	5029	718	78.59
9/18/2001	37152	183200	9/18/2001	9/26/2001	8	183200	188185	4985	623	74.20
9/26/2001	37160	188185	9/26/2001	10/2/2001	6	188185	192259	4074	679	65.22
10/2/2001	37166	192259	10/2/2001	10/10/2001	8	192259	197353	5094	637	67.74
10/10/2001	37174	197353	10/10/2001	10/16/2001	6	197353	201198	3845	641	64.89
10/16/2001	37180	201198	10/16/2001	10/23/2001	7	201198	205400	4202	600	67.16
10/23/2001	37187	205400	10/23/2001	10/30/2001	7	205400	208642	3242	463	64.08
10/30/2001	37194	208642	10/30/2001	11/6/2001	7	208642	210854	2212	316	66.73
11/6/2001	37201	210854	11/6/2001	11/14/2001	8	210854	215624	4770	596	62.59
11/14/2001	37209	215624	11/14/2001	11/20/2001	6	215624	219273	3649	608	61.09
11/20/2001	37215	219273	11/20/2001	11/27/2001	7	219273	223380	4107	587	56.44
11/27/2001	37222	223380	11/27/2001	12/4/2001	7	223380	228066	4686	669	51.06
12/4/2001	37229	228066	12/4/2001	12/12/2001	8	228066	233230	5164	646	57.43
12/12/2001	37237	233230	12/12/2001	12/26/2001	14	233230	241967	8737	624	49.06
12/26/2001	37251	241967	12/26/2001	1/8/2002	13	241967	250131	8164	628	40.68
1/8/2002	37264	250131	1/8/2002	1/15/2002	7	250131	254635	4504	643	50.38
1/15/2002	37271	254635	1/15/2002	1/22/2002	7	254635	258934	4299	614	48.46
1/22/2002	37278	258934	1/22/2002	1/29/2002	7	258934	263399	4465	638	55.79
1/29/2002	37285	263399	1/29/2002	2/12/2002	14	263399	272682	9283	663	46.87
2/12/2002	37299	272682	2/12/2002	2/19/2002	7	272682	277063	4381	626	51.60
2/19/2002	37306	277063	2/19/2002	2/26/2002	7	277063	281668	4605	658	52.04
2/26/2002	37313	281668	2/26/2002	3/5/2002	7	281668	286546	4878	697	41.81
3/5/2002	37320	286546	3/5/2002	3/12/2002	7	286546	291055	4509	644	57.55
3/12/2002	37327	291055	3/12/2002	3/19/2002	7	291055	295807	4752	679	63.63
3/19/2002	37334	295807	3/19/2002	3/26/2002	7	295807	300565	4758	680	52.67
3/26/2002	37341	300565	3/26/2002	4/17/2002	22	300565	315187	14622	665	65.18
4/17/2002	37363	315187	4/17/2002	4/23/2002	6	315187	318989	3802	634	74.41
4/23/2002	37369	318989	4/23/2002	4/30/2002	7	318989	323263	4274	611	76.15
4/30/2002	37376	323263	4/30/2002	5/7/2002	7	323263	327658	4395	628	75.92
5/7/2002	37383	327658	5/7/2002	5/14/2002	7	327658	332750	5092	727	75.16
5/14/2002	37390	332750	5/14/2002	5/21/2002	7	332750	336368	3618	517	69.49
5/21/2002	37397	336368	5/21/2002	5/28/2002	7	336368	340580	4212	602	75.10
5/28/2002	37404	340580	5/28/2002	6/4/2002	7	340580	345291	4711	673	77.67
6/4/2002	37411	345291	6/4/2002	6/18/2002	14	345291	353858	8567	612	81.06
6/18/2002	37425	353858	6/18/2002	6/26/2002	8	353858	358693	4835	604	80.59
6/26/2002	37433	358693	6/26/2002	7/9/2002	13	358693	366867	8174	629	79.73
7/9/2002	37446	366867	7/9/2002	7/16/2002	7	366867	371087	4220	603	80.38
7/16/2002	37453	371087	7/16/2002	7/23/2002	7	371087	375490	4403	629	84.33
7/23/2002	37460	375490	7/23/2002	7/31/2002	8	375490	380608	5118	640	86.96
7/31/2002	37468	380608	7/31/2002	8/8/2002	8	380608	385768	5160	645	85.56
8/8/2002	37476	385768	8/8/2002	8/13/2002	5	385768	389039	3271	654	83.72
8/13/2002	37481	389039	8/13/2002	8/20/2002	7	389039	393411	4372	625	84.99
8/20/2002	37488	393411	8/20/2002	8/27/2002	7	393411	398023	4612	659	86.86
8/27/2002	37495	398023	8/27/2002	9/10/2002	14	398023	406765	8742	624	82.44
9/10/2002	37509	406765	9/10/2002	9/18/2002	8	406765	411878	5113	639	80.40
9/18/2002	37517	411878	9/18/2002	9/24/2002	6	411878	415680	3802	634	72.58
9/24/2002	37523	415680	9/24/2002	10/18/2002	24	415680	431709	16029	668	71.82
10/18/2002	37547	431709	10/18/2002	10/29/2002	11	431709	439134	7425	675	62.46

10/29/2002	37558	439134	10/29/2002	11/19/2002	21	439134	452664	13530	644	56.33
11/19/2002	37579	452664	11/19/2002	12/3/2002	14	452664	461344	8680	620	51.57
12/3/2002	37593	461344	12/3/2002	12/17/2002	14	461344	470988	9644	689	47.73
12/17/2002	37607	470988	12/17/2002	1/7/2003	21	470988	483508	12520	596	48.85
1/7/2003	37628	483508	1/7/2003	1/27/2003	20	483508	lock	#VALU	#VALU	44.63
							changed	E!	E!	
1/27/2003	37648	lock	1/27/2003	2/5/2003	9	lock	503169	#VALU	#VALU	52.33
		changed				changed		E!	E!	
2/5/2003	37657	503169	2/5/2003	2/19/2003	14	503169	512505	9336	667	45.97
2/19/2003	37671	512505	2/19/2003	3/5/2003	14	512505	522046	9541	682	43.53
3/5/2003	37685	522046	3/5/2003	3/13/2003	8	522046	527375	5329	666	57.45
3/13/2003	37693	527375	3/13/2003	3/25/2003	12	527375	539093	11718	977	61.16
3/25/2003	37705	539093	3/25/2003	4/29/2003	35	539093	557390	18297	523	65.83



11.1.28.2. Baseline Model From Manual Readings

87009

Path and name of input data file = DModFY03_1.prn
 Value of no-data flag = -99
 Column number of group field = 1
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 1
 Column number of dependent Y variable = 8
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 2
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

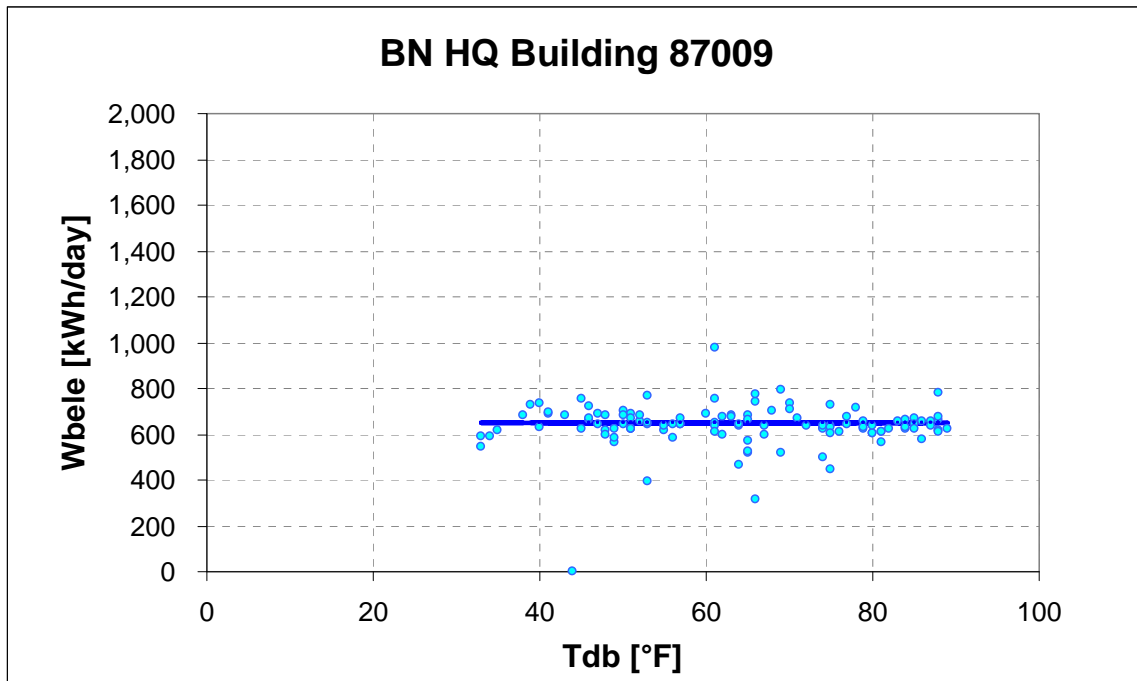
 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DModFY03_1.prn
 Model type = Mean
 Grouping column No = 1
 Value for grouping = 1
 Residual mode = 1
 # of X(Indep.) Var = 0
 Y1 column number = 8
 X1 column number = 0 (unused)
 X2 column number = 0 (unused)
 X3 column number = 0 (unused)
 X4 column number = 0 (unused)
 X5 column number = 0 (unused)
 X6 column number = 0 (unused)

Regression Results

 N = 116
 Ymean = 649.733
 StdDev = 173.610
 CV-StDev = 26.720 %



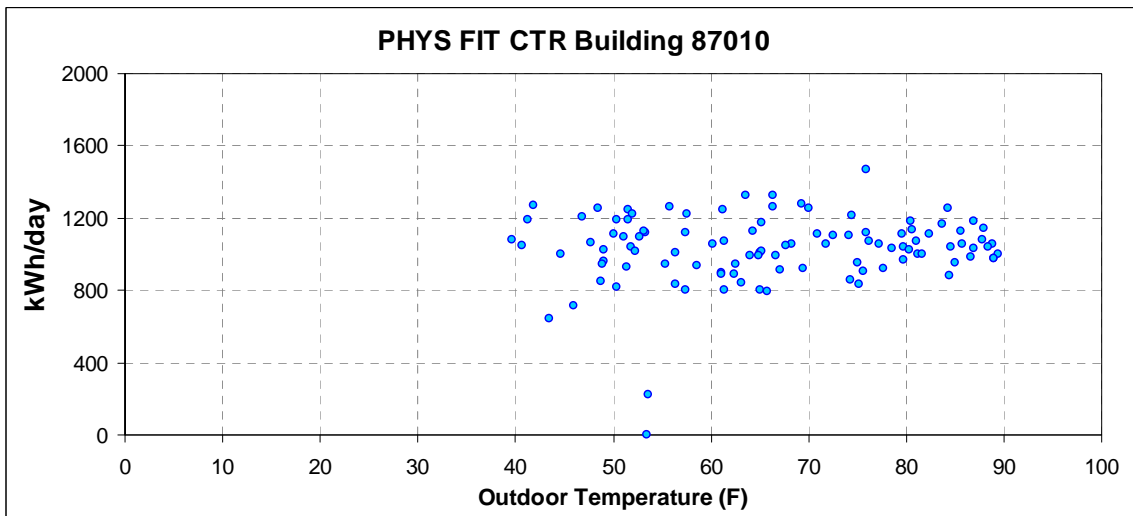
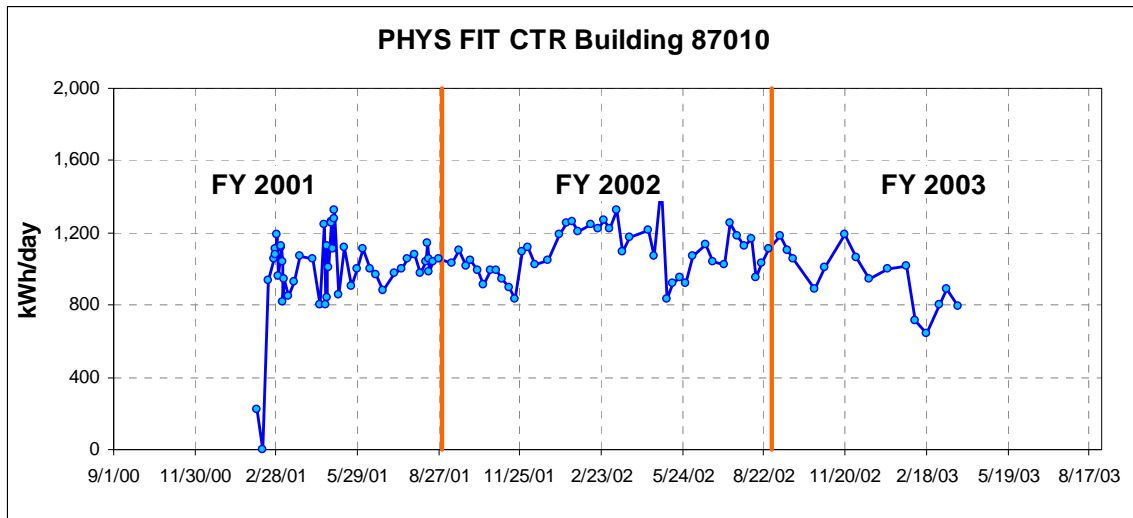
11.1.29. 87010 PHYS FIT CTR Building

11.1.29.1. Electricity Use From Manual Readings

87010	Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Use per period	Use per day	avg temp(F)
12/26/2000	36886	12/26/2000	12/27/2000	1					33.71
12/27/2000	36887	12/27/2000	12/28/2000	1					35.15
12/28/2000	36888	12/28/2000	12/29/2000	1					38.57
12/29/2000	36889	12/29/2000	1/2/2001	4					34.29
1/2/2001	36893	1/2/2001	1/3/2001	1					33.13
1/3/2001	36894	1/3/2001	1/4/2001	1					40.73
1/4/2001	36895	1/4/2001	1/5/2001	1					46.45
1/5/2001	36896	1/5/2001	1/9/2001	4					47.20
1/9/2001	36900	1/9/2001	1/16/2001	7					45.15
1/16/2001	36907	1/16/2001	1/30/2001	14					45.60
1/30/2001	36921	1/30/2001	2/6/2001	7					48.97
2/6/2001	36928	5112	2/13/2001	7	5112	6692	1580	226	53.63
2/13/2001	36935	6692	2/13/2001	7	6692	6693	1	0.143	53.52
2/20/2001	36942	6693	2/20/2001	6	6693	12335	5642	940	58.53
2/26/2001	36948	12335	2/26/2001	1	12335	13393	1058	1058	60.17
2/27/2001	36949	13393	2/27/2001	1	13393	14502	1109	1109	50.13
2/28/2001	36950	14502	2/28/2001	1	14502	15585	1083	1083	39.58
3/1/2001	36951	15585	3/1/2001	1	15585	16778	1193	1193	41.30
3/2/2001	36952	16778	3/2/2001	3	16778	19666	2888	963	49.00
3/5/2001	36955	19666	3/5/2001	1	19666	20785	1119	1119	53.30
3/6/2001	36956	20785	3/6/2001	1	20785	21910	1125	1125	53.20
3/7/2001	36957	21910	3/7/2001	1	21910	22948	1038	1038	51.84
3/8/2001	36958	22948	3/8/2001	1	22948	23766	818	818	50.41
3/9/2001	36959	23766	3/9/2001	4	23766	27557	3791	948	55.40
3/13/2001	36963	27557	3/13/2001	7	27557	33526	5969	853	48.80
3/20/2001	36970	33526	3/20/2001	7	33526	40045	6519	931	51.40
3/27/2001	36977	40045	3/27/2001	14	40045	55097	15052	1075	61.40
4/10/2001	36991	55097	4/10/2001	7	55097	62463	7366	1052	68.30
4/17/2001	36998	62463	4/17/2001	6	62463	67279	4816	803	65.00
4/23/2001	37004	67279	4/23/2001	1	67279	68525	1246	1246	61.30
4/24/2001	37005	68525	4/24/2001	1	68525	69326	801	801	61.40
4/25/2001	37006	69326	4/25/2001	1	69326	70165	839	839	63.17
4/26/2001	37007	70165	4/26/2001	1	70165	71294	1129	1129	64.33
4/27/2001	37008	71294	4/27/2001	3	71294	74306	3012	1004	65.10
4/30/2001	37011	74306	4/30/2001	1	74306	75570	1264	1264	66.40
5/1/2001	37012	75570	5/1/2001	1	75570	76826	1256	1256	70.10
5/2/2001	37013	76826	5/2/2001	1	76826	77935	1109	1109	70.92
5/3/2001	37014	77935	5/3/2001	1	77935	79211	1276	1276	69.27
5/4/2001	37015	79211	5/4/2001	4	79211	84520	5309	1327	66.35
5/8/2001	37019	84520	5/8/2001	7	84520	90543	6023	860	74.37
5/15/2001	37026	90543	5/15/2001	7	90543	98403	7860	1123	75.91
5/22/2001	37033	98403	5/22/2001	7	98403	104756	6353	908	75.64
5/29/2001	37040	104756	5/29/2001	7	104756	111730	6974	996	81.15
6/5/2001	37047	111730	6/5/2001	7	111730	119488	7758	1108	79.57
6/12/2001	37054	119488	6/12/2001	7	119488	126477	6989	998	81.67
6/19/2001	37061	126477	6/19/2001	7	126477	133267	6790	970	79.70
6/26/2001	37068	133267	6/26/2001	14	133267	145611	12344	882	84.37
7/10/2001	37082	145611	7/10/2001	7	145611	152462	6851	979	88.94
7/17/2001	37089	152462	7/17/2001	7	152462	159444	6982	997	89.43

7/24/2001	37096	159444	7/24/2001	7/31/2001	7	159444	166826	7382	1055	88.79
7/31/2001	37103	166826	7/31/2001	8/7/2001	7	166826	174358	7532	1076	87.83
8/7/2001	37110	174358	8/7/2001	8/13/2001	6	174358	180236	5878	980	88.94
8/13/2001	37116	180236	8/13/2001	8/15/2001	2	180236	182314	2078	1039	88.37
8/15/2001	37118	182314	8/15/2001	8/16/2001	1	182314	183459	1145	1145	88.00
8/16/2001	37119	183459	8/16/2001	8/17/2001	1	183459	184516	1057	1057	85.77
8/17/2001	37120	184516	8/17/2001	8/21/2001	4	184516	188467	3951	988	86.59
8/21/2001	37124	188467	8/21/2001	8/28/2001	7	188467	195726	7259	1037	84.54
8/28/2001	37131	195726	8/28/2001	9/11/2001	14	195726	210458	14732	1052	77.20
9/11/2001	37145	210458	9/11/2001	9/18/2001	7	210458	217675	7217	1031	78.59
9/18/2001	37152	217675	9/18/2001	9/26/2001	8	217675	226470	8795	1099	74.20
9/26/2001	37160	226470	9/26/2001	10/2/2001	6	226470	232568	6098	1016	65.22
10/2/2001	37166	232568	10/2/2001	10/10/2001	8	232568	240953	8385	1048	67.74
10/10/2001	37174	240953	10/10/2001	10/16/2001	6	240953	246895	5942	990	64.89
10/16/2001	37180	246895	10/16/2001	10/23/2001	7	246895	253309	6414	916	67.16
10/23/2001	37187	253309	10/23/2001	10/30/2001	7	253309	260274	6965	995	64.08
10/30/2001	37194	260274	10/30/2001	11/6/2001	7	260274	267209	6935	991	66.73
11/6/2001	37201	267209	11/6/2001	11/14/2001	8	267209	274752	7543	943	62.59
11/14/2001	37209	274752	11/14/2001	11/20/2001	6	274752	280150	5398	900	61.09
11/20/2001	37215	280150	11/20/2001	11/27/2001	7	280150	286000	5850	836	56.44
11/27/2001	37222	286000	11/27/2001	12/4/2001	7	286000	293689	7689	1098	51.06
12/4/2001	37229	293689	12/4/2001	12/12/2001	8	293689	302632	8943	1118	57.43
12/12/2001	37237	302632	12/12/2001	12/26/2001	14	302632	316948	14316	1023	49.06
12/26/2001	37251	316948	12/26/2001	1/8/2002	13	316948	330553	13605	1047	40.68
1/8/2002	37264	330553	1/8/2002	1/15/2002	7	330553	338861	8308	1187	50.38
1/15/2002	37271	338861	1/15/2002	1/22/2002	7	338861	347645	8784	1255	48.46
1/22/2002	37278	347645	1/22/2002	1/29/2002	7	347645	356466	8821	1260	55.79
1/29/2002	37285	356466	1/29/2002	2/12/2002	14	356466	373353	16887	1206	46.87
2/12/2002	37299	373353	2/12/2002	2/19/2002	7	373353	382099	8746	1249	51.60
2/19/2002	37306	382099	2/19/2002	2/26/2002	7	382099	390662	8563	1223	52.04
2/26/2002	37313	390662	2/26/2002	3/5/2002	7	390662	399525	8863	1266	41.81
3/5/2002	37320	399525	3/5/2002	3/12/2002	7	399525	408095	8570	1224	57.55
3/12/2002	37327	408095	3/12/2002	3/19/2002	7	408095	417371	9276	1325	63.63
3/19/2002	37334	417371	3/19/2002	3/26/2002	7	417371	425031	7660	1094	52.67
3/26/2002	37341	425031	3/26/2002	4/17/2002	22	425031	450860	25829	1174	65.18
4/17/2002	37363	450860	4/17/2002	4/23/2002	6	450860	458163	7303	1217	74.41
4/23/2002	37369	458163	4/23/2002	4/30/2002	7	458163	465665	7502	1072	76.15
4/30/2002	37376	465665	4/30/2002	5/7/2002	7	465665	475933	10268	1467	75.92
5/7/2002	37383	475933	5/7/2002	5/14/2002	7	475933	481764	5831	833	75.16
5/14/2002	37390	481764	5/14/2002	5/21/2002	7	481764	488228	6464	923	69.49
5/21/2002	37397	488228	5/21/2002	5/28/2002	7	488228	494892	6664	952	75.10
5/28/2002	37404	494892	5/28/2002	6/4/2002	7	494892	501362	6470	924	77.67
6/4/2002	37411	501362	6/4/2002	6/18/2002	14	501362	516399	15037	1074	81.06
6/18/2002	37425	516399	6/18/2002	6/26/2002	8	516399	525472	9073	1134	80.59
6/26/2002	37433	525472	6/26/2002	7/9/2002	13	525472	538979	13507	1039	79.73
7/9/2002	37446	538979	7/9/2002	7/16/2002	7	538979	546122	7143	1020	80.38
7/16/2002	37453	546122	7/16/2002	7/23/2002	7	546122	554923	8801	1257	84.33
7/23/2002	37460	554923	7/23/2002	7/31/2002	8	554923	564372	9449	1181	86.96
7/31/2002	37468	564372	7/31/2002	8/8/2002	8	564372	573373	9001	1125	85.56
8/8/2002	37476	573373	8/8/2002	8/13/2002	5	573373	579222	5849	1170	83.72
8/13/2002	37481	579222	8/13/2002	8/20/2002	7	579222	585879	6657	951	84.99
8/20/2002	37488	585879	8/20/2002	8/27/2002	7	585879	593085	7206	1029	86.86
8/27/2002	37495	593085	8/27/2002	9/10/2002	14	593085	608660	15575	1113	82.44
9/10/2002	37509	608660	9/10/2002	9/18/2002	8	608660	618103	9443	1180	80.40
9/18/2002	37517	618103	9/18/2002	9/24/2002	6	618103	624705	6602	1100	72.58
9/24/2002	37523	624705	9/24/2002	10/18/2002	24	624705	650036	25331	1055	71.82

10/18/2002	37547	650036	10/18/2002	10/29/2002	11	650036	659772	9736	885	62.46
10/29/2002	37558	659772	10/29/2002	11/19/2002	21	659772	680919	21147	1007	56.33
11/19/2002	37579	680919	11/19/2002	12/3/2002	14	680919	697550	16631	1188	51.57
12/3/2002	37593	697550	12/3/2002	12/17/2002	14	697550	712445	14895	1064	47.73
12/17/2002	37607	712445	12/17/2002	1/7/2003	21	712445	732315	19870	946	48.85
1/7/2003	37628	732315	1/7/2003	1/27/2003	20	732315	752282	19967	998	44.63
1/27/2003	37648	752282	1/27/2003	2/5/2003	9	752282	761446	9164	1018	52.33
2/5/2003	37657	761446	2/5/2003	2/19/2003	14	761446	771487	10041	717	45.97
2/19/2003	37671	771487	2/19/2003	3/5/2003	14	771487	780464	8977	641	43.53
3/5/2003	37685	780464	3/5/2003	3/13/2003	8	780464	786888	6424	803	57.45
3/13/2003	37693	786888	3/13/2003	3/25/2003	12	786888	797536	10648	887	61.16
3/25/2003	37705	797536	3/25/2003	4/29/2003	35	797536	825193	27657	790	65.83



11.1.29.2. Baseline Model From Manual Readings

87010

Path and name of input data file = DModFY03_1.prn
 Value of no-data flag = -99
 Column number of group field = 1
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 1
 Column number of dependent Y variable = 9
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 2
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DModFY03_1.prn

Model type = Mean

Grouping column No = 1

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 0

Y1 column number = 9

X1 column number = 0 (unused)

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

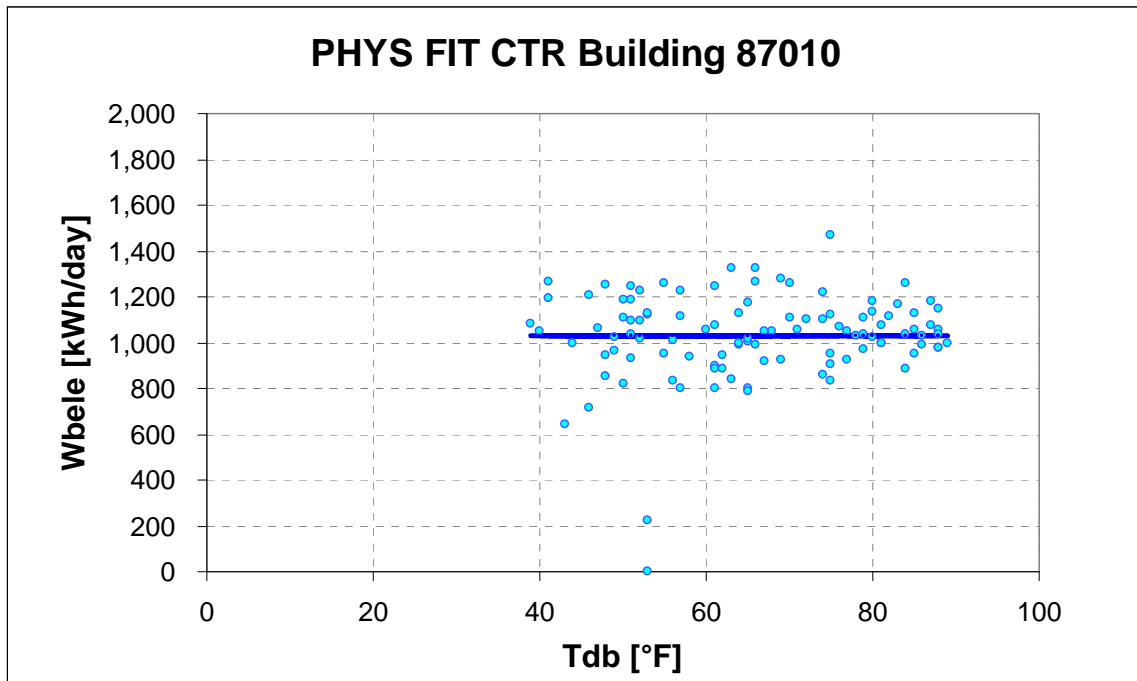
Regression Results

N = 106

Ymean = 1029.330

StdDev = 192.044

CV-StDev = 18.657 %



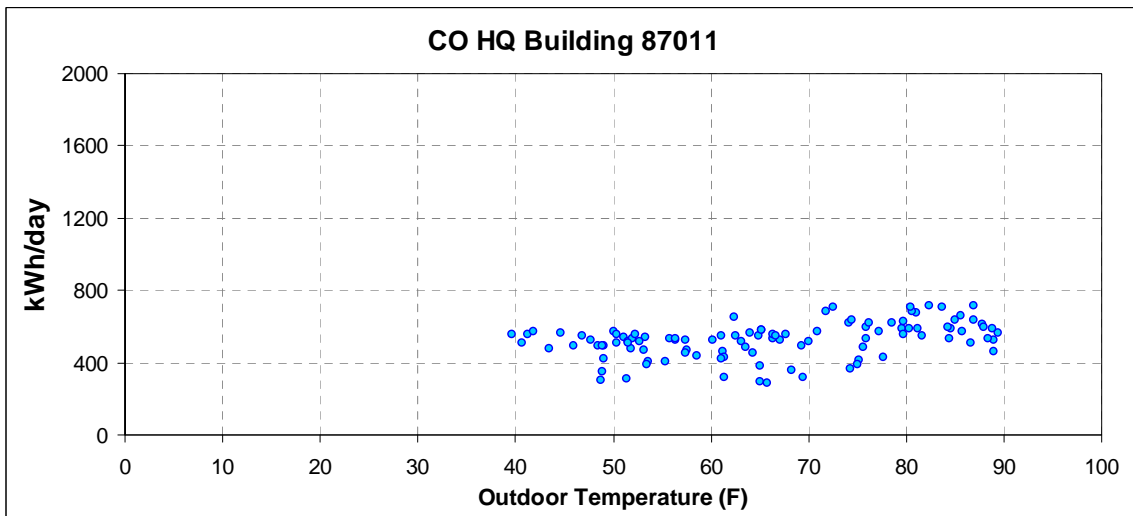
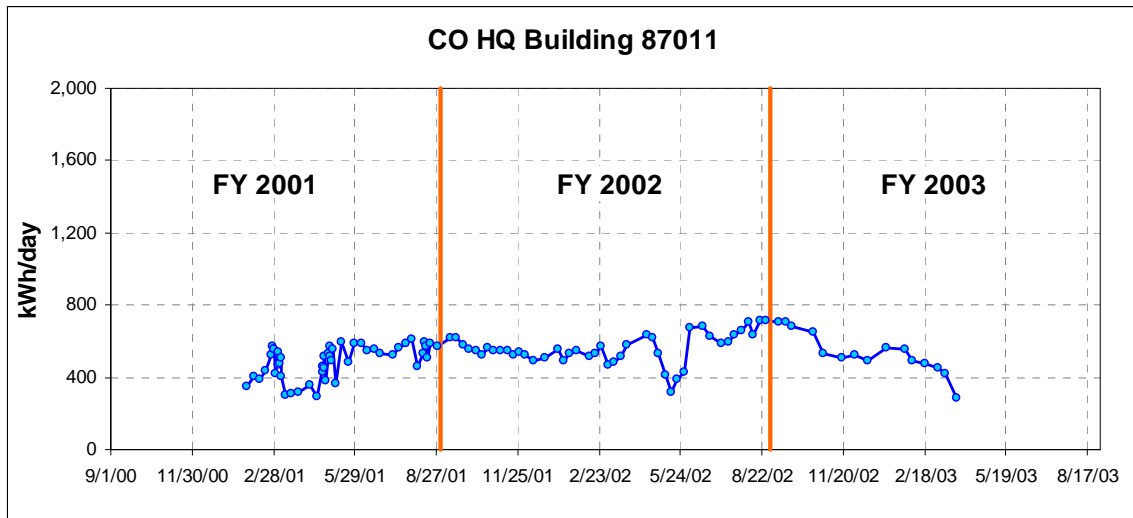
11.1.30. 87011 CO HQ Building

11.1.30.1. Electricity Use From Manual Readings

87011		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Use per period	Use per day	avg temp(F)
12/26/2000	36886		12/26/2000	12/27/2000	1					33.71
12/27/2000	36887		12/27/2000	12/28/2000	1					35.15
12/28/2000	36888		12/28/2000	12/29/2000	1					38.57
12/29/2000	36889		12/29/2000	1/2/2001	4					34.29
1/2/2001	36893		1/2/2001	1/3/2001	1					33.13
1/3/2001	36894		1/3/2001	1/4/2001	1					40.73
1/4/2001	36895		1/4/2001	1/5/2001	1					46.45
1/5/2001	36896		1/5/2001	1/9/2001	4					47.20
1/9/2001	36900		1/9/2001	1/16/2001	7					45.15
1/16/2001	36907		1/16/2001	1/30/2001	14					45.60
1/30/2001	36921	6160	1/30/2001	2/6/2001	7	6160	8596	2436	348	48.97
2/6/2001	36928	8596	2/6/2001	2/13/2001	7	8596	11443	2847	407	53.63
2/13/2001	36935	11443	2/13/2001	2/20/2001	7	11443	14162	2719	388	53.52
2/20/2001	36942	14162	2/20/2001	2/26/2001	6	14162	16782	2620	437	58.53
2/26/2001	36948	16782	2/26/2001	2/27/2001	1	16782	17303	521	521	60.17
2/27/2001	36949	17303	2/27/2001	2/28/2001	1	17303	17874	571	571	50.13
2/28/2001	36950	17874	2/28/2001	3/1/2001	1	17874	18428	554	554	39.58
3/1/2001	36951	18428	3/1/2001	3/2/2001	1	18428	18983	555	555	41.30
3/2/2001	36952	18983	3/2/2001	3/5/2001	3	18983	20247	1264	421	49.00
3/5/2001	36955	20247	3/5/2001	3/6/2001	1	20247	20786	539	539	53.30
3/6/2001	36956	20786	3/6/2001	3/7/2001	1	20786	21254	468	468	53.20
3/7/2001	36957	21254	3/7/2001	3/8/2001	1	21254	21734	480	480	51.84
3/8/2001	36958	21734	3/8/2001	3/9/2001	1	21734	22240	506	506	50.41
3/9/2001	36959	22240	3/9/2001	3/13/2001	4	22240	23858	1618	405	55.40
3/13/2001	36963	23858	3/13/2001	3/20/2001	7	23858	25942	2084	298	48.80
3/20/2001	36970	25942	3/20/2001	3/27/2001	7	25942	28111	2169	310	51.40
3/27/2001	36977	28111	3/27/2001	4/10/2001	14	28111	32559	4448	318	61.40
4/10/2001	36991	32559	4/10/2001	4/17/2001	7	32559	35043	2484	355	68.30
4/17/2001	36998	35043	4/17/2001	4/23/2001	6	35043	36796	1753	292	65.00
4/23/2001	37004	36796	4/23/2001	4/24/2001	1	36796	37260	464	464	61.30
4/24/2001	37005	37260	4/24/2001	4/25/2001	1	37260	37686	426	426	61.40
4/25/2001	37006	37686	4/25/2001	4/26/2001	1	37686	38201	515	515	63.17
4/26/2001	37007	38201	4/26/2001	4/27/2001	1	38201	38656	455	455	64.33
4/27/2001	37008	38656	4/27/2001	4/30/2001	3	38656	39795	1139	380	65.10
4/30/2001	37011	39795	4/30/2001	5/1/2001	1	39795	40330	535	535	66.40
5/1/2001	37012	40330	5/1/2001	5/2/2001	1	40330	40845	515	515	70.10
5/2/2001	37013	40845	5/2/2001	5/3/2001	1	40845	41420	575	575	70.92
5/3/2001	37014	41420	5/3/2001	5/4/2001	1	41420	41910	490	490	69.27
5/4/2001	37015	41910	5/4/2001	5/8/2001	4	41910	44137	2227	557	66.35
5/8/2001	37019	44137	5/8/2001	5/15/2001	7	44137	46719	2582	369	74.37
5/15/2001	37026	46719	5/15/2001	5/22/2001	7	46719	50877	4158	594	75.91
5/22/2001	37033	50877	5/22/2001	5/29/2001	7	50877	54240	3363	480	75.64
5/29/2001	37040	54240	5/29/2001	6/5/2001	7	54240	58325	4085	584	81.15
6/5/2001	37047	58325	6/5/2001	6/12/2001	7	58325	62454	4129	590	79.57
6/12/2001	37054	62454	6/12/2001	6/19/2001	7	62454	66260	3806	544	81.67
6/19/2001	37061	66260	6/19/2001	6/26/2001	7	66260	70170	3910	559	79.70
6/26/2001	37068	70170	6/26/2001	7/10/2001	14	70170	77595	7425	530	84.37
7/10/2001	37082	77595	7/10/2001	7/17/2001	7	77595	81275	3680	526	88.94
7/17/2001	37089	81275	7/17/2001	7/24/2001	7	81275	85201	3926	561	89.43

7/24/2001	37096	85201	7/24/2001	7/31/2001	7	85201	89310	4109	587	88.79
7/31/2001	37103	89310	7/31/2001	8/7/2001	7	89310	93606	4296	614	87.83
8/7/2001	37110	93606	8/7/2001	8/13/2001	6	93606	96363	2757	460	88.94
8/13/2001	37116	96363	8/13/2001	8/15/2001	2	96363	97420	1057	529	88.37
8/15/2001	37118	97420	8/15/2001	8/16/2001	1	97420	98013	593	593	88.00
8/16/2001	37119	98013	8/16/2001	8/17/2001	1	98013	98583	570	570	85.77
8/17/2001	37120	98583	8/17/2001	8/21/2001	4	98583	100600	2017	504	86.59
8/21/2001	37124	100600	8/21/2001	8/28/2001	7	100600	104689	4089	584	84.54
8/28/2001	37131	104689	8/28/2001	9/11/2001	14	104689	112644	7955	568	77.20
9/11/2001	37145	112644	9/11/2001	9/18/2001	7	112644	116976	4332	619	78.59
9/18/2001	37152	116976	9/18/2001	9/26/2001	8	116976	121899	4923	615	74.20
9/26/2001	37160	121899	9/26/2001	10/2/2001	6	121899	125376	3477	580	65.22
10/2/2001	37166	125376	10/2/2001	10/10/2001	8	125376	129823	4447	556	67.74
10/10/2001	37174	129823	10/10/2001	10/16/2001	6	129823	133128	3305	551	64.89
10/16/2001	37180	133128	10/16/2001	10/23/2001	7	133128	136797	3669	524	67.16
10/23/2001	37187	136797	10/23/2001	10/30/2001	7	136797	140726	3929	561	64.08
10/30/2001	37194	140726	10/30/2001	11/6/2001	7	140726	144580	3854	551	66.73
11/6/2001	37201	144580	11/6/2001	11/14/2001	8	144580	148946	4366	546	62.59
11/14/2001	37209	148946	11/14/2001	11/20/2001	6	148946	152247	3301	550	61.09
11/20/2001	37215	152247	11/20/2001	11/27/2001	7	152247	155898	3651	522	56.44
11/27/2001	37222	155898	11/27/2001	12/4/2001	7	155898	159688	3790	541	51.06
12/4/2001	37229	159688	12/4/2001	12/12/2001	8	159688	163870	4182	523	57.43
12/12/2001	37237	163870	12/12/2001	12/26/2001	14	163870	170812	6942	496	49.06
12/26/2001	37251	170812	12/26/2001	1/8/2002	13	170812	177421	6609	508	40.68
1/8/2002	37264	177421	1/8/2002	1/15/2002	7	177421	181327	3906	558	50.38
1/15/2002	37271	181327	1/15/2002	1/22/2002	7	181327	184758	3431	490	48.46
1/22/2002	37278	184758	1/22/2002	1/29/2002	7	184758	188470	3712	530	55.79
1/29/2002	37285	188470	1/29/2002	2/12/2002	14	188470	196168	7698	550	46.87
2/12/2002	37299	196168	2/12/2002	2/19/2002	7	196168	199806	3638	520	51.60
2/19/2002	37306	199806	2/19/2002	2/26/2002	7	199806	203501	3695	528	52.04
2/26/2002	37313	203501	2/26/2002	3/5/2002	7	203501	207481	3980	569	41.81
3/5/2002	37320	207481	3/5/2002	3/12/2002	7	207481	210733	3252	465	57.55
3/12/2002	37327	210733	3/12/2002	3/19/2002	7	210733	214125	3392	485	63.63
3/19/2002	37334	214125	3/19/2002	3/26/2002	7	214125	217730	3605	515	52.67
3/26/2002	37341	217730	3/26/2002	4/17/2002	22	217730	230435	12705	578	65.18
4/17/2002	37363	230435	4/17/2002	4/23/2002	6	230435	234249	3814	636	74.41
4/23/2002	37369	234249	4/23/2002	4/30/2002	7	234249	238573	4324	618	76.15
4/30/2002	37376	238573	4/30/2002	5/7/2002	7	238573	242293	3720	531	75.92
5/7/2002	37383	242293	5/7/2002	5/14/2002	7	242293	245184	2891	413	75.16
5/14/2002	37390	245184	5/14/2002	5/21/2002	7	245184	247386	2202	315	69.49
5/21/2002	37397	247386	5/21/2002	5/28/2002	7	247386	250115	2729	390	75.10
5/28/2002	37404	250115	5/28/2002	6/4/2002	7	250115	253137	3022	432	77.67
6/4/2002	37411	253137	6/4/2002	6/18/2002	14	253137	262621	9484	677	81.06
6/18/2002	37425	262621	6/18/2002	6/26/2002	8	262621	268080	5459	682	80.59
6/26/2002	37433	268080	6/26/2002	7/9/2002	13	268080	276198	8118	624	79.73
7/9/2002	37446	276198	7/9/2002	7/16/2002	7	276198	280328	4130	590	80.38
7/16/2002	37453	280328	7/16/2002	7/23/2002	7	280328	284484	4156	594	84.33
7/23/2002	37460	284484	7/23/2002	7/31/2002	8	284484	289588	5104	638	86.96
7/31/2002	37468	289588	7/31/2002	8/8/2002	8	289588	294859	5271	659	85.56
8/8/2002	37476	294859	8/8/2002	8/13/2002	5	294859	298380	3521	704	83.72
8/13/2002	37481	298380	8/13/2002	8/20/2002	7	298380	302817	4437	634	84.99
8/20/2002	37488	302817	8/20/2002	8/27/2002	7	302817	307820	5003	715	86.86
8/27/2002	37495	307820	8/27/2002	9/10/2002	14	307820	317808	9988	713	82.44
9/10/2002	37509	317808	9/10/2002	9/18/2002	8	317808	323480	5672	709	80.40
9/18/2002	37517	323480	9/18/2002	9/24/2002	6	323480	327724	4244	707	72.58
9/24/2002	37523	327724	9/24/2002	10/18/2002	24	327724	344106	16382	683	71.82

10/18/2002	37547	344106	10/18/2002	10/29/2002	11	344106	351233	7127	648	62.46
10/29/2002	37558	351233	10/29/2002	11/19/2002	21	351233	362464	11231	535	56.33
11/19/2002	37579	362464	11/19/2002	12/3/2002	14	362464	369584	7120	509	51.57
12/3/2002	37593	369584	12/3/2002	12/17/2002	14	369584	376921	7337	524	47.73
12/17/2002	37607	376921	12/17/2002	1/7/2003	21	376921	387306	10385	495	48.85
1/7/2003	37628	387306	1/7/2003	1/27/2003	20	387306	398556	11250	563	44.63
1/27/2003	37648	398556	1/27/2003	2/5/2003	9	398556	403528	4972	552	52.33
2/5/2003	37657	403528	2/5/2003	2/19/2003	14	403528	410368	6840	489	45.97
2/19/2003	37671	410368	2/19/2003	3/5/2003	14	410368	417070	6702	479	43.53
3/5/2003	37685	417070	3/5/2003	3/13/2003	8	417070	420708	3638	455	57.45
3/13/2003	37693	420708	3/13/2003	3/25/2003	12	420708	425726	5018	418	61.16
3/25/2003	37705	425726	3/25/2003	4/29/2003	35	425726	435805	10079	288	65.83



11.1.30.2. Baseline Model From Manual Readings

87011

Path and name of input data file = DModFY03_2.prn
 Value of no-data flag = -99
 Column number of group field = 1
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 2
 Column number of dependent Y variable = 3
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 2
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DModFY03_2.prn

Model type = 2P

Grouping column No = 1

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 3

X1 column number = 2

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 107

R2 = 0.160

AdjR2 = 0.160

RMSE = 88.9283

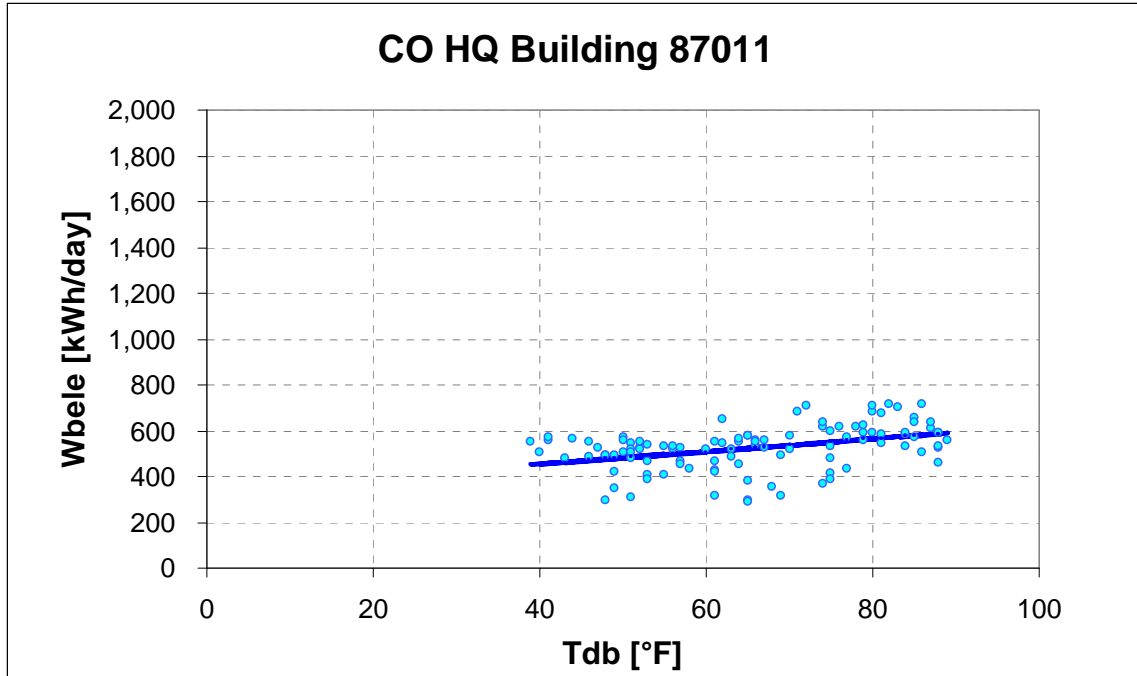
CV-RMSE = 16.970%

p = 0.639

DW = 0.662 (p>0)

a = 342.8461 (41.4206)

X1 = 2.7403 (0.6128)



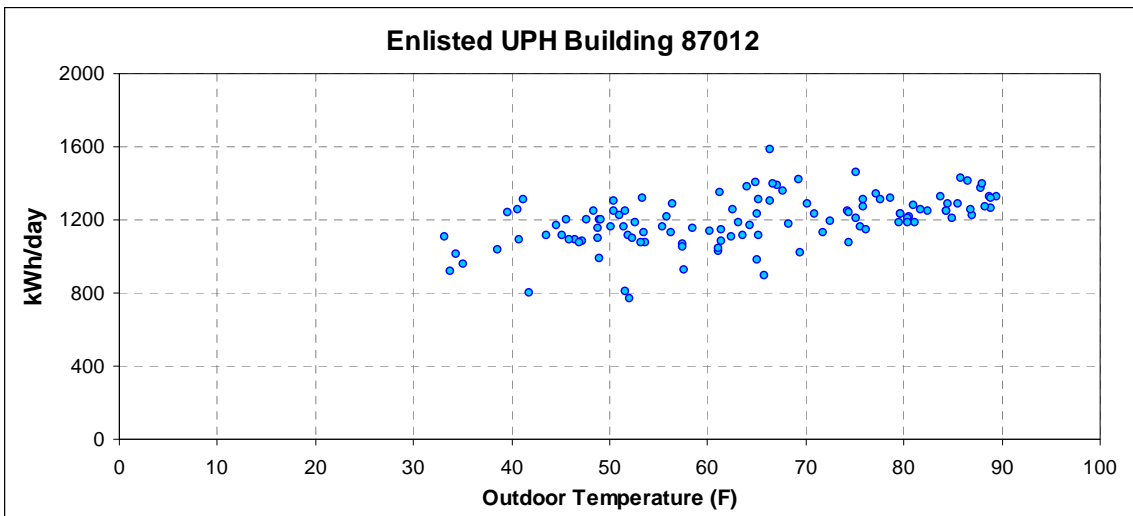
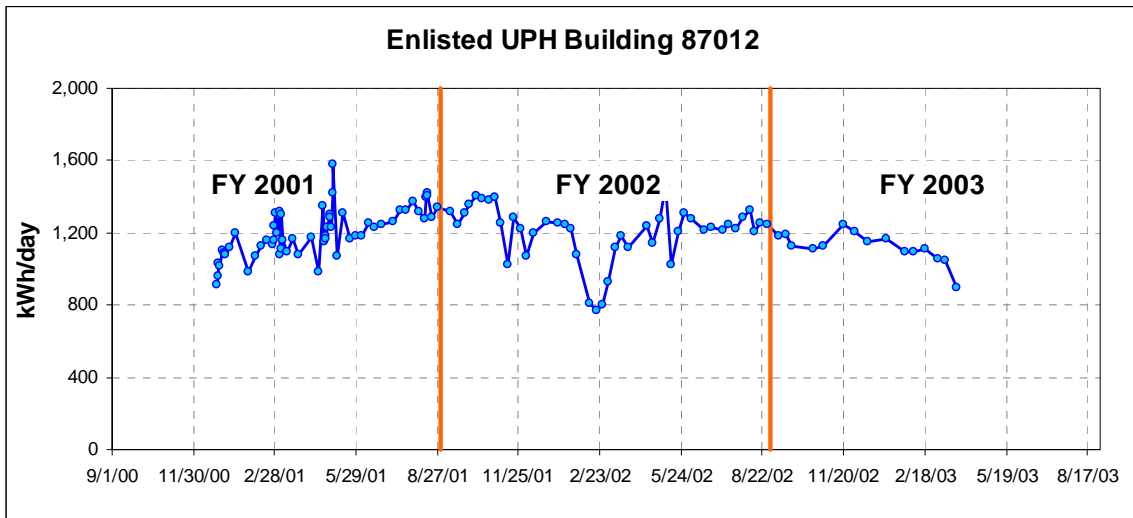
11.1.31. 87012 Enlisted UPH Building

11.1.31.1. Electricity Use From Manual Readings

87012		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Use per period	Use per day	avg temp(F)
12/26/00	36886	29763	12/26/00	12/27/00	1	29763	30677	914	914	33.71
12/27/00	36887	30677	12/27/00	12/28/00	1	30677	31635	958	958	35.15
12/28/00	36888	31635	12/28/00	12/29/00	1	31635	32668	1033	1033	38.57
12/29/00	36889	32668	12/29/00	1/2/01	4	32668	36730	4062	1016	34.29
1/2/01	36893	36730	1/2/01	1/3/01	1	36730	37836	1106	1106	33.13
1/3/01	36894	37836	1/3/01	1/4/01	1	37836	38926	1090	1090	40.73
1/4/01	36895	38926	1/4/01	1/5/01	1	38926	40016	1090	1090	46.45
1/5/01	36896	40016	1/5/01	1/9/01	4	40016	44339	4323	1081	47.20
1/9/01	36900	44339	1/9/01	1/16/01	7	44339	52155	7816	1117	45.15
1/16/01	36907	52155	1/16/01	1/30/01	14	52155	68905	16750	1196	45.60
1/30/01	36921	68905	1/30/01	2/6/01	7	68905	75806	6901	986	48.97
2/6/01	36928	75806	2/6/01	2/13/01	7	75806	83321	7515	1074	53.63
2/13/01	36935	83321	2/13/01	2/20/01	7	83321	91225	7904	1129	53.52
2/20/01	36942	91225	2/20/01	2/26/01	6	91225	98155	6930	1155	58.53
2/26/01	36948	98155	2/26/01	2/27/01	1	98155	99293	1138	1138	60.17
2/27/01	36949	99293	2/27/01	2/28/01	1	99293	100454	1161	1161	50.13
2/28/01	36950	100454	2/28/01	3/1/01	1	100454	101691	1237	1237	39.58
3/1/01	36951	101691	3/1/01	3/2/01	1	101691	102997	1306	1306	41.30
3/2/01	36952	102997	3/2/01	3/5/01	3	102997	106587	3590	1197	49.00
3/5/01	36955	106587	3/5/01	3/6/01	1	106587	107905	1318	1318	53.30
3/6/01	36956	107905	3/6/01	3/7/01	1	107905	108982	1077	1077	53.20
3/7/01	36957	108982	3/7/01	3/8/01	1	108982	110093	1111	1111	51.84
3/8/01	36958	110093	3/8/01	3/9/01	1	110093	111396	1303	1303	50.41
3/9/01	36959	111396	3/9/01	3/13/01	4	111396	116045	4649	1162	55.40
3/13/01	36963	116045	3/13/01	3/20/01	7	116045	123734	7689	1098	48.80
3/20/01	36970	123734	3/20/01	3/27/01	7	123734	131879	8145	1164	51.40
3/27/01	36977	131879	3/27/01	4/10/01	14	131879	146995	15116	1080	61.40
4/10/01	36991	146995	4/10/01	4/17/01	7	146995	155230	8235	1176	68.30
4/17/01	36998	155230	4/17/01	4/23/01	6	155230	161120	5890	982	65.00
4/23/01	37004	161120	4/23/01	4/24/01	1	161120	162470	1350	1350	61.30
4/24/01	37005	162470	4/24/01	4/25/01	1	162470	163618	1148	1148	61.40
4/25/01	37006	163618	4/25/01	4/26/01	1	163618	164804	1186	1186	63.17
4/26/01	37007	164804	4/26/01	4/27/01	1	164804	165972	1168	1168	64.33
4/27/01	37008	165972	4/27/01	4/30/01	3	165972	169673	3701	1234	65.10
4/30/01	37011	169673	4/30/01	5/1/01	1	169673	170974	1301	1301	66.40
5/1/01	37012	170974	5/1/01	5/2/01	1	170974	172259	1285	1285	70.10
5/2/01	37013	172259	5/2/01	5/3/01	1	172259	173489	1230	1230	70.92
5/3/01	37014	173489	5/3/01	5/4/01	1	173489	174908	1419	1419	69.27
5/4/01	37015	174908	5/4/01	5/8/01	4	174908	181234	6326	1582	66.35
5/8/01	37019	181234	5/8/01	5/15/01	7	181234	188734	7500	1071	74.37
5/15/01	37026	188734	5/15/01	5/22/01	7	188734	197919	9185	1312	75.91
5/22/01	37033	197919	5/22/01	5/29/01	7	197919	206069	8150	1164	75.64
5/29/01	37040	206069	5/29/01	6/5/01	7	206069	214344	8275	1182	81.15
6/5/01	37047	214344	6/5/01	6/12/01	7	214344	222638	8294	1185	79.57
6/12/01	37054	222638	6/12/01	6/19/01	7	222638	231414	8776	1254	81.67
6/19/01	37061	231414	6/19/01	6/26/01	7	231414	240024	8610	1230	79.70
6/26/01	37068	240024	6/26/01	7/10/01	14	240024	257478	17454	1247	84.37
7/10/01	37082	257478	7/10/01	7/17/01	7	257478	266311	8833	1262	88.94
7/17/01	37089	266311	7/17/01	7/24/01	7	266311	275596	9285	1326	89.43

7/24/01	37096	275596	7/24/01	7/31/01	7	275596	284870	9274	1325	88.79
7/31/01	37103	284870	7/31/01	8/7/01	7	284870	294492	9622	1375	87.83
8/7/01	37110	294492	8/7/01	8/13/01	6	294492	302406	7914	1319	88.94
8/13/01	37116	302406	8/13/01	8/15/01	2	302406	304954	2548	1274	88.37
8/15/01	37118	304954	8/15/01	8/16/01	1	304954	306347	1393	1393	88.00
8/16/01	37119	306347	8/16/01	8/17/01	1	306347	307771	1424	1424	85.77
8/17/01	37120	307771	8/17/01	8/21/01	4	307771	313404	5633	1408	86.59
8/21/01	37124	313404	8/21/01	8/28/01	7	313404	322389	8985	1284	84.54
8/28/01	37131	322389	8/28/01	9/11/01	14	322389	341131	18742	1339	77.20
9/11/01	37145	341131	9/11/01	9/18/01	7	341131	350344	9213	1316	78.59
9/18/01	37152	350344	9/18/01	9/26/01	8	350344	360316	9972	1247	74.20
9/26/01	37160	360316	9/26/01	10/2/01	6	360316	368178	7862	1310	65.22
10/2/01	37166	368178	10/2/01	10/10/01	8	368178	379041	10863	1358	67.74
10/10/01	37174	379041	10/10/01	10/16/01	6	379041	387457	8416	1403	64.89
10/16/01	37180	387457	10/16/01	10/23/01	7	387457	397189	9732	1390	67.16
10/23/01	37187	397189	10/23/01	10/30/01	7	397189	406858	9669	1381	64.08
10/30/01	37194	406858	10/30/01	11/6/01	7	406858	416614	9756	1394	66.73
11/6/01	37201	416614	11/6/01	11/14/01	8	416614	426639	10025	1253	62.59
11/14/01	37209	426639	11/14/01	11/20/01	6	426639	432784	6145	1024	61.09
11/20/01	37215	432784	11/20/01	11/27/01	7	432784	441784	9000	1286	56.44
11/27/01	37222	441784	11/27/01	12/4/01	7	441784	450329	8545	1221	51.06
12/4/01	37229	450329	12/4/01	12/12/01	8	450329	458879	8550	1069	57.43
12/12/01	37237	458879	12/12/01	12/26/01	14	458879	475656	16777	1198	49.06
12/26/01	37251	475656	12/26/01	1/8/02	13	475656	492019	16363	1259	40.68
1/8/02	37264	492019	1/8/02	1/15/02	7	492019	500773	8754	1251	50.38
1/15/02	37271	500773	1/15/02	1/22/02	7	500773	509519	8746	1249	48.46
1/22/02	37278	509519	1/22/02	1/29/02	7	509519	518049	8530	1219	55.79
1/29/02	37285	518049	1/29/02	2/12/02	14	518049	533121	15072	1077	46.87
2/12/02	37299	533121	2/12/02	2/19/02	7	533121	538800	5679	811	51.60
2/19/02	37306	538800	2/19/02	2/26/02	7	538800	544162	5362	766	52.04
2/26/02	37313	544162	2/26/02	3/5/02	7	544162	549772	5610	801	41.81
3/5/02	37320	549772	3/5/02	3/12/02	7	549772	556268	6496	928	57.55
3/12/02	37327	556268	3/12/02	3/19/02	7	556268	564081	7813	1116	63.63
3/19/02	37334	564081	3/19/02	3/26/02	7	564081	572384	8303	1186	52.67
3/26/02	37341	572384	3/26/02	4/17/02	22	572384	596948	24564	1117	65.18
4/17/02	37363	596948	4/17/02	4/23/02	6	596948	604394	7446	1241	74.41
4/23/02	37369	604394	4/23/02	4/30/02	7	604394	612410	8016	1145	76.15
4/30/02	37376	612410	4/30/02	5/7/02	7	612410	621331	8921	1274	75.92
5/7/02	37383	621331	5/7/02	5/14/02	7	621331	631539	10208	1458	75.16
5/14/02	37390	631539	5/14/02	5/21/02	7	631539	638678	7139	1020	69.49
5/21/02	37397	638678	5/21/02	5/28/02	7	638678	647136	8458	1208	75.10
5/28/02	37404	647136	5/28/02	6/4/02	7	647136	656311	9175	1311	77.67
6/4/02	37411	656311	6/4/02	6/18/02	14	656311	674243	17932	1281	81.06
6/18/02	37425	674243	6/18/02	6/26/02	8	674243	683981	9738	1217	80.59
6/26/02	37433	683981	6/26/02	7/9/02	13	683981	700004	16023	1233	79.73
7/9/02	37446	700004	7/9/02	7/16/02	7	700004	708484	8480	1211	80.38
7/16/02	37453	708484	7/16/02	7/23/02	7	708484	717205	8721	1246	84.33
7/23/02	37460	717205	7/23/02	7/31/02	8	717205	727002	9797	1225	86.96
7/31/02	37468	727002	7/31/02	8/8/02	8	727002	737272	10270	1284	85.56
8/8/02	37476	737272	8/8/02	8/13/02	5	737272	743882	6610	1322	83.72
8/13/02	37481	743882	8/13/02	8/20/02	7	743882	752349	8467	1210	84.99
8/20/02	37488	752349	8/20/02	8/27/02	7	752349	761108	8759	1251	86.86
8/27/02	37495	761108	8/27/02	9/10/02	14	761108	778513	17405	1243	82.44
9/10/02	37509	778513	9/10/02	9/18/02	8	778513	787980	9467	1183	80.40
9/18/02	37517	787980	9/18/02	9/24/02	6	787980	795120	7140	1190	72.58
9/24/02	37523	795120	9/24/02	10/18/02	24	795120	822162	27042	1127	71.82

10/18/02	37547	822162	10/18/02	10/29/02	11	822162	834361	12199	1109	62.46
10/29/02	37558	834361	10/29/02	11/19/02	21	834361	858078	23717	1129	56.33
11/19/02	37579	858078	11/19/02	12/3/02	14	858078	875515	17437	1246	51.57
12/3/02	37593	875515	12/3/02	12/17/02	14	875515	892364	16849	1204	47.73
12/17/02	37607	892364	12/17/02	1/7/03	21	892364	916565	24201	1152	48.85
1/7/03	37628	916565	1/7/03	1/27/03	20	916565	939902	23337	1167	44.63
1/27/03	37648	939902	1/27/03	2/5/03	9	939902	949754	9852	1095	52.33
2/5/03	37657	949754	2/5/03	2/19/03	14	949754	965067	15313	1094	45.97
2/19/03	37671	965067	2/19/03	3/5/03	14	965067	980647	15580	1113	43.53
3/5/03	37685	980647	3/5/03	3/13/03	8	980647	989061	8414	1052	57.45
3/13/03	37693	989061	3/13/03	3/25/03	12	989061	1001588	12527	1044	61.16
3/25/03	37705	1001588	3/25/03	4/29/03	35	1001588	1032862	31274	894	65.83



11.1.31.2. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 2
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 2P

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

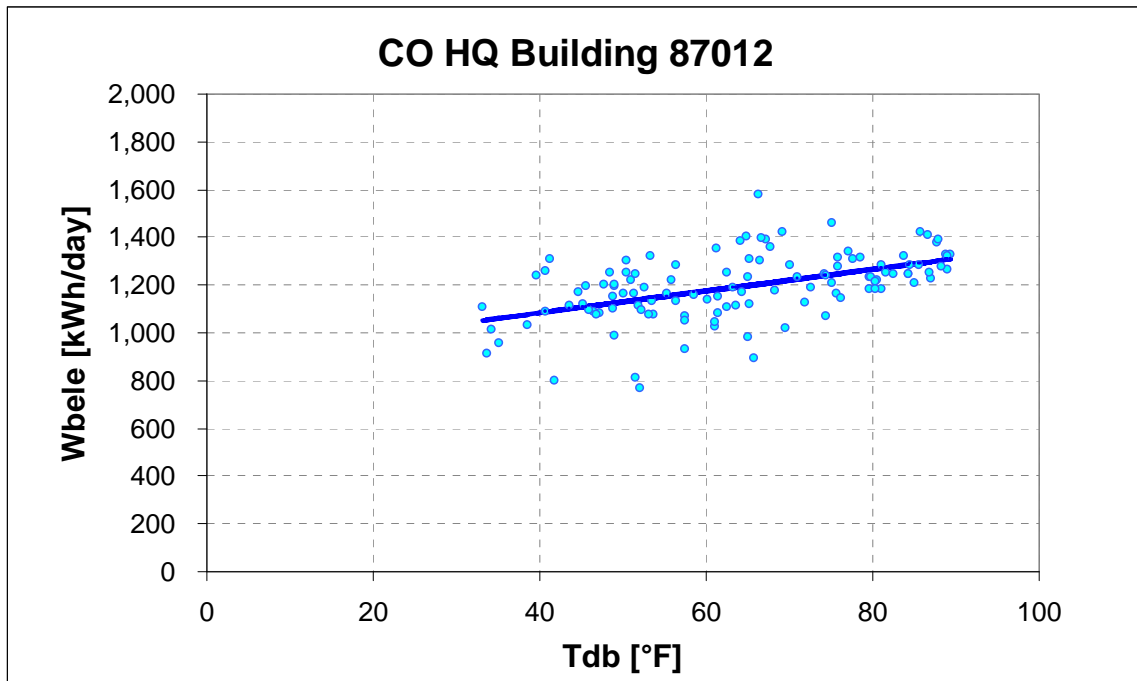
X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

 N = 117
 R2 = 0.258
 AdjR2 = 0.258
 RMSE = 119.1861
 CV-RMSE = 9.994%
 p = 0.411
 DW = 1.117 (p>0)
 a = 902.5427 (47.1450)
 X1 = 4.5402 (0.7175)



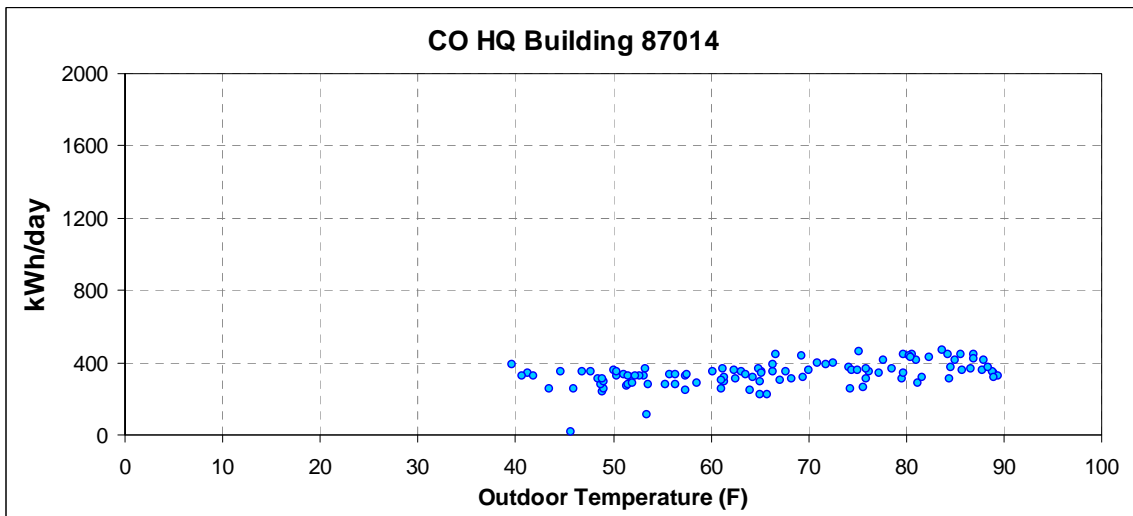
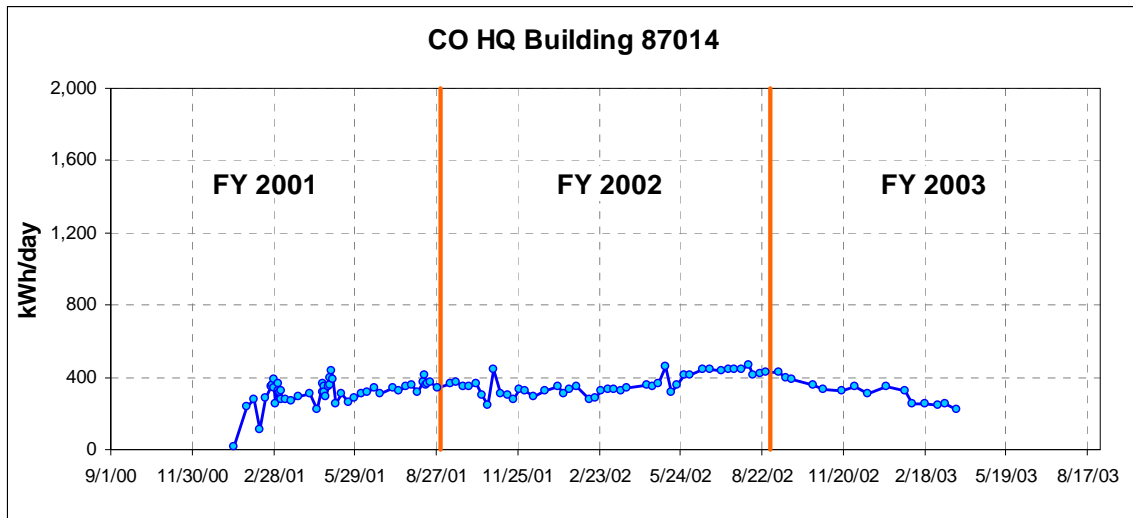
11.1.32. 87014 CO HQ Building

11.1.32.1. Electricity Use From Manual Readings

87014		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Use per period	Use per day	avg temp(F)
12/26/00	36886		12/26/00	12/27/00	1					33.71
12/27/00	36887		12/27/00	12/28/00	1					35.15
12/28/00	36888		12/28/00	12/29/00	1					38.57
12/29/00	36889		12/29/00	1/2/01	4					34.29
1/2/01	36893		1/2/01	1/3/01	1					33.13
1/3/01	36894		1/3/01	1/4/01	1					40.73
1/4/01	36895		1/4/01	1/5/01	1					46.45
1/5/01	36896		1/5/01	1/9/01	4					47.20
1/9/01	36900		1/9/01	1/16/01	7					45.15
1/16/01	36907	3059	1/16/01	1/30/01	14	3059	3336	277	20	45.60
1/30/01	36921	3336	1/30/01	2/6/01	7	3336	5003	1667	238	48.97
2/6/01	36928	5003	2/6/01	2/13/01	7	5003	6972	1969	281	53.63
2/13/01	36935	6972	2/13/01	2/20/01	7	6972	7731	759	108	53.52
2/20/01	36942	7731	2/20/01	2/26/01	6	7731	9459	1728	288	58.53
2/26/01	36948	9459	2/26/01	2/27/01	1	9459	9812	353	353	60.17
2/27/01	36949	9812	2/27/01	2/28/01	1	9812	10171	359	359	50.13
2/28/01	36950	10171	2/28/01	3/1/01	1	10171	10557	386	386	39.58
3/1/01	36951	10557	3/1/01	3/2/01	1	10557	10895	338	338	41.30
3/2/01	36952	10895	3/2/01	3/5/01	3	10895	11646	751	250	49.00
3/5/01	36955	11646	3/5/01	3/6/01	1	11646	12015	369	369	53.30
3/6/01	36956	12015	3/6/01	3/7/01	1	12015	12337	322	322	53.20
3/7/01	36957	12337	3/7/01	3/8/01	1	12337	12653	316	316	51.84
3/8/01	36958	12653	3/8/01	3/9/01	1	12653	12978	325	325	50.41
3/9/01	36959	12978	3/9/01	3/13/01	4	12978	14084	1106	277	55.40
3/13/01	36963	14084	3/13/01	3/20/01	7	14084	16016	1932	276	48.80
3/20/01	36970	16016	3/20/01	3/27/01	7	16016	17921	1905	272	51.40
3/27/01	36977	17921	3/27/01	4/10/01	14	17921	22023	4102	293	61.40
4/10/01	36991	22023	4/10/01	4/17/01	7	22023	24216	2193	313	68.30
4/17/01	36998	24216	4/17/01	4/23/01	6	24216	25526	1310	218	65.00
4/23/01	37004	25526	4/23/01	4/24/01	1	25526	25888	362	362	61.30
4/24/01	37005	25888	4/24/01	4/25/01	1	25888	26207	319	319	61.40
4/25/01	37006	26207	4/25/01	4/26/01	1	26207	26553	346	346	63.17
4/26/01	37007	26553	4/26/01	4/27/01	1	26553	26874	321	321	64.33
4/27/01	37008	26874	4/27/01	4/30/01	3	26874	27745	871	290	65.10
4/30/01	37011	27745	4/30/01	5/1/01	1	27745	28096	351	351	66.40
5/1/01	37012	28096	5/1/01	5/2/01	1	28096	28450	354	354	70.10
5/2/01	37013	28450	5/2/01	5/3/01	1	28450	28848	398	398	70.92
5/3/01	37014	28848	5/3/01	5/4/01	1	28848	29284	436	436	69.27
5/4/01	37015	29284	5/4/01	5/8/01	4	29284	30841	1557	389	66.35
5/8/01	37019	30841	5/8/01	5/15/01	7	30841	32629	1788	255	74.37
5/15/01	37026	32629	5/15/01	5/22/01	7	32629	34791	2162	309	75.91
5/22/01	37033	34791	5/22/01	5/29/01	7	34791	36622	1831	262	75.64
5/29/01	37040	36622	5/29/01	6/5/01	7	36622	38611	1989	284	81.15
6/5/01	37047	38611	6/5/01	6/12/01	7	38611	40803	2192	313	79.57
6/12/01	37054	40803	6/12/01	6/19/01	7	40803	43030	2227	318	81.67
6/19/01	37061	43030	6/19/01	6/26/01	7	43030	45399	2369	338	79.70
6/26/01	37068	45399	6/26/01	7/10/01	14	45399	49787	4388	313	84.37
7/10/01	37082	49787	7/10/01	7/17/01	7	49787	52170	2383	340	88.94
7/17/01	37089	52170	7/17/01	7/24/01	7	52170	54444	2274	325	89.43

7/24/01	37096	54444	7/24/01	7/31/01	7	54444	56887	2443	349	88.79
7/31/01	37103	56887	7/31/01	8/7/01	7	56887	59392	2505	358	87.83
8/7/01	37110	59392	8/7/01	8/13/01	6	59392	61293	1901	317	88.94
8/13/01	37116	61293	8/13/01	8/15/01	2	61293	62039	746	373	88.37
8/15/01	37118	62039	8/15/01	8/16/01	1	62039	62451	412	412	88.00
8/16/01	37119	62451	8/16/01	8/17/01	1	62451	62810	359	359	85.77
8/17/01	37120	62810	8/17/01	8/21/01	4	62810	64276	1466	367	86.59
8/21/01	37124	64276	8/21/01	8/28/01	7	64276	66910	2634	376	84.54
8/28/01	37131	66910	8/28/01	9/11/01	14	66910	71665	4755	340	77.20
9/11/01	37145	71665	9/11/01	9/18/01	7	71665	74216	2551	364	78.59
9/18/01	37152	74216	9/18/01	9/26/01	8	74216	77231	3015	377	74.20
9/26/01	37160	77231	9/26/01	10/2/01	6	77231	79340	2109	352	65.22
10/2/01	37166	79340	10/2/01	10/10/01	8	79340	82112	2772	347	67.74
10/10/01	37174	82112	10/10/01	10/16/01	6	82112	84299	2187	365	64.89
10/16/01	37180	84299	10/16/01	10/23/01	7	84299	86437	2138	305	67.16
10/23/01	37187	86437	10/23/01	10/30/01	7	86437	88151	1714	245	64.08
10/30/01	37194	88151	10/30/01	11/6/01	7	88151	91244	3093	442	66.73
11/6/01	37201	91244	11/6/01	11/14/01	8	91244	93702	2458	307	62.59
11/14/01	37209	93702	11/14/01	11/20/01	6	93702	95525	1823	304	61.09
11/20/01	37215	95525	11/20/01	11/27/01	7	95525	97456	1931	276	56.44
11/27/01	37222	97456	11/27/01	12/4/01	7	97456	99810	2354	336	51.06
12/4/01	37229	99810	12/4/01	12/12/01	8	99810	102421	2611	326	57.43
12/12/01	37237	102421	12/12/01	12/26/01	14	102421	106550	4129	295	49.06
12/26/01	37251	106550	12/26/01	1/8/02	13	106550	110800	4250	327	40.68
1/8/02	37264	110800	1/8/02	1/15/02	7	110800	113260	2460	351	50.38
1/15/02	37271	113260	1/15/02	1/22/02	7	113260	115433	2173	310	48.46
1/22/02	37278	115433	1/22/02	1/29/02	7	115433	117786	2353	336	55.79
1/29/02	37285	117786	1/29/02	2/12/02	14	117786	122638	4852	347	46.87
2/12/02	37299	122638	2/12/02	2/19/02	7	122638	124586	1948	278	51.60
2/19/02	37306	124586	2/19/02	2/26/02	7	124586	126583	1997	285	52.04
2/26/02	37313	126583	2/26/02	3/5/02	7	126583	128865	2282	326	41.81
3/5/02	37320	128865	3/5/02	3/12/02	7	128865	131212	2347	335	57.55
3/12/02	37327	131212	3/12/02	3/19/02	7	131212	133556	2344	335	63.63
3/19/02	37334	133556	3/19/02	3/26/02	7	133556	135839	2283	326	52.67
3/26/02	37341	135839	3/26/02	4/17/02	22	135839	143363	7524	342	65.18
4/17/02	37363	143363	4/17/02	4/23/02	6	143363	145526	2163	361	74.41
4/23/02	37369	145526	4/23/02	4/30/02	7	145526	147957	2431	347	76.15
4/30/02	37376	147957	4/30/02	5/7/02	7	147957	150525	2568	367	75.92
5/7/02	37383	150525	5/7/02	5/14/02	7	150525	153721	3196	457	75.16
5/14/02	37390	153721	5/14/02	5/21/02	7	153721	155937	2216	317	69.49
5/21/02	37397	155937	5/21/02	5/28/02	7	155937	158461	2524	361	75.10
5/28/02	37404	158461	5/28/02	6/4/02	7	158461	161332	2871	410	77.67
6/4/02	37411	161332	6/4/02	6/18/02	14	161332	167125	5793	414	81.06
6/18/02	37425	167125	6/18/02	6/26/02	8	167125	170702	3577	447	80.59
6/26/02	37433	170702	6/26/02	7/9/02	13	170702	176517	5815	447	79.73
7/9/02	37446	176517	7/9/02	7/16/02	7	176517	179584	3067	438	80.38
7/16/02	37453	179584	7/16/02	7/23/02	7	179584	182668	3084	441	84.33
7/23/02	37460	182668	7/23/02	7/31/02	8	182668	186250	3582	448	86.96
7/31/02	37468	186250	7/31/02	8/8/02	8	186250	189805	3555	444	85.56
8/8/02	37476	189805	8/8/02	8/13/02	5	189805	192143	2338	468	83.72
8/13/02	37481	192143	8/13/02	8/20/02	7	192143	195044	2901	414	84.99
8/20/02	37488	195044	8/20/02	8/27/02	7	195044	197973	2929	418	86.86
8/27/02	37495	197973	8/27/02	9/10/02	14	197973	204009	6036	431	82.44
9/10/02	37509	204009	9/10/02	9/18/02	8	204009	207441	3432	429	80.40
9/18/02	37517	207441	9/18/02	9/24/02	6	207441	209835	2394	399	72.58
9/24/02	37523	209835	9/24/02	10/18/02	24	209835	219234	9399	392	71.82

10/18/02	37547	219234	10/18/02	10/29/02	11	219234	223175	3941	358	62.46
10/29/02	37558	223175	10/29/02	11/19/02	21	223175	230238	7063	336	56.33
11/19/02	37579	230238	11/19/02	12/3/02	14	230238	234841	4603	329	51.57
12/3/02	37593	234841	12/3/02	12/17/02	14	234841	239782	4941	353	47.73
12/17/02	37607	239782	12/17/02	1/7/03	21	239782	246242	6460	308	48.85
1/7/03	37628	246242	1/7/03	1/27/03	20	246242	253180	6938	347	44.63
1/27/03	37648	253180	1/27/03	2/5/03	9	253180	256077	2897	322	52.33
2/5/03	37657	256077	2/5/03	2/19/03	14	256077	259630	3553	254	45.97
2/19/03	37671	259630	2/19/03	3/5/03	14	259630	263201	3571	255	43.53
3/5/03	37685	263201	3/5/03	3/13/03	8	263201	265185	1984	248	57.45
3/13/03	37693	265185	3/13/03	3/25/03	12	265185	268261	3076	256	61.16
3/25/03	37705	268261	3/25/03	4/29/03	35	268261	275926	7665	219	65.83



11.1.32.2. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 2
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 2P

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 108

R2 = 0.238

AdjR2 = 0.238

RMSE = 59.4301

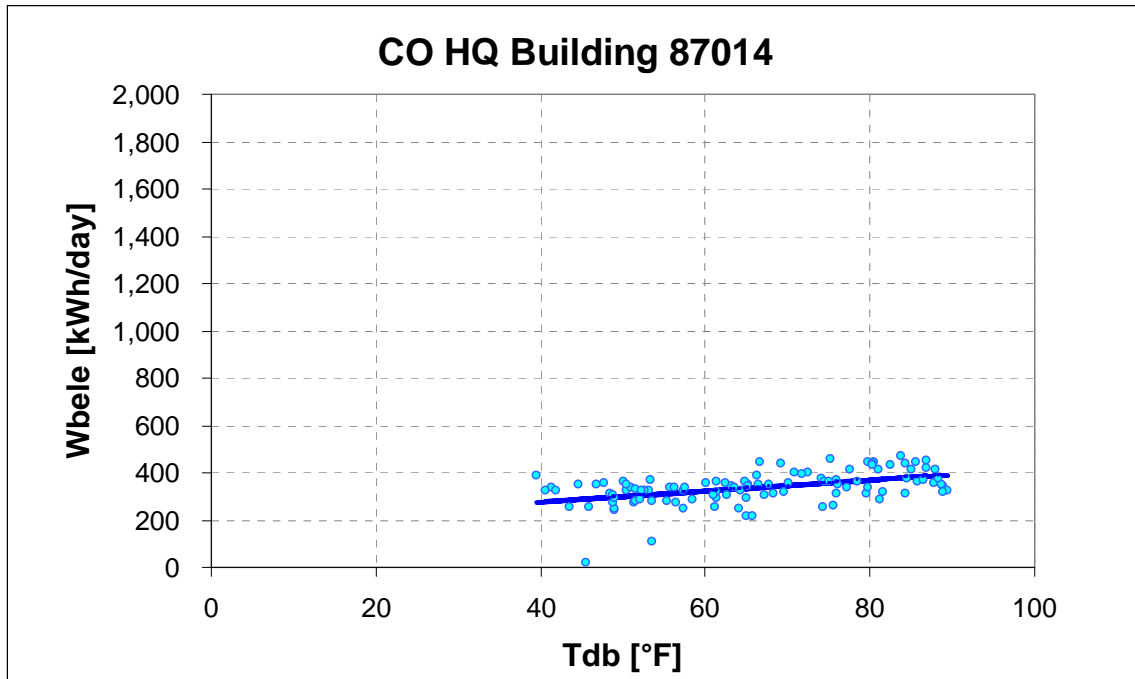
CV-RMSE = 17.705%

p = 0.500

DW = 0.964 (p>0)

a = 181.9658 (27.3435)

X1 = 2.3312 (0.4055)



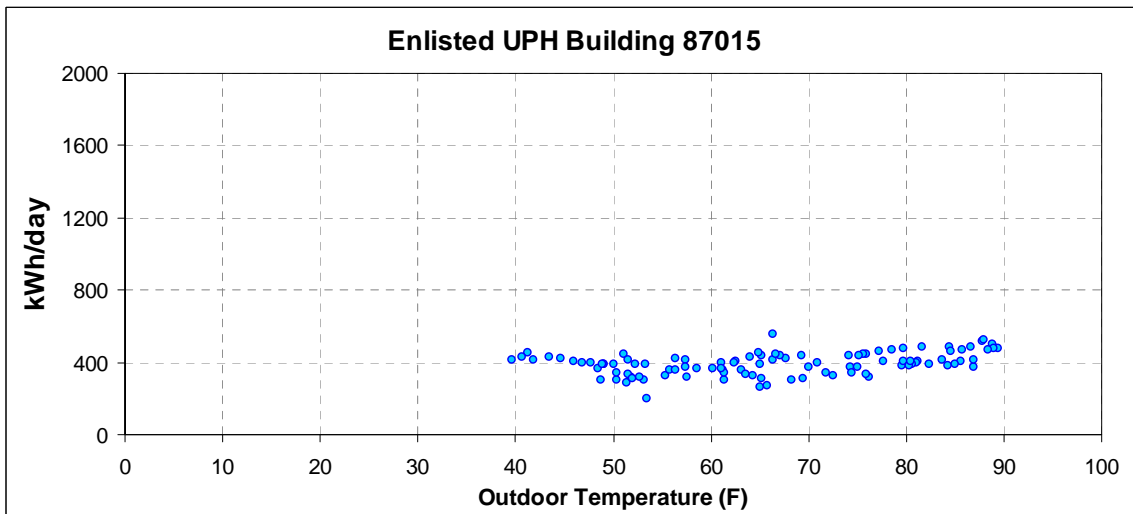
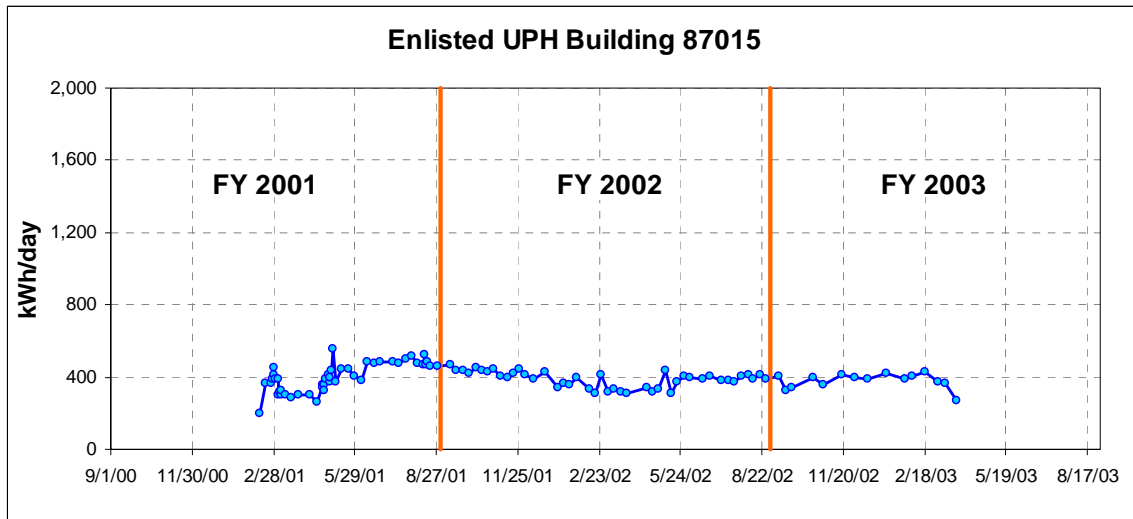
11.1.33. 87015 Enlisted UPH Building

11.1.33.1. Electricity Use From Manual Readings

87015		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Use per period	Use per day	avg temp(F)
12/26/00	36886		12/26/00	12/27/00	1					33.71
12/27/00	36887		12/27/00	12/28/00	1					35.15
12/28/00	36888		12/28/00	12/29/00	1					38.57
12/29/00	36889		12/29/00	1/2/01	4					34.29
1/2/01	36893		1/2/01	1/3/01	1					33.13
1/3/01	36894		1/3/01	1/4/01	1					40.73
1/4/01	36895		1/4/01	1/5/01	1					46.45
1/5/01	36896		1/5/01	1/9/01	4					47.20
1/9/01	36900		1/9/01	1/16/01	7					45.15
1/16/01	36907		1/16/01	1/30/01	14					45.60
1/30/01	36921		1/30/01	2/6/01	7					48.97
2/6/01	36928	6492	2/6/01	2/13/01	7					53.63
2/13/01	36935	13177	2/13/01	2/20/01	7	13177	14578	1401	200	53.52
2/20/01	36942	14578	2/20/01	2/26/01	6	14578	16755	2177	363	58.53
2/26/01	36948	16755	2/26/01	2/27/01	1	16755	17122	367	367	60.17
2/27/01	36949	17122	2/27/01	2/28/01	1	17122	17509	387	387	50.13
2/28/01	36950	17509	2/28/01	3/1/01	1	17509	17919	410	410	39.58
3/1/01	36951	17919	3/1/01	3/2/01	1	17919	18370	451	451	41.30
3/2/01	36952	18370	3/2/01	3/5/01	3	18370	19544	1174	391	49.00
3/5/01	36955	19544	3/5/01	3/6/01	1	19544	19929	385	385	53.30
3/6/01	36956	19929	3/6/01	3/7/01	1	19929	20233	304	304	53.20
3/7/01	36957	20233	3/7/01	3/8/01	1	20233	20549	316	316	51.84
3/8/01	36958	20549	3/8/01	3/9/01	1	20549	20851	302	302	50.41
3/9/01	36959	20851	3/9/01	3/13/01	4	20851	22138	1287	322	55.40
3/13/01	36963	22138	3/13/01	3/20/01	7	22138	24260	2122	303	48.80
3/20/01	36970	24260	3/20/01	3/27/01	7	24260	26264	2004	286	51.40
3/27/01	36977	26264	3/27/01	4/10/01	14	26264	30533	4269	305	61.40
4/10/01	36991	30533	4/10/01	4/17/01	7	30533	32652	2119	303	68.30
4/17/01	36998	32652	4/17/01	4/23/01	6	32652	34219	1567	261	65.00
4/23/01	37004	34219	4/23/01	4/24/01	1	34219	34579	360	360	61.30
4/24/01	37005	34579	4/24/01	4/25/01	1	34579	34920	341	341	61.40
4/25/01	37006	34920	4/25/01	4/26/01	1	34920	35275	355	355	63.17
4/26/01	37007	35275	4/26/01	4/27/01	1	35275	35599	324	324	64.33
4/27/01	37008	35599	4/27/01	4/30/01	3	35599	36760	1161	387	65.10
4/30/01	37011	36760	4/30/01	5/1/01	1	36760	37173	413	413	66.40
5/1/01	37012	37173	5/1/01	5/2/01	1	37173	37547	374	374	70.10
5/2/01	37013	37547	5/2/01	5/3/01	1	37547	37940	393	393	70.92
5/3/01	37014	37940	5/3/01	5/4/01	1	37940	38375	435	435	69.27
5/4/01	37015	38375	5/4/01	5/8/01	4	38375	40608	2233	558	66.35
5/8/01	37019	40608	5/8/01	5/15/01	7	40608	43226	2618	374	74.37
5/15/01	37026	43226	5/15/01	5/22/01	7	43226	46347	3121	446	75.91
5/22/01	37033	46347	5/22/01	5/29/01	7	46347	49439	3092	442	75.64
5/29/01	37040	49439	5/29/01	6/5/01	7	49439	52283	2844	406	81.15
6/5/01	37047	52283	6/5/01	6/12/01	7	52283	54973	2690	384	79.57
6/12/01	37054	54973	6/12/01	6/19/01	7	54973	58355	3382	483	81.67
6/19/01	37061	58355	6/19/01	6/26/01	7	58355	61664	3309	473	79.70
6/26/01	37068	61664	6/26/01	7/10/01	14	61664	68445	6781	484	84.37
7/10/01	37082	68445	7/10/01	7/17/01	7	68445	71817	3372	482	88.94
7/17/01	37089	71817	7/17/01	7/24/01	7	71817	75173	3356	479	89.43

7/24/01	37096	75173	7/24/01	7/31/01	7	75173	78671	3498	500	88.79
7/31/01	37103	78671	7/31/01	8/7/01	7	78671	82277	3606	515	87.83
8/7/01	37110	82277	8/7/01	8/13/01	6	82277	85156	2879	480	88.94
8/13/01	37116	85156	8/13/01	8/15/01	2	85156	86094	938	469	88.37
8/15/01	37118	86094	8/15/01	8/16/01	1	86094	86617	523	523	88.00
8/16/01	37119	86617	8/16/01	8/17/01	1	86617	87084	467	467	85.77
8/17/01	37120	87084	8/17/01	8/21/01	4	87084	89036	1952	488	86.59
8/21/01	37124	89036	8/21/01	8/28/01	7	89036	92264	3228	461	84.54
8/28/01	37131	92264	8/28/01	9/11/01	14	92264	98717	6453	461	77.20
9/11/01	37145	98717	9/11/01	9/18/01	7	98717	102000	3283	469	78.59
9/18/01	37152	102000	9/18/01	9/26/01	8	102000	105507	3507	438	74.20
9/26/01	37160	105507	9/26/01	10/2/01	6	105507	108129	2622	437	65.22
10/2/01	37166	108129	10/2/01	10/10/01	8	108129	111471	3342	418	67.74
10/10/01	37174	111471	10/10/01	10/16/01	6	111471	114165	2694	449	64.89
10/16/01	37180	114165	10/16/01	10/23/01	7	114165	117208	3043	435	67.16
10/23/01	37187	117208	10/23/01	10/30/01	7	117208	120201	2993	428	64.08
10/30/01	37194	120201	10/30/01	11/6/01	7	120201	123314	3113	445	66.73
11/6/01	37201	123314	11/6/01	11/14/01	8	123314	126529	3215	402	62.59
11/14/01	37209	126529	11/14/01	11/20/01	6	126529	128931	2402	400	61.09
11/20/01	37215	128931	11/20/01	11/27/01	7	128931	131891	2960	423	56.44
11/27/01	37222	131891	11/27/01	12/4/01	7	131891	134998	3107	444	51.06
12/4/01	37229	134998	12/4/01	12/12/01	8	134998	138269	3271	409	57.43
12/12/01	37237	138269	12/12/01	12/26/01	14	138269	143753	5484	392	49.06
12/26/01	37251	143753	12/26/01	1/8/02	13	143753	149348	5595	430	40.68
1/8/02	37264	149348	1/8/02	1/15/02	7	149348	151735	2387	341	50.38
1/15/02	37271	151735	1/15/02	1/22/02	7	151735	154277	2542	363	48.46
1/22/02	37278	154277	1/22/02	1/29/02	7	154277	156751	2474	353	55.79
1/29/02	37285	156751	1/29/02	2/12/02	14	156751	162339	5588	399	46.87
2/12/02	37299	162339	2/12/02	2/19/02	7	162339	164657	2318	331	51.60
2/19/02	37306	164657	2/19/02	2/26/02	7	164657	166827	2170	310	52.04
2/26/02	37313	166827	2/26/02	3/5/02	7	166827	169702	2875	411	41.81
3/5/02	37320	169702	3/5/02	3/12/02	7	169702	171933	2231	319	57.55
3/12/02	37327	171933	3/12/02	3/19/02	7	171933	174285	2352	336	63.63
3/19/02	37334	174285	3/19/02	3/26/02	7	174285	176502	2217	317	52.67
3/26/02	37341	176502	3/26/02	4/17/02	22	176502	183396	6894	313	65.18
4/17/02	37363	183396	4/17/02	4/23/02	6	183396	185429	2033	339	74.41
4/23/02	37369	185429	4/23/02	4/30/02	7	185429	187669	2240	320	76.15
4/30/02	37376	187669	4/30/02	5/7/02	7	187669	190022	2353	336	75.92
5/7/02	37383	190022	5/7/02	5/14/02	7	190022	193062	3040	434	75.16
5/14/02	37390	193062	5/14/02	5/21/02	7	193062	195214	2152	307	69.49
5/21/02	37397	195214	5/21/02	5/28/02	7	195214	197829	2615	374	75.10
5/28/02	37404	197829	5/28/02	6/4/02	7	197829	200651	2822	403	77.67
6/4/02	37411	200651	6/4/02	6/18/02	14	200651	206198	5547	396	81.06
6/18/02	37425	206198	6/18/02	6/26/02	8	206198	209339	3141	393	80.59
6/26/02	37433	209339	6/26/02	7/9/02	13	209339	214590	5251	404	79.73
7/9/02	37446	214590	7/9/02	7/16/02	7	214590	217252	2662	380	80.38
7/16/02	37453	217252	7/16/02	7/23/02	7	217252	219904	2652	379	84.33
7/23/02	37460	219904	7/23/02	7/31/02	8	219904	222914	3010	376	86.96
7/31/02	37468	222914	7/31/02	8/8/02	8	222914	226160	3246	406	85.56
8/8/02	37476	226160	8/8/02	8/13/02	5	226160	228227	2067	413	83.72
8/13/02	37481	228227	8/13/02	8/20/02	7	228227	230941	2714	388	84.99
8/20/02	37488	230941	8/20/02	8/27/02	7	230941	233824	2883	412	86.86
8/27/02	37495	233824	8/27/02	9/10/02	14	233824	239213	5389	385	82.44
9/10/02	37509	239213	9/10/02	9/18/02	8	239213	242462	3249	406	80.40
9/18/02	37517	242462	9/18/02	9/24/02	6	242462	244415	1953	326	72.58
9/24/02	37523	244415	9/24/02	10/18/02	24	244415	252545	8130	339	71.82

10/18/02	37547	252545	10/18/02	10/29/02	11	252545	256917	4372	397	62.46
10/29/02	37558	256917	10/29/02	11/19/02	21	256917	264471	7554	360	56.33
11/19/02	37579	264471	11/19/02	12/3/02	14	264471	270255	5784	413	51.57
12/3/02	37593	270255	12/3/02	12/17/02	14	270255	275783	5528	395	47.73
12/17/02	37607	275783	12/17/02	1/7/03	21	275783	283885	8102	386	48.85
1/7/03	37628	283885	1/7/03	1/27/03	20	283885	292324	8439	422	44.63
1/27/03	37648	292324	1/27/03	2/5/03	9	292324	295848	3524	392	52.33
2/5/03	37657	295848	2/5/03	2/19/03	14	295848	301543	5695	407	45.97
2/19/03	37671	301543	2/19/03	3/5/03	14	301543	307505	5962	426	43.53
3/5/03	37685	307505	3/5/03	3/13/03	8	307505	310489	2984	373	57.45
3/13/03	37693	310489	3/13/03	3/25/03	12	310489	314835	4346	362	61.16
3/25/03	37705	314835	3/25/03	4/29/03	35	314835	324171	9336	267	65.83



11.1.33.2. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 3
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Cooling

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 105

R2 = 0.271

AdjR2 = 0.271

RMSE = 53.1616

CV-RMSE = 13.568%

p = 0.569

DW = 0.839 (p>0)

N1 = 65

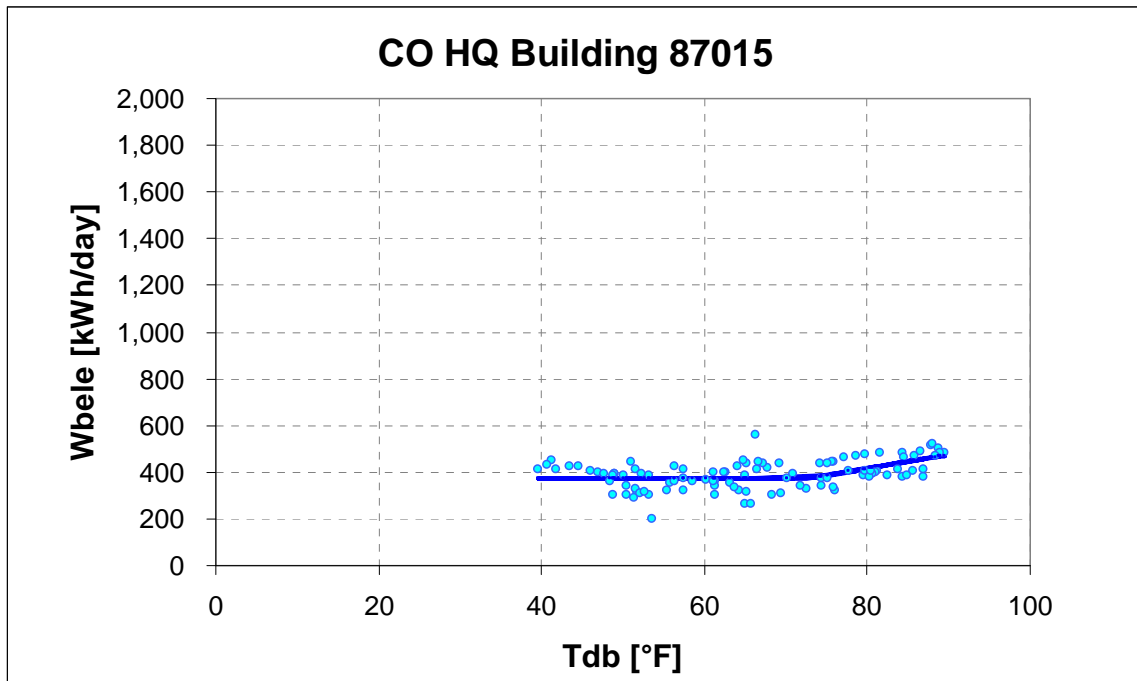
N2 = 40

Ycp = 371.1885 (6.1647)

LS = 0.0000 (0.0000)

RS = 5.9422 (0.9597)

Xcp = 72.4810 (0.9970)



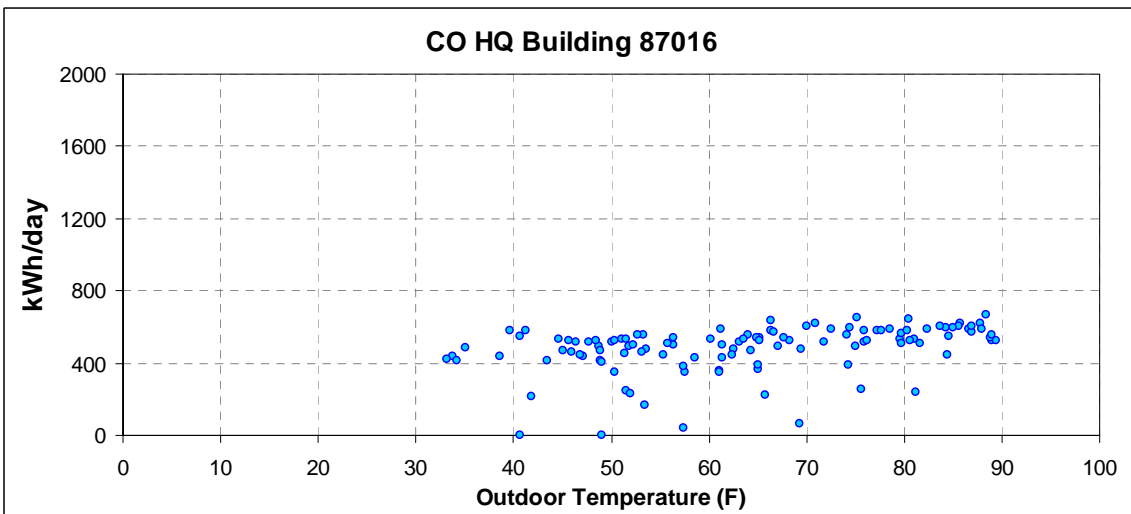
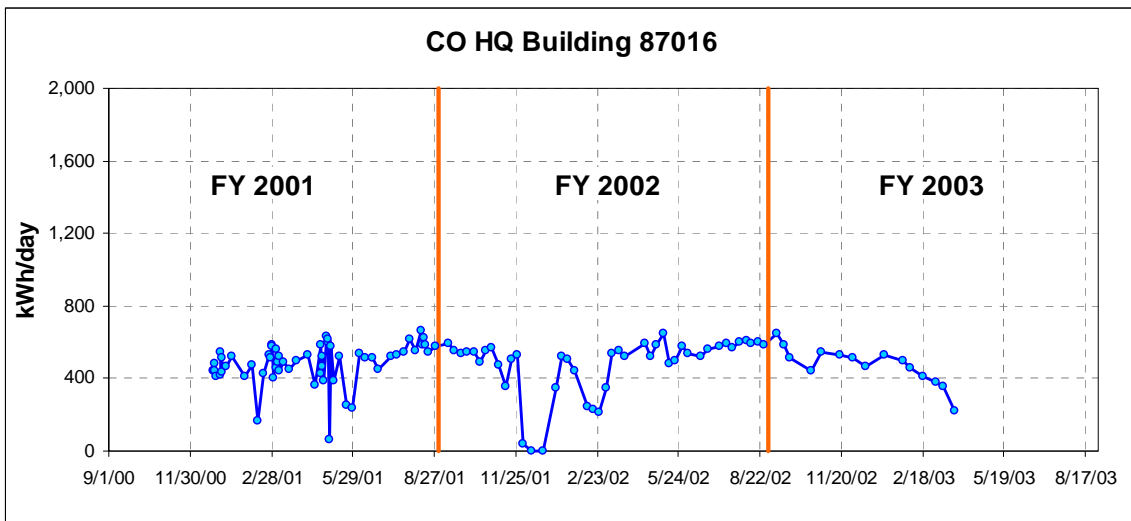
11.1.34. 87016 CO HQ Building

11.1.34.1. Electricity Use From Manual Readings

87016		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Use per period	Use per day	avg temp(F)
12/26/00	36886	12177	12/26/00	12/27/00	1	12177	12617	440	440	33.71
12/27/00	36887	12617	12/27/00	12/28/00	1	12617	13102	485	485	35.15
12/28/00	36888	13102	12/28/00	12/29/00	1	13102	13541	439	439	38.57
12/29/00	36889	13541	12/29/00	1/2/01	4	13541	15178	1637	409	34.29
1/2/01	36893	15178	1/2/01	1/3/01	1	15178	15600	422	422	33.13
1/3/01	36894	15600	1/3/01	1/4/01	1	15600	16148	548	548	40.73
1/4/01	36895	16148	1/4/01	1/5/01	1	16148	16664	516	516	46.45
1/5/01	36896	16664	1/5/01	1/9/01	4	16664	18414	1750	438	47.20
1/9/01	36900	18414	1/9/01	1/16/01	7	18414	21665	3251	464	45.15
1/16/01	36907	21665	1/16/01	1/30/01	14	21665	29005	7340	524	45.60
1/30/01	36921	29005	1/30/01	2/6/01	7	29005	31891	2886	412	48.97
2/6/01	36928	31891	2/6/01	2/13/01	7	31891	35216	3325	475	53.63
2/13/01	36935	35216	2/13/01	2/20/01	7	35216	36405	1189	170	53.52
2/20/01	36942	36405	2/20/01	2/26/01	6	36405	38973	2568	428	58.53
2/26/01	36948	38973	2/26/01	2/27/01	1	38973	39502	529	529	60.17
2/27/01	36949	39502	2/27/01	2/28/01	1	39502	40014	512	512	50.13
2/28/01	36950	40014	2/28/01	3/1/01	1	40014	40596	582	582	39.58
3/1/01	36951	40596	3/1/01	3/2/01	1	40596	41175	579	579	41.30
3/2/01	36952	41175	3/2/01	3/5/01	3	41175	42392	1217	406	49.00
3/5/01	36955	42392	3/5/01	3/6/01	1	42392	42951	559	559	53.30
3/6/01	36956	42951	3/6/01	3/7/01	1	42951	43410	459	459	53.20
3/7/01	36957	43410	3/7/01	3/8/01	1	43410	43901	491	491	51.84
3/8/01	36958	43901	3/8/01	3/9/01	1	43901	44424	523	523	50.41
3/9/01	36959	44424	3/9/01	3/13/01	4	44424	46195	1771	443	55.40
3/13/01	36963	46195	3/13/01	3/20/01	7	46195	49622	3427	490	48.80
3/20/01	36970	49622	3/20/01	3/27/01	7	49622	52801	3179	454	51.40
3/27/01	36977	52801	3/27/01	4/10/01	14	52801	59756	6955	497	61.40
4/10/01	36991	59756	4/10/01	4/17/01	7	59756	63449	3693	528	68.30
4/17/01	36998	63449	4/17/01	4/23/01	6	63449	65622	2173	362	65.00
4/23/01	37004	65622	4/23/01	4/24/01	1	65622	66207	585	585	61.30
4/24/01	37005	66207	4/24/01	4/25/01	1	66207	66633	426	426	61.40
4/25/01	37006	66633	4/25/01	4/26/01	1	66633	67152	519	519	63.17
4/26/01	37007	67152	4/26/01	4/27/01	1	67152	67619	467	467	64.33
4/27/01	37008	67619	4/27/01	4/30/01	3	67619	68776	1157	386	65.10
4/30/01	37011	68776	4/30/01	5/1/01	1	68776	69409	633	633	66.40
5/1/01	37012	69409	5/1/01	5/2/01	1	69409	70012	603	603	70.10
5/2/01	37013	70012	5/2/01	5/3/01	1	70012	70629	617	617	70.92
5/3/01	37014	70629	5/3/01	5/4/01	1	70629	70689	60	60	69.27
5/4/01	37015	70689	5/4/01	5/8/01	4	70689	73009	2320	580	66.35
5/8/01	37019	73009	5/8/01	5/15/01	7	73009	75739	2730	390	74.37
5/15/01	37026	75739	5/15/01	5/22/01	7	75739	79377	3638	520	75.91
5/22/01	37033	79377	5/22/01	5/29/01	7	79377	81145	1768	253	75.64
5/29/01	37040	81145	5/29/01	6/5/01	7	81145	82790	1645	235	81.15
6/5/01	37047	82790	6/5/01	6/12/01	7	82790	86537	3747	535	79.57
6/12/01	37054	86537	6/12/01	6/19/01	7	86537	90112	3575	511	81.67
6/19/01	37061	90112	6/19/01	6/26/01	7	90112	93689	3577	511	79.70
6/26/01	37068	93689	6/26/01	7/10/01	14	93689	99964	6275	448	84.37
7/10/01	37082	99964	7/10/01	7/17/01	7	99964	103631	3667	524	88.94

7/17/01	37089	103631	7/17/01	7/24/01	7	103631	107323	3692	527	89.43
7/24/01	37096	107323	7/24/01	7/31/01	7	107323	111128	3805	544	88.79
7/31/01	37103	111128	7/31/01	8/7/01	7	111128	115453	4325	618	87.83
8/7/01	37110	115453	8/7/01	8/13/01	6	115453	118784	3331	555	88.94
8/13/01	37116	118784	8/13/01	8/15/01	2	118784	120113	1329	665	88.37
8/15/01	37118	120113	8/15/01	8/16/01	1	120113	120700	587	587	88.00
8/16/01	37119	120700	8/16/01	8/17/01	1	120700	121323	623	623	85.77
8/17/01	37120	121323	8/17/01	8/21/01	4	121323	123659	2336	584	86.59
8/21/01	37124	123659	8/21/01	8/28/01	7	123659	127480	3821	546	84.54
8/28/01	37131	127480	8/28/01	9/11/01	14	127480	135603	8123	580	77.20
9/11/01	37145	135603	9/11/01	9/18/01	7	135603	139738	4135	591	78.59
9/18/01	37152	139738	9/18/01	9/26/01	8	139738	144154	4416	552	74.20
9/26/01	37160	144154	9/26/01	10/2/01	6	144154	147390	3236	539	65.22
10/2/01	37166	147390	10/2/01	10/10/01	8	147390	151729	4339	542	67.74
10/10/01	37174	151729	10/10/01	10/16/01	6	151729	154985	3256	543	64.89
10/16/01	37180	154985	10/16/01	10/23/01	7	154985	158417	3432	490	67.16
10/23/01	37187	158417	10/23/01	10/30/01	7	158417	162281	3864	552	64.08
10/30/01	37194	162281	10/30/01	11/6/01	7	162281	166262	3981	569	66.73
11/6/01	37201	166262	11/6/01	11/14/01	8	166262	170060	3798	475	62.59
11/14/01	37209	170060	11/14/01	11/20/01	6	170060	172209	2149	358	61.09
11/20/01	37215	172209	11/20/01	11/27/01	7	172209	175729	3520	503	56.44
11/27/01	37222	175729	11/27/01	12/4/01	7	175729	179427	3698	528	51.06
12/4/01	37229	179427	12/4/01	12/12/01	8	179427	179724	297	37	57.43
12/12/01	37237	179724	12/12/01	12/26/01	14	179724	179724	0	0	49.06
12/26/01	37251	179724	12/26/01	1/8/02	13	179724	179724	0	0	40.68
1/8/02	37264	179724	1/8/02	1/15/02	7	179724	182169	2445	349	50.38
1/15/02	37271	182169	1/15/02	1/22/02	7	182169	185811	3642	520	48.46
1/22/02	37278	185811	1/22/02	1/29/02	7	185811	189376	3565	509	55.79
1/29/02	37285	189376	1/29/02	2/12/02	14	189376	195596	6220	444	46.87
2/12/02	37299	195596	2/12/02	2/19/02	7	195596	197302	1706	244	51.60
2/19/02	37306	197302	2/19/02	2/26/02	7	197302	198918	1616	231	52.04
2/26/02	37313	198918	2/26/02	3/5/02	7	198918	200411	1493	213	41.81
3/5/02	37320	200411	3/5/02	3/12/02	7	200411	202861	2450	350	57.55
3/12/02	37327	202861	3/12/02	3/19/02	7	202861	206600	3739	534	63.63
3/19/02	37334	206600	3/19/02	3/26/02	7	206600	210470	3870	553	52.67
3/26/02	37341	210470	3/26/02	4/17/02	22	210470	221972	11502	523	65.18
4/17/02	37363	221972	4/17/02	4/23/02	6	221972	225523	3551	592	74.41
4/23/02	37369	225523	4/23/02	4/30/02	7	225523	229162	3639	520	76.15
4/30/02	37376	229162	4/30/02	5/7/02	7	229162	233236	4074	582	75.92
5/7/02	37383	233236	5/7/02	5/14/02	7	233236	237786	4550	650	75.16
5/14/02	37390	237786	5/14/02	5/21/02	7	237786	241147	3361	480	69.49
5/21/02	37397	241147	5/21/02	5/28/02	7	241147	244613	3466	495	75.10
5/28/02	37404	244613	5/28/02	6/4/02	7	244613	248644	4031	576	77.67
6/4/02	37411	248644	6/4/02	6/18/02	14	248644	256129	7485	535	81.06
6/18/02	37425	256129	6/18/02	6/26/02	8	256129	260294	4165	521	80.59
6/26/02	37433	260294	6/26/02	7/9/02	13	260294	267597	7303	562	79.73
7/9/02	37446	267597	7/9/02	7/16/02	7	267597	271648	4051	579	80.38
7/16/02	37453	271648	7/16/02	7/23/02	7	271648	275802	4154	593	84.33
7/23/02	37460	275802	7/23/02	7/31/02	8	275802	280355	4553	569	86.96
7/31/02	37468	280355	7/31/02	8/8/02	8	280355	285155	4800	600	85.56
8/8/02	37476	285155	8/8/02	8/13/02	5	285155	288189	3034	607	83.72
8/13/02	37481	288189	8/13/02	8/20/02	7	288189	292338	4149	593	84.99
8/20/02	37488	292338	8/20/02	8/27/02	7	292338	296549	4211	602	86.86
8/27/02	37495	296549	8/27/02	9/10/02	14	296549	304748	8199	586	82.44
9/10/02	37509	304748	9/10/02	9/18/02	8	304748	309920	5172	647	80.40
9/18/02	37517	309920	9/18/02	9/24/02	6	309920	313427	3507	585	72.58

9/24/02	37523	313427	9/24/02	10/18/02	24	313427	325767	12340	514	71.82
10/18/02	37547	325767	10/18/02	10/29/02	11	325767	330679	4912	447	62.46
10/29/02	37558	330679	10/29/02	11/19/02	21	330679	342061	11382	542	56.33
11/19/02	37579	342061	11/19/02	12/3/02	14	342061	349489	7428	531	51.57
12/3/02	37593	349489	12/3/02	12/17/02	14	349489	356724	7235	517	47.73
12/17/02	37607	356724	12/17/02	1/7/03	21	356724	366531	9807	467	48.85
1/7/03	37628	366531	1/7/03	1/27/03	20	366531	377174	10643	532	44.63
1/27/03	37648	377174	1/27/03	2/5/03	9	377174	381690	4516	502	52.33
2/5/03	37657	381690	2/5/03	2/19/03	14	381690	388122	6432	459	45.97
2/19/03	37671	388122	2/19/03	3/5/03	14	388122	393848	5726	409	43.53
3/5/03	37685	393848	3/5/03	3/13/03	8	393848	396912	3064	383	57.45
3/13/03	37693	396912	3/13/03	3/25/03	12	396912	401149	4237	353	61.16
3/25/03	37705	401149	3/25/03	4/29/03	35	401149	409019	7870	225	65.83



11.1.34.2. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 3
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Cooling

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 117

R2 = 0.166

AdjR2 = 0.166

RMSE = 119.7190

CV-RMSE = 24.873%

p = 0.372

DW = 1.219 (p>0)

N1 = 47

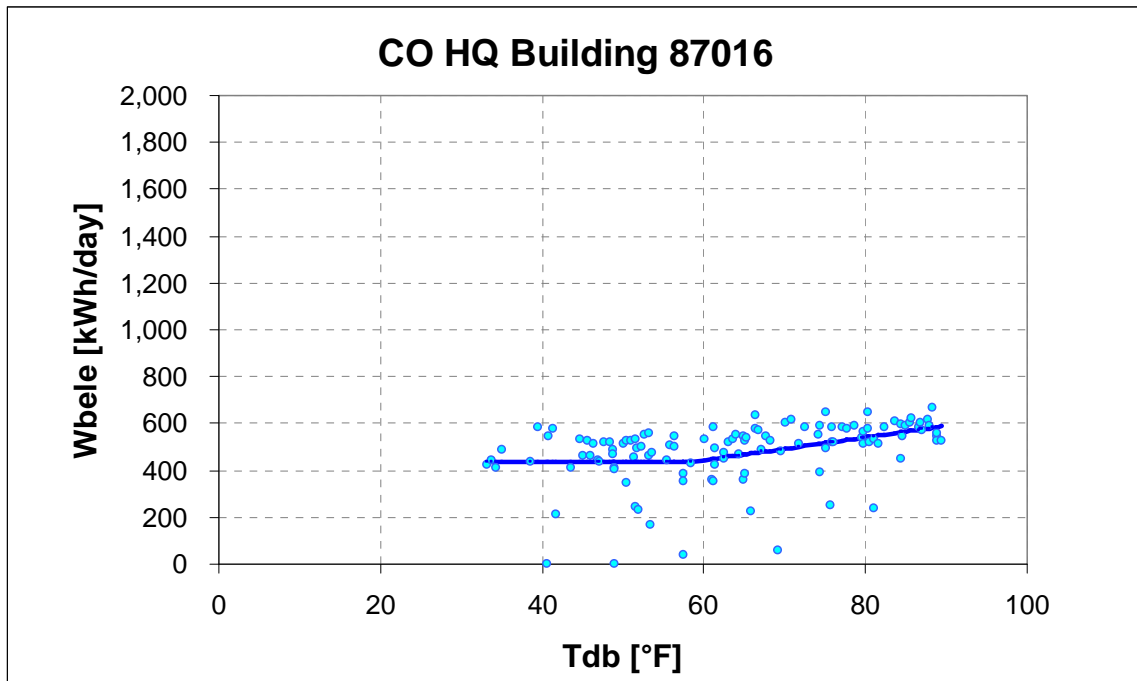
N2 = 70

Ycp = 432.9098 (14.9973)

LS = 0.0000 (0.0000)

RS = 4.8782 (1.0196)

Xcp = 57.9020 (1.1260)



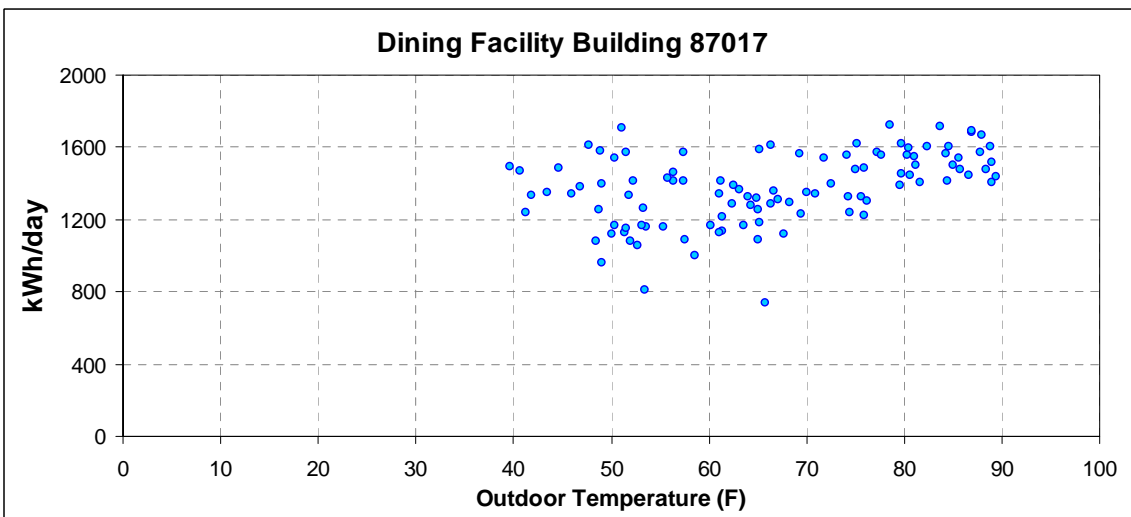
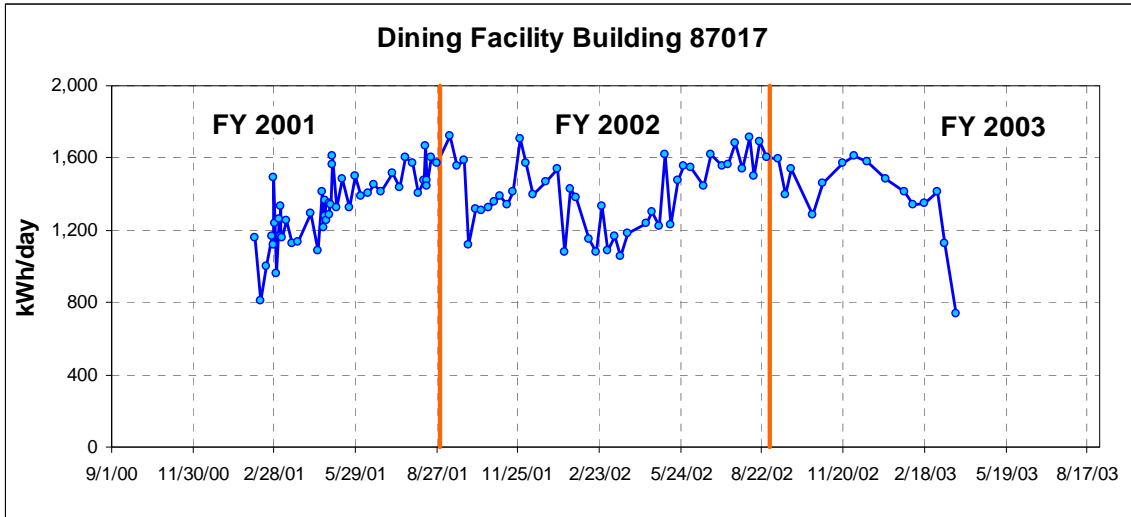
11.1.35. 87017 Dining Facility

11.1.35.1. Electricity Use From Manual Readings

87017	Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Use per period	Use per day	avg temp(F)	
12/26/00	36886	12/26/00	12/27/00	1					33.71	
12/27/00	36887	12/27/00	12/28/00	1					35.15	
12/28/00	36888	12/28/00	12/29/00	1					38.57	
12/29/00	36889	12/29/00	1/2/01	4					34.29	
1/2/01	36893	1/2/01	1/3/01	1					33.13	
1/3/01	36894	1/3/01	1/4/01	1					40.73	
1/4/01	36895	1/4/01	1/5/01	1					46.45	
1/5/01	36896	1/5/01	1/9/01	4					47.20	
1/9/01	36900	1/9/01	1/16/01	7					45.15	
1/16/01	36907	1/16/01	1/30/01	14					45.60	
1/30/01	36921	1/30/01	2/6/01	7					48.97	
2/6/01	36928	6185	2/6/01	2/13/01	7	6185	14301	8116	1159	53.63
2/13/01	36935	14301	2/13/01	2/20/01	7	14301	19969	5668	810	53.52
2/20/01	36942	19969	2/20/01	2/26/01	6	19969	25977	6008	1001	58.53
2/26/01	36948	25977	2/26/01	2/27/01	1	25977	27145	1168	1168	60.17
2/27/01	36949	27145	2/27/01	2/28/01	1	27145	28266	1121	1121	50.13
2/28/01	36950	28266	2/28/01	3/1/01	1	28266	29761	1495	1495	39.58
3/1/01	36951	29761	3/1/01	3/2/01	1	29761	30996	1235	1235	41.30
3/2/01	36952	30996	3/2/01	3/5/01	3	30996	33876	2880	960	49.00
3/5/01	36955	33876	3/5/01	3/6/01	1	33876	35141	1265	1265	53.30
3/6/01	36956	35141	3/6/01	3/7/01	1	35141	36306	1165	1165	53.20
3/7/01	36957	36306	3/7/01	3/8/01	1	36306	37636	1330	1330	51.84
3/8/01	36958	37636	3/8/01	3/9/01	1	37636	38803	1167	1167	50.41
3/9/01	36959	38803	3/9/01	3/13/01	4	38803	43438	4635	1159	55.40
3/13/01	36963	43438	3/13/01	3/20/01	7	43438	52208	8770	1253	48.80
3/20/01	36970	52208	3/20/01	3/27/01	7	52208	60096	7888	1127	51.40
3/27/01	36977	60096	3/27/01	4/10/01	14	60096	76015	15919	1137	61.40
4/10/01	36991	76015	4/10/01	4/17/01	7	76015	85061	9046	1292	68.30
4/17/01	36998	85061	4/17/01	4/23/01	6	85061	91572	6511	1085	65.00
4/23/01	37004	91572	4/23/01	4/24/01	1	91572	92983	1411	1411	61.30
4/24/01	37005	92983	4/24/01	4/25/01	1	92983	94194	1211	1211	61.40
4/25/01	37006	94194	4/25/01	4/26/01	1	94194	95559	1365	1365	63.17
4/26/01	37007	95559	4/26/01	4/27/01	1	95559	96835	1276	1276	64.33
4/27/01	37008	96835	4/27/01	4/30/01	3	96835	100606	3771	1257	65.10
4/30/01	37011	100606	4/30/01	5/1/01	1	100606	101892	1286	1286	66.40
5/1/01	37012	101892	5/1/01	5/2/01	1	101892	103242	1350	1350	70.10
5/2/01	37013	103242	5/2/01	5/3/01	1	103242	104582	1340	1340	70.92
5/3/01	37014	104582	5/3/01	5/4/01	1	104582	106147	1565	1565	69.27
5/4/01	37015	106147	5/4/01	5/8/01	4	106147	112607	6460	1615	66.35
5/8/01	37019	112607	5/8/01	5/15/01	7	112607	121864	9257	1322	74.37
5/15/01	37026	121864	5/15/01	5/22/01	7	121864	132260	10396	1485	75.91
5/22/01	37033	132260	5/22/01	5/29/01	7	132260	141531	9271	1324	75.64
5/29/01	37040	141531	5/29/01	6/5/01	7	141531	152013	10482	1497	81.15
6/5/01	37047	152013	6/5/01	6/12/01	7	152013	161762	9749	1393	79.57
6/12/01	37054	161762	6/12/01	6/19/01	7	161762	171621	9859	1408	81.67
6/19/01	37061	171621	6/19/01	6/26/01	7	171621	181789	10168	1453	79.70
6/26/01	37068	181789	6/26/01	7/10/01	14	181789	201606	19817	1416	84.37
7/10/01	37082	201606	7/10/01	7/17/01	7	201606	212228	10622	1517	88.94
7/17/01	37089	212228	7/17/01	7/24/01	7	212228	222265	10037	1434	89.43
7/24/01	37096	222265	7/24/01	7/31/01	7	222265	233506	11241	1606	88.79

7/31/01	37103	233506	7/31/01	8/7/01	7	233506	244479	10973	1568	87.83
8/7/01	37110	244479	8/7/01	8/13/01	6	244479	252927	8448	1408	88.94
8/13/01	37116	252927	8/13/01	8/15/01	2	252927	255884	2957	1479	88.37
8/15/01	37118	255884	8/15/01	8/16/01	1	255884	257549	1665	1665	88.00
8/16/01	37119	257549	8/16/01	8/17/01	1	257549	259025	1476	1476	85.77
8/17/01	37120	259025	8/17/01	8/21/01	4	259025	264813	5788	1447	86.59
8/21/01	37124	264813	8/21/01	8/28/01	7	264813	276027	11214	1602	84.54
8/28/01	37131	276027	8/28/01	9/11/01	14	276027	298069	22042	1574	77.20
9/11/01	37145	298069	9/11/01	9/18/01	7	298069	310143	12074	1725	78.59
9/18/01	37152	310143	9/18/01	9/26/01	8	310143	322593	12450	1556	74.20
9/26/01	37160	322593	9/26/01	10/2/01	6	322593	332096	9503	1584	65.22
10/2/01	37166	332096	10/2/01	10/10/01	8	332096	341019	8923	1115	67.74
10/10/01	37174	341019	10/10/01	10/16/01	6	341019	348907	7888	1315	64.89
10/16/01	37180	348907	10/16/01	10/23/01	7	348907	358072	9165	1309	67.16
10/23/01	37187	358072	10/23/01	10/30/01	7	358072	367328	9256	1322	64.08
10/30/01	37194	367328	10/30/01	11/6/01	7	367328	376811	9483	1355	66.73
11/6/01	37201	376811	11/6/01	11/14/01	8	376811	387892	11081	1385	62.59
11/14/01	37209	387892	11/14/01	11/20/01	6	387892	395947	8055	1343	61.09
11/20/01	37215	395947	11/20/01	11/27/01	7	395947	405815	9868	1410	56.44
11/27/01	37222	405815	11/27/01	12/4/01	7	405815	417780	11965	1709	51.06
12/4/01	37229	417780	12/4/01	12/12/01	8	417780	430366	12586	1573	57.43
12/12/01	37237	430366	12/12/01	12/26/01	14	430366	449879	19513	1394	49.06
12/26/01	37251	449879	12/26/01	1/8/02	13	449879	468930	19051	1465	40.68
1/8/02	37264	468930	1/8/02	1/15/02	7	468930	479695	10765	1538	50.38
1/15/02	37271	479695	1/15/02	1/22/02	7	479695	487240	7545	1078	48.46
1/22/02	37278	487240	1/22/02	1/29/02	7	487240	497234	9994	1428	55.79
1/29/02	37285	497234	1/29/02	2/12/02	14	497234	516612	19378	1384	46.87
2/12/02	37299	516612	2/12/02	2/19/02	7	516612	524662	8050	1150	51.60
2/19/02	37306	524662	2/19/02	2/26/02	7	524662	532210	7548	1078	52.04
2/26/02	37313	532210	2/26/02	3/5/02	7	532210	541561	9351	1336	41.81
3/5/02	37320	541561	3/5/02	3/12/02	7	541561	549181	7620	1089	57.55
3/12/02	37327	549181	3/12/02	3/19/02	7	549181	557335	8154	1165	63.63
3/19/02	37334	557335	3/19/02	3/26/02	7	557335	564721	7386	1055	52.67
3/26/02	37341	564721	3/26/02	4/17/02	22	564721	590650	25929	1179	65.18
4/17/02	37363	590650	4/17/02	4/23/02	6	590650	598095	7445	1241	74.41
4/23/02	37369	598095	4/23/02	4/30/02	7	598095	607186	9091	1299	76.15
4/30/02	37376	607186	4/30/02	5/7/02	7	607186	615764	8578	1225	75.92
5/7/02	37383	615764	5/7/02	5/14/02	7	615764	627103	11339	1620	75.16
5/14/02	37390	627103	5/14/02	5/21/02	7	627103	635692	8589	1227	69.49
5/21/02	37397	635692	5/21/02	5/28/02	7	635692	646003	10311	1473	75.10
5/28/02	37404	646003	5/28/02	6/4/02	7	646003	656918	10915	1559	77.67
6/4/02	37411	656918	6/4/02	6/18/02	14	656918	678595	21677	1548	81.06
6/18/02	37425	678595	6/18/02	6/26/02	8	678595	690142	11547	1443	80.59
6/26/02	37433	690142	6/26/02	7/9/02	13	690142	711201	21059	1620	79.73
7/9/02	37446	711201	7/9/02	7/16/02	7	711201	722090	10889	1556	80.38
7/16/02	37453	722090	7/16/02	7/23/02	7	722090	733062	10972	1567	84.33
7/23/02	37460	733062	7/23/02	7/31/02	8	733062	746509	13447	1681	86.96
7/31/02	37468	746509	7/31/02	8/8/02	8	746509	758852	12343	1543	85.56
8/8/02	37476	758852	8/8/02	8/13/02	5	758852	767434	8582	1716	83.72
8/13/02	37481	767434	8/13/02	8/20/02	7	767434	777908	10474	1496	84.99
8/20/02	37488	777908	8/20/02	8/27/02	7	777908	789733	11825	1689	86.86
8/27/02	37495	789733	8/27/02	9/10/02	14	789733	812145	22412	1601	82.44
9/10/02	37509	812145	9/10/02	9/18/02	8	812145	824913	12768	1596	80.40
9/18/02	37517	824913	9/18/02	9/24/02	6	824913	833285	8372	1395	72.58
9/24/02	37523	833285	9/24/02	10/18/02	24	833285	870263	36978	1541	71.82
10/18/02	37547	870263	10/18/02	10/29/02	11	870263	884376	14113	1283	62.46

10/29/02	37558	884376	10/29/02	11/19/02	21	884376	915035	30659	1460	56.33
11/19/02	37579	915035	11/19/02	12/3/02	14	915035	937048	22013	1572	51.57
12/3/02	37593	937048	12/3/02	12/17/02	14	937048	959622	22574	1612	47.73
12/17/02	37607	959622	12/17/02	1/7/03	21	959622	992864	33242	1583	48.85
1/7/03	37628	992864	1/7/03	1/27/03	20	992864	1022574	29710	1486	44.63
1/27/03	37648	1022574	1/27/03	2/5/03	9	1022574	1035310	12736	1415	52.33
2/5/03	37657	1035310	2/5/03	2/19/03	14	1035310	1054045	18735	1338	45.97
2/19/03	37671	1054045	2/19/03	3/5/03	14	1054045	1072926	18881	1349	43.53
3/5/03	37685	1072926	3/5/03	3/13/03	8	1072926	1084203	11277	1410	57.45
3/13/03	37693	1084203	3/13/03	3/25/03	12	1084203	1097687	13484	1124	61.16
3/25/03	37705	1097687	3/25/03	4/29/03	35	1097687	1123430	25743	736	65.83



11.1.35.2. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 3
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

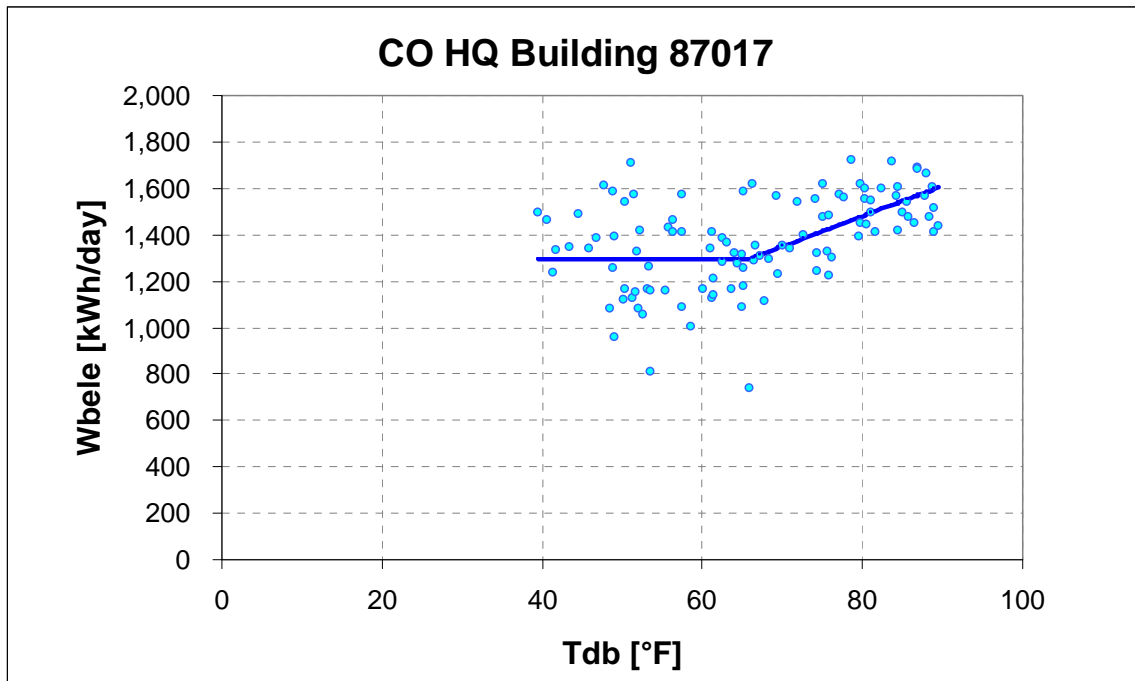
```

*****
ASHRAE INVERSE MODELING TOOLKIT (1.9)
*****
Output file name = IMT.Out
*****
Input data file name = DAILY2.dat
Model type =      3P Cooling
Grouping column No = 5
Value for grouping = 1
Residual mode = 1
# of X(Indep.) Var = 1
Y1 column number = 6
X1 column number = 9
X2 column number = 0 (unused)
X3 column number = 0 (unused)
X4 column number = 0 (unused)
X5 column number = 0 (unused)
X6 column number = 0 (unused)
*****
  
```

Regression Results

```

-----
N = 106
R2 = 0.293
AdjR2 = 0.293
RMSE = 167.4996
CV-RMSE = 12.184%
p = 0.379
DW = 1.133 (p>0)
N1 = 54
N2 = 52
Ycp = 1291.7161 ( 20.6027)
LS = 0.0000 ( 0.0000)
RS = 12.9904 ( 1.9775)
Xcp = 65.5020 ( 0.9970)
-----
  
```

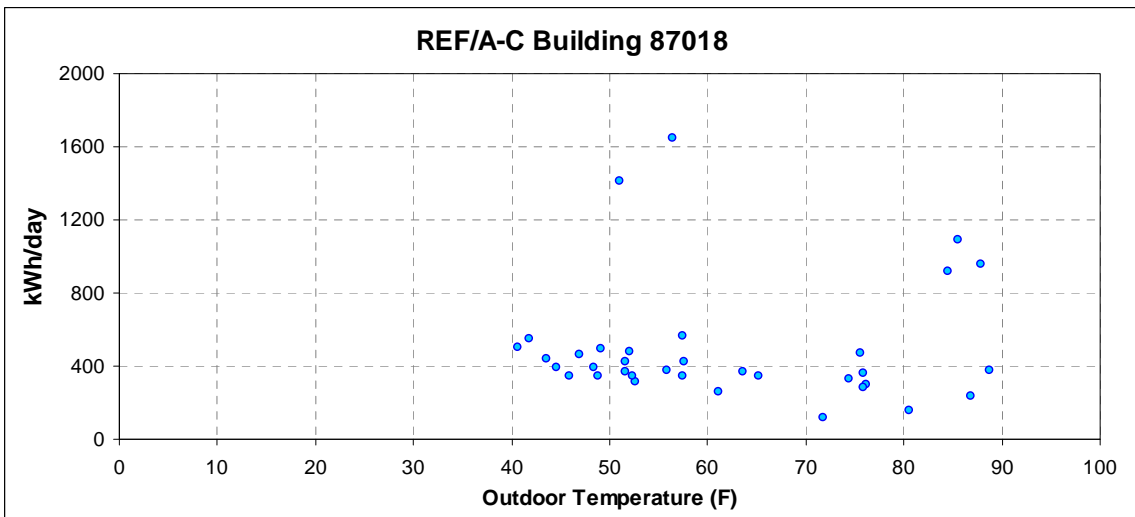
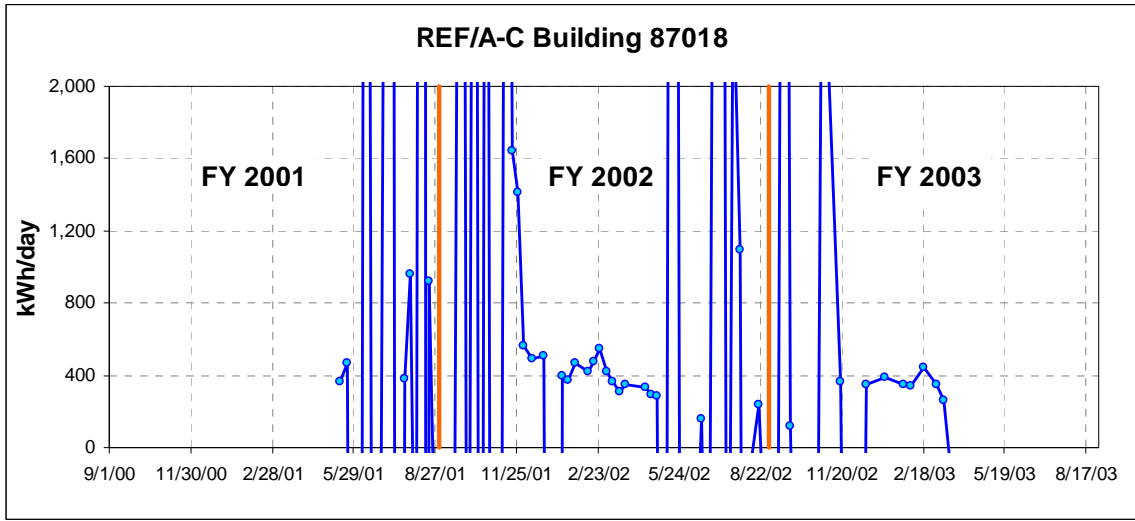


11.1.36. 87018 Electricity Use

11.1.36.1. Electricity Use From Manual Readings

87018 WBE		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Use per period	Use per day	avg temp(F)
5/15/2001	37026	82760	5/15/2001	5/22/2001	7	82760	85299	2539	363	75.9
5/22/2001	37033	85299	5/22/2001	5/29/2001	7	85299	88601	3302	472	75.6
5/29/2001	37040	88601	5/29/2001	6/5/2001	7	88601	43872	-44729	-6390	81.2
6/5/2001	37047	43872	6/5/2001	6/12/2001	7	43872	8197	-35675	-5096	79.6
6/12/2001	37054	8197	6/12/2001	6/19/2001	7	8197	79964	71767	10252	81.7
6/19/2001	37061	79964	6/19/2001	6/26/2001	7	79964	53464	-26500	-3786	79.7
6/26/2001	37068	53464	6/26/2001	7/10/2001	14	53464	13264	-40200	-2871	84.4
7/10/2001	37082	13264	7/10/2001	7/17/2001	7	13264	99884	86620	12374	88.9
7/17/2001	37089	99884	7/17/2001	7/24/2001	7	99884	5225	-94659	-13523	89.4
7/24/2001	37096	5225	7/24/2001	7/31/2001	7	5225	7867	2642	377	88.8
7/31/2001	37103	7867	7/31/2001	8/7/2001	7	7867	14591	6724	961	87.8
8/7/2001	37110	14591	8/7/2001	8/13/2001	6	14591	5159	-9432	-1572	88.9
8/13/2001	37116	5159	8/13/2001	8/15/2001	2	5159	34584	29425	14713	88.4
8/15/2001	37118	34584	8/15/2001	8/16/2001	1	34584	50405	15821	15821	88.0
8/16/2001	37119	50405	8/16/2001	8/17/2001	1	50405	65186	14781	14781	85.8
8/17/2001	37120	65186	8/17/2001	8/21/2001	4	65186	25716	-39470	-9868	86.6
8/21/2001	37124	25716	8/21/2001	8/28/2001	7	25716	32157	6441	920	84.5
8/28/2001	37131	32157	8/28/2001	9/11/2001	14	32157	19135	-13022	-930	77.2
9/11/2001	37145	19135	9/11/2001	9/18/2001	7	19135	16181	-2954	-422	78.6
9/18/2001	37152	16181	9/18/2001	9/26/2001	8	16181	14796	-1385	-173	74.2
9/26/2001	37160	14796	9/26/2001	10/2/2001	6	14796	66488	51692	8615	65.2
10/2/2001	37166	66488	10/2/2001	10/10/2001	8	66488	37615	-28873	-3609	67.7
10/10/2001	37174	37615	10/10/2001	10/16/2001	6	37615	87492	49877	8313	64.9
10/16/2001	37180	87492	10/16/2001	10/23/2001	7	87492	41063	-46429	-6633	67.2
10/23/2001	37187	41063	10/23/2001	10/30/2001	7	41063	97264	56201	8029	64.1
10/30/2001	37194	97264	10/30/2001	11/6/2001	7	97264	54288	-42976	-6139	66.7
11/6/2001	37201	54288	11/6/2001	11/14/2001	8	54288	15140	-39148	-4894	62.6
11/14/2001	37209	15140	11/14/2001	11/20/2001	6	15140	60030	44890	7482	61.1
11/20/2001	37215	60030	11/20/2001	11/27/2001	7	60030	71538	11508	1644	56.4
11/27/2001	37222	71538	11/27/2001	12/4/2001	7	71538	81417	9879	1411	51.1
12/4/2001	37229	81417	12/4/2001	12/12/2001	8	81417	85952	4535	567	57.4
12/12/2001	37237	85952	12/12/2001	12/26/2001	14	85952	92885	6933	495	49.1
12/26/2001	37251	92885	12/26/2001	1/8/2002	13	92885	99443	6558	504	40.7
1/8/2002	37264	99443	1/8/2002	1/15/2002	7	99443	2622	-96821	-13832	50.4
1/15/2002	37271	2622	1/15/2002	1/22/2002	7	2622	5386	2764	395	48.5
1/22/2002	37278	5386	1/22/2002	1/29/2002	7	5386	8014	2628	375	55.8
1/29/2002	37285	8014	1/29/2002	2/12/2002	14	8014	14546	6532	467	46.9
2/12/2002	37299	14546	2/12/2002	2/19/2002	7	14546	17512	2966	424	47.9
2/19/2002	37306	17512	2/19/2002	2/26/2002	7	17512	20847	3335	476	51.6
2/26/2002	37313	20847	2/26/2002	3/5/2002	7	20847	24683	3836	548	52.0
3/5/2002	37320	24683	3/5/2002	3/12/2002	7	24683	27631	2948	421	41.8
3/12/2002	37327	27631	3/12/2002	3/19/2002	7	27631	30189	2558	365	57.5
3/19/2002	37334	30189	3/19/2002	3/26/2002	7	30189	32379	2190	313	63.6
3/26/2002	37341	32379	3/26/2002	4/17/2002	22	32379	40035	7656	348	52.7
4/17/2002	37363	40035	4/17/2002	4/23/2002	6	40035	42016	1981	330	65.2
4/23/2002	37369	42016	4/23/2002	4/30/2002	7	42016	44075	2059	294	74.4
4/30/2002	37376	44075	4/30/2002	5/7/2002	7	44075	46071	1996	285	76.2
5/7/2002	37383	46071	5/7/2002	5/14/2002	7	46071	436	-45635	-6519	76.0

5/14/2002	37390	436	5/14/2002	5/21/2002	7	436	45561	45125	6446	75.2
5/21/2002	37397	45561	5/21/2002	5/28/2002	7	45561	98731	53170	7596	69.5
5/28/2002	37404	98731	5/28/2002	6/4/2002	7	98731	50848	-47883	-6840	75.1
6/4/2002	37411	50848	6/4/2002	6/18/2002	14	50848	27017	-23831	-1702	77.7
6/18/2002	37425	27017	6/18/2002	6/26/2002	8	27017	28279	1262	158	81.1
6/26/2002	37433	28279	6/26/2002	7/9/2002	13	28279	743	-27536	-2118	80.6
7/9/2002	37446	743	7/9/2002	7/16/2002	7	743	88335	87592	12513	79.7
7/16/2002	37453	88335	7/16/2002	7/23/2002	7	88335	67233	-21102	-3015	80.4
7/23/2002	37460	67233	7/23/2002	7/31/2002	8	67233	88180	20947	2618	84.3
7/31/2002	37468	88180	7/31/2002	8/8/2002	8	88180	96912	8732	1092	87.0
8/8/2002	37476	96912	8/8/2002	8/13/2002	5	96912	58944	-37968	-7594	85.6
8/13/2002	37481	58944	8/13/2002	8/20/2002	7	58944	58565	-379	-54	83.7
8/20/2002	37488	58565	8/20/2002	8/27/2002	7	58565	60226	1661	237	85.0
8/27/2002	37495	60226	8/27/2002	9/10/2002	14	60226	53579	-6647	-475	86.9
9/10/2002	37509	53579	9/10/2002	9/18/2002	8	53579	41150	-12429	-1554	82.4
9/18/2002	37517	41150	9/18/2002	9/24/2002	6	41150	94033	52883	8814	80.4
9/24/2002	37523	94033	9/24/2002	10/18/2002	24	94033	96909	2876	120	72.6
10/18/2002	37547	96909	10/18/2002	1/0/1900	####	96909	0	-96909	3	71.8

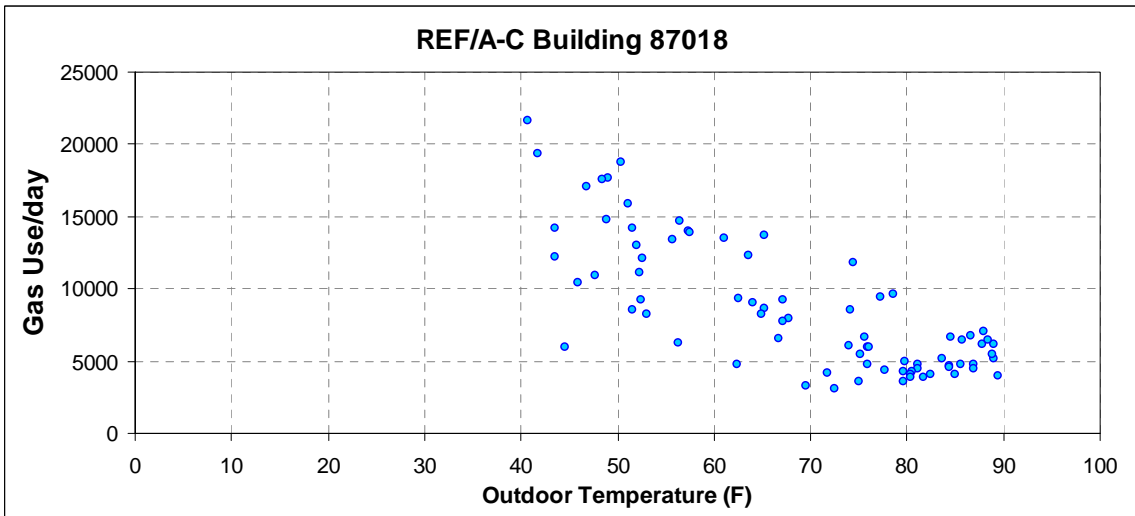
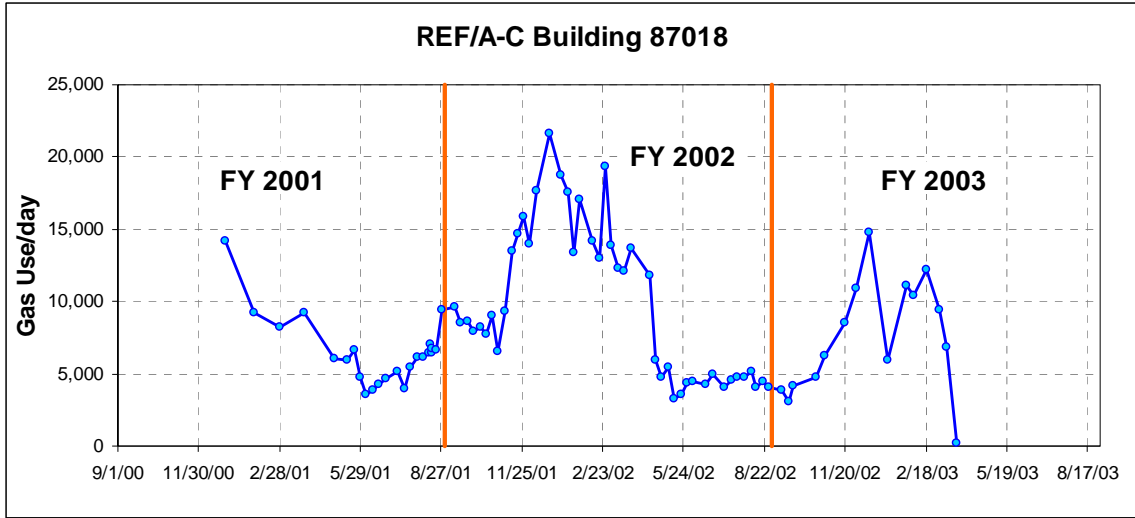


87018 Natural Gas Use

11.1.36.2. Natural Gas Use From Manual Readings

87018 NG	Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Use per period	Use per day	avg temp(F)	
12/29/00	36889	2057341	12/29/00	1/30/01	32	2057341	2511427	454086	14190	43.6
1/30/01	36921	2511427	1/30/01	2/28/01	29	2511427	2778731	267304	9217	52.5
2/28/01	36950	2778731	2/28/01	3/27/01	27	2778731	2999965	221234	8194	53.1
3/27/01	36977	2999965	3/27/01	4/30/01	34	2999965	3313802	313837	9231	67.2
4/30/01	37011	3222783	4/30/01	5/15/01	15	3222783	3313802	91019	6068	74.0
5/15/01	37026	3313802	5/15/01	5/22/01	7	3313802	3355211	41409	5916	75.9
5/22/01	37033	3355211	5/22/01	5/29/01	7	3355211	3401985	46774	6682	75.6
5/29/01	37040	3401985	5/29/01	6/5/01	7	3401985	3435513	33528	4790	81.2
6/5/01	37047	3435513	6/5/01	6/12/01	7	3435513	3460822	25309	3616	79.6
6/12/01	37054	3460822	6/12/01	6/19/01	7	3460822	3488135	27313	3902	81.7
6/19/01	37061	3488135	6/19/01	6/26/01	7	3488135	3518098	29963	4280	79.7
6/26/01	37068	3518098	6/26/01	7/10/01	14	3518098	3583113	65015	4644	84.4
7/10/01	37082	3583113	7/10/01	7/17/01	7	3583113	3619259	36146	5164	88.9
7/17/01	37089	3619259	7/17/01	7/24/01	7	3619259	3647271	28012	4002	89.4
7/24/01	37096	3647271	7/24/01	7/31/01	7	3647271	3685162	37891	5413	88.8
7/31/01	37103	3685162	7/31/01	8/7/01	7	3685162	3728155	42993	6142	87.8
8/7/01	37110	3728155	8/7/01	8/13/01	6	3728155	3765188	37033	6172	88.9
8/13/01	37116	3765188	8/13/01	8/15/01	2	3765188	3778038	12850	6425	88.4
8/15/01	37118	3778038	8/15/01	8/16/01	1	3778038	3785118	7080	7080	88.0
8/16/01	37119	3785118	8/16/01	8/17/01	1	3785118	3791582	6464	6464	85.8
8/17/01	37120	3791582	8/17/01	8/21/01	4	3791582	3818585	27003	6751	86.6
8/21/01	37124	3818585	8/21/01	8/28/01	7	3818585	3865371	46786	6684	84.5
8/28/01	37131	3865371	8/28/01	9/11/01	14	3865371	3997461	132090	9435	77.2
9/11/01	37145	3997461	9/11/01	9/18/01	7	3997461	4064761	67300	9614	78.6
9/18/01	37152	4064761	9/18/01	9/26/01	8	4064761	4133215	68454	8557	74.2
9/26/01	37160	4133215	9/26/01	10/2/01	6	4133215	4184983	51768	8628	65.2
10/2/01	37166	4184983	10/2/01	10/10/01	8	4184983	4248731	63748	7969	67.7
10/10/01	37174	4248731	10/10/01	10/16/01	6	4248731	4298289	49558	8260	64.9
10/16/01	37180	4298289	10/16/01	10/23/01	7	4298289	4352763	54474	7782	67.2
10/23/01	37187	4352763	10/23/01	10/30/01	7	4352763	4416093	63330	9047	64.1
10/30/01	37194	4416093	10/30/01	11/6/01	7	4416093	4461885	45792	6542	66.7
11/6/01	37201	4461885	11/6/01	11/14/01	8	4461885	4536655	74770	9346	62.6
11/14/01	37209	4536655	11/14/01	11/20/01	6	4536655	4617441	80786	13464	61.1
11/20/01	37215	4617441	11/20/01	11/27/01	7	4617441	4720546	103105	14729	56.4
11/27/01	37222	4720546	11/27/01	12/4/01	7	4720546	4831945	111399	15914	51.1
12/4/01	37229	4831945	12/4/01	12/12/01	8	4831945	4944081	112136	14017	57.4
12/12/01	37237	4944081	12/12/01	12/26/01	14	4944081	5190692	246611	17615	49.1
12/26/01	37251	5190692	12/26/01	1/8/02	13	5190692	5471215	280523	21579	40.7
1/8/02	37264	5471215	1/8/02	1/15/02	7	5471215	5602466	131251	18750	50.4
1/15/02	37271	5602466	1/15/02	1/22/02	7	5602466	5725253	122787	17541	48.5
1/22/02	37278	5725253	1/22/02	1/29/02	7	5725253	5819344	94091	13442	55.8
1/29/02	37285	5819344	1/29/02	2/12/02	14	5819344	6058402	239058	17076	46.9
2/12/02	37299	6058402	2/12/02	2/19/02	7	6058402	6157625	99223	14175	51.6
2/19/02	37306	6157625	2/19/02	2/26/02	7	6157625	6248285	90660	12951	52.0
2/26/02	37313	6248285	2/26/02	3/5/02	7	6248285	6383984	135699	19386	41.8
3/5/02	37320	6383984	3/5/02	3/12/02	7	6383984	6481071	97087	13870	57.5
3/12/02	37327	6481071	3/12/02	3/19/02	7	6481071	6567239	86168	12310	63.6
3/19/02	37334	6567239	3/19/02	3/26/02	7	6567239	6651822	84583	12083	52.7
3/26/02	37341	6651822	3/26/02	4/17/02	22	6651822	6952605	300783	13672	65.2

4/17/02	37363	6952605	4/17/02	4/23/02	6	6952605	7023185	70580	11763	74.4
4/23/02	37369	7023185	4/23/02	4/30/02	7	7023185	7065187	42002	6000	76.1
4/30/02	37376	7065187	4/30/02	5/7/02	7	7065187	7098291	33104	4729	75.9
5/7/02	37383	7098291	5/7/02	5/14/02	7	7098291	7136445	38154	5451	75.2
5/14/02	37390	7136445	5/14/02	5/21/02	7	7136445	7159250	22805	3258	69.5
5/21/02	37397	7159250	5/21/02	5/28/02	7	7159250	7184345	25095	3585	75.1
5/28/02	37404	7184345	5/28/02	6/4/02	7	7184345	7214647	30302	4329	77.7
6/4/02	37411	7214647	6/4/02	6/18/02	14	7214647	7276682	62035	4431	81.1
6/18/02	37425	7276682	6/18/02	6/26/02	8	7276682	7310804	34122	4265	80.6
6/26/02	37433	7310804	6/26/02	7/9/02	13	7310804	7374916	64112	4932	79.7
7/9/02	37446	7374916	7/9/02	7/16/02	7	7374916	7403330	28414	4059	80.4
7/16/02	37453	7403330	7/16/02	7/23/02	7	7403330	7435471	32141	4592	84.3
7/23/02	37460	7435471	7/23/02	7/31/02	8	7435471	7473200	37729	4716	87.0
7/31/02	37468	7473200	7/31/02	8/8/02	8	7473200	7510942	37742	4718	85.6
8/8/02	37476	7510942	8/8/02	8/13/02	5	7510942	7536746	25804	5161	83.7
8/13/02	37481	7536746	8/13/02	8/20/02	7	7536746	7564987	28241	4034	85.0
8/20/02	37488	7564987	8/20/02	8/27/02	7	7564987	7595985	30998	4428	86.9
8/27/02	37495	7595985	8/27/02	9/10/02	14	7595985	7652975	56990	4071	82.4
9/10/02	37509	7652975	9/10/02	9/18/02	8	7652975	7684109	31134	3892	80.4
9/18/02	37517	7684109	9/18/02	9/24/02	6	7684109	7702411	18302	3050	72.6
9/24/02	37523	7702411	9/24/02	10/18/02	24	7702411	7801792	99381	4141	71.8
10/18/02	37547	7801792	10/18/02	10/29/02	11	7801792	7853912	52120	4738	62.5
10/29/02	37558	7853912	10/29/02	11/19/02	21	7853912	7985320	131408	6258	56.3
11/19/02	37579	7985320	11/19/02	12/3/02	14	7985320	8104390	119070	8505	51.6
12/3/02	37593	8104390	12/3/02	12/17/02	14	8104390	8257493	153103	10936	47.7
12/17/02	37607	8257493	12/17/02	1/7/03	21	8257493	8567832	310339	14778	48.8
1/7/03	37628	8567832	1/7/03	1/27/03	20	8567832	8686155	118323	5916	44.6
1/27/03	37648	8686155	1/27/03	2/5/03	9	8686155	8786578	100423	11158	52.33
2/5/03	37657	8786578	2/5/03	2/19/03	14	8786578	8931761	145183	10370	45.97
2/19/03	37671	8931761	2/19/03	3/5/03	14	8931761	9102288	170527	12181	43.53
3/5/03	37685	9102288	3/5/03	3/13/03	8	9102288	9177942	75654	9457	57.5
3/13/03	37693	9177942	3/13/03	3/25/03	12	9177942	9260641	82699	6892	61.2



11.1.36.3. Baseline Model From Manual Readings

87018 NATURAL GAS

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

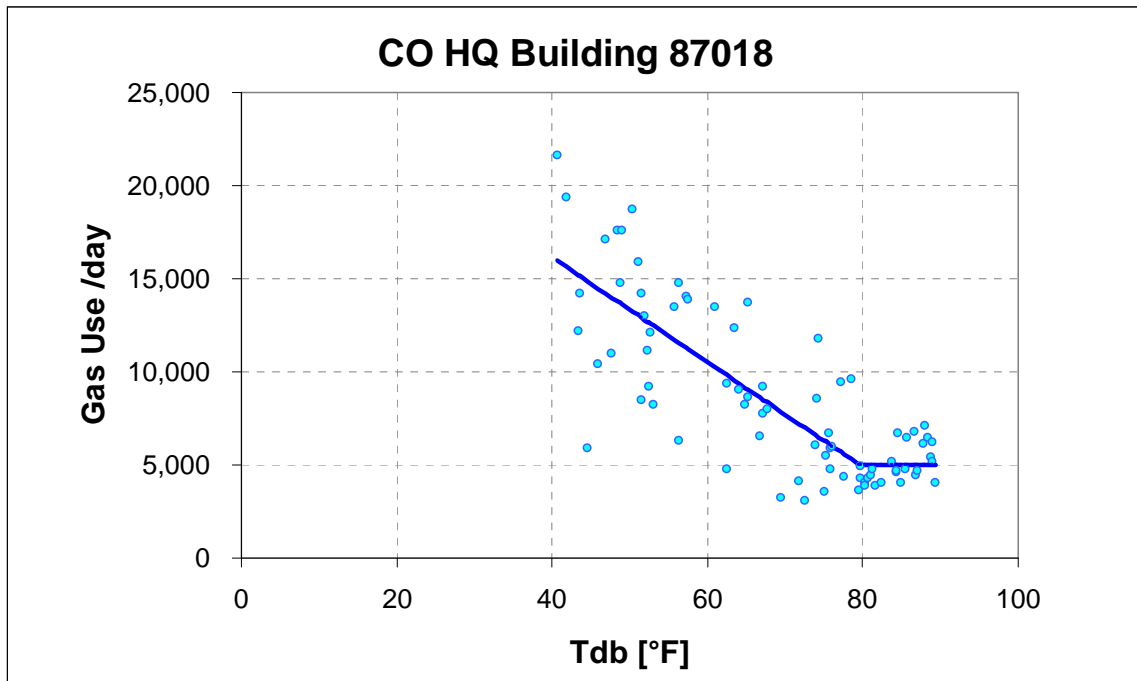
 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat
 Model type = 3P Heating
 Grouping column No = 5
 Value for grouping = 1
 Residual mode = 1
 # of X(Indep.) Var = 1
 Y1 column number = 6
 X1 column number = 9
 X2 column number = 0 (unused)
 X3 column number = 0 (unused)
 X4 column number = 0 (unused)
 X5 column number = 0 (unused)
 X6 column number = 0 (unused)

Regression Results

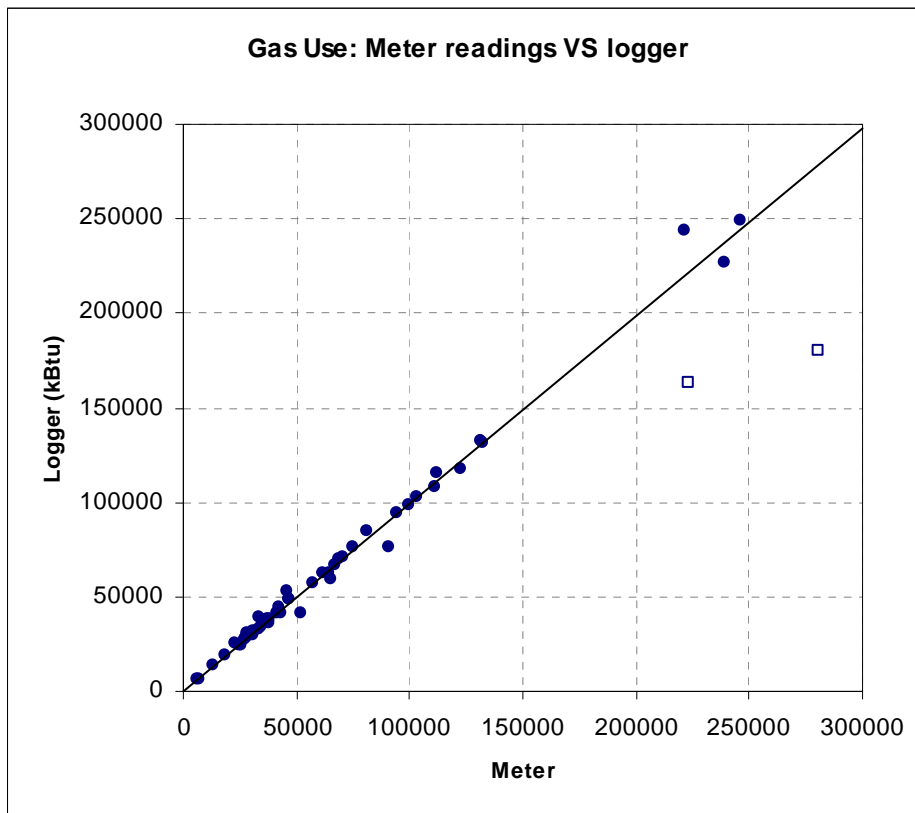
 N = 79
 R2 = 0.645
 AdjR2 = 0.645
 RMSE = 2725.5261
 CV-RMSE = 31.983%
 p = 0.647
 DW = 0.691 (p>0)
 N1 = 53
 N2 = 26
 Ycp = 5006.5054 (427.0242)
 LS = -280.8917 (23.7463)
 RS = 0.0000 (0.0000)
 Xcp = 79.6600 (0.9740)



11.1.37. 87018 Comparison of manual gas vs logger readings for the thermal plant

Date	WBE Reading	Gas Reading	Gas Use (Meter)	Gas Use (Logger) (kBtu??)
3/1/2001	-	2778731	-	-
3/27/2001	-	2999965	221234	243603
4/30/2001	-	3222783	222818	162806
5/15/2001	82760	3313802	91019	76202
5/22/2001	85299	3355211	41409	40904
5/29/2001	88601	3401985	46774	48238
6/5/2001		3435513	33528	39314
6/12/2001		3460822	25309	24822
6/19/2001		3488135	27313	27967
6/26/2001		3518098	29963	30166
7/10/2001		3583113	65015	59822
7/17/2001		3619259	36146	36462
7/24/2001		3647271	28012	28365
7/31/2001		3685162	37891	37554
8/7/2001		3728155	42993	41516
8/13/2001		3765188	37033	38433
8/15/2001		3778038	12850	13449
8/16/2001		3785118	7080	6596
8/17/2001		3791582	6464	6742
8/21/2001		3818585	27003	27175
8/28/2001		3865371	46786	48420
9/11/2001		3997461	132090	131922
9/18/2001		4064761	67300	66913
9/26/2001		4133215	68454	69707
10/2/2001		4184983	51768	41640
10/10/2001		4248731	63748	
10/16/2001		4298289	49558	
10/23/2001		4352763	54474	
10/30/2001		4416093	63330	
11/6/2001		4461885	45792	53283
11/14/2001		4536655	74770	76507
11/20/2001		4617441	80786	84287
11/27/2001		4720546	103105	103054
12/4/2001		4831945	111399	108626
12/12/2001		4944081	112136	115390
12/26/2001		5190692	246611	248760
1/8/2002		5471215	280523	179810
1/15/2002		5602466	131251	132278
1/22/2002		5725253	122787	117967
1/29/2002		5819344	94091	94165
2/12/2002		6058402	239058	227293
2/19/2002		6157625	99223	
2/26/2002		6248285	90660	
3/5/2002		6383984	135699	

3/12/2002	6481071	97087	
3/19/2002	6567239	86168	
3/26/2002	6651822	84583	
4/17/2002	6952605	300783	301116
4/23/2002	7023185	70580	70581
4/30/2002	7065187	42002	45042
5/7/2002	7098291	33104	32818
5/14/2002	7136445	38154	35963
5/21/2002	7159250	22805	25484
5/28/2002	7184345	25095	24449
6/4/2002	7214647	30302	30418
6/18/2002	7276682	62035	62129
6/26/2002	7310804	34122	34149
7/9/2002	7374916	64112	62073
7/16/2002	7403330	28414	30247
7/23/2002	7435471	32141	31901
7/31/2002	7473200	37729	37687
8/8/2002	7510942	37742	37665
8/13/2002	7536746	25804	24642
8/20/2002	7564987	28241	29308
8/27/2002	7595985	30998	29949
9/10/2002	7652975	56990	57553
9/18/2002	7684109	31134	31569
9/24/2002	7702411	18302	18638
10/18/2002	7801792	99381	98984



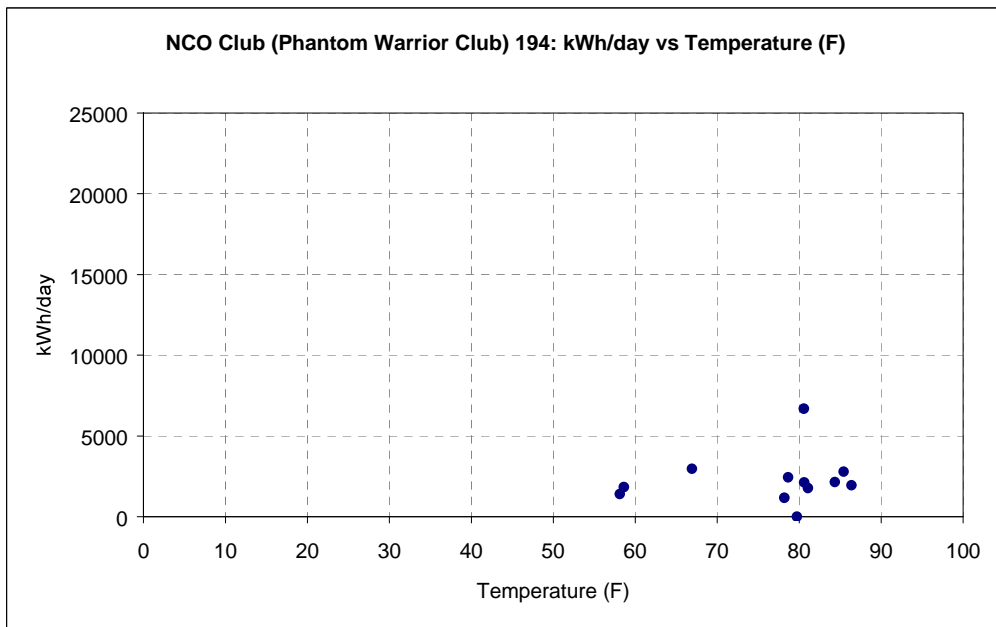
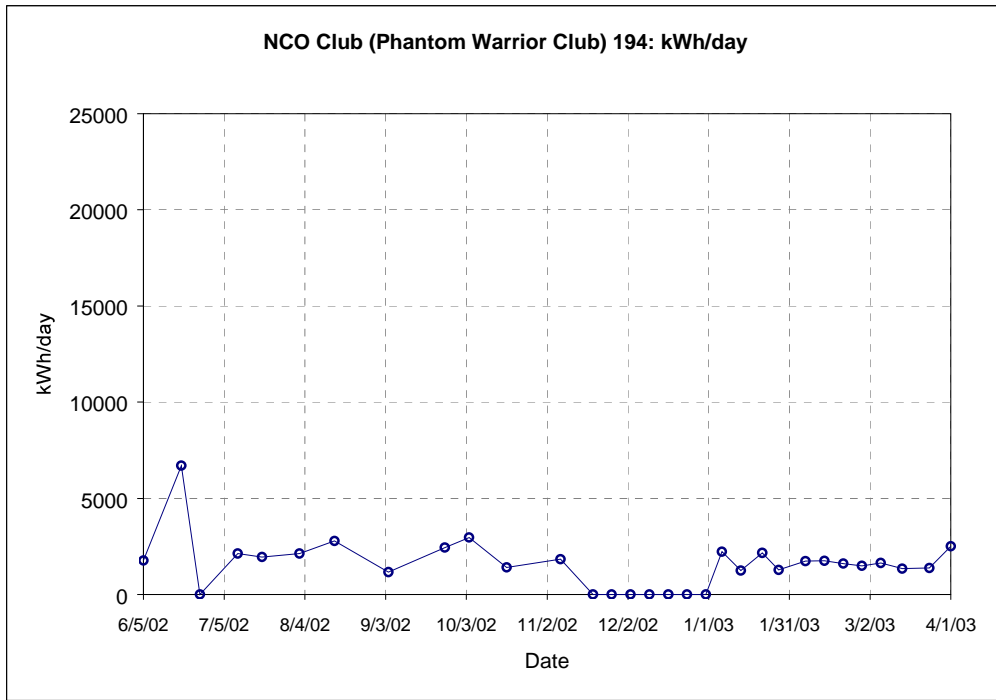
11.2. Additional buildings where manual readings are being made.

This section of the report contains preliminary models on the manual meter readings performed by the Ft. Hood Energy Office during the period June 2002 to November 2002. The Ft. Hood Energy Office plans to continue these readings on a more frequent basis and the models will be updated when more readings become available.

Building Number	Building Name	Building Size (ft2)	Electricity	Natural Gas
194	NCO Club (Phantom Warrior Club)	19,023	√	√
410	Headquarters Building	102,391	√	√
1001	Third Corp Headquarters	312,800	√	√
4351	Motor Pool	16,317	√	√
5485	Pershing Youth Center	17,519	√	√
5764	Officers Club	36,649	√	√
6602	Bronco Youth Center	22,100	√	√
9212	Patton Inn	1,612	√	√
22020	Admin	21,096	√	√
28000	Headquarters Bldg	129,635	√	√
42000	Sports USA	23,341	√	√
50012	Community Event Center	4,203	√	√
52024	COMMAND Child Care	34,779	√	√
52381	Golf Pro Shop	3,061	√	√
70005	Longhorn Saloon	5,718	√	√
85018	Walker Youth Service Center	15,652	√	√
85020	Commissary	105,659	√	√
91012	Admin/ Operational Testing	86,292	√	√
91014	Admin	26,224	√	√

11.2.1. 194 NCO Club (Phantom Warrior Club)
 11.2.1.1. Electricity Use From Manual Readings

194 Elec		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per per.	Use per Period	Use per day	avg temp(F)
									80	6697	
6/5/02	37412	15324	6/5/02	6/19/02	14	15324	15634	310	24800	1771	81.1
6/19/02	37426	15634	6/19/02	6/26/02	7	15634	16220	586	46880	6697	80.6
6/26/02	37433	16220	6/26/02	7/10/02	14	16220	16174	-	-	-	79.7
7/10/02	37447	16174	7/10/02	7/19/02	9	16174	16413	239	19120	2124	80.6
7/19/02	37456	16413	7/19/02	8/2/02	14	16413	16753	340	27200	1943	86.4
8/2/02	37470	16753	8/2/02	8/15/02	13	16753	17100	347	27760	2135	84.3
8/15/02	37483	17100	8/15/02	9/4/02	20	17100	17797	697	55760	2788	85.4
9/4/02	37503	17797	9/4/02	9/25/02	21	17797	18102	305	24400	1162	78.2
9/25/02	37524	18102	9/25/02	10/4/02	9	18102	18377	275	22000	2444	78.7
10/4/02	37533	18377	10/4/02	10/18/02	14	18377	18896	519	41520	2966	66.9
10/18/02	37547	18896	10/18/02	11/7/02	20	18896	19247	351	28080	1404	58.1
11/7/02	37567	19247	11/7/02	11/19/02	12	19247	19522	275	22000	1833	58.6
11/19/02	37579	19522	11/19/02	11/26/02	7	19522	-	-	-	-	53.9
11/26/02	37586	Logger	11/26/02	12/3/02	7	-	-	-	-	-	49.2
12/3/02	37593	Logger	12/3/02	12/10/02	7	-	-	-	-	-	44.7
12/10/02	37600	Logger	12/10/02	12/17/02	7	-	-	-	-	-	52.0
12/17/02	37607	Logger	12/17/02	12/24/02	7	-	-	-	-	-	51.0
12/24/02	37614	Logger	12/24/02	12/31/02	7	-	-	-	-	-	48.6
12/31/02	37621	Logger	12/31/02	1/6/03	6	-	-	-	-	-	47.8
1/6/03	37627	20494	1/6/03	1/13/03	7	20494	20689	195	15600	2229	47.4
1/13/03	37634	20689	1/13/03	1/21/03	8	20689	20814	125	10000	1250	46.8
1/21/03	37642	20814	1/21/03	1/27/03	6	20814	20976	162	12960	2160	38.6
1/27/03	37648	20976	1/27/03	2/6/03	10	20976	21136	160	12800	1280	51.2
2/6/03	37658	21136	2/6/03	2/13/03	7	21136	21288	152	12160	1737	41.9
2/13/03	37665	21288	2/13/03	2/20/03	7	21288	21441	153	12240	1749	53.9
2/20/03	37672	21441	2/20/03	2/27/03	7	21441	21581	140	11200	1600	40.4
2/27/03	37679	21581	2/27/03	3/6/03	7	21581	21712	131	10480	1497	46.1
3/6/03	37686	21712	3/6/03	3/14/03	8	21712	21875	163	13040	1630	59.7
3/14/03	37694	21875	3/14/03	3/24/03	10	21875	22042	167	13360	1336	58.1
3/24/03	37704	22042	3/24/03	4/1/03	8	22042	22180	138	11040	1380	59.8
4/1/03	37712	22180	4/1/03	4/7/03	6	22180	22368	188	15040	2507	59.0



11.2.1.1.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 2
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

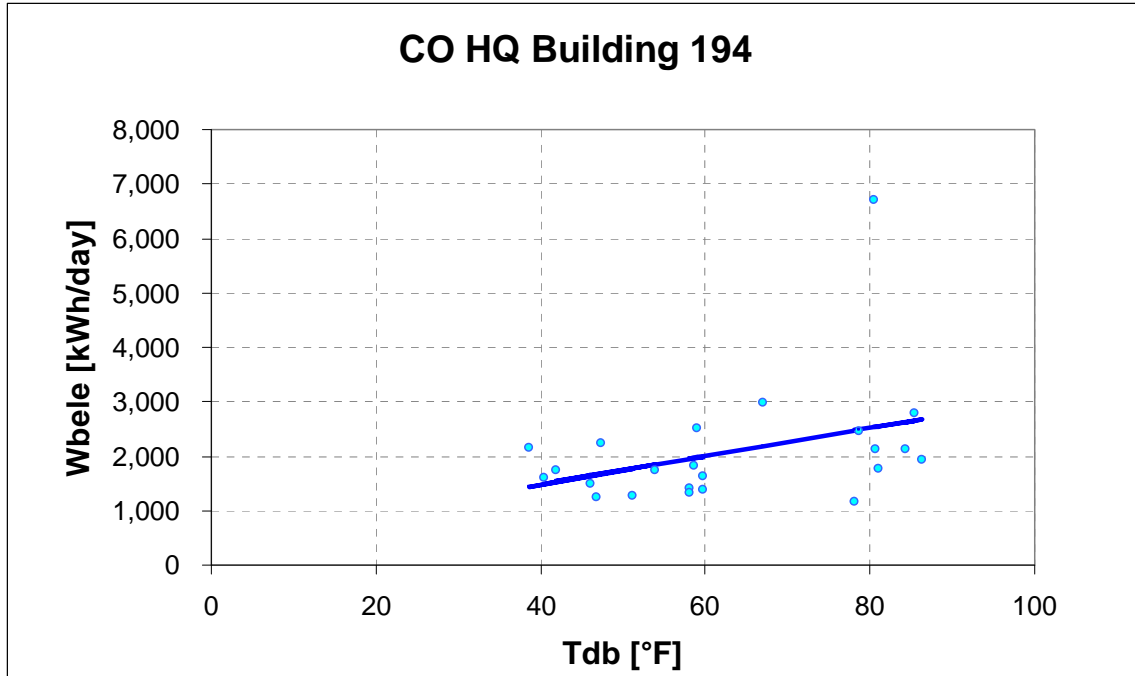
 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat
 Model type = 2P
 Grouping column No = 5
 Value for grouping = 1
 Residual mode = 1
 # of X(Indep.) Var = 1
 Y1 column number = 6
 X1 column number = 9
 X2 column number = 0 (unused)
 X3 column number = 0 (unused)
 X4 column number = 0 (unused)
 X5 column number = 0 (unused)
 X6 column number = 0 (unused)

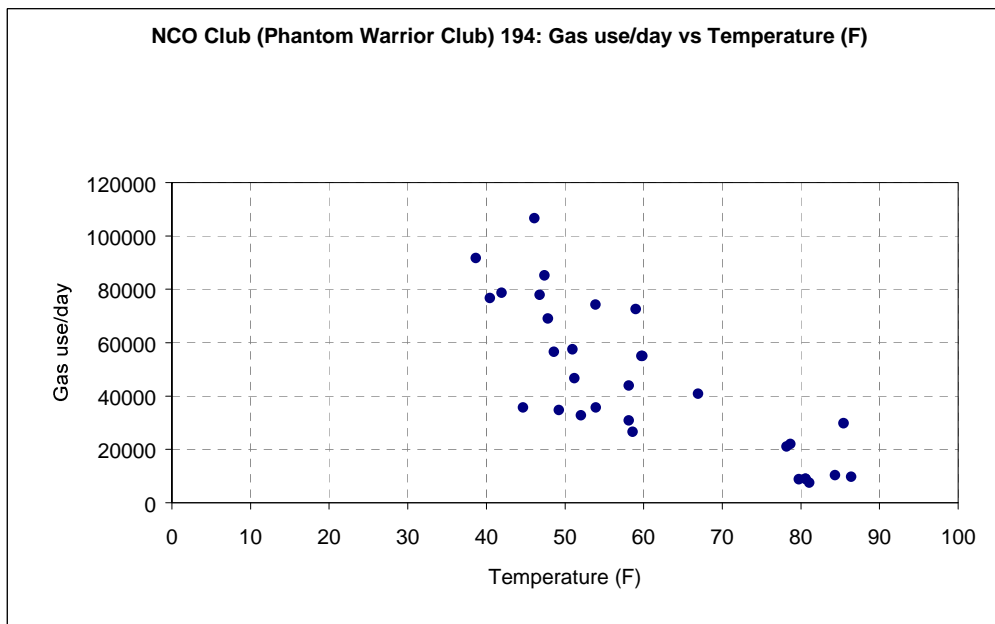
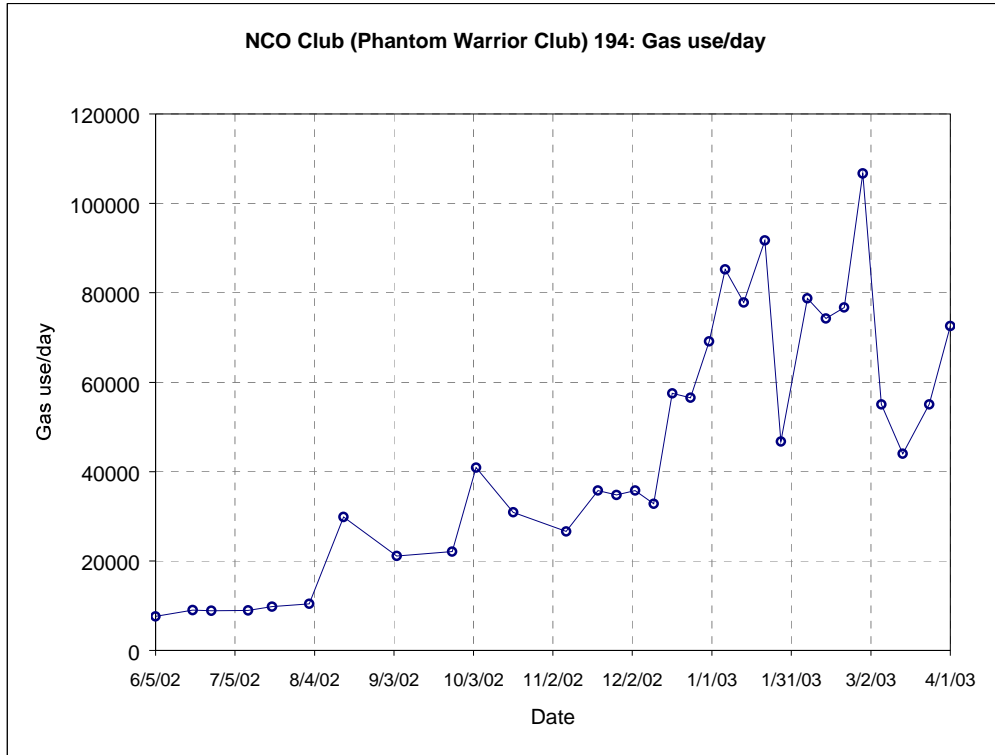
Regression Results

 N = 23
 R2 = 0.135
 AdjR2 = 0.135
 RMSE = 1070.0204
 CV-RMSE = 51.678%
 p = -0.238
 DW = 2.428 (p>0)
 a = 448.4998 (923.2314)
 X1 = 25.8744 (14.2905)



11.2.1.2. Natural Gas From Manual Readings

194 Gas		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp (F)
									10		
6/5/02	37412	4860944	6/5/02	6/19/02	14	4860944	4871579	10635	106350	7596	81.1
6/19/02	37426	4871579	6/19/02	6/26/02	7	4871579	4877909	6330	63300	9043	80.6
6/26/02	37433	4877909	6/26/02	7/10/02	14	4877909	4890349	12440	124400	8886	79.7
7/10/02	37447	4890349	7/10/02	7/19/02	9	4890349	4898424	8075	80750	8972	80.6
7/19/02	37456	4898424	7/19/02	8/2/02	14	4898424	4912148	13724	137240	9803	86.4
8/2/02	37470	4912148	8/2/02	8/15/02	13	4912148	4925708	13560	135600	10431	84.3
8/15/02	37483	4925708	8/15/02	9/4/02	20	4925708	4985427	59719	597190	29860	85.4
9/4/02	37503	4960953	9/4/02	9/25/02	21	4960953	5005305	44352	443520	21120	78.2
9/25/02	37524	4985427	9/25/02	10/4/02	9	4985427	5005305	19878	198780	22087	78.7
10/4/02	37533	5005305	10/4/02	10/18/02	14	5005305	5062587	57282	572820	40916	66.9
10/18/02	37547	5062587	10/18/02	11/7/02	20	5062587	5124316	61729	617290	30865	58.1
11/7/02	37567	5124316	11/7/02	11/19/02	12	5124316	5156227	31911	319110	26593	58.6
11/19/02	37579	5156227	11/19/02	11/26/02	7	5156227	5181248	25021	250210	35744	53.9
11/26/02	37586	5181248	11/26/02	12/3/02	7	5181248	5205594	24346	243460	34780	49.2
12/3/02	37593	5205594	12/3/02	12/10/02	7	5205594	5230630	25036	250360	35766	44.7
12/10/02	37600	5230630	12/10/02	12/17/02	7	5230630	5253610	22980	229800	32829	52.0
12/17/02	37607	5253610	12/17/02	12/24/02	7	5253610	5293866	40256	402560	57509	51.0
12/24/02	37614	5293866	12/24/02	12/31/02	7	5293866	5333450	39584	395840	56549	48.6
12/31/02	37621	5333450	12/31/02	1/6/03	6	5333450	5374917	41467	414670	69112	47.8
1/6/03	37627	5374917	1/6/03	1/13/03	7	5374917	5434587	59670	596700	85243	47.4
1/13/03	37634	5434587	1/13/03	1/21/03	8	5434587	5496875	62288	622880	77860	46.8
1/21/03	37642	5496875	1/21/03	1/27/03	6	5496875	5551917	55042	550420	91737	38.6
1/27/03	37648	5551917	1/27/03	2/6/03	10	5551917	5598644	46727	467270	46727	51.2
2/6/03	37658	5598644	2/6/03	2/13/03	7	5598644	5653770	55126	551260	78751	41.9
2/13/03	37665	5653770	2/13/03	2/20/03	7	5653770	5705755	51985	519850	74264	53.9
2/20/03	37672	5705755	2/20/03	2/27/03	7	5705755	5759453	53698	536980	76711	40.4
2/27/03	37679	5759453	2/27/03	3/6/03	7	5759453	5834132	74679	746790	106684	46.1
3/6/03	37686	5834132	3/6/03	3/14/03	8	5834132	5878156	44024	440240	55030	59.7
3/14/03	37694	5878156	3/14/03	3/24/03	10	5878156	5922111	43955	439550	43955	58.1
3/24/03	37704	5922111	3/24/03	4/1/03	8	5922111	5966157	44046	440460	55058	59.8
4/1/03	37712	5966157	4/1/03	4/7/03	6	5966157	6009697	43540	435400	72567	59.0



11.2.1.2.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

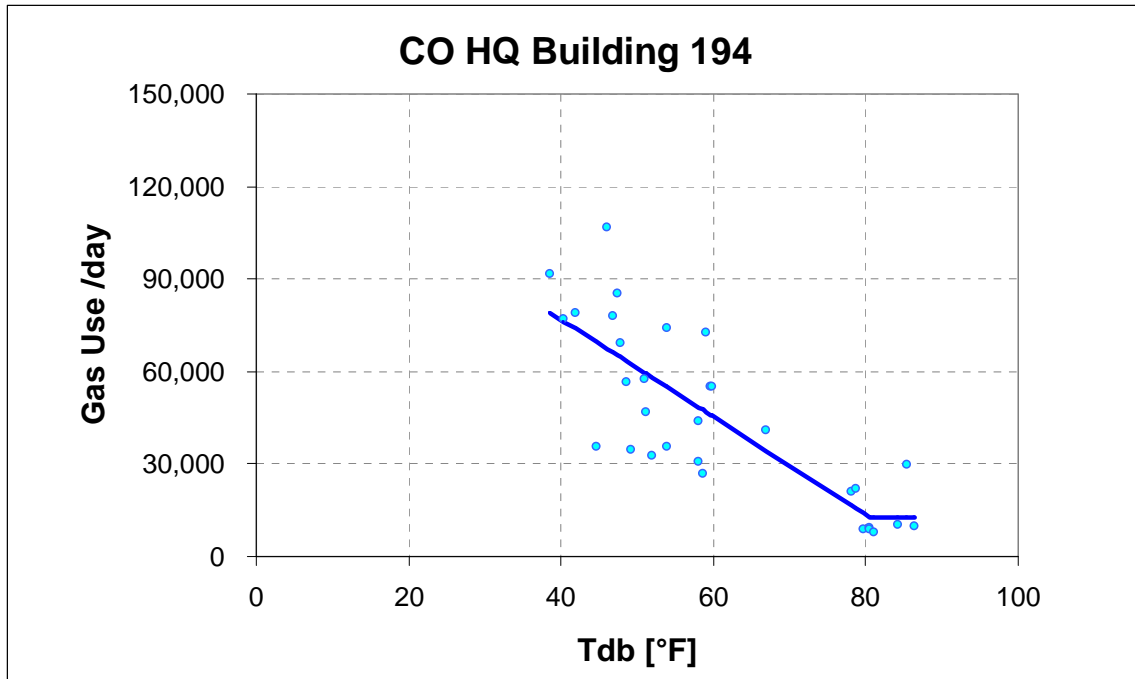
 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat
 Model type = 3P Heating
 Grouping column No = 5
 Value for grouping = 1
 Residual mode = 1
 # of X(Indep.) Var = 1
 Y1 column number = 6
 X1 column number = 9
 X2 column number = 0 (unused)
 X3 column number = 0 (unused)
 X4 column number = 0 (unused)
 X5 column number = 0 (unused)
 X6 column number = 0 (unused)

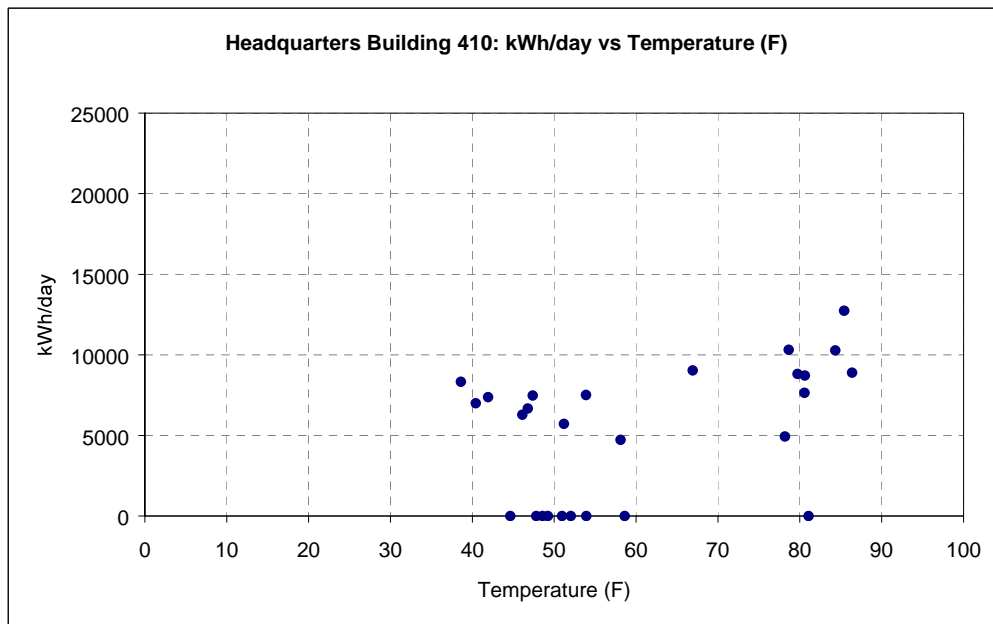
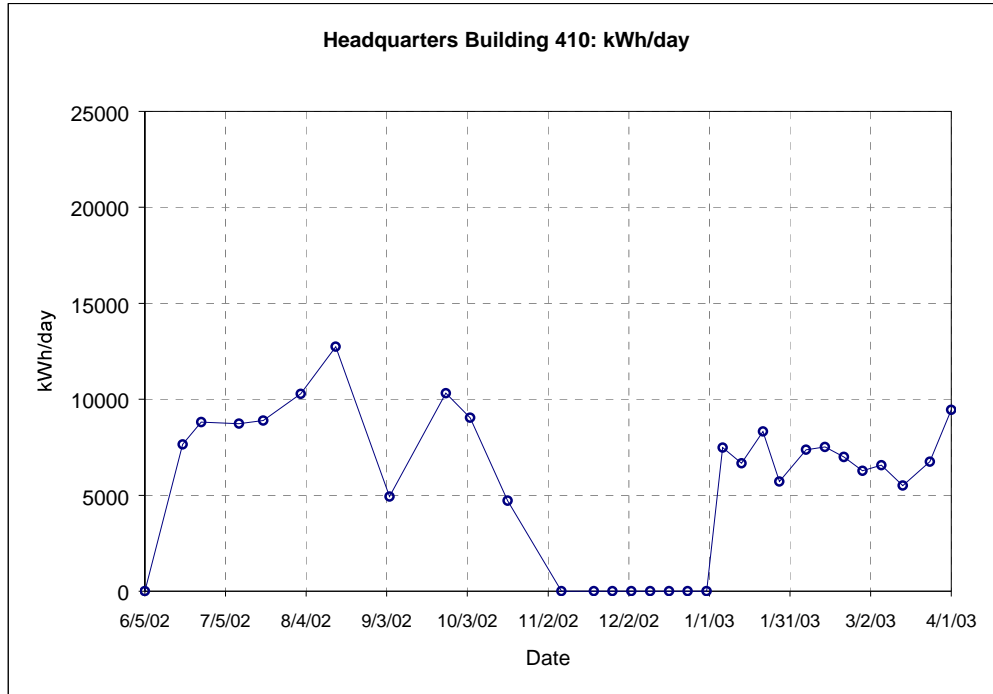
Regression Results

 N = 31
 R2 = 0.666
 AdjR2 = 0.666
 RMSE = 16462.1914
 CV-RMSE = 36.115%
 p = 0.521
 DW = 0.875 (p>0)
 N1 = 27
 N2 = 4
 Ycp = 12715.8652 (5234.6245)
 LS = -1577.8489 (207.3781)
 RS = 0.0000 (0.0000)
 Xcp = 80.6412 (0.9548)



11.2.2. 410 Headquarters Building
 11.2.2.1. Electricity Use From Manual Readings

410 Elec		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									240	12732	
6/5/02	37412	4789	6/5/02	6/19/02	14	4789	4304	-	-	-	81.1
6/19/02	37426	4304	6/19/02	6/26/02	7	4304	4527	223	53520	7646	80.6
6/26/02	37433	4527	6/26/02	7/10/02	14	4527	5041	514	123360	8811	79.7
7/10/02	37447	5041	7/10/02	7/19/02	9	5041	5368	327	78480	8720	80.6
7/19/02	37456	5368	7/19/02	8/2/02	14	5368	5887	519	124560	8897	86.4
8/2/02	37470	5887	8/2/02	8/15/02	13	5887	6444	557	133680	10283	84.3
8/15/02	37483	6444	8/15/02	9/4/02	20	6444	7505	1061	254640	12732	85.4
9/4/02	37503	7505	9/4/02	9/25/02	21	7505	7936	431	103440	4926	78.2
9/25/02	37524	7936	9/25/02	10/4/02	9	7936	8323	387	92880	10320	78.7
10/4/02	37533	8323	10/4/02	10/18/02	14	8323	8850	527	126480	9034	66.9
10/18/02	37547	8850	10/18/02	11/7/02	20	8850	9243	393	94320	4716	58.1
11/7/02	37567	9243	11/7/02	11/19/02	12	9243	815	-	-	-	58.6
11/19/02	37579	815	11/19/02	11/26/02	7	815	-	-	-	-	53.9
11/26/02	37586	Logger	11/26/02	12/3/02	7	-	-	-	-	-	49.2
12/3/02	37593	Logger	12/3/02	12/10/02	7	-	-	-	-	-	44.7
12/10/02	37600	Logger	12/10/02	12/17/02	7	-	-	-	-	-	52.0
12/17/02	37607	Logger	12/17/02	12/24/02	7	-	-	-	-	-	51.0
12/24/02	37614	Logger	12/24/02	12/31/02	7	-	-	-	-	-	48.6
12/31/02	37621	Logger	12/31/02	1/6/03	6	-	-	-	-	-	47.8
1/6/03	37627	1188	1/6/03	1/13/03	7	1188	1406	218	52320	7474	47.4
1/13/03	37634	1406	1/13/03	1/21/03	8	1406	1628	222	53280	6660	46.8
1/21/03	37642	1628	1/21/03	1/27/03	6	1628	1836	208	49920	8320	38.6
1/27/03	37648	1836	1/27/03	2/6/03	10	1836	2074	238	57120	5712	51.2
2/6/03	37658	2074	2/6/03	2/13/03	7	2074	2289	215	51600	7371	41.9
2/13/03	37665	2289	2/13/03	2/20/03	7	2289	2508	219	52560	7509	53.9
2/20/03	37672	2508	2/20/03	2/27/03	7	2508	2712	204	48960	6994	40.4
2/27/03	37679	2712	2/27/03	3/6/03	7	2712	2895	183	43920	6274	46.1
3/6/03	37686	2895	3/6/03	3/14/03	8	2895	3114	219	52560	6570	59.7
3/14/03	37694	3114	3/14/03	3/24/03	10	3114	3343	229	54960	5496	58.1
3/24/03	37704	3343	3/24/03	4/1/03	8	3343	3568	225	54000	6750	59.8
4/1/03	37712	3568	4/1/03	4/7/03	6	3568	3804	236	56640	9440	59.0



11.2.2.1.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 3
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Cooling

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 20

R2 = 0.192

AdjR2 = 0.192

RMSE = 1423.5525

CV-RMSE = 19.284%

p = -0.299

DW = 2.410 (p>0)

N1 = 8

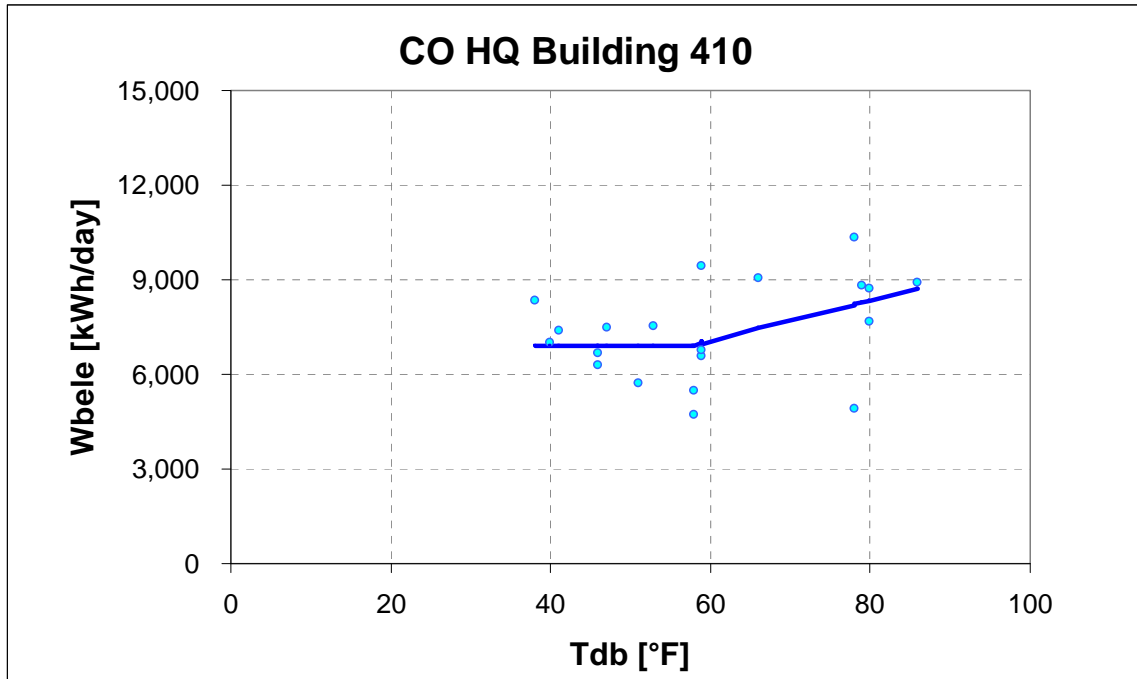
N2 = 12

Ycp = 6893.9790 (396.2592)

LS = 0.0000 (0.0000)

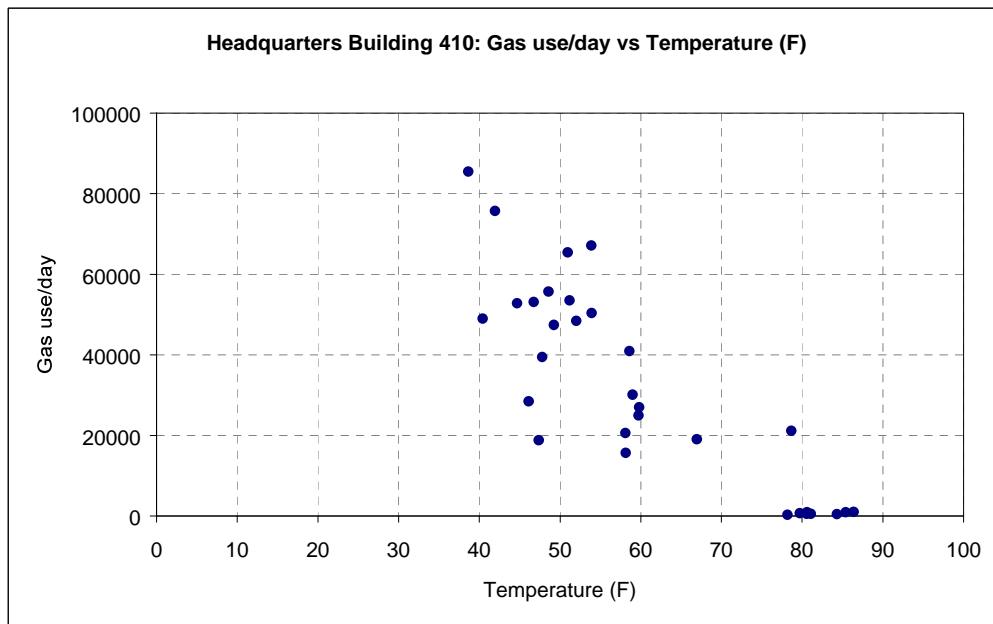
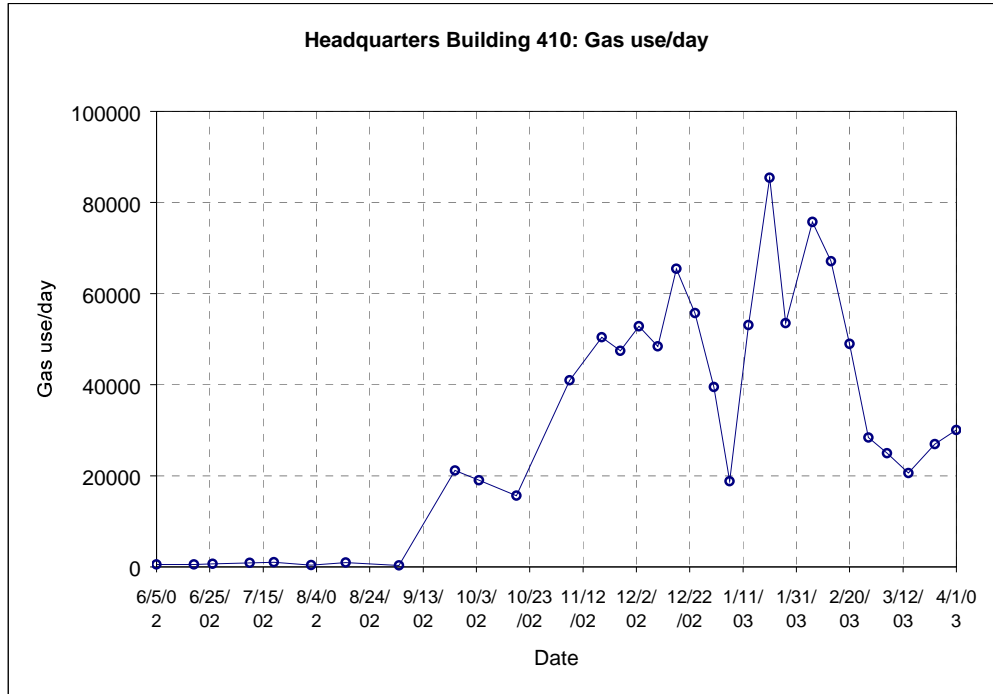
RS = 63.7346 (30.8175)

Xcp = 57.7200 (0.9560)



11.2.2.2. Natural Gas From Manual Readings

410 Gas		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									10		
6/5/02	37412	908060	06/05/02	06/19/02	14	908060	908824	764	7640	546	81.1
6/19/02	37426	908824	06/19/02	06/26/02	7	908824	909191	367	3670	524	80.6
6/26/02	37433	909191	06/26/02	07/10/02	14	909191	910127	936	9360	669	79.7
7/10/02	37447	910127	07/10/02	07/19/02	9	910127	910959	832	8320	924	80.6
7/19/02	37456	910959	07/19/02	08/02/02	14	910959	912397	1438	14380	1027	86.4
8/2/02	37470	912397	08/02/02	08/15/02	13	912397	912979	582	5820	448	84.3
8/15/02	37483	912979	08/15/02	09/04/02	20	912979	914877	1898	18980	949	85.4
9/4/02	37503	914877	09/04/02	09/25/02	21	914877	915530	653	6530	311	78.2
9/25/02	37524	915530	09/25/02	10/04/02	9	915530	934560	19030	190300	21144	78.7
10/4/02	37533	934560	10/04/02	10/18/02	14	934560	961254	26694	266940	19067	66.9
10/18/02	37547	961254	10/18/02	11/07/02	20	961254	992567	31313	313130	15657	58.1
11/7/02	37567	992567	11/07/02	11/19/02	12	992567	1041741	49174	491740	40978	58.6
11/19/02	37579	1041741	11/19/02	11/26/02	7	1041741	1077010	35269	352690	50384	53.9
11/26/02	37586	1077010	11/26/02	12/03/02	7	1077010	1110225	33215	332150	47450	49.2
12/3/02	37593	1110225	12/03/02	12/10/02	7	1110225	1147183	36958	369580	52797	44.7
12/10/02	37600	1147183	12/10/02	12/17/02	7	1147183	1181089	33906	339060	48437	52.0
12/17/02	37607	1181089	12/17/02	12/24/02	7	1181089	1226895	45806	458060	65437	51.0
12/24/02	37614	1226895	12/24/02	12/31/02	7	1226895	1265891	38996	389960	55709	48.6
12/31/02	37621	1265891	12/31/02	01/06/03	6	1265891	1289594	23703	237030	39505	47.8
1/6/03	37627	1289594	01/06/03	01/13/03	7	1289594	1302769	13175	131750	18821	47.4
1/13/03	37634	1302769	01/13/03	01/21/03	8	1302769	1345264	42495	424950	53119	46.8
1/21/03	37642	1345264	01/21/03	01/27/03	6	1345264	1396545	51281	512810	85468	38.6
1/27/03	37648	1396545	01/27/03	02/06/03	10	1396545	1450068	53523	535230	53523	51.2
2/6/03	37658	1450068	02/06/03	02/13/03	7	1450068	1503068	53000	530000	75714	41.9
2/13/03	37665	1503068	02/13/03	02/20/03	7	1503068	1550055	46987	469870	67124	53.9
2/20/03	37672	1550055	02/20/03	02/27/03	7	1550055	1584350	34295	342950	48993	40.4
2/27/03	37679	1584350	02/27/03	03/06/03	7	1584350	1604263	19913	199130	28447	46.1
3/6/03	37686	1604263	03/06/03	03/14/03	8	1604263	1624258	19995	199950	24994	59.7
3/14/03	37694	1624258	03/14/03	03/24/03	10	1624258	1644850	20592	205920	20592	58.1
3/24/03	37704	1644850	03/24/03	04/01/03	8	1644850	1666439	21589	215890	26986	59.8
4/1/03	37712	1666439	04/01/03	04/07/03	6	1666439	1684482	18043	180430	30072	59.0



11.2.2.2.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Heating

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 31

R2 = 0.741

AdjR2 = 0.741

RMSE = 13049.8691

CV-RMSE = 40.625%

p = 0.264

DW = 1.471 (p>0)

N1 = 22

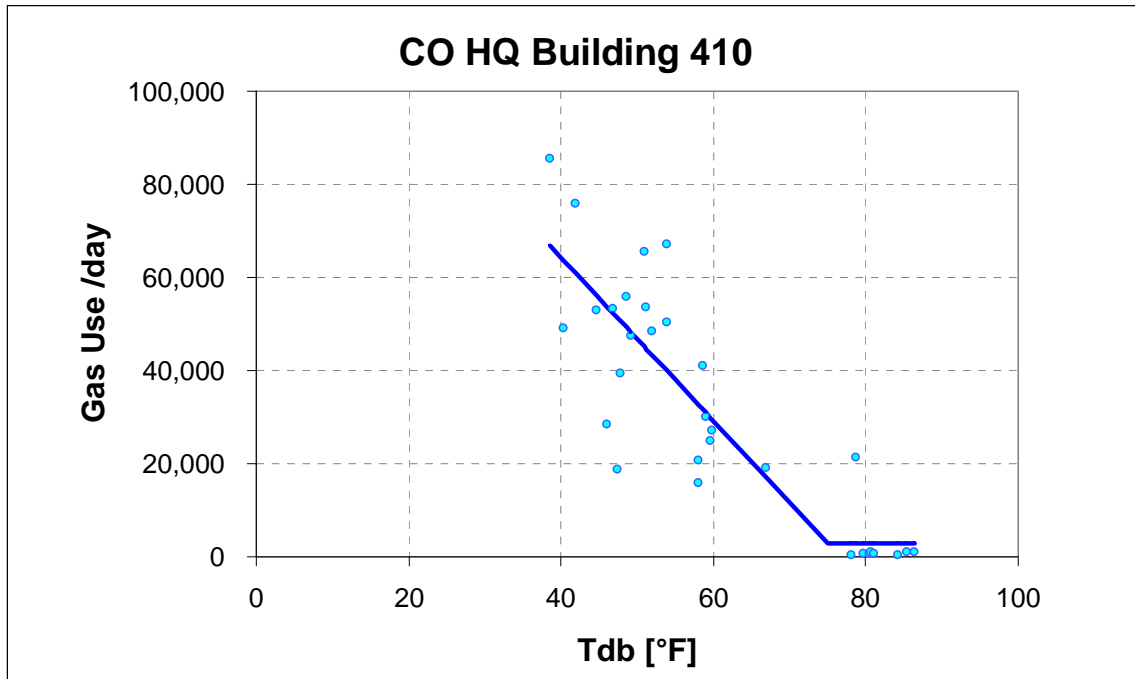
N2 = 9

Ycp = 3001.9946 (3961.7581)

LS = -1755.3330 (192.5280)

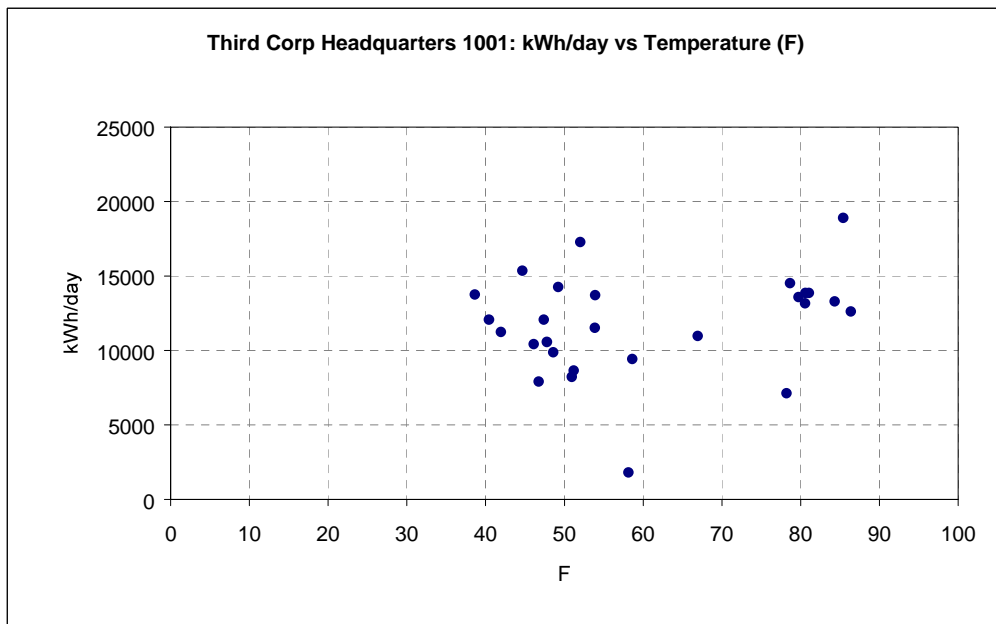
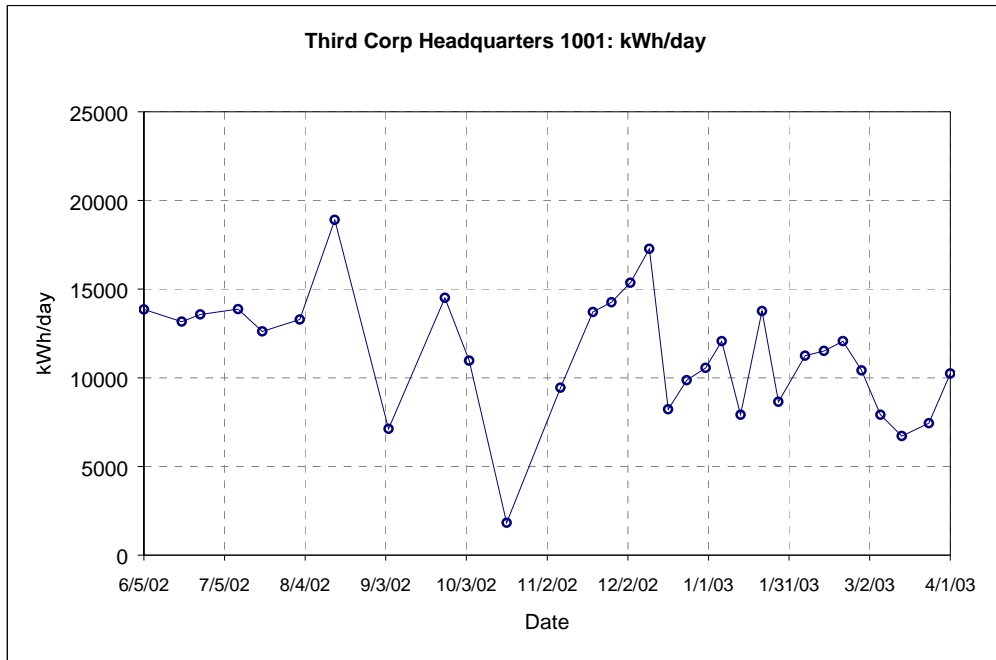
RS = 0.0000 (0.0000)

Xcp = 74.9124 (0.9548)



11.2.3. 1001 Third Corp Headquarters
 11.2.3.1. Electricity Use From Manual Readings

1001 Elec 1	Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)	
								1920	18912		
6/5/02	37412	6408	6/5/02	6/19/02	14	6408	6509	101	193920	13851	81.1
6/19/02	37426	6509	6/19/02	6/26/02	7	6509	6557	48	92160	13166	80.6
6/26/02	37433	6557	6/26/02	7/10/02	14	6557	6656	99	190080	13577	79.7
7/10/02	37447	6656	7/10/02	7/19/02	9	6656	6721	65	124800	13867	80.6
7/19/02	37456	6721	7/19/02	8/2/02	14	6721	6813	92	176640	12617	86.4
8/2/02	37470	6813	8/2/02	8/15/02	13	6813	6903	90	172800	13292	84.3
8/15/02	37483	6903	8/15/02	9/4/02	20	6903	7100	197	378240	18912	85.4
9/4/02	37503	7100	9/4/02	9/25/02	21	7100	7178	78	149760	7131	78.2
9/25/02	37524	7178	9/25/02	10/4/02	9	7178	7246	68	130560	14507	78.7
10/4/02	37533	7246	10/4/02	10/18/02	14	7246	7326	80	153600	10971	66.9
10/18/02	37547	7326	10/18/02	11/7/02	20	7326	7345	19	36480	1824	58.1
11/7/02	37567	7345	11/7/02	11/19/02	12	7345	7404	59	113280	9440	58.6
11/19/02	37579	7404	11/19/02	11/26/02	7	7404	7454	50	96000	13714	53.9
11/26/02	37586	7454	11/26/02	12/3/02	7	7454	7506	52	99840	14263	49.2
12/3/02	37593	7506	12/3/02	12/10/02	7	7506	7562	56	107520	15360	44.7
12/10/02	37600	7562	12/10/02	12/17/02	7	7562	7625	63	120960	17280	52.0
12/17/02	37607	7625	12/17/02	12/24/02	7	7625	7655	30	57600	8229	51.0
12/24/02	37614	7655	12/24/02	12/31/02	7	7655	7691	36	69120	9874	48.6
12/31/02	37621	7691	12/31/02	1/6/03	6	7691	7724	33	63360	10560	47.8
1/6/03	37627	7724	1/6/03	1/13/03	7	7724	7768	44	84480	12069	47.4
1/13/03	37634	7768	1/13/03	1/21/03	8	7768	7801	33	63360	7920	46.8
1/21/03	37642	7801	1/21/03	1/27/03	6	7801	7844	43	82560	13760	38.6
1/27/03	37648	7844	1/27/03	2/6/03	10	7844	7889	45	86400	8640	51.2
2/6/03	37658	7889	2/6/03	2/13/03	7	7889	7930	41	78720	11246	41.9
2/13/03	37665	7930	2/13/03	2/20/03	7	7930	7972	42	80640	11520	53.9
2/20/03	37672	7972	2/20/03	2/27/03	7	7972	8016	44	84480	12069	40.4
2/27/03	37679	8016	2/27/03	3/6/03	7	8016	8054	38	72960	10423	46.1
3/6/03	37686	8054	3/6/03	3/14/03	8	8054	8087	33	63360	7920	59.7
3/14/03	37694	8087	3/14/03	3/24/03	10	8087	8122	35	67200	6720	58.1
3/24/03	37704	8122	3/24/03	4/1/03	8	8122	8153	31	59520	7440	59.8
4/1/03	37712	8153	4/1/03	4/7/03	6	8153	8185	32	61440	10240	59.0



11.2.3.1.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 1
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = Mean

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 0

Y1 column number = 6

X1 column number = 0 (unused)

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

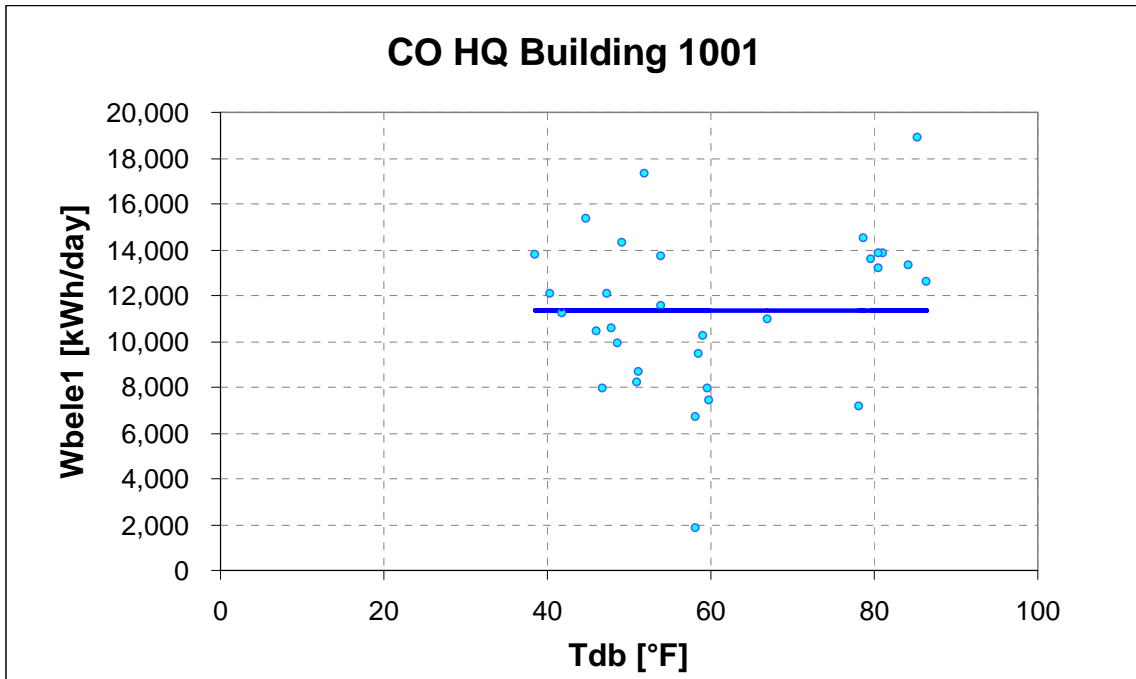
Regression Results

N = 31

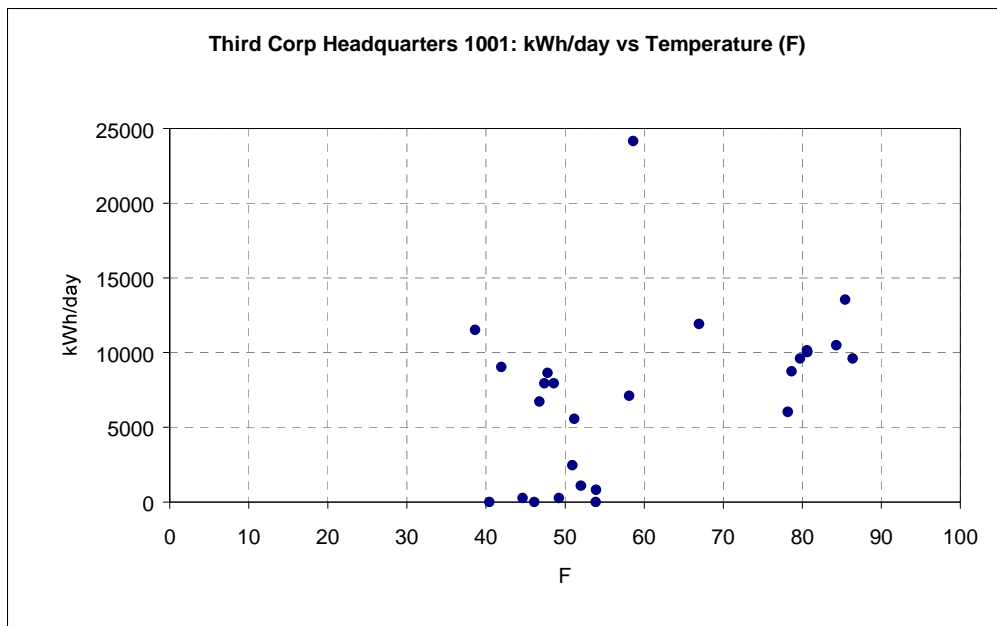
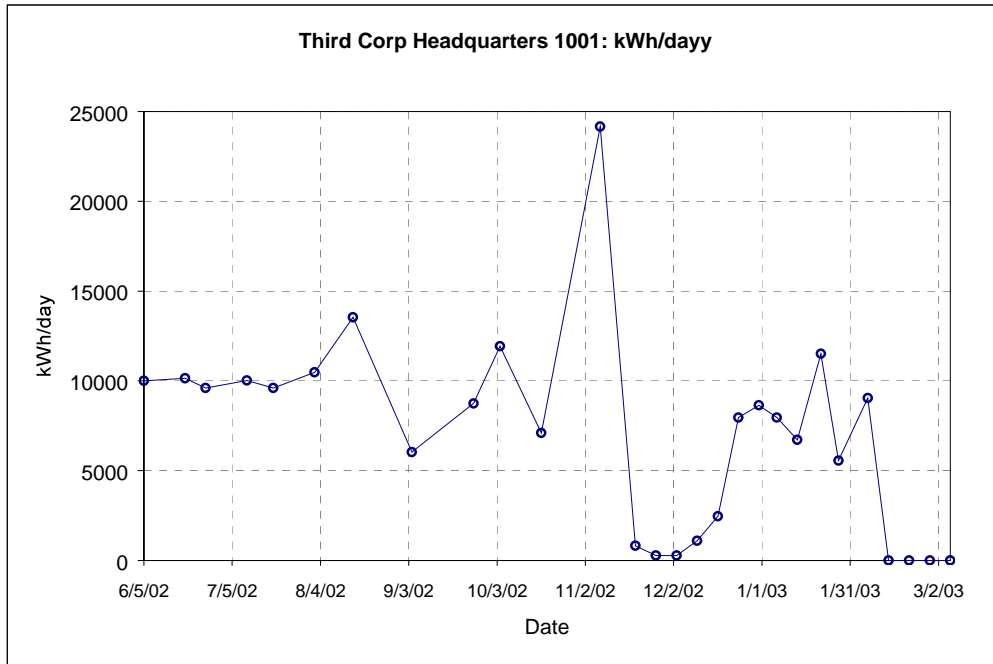
Ymean = 11367.796

StdDev = 3464.741

CV-StDev = 30.479 %



1001 Elec 2		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									1920	24160	
6/5/02	37412	2953	6/5/02	6/19/02	14	2953	3026	73	140160	10011	81.1
6/19/02	37426	3026	6/19/02	6/26/02	7	3026	3063	37	71040	10149	80.6
6/26/02	37433	3063	6/26/02	7/10/02	14	3063	3133	70	134400	9600	79.7
7/10/02	37447	3133	7/10/02	7/19/02	9	3133	3180	47	90240	10027	80.6
7/19/02	37456	3180	7/19/02	8/2/02	14	3180	3250	70	134400	9600	86.4
8/2/02	37470	3250	8/2/02	8/15/02	13	3250	3321	71	136320	10486	84.3
8/15/02	37483	3321	8/15/02	9/4/02	20	3321	3462	141	270720	13536	85.4
9/4/02	37503	3462	9/4/02	9/25/02	21	3462	3528	66	126720	6034	78.2
9/25/02	37524	3528	9/25/02	10/4/02	9	3528	3569	41	78720	8747	78.7
10/4/02	37533	3569	10/4/02	10/18/02	14	3569	3656	87	167040	11931	66.9
					2						
10/18/02	37547	3656	10/18/02	11/7/02	20	3656	3730	74	142080	7104	58.1
11/7/02	37567	3730	11/7/02	11/19/02	12	3730	3881	151	289920	24160	58.6
					2						
11/19/02	37579	3881	11/19/02	11/26/02	7	3881	3884	3	5760	823	53.9
					2						
11/26/02	37586	3884	11/26/02	12/3/02	7	3884	3885	1	1920	274	49.2
12/3/02	37593	3885	12/3/02	12/10/02	7	3885	3886	1	1920	274	44.7
					2						
12/10/02	37600	3886	12/10/02	12/17/02	7	3886	3890	4	7680	1097	52.0
					2						
12/17/02	37607	3890	12/17/02	12/24/02	7	3890	3899	9	17280	2469	51.0
					2						
12/24/02	37614	3899	12/24/02	12/31/02	7	3899	3928	29	55680	7954	48.6
					2						
12/31/02	37621	3928	12/31/02	1/6/03	6	3928	3955	27	51840	8640	47.8
1/6/03	37627	3955	1/6/03	1/13/03	7	3955	3984	29	55680	7954	47.4
1/13/03	37634	3984	1/13/03	1/21/03	8	3984	4012	28	53760	6720	46.8
1/21/03	37642	4012	1/21/03	1/27/03	6	4012	4048	36	69120	11520	38.6
1/27/03	37648	4048	1/27/03	2/6/03	10	4048	4077	29	55680	5568	51.2
2/6/03	37658	4077	2/6/03	2/13/03	7	4077	4110	33	63360	9051	41.9
2/13/03	37665	4110	2/13/03	2/20/03	7	4110	-	-	-	-	53.9
2/20/03	37672		2/20/03	2/27/03	7	-	-	-	-	-	40.4
2/27/03	37679		2/27/03	3/6/03	7	-	-	-	-	-	46.1
3/6/03	37686		3/6/03	3/14/03	8	-	-	-	-	-	59.7
3/14/03	37694										58.1
3/24/03	37704										59.8
4/1/03	37712										59.0



11.2.3.1.2. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 1
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = Mean

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 0

Y1 column number = 6

X1 column number = 0 (unused)

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

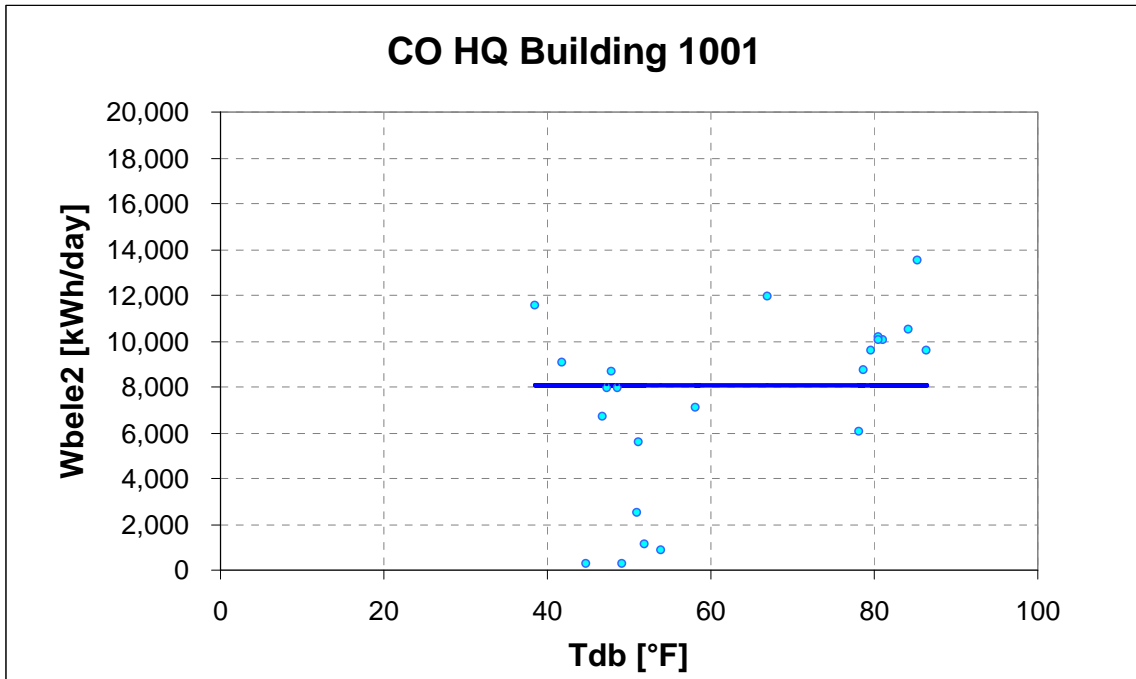
Regression Results

N = 24

Ymean = 8072.100

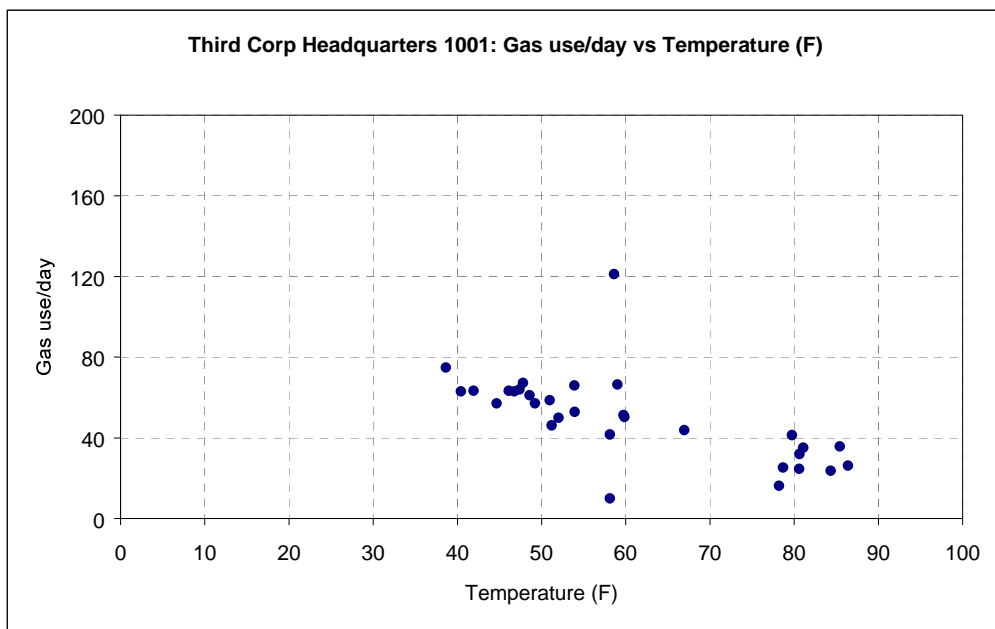
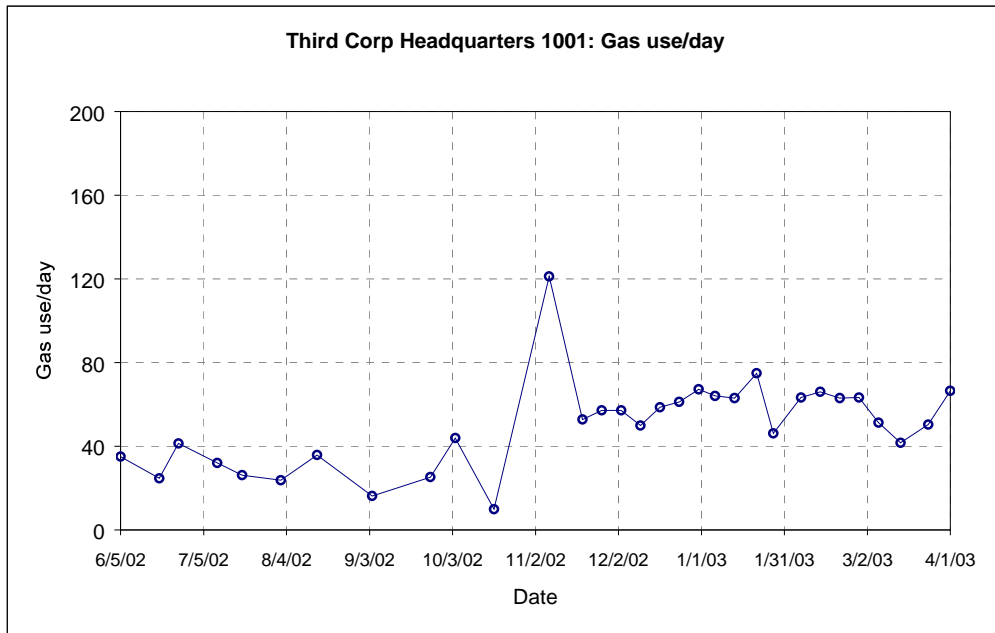
StdDev = 5137.300

CV-StDev = 63.643 %



11.2.3.2. Natural Gas From Manual Readings

1001 Gas		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Use per period	Use per day	avg temp(F)
6/5/02	37412	5458	6/5/02	6/19/02	14	5458	5949	491	35	81.1
6/19/02	37426	5949	6/19/02	6/26/02	7	5949	6122	173	25	80.6
6/26/02	37433	6122	6/26/02	7/10/02	14	6122	6700	578	41	79.7
7/10/02	37447	6700	7/10/02	7/19/02	9	6700	6988	288	32	80.6
7/19/02	37456	6988	7/19/02	8/2/02	14	6988	7354	366	26	86.4
8/2/02	37470	7354	8/2/02	8/15/02	13	7354	7662	308	24	84.3
8/15/02	37483	7662	8/15/02	9/4/02	20	7662	8378	716	36	85.4
9/4/02	37503	8378	9/4/02	9/25/02	21	8378	8719	341	16	78.2
9/25/02	37524	8719	9/25/02	10/4/02	9	8719	8947	228	25	78.7
10/4/02	37533	8947	10/4/02	10/18/02	14	8947	9561	614	44	66.9
10/18/02	37547	9561	10/18/02	11/7/02	20	9561	9760	199	10	58.1
11/7/02	37567	9760	11/7/02	11/19/02	12	9760	11215	1455	121	58.6
11/19/02	37579	11215	11/19/02	11/26/02	7	11215	11585	370	53	53.9
11/26/02	37586	11585	11/26/02	12/3/02	7	11585	11985	400	57	49.2
12/3/02	37593	11985	12/3/02	12/10/02	7	11985	12385	400	57	44.7
12/10/02	37600	12385	12/10/02	12/17/02	7	12385	12735	350	50	52.0
12/17/02	37607	12735	12/17/02	12/24/02	7	12735	13146	411	59	51.0
12/24/02	37614	13146	12/24/02	12/31/02	7	13146	13574	428	61	48.6
12/31/02	37621	13574	12/31/02	1/6/03	6	13574	13977	403	67	47.8
1/6/03	37627	13977	1/6/03	1/13/03	7	13977	14425	448	64	47.4
1/13/03	37634	14425	1/13/03	1/21/03	8	14425	14929	504	63	46.8
1/21/03	37642	14929	1/21/03	1/27/03	6	14929	15378	449	75	38.6
1/27/03	37648	15378	1/27/03	2/6/03	10	15378	15839	461	46	51.2
2/6/03	37658	15839	2/6/03	2/13/03	7	15839	16282	443	63	41.9
2/13/03	37665	16282	2/13/03	2/20/03	7	16282	16744	462	66	53.9
2/20/03	37672	16744	2/20/03	2/27/03	7	16744	17185	441	63	40.4
2/27/03	37679	17185	2/27/03	3/6/03	7	17185	17628	443	63	46.1
3/6/03	37686	17628	3/6/03	3/14/03	8	17628	18038	410	51	59.7
3/14/03	37694	18038	3/14/03	3/24/03	10	18038	18454	416	42	58.1
3/24/03	37704	18454	3/24/03	4/1/03	8	18454	18857	403	50	59.8
4/1/03	37712	18857	4/1/03	4/7/03	6	18857	19256	399	67	59.0



11.2.3.2.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Heating

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 31

R2 = 0.422

AdjR2 = 0.422

RMSE = 16.6543

CV-RMSE = 33.248%

p = -0.406

DW = 2.777 (p>0)

N1 = 28

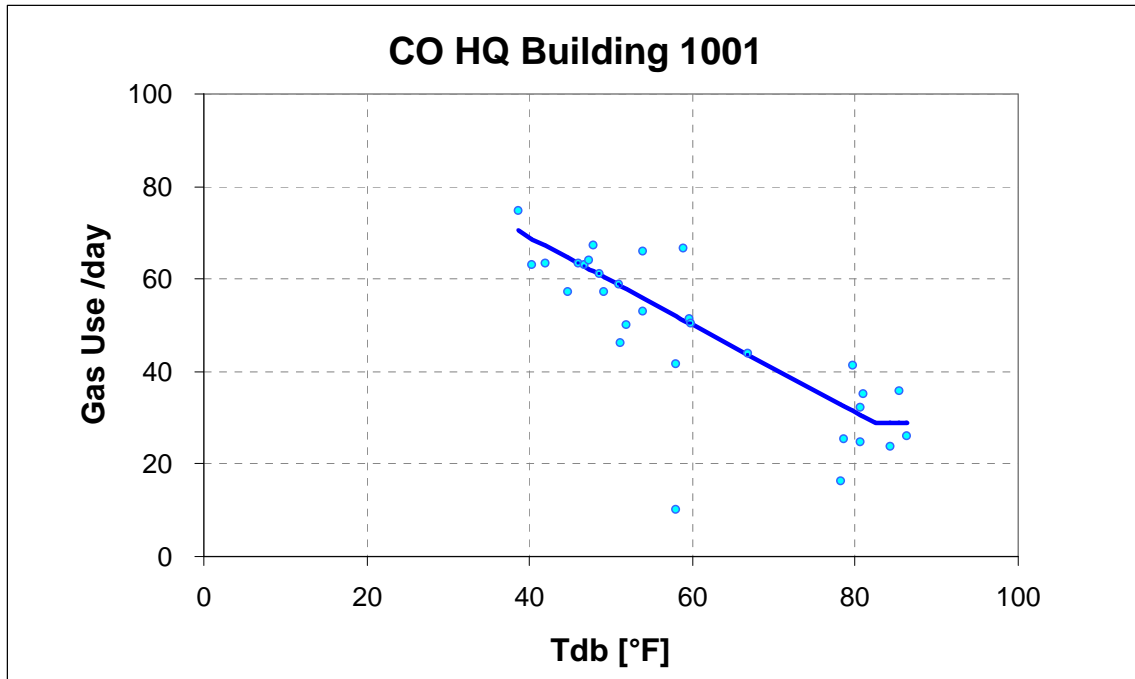
N2 = 3

Ycp = 28.7489 (5.5170)

LS = -0.9458 (0.2054)

RS = 0.0000 (0.0000)

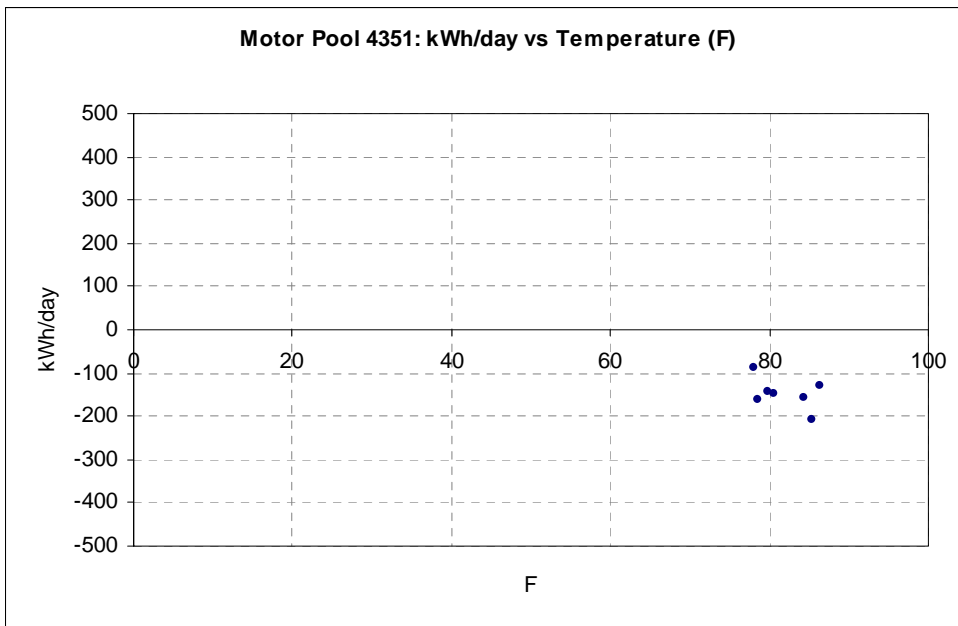
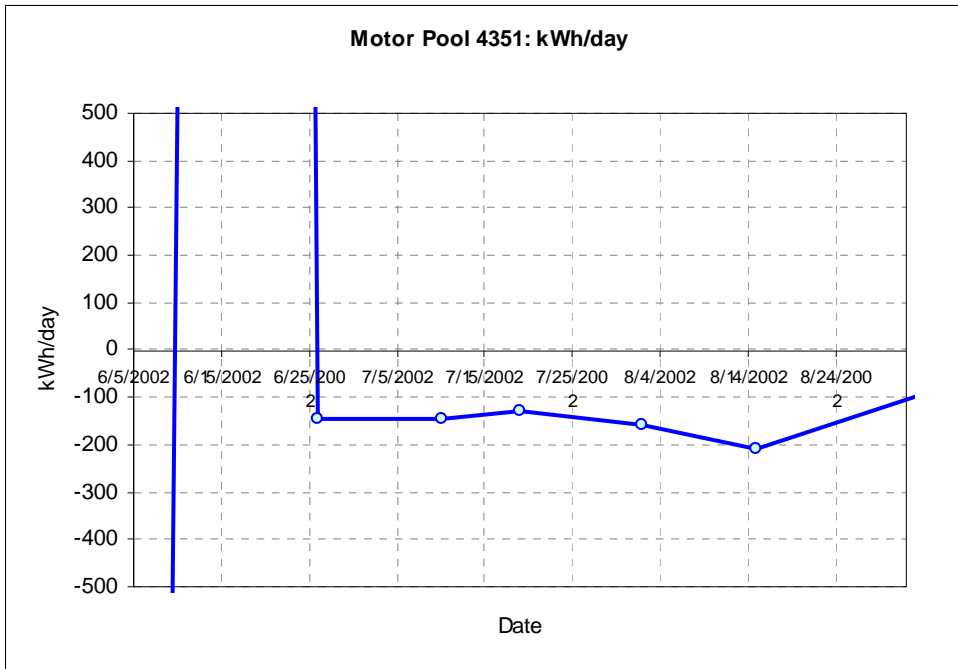
Xcp = 82.5760 (0.9560)



11.2.4. 4351 Motor Pool

11.2.4.1. Electricity Use From Manual Readings

4351 Elec		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									120	17006	
6/5/2002	37412	2035	6/5/2002	6/19/2002	14	2035	1019	-1016	-121920	-8709	81.1
6/19/2002	37426	1019	6/19/2002	6/26/2002	7	1019	2011	992	119040	17006	80.6
6/26/2002	37433	2011	6/26/2002	7/10/2002	14	2011	1994	-17	-2040	-146	79.7
7/10/2002	37447	1994	7/10/2002	7/19/2002	9	1994	1983	-11	-1320	-147	80.6
7/19/2002	37456	1983	7/19/2002	8/2/2002	14	1983	1968	-15	-1800	-129	86.4
8/2/2002	37470	1968	8/2/2002	8/15/2002	13	1968	1951	-17	-2040	-157	84.3
8/15/2002	37483	1951	8/15/2002	9/4/2002	20	1951	1916	-35	-4200	-210	85.4
9/4/2002	37503	1916	9/4/2002	9/25/2002	21	1916	1901	-15	-1800	-86	78.2
9/25/2002	37524	1901	9/25/2002	10/4/2002	9	1901	1889	-12	-1440	-160	78.7
10/4/2002	37533	1889	10/4/2002	10/18/2002	14	1889	1872	-17	-2040	-146	66.9
10/18/2002	37547	1872	10/18/2002	11/7/2002	20	1872	1856	-16	-1920	-96	58.1
11/7/2002	37567	1856	11/7/2002	11/19/2002	12	1856	1845	-11	-1320	-110	59.1
11/19/2002	37579	1845	11/19/2002	1/0/1900	#####	1845	0	-1845	-221400	6	0.0

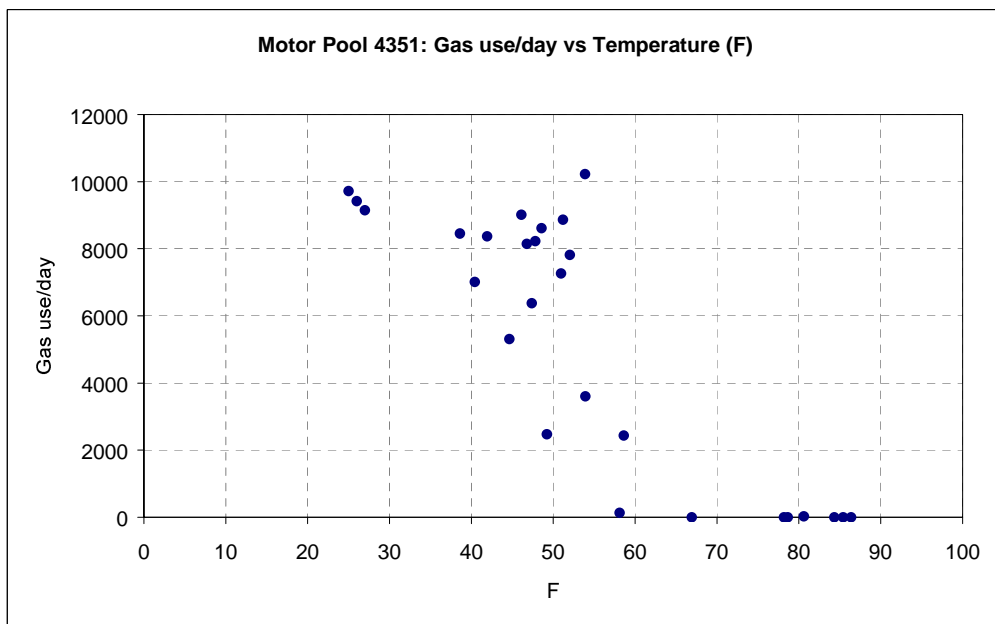
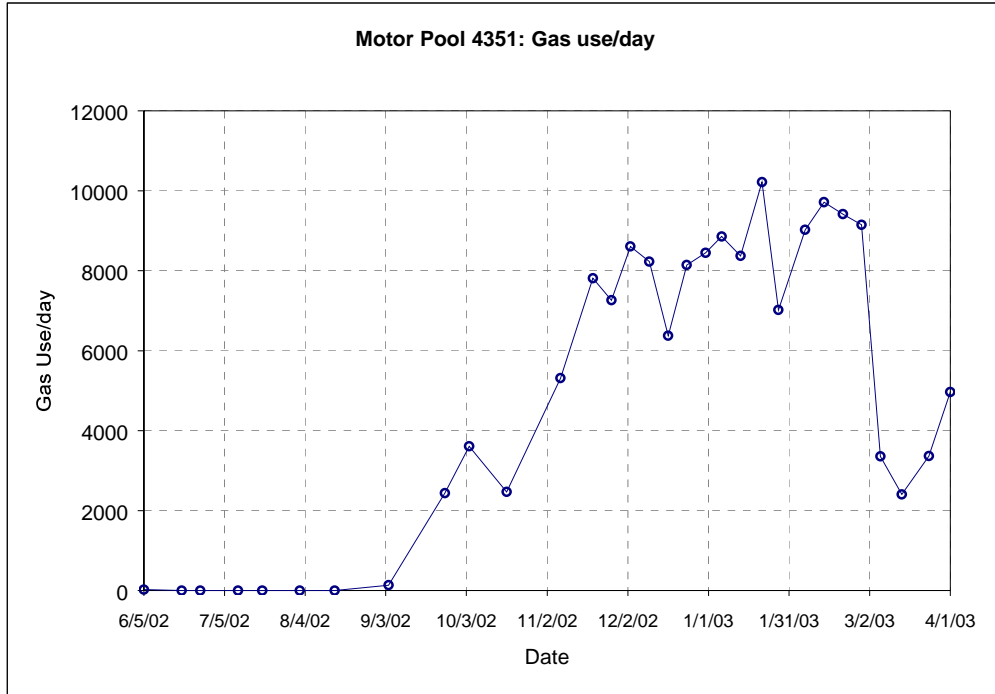


11.2.4.1.1. Baseline Model From Manual Readings

No baseline models are available from this site.

11.2.4.2. Natural Gas From Manual Readings

4351 Gas		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									1		
6/5/02	37412	827904	6/5/02	6/19/02	14	827904	828276	372	372	27	81.1
6/19/02	37426	828276	6/19/02	6/26/02	7	828276	828278	2	2	0	80.6
6/26/02	37433	828278	6/26/02	7/10/02	14	828278	828283	5	5	0	79.7
7/10/02	37447	828283	7/10/02	7/19/02	9	828283	828286	3	3	0	80.6
7/19/02	37456	828286	7/19/02	8/2/02	14	828286	828292	6	6	0	86.4
8/2/02	37470	828292	8/2/02	8/15/02	13	828292	828298	6	6	0	84.3
8/15/02	37483	828298	8/15/02	9/4/02	20	828298	828310	12	12	1	85.4
9/4/02	37503	828310	9/4/02	9/25/02	21	828310	831075	2765	2765	132	78.2
9/25/02	37524	831075	9/25/02	10/4/02	9	831075	852972	21897	21897	2433	78.7
10/4/02	37533	852972	10/4/02	10/18/02	14	852972	903432	50460	50460	3604	66.9
10/18/02	37547	903432	10/18/02	11/7/02	20	903432	952833	49401	49401	2470	58.1
11/7/02	37567	952833	11/7/02	11/19/02	12	952833	1016570	63737	63737	5311	58.6
11/19/02	37579	1016570	11/19/02	11/26/02	7	1016570	1071254	54684	54684	7812	53.9
11/26/02	37586	1071254	11/26/02	12/3/02	7	1071254	1122104	50850	50850	7264	49.2
12/3/02	37593	1122104	12/3/02	12/10/02	7	1122104	1182360	60256	60256	8608	44.7
12/10/02	37600	1182360	12/10/02	12/17/02	7	1182360	1239969	57609	57609	8230	52.0
12/17/02	37607	1239969	12/17/02	12/24/02	7	1239969	1284587	44618	44618	6374	51.0
12/24/02	37614	1284587	12/24/02	12/31/02	7	1284587	1341578	56991	56991	8142	48.6
12/31/02	37621	1341578	12/31/02	1/6/03	6	1341578	1392266	50688	50688	8448	47.8
1/6/03	37627	1392266	1/6/03	1/13/03	7	1392266	1454286	62020	62020	8860	47.4
1/13/03	37634	1454286	1/13/03	1/21/03	8	1454286	1521259	66973	66973	8372	46.8
1/21/03	37642	1521259	1/21/03	1/27/03	6	1521259	1582568	61309	61309	10218	38.6
1/27/03	37648	1582568	1/27/03	2/6/03	10	1582568	1652722	70154	70154	7015	51.2
2/6/03	37658	1652722	2/6/03	2/13/03	7	1652722	1715850	63128	63128	9018	41.9
2/13/03	37665	1715850	2/13/03	2/20/03	7	1715850	1783859	68009	68009	9716	53.9
2/20/03	37672	1783859	2/20/03	2/27/03	7	1783859	1849744	65885	65885	9412	40.4
2/27/03	37679	1849744	2/27/03	3/6/03	7	1849744	1913773	64029	64029	9147	46.1
3/6/03	37686	1913773	3/6/03	3/14/03	8	1913773	1940648	26875	26875	3359	59.7
3/14/03	37694	1940648	3/14/03	3/24/03	10	1940648	1964669	24021	24021	2402	58.1
3/24/03	37704	1964669	3/24/03	4/1/03	8	1964669	1991548	26879	26879	3360	59.8
4/1/03	37712	1991548	4/1/03	4/7/03	6	1991548	2021325	29777	29777	4963	59.0



11.2.4.2.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Heating

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

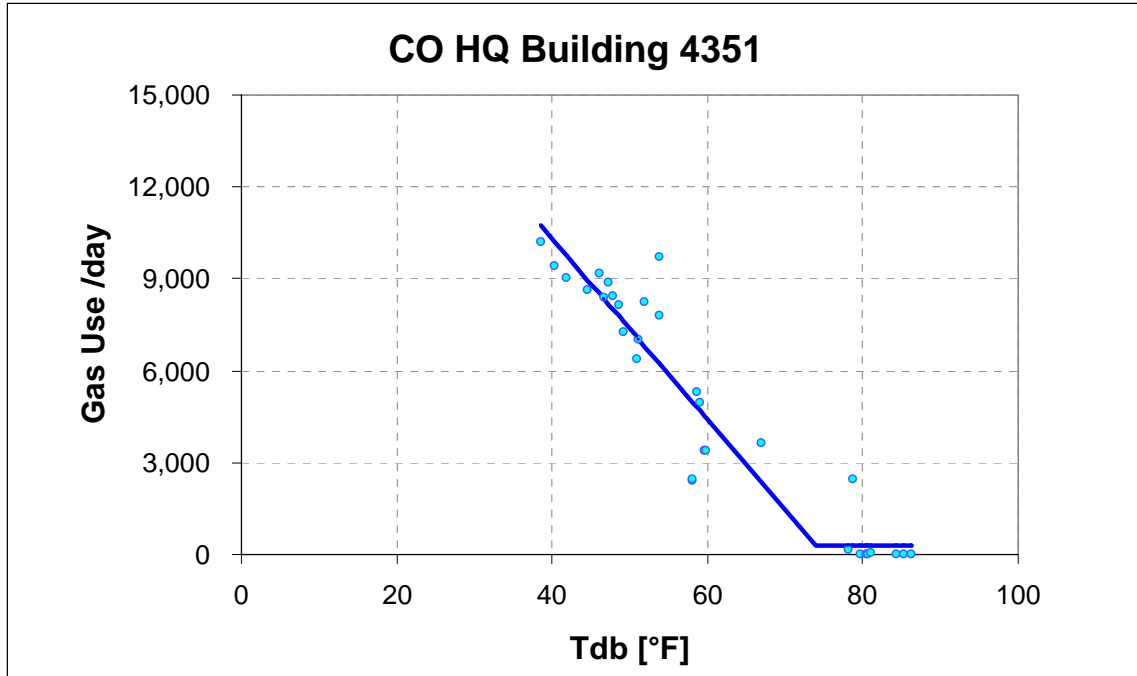
X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

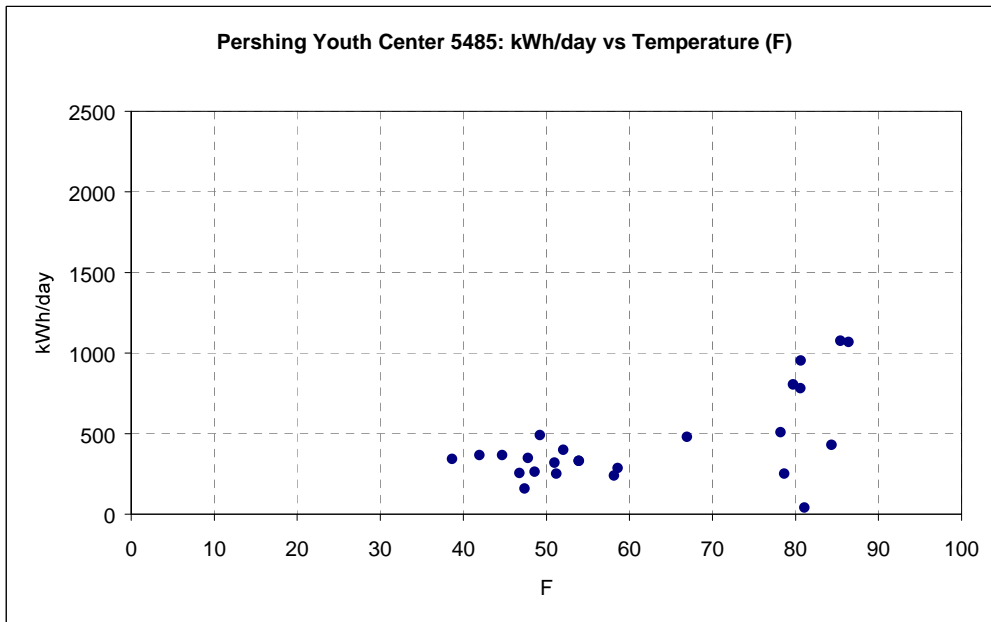
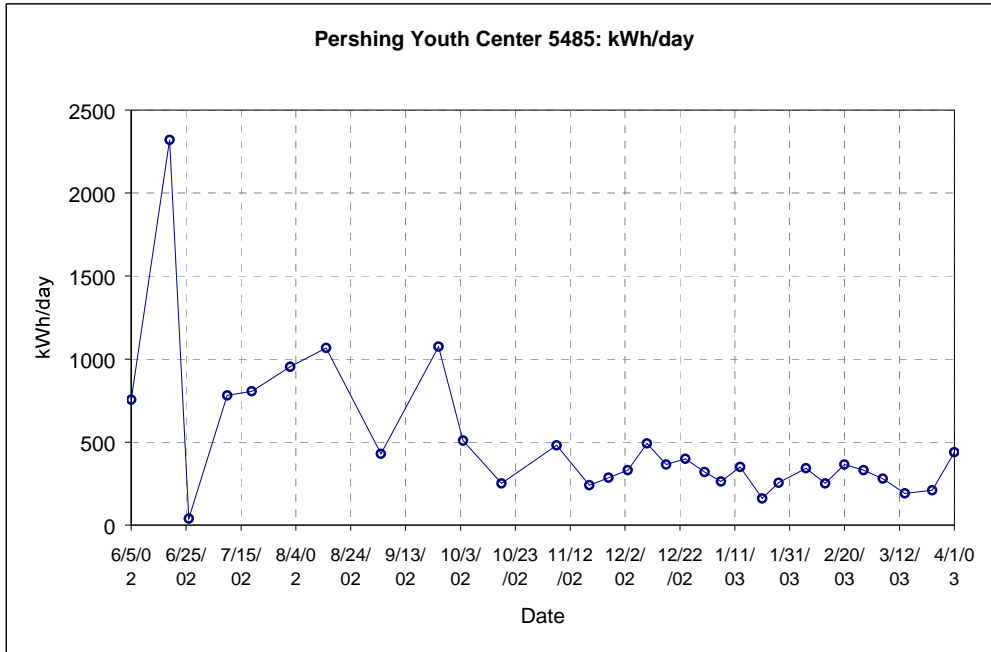
 N = 31
 R2 = 0.898
 AdjR2 = 0.898
 RMSE = 1213.0898
 CV-RMSE = 24.309%
 p = -0.079
 DW = 2.154 (p>0)
 N1 = 22
 N2 = 9
 Ycp = 295.3830 (365.8187)
 LS = -295.0465 (18.4672)
 RS = 0.0000 (0.0000)
 Xcp = 73.9576 (0.9548)



11.2.5. 5485 Pershing Youth Center

11.2.5.1. Electricity Use From Manual Readings

5485 Elec		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									80	2320	
6/5/02	37412	23280	6/5/02	6/19/02	14	23280	23412	132	10560	754	81.1
6/19/02	37426	23412	6/19/02	6/26/02	7	23412	23615	203	16240	2320	80.6
6/26/02	37433	23615	6/26/02	7/10/02	14	23615	23622	7	560	40	79.7
7/10/02	37447	23622	7/10/02	7/19/02	9	23622	23710	88	7040	782	80.6
7/19/02	37456	23710	7/19/02	8/2/02	14	23710	23851	141	11280	806	86.4
8/2/02	37470	23851	8/2/02	8/15/02	13	23851	24006	155	12400	954	84.3
8/15/02	37483	24006	8/15/02	9/4/02	20	24006	24273	267	21360	1068	85.4
9/4/02	37503	24273	9/4/02	9/25/02	21	24273	24386	113	9040	430	78.2
9/25/02	37524	24386	9/25/02	10/4/02	9	24386	24507	121	9680	1076	78.7
10/4/02	37533	24507	10/4/02	10/18/02	14	24507	24596	89	7120	509	66.9
10/18/02	37547	24596	10/18/02	11/7/02	20	24596	24659	63	5040	252	58.1
11/7/02	37567	24659	11/7/02	11/19/02	12	24659	24731	72	5760	480	58.6
11/19/02	37579	24731	11/19/02	11/26/02	7	24731	24752	21	1680	240	53.9
11/26/02	37586	24752	11/26/02	12/3/02	7	24752	24777	25	2000	286	49.2
12/3/02	37593	24777	12/3/02	12/10/02	7	24777	24806	29	2320	331	44.7
12/10/02	37600	24806	12/10/02	12/17/02	7	24806	24849	43	3440	491	52.0
12/17/02	37607	24849	12/17/02	12/24/02	7	24849	24881	32	2560	366	51.0
12/24/02	37614	24881	12/24/02	12/31/02	7	24881	24916	35	2800	400	48.6
12/31/02	37621	24916	12/31/02	1/6/03	6	24916	24940	24	1920	320	47.8
1/6/03	37627	24940	1/6/03	1/13/03	7	24940	24963	23	1840	263	47.4
1/13/03	37634	24963	1/13/03	1/21/03	8	24963	24998	35	2800	350	46.8
1/21/03	37642	24998	1/21/03	1/27/03	6	24998	25010	12	960	160	38.6
1/27/03	37648	25010	1/27/03	2/6/03	10	25010	25042	32	2560	256	51.2
2/6/03	37658	25042	2/6/03	2/13/03	7	25042	25072	30	2400	343	41.9
2/13/03	37665	25072	2/13/03	2/20/03	7	25072	25094	22	1760	251	53.9
2/20/03	37672	25094	2/20/03	2/27/03	7	25094	25126	32	2560	366	40.4
2/27/03	37679	25126	2/27/03	3/6/03	7	25126	25155	29	2320	331	46.1
3/6/03	37686	25155	3/6/03	3/14/03	8	25155	25183	28	2240	280	59.7
3/14/03	37694	25183	3/14/03	3/24/03	10	25183	25207	24	1920	192	58.1
3/24/03	37704	25207	3/24/03	4/1/03	8	25207	25228	21	1680	210	59.8
4/1/03	37712	25228	4/1/03	4/7/03	6	25228	25261	33	2640	440	59.0



11.2.5.1.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 3
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

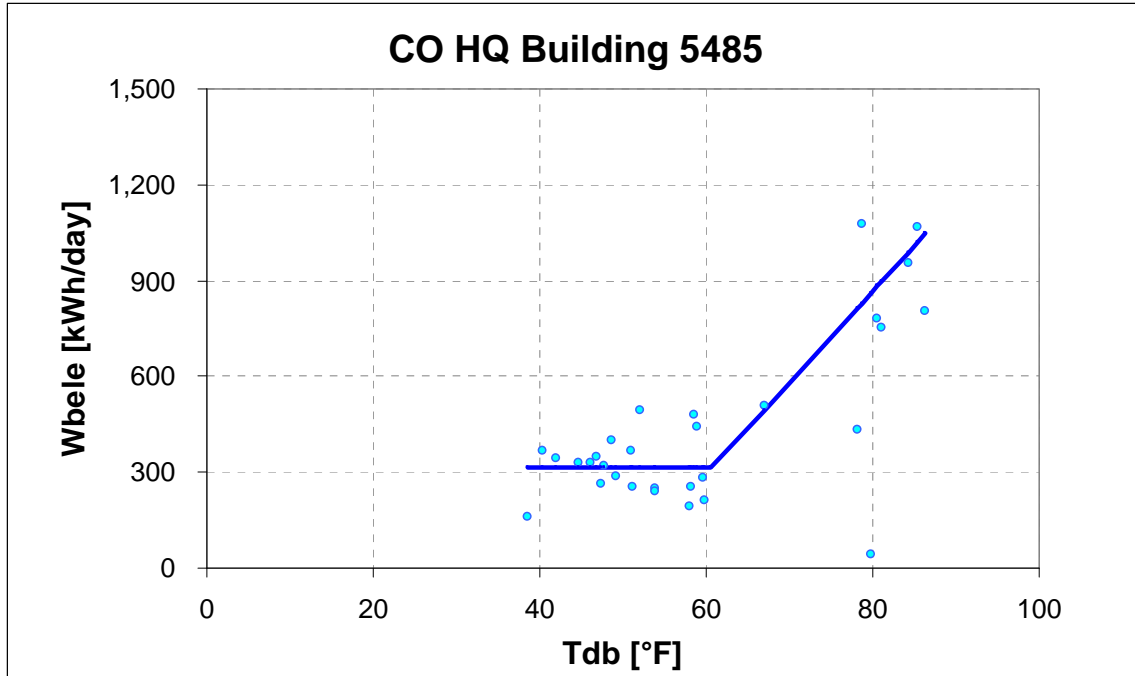
```

*****
ASHRAE INVERSE MODELING TOOLKIT (1.9)
*****
Output file name = IMT.Out
*****
Input data file name = DAILY2.dat
Model type =      3P Cooling
Grouping column No = 5
Value for grouping = 1
Residual mode = 1
# of X(Indep.) Var = 1
Y1 column number = 6
X1 column number = 9
X2 column number = 0 (unused)
X3 column number = 0 (unused)
X4 column number = 0 (unused)
X5 column number = 0 (unused)
X6 column number = 0 (unused)
*****
  
```

Regression Results

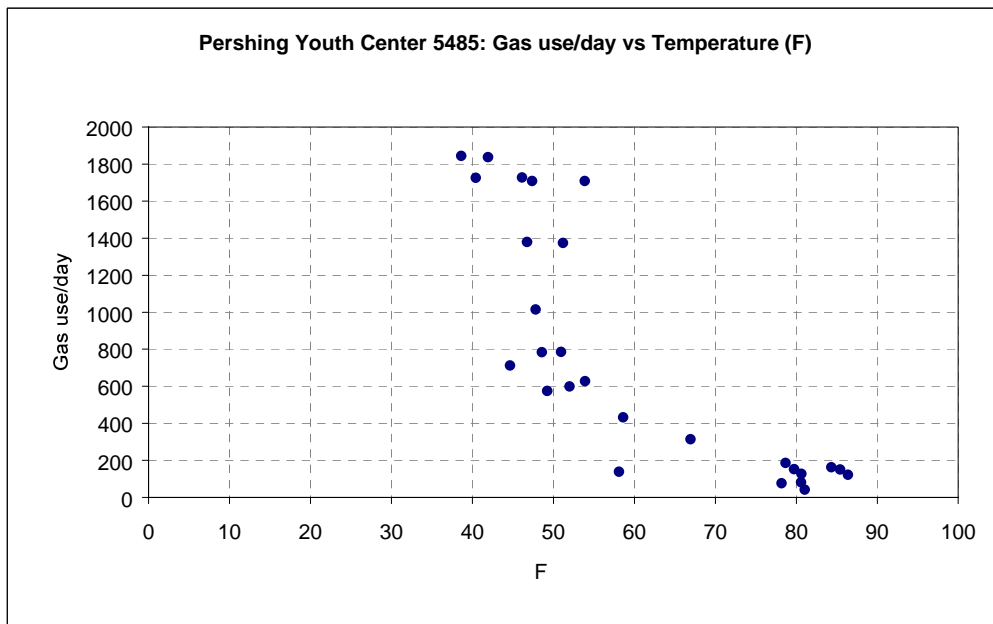
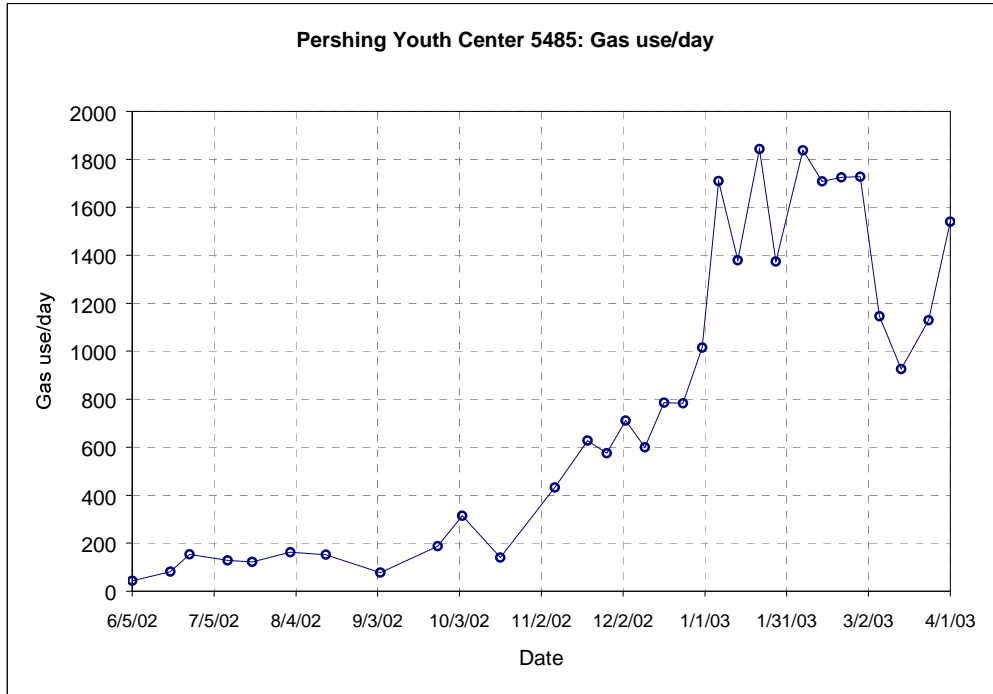
```

-----
N = 31
R2 = 0.419
AdjR2 = 0.419
RMSE = 332.0483
CV-RMSE = 67.071%
p = -0.435
DW = 2.853 (p>0)
N1 = 21
N2 = 10
Ycp = 315.6190 ( 71.3679)
LS = 0.0000 ( 0.0000)
RS = 28.3804 ( 6.1997)
Xcp = 60.5904 ( 0.9548)
-----
  
```



11.2.5.2. Natural Gas From Manual Readings

5485 Gas	Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)	
								1			
6/5/02	37412	3120856	06/05/02	06/19/02	14	3120856	3121458	602	602	43	81.1
6/19/02	37426	3121458	06/19/02	06/26/02	7	3121458	3122031	573	573	82	80.6
6/26/02	37433	3122031	06/26/02	07/10/02	14	3122031	3124173	2142	2142	153	79.7
7/10/02	37447	3124173	07/10/02	07/19/02	9	3124173	3125323	1150	1150	128	80.6
7/19/02	37456	3125323	07/19/02	08/02/02	14	3125323	3127030	1707	1707	122	86.4
8/2/02	37470	3127030	08/02/02	08/15/02	13	3127030	3129141	2111	2111	162	84.3
8/15/02	37483	3129141	08/15/02	09/04/02	20	3129141	3132167	3026	3026	151	85.4
9/4/02	37503	3132167	09/04/02	09/25/02	21	3132167	3133783	1616	1616	77	78.2
9/25/02	37524	3133783	09/25/02	10/04/02	9	3133783	3135468	1685	1685	187	78.7
10/4/02	37533	3135468	10/04/02	10/18/02	14	3135468	3139860	4392	4392	314	66.9
10/18/02	37547	3139860	10/18/02	11/07/02	20	3139860	3142650	2790	2790	140	58.1
11/7/02	37567	3142650	11/07/02	11/19/02	12	3142650	3147836	5186	5186	432	58.6
11/19/02	37579	3147836	11/19/02	11/26/02	7	3147836	3152227	4391	4391	627	53.9
11/26/02	37586	3152227	11/26/02	12/03/02	7	3152227	3156248	4021	4021	574	49.2
12/3/02	37593	3156248	12/03/02	12/10/02	7	3156248	3161230	4982	4982	712	44.7
12/10/02	37600	3161230	12/10/02	12/17/02	7	3161230	3165426	4196	4196	599	52.0
12/17/02	37607	3165426	12/17/02	12/24/02	7	3165426	3170926	5500	5500	786	51.0
12/24/02	37614	3170926	12/24/02	12/31/02	7	3170926	3176409	5483	5483	783	48.6
12/31/02	37621	3176409	12/31/02	01/06/03	6	3176409	3182496	6087	6087	1015	47.8
1/6/03	37627	3182496	01/06/03	01/13/03	7	3182496	3194457	11961	11961	1709	47.4
1/13/03	37634	3194457	01/13/03	01/21/03	8	3194457	3205487	11030	11030	1379	46.8
1/21/03	37642	3205487	01/21/03	01/27/03	6	3205487	3216547	11060	11060	1843	38.6
1/27/03	37648	3216547	01/27/03	02/06/03	10	3216547	3230284	13737	13737	1374	51.2
2/6/03	37658	3230284	02/06/03	02/13/03	7	3230284	3243148	12864	12864	1838	41.9
2/13/03	37665	3243148	02/13/03	02/20/03	7	3243148	3255105	11957	11957	1708	53.9
2/20/03	37672	3255105	02/20/03	02/27/03	7	3255105	3267181	12076	12076	1725	40.4
2/27/03	37679	3267181	02/27/03	03/06/03	7	3267181	3279270	12089	12089	1727	46.1
3/6/03	37686	3279270	03/06/03	03/14/03	8	3279270	3288438	9168	9168	1146	59.7
3/14/03	37694	3288438	03/14/03	03/24/03	10	3288438	3297696	9258	9258	926	58.1
3/24/03	37704	3297696	03/24/03	04/01/03	8	3297696	3306724	9028	9028	1129	59.8
4/1/03	37712	3306724	04/01/03	04/07/03	6	3306724	3315968	9244	9244	1541	59.0



11.2.5.2.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Heating

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 31

R2 = 0.654

AdjR2 = 0.654

RMSE = 380.3130

CV-RMSE = 46.914%

p = 0.691

DW = 0.482 (p>0)

N1 = 22

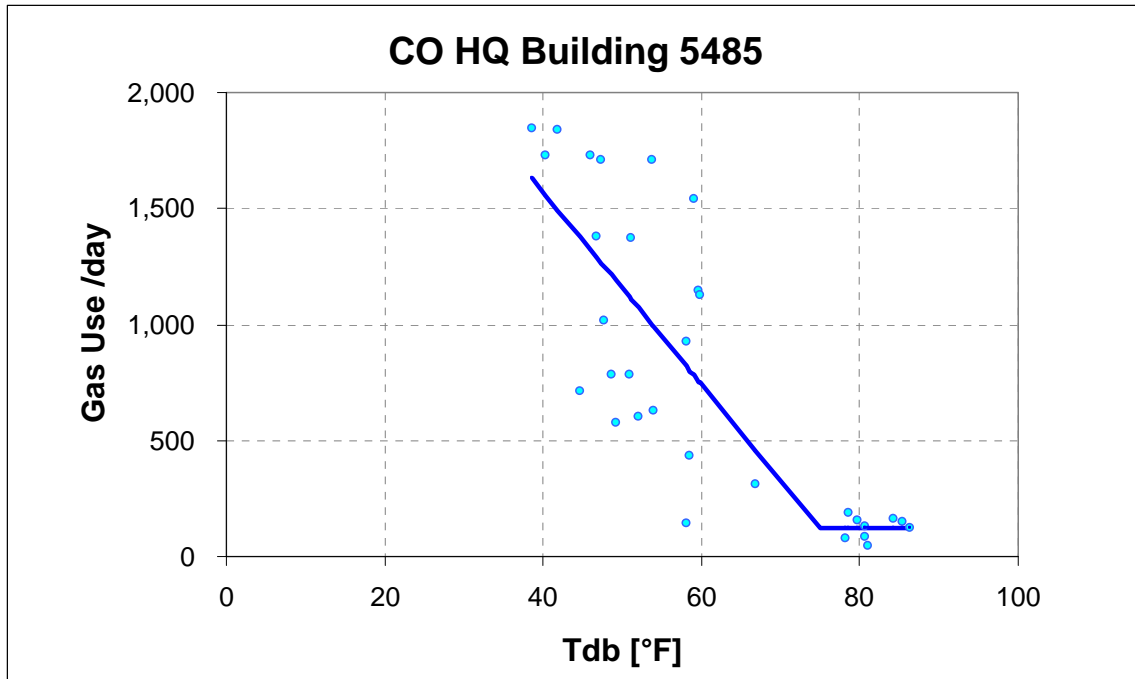
N2 = 9

Ycp = 121.9793 (115.4577)

LS = -41.5118 (5.6109)

RS = 0.0000 (0.0000)

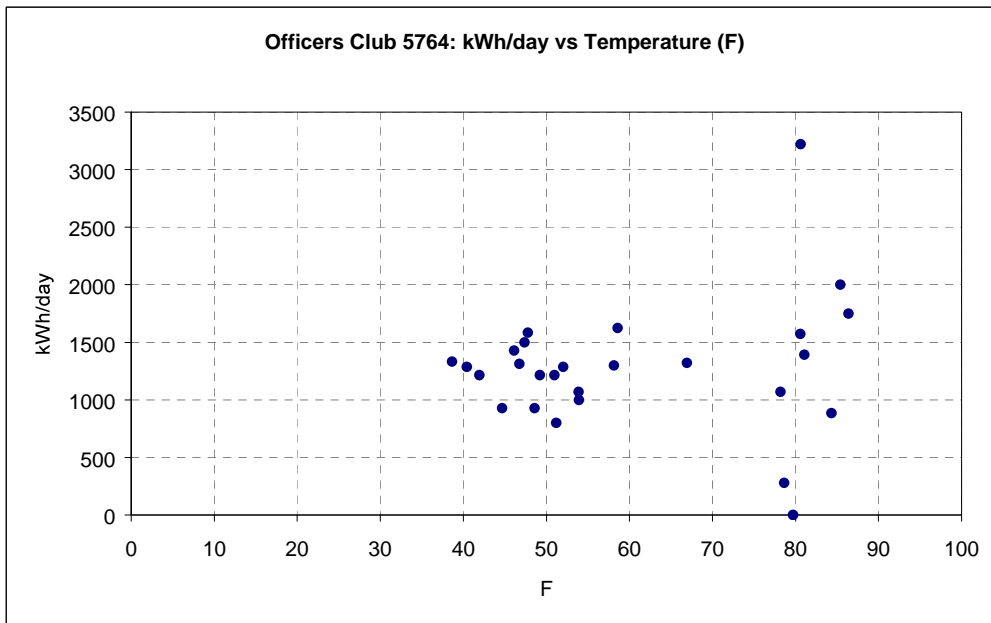
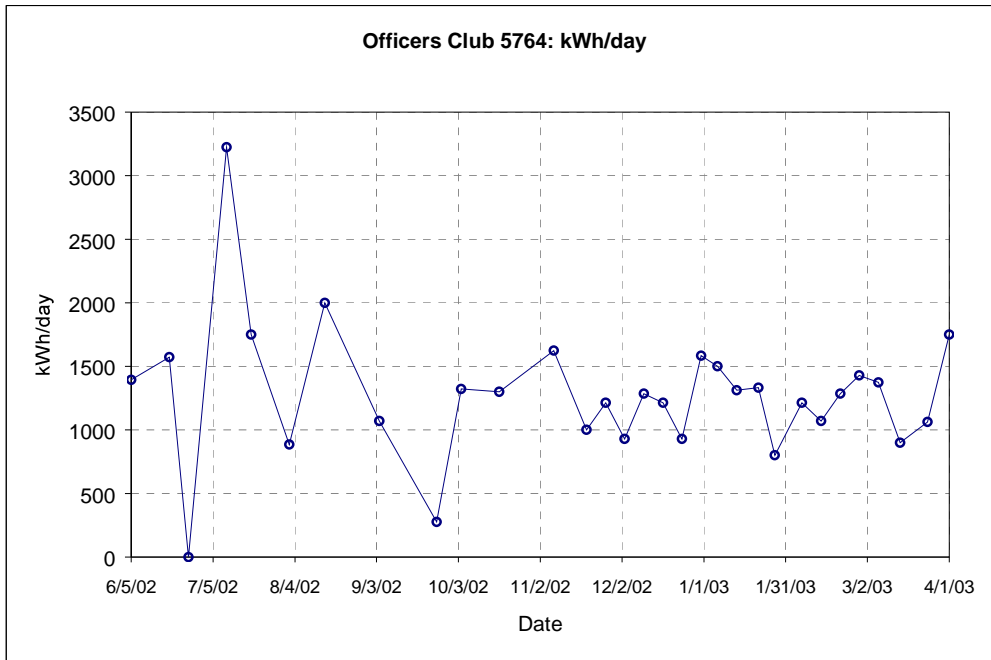
Xcp = 74.9124 (0.9548)



11.2.6. 5764 Officers Club

11.2.6.1. Electricity Use From Manual Readings

5764 Elec		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									500	3222	
6/5/02	37412	7100	6/5/02	6/19/02	14	7100	7139	39	19500	1393	81.1
6/19/02	37426	7139	6/19/02	6/26/02	7	7139	7161	22	11000	1571	80.6
6/26/02	37433	7161	6/26/02	7/10/02	14	7161	7161	0	0	0	79.7
7/10/02	37447	7161	7/10/02	7/19/02	9	7161	7219	58	29000	3222	80.6
7/19/02	37456	7219	7/19/02	8/2/02	14	7219	7268	49	24500	1750	86.4
8/2/02	37470	7268	8/2/02	8/15/02	13	7268	7291	23	11500	885	84.3
8/15/02	37483	7291	8/15/02	9/4/02	20	7291	7371	80	40000	2000	85.4
9/4/02	37503	7371	9/4/02	9/25/02	21	7371	7416	45	22500	1071	78.2
9/25/02	37524	7416	9/25/02	10/4/02	9	7416	7421	5	2500	278	78.7
10/4/02	37533	7421	10/4/02	10/18/02	14	7421	7458	37	18500	1321	66.9
					2						
10/18/02	37547	7458	10/18/02	11/7/02	20	7458	7510	52	26000	1300	58.1
11/7/02	37567	7510	11/7/02	11/19/02	12	7510	7549	39	19500	1625	58.6
					2						
11/19/02	37579	7549	11/19/02	11/26/02	7	7549	7563	14	7000	1000	53.9
					2						
11/26/02	37586	7563	11/26/02	12/3/02	7	7563	7580	17	8500	1214	49.2
12/3/02	37593	7580	12/3/02	12/10/02	7	7580	7593	13	6500	929	44.7
					2						
12/10/02	37600	7593	12/10/02	12/17/02	7	7593	7611	18	9000	1286	52.0
					2						
12/17/02	37607	7611	12/17/02	12/24/02	7	7611	7628	17	8500	1214	51.0
					2						
12/24/02	37614	7628	12/24/02	12/31/02	7	7628	7641	13	6500	929	48.6
					2						
12/31/02	37621	7641	12/31/02	1/6/03	6	7641	7660	19	9500	1583	47.8
1/6/03	37627	7660	1/6/03	1/13/03	7	7660	7681	21	10500	1500	47.4
1/13/03	37634	7681	1/13/03	1/21/03	8	7681	7702	21	10500	1313	46.8
1/21/03	37642	7702	1/21/03	1/27/03	6	7702	7718	16	8000	1333	38.6
1/27/03	37648	7718	1/27/03	2/6/03	10	7718	7734	16	8000	800	51.2
2/6/03	37658	7734	2/6/03	2/13/03	7	7734	7751	17	8500	1214	41.9
2/13/03	37665	7751	2/13/03	2/20/03	7	7751	7766	15	7500	1071	53.9
2/20/03	37672	7766	2/20/03	2/27/03	7	7766	7784	18	9000	1286	40.4
2/27/03	37679	7784	2/27/03	3/6/03	7	7784	7804	20	10000	1429	46.1
3/6/03	37686	7804	3/6/03	3/14/03	8	7804	7826	22	11000	1375	59.7
3/14/03	37694	7826	3/14/03	3/24/03	10	7826	7844	18	9000	900	58.1
3/24/03	37704	7844	3/24/03	4/1/03	8	7844	7861	17	8500	1063	59.8
4/1/03	37712	7861	4/1/03	4/7/03	6	7861	7882	21	10500	1750	59.0



11.2.6.1.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 1
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = Mean

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 0

Y1 column number = 6

X1 column number = 0 (unused)

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

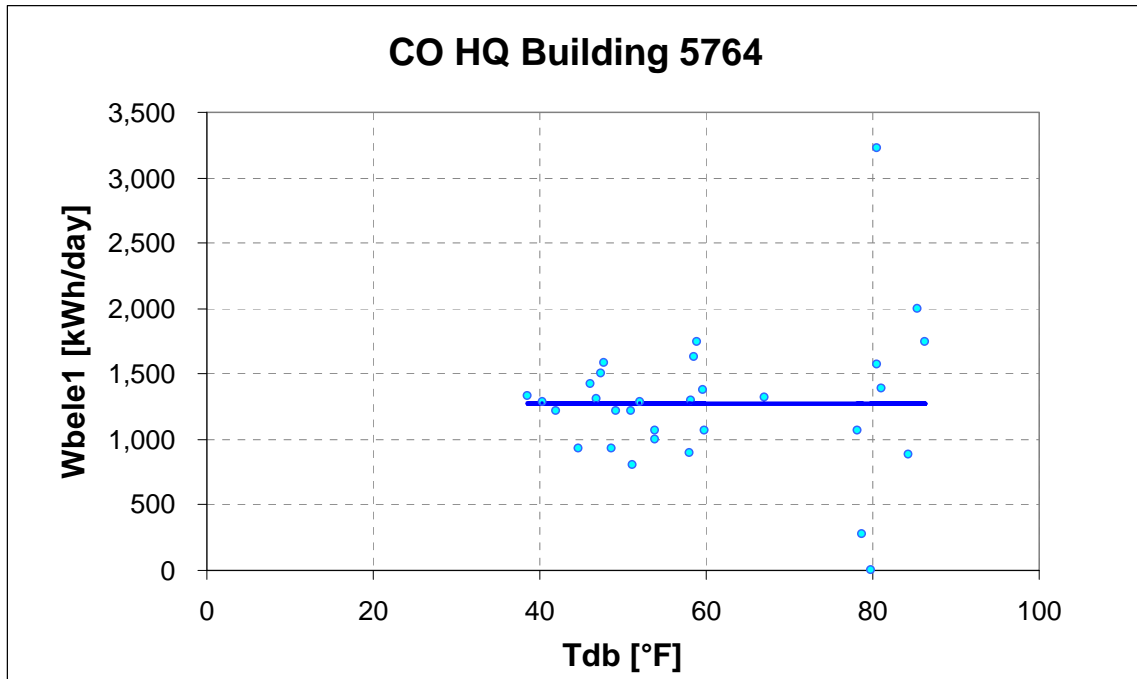
Regression Results

N = 31

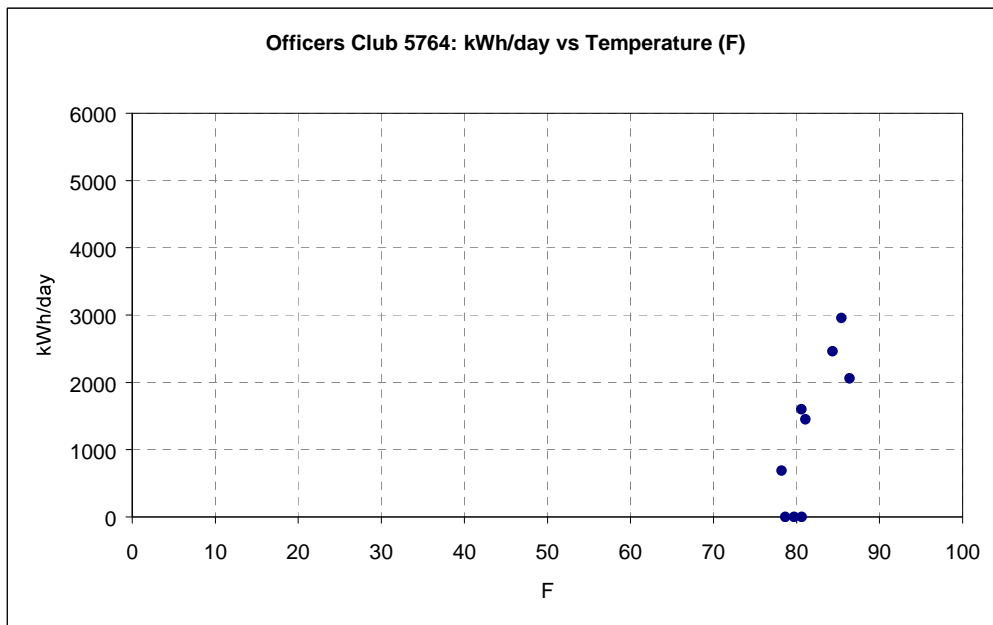
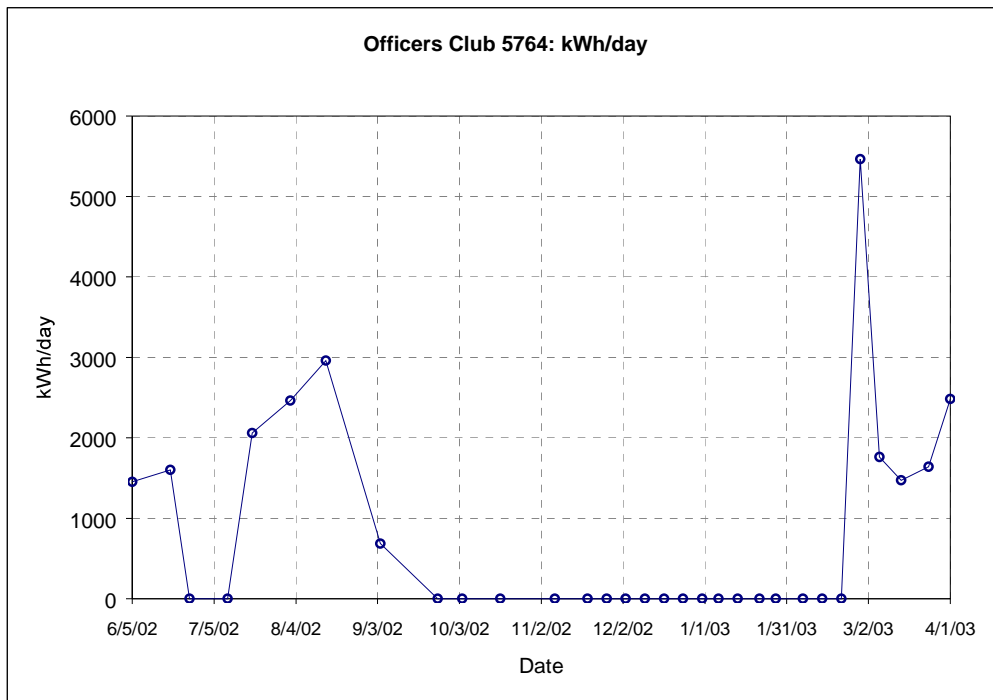
Ymean = 1277.576

StdDev = 540.776

CV-StDev = 42.328 %



5764 Elec 2		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp (F)
									160	5463	
6/5/02	37412	154	6/5/02	6/19/02	14	154	281	127	20320	1451	81.1
6/19/02	37426	281	6/19/02	6/26/02	7	281	351	70	11200	1600	80.6
6/26/02	37433	351	6/26/02	7/10/02	14	351	-	-	-	-	79.7
7/10/02	37447	Water	7/10/02	7/19/02	9	-	-	-	-	-	80.6
7/19/02	37456	601	7/19/02	8/2/02	14	601	781	180	28800	2057	86.4
8/2/02	37470	781	8/2/02	8/15/02	13	781	981	200	32000	2462	84.3
8/15/02	37483	981	8/15/02	9/4/02	20	981	1351	370	59200	2960	85.4
9/4/02	37503	1351	9/4/02	9/25/02	21	1351	1441	90	14400	686	78.2
9/25/02	37524	1441	9/25/02	10/4/02	9	1441	-	-	-	-	78.7
10/4/02	37533	broke	10/4/02	10/18/02	14	-	-	-	-	-	66.9
10/18/02	37547	broke	10/18/02	11/7/02	20	-	-	-	-	-	58.1
11/7/02	37567	broke	11/7/02	11/19/02	12	-	-	-	-	-	58.6
11/19/02	37579	broke	11/19/02	11/26/02	7	-	-	-	-	-	53.9
11/26/02	37586		11/26/02	12/3/02	7	0	0	0	0	0	49.2
12/3/02	37593		12/3/02	12/10/02	7	0	0	0	0	0	44.7
12/10/02	37600		12/10/02	12/17/02	7	0	0	0	0	0	52.0
12/17/02	37607		12/17/02	12/24/02	7	0	0	0	0	0	51.0
12/24/02	37614		12/24/02	12/31/02	7	0	0	0	0	0	48.6
12/31/02	37621		12/31/02	1/6/03	6	0	0	0	0	0	47.8
1/6/03	37627		1/6/03	1/13/03	7	0	0	0	0	0	47.4
1/13/03	37634		1/13/03	1/21/03	8	0	0	0	0	0	46.8
1/21/03	37642		1/21/03	1/27/03	6	0	0	0	0	0	38.6
1/27/03	37648		1/27/03	2/6/03	10	0	0	0	0	0	51.2
2/6/03	37658		2/6/03	2/13/03	7	0	0	0	0	0	41.9
2/13/03	37665		2/13/03	2/20/03	7	0	0	0	0	0	53.9
2/20/03	37672		2/20/03	2/27/03	7	0	0	0	0	0	40.4
2/27/03	37679		2/27/03	3/6/03	7	0	239	239	38240	5463	46.1
3/6/03	37686	239	3/6/03	3/14/03	8	239	327	88	14080	1760	59.7
3/14/03	37694	327	3/14/03	3/24/03	10	327	419	92	14720	1472	58.1
3/24/03	37704	419	3/24/03	4/1/03	8	419	501	82	13120	1640	59.8
4/1/03	37712	501	4/1/03	4/7/03	6	501	594	93	14880	2480	59.0



11.2.6.1.2. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 2
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 2P

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 24

R2 = 0.216

AdjR2 = 0.216

RMSE = 1253.4249

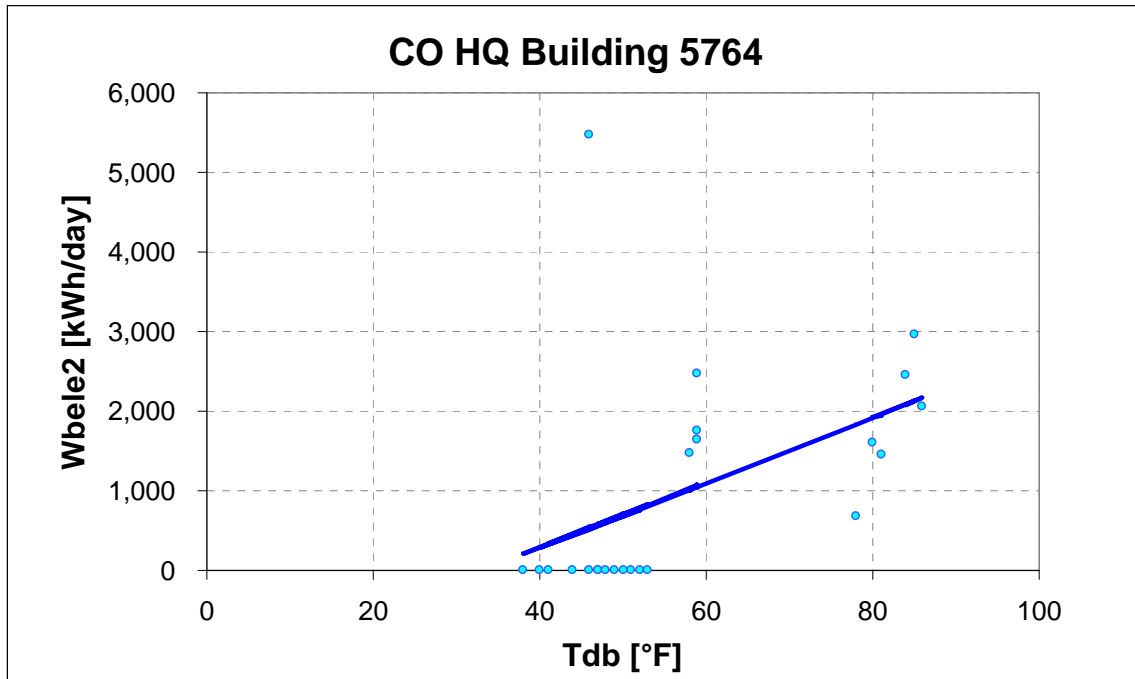
CV-RMSE = 125.182%

p = 0.212

DW = 1.511 (p>0)

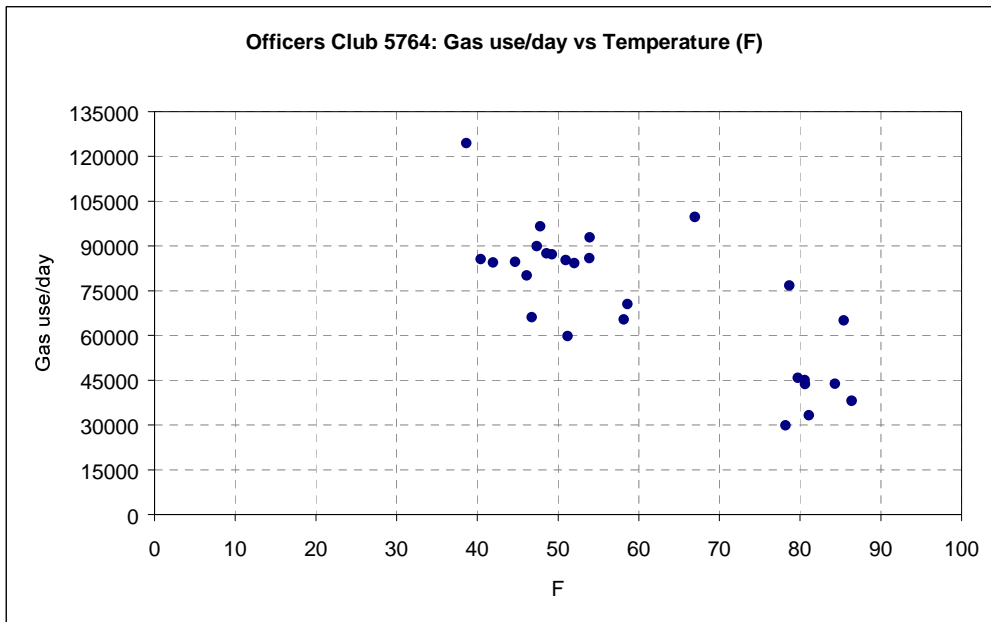
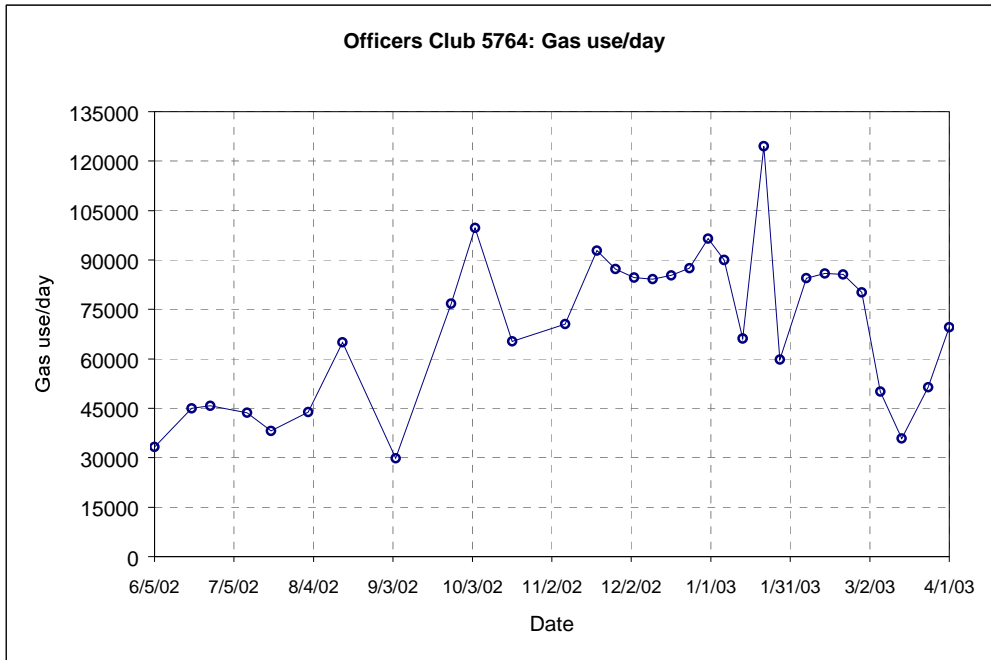
a = -1383.9058 (1002.5729)

X1 = 41.1194 (16.7116)



11.2.6.2. Natural Gas From Manual Readings

5764 Gas		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp (F)
									10		
6/5/02	37412	3012170	6/5/02	6/19/02	14	3012170	3058766	46596	465960	33283	81.1
6/19/02	37426	3058766	6/19/02	6/26/02	7	3058766	3090294	31528	315280	45040	80.6
6/26/02	37433	3090294	6/26/02	7/10/02	14	3090294	3154351	64057	640570	45755	79.7
7/10/02	37447	3154351	7/10/02	7/19/02	9	3154351	3193645	39294	392940	43660	80.6
7/19/02	37456	3193645	7/19/02	8/2/02	14	3193645	3247035	53390	533900	38136	86.4
8/2/02	37470	3247035	8/2/02	8/15/02	13	3247035	3303991	56956	569560	43812	84.3
8/15/02	37483	3303991	8/15/02	9/4/02	20	3303991	3434082	130091	1300910	65046	85.4
9/4/02	37503	3434082	9/4/02	9/25/02	21	3434082	3496831	62749	627490	29880	78.2
9/25/02	37524	3496831	9/25/02	10/4/02	9	3496831	3565928	69097	690970	76774	78.7
10/4/02	37533	3565928	10/4/02	10/18/02	14	3565928	3705479	139551	1395510	99679	66.9
10/18/02	37547	3705479	10/18/02	11/7/02	20	3705479	3836176	130697	1306970	65349	58.1
11/7/02	37567	3836176	11/7/02	11/19/02	12	3836176	3920808	84632	846320	70527	58.6
11/19/02	37579	3920808	11/19/02	11/26/02	7	3920808	3985829	65021	650210	92887	53.9
11/26/02	37586	3985829	11/26/02	12/3/02	7	3985829	4046874	61045	610450	87207	49.2
12/3/02	37593	4046874	12/3/02	12/10/02	7	4046874	4106139	59265	592650	84664	44.7
12/10/02	37600	4106139	12/10/02	12/17/02	7	4106139	4165077	58938	589380	84197	52.0
12/17/02	37607	4165077	12/17/02	12/24/02	7	4165077	4224816	59739	597390	85341	51.0
12/24/02	37614	4224816	12/24/02	12/31/02	7	4224816	4286070	61254	612540	87506	48.6
12/31/02	37621	4286070	12/31/02	1/6/03	6	4286070	4343981	57911	579110	96518	47.8
1/6/03	37627	4343981	1/6/03	1/13/03	7	4343981	4406956	62975	629750	89964	47.4
1/13/03	37634	4406956	1/13/03	1/21/03	8	4406956	4459879	52923	529230	66154	46.8
1/21/03	37642	4459879	1/21/03	1/27/03	6	4459879	4534562	74683	746830	124472	38.6
1/27/03	37648	4534562	1/27/03	2/6/03	10	4534562	4594377	59815	598150	59815	51.2
2/6/03	37658	4594377	2/6/03	2/13/03	7	4594377	4653502	59125	591250	84464	41.9
2/13/03	37665	4653502	2/13/03	2/20/03	7	4653502	4713660	60158	601580	85940	53.9
2/20/03	37672	4713660	2/20/03	2/27/03	7	4713660	4773558	59898	598980	85569	40.4
2/27/03	37679	4773558	2/27/03	3/6/03	7	4773558	4829655	56097	560970	80139	46.1
3/6/03	37686	4829655	3/6/03	3/14/03	8	4829655	4869687	40032	400320	50040	59.7
3/14/03	37694	4869687	3/14/03	3/24/03	10	4869687	4905489	35802	358020	35802	58.1
3/24/03	37704	4905489	3/24/03	4/1/03	8	4905489	4946587	41098	410980	51373	59.8
4/1/03	37712	4946587	4/1/03	4/7/03	6	4946587	4988371	41784	417840	69640	59.0



11.2.6.2.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Heating

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 31

R2 = 0.524

AdjR2 = 0.524

RMSE = 16322.0176

CV-RMSE = 23.440%

p = 0.081

DW = 1.817 (p>0)

N1 = 22

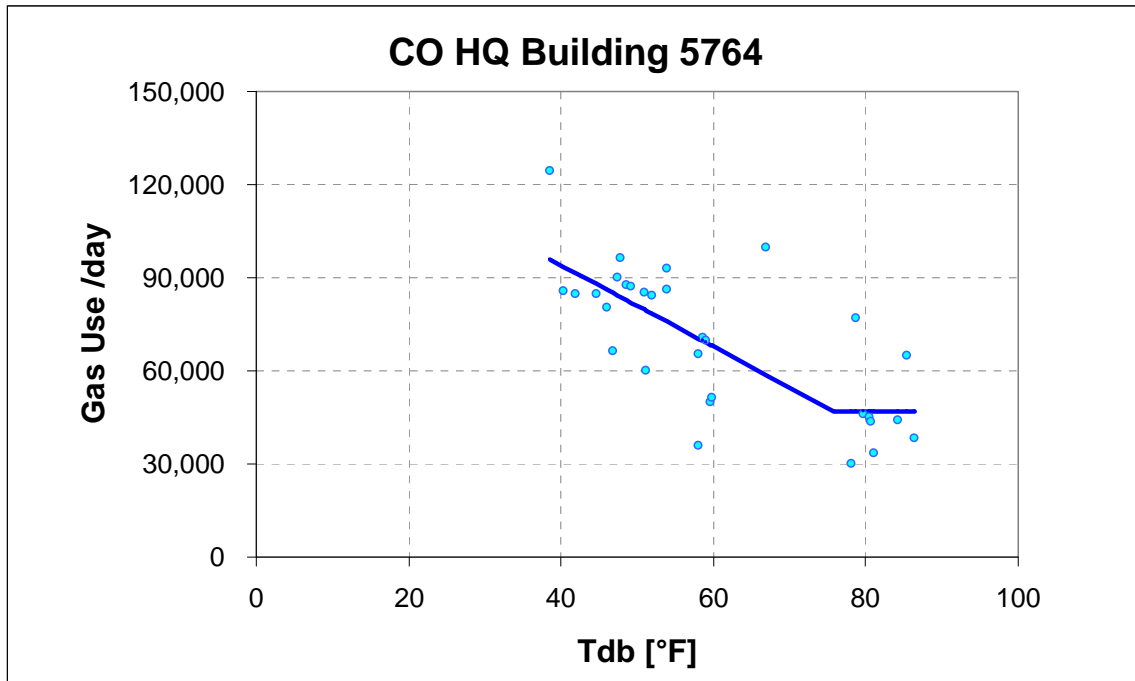
N2 = 9

Ycp = 46861.6289 (4985.3765)

LS = -1318.7449 (233.5222)

RS = 0.0000 (0.0000)

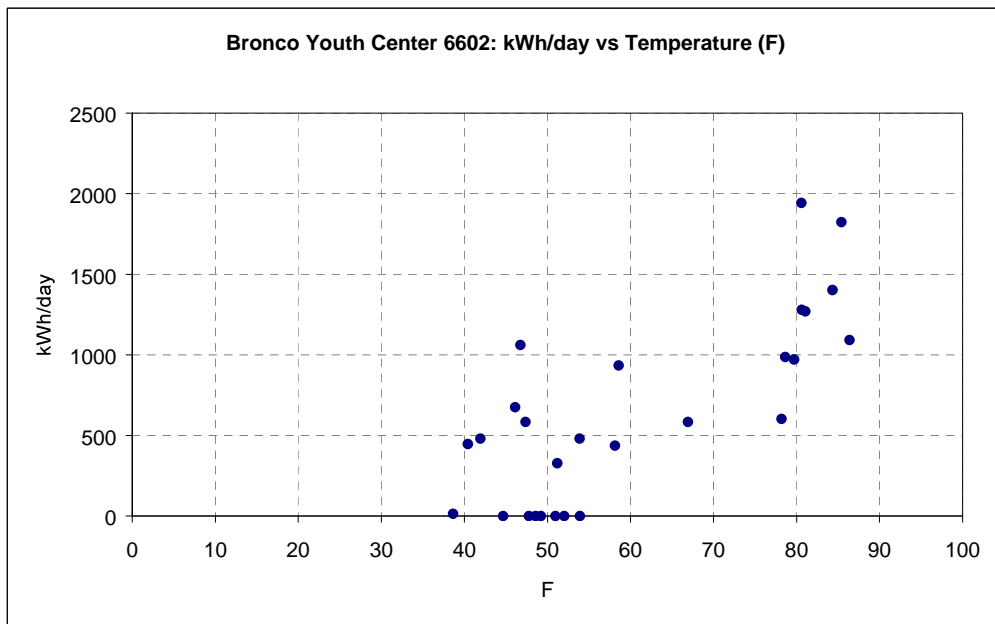
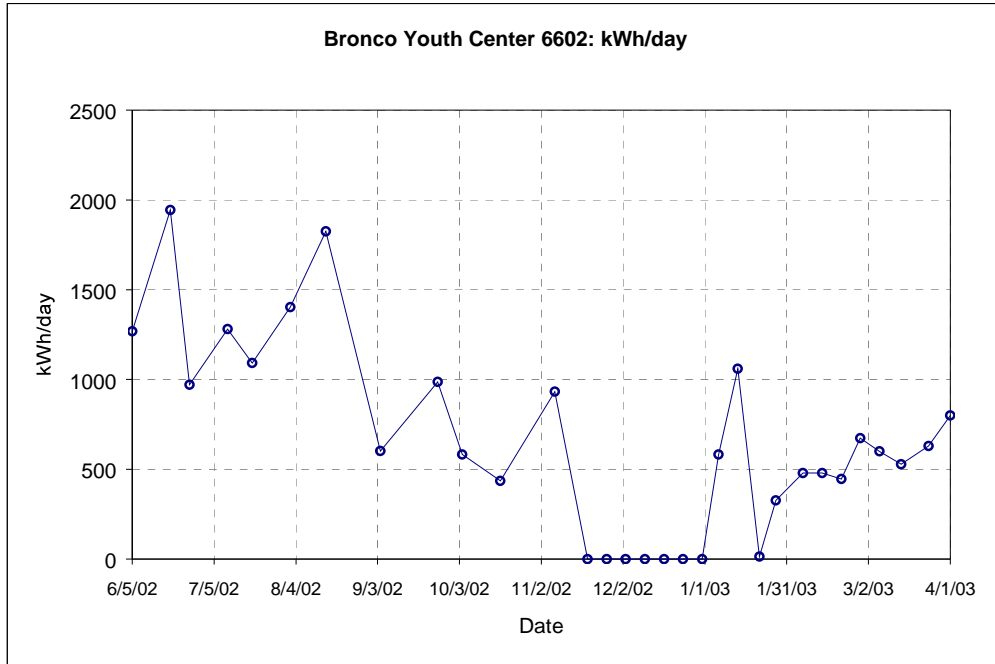
Xcp = 75.8672 (0.9548)



11.2.7. 6602 Bronco Youth Center

11.2.7.1. Electricity Use From Manual Readings

6602 Elec		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									80	1943	
6/5/02	37412	28738	6/5/02	6/19/02	14	28738	28960	222	17760	1269	81.1
6/19/02	37426	28960	6/19/02	6/26/02	7	28960	29130	170	13600	1943	80.6
6/26/02	37433	29130	6/26/02	7/10/02	14	29130	29300	170	13600	971	79.7
7/10/02	37447	29300	7/10/02	7/19/02	9	29300	29444	144	11520	1280	80.6
7/19/02	37456	29444	7/19/02	8/2/02	14	29444	29635	191	15280	1091	86.4
8/2/02	37470	29635	8/2/02	8/15/02	13	29635	29863	228	18240	1403	84.3
8/15/02	37483	29863	8/15/02	9/4/02	20	29863	30319	456	36480	1824	85.4
9/4/02	37503	30319	9/4/02	9/25/02	21	30319	30477	158	12640	602	78.2
9/25/02	37524	30477	9/25/02	10/4/02	9	30477	30588	111	8880	987	78.7
10/4/02	37533	30588	10/4/02	10/18/02	14	30588	30690	102	8160	583	66.9
10/18/02	37547	30690	10/18/02	11/7/02	20	30690	30799	109	8720	436	58.1
11/7/02	37567	30799	11/7/02	11/19/02	12	30799	30939	140	11200	933	58.6
11/19/02	37579	30939	11/19/02	11/26/02	7	30939	-	-	-	-	53.9
11/26/02	37586	Logger	11/26/02	12/3/02	7	-	-	-	-	-	49.2
12/3/02	37593	Logger	12/3/02	12/10/02	7	-	-	-	-	-	44.7
12/10/02	37600	Logger	12/10/02	12/17/02	7	-	-	-	-	-	52.0
12/17/02	37607	Logger	12/17/02	12/24/02	7	-	-	-	-	-	51.0
12/24/02	37614	Logger	12/24/02	12/31/02	7	-	-	-	-	-	48.6
12/31/02	37621	Logger	12/31/02	1/6/03	6	-	-	-	-	-	47.8
1/6/03	37627	31241	1/6/03	1/13/03	7	31241	31292	51	4080	583	47.4
1/13/03	37634	31292	1/13/03	1/21/03	8	31292	31398	106	8480	1060	46.8
1/21/03	37642	31398	1/21/03	1/27/03	6	31398	31399	1	80	13	38.6
1/27/03	37648	31399	1/27/03	2/6/03	10	31399	31440	41	3280	328	51.2
2/6/03	37658	31440	2/6/03	2/13/03	7	31440	31482	42	3360	480	41.9
2/13/03	37665	31482	2/13/03	2/20/03	7	31482	31524	42	3360	480	53.9
2/20/03	37672	31524	2/20/03	2/27/03	7	31524	31563	39	3120	446	40.4
2/27/03	37679	31563	2/27/03	3/6/03	7	31563	31622	59	4720	674	46.1
3/6/03	37686	31622	3/6/03	3/14/03	8	31622	31682	60	4800	600	59.7
3/14/03	37694	31682	3/14/03	3/24/03	10	31682	31748	66	5280	528	58.1
3/24/03	37704	31748	3/24/03	4/1/03	8	31748	31811	63	5040	630	59.8
4/1/03	37712	31811	4/1/03	4/7/03	6	31811	31871	60	4800	800	59.0



11.2.7.1.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 3
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Cooling

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 24

R2 = 0.601

AdjR2 = 0.601

RMSE = 300.5061

CV-RMSE = 36.161%

p = -0.191

DW = 2.355 (p>0)

N1 = 15

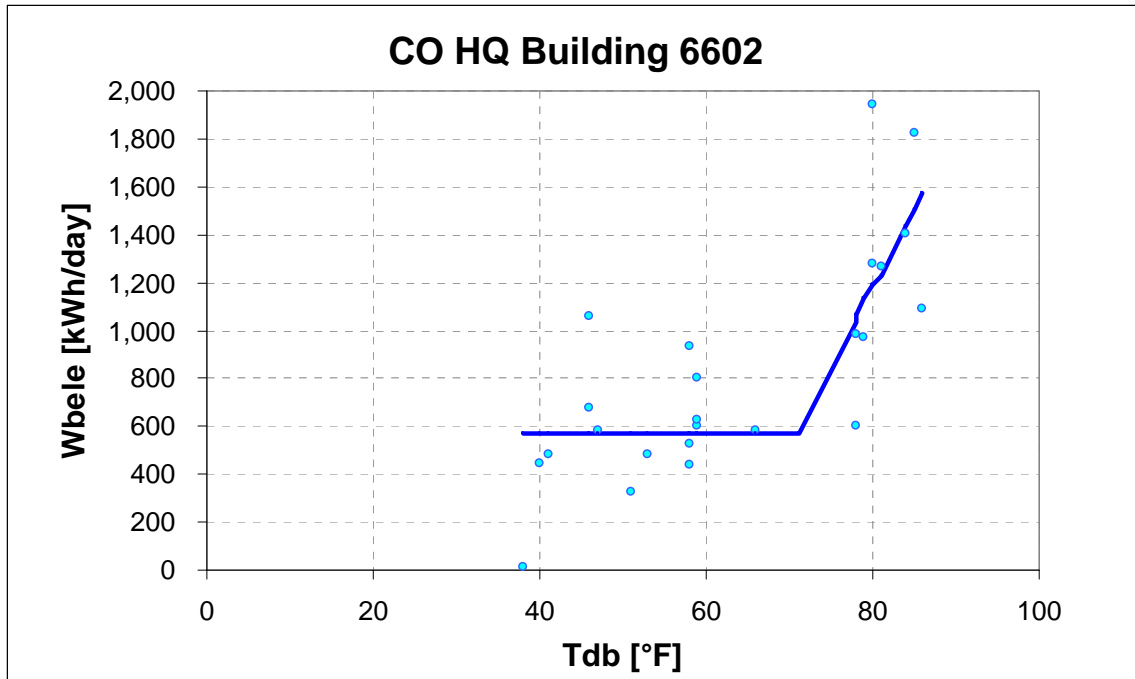
N2 = 9

Ycp = 571.8008 (76.1058)

LS = 0.0000 (0.0000)

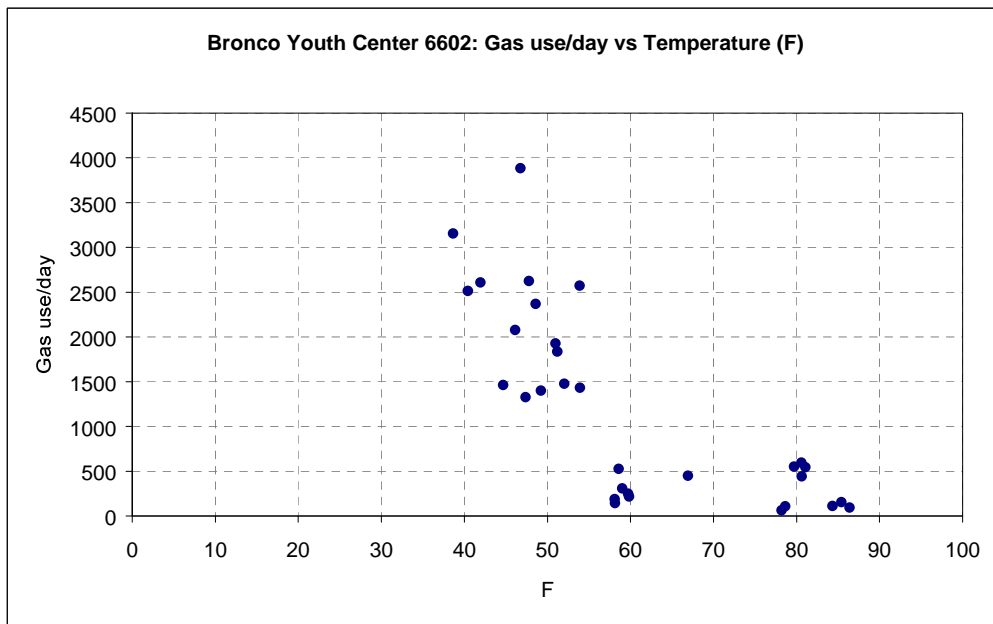
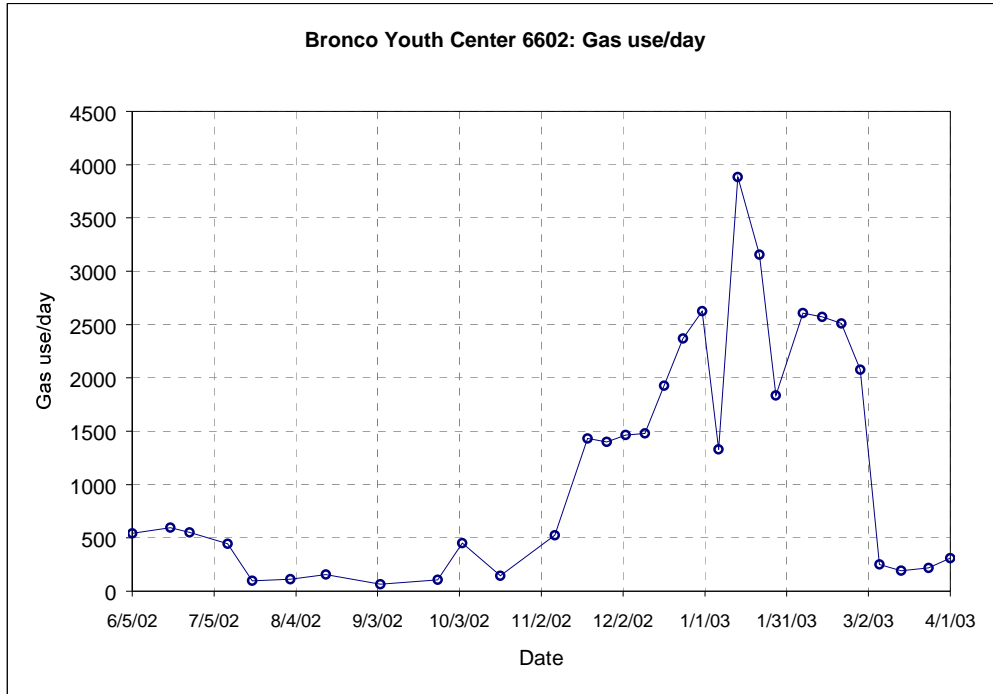
RS = 65.4411 (11.3732)

Xcp = 71.1040 (0.9560)



11.2.7.2. Natural Gas From Manual Readings

6602 Gas		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									1		
6/5/02	37412	3731774	6/5/02	6/19/02	14	3731774	3739379	7605	7605	543	81.1
6/19/02	37426	3739379	6/19/02	6/26/02	7	3739379	3743544	4165	4165	595	80.6
6/26/02	37433	3743544	6/26/02	7/10/02	14	3743544	3751275	7731	7731	552	79.7
7/10/02	37447	3751275	7/10/02	7/19/02	9	3751275	3755271	3996	3996	444	80.6
7/19/02	37456	3755271	7/19/02	8/2/02	14	3755271	3756615	1344	1344	96	86.4
8/2/02	37470	3756615	8/2/02	8/15/02	13	3756615	3758080	1465	1465	113	84.3
8/15/02	37483	3758080	8/15/02	9/4/02	20	3758080	3761196	3116	3116	156	85.4
9/4/02	37503	3761196	9/4/02	9/25/02	21	3761196	3762550	1354	1354	64	78.2
9/25/02	37524	3762550	9/25/02	10/4/02	9	3762550	3763516	966	966	107	78.7
10/4/02	37533	3763516	10/4/02	10/18/02	14	3763516	3769812	6296	6296	450	66.9
10/18/02	37547	3769812	10/18/02	11/7/02	20	3769812	3772698	2886	2886	144	58.1
11/7/02	37567	3772698	11/7/02	11/19/02	12	3772698	3779007	6309	6309	526	58.6
11/19/02	37579	3779007	11/19/02	11/26/02	7	3779007	3789032	10025	10025	1432	53.9
11/26/02	37586	3789032	11/26/02	12/3/02	7	3789032	3798839	9807	9807	1401	49.2
12/3/02	37593	3798839	12/3/02	12/10/02	7	3798839	3809090	10251	10251	1464	44.7
12/10/02	37600	3809090	12/10/02	12/17/02	7	3809090	3819445	10355	10355	1479	52.0
12/17/02	37607	3819445	12/17/02	12/24/02	7	3819445	3832931	13486	13486	1927	51.0
12/24/02	37614	3832931	12/24/02	12/31/02	7	3832931	3849515	16584	16584	2369	48.6
12/31/02	37621	3849515	12/31/02	1/6/03	6	3849515	3865270	15755	15755	2626	47.8
1/6/03	37627	3865270	1/6/03	1/13/03	7	3865270	3874568	9298	9298	1328	47.4
1/13/03	37634	3874568	1/13/03	1/21/03	8	3874568	3905648	31080	31080	3885	46.8
1/21/03	37642	3905648	1/21/03	1/27/03	6	3905648	3924587	18939	18939	3157	38.6
1/27/03	37648	3924587	1/27/03	2/6/03	10	3924587	3942947	18360	18360	1836	51.2
2/6/03	37658	3942947	2/6/03	2/13/03	7	3942947	3961201	18254	18254	2608	41.9
2/13/03	37665	3961201	2/13/03	2/20/03	7	3961201	3979207	18006	18006	2572	53.9
2/20/03	37672	3979207	2/20/03	2/27/03	7	3979207	3996789	17582	17582	2512	40.4
2/27/03	37679	3996789	2/27/03	3/6/03	7	3996789	4011336	14547	14547	2078	46.1
3/6/03	37686	4011336	3/6/03	3/14/03	8	4011336	4013335	1999	1999	250	59.7
3/14/03	37694	4013335	3/14/03	3/24/03	10	4013335	4015236	1901	1901	190	58.1
3/24/03	37704	4015236	3/24/03	4/1/03	8	4015236	4016986	1750	1750	219	59.8
4/1/03	37712	4016986	4/1/03	4/7/03	6	4016986	4018835	1849	1849	308	59.0



11.2.7.2.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Heating

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 31

R2 = 0.755

AdjR2 = 0.755

RMSE = 547.7226

CV-RMSE = 45.361%

p = -0.192

DW = 2.370 (p>0)

N1 = 21

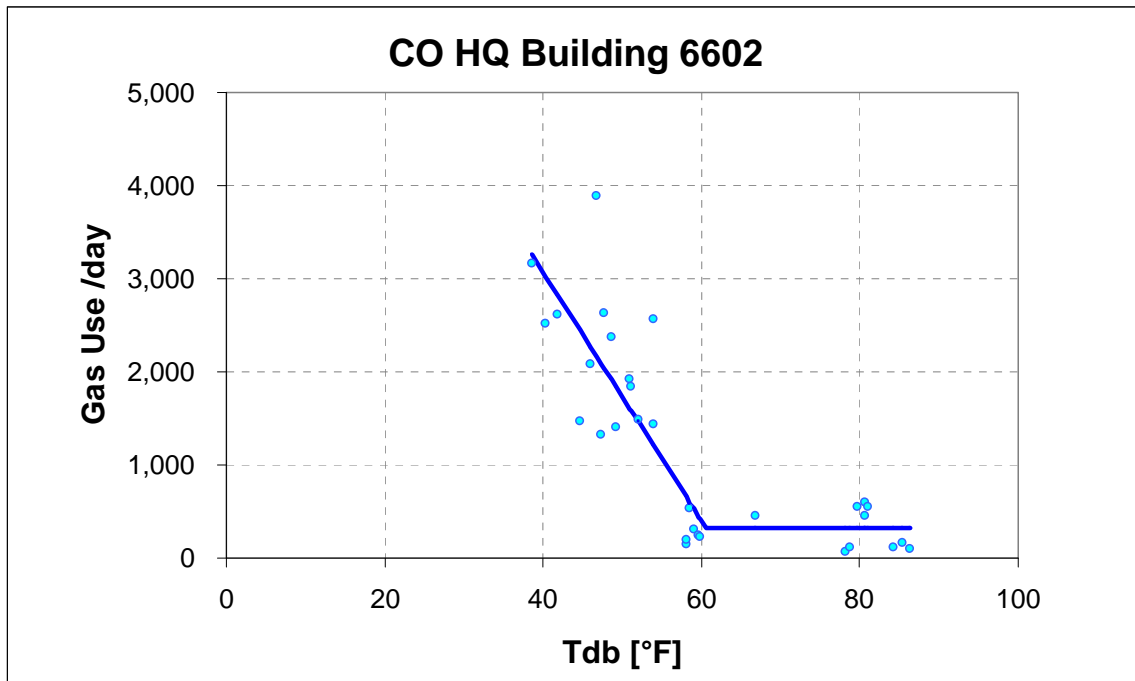
N2 = 10

Ycp = 321.4508 (135.8152)

LS = -133.6253 (14.1224)

RS = 0.0000 (0.0000)

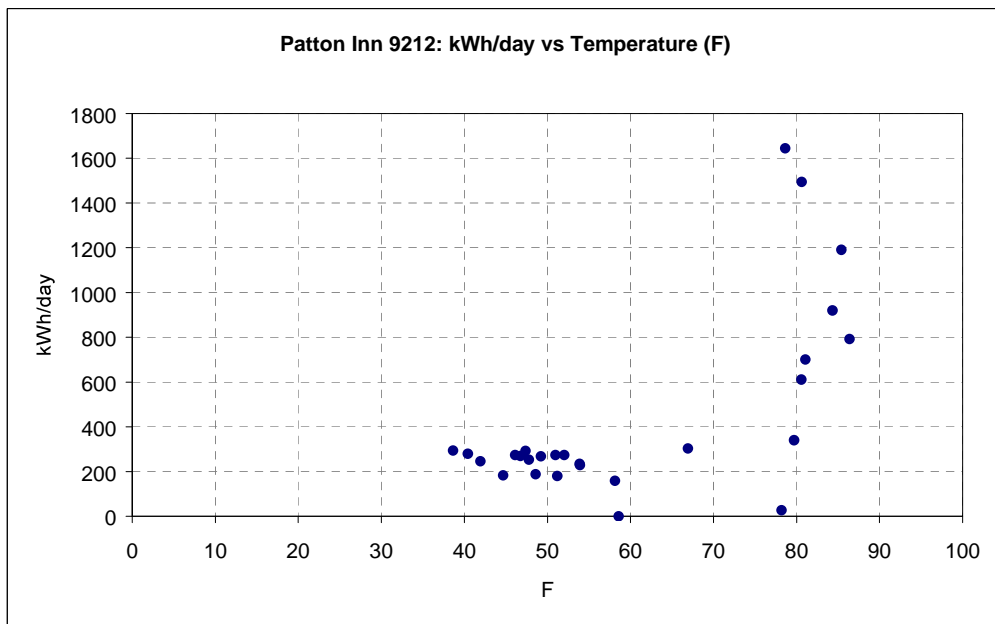
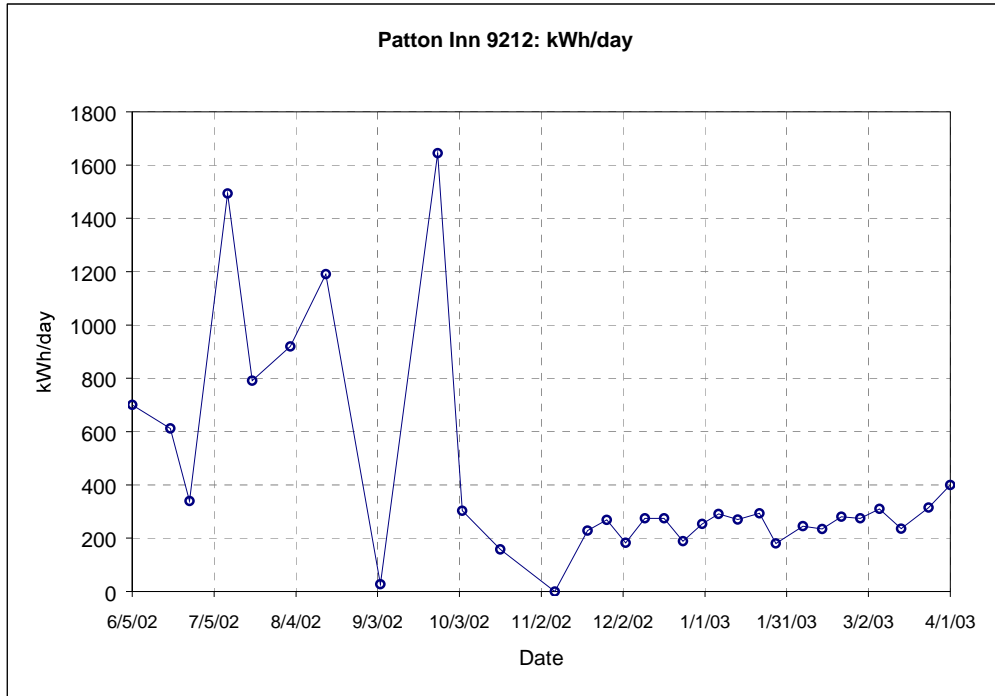
Xcp = 60.5880 (0.9560)



11.2.8. 9212 Patton Inn

11.2.8.1. Electricity Use From Manual Readings

9212 Elec		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									40	1644	
6/5/02	37412	7388	6/5/02	6/19/02	14	7388	7633	245	9800	700	81.1
6/19/02	37426	7633	6/19/02	6/26/02	7	7633	7740	107	4280	611	80.6
6/26/02	37433	7740	6/26/02	7/10/02	14	7740	7859	119	4760	340	79.7
7/10/02	37447	7859	7/10/02	7/19/02	9	7859	8195	336	13440	1493	80.6
7/19/02	37456	8195	7/19/02	8/2/02	14	8195	8472	277	11080	791	86.4
8/2/02	37470	8472	8/2/02	8/15/02	13	8472	8771	299	11960	920	84.3
8/15/02	37483	8771	8/15/02	9/4/02	20	8771	9366	595	23800	1190	85.4
9/4/02	37503	9366	9/4/02	9/25/02	21	9366	9380	14	560	27	78.2
9/25/02	37524	9380	9/25/02	10/4/02	9	9380	9750	370	14800	1644	78.7
10/4/02	37533	9750	10/4/02	10/18/02	14	9750	9856	106	4240	303	66.9
10/18/02	37547	9856	10/18/02	11/7/02	20	9856	9935	79	3160	158	58.1
11/7/02	37567	9935	11/7/02	11/19/02	12	9935	214	-	-	-	58.6
11/19/02	37579	214	11/19/02	11/26/02	7	214	254	40	1600	229	53.9
11/26/02	37586	254	11/26/02	12/3/02	7	254	301	47	1880	269	49.2
12/3/02	37593	301	12/3/02	12/10/02	7	301	333	32	1280	183	44.7
12/10/02	37600	333	12/10/02	12/17/02	7	333	381	48	1920	274	52.0
12/17/02	37607	381	12/17/02	12/24/02	7	381	429	48	1920	274	51.0
12/24/02	37614	429	12/24/02	12/31/02	7	429	462	33	1320	189	48.6
12/31/02	37621	462	12/31/02	1/6/03	6	462	500	38	1520	253	47.8
1/6/03	37627	500	1/6/03	1/13/03	7	500	551	51	2040	291	47.4
1/13/03	37634	551	1/13/03	1/21/03	8	551	605	54	2160	270	46.8
1/21/03	37642	605	1/21/03	1/27/03	6	605	649	44	1760	293	38.6
1/27/03	37648	649	1/27/03	2/6/03	10	649	694	45	1800	180	51.2
2/6/03	37658	694	2/6/03	2/13/03	7	694	737	43	1720	246	41.9
2/13/03	37665	737	2/13/03	2/20/03	7	737	778	41	1640	234	53.9
2/20/03	37672	778	2/20/03	2/27/03	7	778	827	49	1960	280	40.4
2/27/03	37679	827	2/27/03	3/6/03	7	827	875	48	1920	274	46.1
3/6/03	37686	875	3/6/03	3/14/03	8	875	937	62	2480	310	59.7
3/14/03	37694	937	3/14/03	3/24/03	10	937	996	59	2360	236	58.1
3/24/03	37704	996	3/24/03	4/1/03	8	996	1059	63	2520	315	59.8
4/1/03	37712	1059	4/1/03	4/7/03	6	1059	1119	60	2400	400	59.0



11.2.8.1.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 3
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Cooling

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 30

R2 = 0.518

AdjR2 = 0.518

RMSE = 278.2905

CV-RMSE = 63.350%

p = -0.518

DW = 3.010 (p>0)

N1 = 20

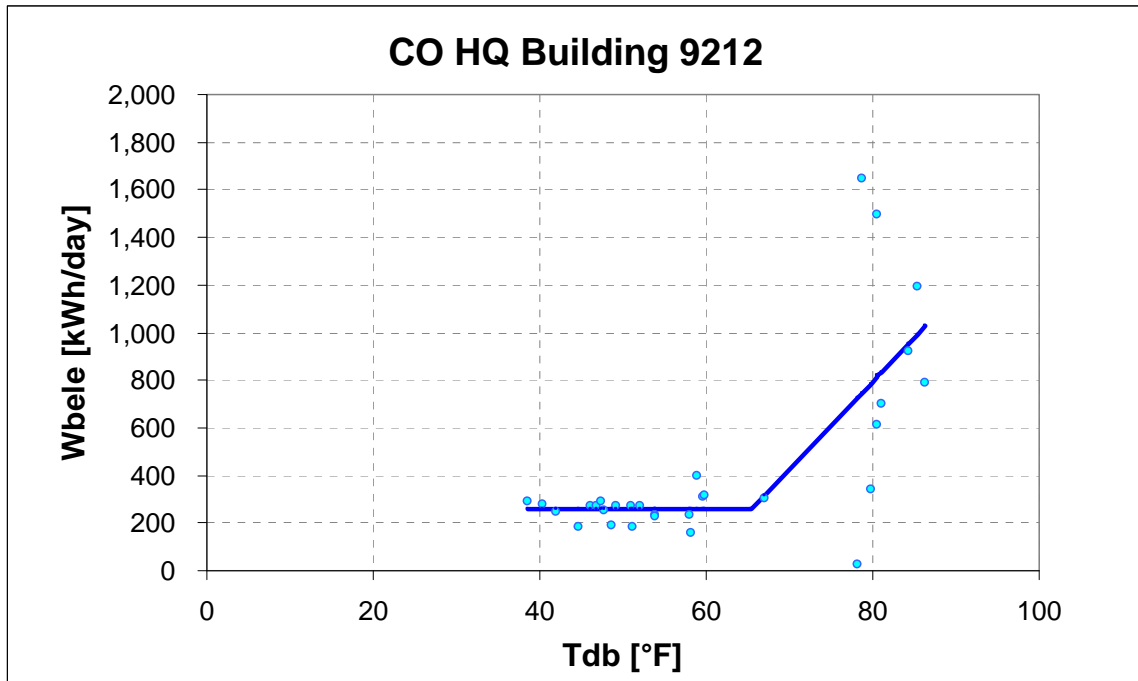
N2 = 10

Ycp = 258.1218 (60.6148)

LS = 0.0000 (0.0000)

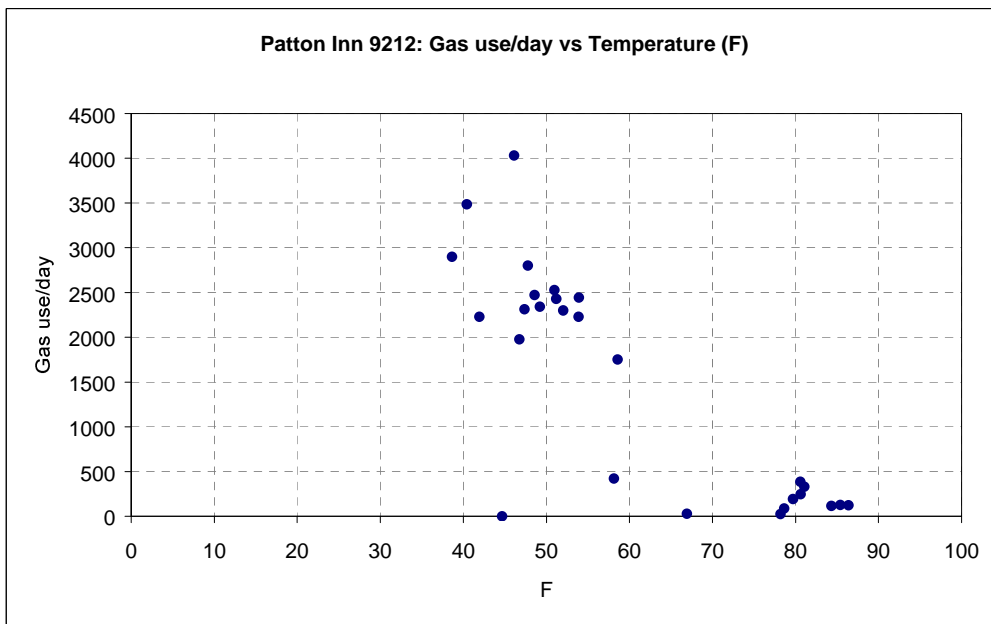
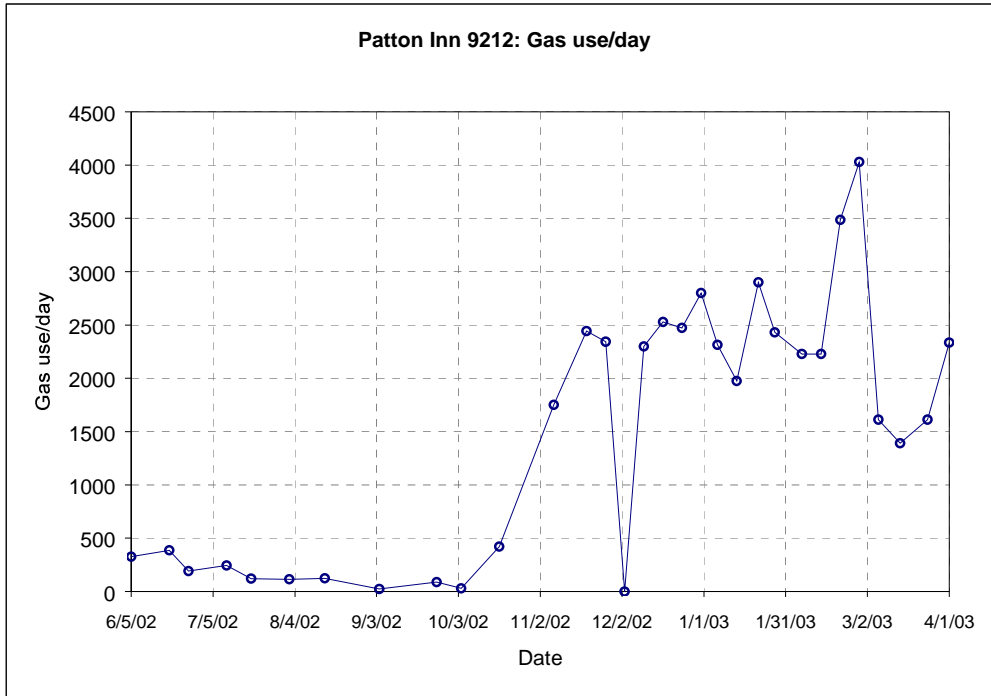
RS = 36.6549 (6.6879)

Xcp = 65.3644 (0.9548)



11.2.8.2. Natural Gas From Manual Readings

9212 Gas		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									100		
6/5/02	37412	9076	6/5/02	6/19/02	14	9076	9122	46	4600	329	81.1
6/19/02	37426	9122	6/19/02	6/26/02	7	9122	9149	27	2700	386	80.6
6/26/02	37433	9149	6/26/02	7/10/02	14	9149	9176	27	2700	193	79.7
7/10/02	37447	9176	7/10/02	7/19/02	9	9176	9198	22	2200	244	80.6
7/19/02	37456	9198	7/19/02	8/2/02	14	9198	9215	17	1700	121	86.4
8/2/02	37470	9215	8/2/02	8/15/02	13	9215	9230	15	1500	115	84.3
8/15/02	37483	9230	8/15/02	9/4/02	20	9230	9255	25	2500	125	85.4
9/4/02	37503	9255	9/4/02	9/25/02	21	9255	9260	5	500	24	78.2
9/25/02	37524	9260	9/25/02	10/4/02	9	9260	9268	8	800	89	78.7
10/4/02	37533	9268	10/4/02	10/18/02	14	9268	9272	4	400	29	66.9
10/18/02	37547	9272	10/18/02	11/7/02	20	9272	9356	84	8400	420	58.1
11/7/02	37567	9356	11/7/02	11/19/02	12	9356	9566	210	21000	1750	58.6
11/19/02	37579	9566	11/19/02	11/26/02	7	9566	9737	171	17100	2443	53.9
11/26/02	37586	9737	11/26/02	12/3/02	7	9737	9901	164	16400	2343	49.2
12/3/02	37593	9901	12/3/02	12/10/02	7	9901	77	-	-	-	44.7
12/10/02	37600	77	12/10/02	12/17/02	7	77	238	161	16100	2300	52.0
12/17/02	37607	238	12/17/02	12/24/02	7	238	415	177	17700	2529	51.0
12/24/02	37614	415	12/24/02	12/31/02	7	415	588	173	17300	2471	48.6
12/31/02	37621	588	12/31/02	1/6/03	6	588	756	168	16800	2800	47.8
1/6/03	37627	756	1/6/03	1/13/03	7	756	918	162	16200	2314	47.4
1/13/03	37634	918	1/13/03	1/21/03	8	918	1076	158	15800	1975	46.8
1/21/03	37642	1076	1/21/03	1/27/03	6	1076	1250	174	17400	2900	38.6
1/27/03	37648	1250	1/27/03	2/6/03	10	1250	1493	243	24300	2430	51.2
2/6/03	37658	1493	2/6/03	2/13/03	7	1493	1649	156	15600	2229	41.9
2/13/03	37665	1649	2/13/03	2/20/03	7	1649	1805	156	15600	2229	53.9
2/20/03	37672	1805	2/20/03	2/27/03	7	1805	2049	244	24400	3486	40.4
2/27/03	37679	2049	2/27/03	3/6/03	7	2049	2331	282	28200	4029	46.1
3/6/03	37686	2331	3/6/03	3/14/03	8	2331	2460	129	12900	1613	59.7
3/14/03	37694	2460	3/14/03	3/24/03	10	2460	2599	139	13900	1390	58.1
3/24/03	37704	2599	3/24/03	4/1/03	8	2599	2728	129	12900	1613	59.8
4/1/03	37712	2728	4/1/03	4/7/03	6	2728	2868	140	14000	2333	59.0



11.2.8.2.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

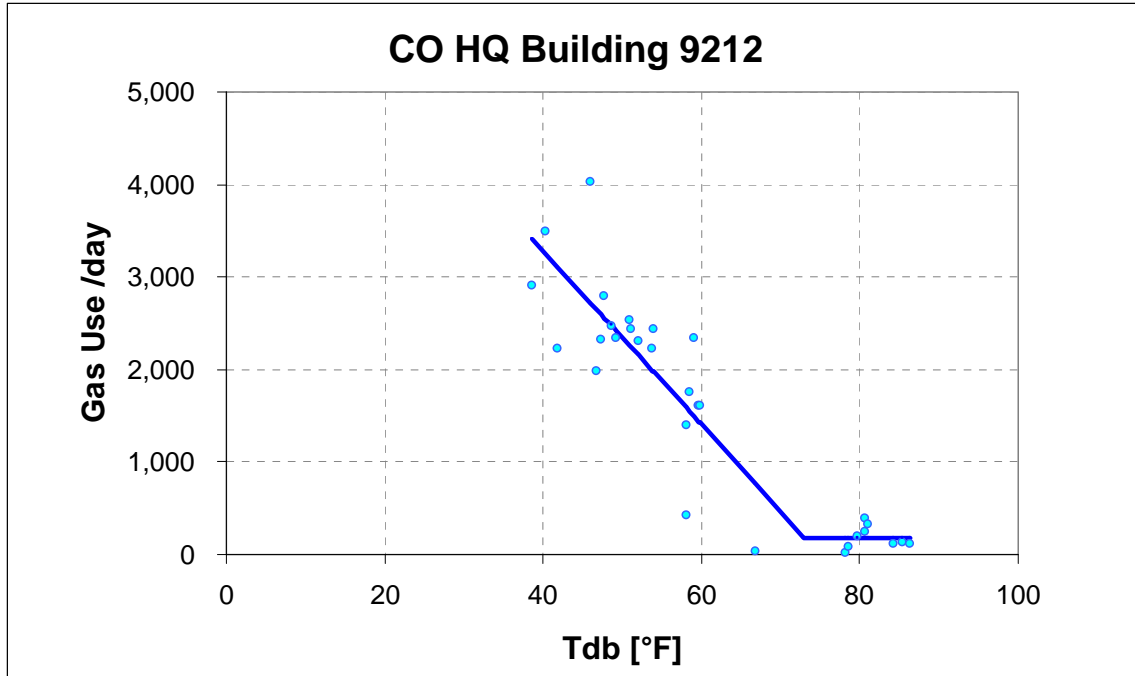
```

*****
ASHRAE INVERSE MODELING TOOLKIT (1.9)
*****
Output file name = IMT.Out
*****
Input data file name = DAILY2.dat
Model type =      3P Heating
Grouping column No = 5
Value for grouping = 1
Residual mode = 1
# of X(Indep.) Var = 1
Y1 column number = 6
X1 column number = 9
X2 column number = 0 (unused)
X3 column number = 0 (unused)
X4 column number = 0 (unused)
X5 column number = 0 (unused)
X6 column number = 0 (unused)
*****
  
```

Regression Results

```

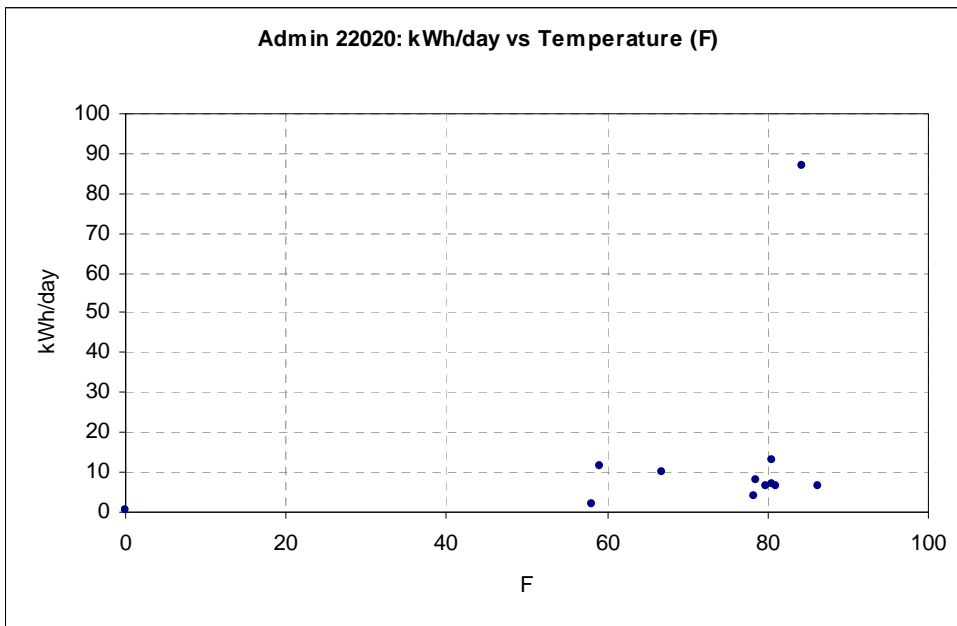
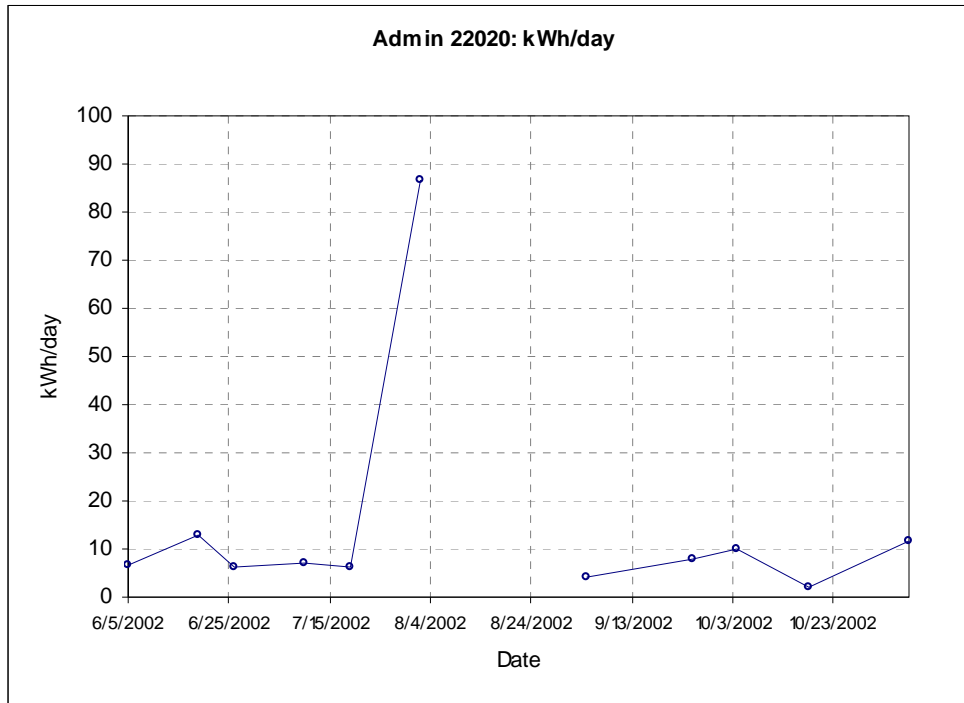
-----
N = 30
R2 = 0.836
AdjR2 = 0.836
RMSE = 488.1092
CV-RMSE = 30.991%
p = 0.225
DW = 1.444 (p>0)
N1 = 21
N2 = 9
Ycp = 185.7489 ( 146.3672)
LS = -93.8799 ( 7.8464)
RS = 0.0000 ( 0.0000)
Xcp = 73.0028 ( 0.9548)
-----
  
```



11.2.9. 22020 Admin

11.2.9.1. Electricity Use From Manual Readings

22020 Elec		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									?	87	
6/5/2002	37412	20356	6/5/2002	6/19/2002	14	20356	20450	94		7	81.1
6/19/2002	37426	20450	6/19/2002	6/26/2002	7	20450	20541	91		13	80.6
6/26/2002	37433	20541	6/26/2002	7/10/2002	14	20541	20631	90		6	79.7
7/10/2002	37447	20631	7/10/2002	7/19/2002	9	20631	20694	63		7	80.6
7/19/2002	37456	20694	7/19/2002	8/2/2002	14	20694	20782	88		6	86.4
8/2/2002	37470	20782	8/2/2002	8/15/2002	13	20782	21910	1128		87	84.3
8/15/2002	37483	21910	8/15/2002	9/4/2002	20	21910	21097	-813			85.4
9/4/2002	37503	21097	9/4/2002	9/25/2002	21	21097	21185	88		4	78.2
9/25/2002	37524	21185	9/25/2002	10/4/2002	9	21185	21257	72		8	78.7
10/4/2002	37533	21257	10/4/2002	10/18/2002	14	21257	21398	141		10	66.9
10/18/2002	37547	21398	10/18/2002	11/7/2002	20	21398	21436	38		2	58.1
11/7/2002	37567	21436	11/7/2002	11/19/2002	12	21436	21576	140		12	59.1
11/19/2002	37579	21576	11/19/2002	1/0/1900	####	21576	0	-21576		1	0.0



11.2.9.1.1. Baseline Model From Manual Readings

No baseline model available for this site.

11.2.9.2. Natural Gas From Manual Readings

22020 Gas		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp (F)	
									1			
6/5/2002	37412	3561730	6/5/2002	6/19/2002	14	3561730	3561730	0	0	0	81.1	
6/19/2002	37426	3561730	6/19/2002	6/26/2002	7	3561730	3561730	0	0	0	80.6	
6/26/2002	37433	3561730	6/26/2002	7/10/2002	14	3561730	3561730	0	0	0	79.7	
7/10/2002	37447	3561730	7/10/2002	7/19/2002	9	3561730	3561730	0	0	0	80.6	
7/19/2002	37456	3561730	7/19/2002	8/2/2002	14	3561730	3561730	0	0	0	86.4	
8/2/2002	37470	3561730	8/2/2002	8/15/2002	13	3561730	3561730	0	0	0	84.3	
8/15/2002	37483	3561730	8/15/2002	9/4/2002	20	3561730	3561730	0	0	0	85.4	
9/4/2002	37503	3561730	9/4/2002	9/25/2002	21	3561730	3561720	-10	-10	0	78.2	
9/25/2002	37524	3561720	9/25/2002	10/4/2002	9	3561720	3561731	11	11	1	78.7	
10/4/2002	37533	3561731	10/4/2002	10/18/2002	14	3561731	broke	#VALUE!	#VALUE!	#####	66.9	
10/18/2002	37547	broke	10/18/2002	11/7/2002	20	Broke	broke	#VALUE!	#VALUE!	#####	58.1	
11/7/2002	37567	broke	11/7/2002	11/19/2002	12	Broke	broke	#VALUE!	#VALUE!	#####	59.1	
11/19/2002	37579	broke	11/19/2002	1/0/1900	####	Broke		0	!	!	#####	0.0

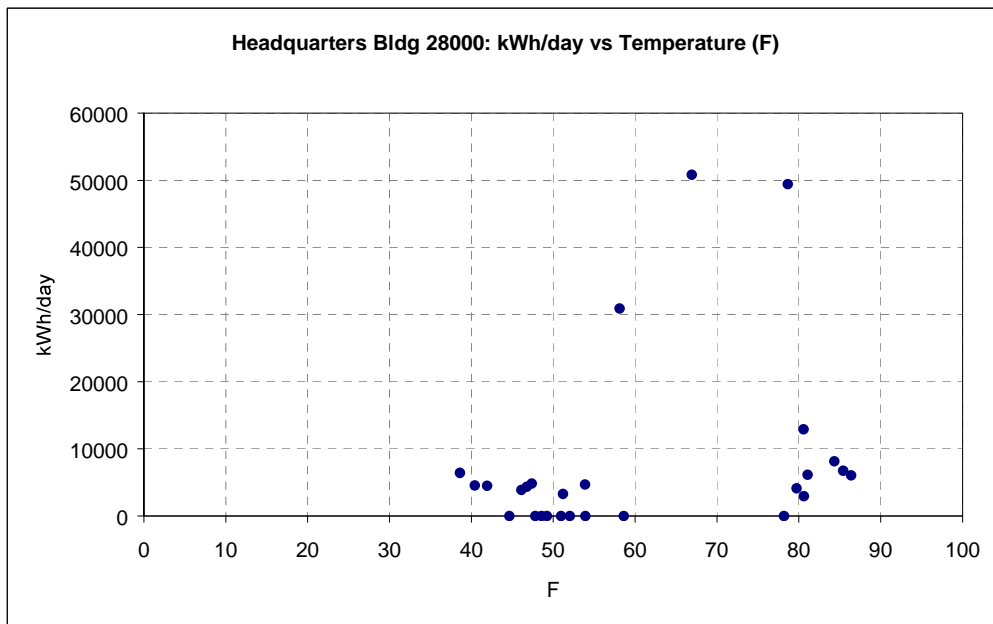
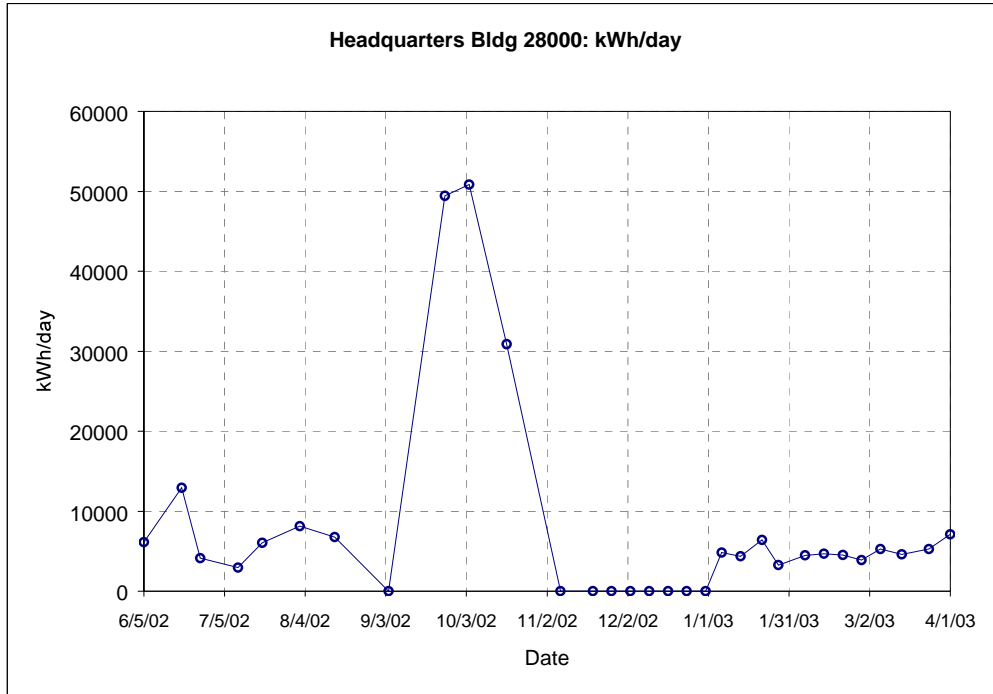
11.2.9.2.1. Baseline Model From Manual Readings

No baseline model available for this site.

11.2.10. 28000 Headquarters Bldg

11.2.10.1. Electricity Use From Manual Readings

28000 Elec	Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)	
								240	50829		
6/5/02	37412	6456	6/5/02	6/19/02	14	6456	6813	357	85680	6120	81.1
6/19/02	37426	6813	6/19/02	6/26/02	7	6813	7190	377	90480	12926	80.6
6/26/02	37433	7190	6/26/02	7/10/02	14	7190	7430	240	57600	4114	79.7
7/10/02	37447	7430	7/10/02	7/19/02	9	7430	7541	111	26640	2960	80.6
7/19/02	37456	7541	7/19/02	8/2/02	14	7541	7893	352	84480	6034	86.4
8/2/02	37470	7893	8/2/02	8/15/02	13	7893	8333	440	105600	8123	84.3
8/15/02	37483	8333	8/15/02	9/4/02	20	8333	8896	563	135120	6756	85.4
9/4/02	37503	8896	9/4/02	9/25/02	21	8896	1168	-	-	-	78.2
9/25/02	37524	1168	9/25/02	10/4/02	9	1168	3021	1853	444720	49413	78.7
10/4/02	37533	3021	10/4/02	10/18/02	14	3021	5986	2965	711600	50829	66.9
10/18/02	37547	5986	10/18/02	11/7/02	20	5986	8561	2575	618000	30900	58.1
11/7/02	37567	8561	11/7/02	11/19/02	12	8561	255	-	-	-	58.6
11/19/02	37579	255	11/19/02	11/26/02	7	255	-	-	-	-	53.9
11/26/02	37586	Logger	11/26/02	12/3/02	7	-	-	-	-	-	49.2
12/3/02	37593	Logger	12/3/02	12/10/02	7	-	-	-	-	-	44.7
12/10/02	37600	Logger	12/10/02	12/17/02	7	-	-	-	-	-	52.0
12/17/02	37607	Logger	12/17/02	12/24/02	7	-	-	-	-	-	51.0
12/24/02	37614	Logger	12/24/02	12/31/02	7	-	-	-	-	-	48.6
12/31/02	37621	Logger	12/31/02	1/6/03	6	-	-	-	-	-	47.8
1/6/03	37627	1063	1/6/03	1/13/03	7	1063	1204	141	33840	4834	47.4
1/13/03	37634	1204	1/13/03	1/21/03	8	1204	1349	145	34800	4350	46.8
1/21/03	37642	1349	1/21/03	1/27/03	6	1349	1509	160	38400	6400	38.6
1/27/03	37648	1509	1/27/03	2/6/03	10	1509	1645	136	32640	3264	51.2
2/6/03	37658	1645	2/6/03	2/13/03	7	1645	1776	131	31440	4491	41.9
2/13/03	37665	1776	2/13/03	2/20/03	7	1776	1912	136	32640	4663	53.9
2/20/03	37672	1912	2/20/03	2/27/03	7	1912	2044	132	31680	4526	40.4
2/27/03	37679	2044	2/27/03	3/6/03	7	2044	2157	113	27120	3874	46.1
3/6/03	37686	2157	3/6/03	3/14/03	8	2157	2333	176	42240	5280	59.7
3/14/03	37694	2333	3/14/03	3/24/03	10	2333	2525	192	46080	4608	58.1
3/24/03	37704	2525	3/24/03	4/1/03	8	2525	2700	175	42000	5250	59.8
4/1/03	37712	2700	4/1/03	4/7/03	6	2700	2878	178	42720	7120	59.0



11.2.10.1.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 1
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

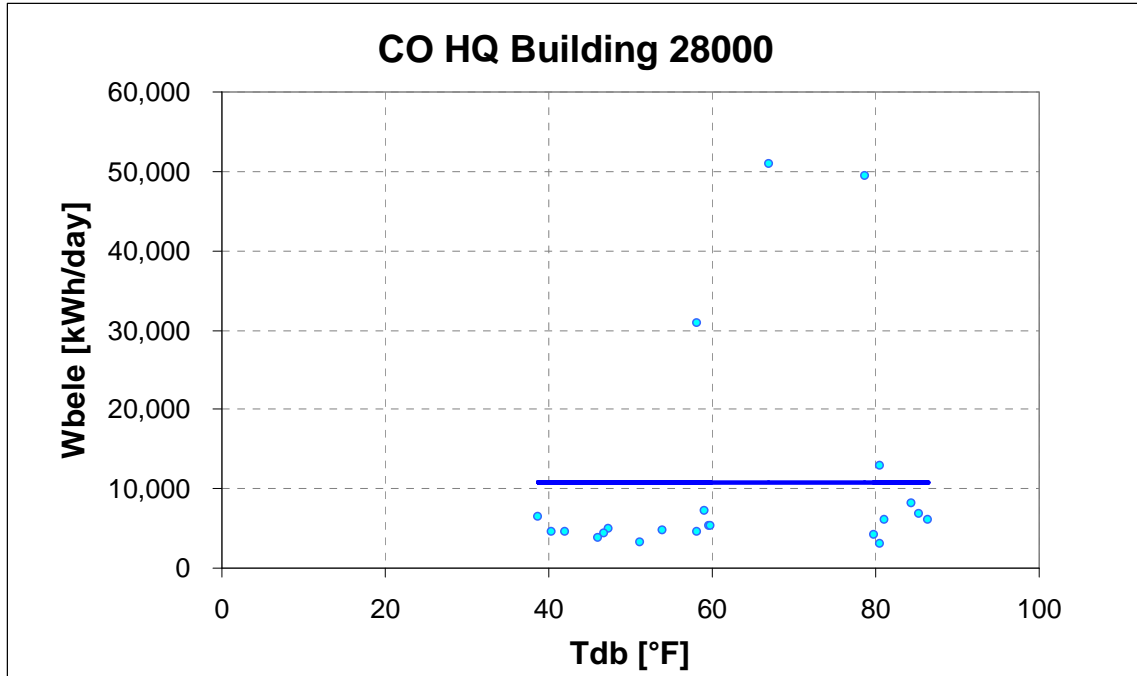
 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat
 Model type = Mean
 Grouping column No = 5
 Value for grouping = 1
 Residual mode = 1
 # of X(Indep.) Var = 0
 Y1 column number = 6
 X1 column number = 0 (unused)
 X2 column number = 0 (unused)
 X3 column number = 0 (unused)
 X4 column number = 0 (unused)
 X5 column number = 0 (unused)
 X6 column number = 0 (unused)

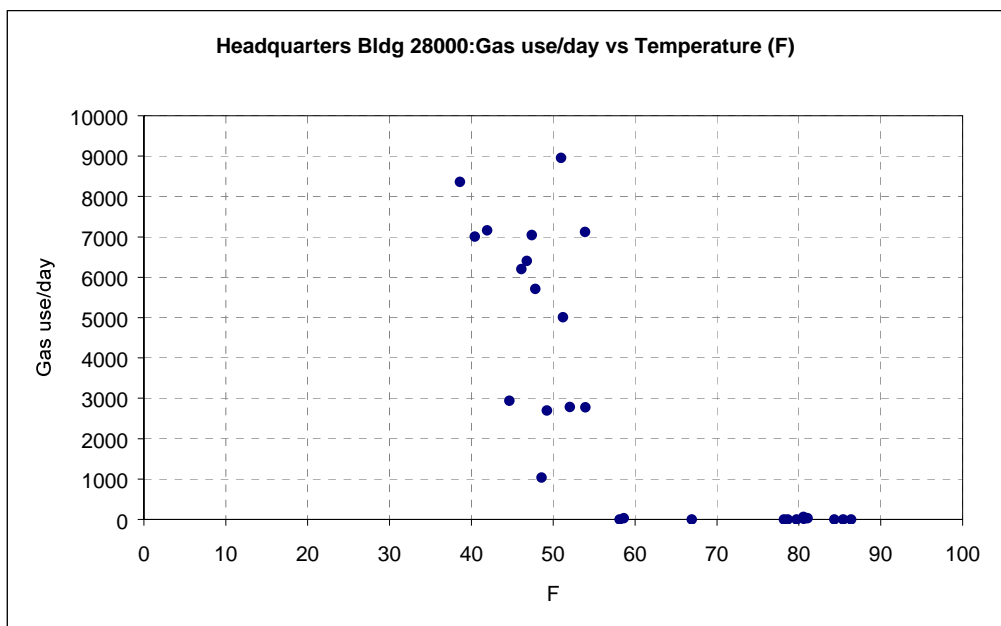
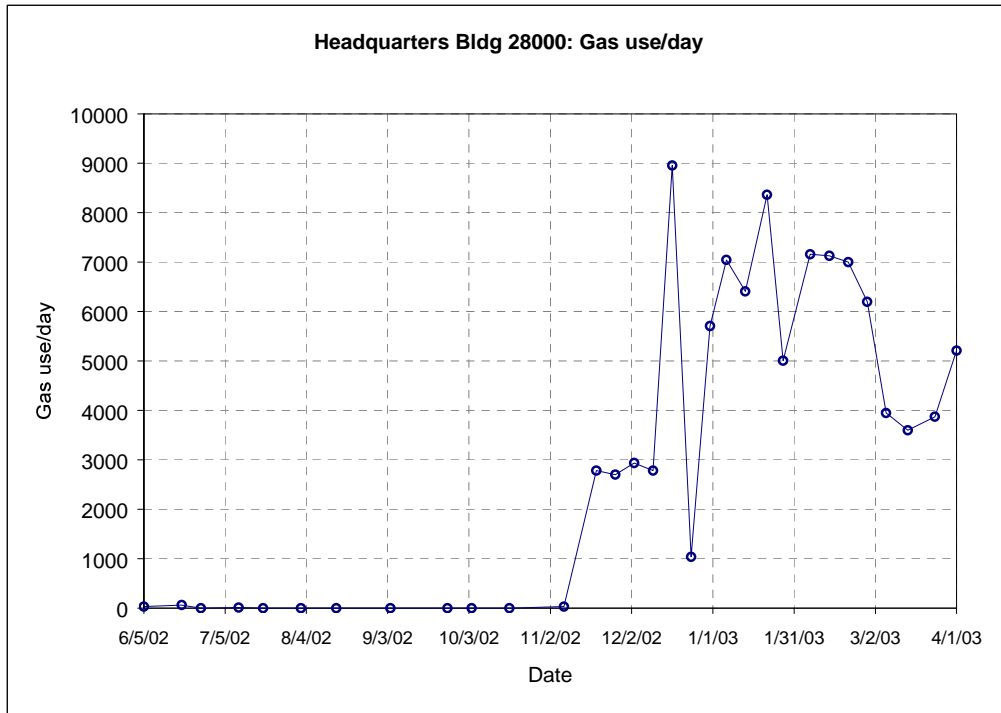
Regression Results

 N = 22
 Ymean = 10765.267
 StdDev = 13985.316
 CV-StDev = 129.911 %



11.2.10.2. Natural Gas From Manual Readings

28000 Gas		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									1		
6/5/02	37412	5831900	6/5/02	6/19/02	14	5831900	5832326	426	426	30	81.1
6/19/02	37426	5832326	6/19/02	6/26/02	7	5832326	5832764	438	438	63	80.6
6/26/02	37433	5832764	6/26/02	7/10/02	14	5832764	5832603	-	-	-	79.7
7/10/02	37447	5832603	7/10/02	7/19/02	9	5832603	5832729	126	126	14	80.6
7/19/02	37456	5832729	7/19/02	8/2/02	14	5832729	5832765	36	36	3	86.4
8/2/02	37470	5832765	8/2/02	8/15/02	13	5832765	5832771	6	6	0	84.3
8/15/02	37483	5832771	8/15/02	9/4/02	20	5832771	5832812	41	41	2	85.4
9/4/02	37503	5832812	9/4/02	9/25/02	21	5832812	5832826	14	14	1	78.2
9/25/02	37524	5832826	9/25/02	10/4/02	9	5832826	5832839	13	13	1	78.7
10/4/02	37533	5832839	10/4/02	10/18/02	14	5832839	5832844	5	5	0	66.9
10/18/02	37547	5832844	10/18/02	11/7/02	20	5832844	5832860	16	16	1	58.1
11/7/02	37567	5832860	11/7/02	11/19/02	12	5832860	5833242	382	382	32	58.6
11/19/02	37579	5833242	11/19/02	11/26/02	7	5833242	5852704	19462	19462	2780	53.9
11/26/02	37586	5852704	11/26/02	12/3/02	7	5852704	5871606	18902	18902	2700	49.2
12/3/02	37593	5871606	12/3/02	12/10/02	7	5871606	5892173	20567	20567	2938	44.7
12/10/02	37600	5892173	12/10/02	12/17/02	7	5892173	5911641	19468	19468	2781	52.0
12/17/02	37607	5911641	12/17/02	12/24/02	7	5911641	5974325	62684	62684	8955	51.0
12/24/02	37614	5974325	12/24/02	12/31/02	7	5974325	5981603	7278	7278	1040	48.6
12/31/02	37621	5981603	12/31/02	1/6/03	6	5981603	6015861	34258	34258	5710	47.8
1/6/03	37627	6015861	1/6/03	1/13/03	7	6015861	6065159	49298	49298	7043	47.4
1/13/03	37634	6065159	1/13/03	1/21/03	8	6065159	6116413	51254	51254	6407	46.8
1/21/03	37642	6116413	1/21/03	1/27/03	6	6116413	6166589	50176	50176	8363	38.6
1/27/03	37648	6166589	1/27/03	2/6/03	10	6166589	6216684	50095	50095	5010	51.2
2/6/03	37658	6216684	2/6/03	2/13/03	7	6216684	6266807	50123	50123	7160	41.9
2/13/03	37665	6266807	2/13/03	2/20/03	7	6266807	6316682	49875	49875	7125	53.9
2/20/03	37672	6316682	2/20/03	2/27/03	7	6316682	6365703	49021	49021	7003	40.4
2/27/03	37679	6365703	2/27/03	3/6/03	7	6365703	6409091	43388	43388	6198	46.1
3/6/03	37686	6409091	3/6/03	3/14/03	8	6409091	6440673	31582	31582	3948	59.7
3/14/03	37694	6440673	3/14/03	3/24/03	10	6440673	6476654	35981	35981	3598	58.1
3/24/03	37704	6476654	3/24/03	4/1/03	8	6476654	6507622	30968	30968	3871	59.8
4/1/03	37712	6507622	4/1/03	4/7/03	6	6507622	6538870	31248	31248	5208	59.0



11.2.10.2.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

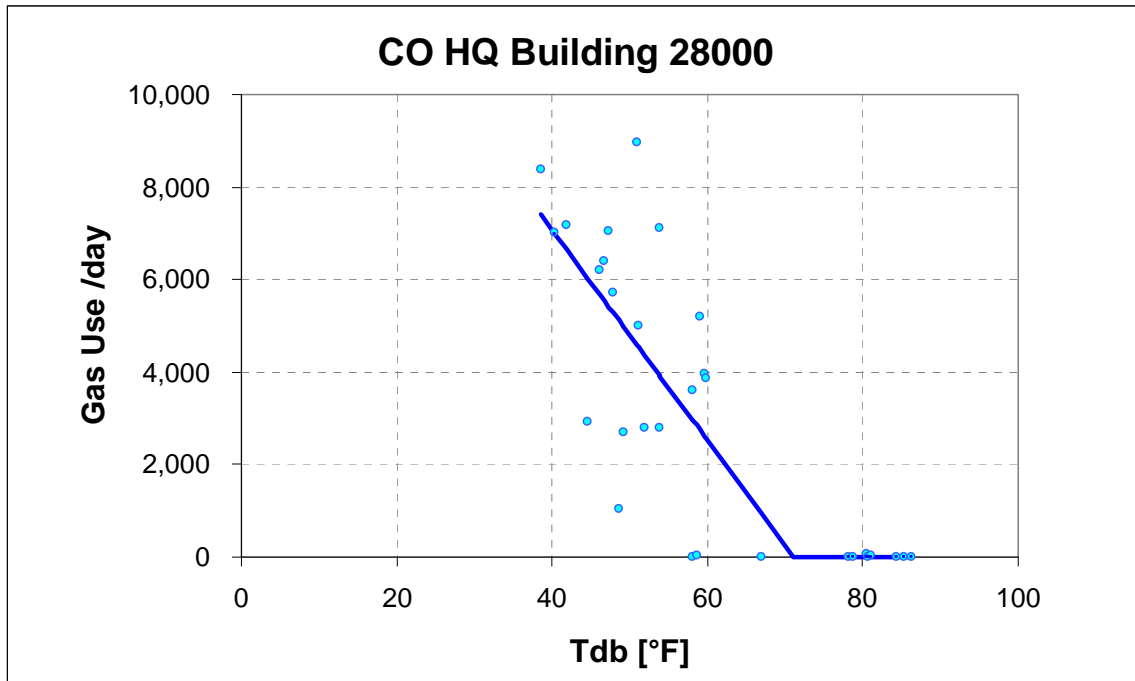
 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat
 Model type = 3P Heating
 Grouping column No = 5
 Value for grouping = 1
 Residual mode = 1
 # of X(Indep.) Var = 1
 Y1 column number = 6
 X1 column number = 9
 X2 column number = 0 (unused)
 X3 column number = 0 (unused)
 X4 column number = 0 (unused)
 X5 column number = 0 (unused)
 X6 column number = 0 (unused)

Regression Results

 N = 30
 R2 = 0.641
 AdjR2 = 0.641
 RMSE = 1863.7917
 CV-RMSE = 57.064%
 p = 0.137
 DW = 1.664 (p>0)
 N1 = 22
 N2 = 8
 Ycp = -1.4817 (573.7777)
 LS = -227.8306 (32.2113)
 RS = 0.0000 (0.0000)
 Xcp = 71.0932 (0.9548)



11.2.11. 42000 Sports USA

11.2.11.1. Electricity Use From Manual Readings

42000 Elec		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									1		
6/5/2002	37412	broke	6/5/2002	6/19/2002	14	broke	broke	#VALUE!	#VALUE!	#VALUE!	81.1
6/19/2002	37426	broke	6/19/2002	6/26/2002	7	broke	broke	#VALUE!	#VALUE!	#VALUE!	80.6
6/26/2002	37433	broke	6/26/2002	7/10/2002	14	broke	broke	#VALUE!	#VALUE!	#VALUE!	79.7
7/10/2002	37447	broke	7/10/2002	7/19/2002	9	broke	broke	#VALUE!	#VALUE!	#VALUE!	80.6
7/19/2002	37456	broke	7/19/2002	8/2/2002	14	broke	broke	#VALUE!	#VALUE!	#VALUE!	86.4
8/2/2002	37470	broke	8/2/2002	8/15/2002	13	broke	broke	#VALUE!	#VALUE!	#VALUE!	84.3
8/15/2002	37483	broke	8/15/2002	9/4/2002	20	broke	1785	#VALUE!	#VALUE!	#VALUE!	85.4
9/4/2002	37503	1785	9/4/2002	9/25/2002	21	1785	broke	#VALUE!	#VALUE!	#VALUE!	78.2
9/25/2002	37524	broke	9/25/2002	10/4/2002	9	broke	broke	#VALUE!	#VALUE!	#VALUE!	78.7
10/4/2002	37533	broke	10/4/2002	#####	14	broke	broke	#VALUE!	#VALUE!	#VALUE!	66.9
10/18/2002	37547	Broke	#####	11/7/2002	20	broke	broke	#VALUE!	#VALUE!	#VALUE!	58.1
11/7/2002	37567	Broke	11/7/2002	#####	12	broke	broke	#VALUE!	#VALUE!	#VALUE!	59.1
11/19/2002	37579	Broke	#####	1/0/1900	####	broke		0	#VALUE!	#VALUE!	0.0

11.2.11.1.1. Baseline Model From Manual Readings

No baseline model available for this site.

11.2.11.2. Natural Gas From Manual Readings

42000 Gas		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									300		
6/5/2002	37412	1964480	6/5/2002	6/19/2002	14	1964480	1964480	0	0	0	81.1
6/19/2002	37426	1964480	6/19/2002	6/26/2002	7	1964480	1964480	0	0	0	80.6
6/26/2002	37433	1964480	6/26/2002	7/10/2002	14	1964480	broke	#VALUE!	#VALUE!	#VALUE!	79.7
7/10/2002	37447	broke	7/10/2002	7/19/2002	9	broke	1964480	#VALUE!	#VALUE!	#VALUE!	80.6
7/19/2002	37456	1964480	7/19/2002	8/2/2002	14	1964480	broke	#VALUE!	#VALUE!	#VALUE!	86.4
8/2/2002	37470	broke	8/2/2002	8/15/2002	13	broke	0	#VALUE!	#VALUE!	#VALUE!	84.3
8/15/2002	37483		8/15/2002	9/4/2002	20		0 1964480	2E+06	6E+08	98224	85.4
9/4/2002	37503	1964480	9/4/2002	9/25/2002	21	1964480	broke	#VALUE!	#VALUE!	#VALUE!	78.7
9/25/2002	37524	broke	9/25/2002	10/4/2002	9	broke	broke	#VALUE!	#VALUE!	#VALUE!	
10/4/2002	37533	broke	10/4/2002	10/18/2002	14	broke	broke	#VALUE!	#VALUE!	#VALUE!	
10/18/2002	37547	broke	#####	11/7/2002	20	broke	broke	#VALUE!	#VALUE!	#VALUE!	
11/7/2002	37567	broke	11/7/2002	11/19/2002	12	broke	broke	#VALUE!	#VALUE!	#VALUE!	
11/19/2002	37579	broke	#####	1/0/1900	####	broke		#VALUE!	#VALUE!	#VALUE!	

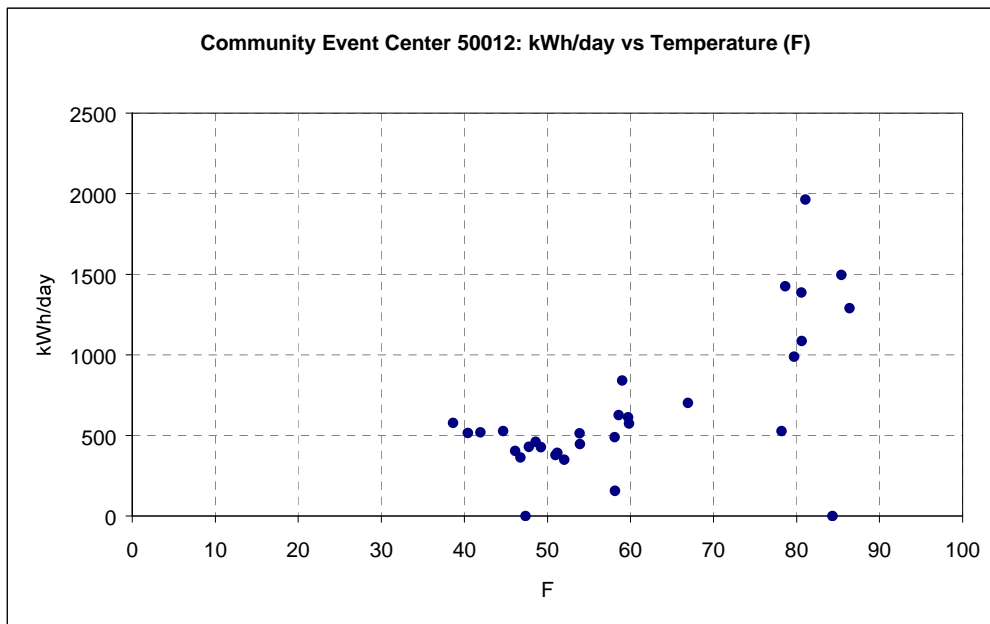
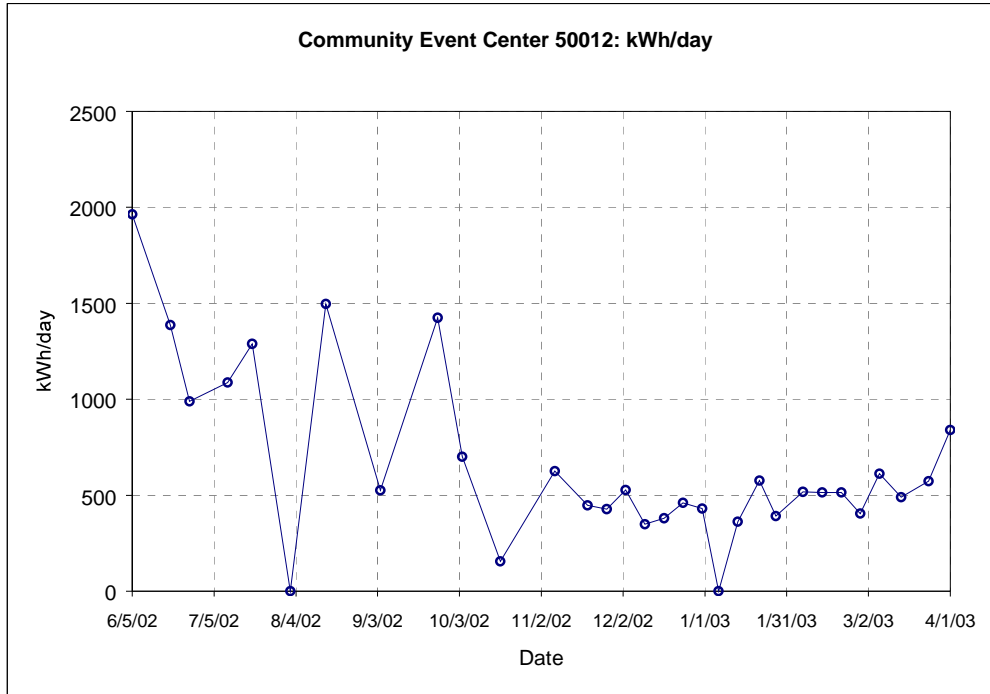
11.2.11.2.1. Baseline Model From Manual Readings

No baseline model available for this site.

11.2.12. 50012 Community Event Center

11.2.12.1. Electricity Use From Manual Readings

50012 Elec		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									?		
6/5/02	37412	1380	6/5/02	6/19/02	14	1380	28862	27482		1963	81.1
6/19/02	37426	28862	6/19/02	6/26/02	7	28862	38570	9708		1387	80.6
6/26/02	37433	38570	6/26/02	7/10/02	14	38570	52408	13838		988	79.7
7/10/02	37447	52408	7/10/02	7/19/02	9	52408	62185	9777		1086	80.6
7/19/02	37456	62185	7/19/02	8/2/02	14	62185	80229	18044		1289	86.4
8/2/02	37470	80229	8/2/02	8/15/02	13	80229	3350	-		-	84.3
8/15/02	37483	3350	8/15/02	9/4/02	20	3350	33270	29920		1496	85.4
9/4/02	37503	33270	9/4/02	9/25/02	21	33270	44311	11041		526	78.2
9/25/02	37524	44311	9/25/02	10/4/02	9	44311	57133	12822		1425	78.7
10/4/02	37533	57133	10/4/02	10/18/02	14	57133	66948	9815		701	66.9
10/18/02	37547	66948	10/18/02	11/7/02	20	66948	70054	3106		155	58.1
11/7/02	37567	70054	11/7/02	11/19/02	12	70054	77557	7503		625	58.6
11/19/02	37579	77557	11/19/02	11/26/02	7	77557	80682	3125		446	53.9
11/26/02	37586	80682	11/26/02	12/3/02	7	80682	83669	2987		427	49.2
12/3/02	37593	83669	12/3/02	12/10/02	7	83669	87360	3691		527	44.7
12/10/02	37600	87360	12/10/02	12/17/02	7	87360	89805	2445		349	52.0
12/17/02	37607	89805	12/17/02	12/24/02	7	89805	92459	2654		379	51.0
12/24/02	37614	92459	12/24/02	12/31/02	7	92459	95684	3225		461	48.6
12/31/02	37621	95684	12/31/02	1/6/03	6	95684	98263	2579		430	47.8
1/6/03	37627	98263	1/6/03	1/13/03	7	98263	1663	-		-	47.4
1/13/03	37634	1663	1/13/03	1/21/03	8	1663	4560	2897		362	46.8
1/21/03	37642	4560	1/21/03	1/27/03	6	4560	8021	3461		577	38.6
1/27/03	37648	8021	1/27/03	2/6/03	10	8021	11938	3917		392	51.2
2/6/03	37658	11938	2/6/03	2/13/03	7	11938	15563	3625		518	41.9
2/13/03	37665	15563	2/13/03	2/20/03	7	15563	19157	3594		513	53.9
2/20/03	37672	19157	2/20/03	2/27/03	7	19157	22759	3602		515	40.4
2/27/03	37679	22759	2/27/03	3/6/03	7	22759	25584	2825		404	46.1
3/6/03	37686	25584	3/6/03	3/14/03	8	25584	30480	4896		612	59.7
3/14/03	37694	30480	3/14/03	3/24/03	10	30480	35370	4890		489	58.1
3/24/03	37704	35370	3/24/03	4/1/03	8	35370	39959	4589		574	59.8
4/1/03	37712	39959	4/1/03	4/7/03	6	39959	45003	5044		841	59.0



11.2.12.1.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 3
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Cooling

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

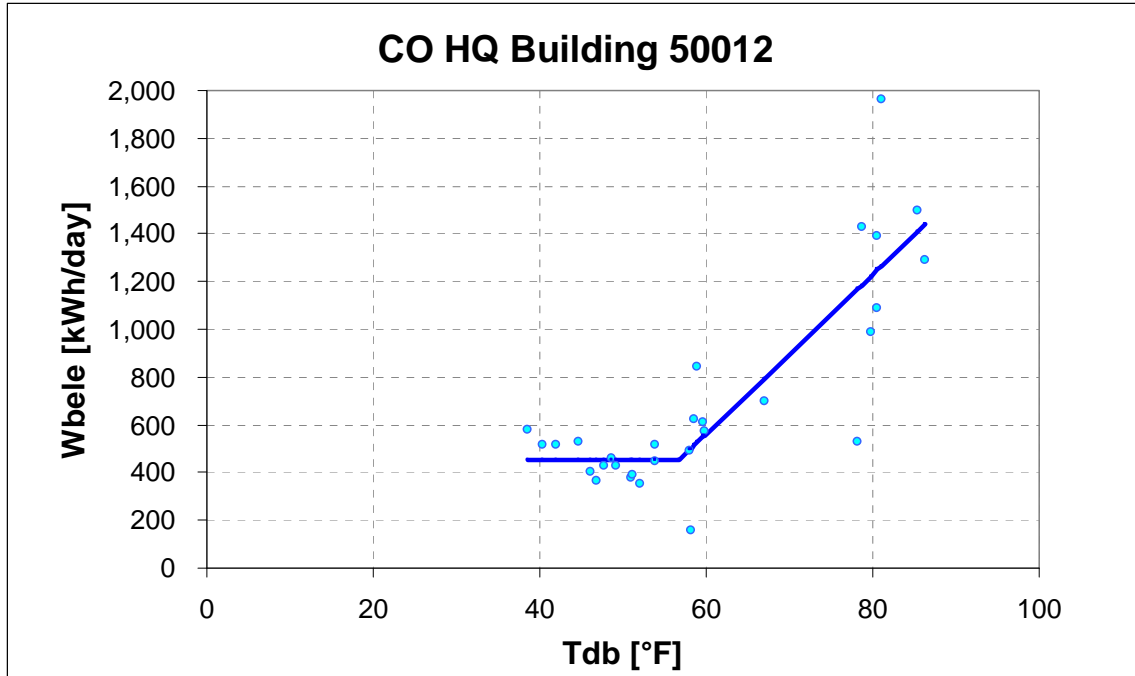
X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

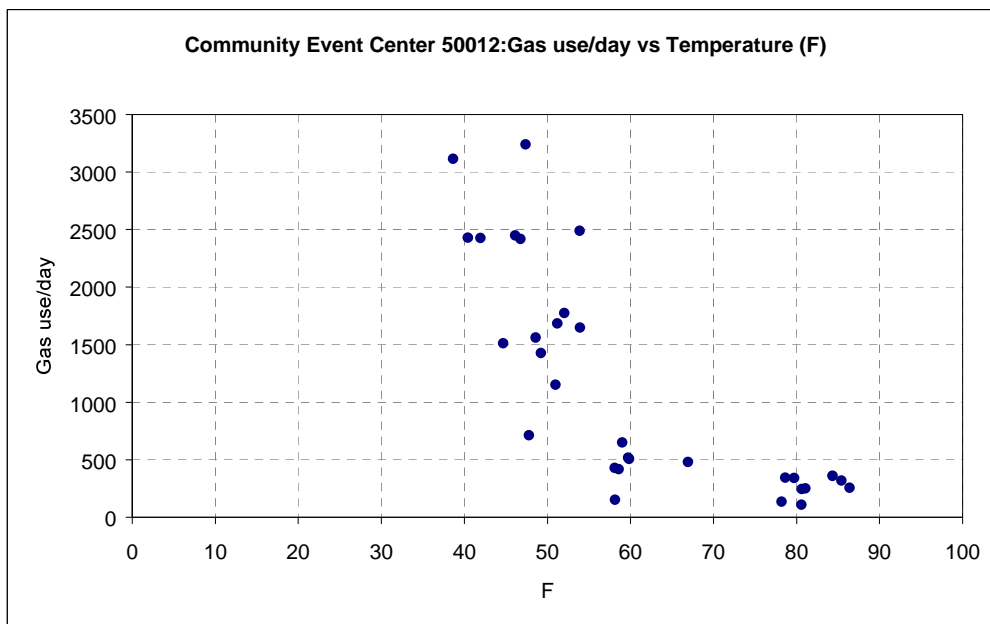
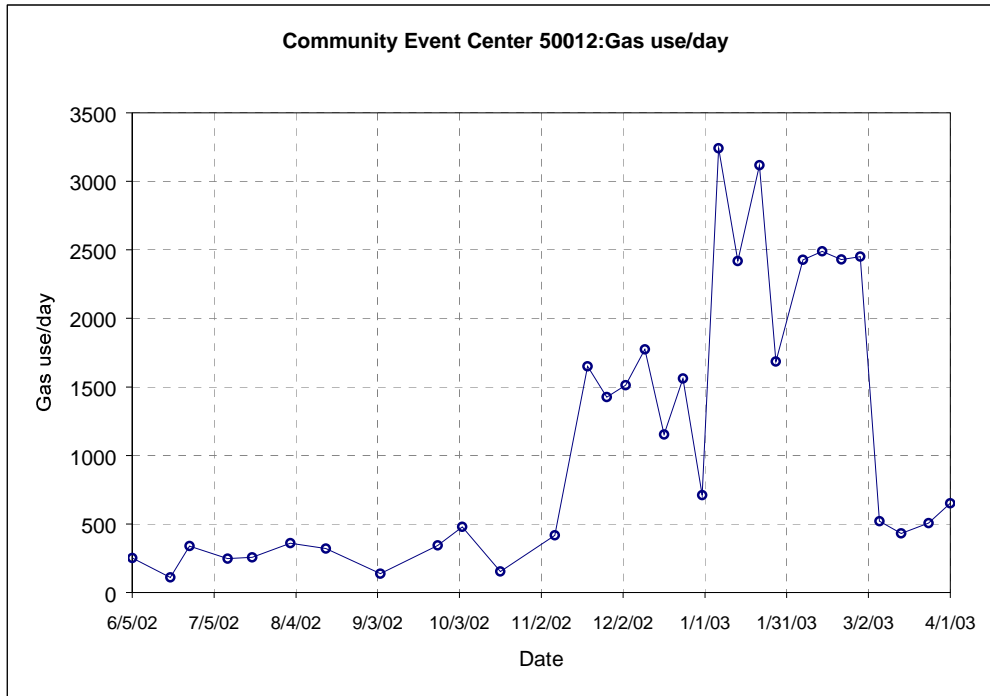
Regression Results

 N = 29
 R2 = 0.730
 AdjR2 = 0.730
 RMSE = 227.2261
 CV-RMSE = 32.213%
 p = -0.154
 DW = 1.781 (p>0)
 N1 = 14
 N2 = 15
 Ycp = 452.0388 (51.5694)
 LS = 0.0000 (0.0000)
 RS = 33.4889 (3.9190)
 Xcp = 56.7712 (0.9548)



11.2.12.2. Natural Gas From Manual Readings

50012 Gas		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									1		
6/5/02	37412	2609318	6/5/02	6/19/02	14	2609318	2612844	3526	3526	252	81.1
6/19/02	37426	2612844	6/19/02	6/26/02	7	2612844	2613610	766	766	109	80.6
6/26/02	37433	2613610	6/26/02	7/10/02	14	2613610	2618375	4765	4765	340	79.7
7/10/02	37447	2618375	7/10/02	7/19/02	9	2618375	2620598	2223	2223	247	80.6
7/19/02	37456	2620598	7/19/02	8/2/02	14	2620598	2624181	3583	3583	256	86.4
8/2/02	37470	2624181	8/2/02	8/15/02	13	2624181	2628855	4674	4674	360	84.3
8/15/02	37483	2628855	8/15/02	9/4/02	20	2628855	2635269	6414	6414	321	85.4
9/4/02	37503	2635269	9/4/02	9/25/02	21	2635269	2638139	2870	2870	137	78.2
9/25/02	37524	2638139	9/25/02	10/4/02	9	2638139	2641232	3093	3093	344	78.7
10/4/02	37533	2641232	10/4/02	10/18/02	14	2641232	2647953	6721	6721	480	66.9
10/18/02	37547	2647953	10/18/02	11/7/02	20	2647953	2651024	3071	3071	154	58.1
11/7/02	37567	2651024	11/7/02	11/19/02	12	2651024	2656042	5018	5018	418	58.6
11/19/02	37579	2656042	11/19/02	11/26/02	7	2656042	2667588	11546	11546	1649	53.9
11/26/02	37586	2667588	11/26/02	12/3/02	7	2667588	2677575	9987	9987	1427	49.2
12/3/02	37593	2677575	12/3/02	12/10/02	7	2677575	2688162	10587	10587	1512	44.7
12/10/02	37600	2688162	12/10/02	12/17/02	7	2688162	2700585	12423	12423	1775	52.0
12/17/02	37607	2700585	12/17/02	12/24/02	7	2700585	2708658	8073	8073	1153	51.0
12/24/02	37614	2708658	12/24/02	12/31/02	7	2708658	2719587	10929	10929	1561	48.6
12/31/02	37621	2719587	12/31/02	1/6/03	6	2719587	2723855	4268	4268	711	47.8
1/6/03	37627	2723855	1/6/03	1/13/03	7	2723855	2746548	22693	22693	3242	47.4
1/13/03	37634	2746548	1/13/03	1/21/03	8	2746548	2765894	19346	19346	2418	46.8
1/21/03	37642	2765894	1/21/03	1/27/03	6	2765894	2784592	18698	18698	3116	38.6
1/27/03	37648	2784592	1/27/03	2/6/03	10	2784592	2801434	16842	16842	1684	51.2
2/6/03	37658	2801434	2/6/03	2/13/03	7	2801434	2818423	16989	16989	2427	41.9
2/13/03	37665	2818423	2/13/03	2/20/03	7	2818423	2835848	17425	17425	2489	53.9
2/20/03	37672	2835848	2/20/03	2/27/03	7	2835848	2852859	17011	17011	2430	40.4
2/27/03	37679	2852859	2/27/03	3/6/03	7	2852859	2870010	17151	17151	2450	46.1
3/6/03	37686	2870010	3/6/03	3/14/03	8	2870010	2874168	4158	4158	520	59.7
3/14/03	37694	2874168	3/14/03	3/24/03	10	2874168	2878466	4298	4298	430	58.1
3/24/03	37704	2878466	3/24/03	4/1/03	8	2878466	2882518	4052	4052	507	59.8
4/1/03	37712	2882518	4/1/03	4/7/03	6	2882518	2886417	3899	3899	650	59.0



11.2.12.2.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Heating

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

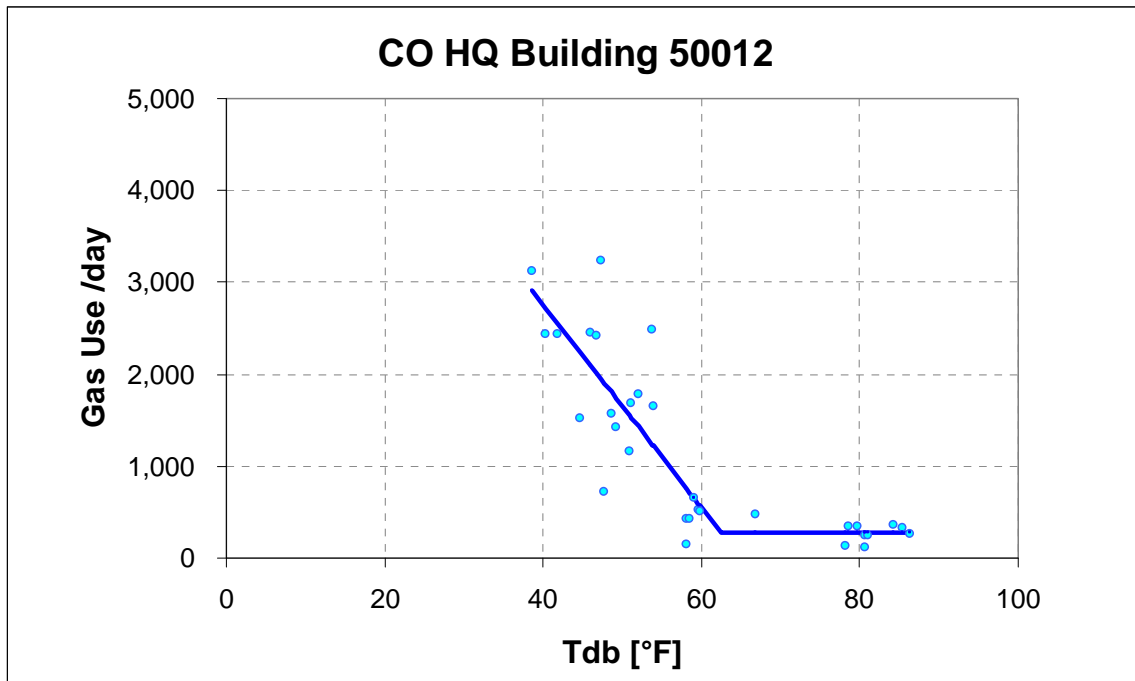
X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

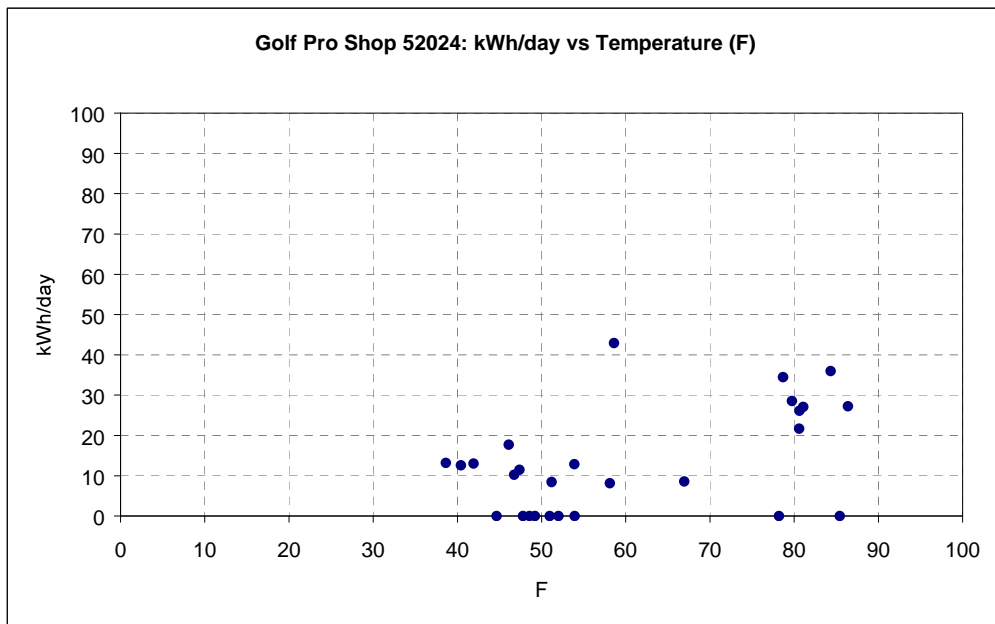
 N = 31
 R2 = 0.758
 AdjR2 = 0.758
 RMSE = 490.3720
 CV-RMSE = 42.738%
 p = -0.215
 DW = 2.429 (p>0)
 N1 = 21
 N2 = 10
 Ycp = 270.3443 (127.3944)
 LS = -110.6756 (11.6153)
 RS = 0.0000 (0.0000)
 Xcp = 62.5000 (0.9548)



11.2.13. 52024 COMMAND Child Care

11.2.13.1. Electricity Use From Manual Readings

52024 Elec	Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)	
								1			
6/5/02	37412	76501	6/5/02	6/19/02	14	76501	76880	379	379	27	81.1
6/19/02	37426	76880	6/19/02	6/26/02	7	76880	77032	152	152	22	80.6
6/26/02	37433	77032	6/26/02	7/10/02	14	77032	77432	400	400	29	79.7
7/10/02	37447	77432	7/10/02	7/19/02	9	77432	77667	235	235	26	80.6
7/19/02	37456	77667	7/19/02	8/2/02	14	77667	78048	381	381	27	86.4
8/2/02	37470	78048	8/2/02	8/15/02	13	78048	78515	467	467	36	84.3
8/15/02	37483	78515	8/15/02	9/4/02	20	78515	9702	-	-	-	85.4
9/4/02	37503	9702	9/4/02	9/25/02	21	9702	7	-	-	-	78.2
9/25/02	37524	7	9/25/02	10/4/02	9	7	317	310	310	34	78.7
10/4/02	37533	317	10/4/02	10/18/02	14	317	437	120	120	9	66.9
10/18/02	37547	437	10/18/02	11/7/02	20	437	600	163	163	8	58.1
11/7/02	37567	600	11/7/02	11/19/02	12	600	1115	515	515	43	58.6
11/19/02	37579	1115	11/19/02	11/26/02	7	1115	-	-	-	-	53.9
11/26/02	37586	Logger	11/26/02	12/3/02	7	-	-	-	-	-	49.2
12/3/02	37593	Logger	12/3/02	12/10/02	7	-	-	-	-	-	44.7
12/10/02	37600	Logger	12/10/02	12/17/02	7	-	-	-	-	-	52.0
12/17/02	37607	Logger	12/17/02	12/24/02	7	-	-	-	-	-	51.0
12/24/02	37614	Logger	12/24/02	12/31/02	7	-	-	-	-	-	48.6
12/31/02	37621	Logger	12/31/02	1/6/03	6	-	-	-	-	-	47.8
1/6/03	37627	1913	1/6/03	1/13/03	7	1913	1993	80	80	11	47.4
1/13/03	37634	1993	1/13/03	1/21/03	8	1993	2075	82	82	10	46.8
1/21/03	37642	2075	1/21/03	1/27/03	6	2075	2154	79	79	13	38.6
1/27/03	37648	2154	1/27/03	2/6/03	10	2154	2238	84	84	8	51.2
2/6/03	37658	2238	2/6/03	2/13/03	7	2238	2329	91	91	13	41.9
2/13/03	37665	2329	2/13/03	2/20/03	7	2329	2419	90	90	13	53.9
2/20/03	37672	2419	2/20/03	2/27/03	7	2419	2507	88	88	13	40.4
2/27/03	37679	2507	2/27/03	3/6/03	7	2507	2631	124	124	18	46.1
3/6/03	37686	2631	3/6/03	3/14/03	8	2631	2762	131	131	16	59.7
3/14/03	37694	2762	3/14/03	3/24/03	10	2762	2901	139	139	14	58.1
3/24/03	37704	2901	3/24/03	4/1/03	8	2901	3027	126	126	16	59.8
4/1/03	37712	3027	4/1/03	4/7/03	6	3027	3161	134	134	22	59.0



11.2.13.1.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 3
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

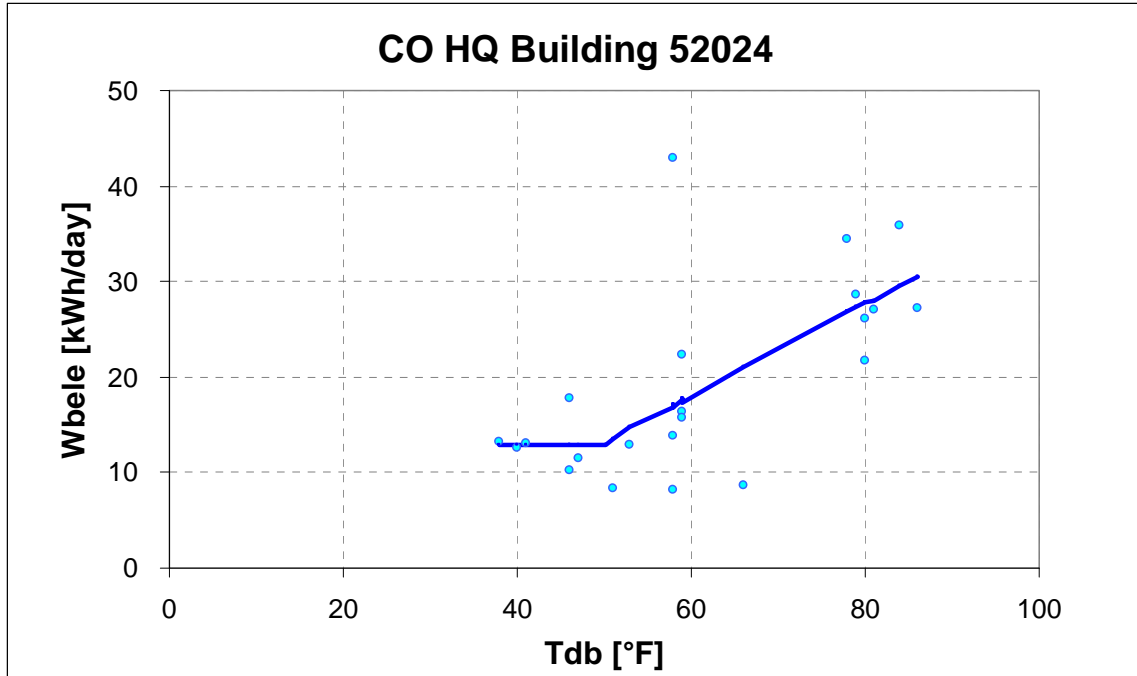
 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat
 Model type = 3P Cooling
 Grouping column No = 5
 Value for grouping = 1
 Residual mode = 1
 # of X(Indep.) Var = 1
 Y1 column number = 6
 X1 column number = 9
 X2 column number = 0 (unused)
 X3 column number = 0 (unused)
 X4 column number = 0 (unused)
 X5 column number = 0 (unused)
 X6 column number = 0 (unused)

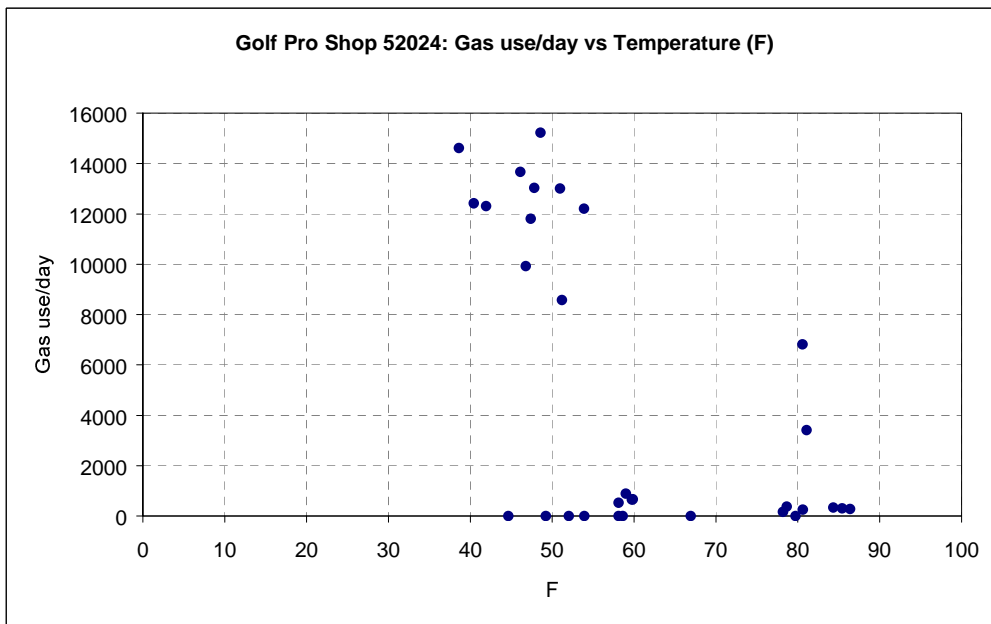
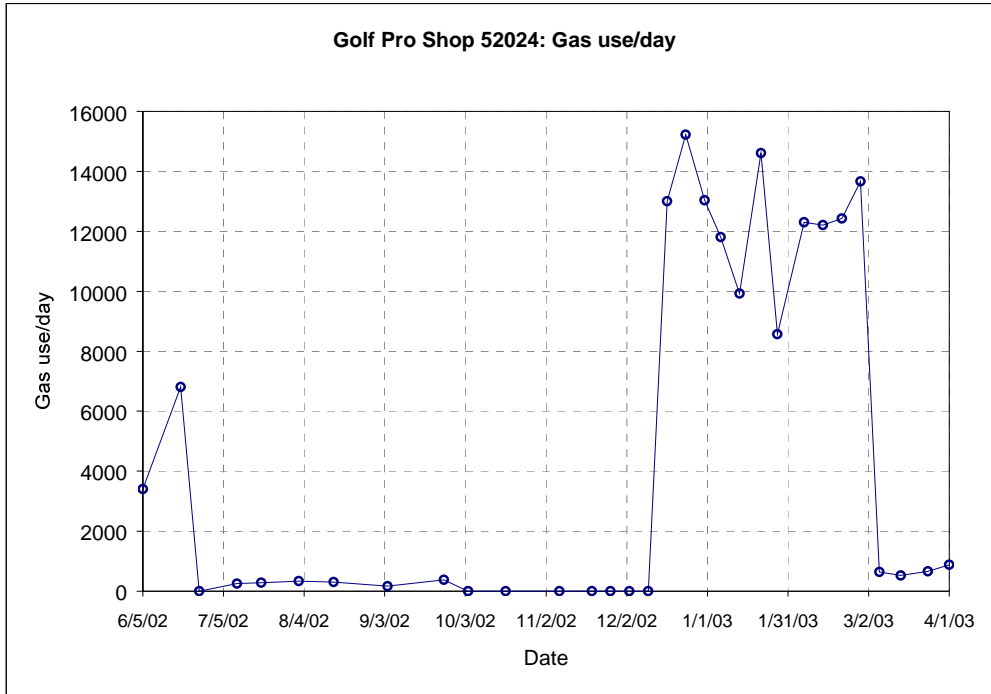
Regression Results

N = 22
 R2 = 0.438
 AdjR2 = 0.438
 RMSE = 7.5951
 CV-RMSE = 39.002%
 p = -0.197
 DW = 2.371 (p>0)
 N1 = 6
 N2 = 16
 Ycp = 12.9554 (2.3132)
 LS = 0.0000 (0.0000)
 RS = 0.4855 (0.1230)
 Xcp = 50.0876 (0.9548)



11.2.13.2. Natural Gas From Manual Readings

52024 Gas		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									1		
6/5/02	37412	9523941	6/5/02	6/19/02	14	9523941	9571642	47701	47701	3407	81.1
6/19/02	37426	9571642	6/19/02	6/26/02	7	9571642	9619311	47669	47669	6810	80.6
6/26/02	37433	9619311	6/26/02	7/10/02	14	9619311	9588400	-	-	-	79.7
7/10/02	37447	9588400	7/10/02	7/19/02	9	9588400	9590671	2271	2271	252	80.6
7/19/02	37456	9590671	7/19/02	8/2/02	14	9590671	9594602	3931	3931	281	86.4
8/2/02	37470	9594602	8/2/02	8/15/02	13	9594602	9598941	4339	4339	334	84.3
8/15/02	37483	9598941	8/15/02	9/4/02	20	9598941	9604931	5990	5990	300	85.4
9/4/02	37503	9604931	9/4/02	9/25/02	21	9604931	9608361	3430	3430	163	78.2
9/25/02	37524	9608361	9/25/02	10/4/02	9	9608361	9611761	3400	3400	378	78.7
10/4/02	37533	9611761	10/4/02	10/18/02	14	9611761	-	-	-	-	66.9
10/18/02	37547	-	10/18/02	11/7/02	20	-	-	-	-	-	58.1
11/7/02	37567	-	11/7/02	11/19/02	12	-	-	-	-	-	58.6
11/19/02	37579	-	11/19/02	11/26/02	7	-	-	-	-	-	53.9
11/26/02	37586	-	11/26/02	12/3/02	7	-	-	-	-	-	49.2
12/3/02	37593	-	12/3/02	12/10/02	7	-	-	-	-	-	44.7
12/10/02	37600	-	12/10/02	12/17/02	7	-	-	-	-	-	52.0
12/17/02	37607	628084	12/17/02	12/24/02	7	628084	719125	91041	91041	13006	51.0
12/24/02	37614	719125	12/24/02	12/31/02	7	719125	825698	106573	106573	15225	48.6
12/31/02	37621	825698	12/31/02	1/6/03	6	825698	903891	78193	78193	13032	47.8
1/6/03	37627	903891	1/6/03	1/13/03	7	903891	986548	82657	82657	11808	47.4
1/13/03	37634	986548	1/13/03	1/21/03	8	986548	1065897	79349	79349	9919	46.8
1/21/03	37642	1065897	1/21/03	1/27/03	6	1065897	1153560	87663	87663	14611	38.6
1/27/03	37648	1153560	1/27/03	2/6/03	10	1153560	1239280	85720	85720	8572	51.2
2/6/03	37658	1239280	2/6/03	2/13/03	7	1239280	1325403	86123	86123	12303	41.9
2/13/03	37665	1325403	2/13/03	2/20/03	7	1325403	1410878	85475	85475	12211	53.9
2/20/03	37672	1410878	2/20/03	2/27/03	7	1410878	1497834	86956	86956	12422	40.4
2/27/03	37679	1497834	2/27/03	3/6/03	7	1497834	1593500	95666	95666	13667	46.1
3/6/03	37686	1593500	3/6/03	3/14/03	8	1593500	1598647	5147	5147	643	59.7
3/14/03	37694	1598647	3/14/03	3/24/03	10	1598647	1603910	5263	5263	526	58.1
3/24/03	37704	1603910	3/24/03	4/1/03	8	1603910	1609170	5260	5260	658	59.8
4/1/03	37712	1609170	4/1/03	4/7/03	6	1609170	1614481	5311	5311	885	59.0



11.2.13.2.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Heating

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 23

R2 = 0.783

AdjR2 = 0.783

RMSE = 2874.7502

CV-RMSE = 43.668%

p = 0.114

DW = 1.724 (p>0)

N1 = 15

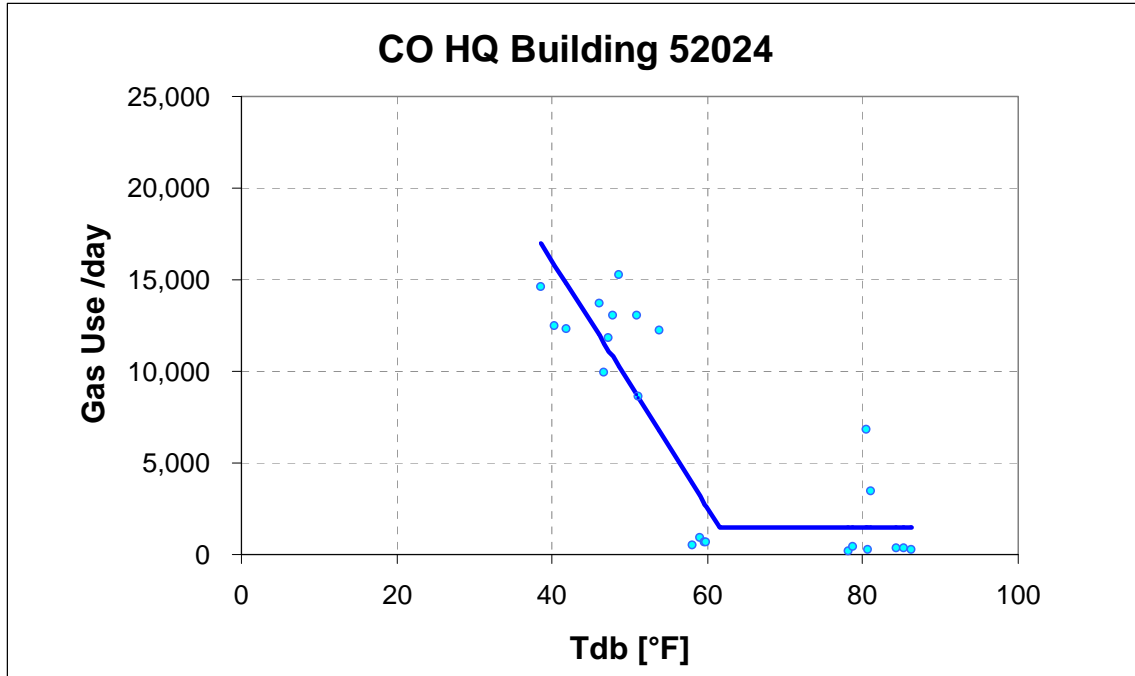
N2 = 8

Ycp = 1503.5549 (836.2368)

LS = -675.7558 (77.5692)

RS = 0.0000 (0.0000)

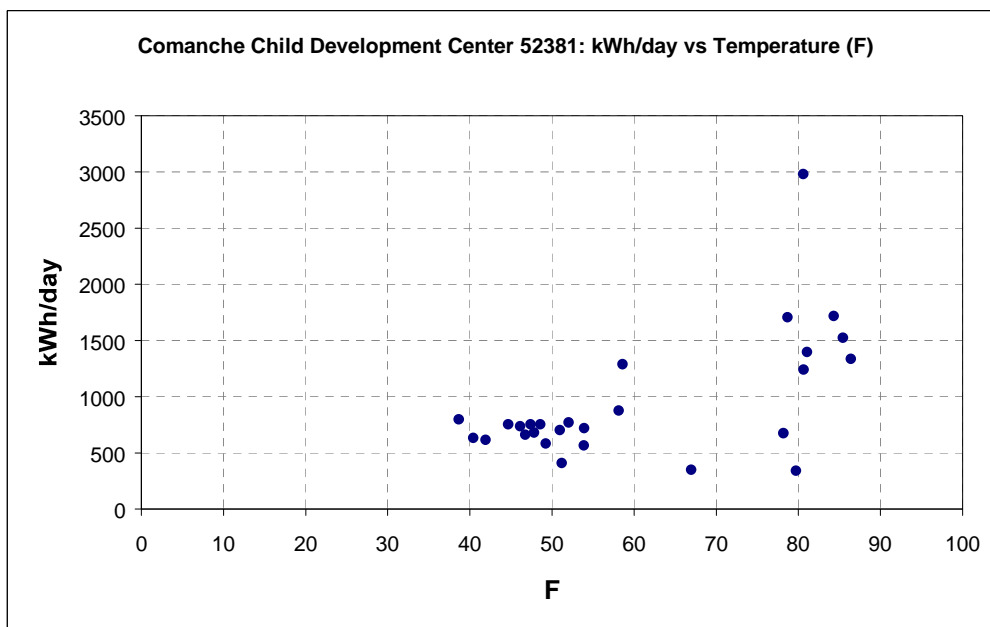
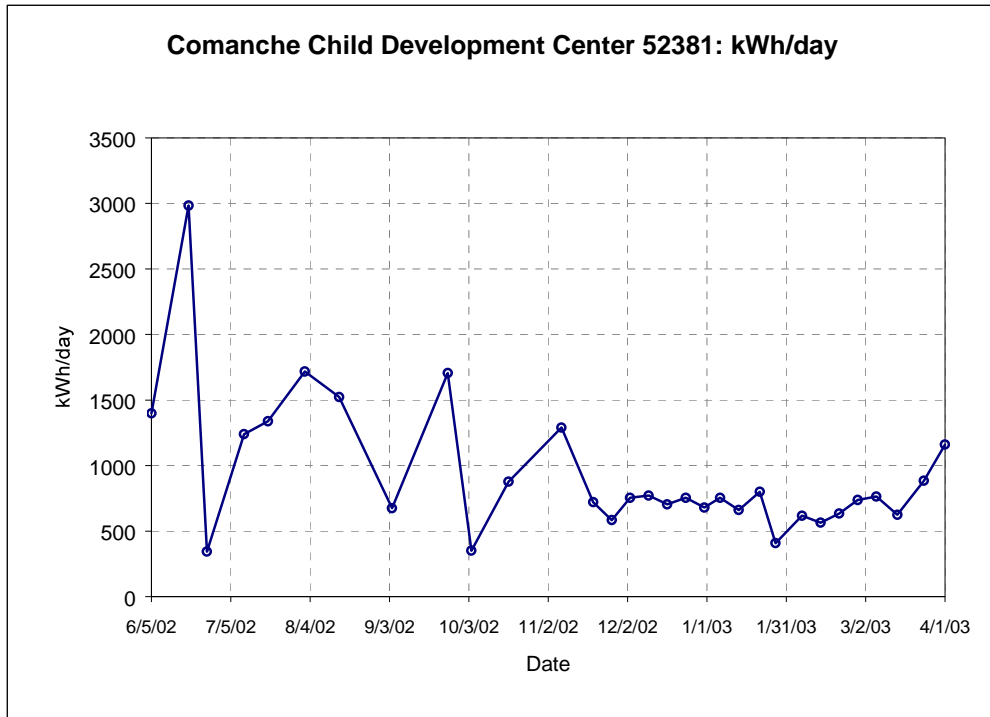
Xcp = 61.5452 (0.9548)



11.2.14. 52381 Golf Pro Shop

11.2.14.1. Electricity Use From Manual Readings

52381 Elec		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp (F)
									120	2983	
6/5/02	37412	8159	6/5/02	6/19/02	14	8159	8322	163	19560	1397	81.1
6/19/02	37426	8322	6/19/02	6/26/02	7	8322	8496	174	20880	2983	80.6
6/26/02	37433	8496	6/26/02	7/10/02	14	8496	8536	40	4800	343	79.7
7/10/02	37447	8536	7/10/02	7/19/02	9	8536	8629	93	11160	1240	80.6
7/19/02	37456	8629	7/19/02	8/2/02	14	8629	8785	156	18720	1337	86.4
8/2/02	37470	8785	8/2/02	8/15/02	13	8785	8971	186	22320	1717	84.3
8/15/02	37483	8971	8/15/02	9/4/02	20	8971	9225	254	30480	1524	85.4
9/4/02	37503	9225	9/4/02	9/25/02	21	9225	9343	118	14160	674	78.2
9/25/02	37524	9343	9/25/02	10/4/02	9	9343	9471	128	15360	1707	78.7
10/4/02	37533	9471	10/4/02	10/18/02	14	9471	9512	41	4920	351	66.9
10/18/02	37547	9512	10/18/02	11/7/02	20	9512	9658	146	17520	876	58.1
11/7/02	37567	9658	11/7/02	11/19/02	12	9658	9787	129	15480	1290	58.6
11/19/02	37579	9787	11/19/02	11/26/02	7	9787	9829	42	5040	720	53.9
11/26/02	37586	9829	11/26/02	12/3/02	7	9829	9863	34	4080	583	49.2
12/3/02	37593	9863	12/3/02	12/10/02	7	9863	9907	44	5280	754	44.7
12/10/02	37600	9907	12/10/02	12/17/02	7	9907	9952	45	5400	771	52.0
12/17/02	37607	9952	12/17/02	12/24/02	7	9952	9993	41	4920	703	51.0
12/24/02	37614	9993	12/24/02	12/31/02	7	9993	10037	44	5280	754	48.6
12/31/02	37621	10037	12/31/02	1/6/03	6	10037	10071	34	4080	680	47.8
1/6/03	37627	10071	1/6/03	1/13/03	7	10071	10115	44	5280	754	47.4
1/13/03	37634	10115	1/13/03	1/21/03	8	10115	10159	44	5280	660	46.8
1/21/03	37642	10159	1/21/03	1/27/03	6	10159	10199	40	4800	800	38.6
1/27/03	37648	10199	1/27/03	2/6/03	10	10199	10233	34	4080	408	51.2
2/6/03	37658	10233	2/6/03	2/13/03	7	10233	10269	36	4320	617	41.9
2/13/03	37665	10269	2/13/03	2/20/03	7	10269	10302	33	3960	566	53.9
2/20/03	37672	10302	2/20/03	2/27/03	7	10302	10339	37	4440	634	40.4
2/27/03	37679	10339	2/27/03	3/6/03	7	10339	10382	43	5160	737	46.1
3/6/03	37686	10382	3/6/03	3/14/03	8	10382	10433	51	6120	765	59.7
3/14/03	37694	10433	3/14/03	3/24/03	10	10433	10485	52	6240	624	58.1
3/24/03	37704	10485	3/24/03	4/1/03	8	10485	10544	59	7080	885	59.8
4/1/03	37712	10544	4/1/03	4/7/03	6	10544	10602	58	6960	1160	59.0



11.2.14.1.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 3
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Cooling

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 31

R2 = 0.392

AdjR2 = 0.392

RMSE = 420.6346

CV-RMSE = 44.940%

p = -0.337

DW = 2.639 (p>0)

N1 = 22

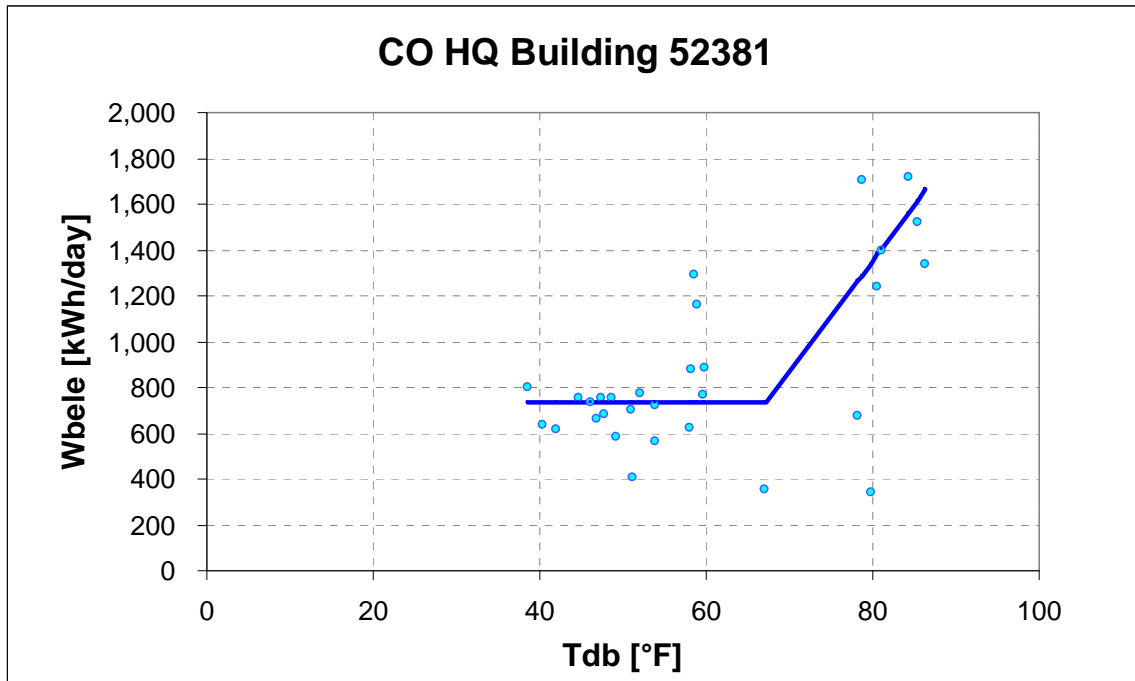
N2 = 9

Ycp = 732.5206 (89.0171)

LS = 0.0000 (0.0000)

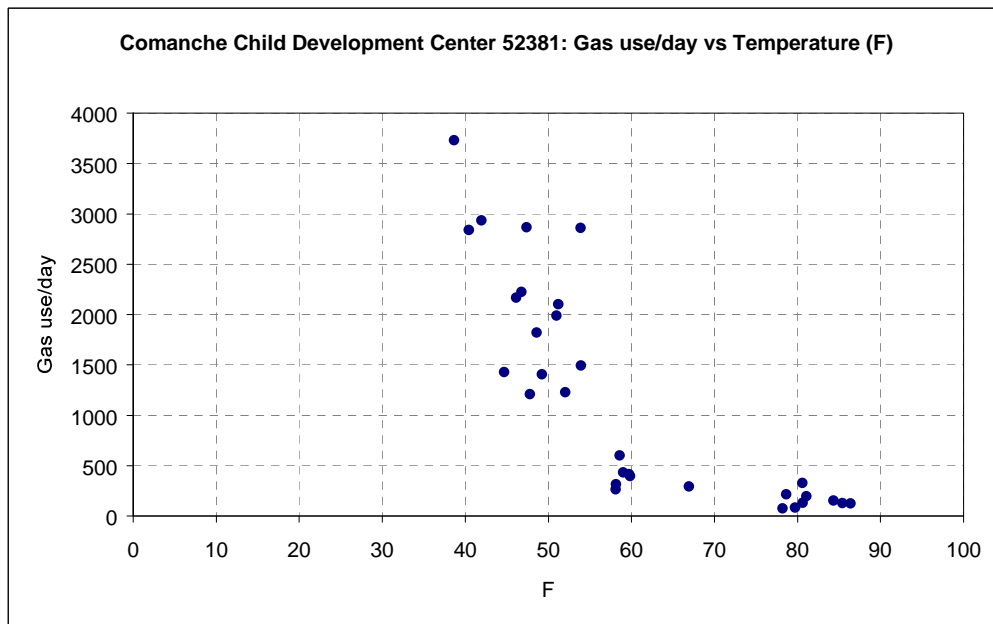
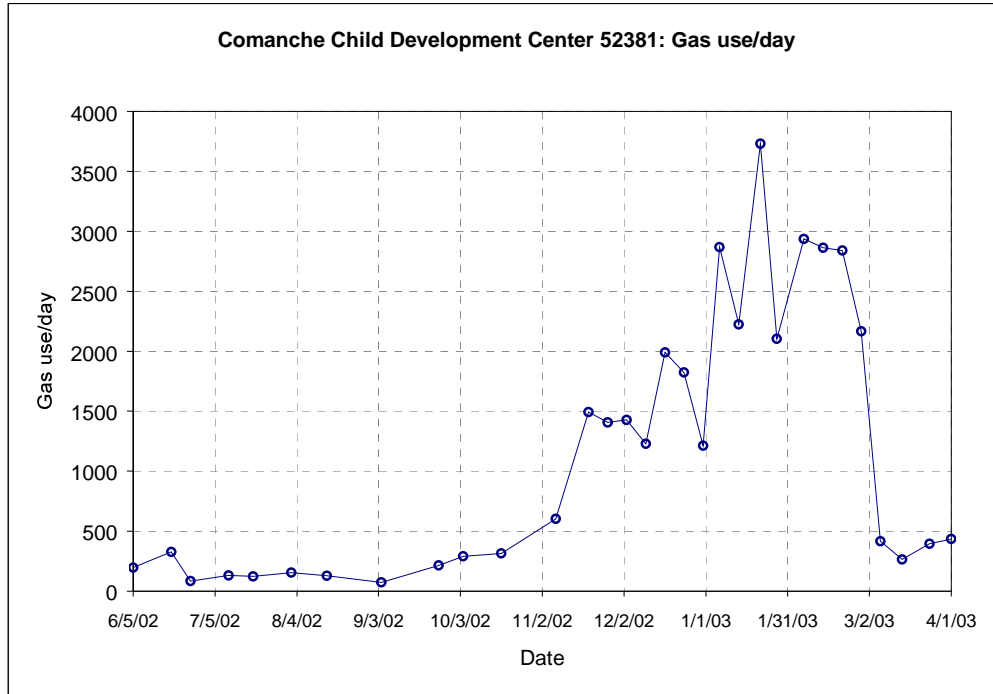
RS = 48.7010 (11.2689)

Xcp = 67.2740 (0.9548)



11.2.14.2. Natural Gas From Manual Readings

52381 Gas		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									1		
6/5/02	37412	958105	6/5/02	6/19/02	14	958105	960841	2736	2736	195	81.1
6/19/02	37426	960841	6/19/02	6/26/02	7	960841	963126	2285	2285	326	80.6
6/26/02	37433	963126	6/26/02	7/10/02	14	963126	964308	1182	1182	84	79.7
7/10/02	37447	964308	7/10/02	7/19/02	9	964308	965488	1180	1180	131	80.6
7/19/02	37456	965488	7/19/02	8/2/02	14	965488	967228	1740	1740	124	86.4
8/2/02	37470	967228	8/2/02	8/15/02	13	967228	969225	1997	1997	154	84.3
8/15/02	37483	969225	8/15/02	9/4/02	20	969225	971805	2580	2580	129	85.4
9/4/02	37503	971805	9/4/02	9/25/02	21	971805	973352	1547	1547	74	78.2
9/25/02	37524	973352	9/25/02	10/4/02	9	973352	975280	1928	1928	214	78.7
10/4/02	37533	975280	10/4/02	10/18/02	14	975280	979365	4085	4085	292	66.9
10/18/02	37547	979365	10/18/02	11/7/02	20	979365	985648	6283	6283	314	58.1
11/7/02	37567	985648	11/7/02	11/19/02	12	985648	992863	7215	7215	601	58.6
11/19/02	37579	992863	11/19/02	11/26/02	7	992863	1003321	10458	10458	1494	53.9
11/26/02	37586	1003321	11/26/02	12/3/02	7	1003321	1013166	9845	9845	1406	49.2
12/3/02	37593	1013166	12/3/02	12/10/02	7	1013166	1023165	9999	9999	1428	44.7
12/10/02	37600	1023165	12/10/02	12/17/02	7	1023165	1031762	8597	8597	1228	52.0
12/17/02	37607	1031762	12/17/02	12/24/02	7	1031762	1045698	13936	13936	1991	51.0
12/24/02	37614	1045698	12/24/02	12/31/02	7	1045698	1058458	12760	12760	1823	48.6
12/31/02	37621	1058458	12/31/02	1/6/03	6	1058458	1065731	7273	7273	1212	47.8
1/6/03	37627	1065731	1/6/03	1/13/03	7	1065731	1085811	20080	20080	2869	47.4
1/13/03	37634	1085811	1/13/03	1/21/03	8	1085811	1103597	17786	17786	2223	46.8
1/21/03	37642	1103597	1/21/03	1/27/03	6	1103597	1125984	22387	22387	3731	38.6
1/27/03	37648	1125984	1/27/03	2/6/03	10	1125984	1147027	21043	21043	2104	51.2
2/6/03	37658	1147027	2/6/03	2/13/03	7	1147027	1167576	20549	20549	2936	41.9
2/13/03	37665	1167576	2/13/03	2/20/03	7	1167576	1187612	20036	20036	2862	53.9
2/20/03	37672	1187612	2/20/03	2/27/03	7	1187612	1207483	19871	19871	2839	40.4
2/27/03	37679	1207483	2/27/03	3/6/03	7	1207483	1222654	15171	15171	2167	46.1
3/6/03	37686	1222654	3/6/03	3/14/03	8	1222654	1225984	3330	3330	416	59.7
3/14/03	37694	1225984	3/14/03	3/24/03	10	1225984	1228639	2655	2655	266	58.1
3/24/03	37704	1228639	3/24/03	4/1/03	8	1228639	1231797	3158	3158	395	59.8
4/1/03	37712	1231797	4/1/03	4/7/03	6	1231797	1234403	2606	2606	434	59.0



11.2.14.2.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Heating

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

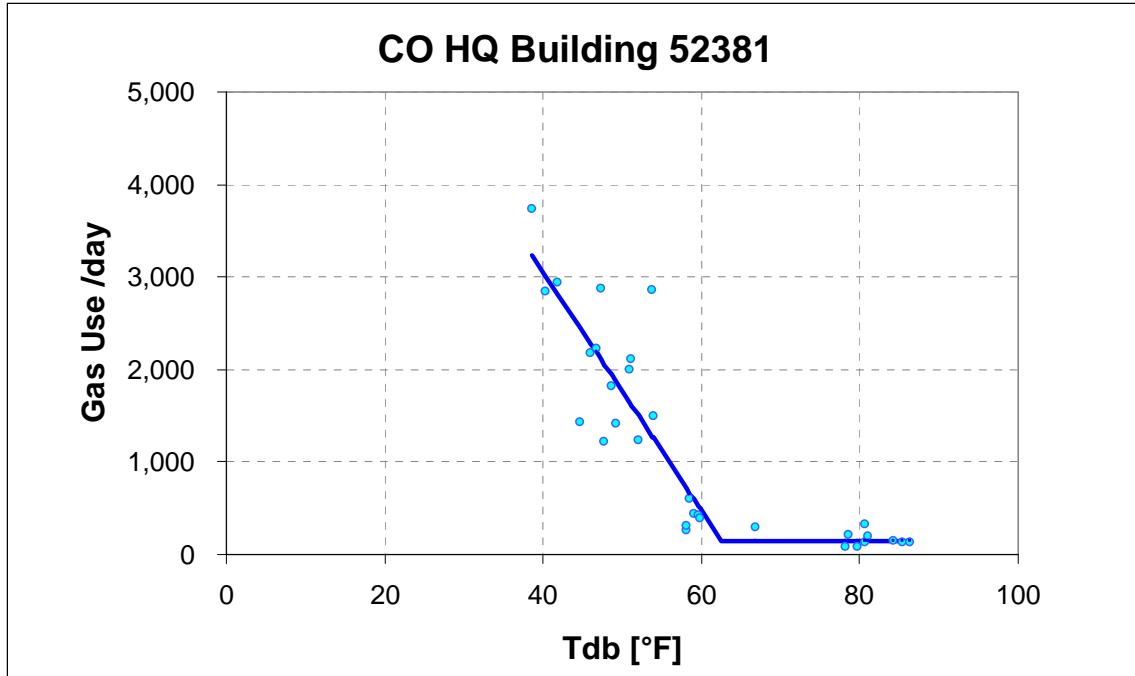
X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

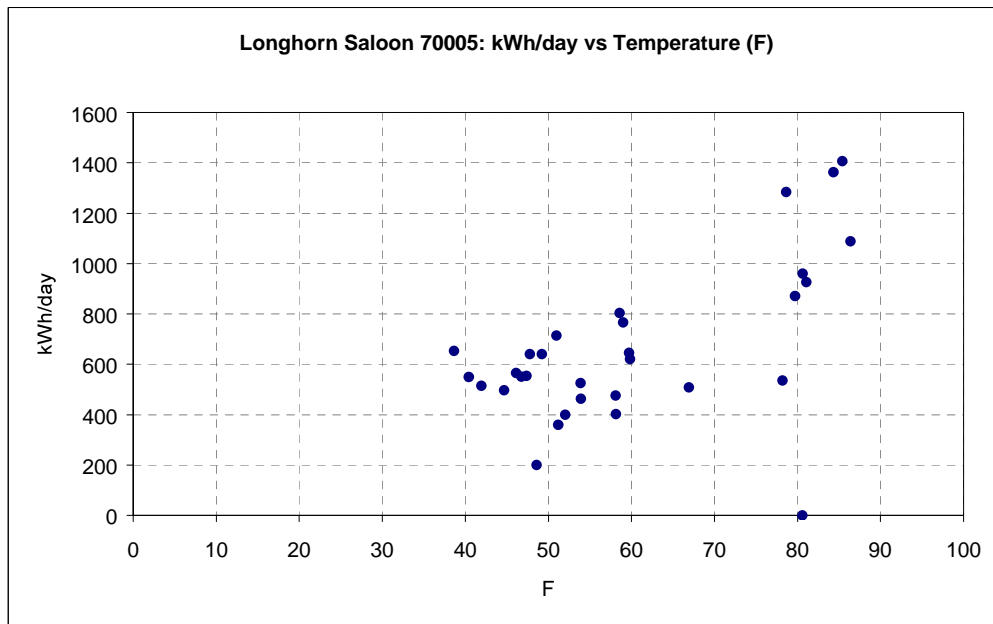
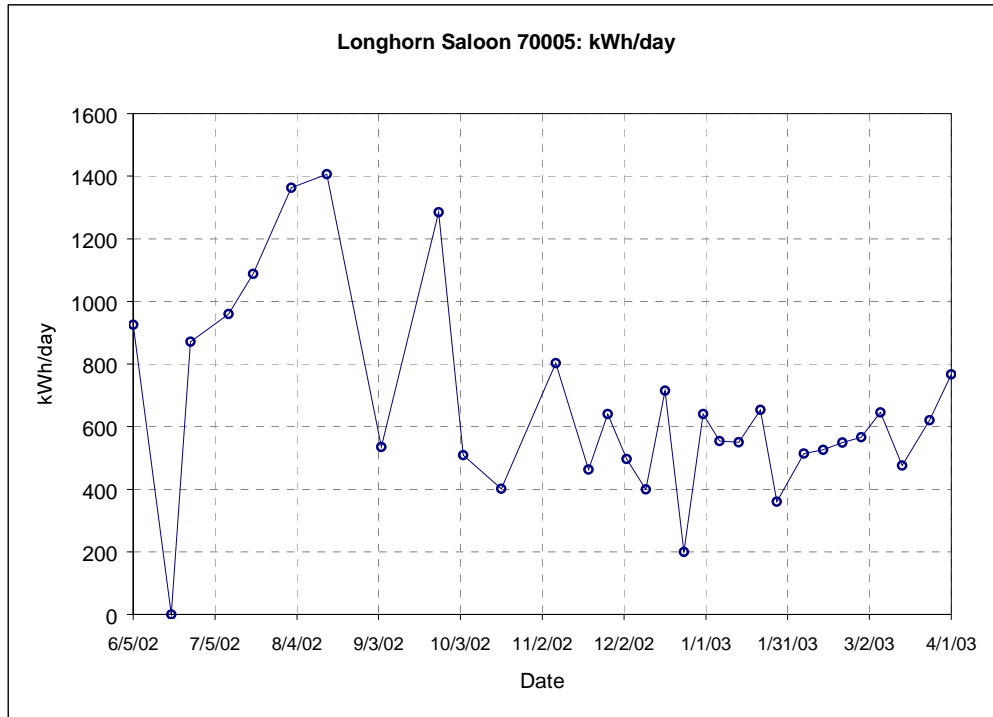
 N = 31
 R2 = 0.823
 AdjR2 = 0.823
 RMSE = 469.8514
 CV-RMSE = 39.944%
 p = 0.056
 DW = 1.882 (p>0)
 N1 = 21
 N2 = 10
 Ycp = 153.0141 (122.0633)
 LS = -129.1249 (11.1292)
 RS = 0.0000 (0.0000)
 Xcp = 62.5000 (0.9548)



11.2.15. 70005 Longhorn Saloon

11.2.15.1. Electricity Use From Manual Readings

70005 Elec		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									40	1406	
6/5/02	37412	9650	6/5/02	6/19/02	14	9650	9974	324	12960	926	81.1
6/19/02	37426	9974	6/19/02	6/26/02	7	9974	162	-	-	-	80.6
6/26/02	37433	162	6/26/02	7/10/02	14	162	467	305	12200	871	79.7
7/10/02	37447	467	7/10/02	7/19/02	9	467	683	216	8640	960	80.6
7/19/02	37456	683	7/19/02	8/2/02	14	683	1064	381	15240	1089	86.4
8/2/02	37470	1064	8/2/02	8/15/02	13	1064	1507	443	17720	1363	84.3
8/15/02	37483	1507	8/15/02	9/4/02	20	1507	2210	703	28120	1406	85.4
9/4/02	37503	2210	9/4/02	9/25/02	21	2210	2491	281	11240	535	78.2
9/25/02	37524	2491	9/25/02	10/4/02	9	2491	2780	289	11560	1284	78.7
10/4/02	37533	2780	10/4/02	10/18/02	14	2780	2958	178	7120	509	66.9
10/18/02	37547	2958	10/18/02	11/7/02	20	2958	3159	201	8040	402	58.1
11/7/02	37567	3159	11/7/02	11/19/02	12	3159	3400	241	9640	803	58.6
11/19/02	37579	3400	11/19/02	11/26/02	7	3400	3481	81	3240	463	53.9
11/26/02	37586	3481	11/26/02	12/3/02	7	3481	3593	112	4480	640	49.2
12/3/02	37593	3593	12/3/02	12/10/02	7	3593	3680	87	3480	497	44.7
12/10/02	37600	3680	12/10/02	12/17/02	7	3680	3750	70	2800	400	52.0
12/17/02	37607	3750	12/17/02	12/24/02	7	3750	3875	125	5000	714	51.0
12/24/02	37614	3875	12/24/02	12/31/02	7	3875	3910	35	1400	200	48.6
12/31/02	37621	3910	12/31/02	1/6/03	6	3910	4006	96	3840	640	47.8
1/6/03	37627	4006	1/6/03	1/13/03	7	4006	4103	97	3880	554	47.4
1/13/03	37634	4103	1/13/03	1/21/03	8	4103	4213	110	4400	550	46.8
1/21/03	37642	4213	1/21/03	1/27/03	6	4213	4311	98	3920	653	38.6
1/27/03	37648	4311	1/27/03	2/6/03	10	4311	4401	90	3600	360	51.2
2/6/03	37658	4401	2/6/03	2/13/03	7	4401	4491	90	3600	514	41.9
2/13/03	37665	4491	2/13/03	2/20/03	7	4491	4583	92	3680	526	53.9
2/20/03	37672	4583	2/20/03	2/27/03	7	4583	4679	96	3840	549	40.4
2/27/03	37679	4679	2/27/03	3/6/03	7	4679	4778	99	3960	566	46.1
3/6/03	37686	4778	3/6/03	3/14/03	8	4778	4907	129	5160	645	59.7
3/14/03	37694	4907	3/14/03	3/24/03	10	4907	5026	119	4760	476	58.1
3/24/03	37704	5026	3/24/03	4/1/03	8	5026	5150	124	4960	620	59.8
4/1/03	37712	5150	4/1/03	4/7/03	6	5150	5265	115	4600	767	59.0



11.2.15.1.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 3
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Cooling

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

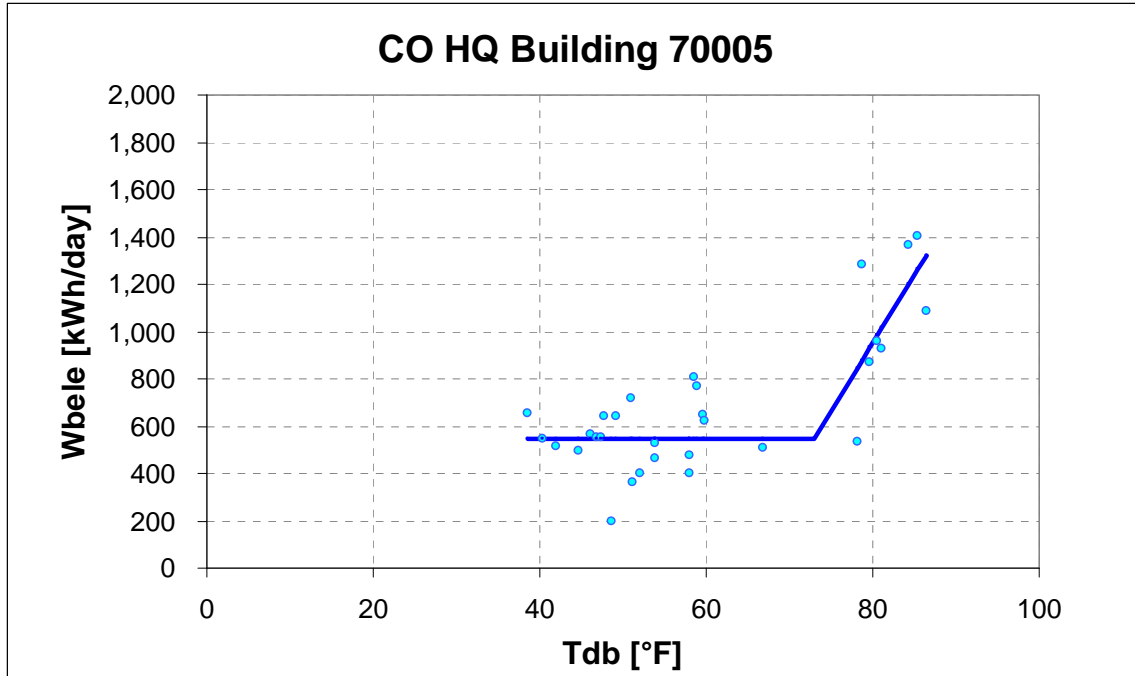
X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

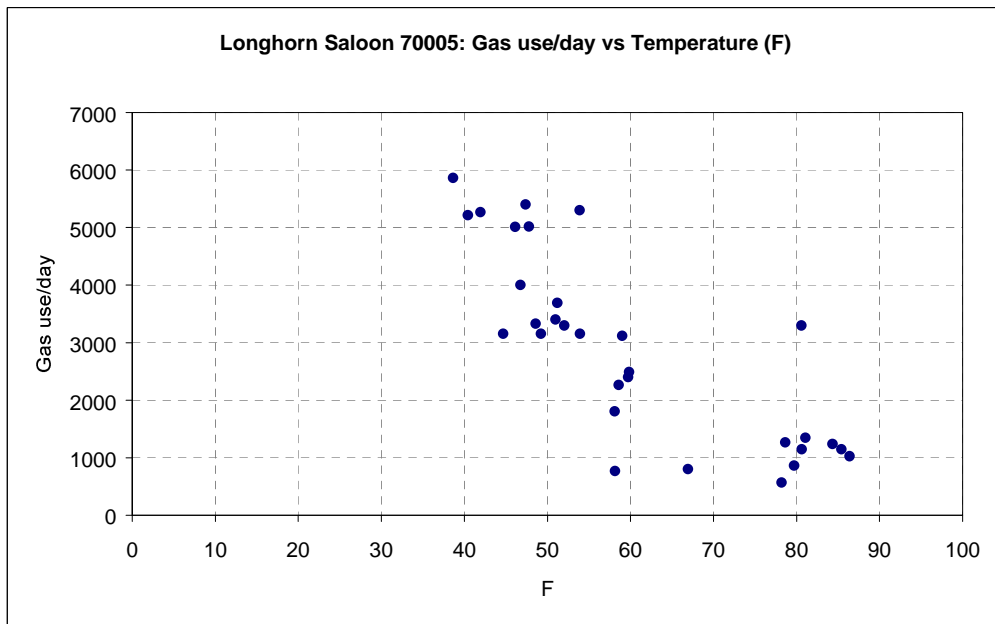
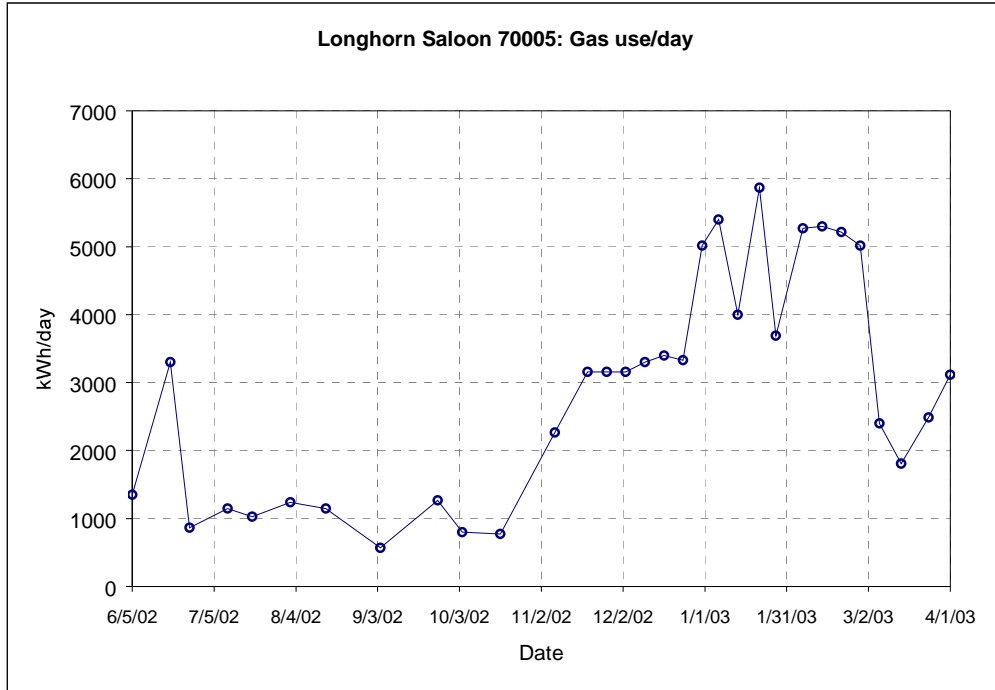
Regression Results

 N = 30
 R2 = 0.689
 AdjR2 = 0.689
 RMSE = 166.8153
 CV-RMSE = 24.433%
 p = -0.479
 DW = 2.877 (p>0)
 N1 = 22
 N2 = 8
 Ycp = 547.8864 (34.9300)
 LS = 0.0000 (0.0000)
 RS = 57.5711 (7.3017)
 Xcp = 73.0160 (0.9560)



11.2.15.2. Natural Gas From Manual Readings

70005 Gas		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									100		
6/5/02	37412	3275	6/5/02	6/19/02	14	3275	3464	189	18900	1350	81.1
6/19/02	37426	3464	6/19/02	6/26/02	7	3464	3695	231	23100	3300	80.6
6/26/02	37433	3695	6/26/02	7/10/02	14	3695	3816	121	12100	864	79.7
7/10/02	37447	3816	7/10/02	7/19/02	9	3816	3919	103	10300	1144	80.6
7/19/02	37456	3919	7/19/02	8/2/02	14	3919	4063	144	14400	1029	86.4
8/2/02	37470	4063	8/2/02	8/15/02	13	4063	4224	161	16100	1238	84.3
8/15/02	37483	4224	8/15/02	9/4/02	20	4224	4453	229	22900	1145	85.4
9/4/02	37503	4453	9/4/02	9/25/02	21	4453	4572	119	11900	567	78.2
9/25/02	37524	4572	9/25/02	10/4/02	9	4572	4686	114	11400	1267	78.7
10/4/02	37533	4686	10/4/02	10/18/02	14	4686	4798	112	11200	800	66.9
10/18/02	37547	4798	10/18/02	11/7/02	20	4798	4952	154	15400	770	58.1
11/7/02	37567	4952	11/7/02	11/19/02	12	4952	5224	272	27200	2267	58.6
11/19/02	37579	5224	11/19/02	11/26/02	7	5224	5445	221	22100	3157	53.9
11/26/02	37586	5445	11/26/02	12/3/02	7	5445	5666	221	22100	3157	49.2
12/3/02	37593	5666	12/3/02	12/10/02	7	5666	5887	221	22100	3157	44.7
12/10/02	37600	5887	12/10/02	12/17/02	7	5887	6118	231	23100	3300	52.0
12/17/02	37607	6118	12/17/02	12/24/02	7	6118	6356	238	23800	3400	51.0
12/24/02	37614	6356	12/24/02	12/31/02	7	6356	6589	233	23300	3329	48.6
12/31/02	37621	6589	12/31/02	1/6/03	6	6589	6890	301	30100	5017	47.8
1/6/03	37627	6890	1/6/03	1/13/03	7	6890	7268	378	37800	5400	47.4
1/13/03	37634	7268	1/13/03	1/21/03	8	7268	7588	320	32000	4000	46.8
1/21/03	37642	7588	1/21/03	1/27/03	6	7588	7940	352	35200	5867	38.6
1/27/03	37648	7940	1/27/03	2/6/03	10	7940	8309	369	36900	3690	51.2
2/6/03	37658	8309	2/6/03	2/13/03	7	8309	8678	369	36900	5271	41.9
2/13/03	37665	8678	2/13/03	2/20/03	7	8678	9049	371	37100	5300	53.9
2/20/03	37672	9049	2/20/03	2/27/03	7	9049	9414	365	36500	5214	40.4
2/27/03	37679	9414	2/27/03	3/6/03	7	9414	9765	351	35100	5014	46.1
3/6/03	37686	9765	3/6/03	3/14/03	8	9765	9957	192	19200	2400	59.7
3/14/03	37694	9957	3/14/03	3/24/03	10	9957	10138	181	18100	1810	58.1
3/24/03	37704	139	3/24/03	4/1/03	8	139	338	199	19900	2488	59.8
4/1/03	37712	338	4/1/03	4/7/03	6	338	525	187	18700	3117	59.0



11.2.15.2.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Heating

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 31

R2 = 0.756

AdjR2 = 0.756

RMSE = 827.8978

CV-RMSE = 28.571%

p = 0.104

DW = 1.761 (p>0)

N1 = 21

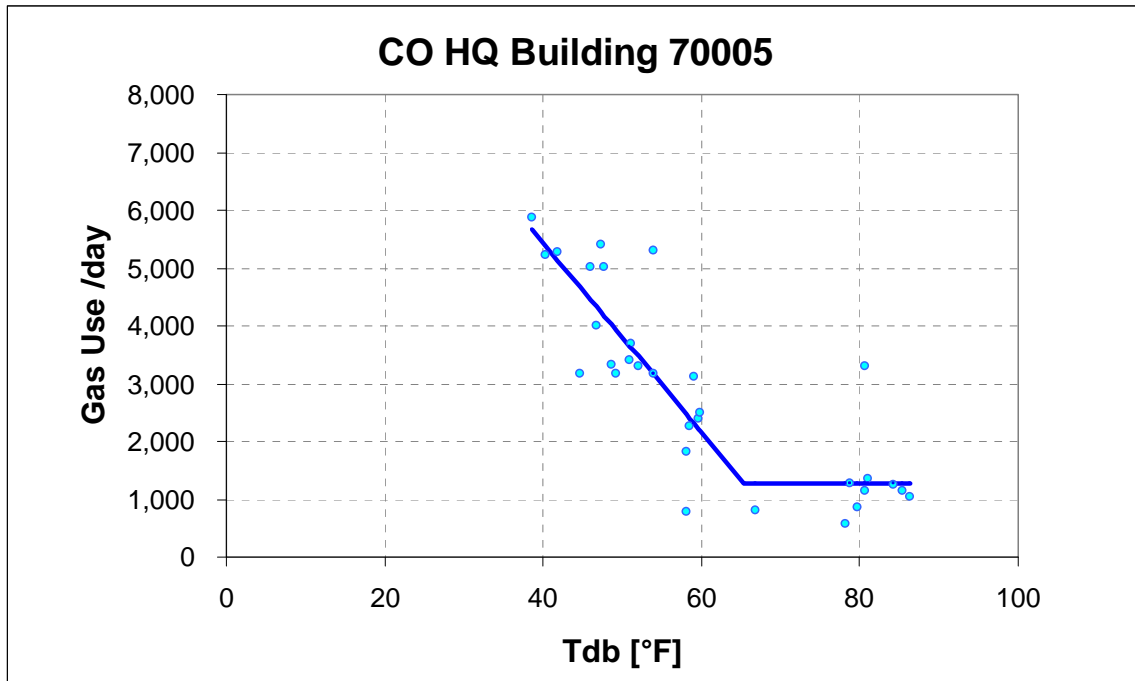
N2 = 10

Ycp = 1278.3319 (226.3258)

LS = -164.0908 (17.2897)

RS = 0.0000 (0.0000)

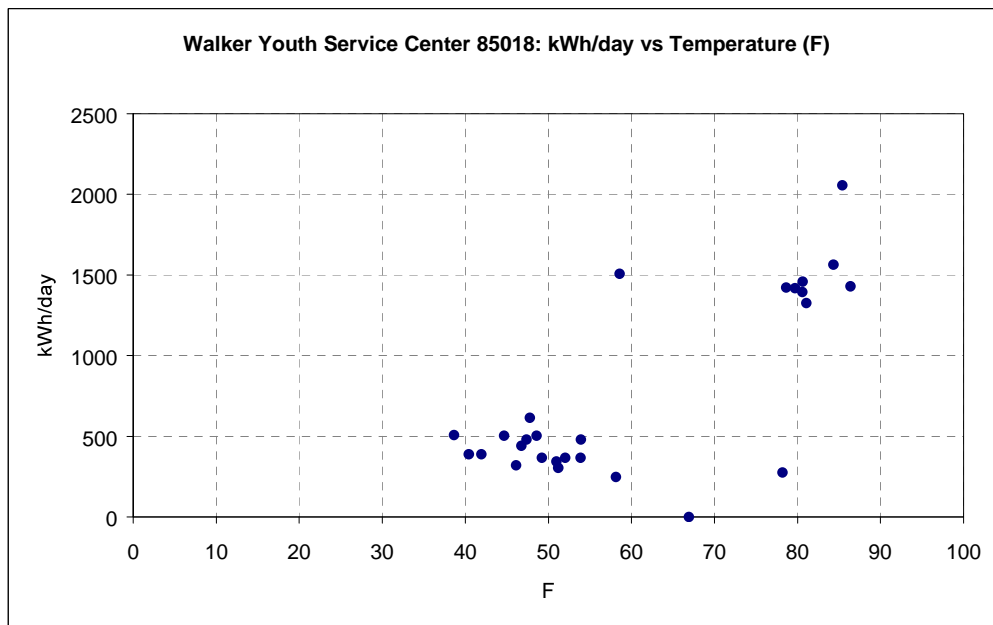
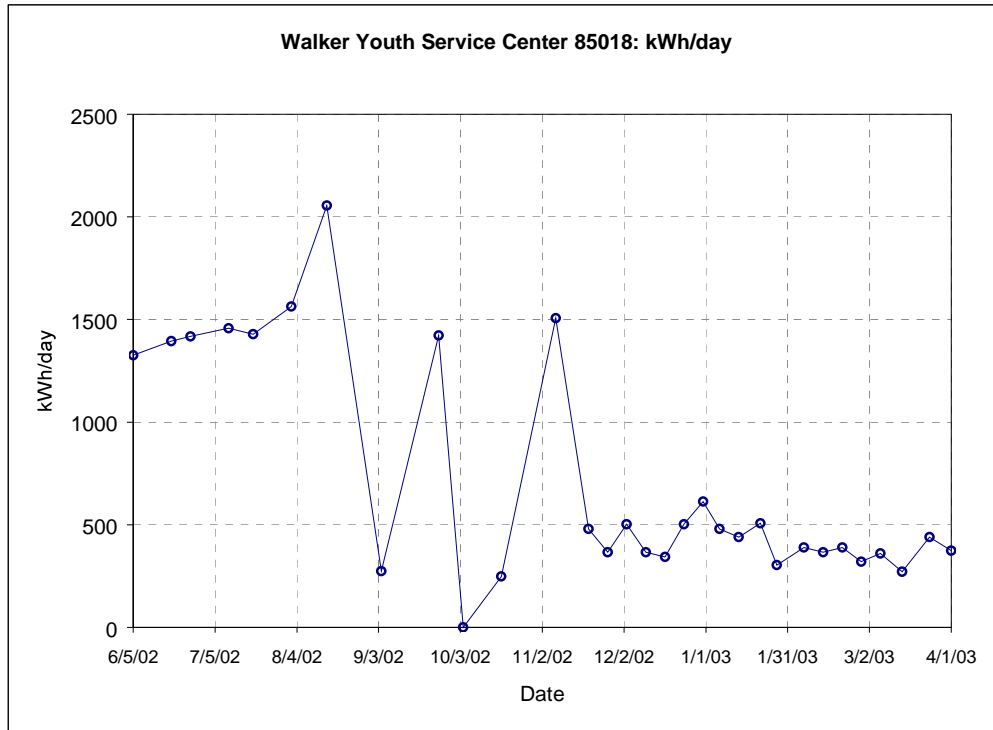
Xcp = 65.3680 (0.9560)



11.2.16. 85018 Walker Youth Service Center

11.2.16.1. Electricity Use From Manual Readings

85018 Elec		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									160	2056	
6/5/02	37412	14184	6/5/02	6/19/02	14	14184	14300	116	18560	1326	81.1
6/19/02	37426	14300	6/19/02	6/26/02	7	14300	14361	61	9760	1394	80.6
6/26/02	37433	14361	6/26/02	7/10/02	14	14361	14485	124	19840	1417	79.7
7/10/02	37447	14485	7/10/02	7/19/02	9	14485	14567	82	13120	1458	80.6
7/19/02	37456	14567	7/19/02	8/2/02	14	14567	14692	125	20000	1429	86.4
8/2/02	37470	14692	8/2/02	8/15/02	13	14692	14819	127	20320	1563	84.3
8/15/02	37483	14819	8/15/02	9/4/02	20	14819	15076	257	41120	2056	85.4
9/4/02	37503	15076	9/4/02	9/25/02	21	15076	15112	36	5760	274	78.2
9/25/02	37524	15112	9/25/02	10/4/02	9	15112	15192	80	12800	1422	78.7
10/4/02	37533	15192	10/4/02	10/18/02	14	15192	15169	-	-	-	66.9
10/18/02	37547	15169	10/18/02	11/7/02	20	15169	15200	31	4960	248	58.1
11/7/02	37567	15200	11/7/02	11/19/02	12	15200	15313	113	18080	1507	58.6
11/19/02	37579	15313	11/19/02	11/26/02	7	15313	15334	21	3360	480	53.9
11/26/02	37586	15334	11/26/02	12/3/02	7	15334	15350	16	2560	366	49.2
12/3/02	37593	15350	12/3/02	12/10/02	7	15350	15372	22	3520	503	44.7
12/10/02	37600	15372	12/10/02	12/17/02	7	15372	15388	16	2560	366	52.0
12/17/02	37607	15388	12/17/02	12/24/02	7	15388	15403	15	2400	343	51.0
12/24/02	37614	15403	12/24/02	12/31/02	7	15403	15425	22	3520	503	48.6
12/31/02	37621	15425	12/31/02	1/6/03	6	15425	15448	23	3680	613	47.8
1/6/03	37627	15448	1/6/03	1/13/03	7	15448	15469	21	3360	480	47.4
1/13/03	37634	15469	1/13/03	1/21/03	8	15469	15491	22	3520	440	46.8
1/21/03	37642	15491	1/21/03	1/27/03	6	15491	15510	19	3040	507	38.6
1/27/03	37648	15510	1/27/03	2/6/03	10	15510	15529	19	3040	304	51.2
2/6/03	37658	15529	2/6/03	2/13/03	7	15529	15546	17	2720	389	41.9
2/13/03	37665	15546	2/13/03	2/20/03	7	15546	15562	16	2560	366	53.9
2/20/03	37672	15562	2/20/03	2/27/03	7	15562	15579	17	2720	389	40.4
2/27/03	37679	15579	2/27/03	3/6/03	7	15579	15593	14	2240	320	46.1
3/6/03	37686	15593	3/6/03	3/14/03	8	15593	15611	18	2880	360	59.7
3/14/03	37694	15611	3/14/03	3/24/03	10	15611	15628	17	2720	272	58.1
3/24/03	37704	15628	3/24/03	4/1/03	8	15628	15650	22	3520	440	59.8
4/1/03	37712	15650	4/1/03	4/7/03	6	15650	15664	14	2240	373	59.0



11.2.16.1.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 3
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Cooling

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

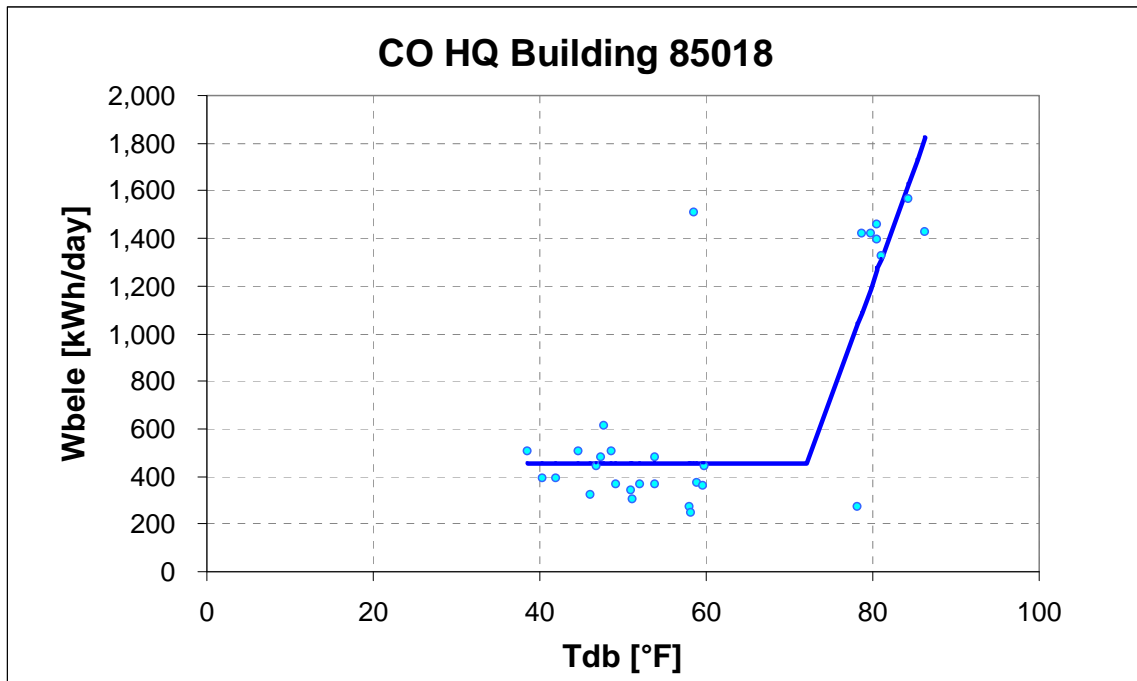
X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

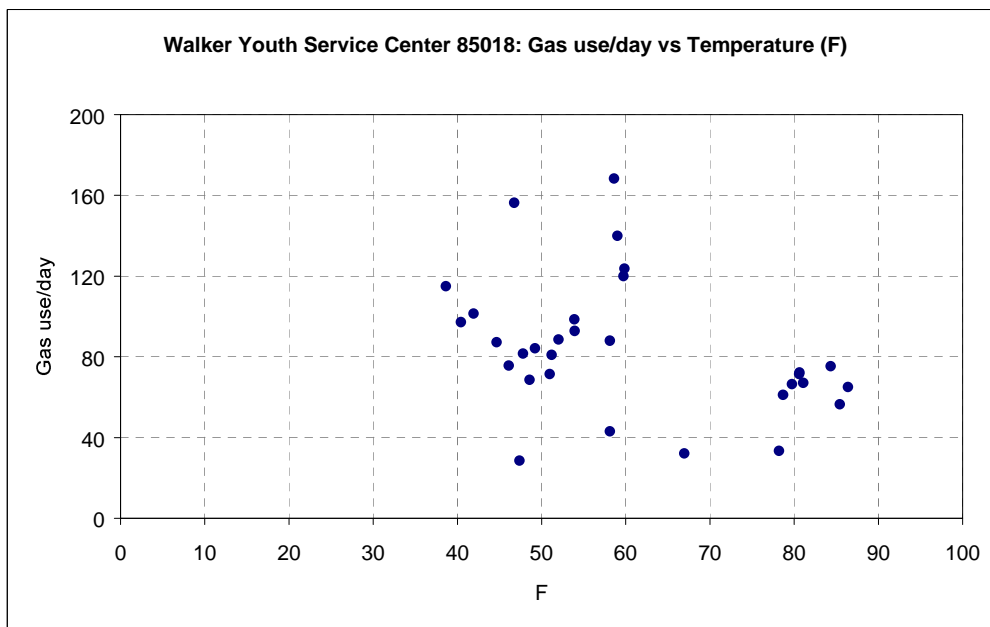
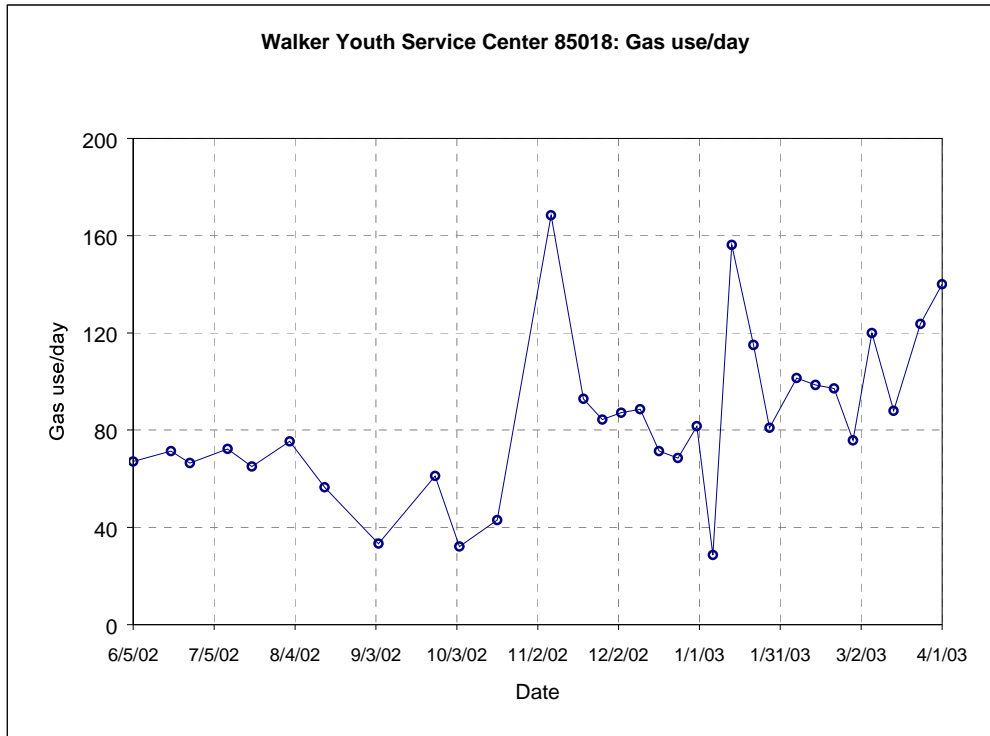
Regression Results

 N = 30
 R2 = 0.713
 AdjR2 = 0.713
 RMSE = 291.8840
 CV-RMSE = 39.973%
 p = -0.295
 DW = 2.587 (p>0)
 N1 = 21
 N2 = 9
 Ycp = 455.1121 (62.6525)
 LS = 0.0000 (0.0000)
 RS = 95.3545 (11.4202)
 Xcp = 72.0480 (0.9548)



11.2.16.2. Natural Gas From Manual Readings

85018 Gas		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									10		
6/5/02	37412	17036	6/5/02	6/19/02	14	17036	17130	94	940	67	81.1
6/19/02	37426	17130	6/19/02	6/26/02	7	17130	17180	50	500	71	80.6
6/26/02	37433	17180	6/26/02	7/10/02	14	17180	17273	93	930	66	79.7
7/10/02	37447	17273	7/10/02	7/19/02	9	17273	17338	65	650	72	80.6
7/19/02	37456	17338	7/19/02	8/2/02	14	17338	17429	91	910	65	86.4
8/2/02	37470	17429	8/2/02	8/15/02	13	17429	17527	98	980	75	84.3
8/15/02	37483	17527	8/15/02	9/4/02	20	17527	17640	113	1130	57	85.4
9/4/02	37503	17640	9/4/02	9/25/02	21	17640	17710	70	700	33	78.2
9/25/02	37524	17710	9/25/02	10/4/02	9	17710	17765	55	550	61	78.7
10/4/02	37533	17765	10/4/02	10/18/02	14	17765	17810	45	450	32	66.9
10/18/02	37547	17810	10/18/02	11/7/02	20	17810	17896	86	860	43	58.1
11/7/02	37567	17896	11/7/02	11/19/02	12	17896	18098	202	2020	168	58.6
11/19/02	37579	18098	11/19/02	11/26/02	7	18098	18163	65	650	93	53.9
11/26/02	37586	18163	11/26/02	12/3/02	7	18163	18222	59	590	84	49.2
12/3/02	37593	18222	12/3/02	12/10/02	7	18222	18283	61	610	87	44.7
12/10/02	37600	18283	12/10/02	12/17/02	7	18283	18345	62	620	89	52.0
12/17/02	37607	18345	12/17/02	12/24/02	7	18345	18395	50	500	71	51.0
12/24/02	37614	18395	12/24/02	12/31/02	7	18395	18443	48	480	69	48.6
12/31/02	37621	18443	12/31/02	1/6/03	6	18443	18492	49	490	82	47.8
1/6/03	37627	18492	1/6/03	1/13/03	7	18492	18512	20	200	29	47.4
1/13/03	37634	18512	1/13/03	1/21/03	8	18512	18637	125	1250	156	46.8
1/21/03	37642	18637	1/21/03	1/27/03	6	18637	18706	69	690	115	38.6
1/27/03	37648	18706	1/27/03	2/6/03	10	18706	18787	81	810	81	51.2
2/6/03	37658	18787	2/6/03	2/13/03	7	18787	18858	71	710	101	41.9
2/13/03	37665	18858	2/13/03	2/20/03	7	18858	18927	69	690	99	53.9
2/20/03	37672	18927	2/20/03	2/27/03	7	18927	18995	68	680	97	40.4
2/27/03	37679	18995	2/27/03	3/6/03	7	18995	19048	53	530	76	46.1
3/6/03	37686	19048	3/6/03	3/14/03	8	19048	19144	96	960	120	59.7
3/14/03	37694	19144	3/14/03	3/24/03	10	19144	19232	88	880	88	58.1
3/24/03	37704	19232	3/24/03	4/1/03	8	19232	19331	99	990	124	59.8
4/1/03	37712	19331	4/1/03	4/7/03	6	19331	19415	84	840	140	59.0



11.2.16.2.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat
 Model type = 3P Heating
 Grouping column No = 5
 Value for grouping = 1
 Residual mode = 1
 # of X(Indep.) Var = 1
 Y1 column number = 6
 X1 column number = 9
 X2 column number = 0 (unused)
 X3 column number = 0 (unused)
 X4 column number = 0 (unused)
 X5 column number = 0 (unused)
 X6 column number = 0 (unused)

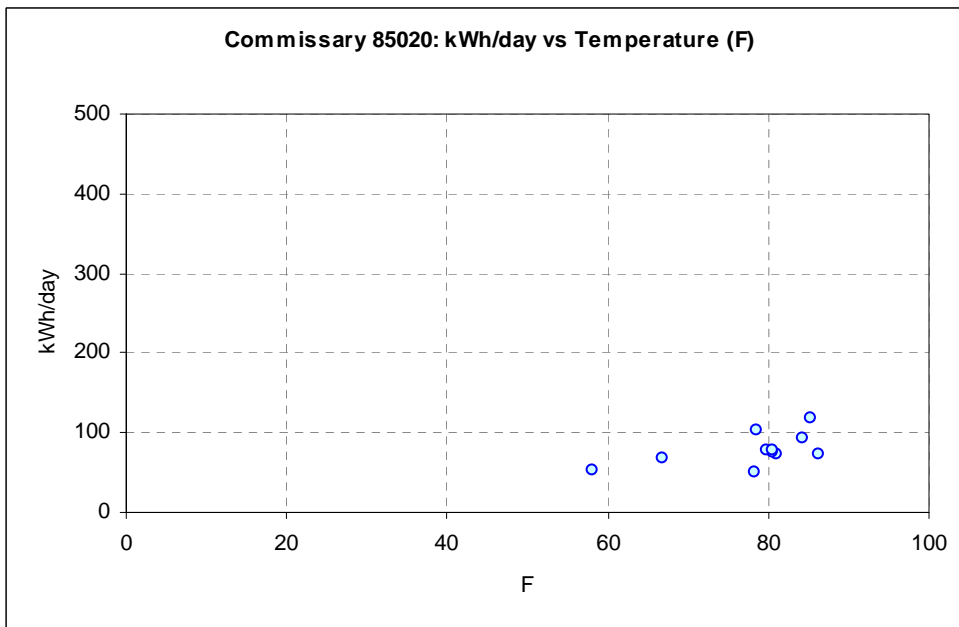
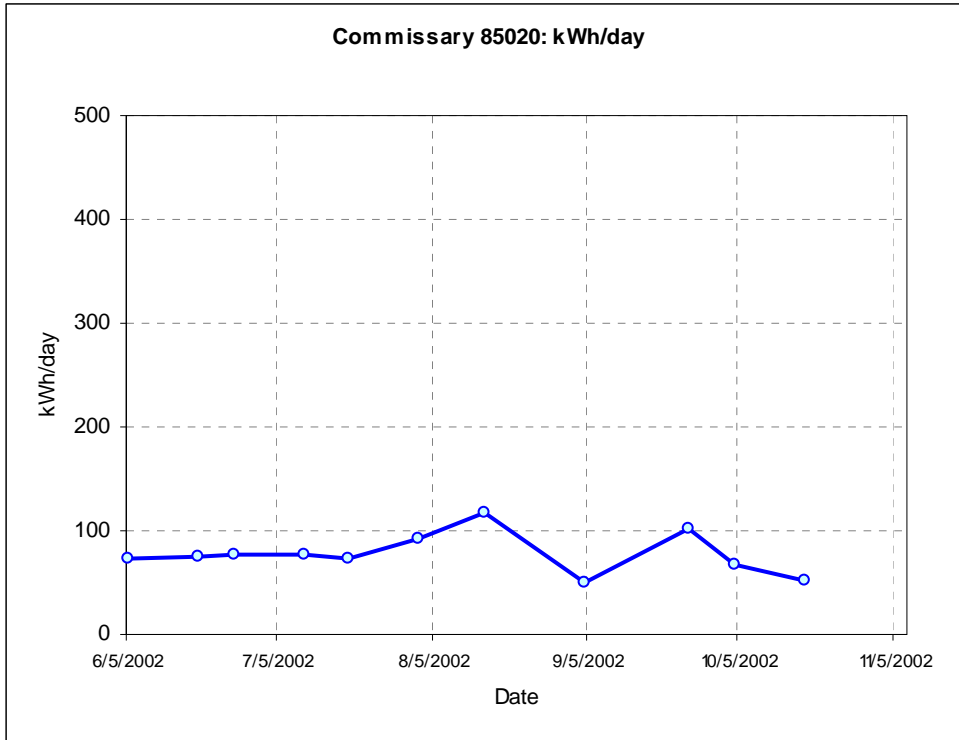
Regression Results

N = 31
 R2 = 0.141
 AdjR2 = 0.141
 RMSE = 31.3569
 CV-RMSE = 37.216%
 p = -0.017
 DW = 1.926 (p>0)
 N1 = 24
 N2 = 7
 Ycp = 66.8778 (9.7438)
 LS = -0.8995 (0.4116)
 RS = 0.0000 (0.0000)
 Xcp = 78.7316 (0.9548)

11.2.17. 85020 Commissary

11.2.17.1. Electricity Use From Manual Readings

85020 Elec		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp (F)
									10	118	
6/5/2002	37412	20272	6/5/2002	6/19/2002	14	20272	20375	103	1030	74	81.1
6/19/2002	37426	20375	6/19/2002	6/26/2002	7	20375	20427	52	520	74	80.6
6/26/2002	37433	20427	6/26/2002	7/10/2002	14	20427	20536	109	1090	78	79.7
7/10/2002	37447	20536	7/10/2002	7/19/2002	9	20536	20605	69	690	77	80.6
7/19/2002	37456	20605	7/19/2002	8/2/2002	14	20605	20706	101	1010	72	86.4
8/2/2002	37470	20706	8/2/2002	8/15/2002	13	20706	20826	120	1200	92	84.3
8/15/2002	37483	20826	8/15/2002	9/4/2002	20	20826	21061	235	2350	118	85.4
9/4/2002	37503	21061	9/4/2002	9/25/2002	21	21061	21168	107	1070	51	78.2
9/25/2002	37524	21168	9/25/2002	10/4/2002	9	21168	21260	92	920	102	78.7
10/4/2002	37533	21260	10/4/2002	10/18/2002	14	21260	21354	94	940	67	66.9
10/18/2002	37547	21354	10/18/2002	11/7/2002	20	21354	21459	105	1050	53	58.1
11/7/2002	37567	21459	11/7/2002	11/19/2002	12	21459	382	-21077	-210770		59.1
11/19/2002	37579	382	11/19/2002	1/0/1900	####	382	0	-382	-3820	0	0.0



11.2.17.1.1. Baseline Model From Manual Readings

Path and name of input data file = Modeling00.prn
 Value of no-data flag = -99
 Column number of group field = 4
 Value of valid group field = 31
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 1
 Column number of dependent Y variable = 1
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 3
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = Modeling00.prn

Model type = Mean

Grouping column No = 4

Value for grouping = 31

Residual mode = 1

of X(Indep.) Var = 0

Y1 column number = 1

X1 column number = 0 (unused)

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

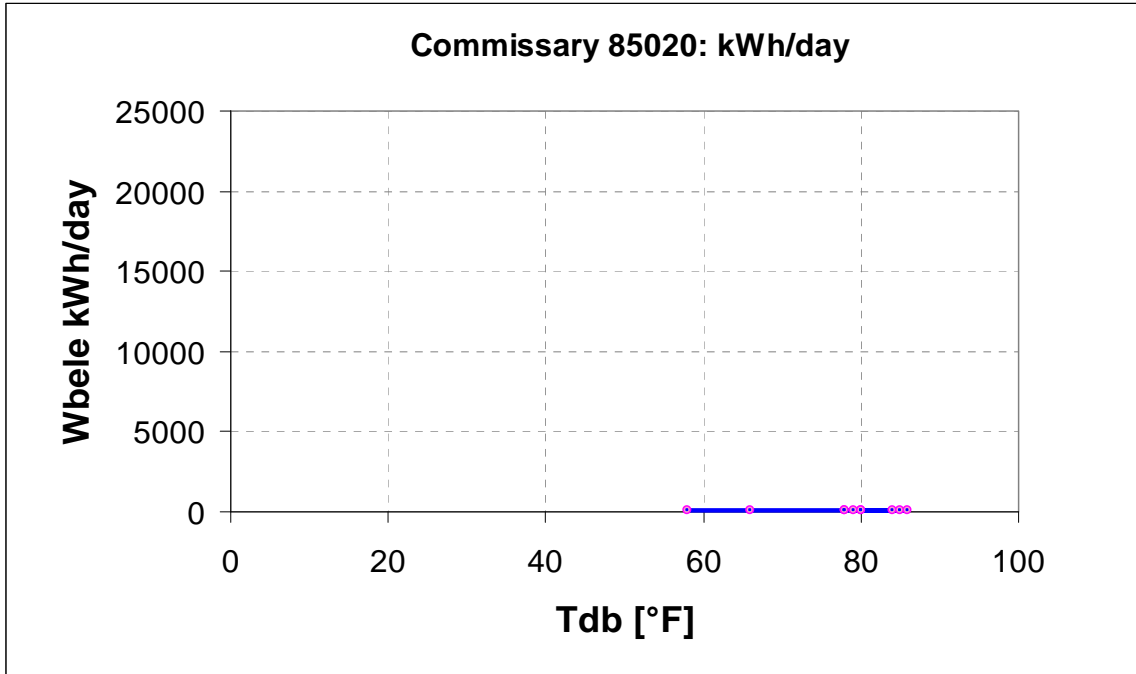
Regression Results

 N = 11

Ymean = 78.000

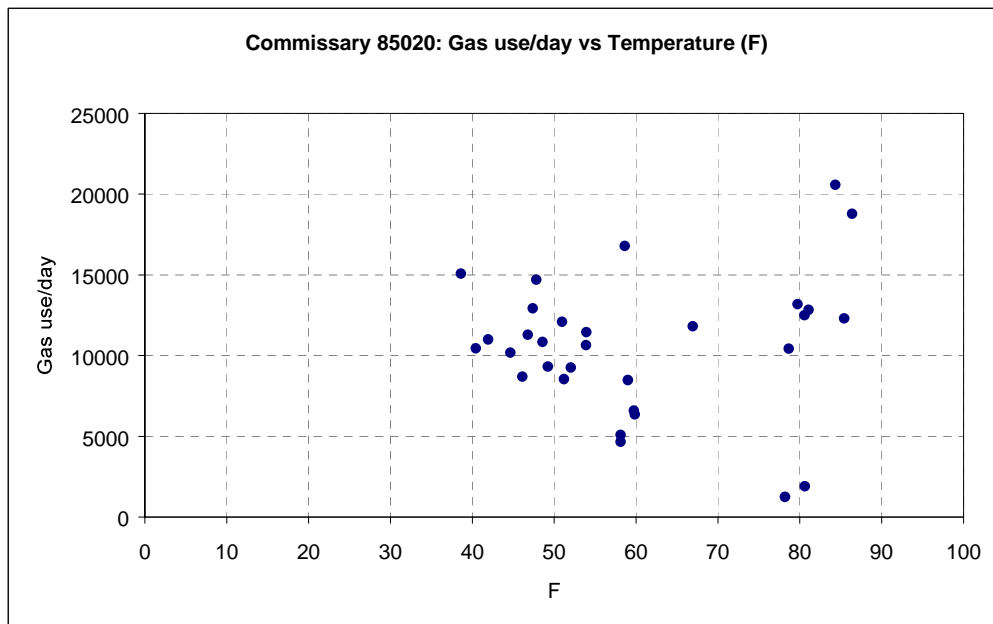
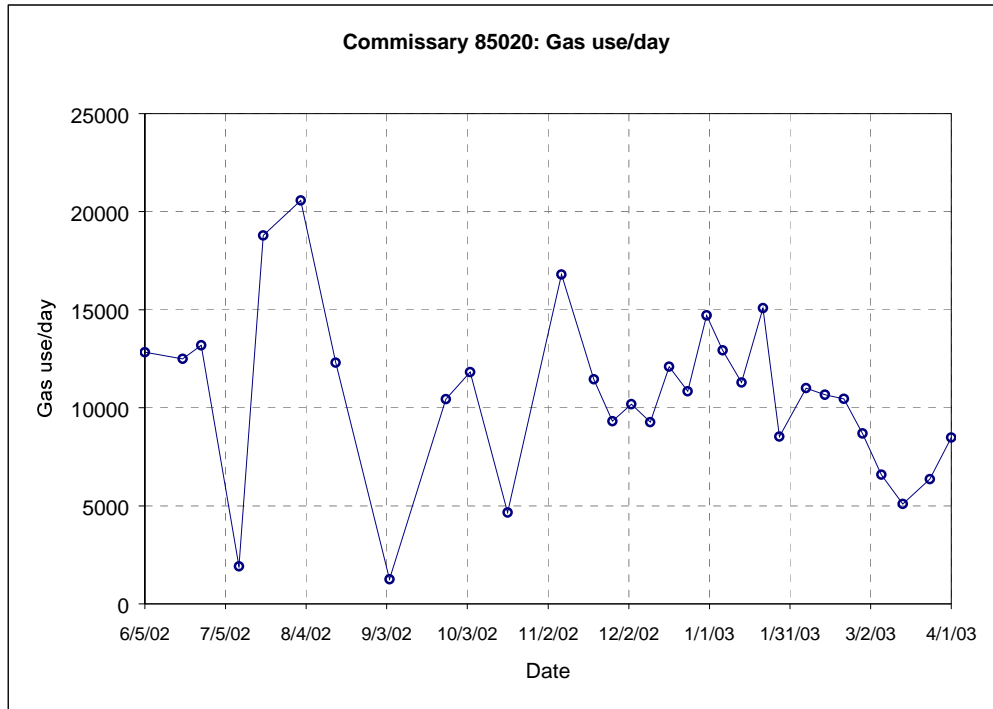
StdDev = 19.789

CV-StDev = 25.370 %



11.2.17.2. Natural Gas From Manual Readings

85020 Gas		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									1		
6/5/02	37412	1534563	6/5/02	6/19/02	14	1534563	1714246	179683	179683	12835	81.1
6/19/02	37426	1714246	6/19/02	6/26/02	7	1714246	1801737	87491	87491	12499	80.6
6/26/02	37433	1801737	6/26/02	7/10/02	14	1801737	1986307	184570	184570	13184	79.7
7/10/02	37447	1986307	7/10/02	7/19/02	9	1986307	2003549	17242	17242	1916	80.6
7/19/02	37456	2003549	7/19/02	8/2/02	14	2003549	2266532	262983	262983	18785	86.4
8/2/02	37470	2266532	8/2/02	8/15/02	13	2266532	2533944	267412	267412	20570	84.3
8/15/02	37483	2533944	8/15/02	9/4/02	20	2533944	2780079	246135	246135	12307	85.4
9/4/02	37503	2780079	9/4/02	9/25/02	21	2780079	2806452	26373	26373	1256	78.2
9/25/02	37524	2806452	9/25/02	10/4/02	9	2806452	2900316	93864	93864	10429	78.7
10/4/02	37533	2900316	10/4/02	10/18/02	14	2900316	3065821	165505	165505	11822	66.9
10/18/02	37547	3065821	10/18/02	11/7/02	20	3065821	3158956	93135	93135	4657	58.1
11/7/02	37567	3158956	11/7/02	11/19/02	12	3158956	3360503	201547	201547	16796	58.6
11/19/02	37579	3360503	11/19/02	11/26/02	7	3360503	3440628	80125	80125	11446	53.9
11/26/02	37586	3440628	11/26/02	12/3/02	7	3440628	3505871	65243	65243	9320	49.2
12/3/02	37593	3505871	12/3/02	12/10/02	7	3505871	3577130	71259	71259	10180	44.7
12/10/02	37600	3577130	12/10/02	12/17/02	7	3577130	3641992	64862	64862	9266	52.0
12/17/02	37607	3641992	12/17/02	12/24/02	7	3641992	3726589	84597	84597	12085	51.0
12/24/02	37614	3726589	12/24/02	12/31/02	7	3726589	3802455	75866	75866	10838	48.6
12/31/02	37621	3802455	12/31/02	1/6/03	6	3802455	3890723	88268	88268	14711	47.8
1/6/03	37627	3890723	1/6/03	1/13/03	7	3890723	3981234	90511	90511	12930	47.4
1/13/03	37634	3981234	1/13/03	1/21/03	8	3981234	4071546	90312	90312	11289	46.8
1/21/03	37642	4071546	1/21/03	1/27/03	6	4071546	4161961	90415	90415	15069	38.6
1/27/03	37648	4161961	1/27/03	2/6/03	10	4161961	4247279	85318	85318	8532	51.2
2/6/03	37658	4247279	2/6/03	2/13/03	7	4247279	4324266	76987	76987	10998	41.9
2/13/03	37665	4324266	2/13/03	2/20/03	7	4324266	4398855	74589	74589	10656	53.9
2/20/03	37672	4398855	2/20/03	2/27/03	7	4398855	4472009	73154	73154	10451	40.4
2/27/03	37679	4472009	2/27/03	3/6/03	7	4472009	4532846	60837	60837	8691	46.1
3/6/03	37686	4532846	3/6/03	3/14/03	8	4532846	4585504	52658	52658	6582	59.7
3/14/03	37694	4585504	3/14/03	3/24/03	10	4585504	4636401	50897	50897	5090	58.1
3/24/03	37704	4636401	3/24/03	4/1/03	8	4636401	4687232	50831	50831	6354	59.8
4/1/03	37712	4687232	4/1/03	4/7/03	6	4687232	4738108	50876	50876	8479	59.0



11.2.17.2.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 1
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = Mean

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 0

Y1 column number = 6

X1 column number = 0 (unused)

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

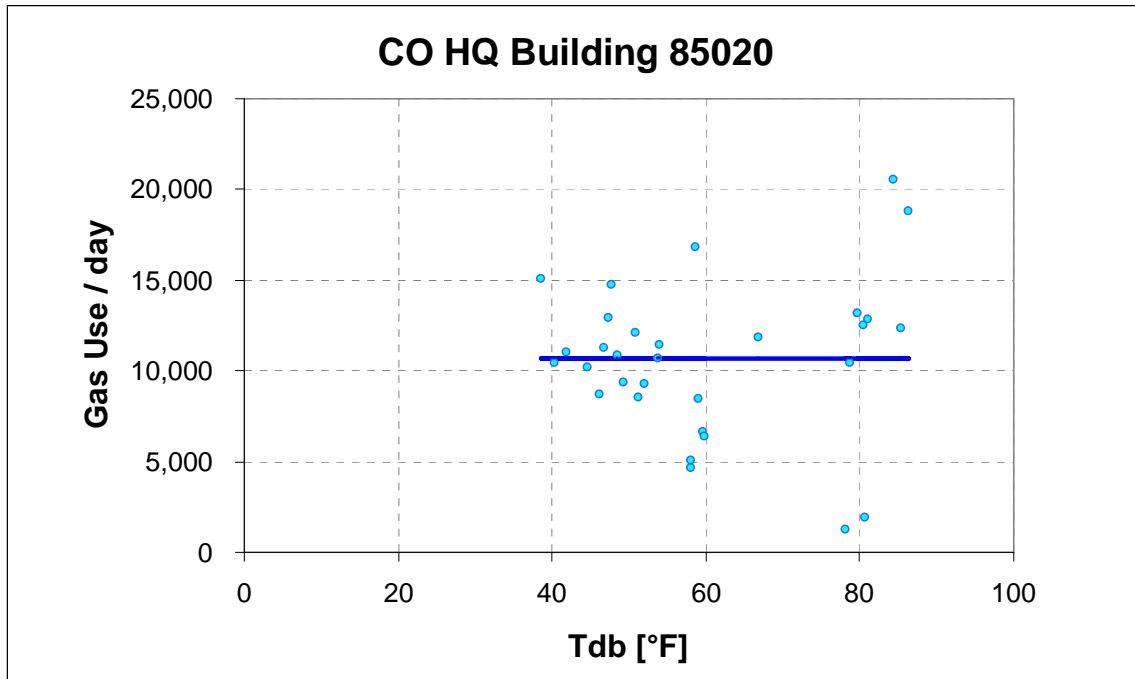
Regression Results

N = 31

Ymean = 10645.903

StdDev = 4277.696

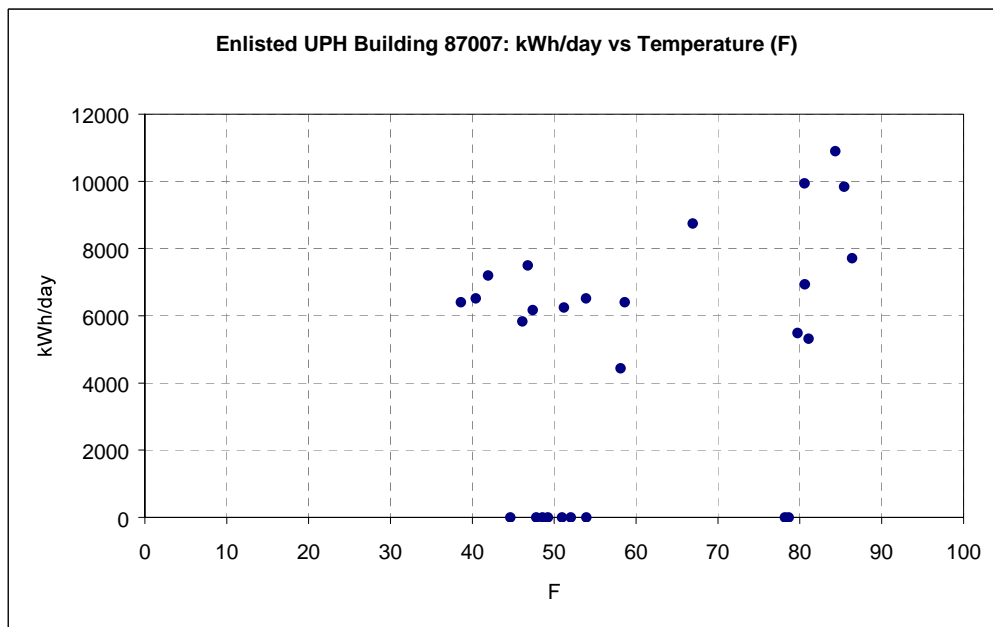
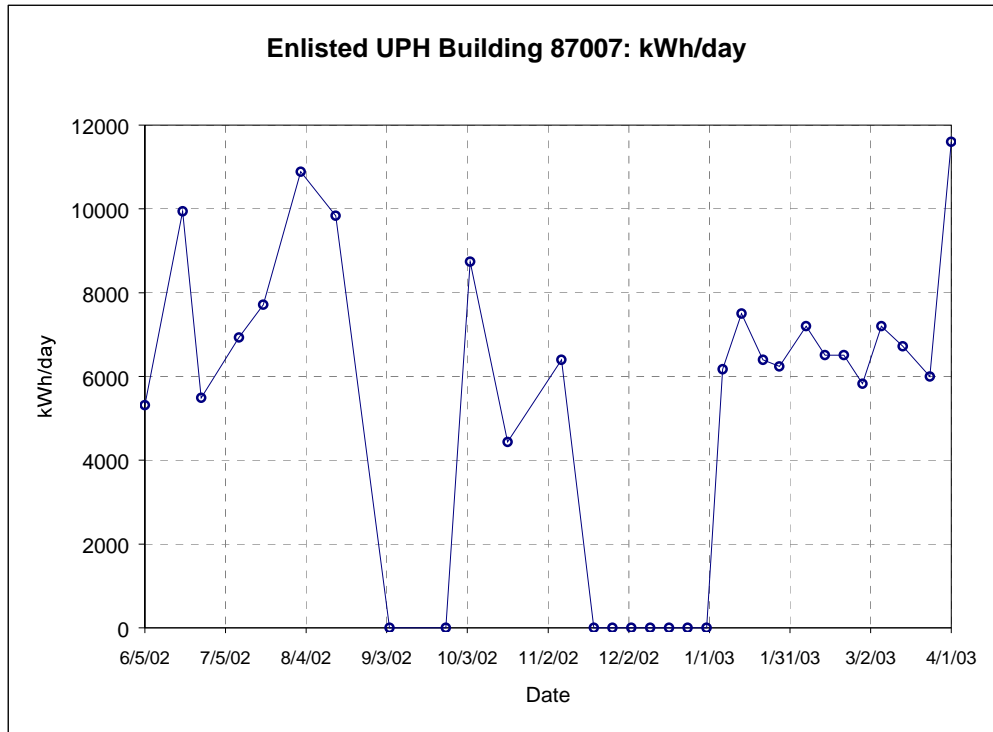
CV-StDev = 40.182 %



11.2.18. 91012 Admin/ Operational Testing

11.2.18.1. Electricity Use From Manual Readings

91012 Elec		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									2400		
6/5/02	37412	5318	6/5/02	6/19/02	14	5318	5349	31	74400	5314	81.1
6/19/02	37426	5349	6/19/02	6/26/02	7	5349	5378	29	69600	9943	80.6
6/26/02	37433	5378	6/26/02	7/10/02	14	5378	5410	32	76800	5486	79.7
7/10/02	37447	5410	7/10/02	7/19/02	9	5410	5436	26	62400	6933	80.6
7/19/02	37456	5436	7/19/02	8/2/02	14	5436	5481	45	108000	7714	86.4
8/2/02	37470	5481	8/2/02	8/15/02	13	5481	5540	59	141600	10892	84.3
8/15/02	37483	5540	8/15/02	9/4/02	20	5540	5622	82	196800	9840	85.4
9/4/02	37503	5622	9/4/02	9/25/02	21	5622	-	-	-	-	78.2
9/25/02	37524	-	9/25/02	10/4/02	9	-	5702	-	-	-	78.7
10/4/02	37533	5702	10/4/02	10/18/02	14	5702	5753	51	122400	8743	66.9
10/18/02	37547	5753	10/18/02	11/7/02	20	5753	5790	37	88800	4440	58.1
11/7/02	37567	5790	11/7/02	11/19/02	12	5790	5822	32	76800	6400	58.6
11/19/02	37579	5822	11/19/02	11/26/02	7	5822	-	-	-	-	53.9
11/26/02	37586	Logger	11/26/02	12/3/02	7	-	-	-	-	-	49.2
12/3/02	37593	Logger	12/3/02	12/10/02	7	-	-	-	-	-	44.7
12/10/02	37600	Logger	12/10/02	12/17/02	7	-	-	-	-	-	52.0
12/17/02	37607	Logger	12/17/02	12/24/02	7	-	-	-	-	-	51.0
12/24/02	37614	Logger	12/24/02	12/31/02	7	-	-	-	-	-	48.6
12/31/02	37621	Logger	12/31/02	1/6/03	6	-	-	-	-	-	47.8
1/6/03	37627	5956	1/6/03	1/13/03	7	5956	5974	18	43200	6171	47.4
1/13/03	37634	5974	1/13/03	1/21/03	8	5974	5999	25	60000	7500	46.8
1/21/03	37642	5999	1/21/03	1/27/03	6	5999	6015	16	38400	6400	38.6
1/27/03	37648	6015	1/27/03	2/6/03	10	6015	6041	26	62400	6240	51.2
2/6/03	37658	6041	2/6/03	2/13/03	7	6041	6062	21	50400	7200	41.9
2/13/03	37665	6062	2/13/03	2/20/03	7	6062	6081	19	45600	6514	53.9
2/20/03	37672	6081	2/20/03	2/27/03	7	6081	6100	19	45600	6514	40.4
2/27/03	37679	6100	2/27/03	3/6/03	7	6100	6117	17	40800	5829	46.1
3/6/03	37686	6117	3/6/03	3/14/03	8	6117	6141	24	57600	7200	59.7
3/14/03	37694	6141	3/14/03	3/24/03	10	6141	6169	28	67200	6720	58.1
3/24/03	37704	6169	3/24/03	4/1/03	8	6169	6189	20	48000	6000	59.8
4/1/03	37712	6189	4/1/03	4/7/03	6	6189	6218	29	69600	11600	59.0



11.2.18.1.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 3
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

 ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Cooling

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 22

R2 = 0.193

AdjR2 = 0.193

RMSE = 1705.5343

CV-RMSE = 23.511%

p = -0.328

DW = 2.145 (p>0)

N1 = 15

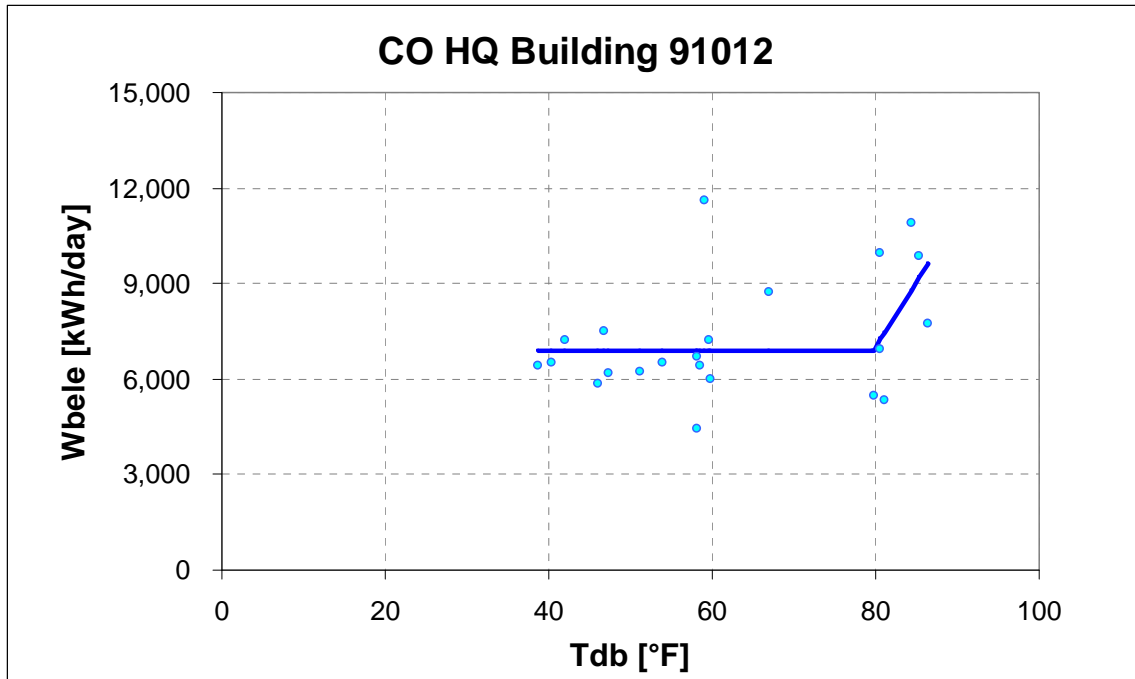
N2 = 7

Ycp = 6878.0811 (402.2546)

LS = 0.0000 (0.0000)

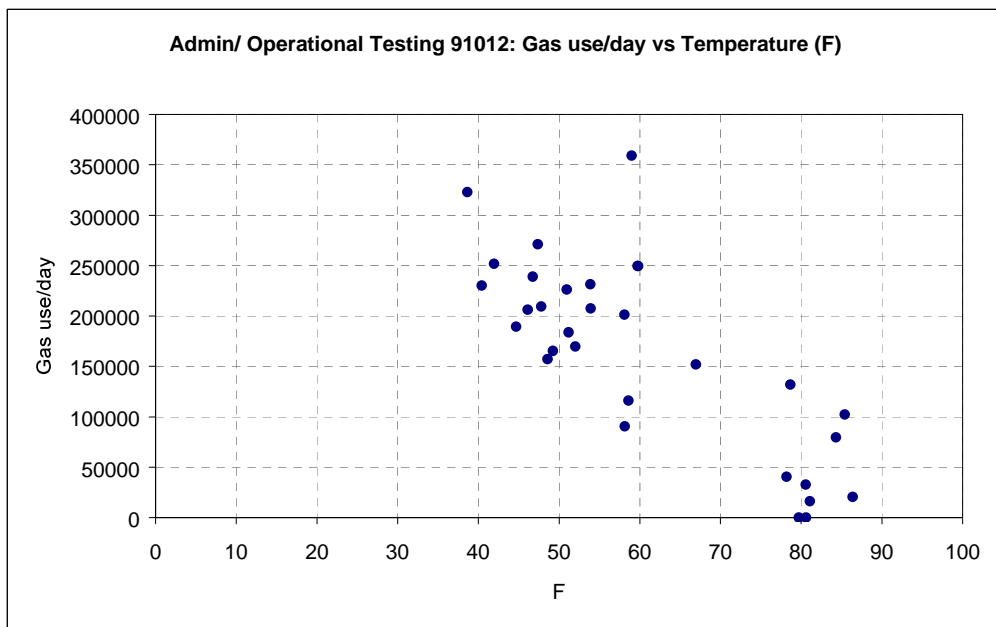
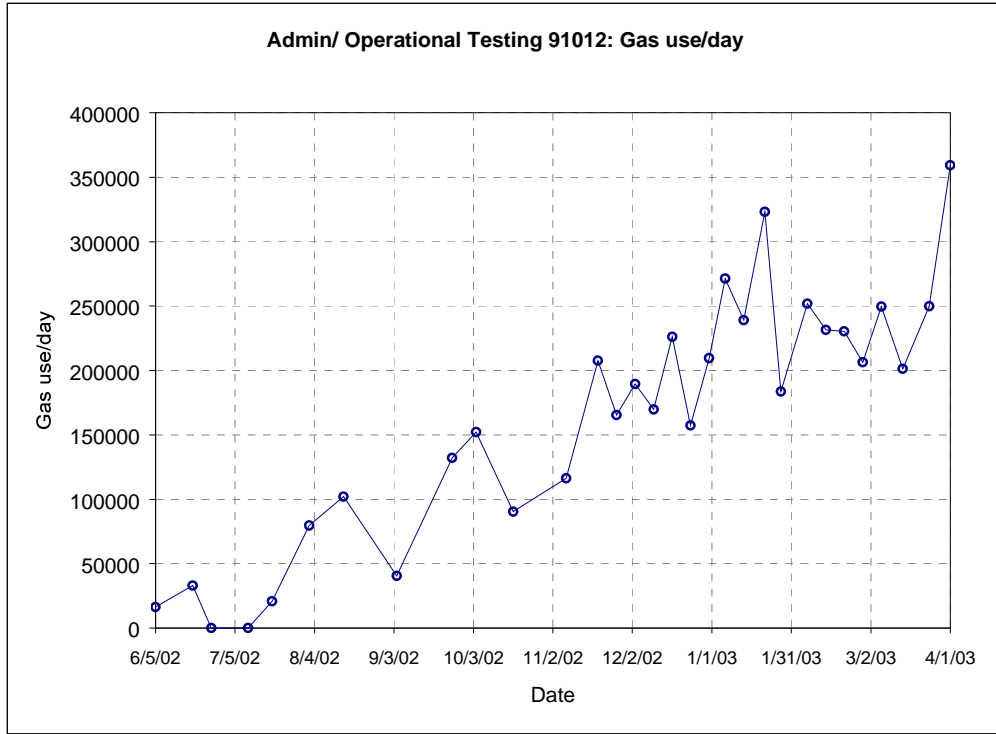
RS = 407.4030 (186.2784)

Xcp = 79.6864 (0.9548)



11.2.18.2. Natural Gas From Manual Readings

91012 Gas		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp (F)
									10		
6/5/02	37412	5121951	6/5/02	6/19/02	14	5121951	5144856	22905	229050	16361	81.1
6/19/02	37426	5144856	6/19/02	6/26/02	7	5144856	5167862	23006	230060	32866	80.6
6/26/02	37433	5167862	6/26/02	7/10/02	14	5167862	5159271	-	-	-	79.7
7/10/02	37447	5159271	7/10/02	7/19/02	9	5159271	5151169	-	-	-	80.6
7/19/02	37456	5151169	7/19/02	8/2/02	14	5151169	5180104	28935	289350	20668	86.4
8/2/02	37470	5180104	8/2/02	8/15/02	13	5180104	5283590	103486	1034860	79605	84.3
8/15/02	37483	5283590	8/15/02	9/4/02	20	5283590	5487964	204374	2043740	102187	85.4
9/4/02	37503	5487964	9/4/02	9/25/02	21	5487964	5573252	85288	852880	40613	78.2
9/25/02	37524	5573252	9/25/02	10/4/02	9	5573252	5692095	118843	1188430	132048	78.7
10/4/02	37533	5692095	10/4/02	10/18/02	14	5692095	5904986	212891	2128910	152065	66.9
10/18/02	37547	5904986	10/18/02	11/7/02	20	5904986	6085658	180672	1806720	90336	58.1
11/7/02	37567	6085658	11/7/02	11/19/02	12	6085658	6225105	139447	1394470	116206	58.6
11/19/02	37579	6225105	11/19/02	11/26/02	7	6225105	6370430	145325	1453250	207607	53.9
11/26/02	37586	6370430	11/26/02	12/3/02	7	6370430	6486125	115695	1156950	165279	49.2
12/3/02	37593	6486125	12/3/02	12/10/02	7	6486125	6618694	132569	1325690	189384	44.7
12/10/02	37600	6618694	12/10/02	12/17/02	7	6618694	6737515	118821	1188210	169744	52.0
12/17/02	37607	6737515	12/17/02	12/24/02	7	6737515	6895781	158266	1582660	226094	51.0
12/24/02	37614	6895781	12/24/02	12/31/02	7	6895781	7005895	110114	1101140	157306	48.6
12/31/02	37621	7005895	12/31/02	1/6/03	6	7005895	7131577	125682	1256820	209470	47.8
1/6/03	37627	7131577	1/6/03	1/13/03	7	7131577	7321458	189881	1898810	271259	47.4
1/13/03	37634	7321458	1/13/03	1/21/03	8	7321458	7512658	191200	1912000	239000	46.8
1/21/03	37642	7512658	1/21/03	1/27/03	6	7512658	7706488	193830	1938300	323050	38.6
1/27/03	37648	7706488	1/27/03	2/6/03	10	7706488	7890146	183658	1836580	183658	51.2
2/6/03	37658	7890146	2/6/03	2/13/03	7	7890146	8066305	176159	1761590	251656	41.9
2/13/03	37665	8066305	2/13/03	2/20/03	7	8066305	8228308	162003	1620030	231433	53.9
2/20/03	37672	8228308	2/20/03	2/27/03	7	8228308	8389431	161123	1611230	230176	40.4
2/27/03	37679	8389431	2/27/03	3/6/03	7	8389431	8533798	144367	1443670	206239	46.1
3/6/03	37686	8533798	3/6/03	3/14/03	8	8533798	8733412	199614	1996140	249518	59.7
3/14/03	37694	8733412	3/14/03	3/24/03	10	8733412	8934565	201153	2011530	201153	58.1
3/24/03	37704	8934565	3/24/03	4/1/03	8	8934565	9134373	199808	1998080	249760	59.8
4/1/03	37712	9134373	4/1/03	4/7/03	6	9134373	9349918	215545	2155450	359242	59.0



11.2.18.2.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Heating

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 29

R2 = 0.572

AdjR2 = 0.572

RMSE = 58266.3555

CV-RMSE = 33.106%

p = 0.255

DW = 1.098 (p>0)

N1 = 26

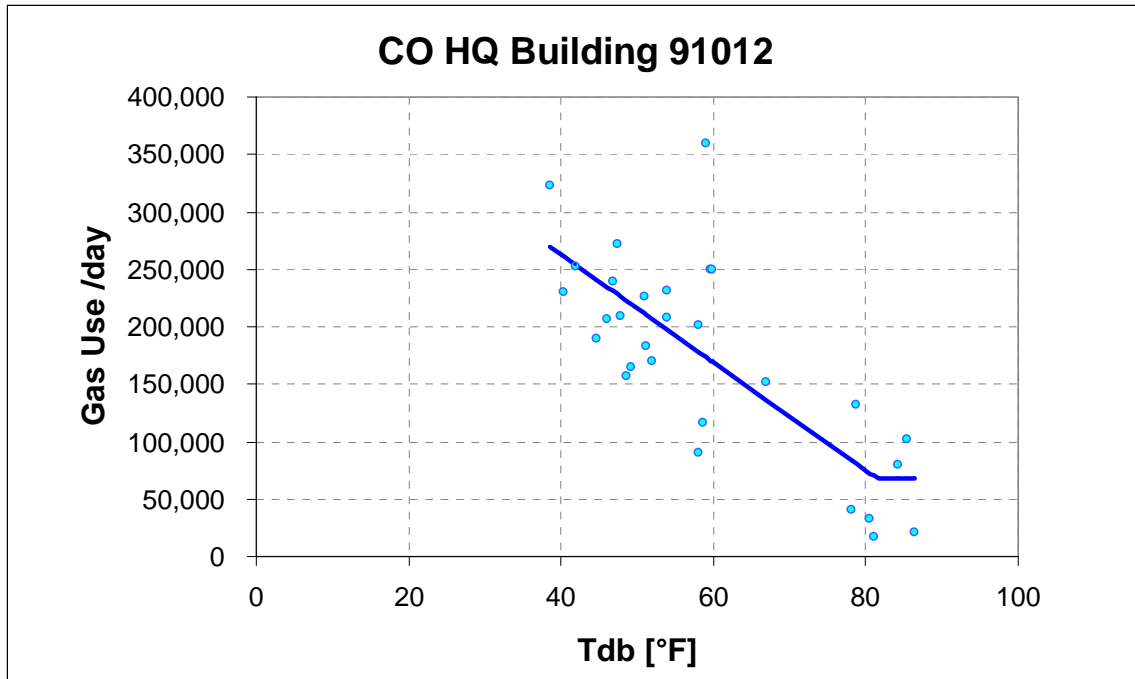
N2 = 3

Ycp = 67638.0625 (21025.1816)

LS = -4695.8267 (781.2202)

RS = 0.0000 (0.0000)

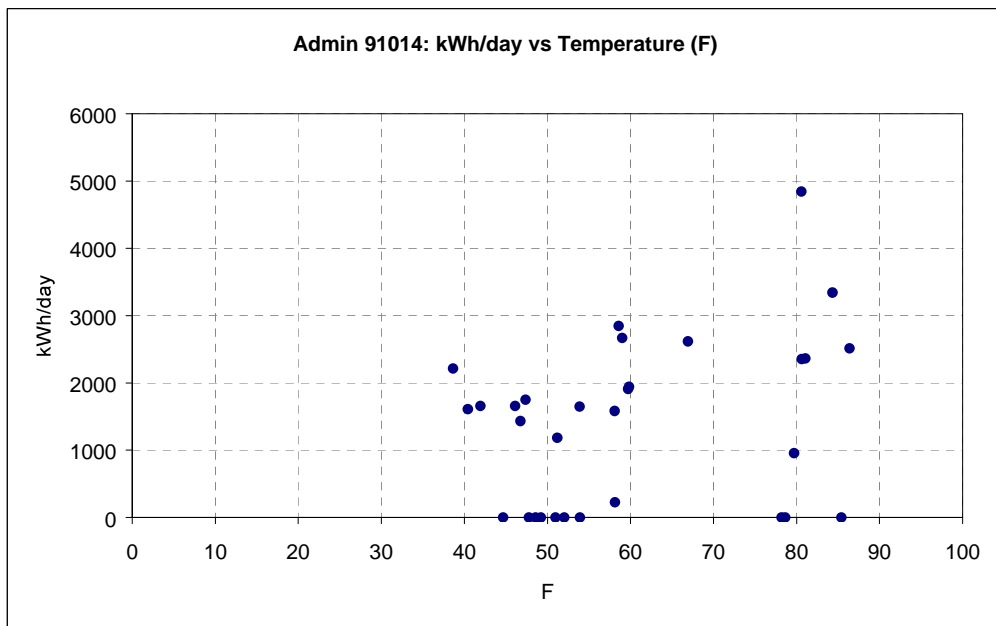
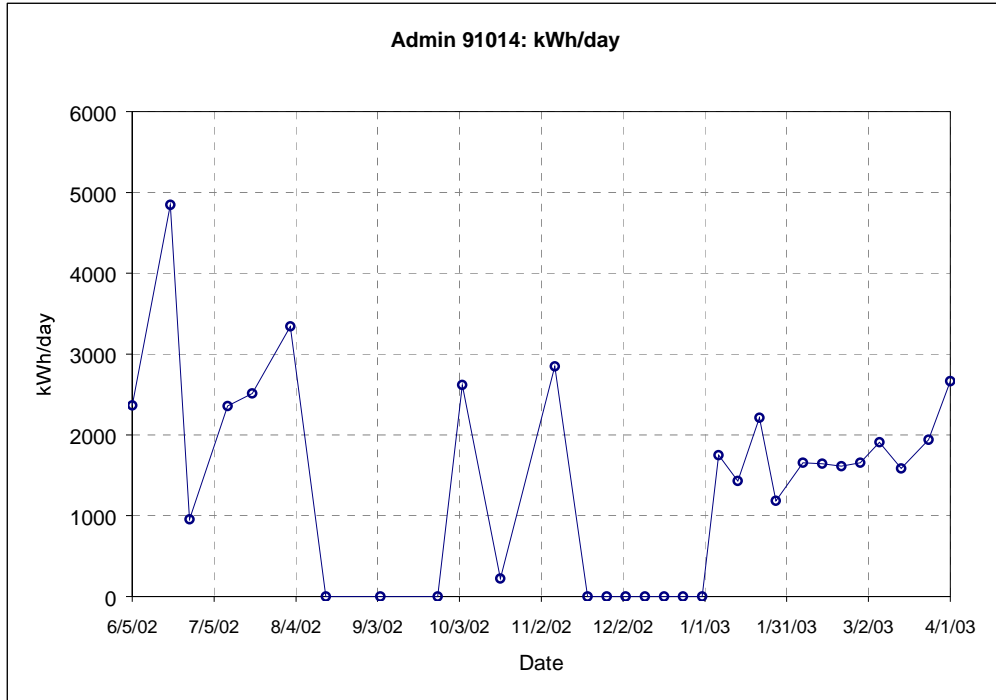
Xcp = 81.5960 (0.9548)



11.2.19. 91014 Admin

11.2.19.1. Electricity Use From Manual Readings

91014 Elec		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									80		
6/5/02	37412	60716	6/5/02	6/19/02	14	60716	61130	414	33120	2366	81.1
6/19/02	37426	61130	6/19/02	6/26/02	7	61130	61554	424	33920	4846	80.6
6/26/02	37433	61554	6/26/02	7/10/02	14	61554	61721	167	13360	954	79.7
7/10/02	37447	61721	7/10/02	7/19/02	9	61721	61986	265	21200	2356	80.6
7/19/02	37456	61986	7/19/02	8/2/02	14	61986	62426	440	35200	2514	86.4
8/2/02	37470	62426	8/2/02	8/15/02	13	62426	62969	543	43440	3342	84.3
8/15/02	37483	62969	8/15/02	9/4/02	20	62969	-	-	-	-	85.4
9/4/02	37503	-	9/4/02	9/25/02	21	-	-	-	-	-	78.2
9/25/02	37524	-	9/25/02	10/4/02	9	-	64500	-	-	-	78.7
10/4/02	37533	64500	10/4/02	10/18/02	14	64500	64958	458	36640	2617	66.9
10/18/02	37547	64958	10/18/02	11/7/02	20	64958	65014	56	4480	224	58.1
11/7/02	37567	65014	11/7/02	11/19/02	12	65014	65441	427	34160	2847	58.6
11/19/02	37579	65441	11/19/02	11/26/02	7	65441	-	-	-	-	53.9
11/26/02	37586	Logger	11/26/02	12/3/02	7	-	-	-	-	-	49.2
12/3/02	37593	Logger	12/3/02	12/10/02	7	-	-	-	-	-	44.7
12/10/02	37600	Logger	12/10/02	12/17/02	7	-	-	-	-	-	52.0
12/17/02	37607	Logger	12/17/02	12/24/02	7	-	-	-	-	-	51.0
12/24/02	37614	Logger	12/24/02	12/31/02	7	-	-	-	-	-	48.6
12/31/02	37621	Logger	12/31/02	1/6/03	6	-	-	-	-	-	47.8
1/6/03	37627	66395	1/6/03	1/13/03	7	66395	66548	153	12240	1749	47.4
1/13/03	37634	66548	1/13/03	1/21/03	8	66548	66691	143	11440	1430	46.8
1/21/03	37642	66691	1/21/03	1/27/03	6	66691	66857	166	13280	2213	38.6
1/27/03	37648	66857	1/27/03	2/6/03	10	66857	67005	148	11840	1184	51.2
2/6/03	37658	67005	2/6/03	2/13/03	7	67005	67150	145	11600	1657	41.9
2/13/03	37665	67150	2/13/03	2/20/03	7	67150	67294	144	11520	1646	53.9
2/20/03	37672	67294	2/20/03	2/27/03	7	67294	67435	141	11280	1611	40.4
2/27/03	37679	67435	2/27/03	3/6/03	7	67435	67580	145	11600	1657	46.1
3/6/03	37686	67580	3/6/03	3/14/03	8	67580	67771	191	15280	1910	59.7
3/14/03	37694	67771	3/14/03	3/24/03	10	67771	67969	198	15840	1584	58.1
3/24/03	37704	67969	3/24/03	4/1/03	8	67969	68163	194	15520	1940	59.8
4/1/03	37712	68163	4/1/03	4/7/03	6	68163	68363	200	16000	2667	59.0



11.2.19.1.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat
 Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 3
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Cooling

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 21

R2 = 0.260

AdjR2 = 0.260

RMSE = 835.5569

CV-RMSE = 40.511%

p = -0.478

DW = 2.889 (p>0)

N1 = 7

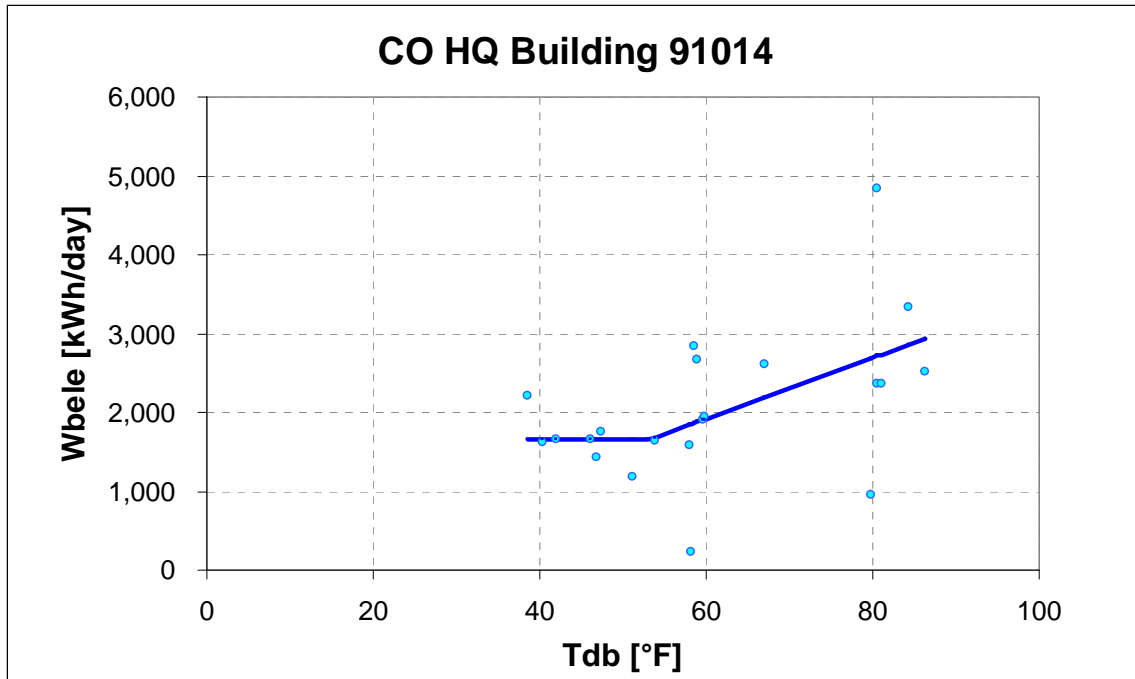
N2 = 14

Ycp = 1647.7891 (242.9162)

LS = 0.0000 (0.0000)

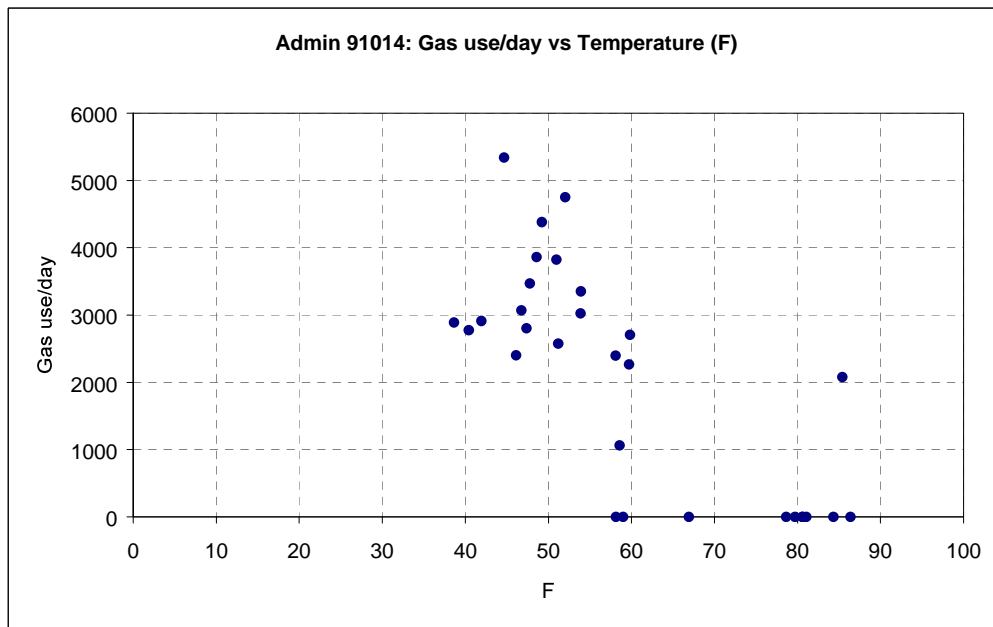
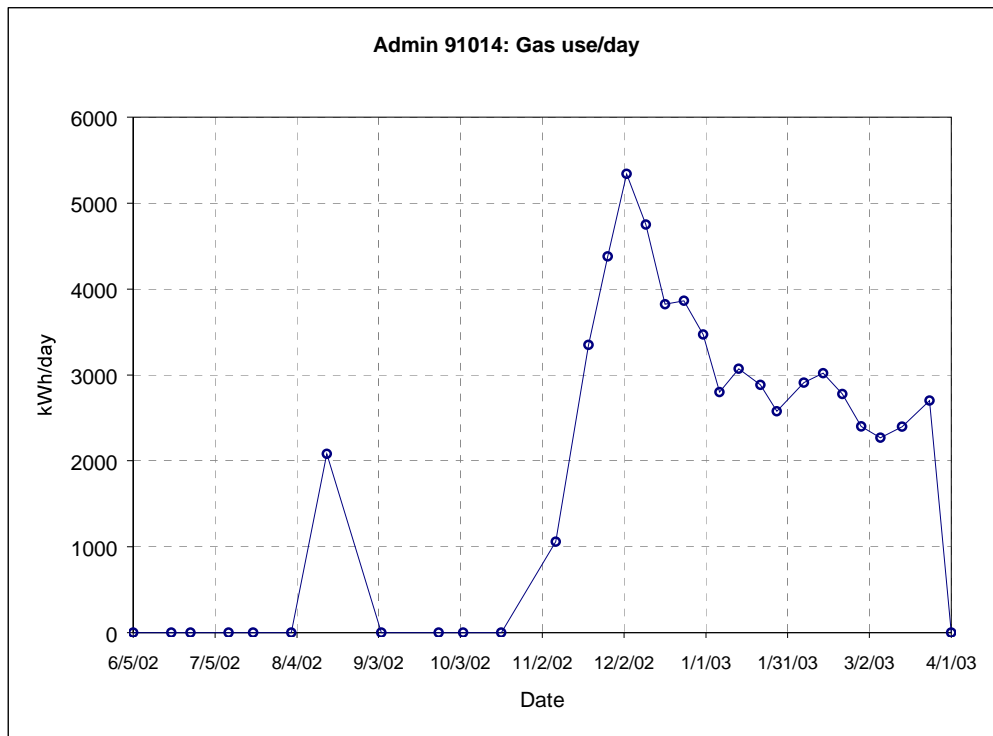
RS = 38.6100 (14.9428)

Xcp = 52.9520 (0.9548)



11.2.19.2. Natural Gas From Manual Readings

91014 Gas		Reading	Date Begin	Date End	# of days	Reading Begin	Reading End	Counts per period	Use per period	Use per day	avg temp(F)
									1		
6/5/02	37412	0	6/5/02	6/19/02	14	0	0	0	0	0	81.1
6/19/02	37426	0	6/19/02	6/26/02	7	0	0	0	0	0	80.6
6/26/02	37433	0	6/26/02	7/10/02	14	0	0	0	0	0	79.7
7/10/02	37447	0	7/10/02	7/19/02	9	0	0	0	0	0	80.6
7/19/02	37456	0	7/19/02	8/2/02	14	0	0	0	0	0	86.4
8/2/02	37470	0	8/2/02	8/15/02	13	0	-	-	-	-	84.3
8/15/02	37483	5487964	8/15/02	9/25/02	41	5487964	5573252	85288	85288	2080	85.4
9/4/02	37503		9/4/02	10/4/02	30	0	0	0	0	0	
9/25/02	37524	5573252	9/25/02	10/18/02	23	5573252	0	-	-	-	78.7
10/4/02	37533		10/4/02	11/7/02	34	0	0	0	0	0	66.9
10/18/02	37547		10/18/02	11/19/02	32	0	0	0	0	0	58.1
11/7/02	37567		11/7/02	11/26/02	19	0	20154	20154	20154	1061	58.6
11/19/02	37579		11/19/02	12/3/02	14	0	46895	46895	46895	3350	53.9
11/26/02	37586	20154	11/26/02	12/10/02	14	20154	81493	61339	61339	4381	49.2
12/3/02	37593	46895	12/3/02	12/17/02	14	46895	121648	74753	74753	5340	44.7
12/10/02	37600	81493	12/10/02	12/24/02	14	81493	148005	66512	66512	4751	52.0
12/17/02	37607	121648	12/17/02	12/31/02	14	121648	175148	53500	53500	3821	51.0
12/24/02	37614	148005	12/24/02	1/6/03	13	148005	198226	50221	50221	3863	48.6
12/31/02	37621	175148	12/31/02	1/13/03	13	175148	220259	45111	45111	3470	47.8
1/6/03	37627	198226	1/6/03	1/21/03	15	198226	240257	42031	42031	2802	47.4
1/13/03	37634	220259	1/13/03	1/27/03	14	220259	263235	42976	42976	3070	46.8
1/21/03	37642	240257	1/21/03	2/6/03	16	240257	286423	46166	46166	2885	38.6
1/27/03	37648	263235	1/27/03	2/13/03	17	263235	307012	43777	43777	2575	51.2
2/6/03	37658	286423	2/6/03	2/20/03	14	286423	327157	40734	40734	2910	41.9
2/13/03	37665	307012	2/13/03	2/27/03	14	307012	349311	42299	42299	3021	53.9
2/20/03	37672	327157	2/20/03	3/6/03	14	327157	366042	38885	38885	2778	40.4
2/27/03	37679	349311	2/27/03	3/14/03	15	349311	385300	35989	35989	2399	46.1
3/6/03	37686	366042	3/6/03	3/24/03	18	366042	406848	40806	40806	2267	59.7
3/14/03	37694	385300	3/14/03	4/1/03	18	385300	428437	43137	43137	2397	58.1
3/24/03	37704	406848	3/24/03	4/7/03	14	406848	444689	37841	37841	2703	59.8
4/1/03	37712	428437	4/1/03	1/0/00	###	428437	0	-	-	-	59.0



11.2.19.2.1. Baseline Model From Manual Readings

Path and name of input data file =DAILY2.dat

Value of no-data flag = -99
 Column number of group field = 5
 Value of valid group field = 1
 Residual file needed (1 yes, 0 no) = 1
 Model type (1:Mean,2:2p,3:3pc,4:3ph,5:4p,6:5p,7:MVR,8:HDD,9:CDD) = 4
 Column number of dependent Y variable = 6
 Number of independent X variables (0 to 6) = 1
 Column number of independent variable X1 = 9
 Column number of independent variable X2 = 0
 Column number of independent variable X3 = 0
 Column number of independent variable X4 = 0
 Column number of independent variable X5 = 0
 Column number of independent variable X6 = 0

ASHRAE INVERSE MODELING TOOLKIT (1.9)

Output file name = IMT.Out

Input data file name = DAILY2.dat

Model type = 3P Heating

Grouping column No = 5

Value for grouping = 1

Residual mode = 1

of X(Indep.) Var = 1

Y1 column number = 6

X1 column number = 9

X2 column number = 0 (unused)

X3 column number = 0 (unused)

X4 column number = 0 (unused)

X5 column number = 0 (unused)

X6 column number = 0 (unused)

Regression Results

N = 28

R2 = 0.618

AdjR2 = 0.618

RMSE = 1036.6536

CV-RMSE = 46.875%

p = 0.524

DW = 0.932 (p>0)

N1 = 21

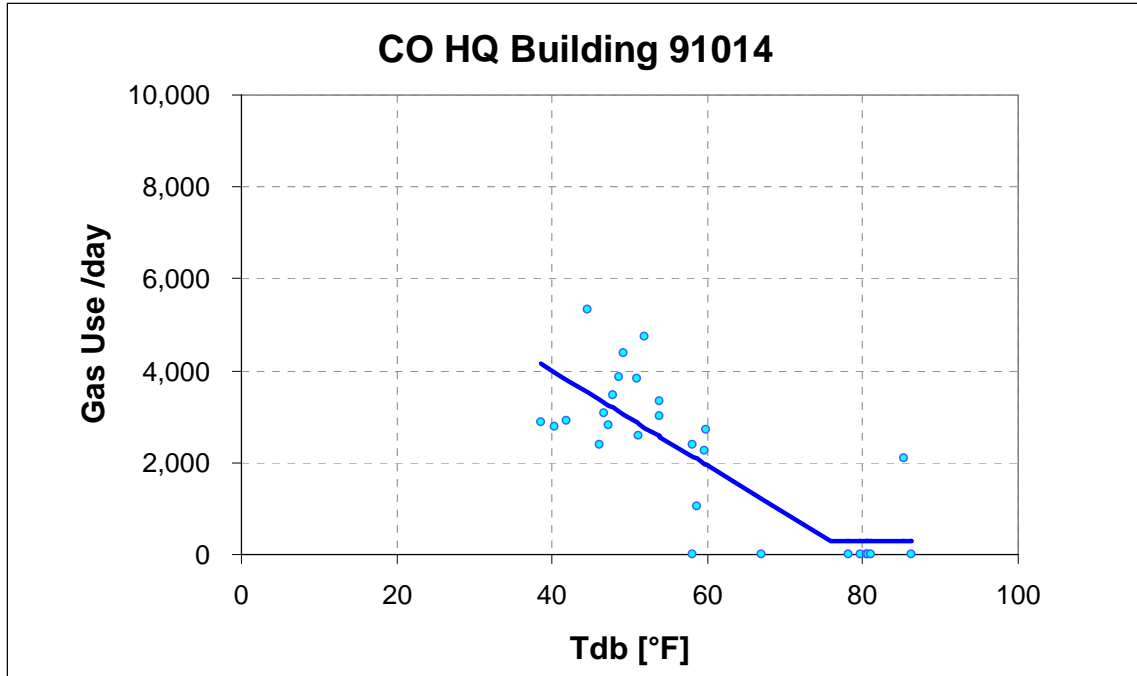
N2 = 7

Ycp = 302.8012 (353.7845)

LS = -103.0897 (15.9105)

RS = 0.0000 (0.0000)

Xcp = 75.8672 (0.9548)



11.3. Baseline Models for Electric Demand Using 1093-RP Diversity Factor Analysis

This section contains the weather-independent analysis, which utilizes 24-hour profiles that were developed using ASHRAE's 1093-RP diversity factor procedures (Abushakra 2001). The methodology used to derive the 24-hour weekday, weekend profiles is based on an analysis developed for ASHRAE research project 1093-RP that uses percentiles, where the 10th, 25th, 50th, 75th, and 90th percentiles are reported for each hour of the day by day type (i.e., weekday, weekend).

Building Number	Building Name	Building Size (ft ²)	Electricity Meter Status		Total Annual kW Savings	Total Annual kW Savings (\$)	Diversity Factor Analysis
			Type	ACR Data?			
194	NCO Club (Phantom Warrior Club)	19,023	Man & ACR	YES	47	\$207	*
410	Headquarters Building	102,391	Man & ACR	YES	1,025	\$4,537	*
1001	Third Corp Headquarters	312,800	Logger	YES	2,363	\$10,459	*
4351	Motor Pool	16,317	Manual	NO	75	\$332	
5485	Pershing Youth Center	17,519	Manual	NO	68	\$300	
5764	Officers Club	36,649	Man & ACR	YES	152	\$673	*
6602	Bronco Youth Center	22,100	Man & ACR	YES	125	\$552	*
9112	Motor Pool	20,832	Man & ACR	YES	431	\$1,906	*
9122	Motor Pool	20,832	Man & ACR	YES	477	\$2,112	*
9127	Motor Pool	20,240	BLINK	NO	222	\$984	
9212	Patton Inn	1,612	Manual	NO	53	\$235	
9513	Motor Pool	20,832	Man & ACR	NO	362	\$1,600	
9535	Motor Pool	20,240	BLINK	NO	260	\$1,149	
9553	Motor Pool	24,560	BLINK	NO	140	\$621	
15060	Motor Pool	20,240	Man & ACR	YES	329	\$1,455	*
19012	Motor Pool	20,240	BLINK	NO	150		
22020	Admin	21,096	Man & ACR	YES	180	\$798	*
28000	Headquarters Bldg	129,635	Man & ACR	YES	0	\$0	*
30015	Motor Pool	20,240	BLINK	NO	218	\$963	
30017	Motor Pool	20,240	BLINK	NO	219	\$970	
30033	Motor Pool	20,240	BLINK	NO	256	\$1,132	
35014	Motor Pool	20,480	BLINK	NO	191	\$845	
35023	Motor Pool	23,040	BLINK	NO	135	\$598	
38003	Motor Pool	20,240	BLINK	NO	247	\$1,093	
38014	Motor Pool	20,240	BLINK	NO	183	\$811	
42000	Sports USA	23,341	Man & ACR	YES	92	\$409	*
50012	Community Event Center	4,203	Manual	NO	0	\$0	
52019	Comanche Community Activity Center	13,450	Manual	NO	108	\$479	
52381	Golf Pro Shop	3,061	Manual	NO		\$0	
52024	COMMAND Child Care	34,779	Man & ACR	YES	217	\$960	*
70005	Longhorn Saloon	5,718	Manual	NO	53	\$234	
85018	Walker Youth Service Center	15,652	Manual	NO	113	\$498	
85020	Commissary	105,659	Man & ACR	YES	470	\$2,082	*
87003	BN HQ Building and Org Classroom	12,314	87000 Block	YES	146	\$647	*
87004	CO HQ Building	18,818	87000 Block	BROKEN	126	\$557	
87005	BDE HQ Building	9,840	87000 Block	YES	114	\$504	*
87006	Offices	4,073	87000 Block	YES	44	\$196	*
87007	Enlisted UPH	31,470	87000 Block	YES	0	\$0	*
87008	BN HQ Building	6,371	87000 Block	YES	70	\$308	*
87009	BN HQ Building and Org Classroom	12,381	87000 Block	YES	162	\$717	*
87010	Physical Fitness Center	23,631	87000 Block	YES	172	\$759	*
87011	CO HQ Building	25,618	87000 Block	YES	157	\$697	*
87012	Enlisted UPH	42,306	87000 Block	YES	5	\$23	*
87013	Enlisted UPH	31,740	87000 Block	NO	0	\$0	
87014	CO HQ Building	14,162	87000 Block	YES	96	\$425	*
87015	Enlisted UPH	42,306	87000 Block	YES	3	\$15	*
87016	CO HQ Building	25,168	87000 Block	YES	157	\$697	*
87017	Dining Facility	15,695	87000 Block	YES	89	\$393	*
87018	Physical Plant - 87000 Block	3,327	Logger	NO	15	\$68	
87019	CO HQ Building	18,818	BLINK	NO	126	\$557	
87020	Enlisted UPH	42,306	BLINK	NO	79	\$349	
87021	Enlisted UPH	87,021	BLINK	NO	1	\$4	
87022	Enlisted UPH	42,306	BLINK	NO	54	\$238	
91002	Headquarters Bldg	38,462	Man & ACR	YES	121	\$534	*
91012	Admin/ Operational Testing	86,292	Man & ACR	YES	388	\$1,715	*
91014	Admin	26,224	Man & ACR	YES	184	\$814	*
Total Annual kW Savings						\$49,214	
kW Savings Covered by Demand Model:						\$35,153	71.4%

Table 11.3-1: List of Buildings with Electric Demand Baseline Models

Table 11.3-1 shows the list of buildings that have been monitored by ESL using ACR loggers. 24-hour profiles were developed for these buildings and presented in the following in this section. It shows that 71.4% of the total electrical demand savings are covered in these demand models.

11.3.1. 87003 BN HQ Building

Figure 11.3.1-1 displays a time series plot of the electricity use data that were recorded for the period from January 2003 to August 2003 for 87003 Building. There are two different periods shown in Figure 11.3.1-1 that the usage is distinctively different. In Figure 11.3.1-2 the 24-hour weekday, weekend profiles are presented for the whole-building electricity use for 87003 building for the period 1, and in Table 11.3.1-1 the values shown in Figure 11.3.1-2 are displayed. The 24-hour weekday, weekend profiles and the values for the whole-building electricity use for 87003 building for the period 2 are shown in Figure 11.3.1-3 and Table in Table 11.3.1-2. Although the whole-building electricity load is known to have weather dependencies, the 24-hour weekday, weekend profile was very consistent over the period 2 starting from April 03.

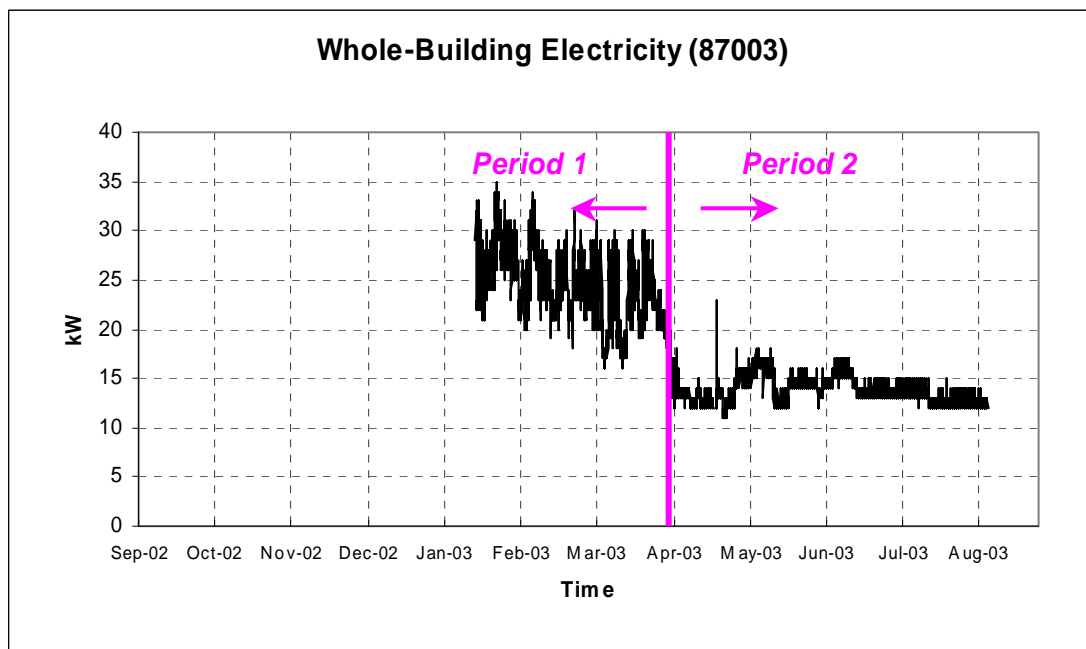
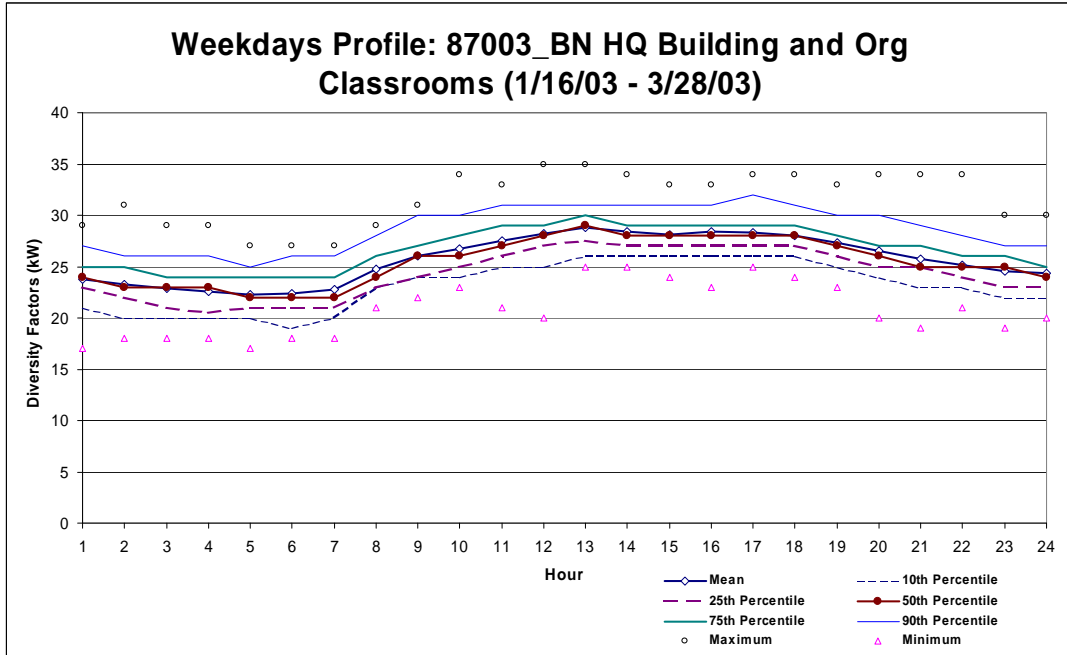


Figure 11.3.1-1: Building #87003 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 03/17/03.

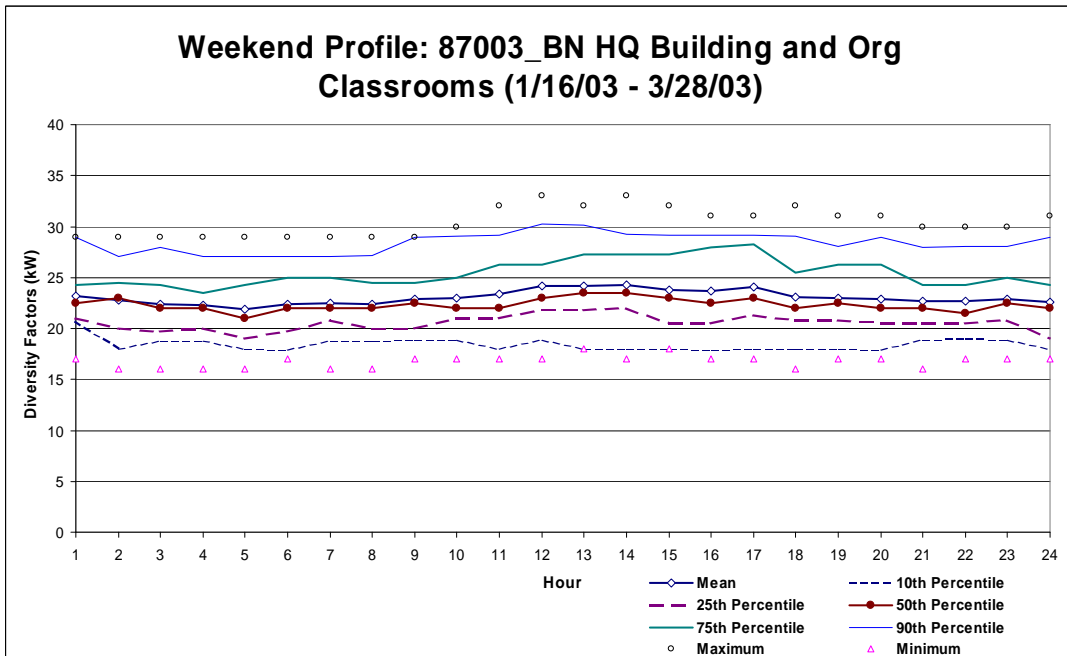


Figure 11.3.1-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87003 in Period 1

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	23.75	26.27	21.22	21.00	23.00	24.00	25.00	27.00	29.00	17.00
2	23.27	25.89	20.66	20.00	22.00	23.00	25.00	26.00	31.00	18.00
3	22.84	25.24	20.45	20.00	21.00	23.00	24.00	26.00	29.00	18.00
4	22.57	25.08	20.05	20.00	20.50	23.00	24.00	26.00	29.00	18.00
5	22.27	24.44	20.11	20.00	21.00	22.00	24.00	25.00	27.00	17.00
6	22.41	24.68	20.14	19.00	21.00	22.00	24.00	26.00	27.00	18.00
7	22.76	25.08	20.45	20.00	21.00	22.00	24.00	26.00	27.00	18.00
8	24.76	26.78	22.75	23.00	23.00	24.00	26.00	28.00	29.00	21.00
9	26.02	28.33	23.71	24.00	24.00	26.00	27.00	30.00	31.00	22.00
10	26.71	29.40	24.01	24.00	25.00	26.00	28.00	30.00	34.00	23.00
11	27.53	30.01	25.04	25.00	26.00	27.00	29.00	31.00	33.00	21.00
12	28.20	30.90	25.49	25.00	27.00	28.00	29.00	31.00	35.00	20.00
13	28.78	30.96	26.61	26.00	27.50	29.00	30.00	31.00	35.00	25.00
14	28.41	30.46	26.36	26.00	27.00	28.00	29.00	31.00	34.00	25.00
15	28.16	30.04	26.28	26.00	27.00	28.00	29.00	31.00	33.00	24.00
16	28.41	30.42	26.40	26.00	27.00	28.00	29.00	31.00	33.00	23.00
17	28.29	30.38	26.21	26.00	27.00	28.00	29.00	32.00	34.00	25.00
18	28.02	30.09	25.95	26.00	27.00	28.00	29.00	31.00	34.00	24.00
19	27.33	29.39	25.28	25.00	26.00	27.00	28.00	30.00	33.00	23.00
20	26.51	28.82	24.20	24.00	25.00	26.00	27.00	30.00	34.00	20.00
21	25.76	28.16	23.37	23.00	25.00	25.00	27.00	29.00	34.00	19.00
22	25.20	27.48	22.92	23.00	24.00	25.00	26.00	28.00	34.00	21.00
23	24.59	26.80	22.38	22.00	23.00	25.00	26.00	27.00	30.00	19.00
24	24.39	26.63	22.16	22.00	23.00	24.00	25.00	27.00	30.00	20.00
Daily Values	616.96	658.50	575.42	574.00	591.00	608.00	637.00	666.00	753.00	546.00
Hourly Daily Sum	616.96	671.73	562.19	556.00	583.00	611.00	643.00	690.00	759.00	499.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

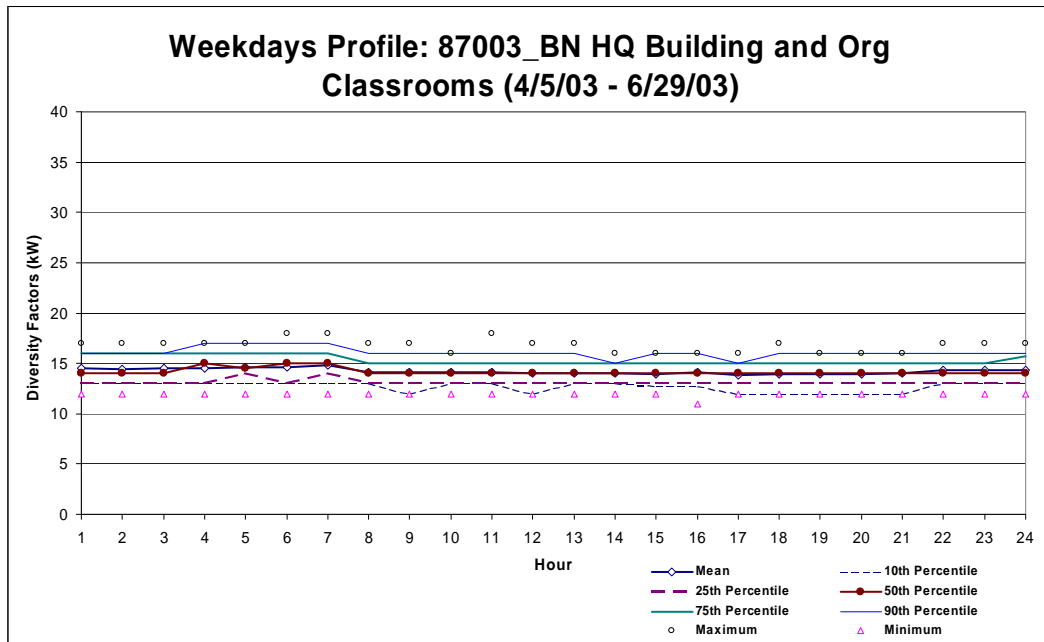
WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	23.15	26.54	19.76	20.70	21.00	22.50	24.25	29.00	29.00	17.00
2	22.75	26.23	19.27	18.00	20.00	23.00	24.50	27.10	29.00	16.00
3	22.35	26.01	18.69	18.80	19.75	22.00	24.25	28.00	29.00	16.00
4	22.30	25.74	18.86	18.80	20.00	22.00	23.50	27.10	29.00	16.00
5	21.90	25.53	18.27	18.00	19.00	21.00	24.25	27.10	29.00	16.00
6	22.35	25.98	18.72	17.90	19.75	22.00	25.00	27.10	29.00	17.00
7	22.45	25.89	19.01	18.80	20.75	22.00	25.00	27.10	29.00	16.00
8	22.40	26.02	18.78	18.80	20.00	22.00	24.50	27.20	29.00	16.00
9	22.90	26.58	19.22	18.90	20.00	22.50	24.50	29.00	29.00	17.00
10	23.00	26.83	19.17	18.90	21.00	22.00	25.00	29.10	30.00	17.00
11	23.40	27.72	19.08	18.00	21.00	22.00	26.25	29.20	32.00	17.00
12	24.15	28.68	19.62	18.90	21.75	23.00	26.25	30.20	33.00	17.00
13	24.15	28.58	19.72	18.00	21.75	23.50	27.25	30.10	32.00	18.00
14	24.30	28.82	19.78	18.00	22.00	23.50	27.25	29.30	33.00	17.00
15	23.80	28.34	19.26	18.00	20.50	23.00	27.25	29.20	32.00	18.00
16	23.65	28.23	19.07	17.90	20.50	22.50	28.00	29.20	31.00	17.00
17	24.05	28.52	19.58	18.00	21.25	23.00	28.25	29.20	31.00	17.00
18	23.10	27.44	18.76	18.00	20.75	22.00	25.50	29.10	32.00	16.00
19	22.95	26.86	19.04	18.00	20.75	22.50	26.25	28.10	31.00	17.00
20	22.90	27.20	18.60	17.90	20.50	22.00	26.25	29.00	31.00	17.00
21	22.70	26.41	18.99	18.90	20.50	22.00	24.25	28.00	30.00	16.00
22	22.65	26.34	18.96	19.00	20.50	21.50	24.25	28.10	30.00	17.00
23	22.90	26.48	19.32	18.90	20.75	22.50	25.00	28.10	30.00	17.00
24	22.60	26.64	18.56	18.00	19.00	22.00	24.25	29.00	31.00	17.00
Daily Values	552.85	643.50	462.20	435.60	502.75	541.50	589.25	679.80	726.00	424.00
Hourly Daily Sum	552.85	647.61	458.09	443.10	492.75	536.00	611.00	683.60	730.00	402.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.1-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87003 in Period 1



* The dates that are excluded from the weekday profile are as follow: 04/23/03 and 05/26/03.

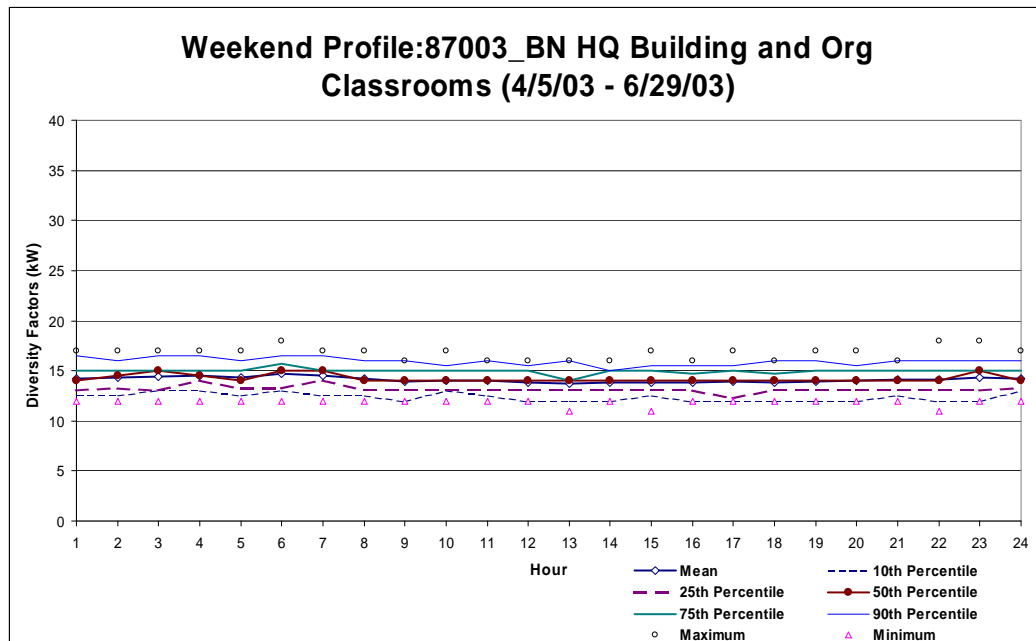


Figure 11.3.1-3: 24-hour weekday, weekend profiles for whole-building electricity use for #87003 in Period 2

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	14.48	15.90	13.07	13.00	13.00	14.00	16.00	16.00	17.00	12.00
2	14.45	15.93	12.97	13.00	13.00	14.00	16.00	16.00	17.00	12.00
3	14.50	15.85	13.15	13.00	13.00	14.00	16.00	16.00	17.00	12.00
4	14.55	16.06	13.04	13.00	13.00	15.00	16.00	17.00	17.00	12.00
5	14.66	16.21	13.10	13.00	14.00	14.50	16.00	17.00	17.00	12.00
6	14.62	16.13	13.11	13.00	13.00	15.00	16.00	17.00	18.00	12.00
7	14.79	16.32	13.26	13.00	14.00	15.00	16.00	17.00	18.00	12.00
8	14.10	15.34	12.87	13.00	13.00	14.00	15.00	16.00	17.00	12.00
9	14.10	15.42	12.78	12.00	13.00	14.00	15.00	16.00	17.00	12.00
10	14.14	15.34	12.93	13.00	13.00	14.00	15.00	16.00	16.00	12.00
11	14.17	15.61	12.73	13.00	13.00	14.00	15.00	16.00	16.00	12.00
12	14.02	15.36	12.67	12.00	13.00	14.00	15.00	16.00	17.00	12.00
13	14.03	15.28	12.79	13.00	13.00	14.00	15.00	16.00	17.00	12.00
14	14.00	15.09	12.91	13.00	13.00	14.00	15.00	15.00	16.00	12.00
15	13.97	15.18	12.75	12.70	13.00	14.00	15.00	16.00	16.00	12.00
16	14.10	15.46	12.74	12.70	13.00	14.00	15.00	16.00	16.00	11.00
17	13.79	15.00	12.58	12.00	13.00	14.00	15.00	15.00	16.00	12.00
18	13.91	15.20	12.63	12.00	13.00	14.00	15.00	16.00	17.00	12.00
19	13.95	15.21	12.69	12.00	13.00	14.00	15.00	16.00	16.00	12.00
20	13.90	15.15	12.64	12.00	13.00	14.00	15.00	16.00	16.00	12.00
21	14.02	15.25	12.78	12.00	13.00	14.00	15.00	16.00	16.00	12.00
22	14.28	15.65	12.90	13.00	13.00	14.00	15.00	16.00	17.00	12.00
23	14.31	15.65	12.97	13.00	13.00	14.00	15.00	16.00	17.00	12.00
24	14.36	15.78	12.94	13.00	13.00	14.00	15.75	16.00	17.00	12.00
Daily Values	341.21	369.80	312.61	306.00	316.50	336.50	365.00	379.70	392.00	289.00
Hourly Daily Sum	341.21	373.40	309.01	304.40	314.00	339.50	367.75	386.00	403.00	287.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	14.23	15.71	12.75	12.50	13.00	14.00	15.00	16.50	17.00	12.00
2	14.35	15.70	12.99	12.50	13.25	14.50	15.00	16.00	17.00	12.00
3	14.42	15.84	13.00	13.00	13.00	15.00	15.00	16.50	17.00	12.00
4	14.54	15.96	13.12	13.00	14.00	14.50	15.00	16.50	17.00	12.00
5	14.31	15.69	12.93	12.50	13.25	14.00	15.00	16.00	17.00	12.00
6	14.69	16.24	13.15	13.00	13.25	15.00	15.75	16.50	18.00	12.00
7	14.54	16.01	13.06	12.50	14.00	15.00	15.00	16.50	17.00	12.00
8	14.23	15.63	12.84	12.50	13.00	14.00	15.00	16.00	17.00	12.00
9	13.92	15.25	12.60	12.00	13.00	14.00	15.00	16.00	16.00	12.00
10	14.00	15.26	12.74	13.00	13.00	14.00	15.00	15.50	17.00	12.00
11	14.04	15.25	12.82	12.50	13.00	14.00	15.00	16.00	16.00	12.00
12	13.85	15.13	12.56	12.00	13.00	14.00	15.00	15.50	16.00	12.00
13	13.73	15.07	12.39	12.00	13.00	14.00	14.00	16.00	16.00	11.00
14	13.85	15.16	12.53	12.00	13.00	14.00	15.00	15.00	16.00	12.00
15	13.85	15.22	12.47	12.50	13.00	14.00	15.00	15.50	17.00	11.00
16	13.85	15.07	12.62	12.00	13.00	14.00	14.75	15.50	16.00	12.00
17	13.88	15.36	12.41	12.00	12.25	14.00	15.00	15.50	17.00	12.00
18	13.85	15.13	12.56	12.00	13.00	14.00	14.75	16.00	16.00	12.00
19	13.96	15.42	12.51	12.00	13.00	14.00	15.00	16.00	17.00	12.00
20	14.00	15.30	12.70	12.00	13.00	14.00	15.00	15.50	17.00	12.00
21	14.12	15.42	12.81	12.50	13.00	14.00	15.00	16.00	16.00	12.00
22	14.12	15.84	12.39	12.00	13.00	14.00	15.00	16.00	18.00	11.00
23	14.35	15.89	12.80	12.00	13.00	15.00	15.00	16.00	18.00	12.00
24	14.27	15.52	13.02	13.00	13.25	14.00	15.00	16.00	17.00	12.00
Daily Values	338.92	369.07	308.77	301.00	312.00	345.00	353.50	378.50	395.00	287.00
Hourly Daily Sum	338.92	372.09	305.76	297.00	314.25	341.00	359.25	382.50	403.00	285.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.1-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87003 in Period 2

11.3.2. 87005 BDE HQ Building

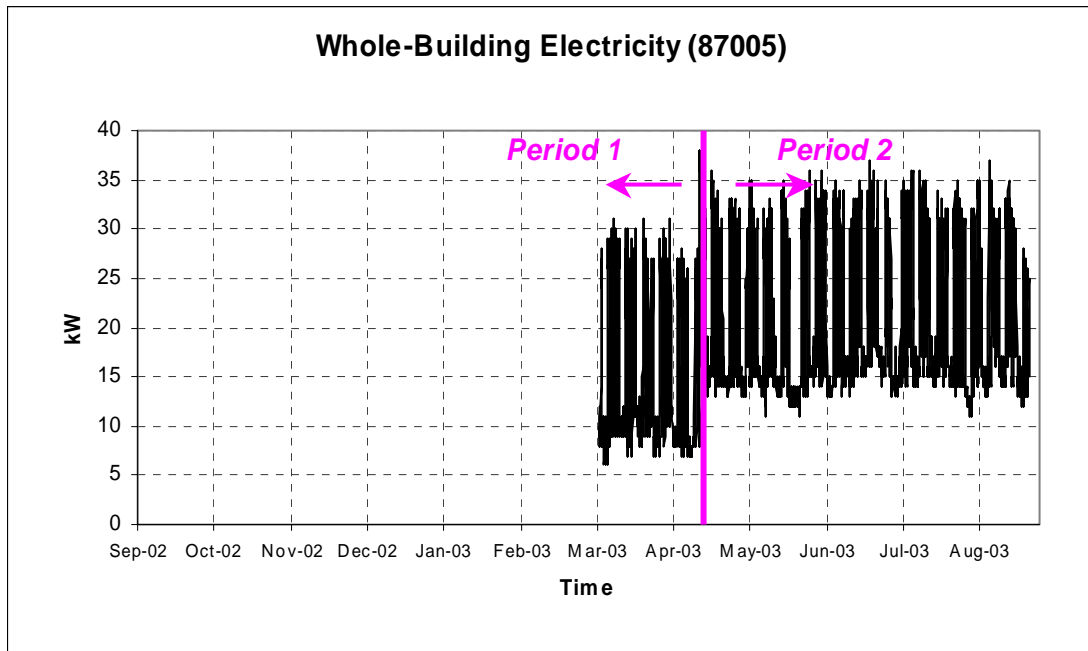
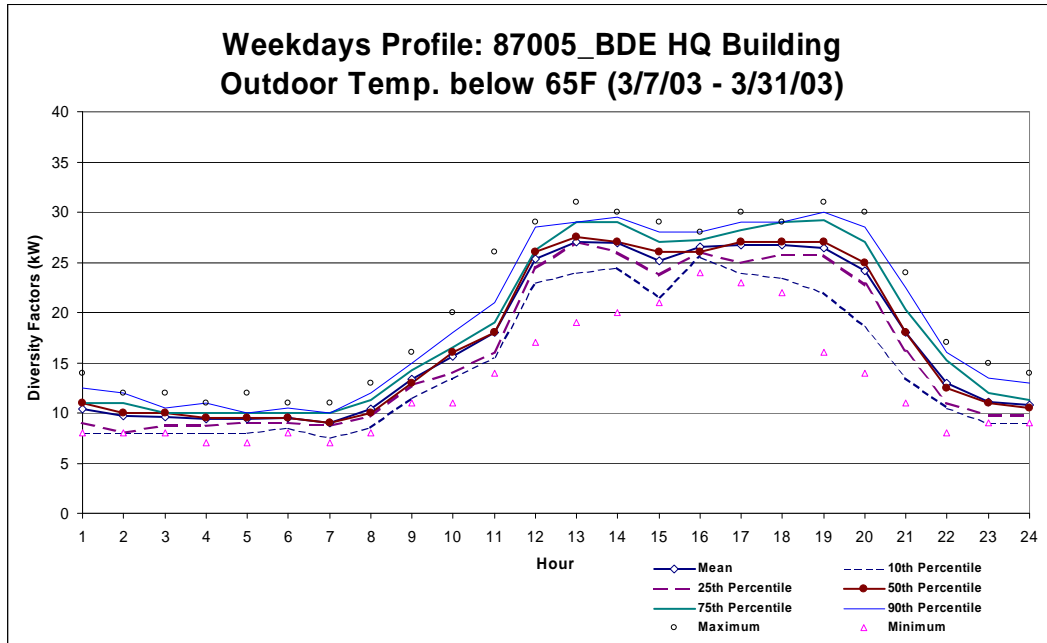


Figure 11.3.2-1: Building #87005 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 03/18/03.

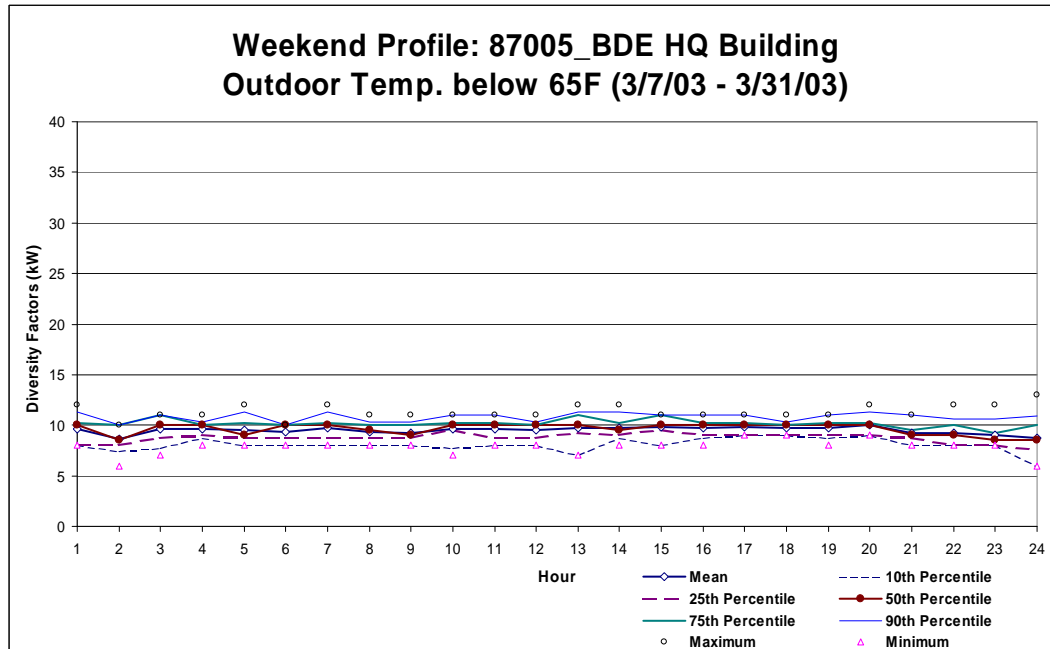


Figure 11.3.2-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87005 when the outdoor temperature is below 65F

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	10.44	12.19	8.69	8.00	9.00	11.00	11.00	12.50	14.00	8.00
2	9.75	11.28	8.22	8.00	8.00	10.00	11.00	12.00	12.00	8.00
3	9.56	10.72	8.41	8.00	8.75	10.00	10.00	10.50	12.00	8.00
4	9.38	10.58	8.17	8.00	8.75	9.50	10.00	11.00	11.00	7.00
5	9.38	10.52	8.23	8.00	9.00	9.50	10.00	10.00	12.00	7.00
6	9.50	10.39	8.61	8.50	9.00	9.50	10.00	10.50	11.00	8.00
7	9.00	10.10	7.90	7.50	8.75	9.00	10.00	10.00	11.00	7.00
8	10.38	11.83	8.92	8.50	9.75	10.00	11.25	12.00	13.00	8.00
9	13.38	14.83	11.92	11.50	12.75	13.00	14.25	15.00	16.00	11.00
10	15.63	17.84	13.41	13.50	14.00	16.00	16.50	18.00	20.00	11.00
11	18.06	20.95	15.18	15.50	16.00	18.00	19.00	21.00	26.00	14.00
12	25.38	28.27	22.48	23.00	24.50	26.00	26.25	28.50	29.00	17.00
13	27.06	29.85	24.27	24.00	27.00	27.50	29.00	29.00	31.00	19.00
14	26.94	29.53	24.34	24.50	26.00	27.00	29.00	29.50	30.00	20.00
15	25.19	27.72	22.65	21.50	23.75	26.00	27.00	28.00	29.00	21.00
16	26.50	27.65	25.35	25.50	26.00	26.00	27.25	28.00	28.00	24.00
17	26.75	28.83	24.67	24.00	25.00	27.00	28.25	29.00	30.00	23.00
18	26.69	28.96	24.42	23.50	25.75	27.00	29.00	29.00	29.00	22.00
19	26.44	30.42	22.45	22.00	25.75	27.00	29.25	30.00	31.00	16.00
20	24.13	28.52	19.73	18.50	22.75	25.00	27.00	28.50	30.00	14.00
21	18.00	21.67	14.33	13.50	16.00	18.00	20.25	22.50	24.00	11.00
22	13.00	15.56	10.44	10.50	11.00	12.50	15.25	16.00	17.00	8.00
23	11.06	12.91	9.22	9.00	9.75	11.00	12.00	13.50	15.00	9.00
24	10.75	12.32	9.18	9.00	9.75	10.50	11.25	13.00	14.00	9.00
Daily Values	412.31	434.69	389.93	386.00	398.75	411.50	432.75	438.00	441.00	366.00
Hourly Daily Sum	412.31	463.44	361.18	353.50	386.75	416.00	443.75	467.00	495.00	310.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

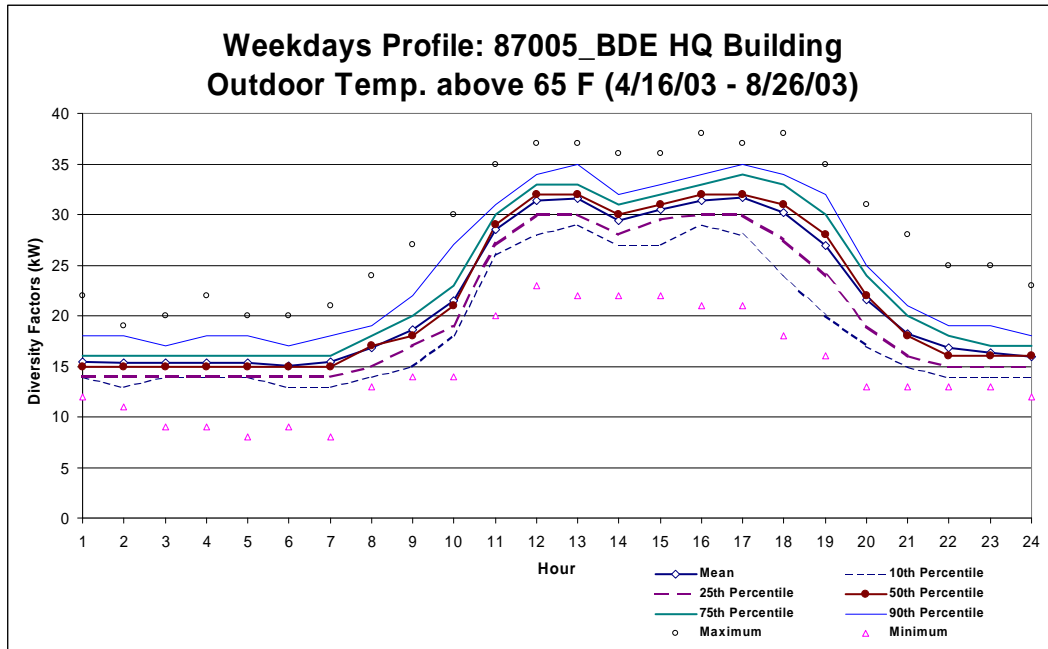
WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	9.63	11.13	8.12	8.00	8.00	10.00	10.25	11.30	12.00	8.00
2	8.63	10.03	7.22	7.40	8.00	8.50	10.00	10.00	10.00	6.00
3	9.63	11.13	8.12	7.70	8.75	10.00	11.00	11.00	11.00	7.00
4	9.63	10.54	8.71	8.70	9.00	10.00	10.00	10.30	11.00	8.00
5	9.50	10.91	8.09	8.00	8.75	9.00	10.25	11.30	12.00	8.00
6	9.38	10.29	8.46	8.00	8.75	10.00	10.00	10.00	10.00	8.00
7	9.75	11.14	8.36	8.00	8.75	10.00	10.25	11.30	12.00	8.00
8	9.38	10.44	8.31	8.00	8.75	9.50	10.00	10.30	11.00	8.00
9	9.25	10.29	8.21	8.00	8.75	9.00	10.00	10.30	11.00	8.00
10	9.63	11.03	8.22	7.70	9.50	10.00	10.25	11.00	11.00	7.00
11	9.63	10.81	8.44	8.00	8.75	10.00	10.25	11.00	11.00	8.00
12	9.50	10.57	8.43	8.00	8.75	10.00	10.00	10.30	11.00	8.00
13	9.75	11.58	7.92	7.00	9.25	10.00	11.00	11.30	12.00	7.00
14	9.75	11.03	8.47	8.70	9.00	9.50	10.25	11.30	12.00	8.00
15	9.88	11.12	8.63	8.00	9.50	10.00	11.00	11.00	11.00	8.00
16	9.75	10.79	8.71	8.70	9.00	10.00	10.25	11.00	11.00	8.00
17	9.88	10.71	9.04	9.00	9.00	10.00	10.25	11.00	11.00	9.00
18	9.75	10.46	9.04	9.00	9.00	10.00	10.00	10.30	11.00	9.00
19	9.75	10.79	8.71	8.70	9.00	10.00	10.25	11.00	11.00	8.00
20	10.00	11.07	8.93	9.00	9.00	10.00	10.25	11.30	12.00	9.00
21	9.25	10.41	8.09	8.00	8.75	9.00	9.50	11.00	11.00	8.00
22	9.25	10.64	7.86	8.00	8.00	9.00	10.00	10.60	12.00	8.00
23	9.00	10.41	7.59	8.00	8.00	8.50	9.25	10.60	12.00	8.00
24	8.75	11.06	6.44	6.00	7.50	8.50	10.00	10.90	13.00	6.00
Daily Values	228.25	247.12	209.38	204.00	215.25	231.00	241.25	245.60	254.00	204.00
Hourly Daily Sum	228.25	258.39	198.11	193.60	209.50	230.50	244.25	259.40	272.00	188.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.2-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87005 when the temperature is below 65F



* The dates that are excluded from the weekday profile are as follow: 05/26/03, 07/03/03, and 07/04/03.

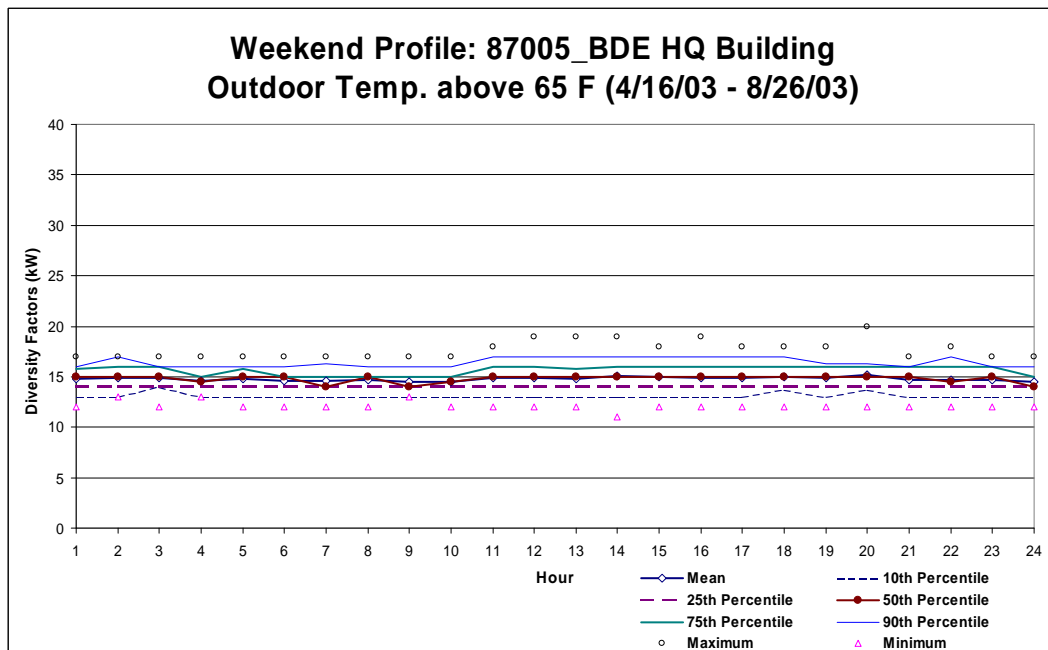


Figure 11.3.2-3: 24-hour weekday, weekend profiles for whole-building electricity use for #87005 when the outdoor temperature is above 65F

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	15.46	17.16	13.76	14.00	14.00	15.00	16.00	18.00	22.00	12.00
2	15.38	17.06	13.69	13.00	14.00	14.00	15.00	16.00	19.00	11.00
3	15.40	17.05	13.74	14.00	14.00	15.00	16.00	17.00	20.00	9.00
4	15.40	17.26	13.53	14.00	14.00	15.00	16.00	18.00	22.00	9.00
5	15.33	17.13	13.53	14.00	14.00	15.00	16.00	18.00	20.00	8.00
6	15.08	16.76	13.39	13.00	14.00	15.00	16.00	17.00	20.00	9.00
7	15.42	17.39	13.45	13.00	14.00	15.00	16.00	18.00	21.00	8.00
8	16.84	18.90	14.77	14.00	15.00	17.00	18.00	19.00	24.00	13.00
9	18.63	21.34	15.92	15.00	17.00	18.00	20.00	22.00	27.00	14.00
10	21.48	24.85	18.12	18.00	19.00	21.00	23.00	27.00	30.00	14.00
11	28.51	31.05	25.96	26.00	27.00	29.00	30.00	31.00	35.00	20.00
12	31.38	33.92	28.85	28.00	30.00	32.00	33.00	34.00	37.00	23.00
13	31.54	34.19	28.89	29.00	30.00	32.00	33.00	35.00	37.00	22.00
14	29.45	31.75	27.15	27.00	28.00	30.00	31.00	32.00	36.00	22.00
15	30.53	33.11	27.95	27.00	29.50	31.00	32.00	33.00	36.00	22.00
16	31.41	33.87	28.94	29.00	30.00	32.00	33.00	34.00	38.00	21.00
17	31.68	34.45	28.91	28.00	30.00	32.00	34.00	35.00	37.00	21.00
18	30.18	34.39	25.97	24.00	27.50	31.00	33.00	34.00	38.00	18.00
19	26.89	31.38	22.40	20.00	24.00	28.00	30.00	32.00	35.00	16.00
20	21.59	24.98	18.21	17.00	19.00	22.00	24.00	25.00	31.00	13.00
21	18.18	20.72	15.63	15.00	16.00	18.00	20.00	21.00	28.00	13.00
22	16.80	19.13	14.47	14.00	15.00	16.00	18.00	19.00	25.00	13.00
23	16.34	18.34	14.34	14.00	15.00	16.00	17.00	19.00	25.00	13.00
24	15.90	17.65	14.16	14.00	15.00	16.00	17.00	18.00	23.00	12.00
Daily Values	524.78	557.69	491.87	484.00	505.00	530.00	546.00	567.00	586.00	429.00
Hourly Daily Sum	524.77	583.83	465.72	454.00	485.00	526.00	558.00	594.00	686.00	356.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	14.76	15.91	13.61	13.00	14.00	15.00	15.75	16.00	17.00	12.00
2	14.84	16.13	13.56	13.00	14.00	15.00	16.00	17.00	17.00	13.00
3	14.87	15.96	13.77	14.00	14.00	15.00	16.00	16.00	17.00	12.00
4	14.61	15.63	13.58	13.00	14.00	14.50	15.00	16.00	17.00	13.00
5	14.79	15.93	13.65	13.00	14.00	15.00	15.75	16.00	17.00	12.00
6	14.58	15.78	13.38	13.00	14.00	15.00	15.00	16.00	17.00	12.00
7	14.61	15.89	13.32	13.00	14.00	14.00	15.00	16.30	17.00	12.00
8	14.66	15.76	13.56	13.00	14.00	15.00	15.00	16.00	17.00	12.00
9	14.45	15.51	13.39	13.00	14.00	14.00	15.00	16.00	17.00	13.00
10	14.50	15.75	13.25	13.00	14.00	14.50	15.00	16.00	17.00	12.00
11	14.87	16.34	13.39	13.00	14.00	15.00	16.00	17.00	18.00	12.00
12	14.89	16.42	13.37	13.00	14.00	15.00	16.00	17.00	19.00	12.00
13	14.82	16.30	13.33	13.00	14.00	15.00	15.75	17.00	19.00	12.00
14	15.13	16.75	13.52	13.00	14.00	15.00	16.00	17.00	19.00	11.00
15	14.95	16.47	13.42	13.00	14.00	15.00	16.00	17.00	18.00	12.00
16	14.92	16.50	13.34	13.00	14.00	15.00	16.00	17.00	19.00	12.00
17	14.89	16.36	13.43	13.00	14.00	15.00	16.00	17.00	18.00	12.00
18	15.00	16.49	13.51	13.70	14.00	15.00	16.00	17.00	18.00	12.00
19	14.89	16.32	13.47	13.00	14.00	15.00	16.00	16.30	18.00	12.00
20	15.18	16.79	13.58	13.70	14.00	15.00	16.00	16.30	20.00	12.00
21	14.74	16.05	13.43	13.00	14.00	15.00	16.00	16.00	17.00	12.00
22	14.71	16.14	13.28	13.00	14.00	14.50	16.00	17.00	18.00	12.00
23	14.74	15.89	13.58	13.00	14.00	15.00	16.00	16.00	17.00	12.00
24	14.47	15.65	13.29	13.00	14.00	14.00	15.00	16.00	17.00	12.00
Daily Values	354.87	379.82	329.91	320.70	338.00	359.50	372.75	385.90	396.00	296.00
Hourly Daily Sum	354.87	386.72	323.01	314.40	336.00	355.50	376.25	394.90	425.00	290.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.2-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87005 when the outdoor temperature is below 65F

11.3.3. 87006 Health Clinic Building

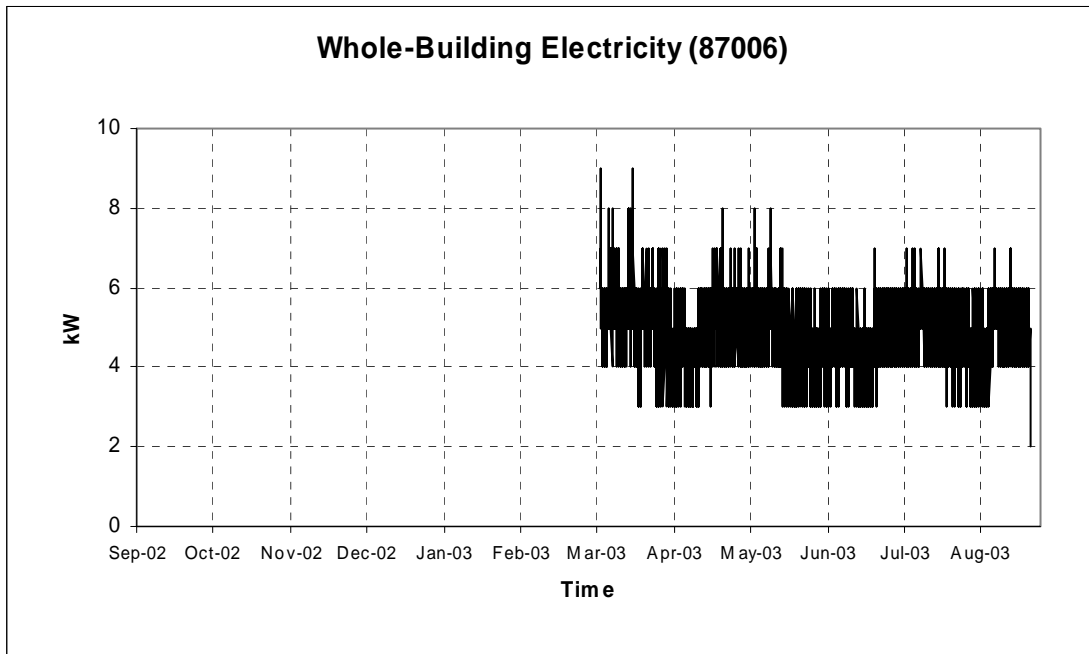
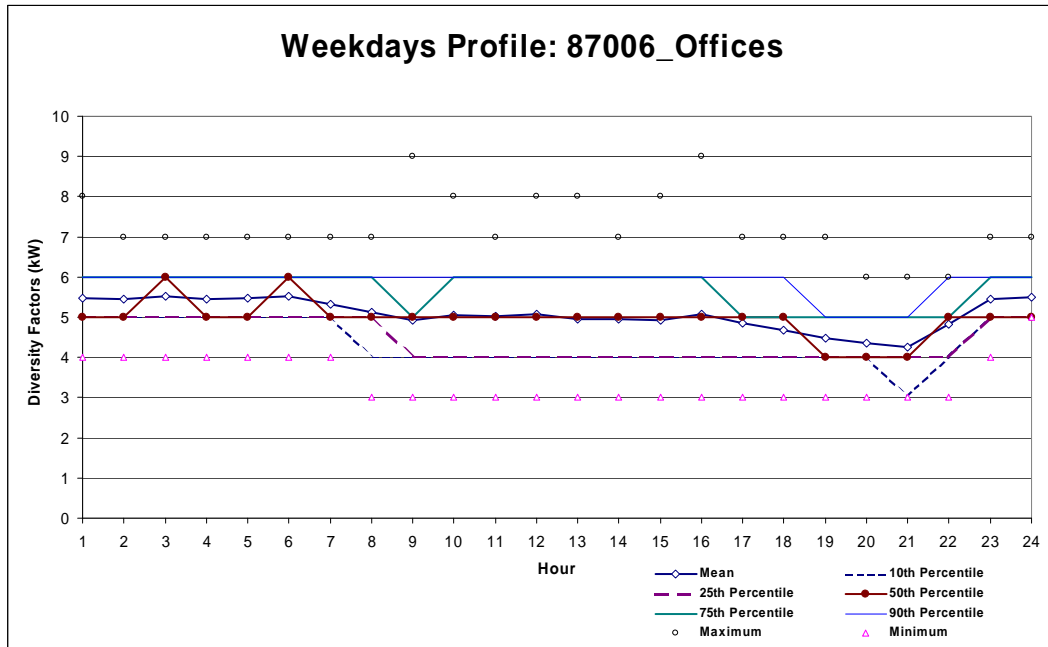


Figure 11.3.3-1: Building #87006 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 05/26/03 and 07/04/03.

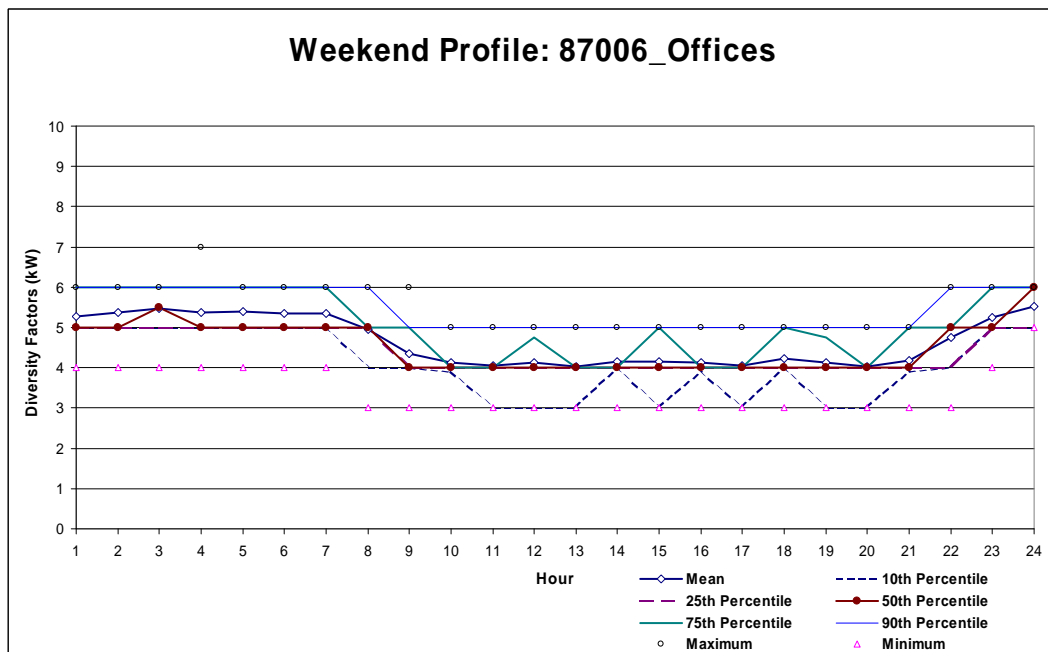


Figure 11.3.3-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87006

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	5.47	6.10	4.84	5.00	5.00	5.00	6.00	6.00	8.00	4.00
2	5.45	6.02	4.87	5.00	5.00	5.00	6.00	6.00	7.00	4.00
3	5.52	6.11	4.93	5.00	5.00	6.00	6.00	6.00	7.00	4.00
4	5.45	6.05	4.86	5.00	5.00	5.00	6.00	6.00	7.00	4.00
5	5.48	6.04	4.92	5.00	5.00	5.00	6.00	6.00	7.00	4.00
6	5.52	6.13	4.91	5.00	5.00	6.00	6.00	6.00	7.00	4.00
7	5.31	5.85	4.78	5.00	5.00	5.00	6.00	6.00	7.00	4.00
8	5.12	5.90	4.34	4.00	5.00	5.00	6.00	6.00	7.00	3.00
9	4.92	5.99	3.84	4.00	4.00	5.00	5.00	6.00	9.00	3.00
10	5.06	6.11	4.01	4.00	4.00	5.00	6.00	6.00	8.00	3.00
11	5.02	6.09	3.96	4.00	4.00	5.00	6.00	6.00	7.00	3.00
12	5.08	6.11	4.05	4.00	4.00	5.00	6.00	6.00	8.00	3.00
13	4.96	5.97	3.95	4.00	4.00	5.00	6.00	6.00	8.00	3.00
14	4.95	5.88	4.02	4.00	4.00	5.00	6.00	6.00	7.00	3.00
15	4.93	5.95	3.90	4.00	4.00	5.00	6.00	6.00	8.00	3.00
16	5.07	6.05	4.09	4.00	4.00	5.00	6.00	6.00	9.00	3.00
17	4.85	5.81	3.90	4.00	4.00	5.00	5.00	6.00	7.00	3.00
18	4.68	5.58	3.77	4.00	4.00	5.00	5.00	6.00	7.00	3.00
19	4.48	5.20	3.76	4.00	4.00	4.00	5.00	5.00	7.00	3.00
20	4.36	5.07	3.64	4.00	4.00	4.00	5.00	5.00	6.00	3.00
21	4.26	4.94	3.58	3.00	4.00	4.00	5.00	5.00	6.00	3.00
22	4.83	5.64	4.01	4.00	4.00	5.00	5.00	6.00	6.00	3.00
23	5.45	6.06	4.83	5.00	5.00	5.00	6.00	6.00	7.00	4.00
24	5.50	6.03	4.96	5.00	5.00	5.00	6.00	6.00	7.00	5.00
Daily Values	121.71	132.93	110.50	106.00	112.00	122.00	130.00	136.00	148.00	101.00
Hourly Daily Sum	121.71	140.70	102.72	104.00	106.00	119.00	137.00	141.00	174.00	82.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	5.28	5.89	4.67	5.00	5.00	5.00	6.00	6.00	6.00	4.00
2	5.38	5.91	4.85	5.00	5.00	5.00	6.00	6.00	6.00	4.00
3	5.48	6.02	4.94	5.00	5.00	5.50	6.00	6.00	6.00	4.00
4	5.38	6.02	4.74	5.00	5.00	5.00	6.00	6.00	7.00	4.00
5	5.40	5.97	4.83	5.00	5.00	5.00	6.00	6.00	6.00	4.00
6	5.36	5.89	4.83	5.00	5.00	5.00	6.00	6.00	6.00	4.00
7	5.36	5.92	4.80	5.00	5.00	5.00	6.00	6.00	6.00	4.00
8	4.94	5.62	4.26	4.00	5.00	5.00	5.00	6.00	6.00	3.00
9	4.36	5.08	3.64	4.00	4.00	4.00	5.00	5.00	6.00	3.00
10	4.12	4.68	3.56	3.90	4.00	4.00	4.00	5.00	5.00	3.00
11	4.06	4.65	3.47	3.00	4.00	4.00	4.00	5.00	5.00	3.00
12	4.12	4.75	3.49	3.00	4.00	4.00	4.75	5.00	5.00	3.00
13	4.02	4.57	3.47	3.00	4.00	4.00	4.00	5.00	5.00	3.00
14	4.16	4.71	3.61	4.00	4.00	4.00	4.00	5.00	5.00	3.00
15	4.16	4.78	3.54	3.00	4.00	4.00	5.00	5.00	5.00	3.00
16	4.14	4.71	3.57	3.90	4.00	4.00	4.00	5.00	5.00	3.00
17	4.06	4.68	3.44	3.00	4.00	4.00	4.00	5.00	5.00	3.00
18	4.22	4.77	3.67	4.00	4.00	4.00	5.00	5.00	5.00	3.00
19	4.14	4.75	3.53	3.00	4.00	4.00	4.75	5.00	5.00	3.00
20	4.02	4.61	3.43	3.00	4.00	4.00	4.00	5.00	5.00	3.00
21	4.18	4.78	3.58	3.90	4.00	4.00	5.00	5.00	5.00	3.00
22	4.74	5.46	4.02	4.00	4.00	5.00	5.00	6.00	6.00	3.00
23	5.26	5.82	4.70	5.00	5.00	5.00	6.00	6.00	6.00	4.00
24	5.52	6.02	5.02	5.00	5.00	6.00	6.00	6.00	6.00	5.00
Daily Values	111.86	120.27	103.45	100.90	104.25	112.50	119.00	122.10	126.00	95.00
Hourly Daily Sum	111.86	126.05	97.67	97.70	106.00	108.50	121.50	131.00	133.00	82.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.3-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87006

11.3.4. 87007 Enlisted UPH Building

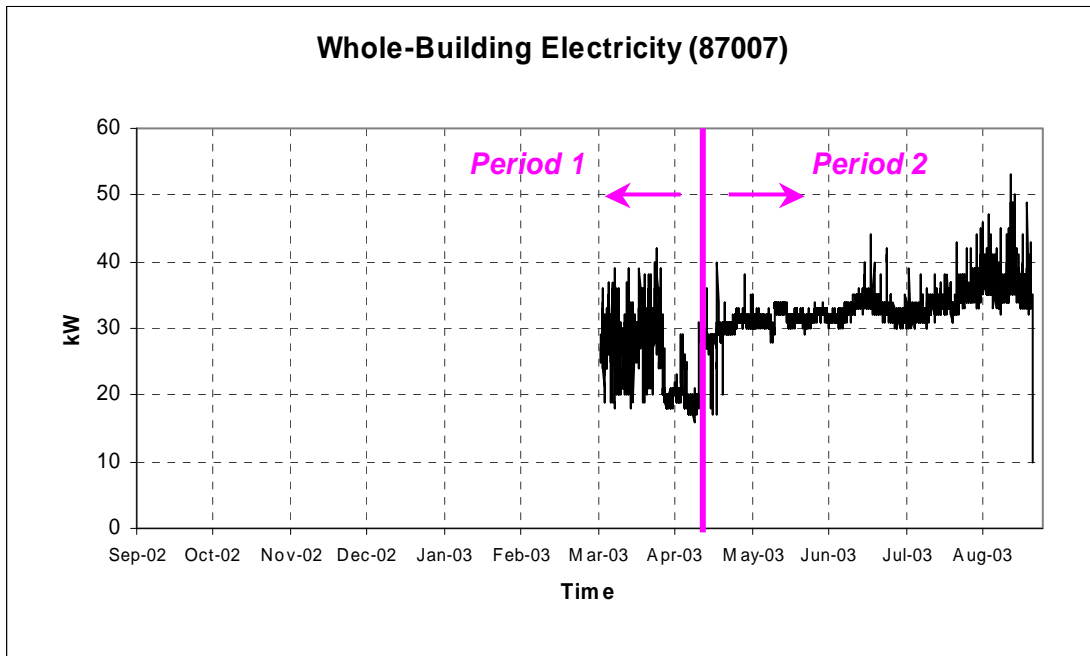


Figure 11.3.4-1: Building #87007 Electricity Usage

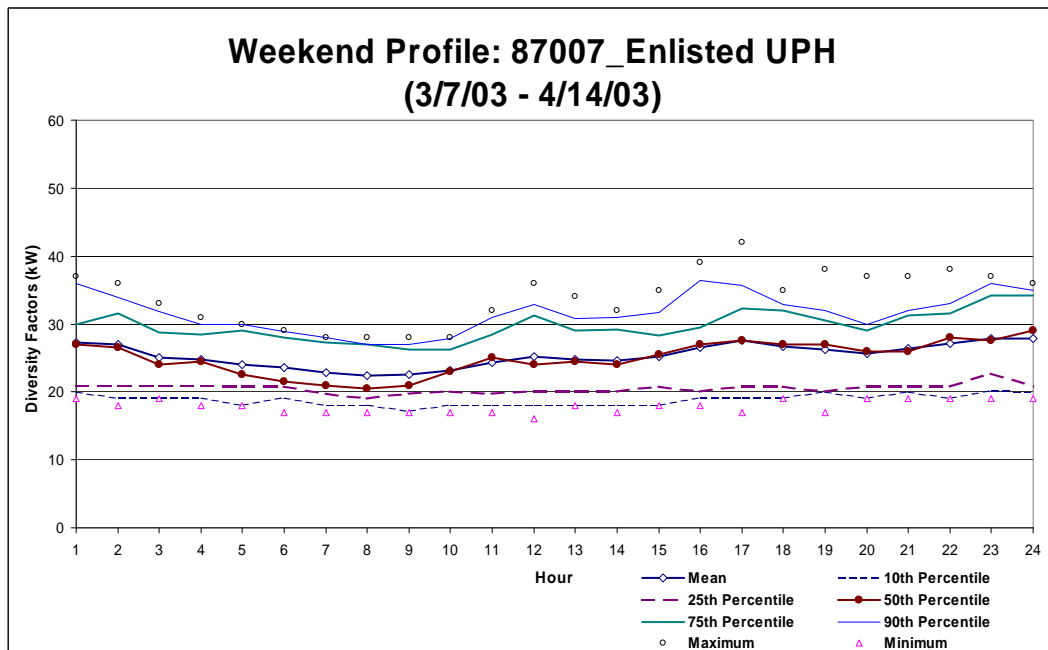
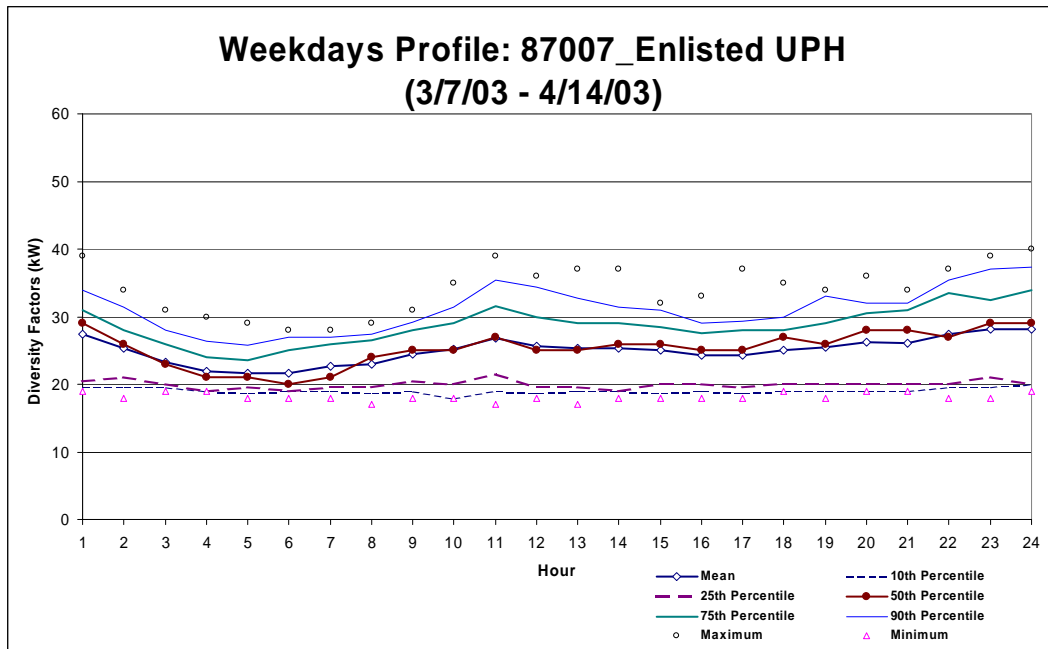


Figure 11.3.4-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87007 in Period 1

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	27.41	33.49	21.33	19.60	20.50	29.00	31.00	34.00	39.00	19.00
2	25.37	30.01	20.73	19.60	21.00	26.00	28.00	31.40	34.00	18.00
3	23.33	26.75	19.91	19.60	20.00	23.00	26.00	28.00	31.00	19.00
4	21.96	25.26	18.66	19.00	19.00	21.00	24.00	26.40	30.00	19.00
5	21.59	24.61	18.58	18.60	19.50	21.00	23.50	25.80	29.00	18.00
6	21.59	24.91	18.27	19.00	19.00	20.00	25.00	27.00	28.00	18.00
7	22.63	26.19	19.07	19.00	19.50	21.00	26.00	27.00	28.00	18.00
8	23.00	26.92	19.08	18.60	19.50	24.00	26.50	27.40	29.00	17.00
9	24.44	28.65	20.24	19.00	20.50	25.00	28.00	29.20	31.00	18.00
10	25.19	30.28	20.09	18.00	20.00	25.00	29.00	31.40	35.00	18.00
11	26.85	33.25	20.45	19.00	21.50	27.00	31.50	35.40	39.00	17.00
12	25.59	31.68	19.50	18.60	19.50	25.00	30.00	34.40	36.00	18.00
13	25.30	30.96	19.63	19.00	19.50	25.00	29.00	32.80	37.00	17.00
14	25.37	30.68	20.06	19.00	19.00	26.00	29.00	31.40	37.00	18.00
15	25.04	29.88	20.20	18.60	20.00	26.00	28.50	31.00	32.00	18.00
16	24.30	28.67	19.92	19.00	20.00	25.00	27.50	29.00	33.00	18.00
17	24.37	29.28	19.46	18.60	19.50	25.00	28.00	29.40	37.00	18.00
18	25.04	29.76	20.31	19.00	20.00	27.00	28.00	30.00	35.00	19.00
19	25.48	30.88	20.08	19.00	20.00	26.00	29.00	33.00	34.00	18.00
20	26.22	31.74	20.70	19.00	20.00	28.00	30.50	32.00	36.00	19.00
21	26.11	31.57	20.65	19.00	20.00	28.00	31.00	32.00	34.00	19.00
22	27.37	33.93	20.81	19.60	20.00	27.00	33.50	35.40	37.00	18.00
23	28.19	34.96	21.41	19.60	21.00	29.00	32.50	37.00	39.00	18.00
24	28.15	35.15	21.15	20.00	20.00	29.00	34.00	37.40	40.00	19.00
Daily Values	599.89	693.08	506.70	462.80	507.50	629.00	677.50	692.20	713.00	444.00
Hourly Daily Sum	599.89	719.49	480.29	457.00	478.50	608.00	689.00	747.80	820.00	436.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

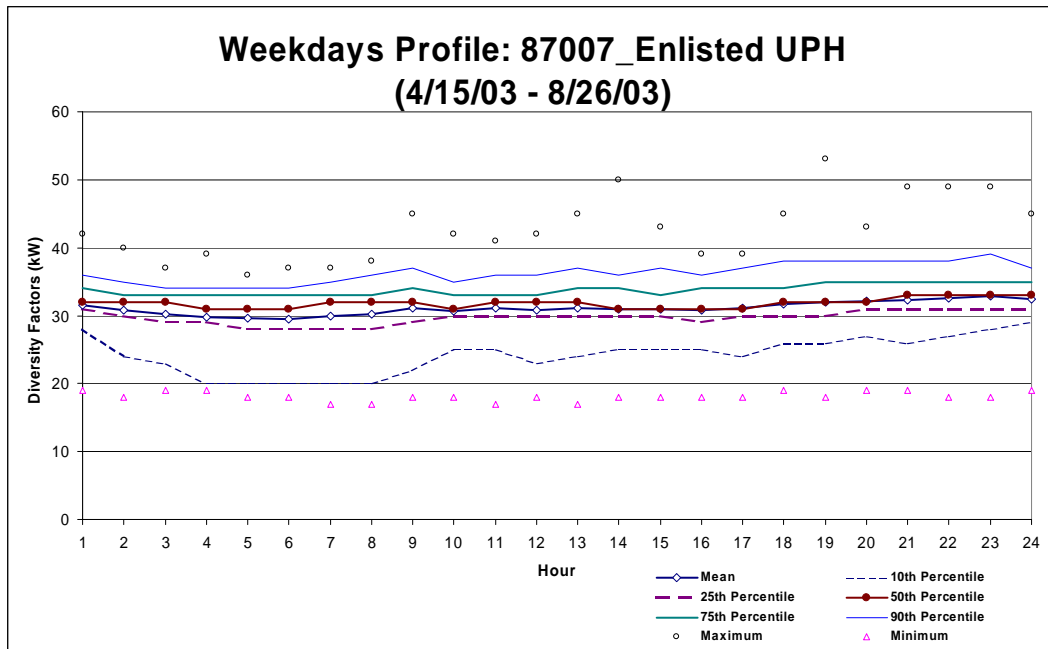
WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	27.25	33.63	20.87	20.10	21.00	27.00	30.00	36.00	37.00	19.00
2	26.92	33.07	20.76	19.20	21.00	26.50	31.50	33.90	36.00	18.00
3	25.08	29.99	20.18	19.20	21.00	24.00	28.75	31.90	33.00	19.00
4	24.83	29.28	20.38	19.20	21.00	24.50	28.50	30.00	31.00	18.00
5	24.08	28.84	19.33	18.20	20.75	22.50	29.00	29.90	30.00	18.00
6	23.58	28.02	19.14	19.10	20.75	21.50	28.00	28.90	29.00	17.00
7	22.83	27.07	18.59	18.10	19.75	21.00	27.25	28.00	28.00	17.00
8	22.42	26.60	18.23	18.10	19.00	20.50	27.00	27.00	28.00	17.00
9	22.50	26.56	18.44	17.20	19.75	21.00	26.25	27.00	28.00	17.00
10	23.08	27.00	19.16	18.20	20.00	23.00	26.25	27.90	28.00	17.00
11	24.33	29.72	18.95	18.10	19.75	25.00	28.50	30.90	32.00	17.00
12	25.17	31.93	18.40	18.20	20.00	24.00	31.25	32.90	36.00	16.00
13	24.83	30.22	19.44	18.20	20.00	24.50	29.00	30.80	34.00	18.00
14	24.67	29.91	19.42	18.20	20.00	24.00	29.25	30.90	32.00	17.00
15	25.25	30.63	19.87	18.20	20.75	25.50	28.25	31.70	35.00	18.00
16	26.58	33.43	19.74	19.10	20.00	27.00	29.50	36.40	39.00	18.00
17	27.50	35.05	19.95	19.10	20.75	27.50	32.25	35.70	42.00	17.00
18	26.67	32.52	20.81	19.10	20.75	27.00	32.00	32.90	35.00	19.00
19	26.25	32.59	19.91	20.00	20.00	27.00	30.50	32.00	38.00	17.00
20	25.67	31.07	20.27	19.10	20.75	26.00	29.00	29.90	37.00	19.00
21	26.42	32.21	20.63	20.00	20.75	26.00	31.25	32.00	37.00	19.00
22	27.17	33.40	20.93	19.10	20.75	28.00	31.50	33.00	38.00	19.00
23	27.92	34.25	21.59	20.20	22.75	27.50	34.25	35.90	37.00	19.00
24	27.83	34.35	21.31	20.00	20.75	29.00	34.25	35.00	36.00	19.00
Daily Values	608.83	729.76	487.91	446.80	493.00	612.50	701.50	735.10	792.00	437.00
Hourly Daily Sum	608.83	741.35	476.31	453.20	491.75	599.50	713.25	760.50	816.00	429.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.4-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87007 in Period 1



* The dates that are excluded from the weekday profile are as follow: 05/26/03 and 07/04/03.

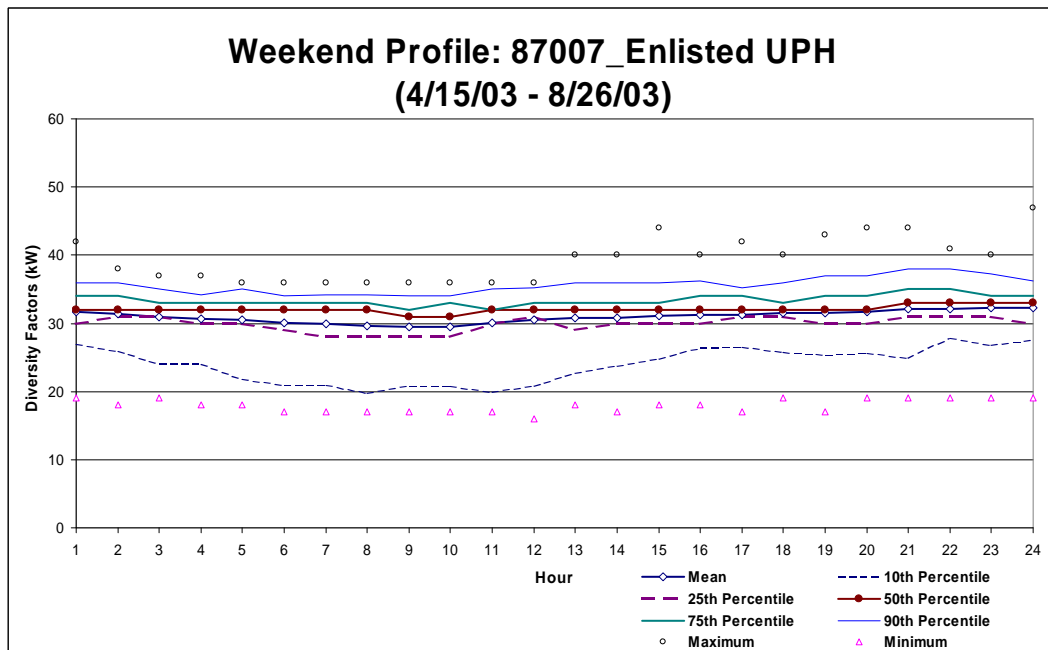


Figure 11.3.4-3: 24-hour weekday, weekend profiles for whole-building electricity use for #87007 in Period 2

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	31.48	35.77	27.19	28.00	31.00	32.00	34.00	36.00	42.00	19.00
2	30.87	35.13	26.61	24.00	30.00	32.00	33.00	35.00	40.00	18.00
3	30.28	34.83	25.74	23.00	29.00	32.00	33.00	34.00	37.00	19.00
4	29.71	34.62	24.81	20.00	29.00	31.00	33.00	34.00	39.00	19.00
5	29.65	34.62	24.68	20.00	28.00	31.00	33.00	34.00	36.00	18.00
6	29.55	34.56	24.55	20.00	28.00	31.00	33.00	34.00	37.00	18.00
7	29.93	34.93	24.92	20.00	28.00	32.00	33.00	35.00	37.00	17.00
8	30.26	35.45	25.08	20.00	28.00	32.00	33.00	36.00	38.00	17.00
9	31.07	36.41	25.74	22.00	29.00	32.00	34.00	37.00	45.00	18.00
10	30.70	35.29	26.11	25.00	30.00	31.00	33.00	35.00	42.00	18.00
11	31.05	35.73	26.36	25.00	30.00	32.00	33.00	36.00	41.00	17.00
12	30.81	35.73	25.89	23.00	30.00	32.00	33.00	36.00	42.00	18.00
13	31.06	36.28	25.83	24.00	30.00	32.00	34.00	37.00	45.00	17.00
14	31.01	36.19	25.83	25.00	30.00	31.00	34.00	36.00	50.00	18.00
15	30.95	35.77	26.13	25.00	30.00	31.00	33.00	37.00	43.00	18.00
16	30.88	35.61	26.16	25.00	29.00	31.00	34.00	36.00	39.00	18.00
17	31.15	36.08	26.22	24.00	30.00	31.00	34.00	37.00	39.00	18.00
18	31.65	36.62	26.68	26.00	30.00	32.00	34.00	38.00	45.00	19.00
19	31.98	37.32	26.65	26.00	30.00	32.00	35.00	38.00	53.00	18.00
20	32.07	36.90	27.23	27.00	31.00	32.00	35.00	38.00	43.00	19.00
21	32.33	37.57	27.09	26.00	31.00	33.00	35.00	38.00	49.00	19.00
22	32.61	37.87	27.36	27.00	31.00	33.00	35.00	38.00	49.00	18.00
23	32.83	38.17	27.50	28.00	31.00	33.00	35.00	39.00	49.00	18.00
24	32.36	37.07	27.66	29.00	31.00	33.00	35.00	37.00	45.00	19.00
Daily Values	746.26	853.03	639.50	613.00	696.00	758.00	807.00	872.00	937.00	444.00
Hourly Daily Sum	746.26	864.50	628.03	582.00	714.00	764.00	811.00	871.00	1025.00	435.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	31.63	36.17	27.09	27.00	30.00	32.00	34.00	36.00	42.00	19.00
2	31.43	35.75	27.10	26.00	31.00	32.00	34.00	36.00	38.00	18.00
3	30.94	35.37	26.51	24.00	31.00	32.00	33.00	35.00	37.00	19.00
4	30.61	34.90	26.33	24.00	30.00	32.00	33.00	34.20	37.00	18.00
5	30.49	35.15	25.83	21.80	30.00	32.00	33.00	35.00	36.00	18.00
6	30.08	34.61	25.55	21.00	29.00	32.00	33.00	34.00	36.00	17.00
7	29.92	34.80	25.04	21.00	28.00	32.00	33.00	34.20	36.00	17.00
8	29.65	34.88	24.42	19.80	28.00	32.00	33.00	34.20	36.00	17.00
9	29.51	34.63	24.39	20.80	28.00	31.00	32.00	34.00	36.00	17.00
10	29.55	34.45	24.65	20.80	28.00	31.00	33.00	34.00	36.00	17.00
11	30.06	34.88	25.24	20.00	30.00	32.00	32.00	35.00	36.00	17.00
12	30.51	35.34	25.68	20.80	31.00	32.00	33.00	35.20	36.00	16.00
13	30.84	35.79	25.88	22.80	29.00	32.00	33.00	36.00	40.00	18.00
14	30.73	35.57	25.90	23.80	30.00	32.00	33.00	36.00	40.00	17.00
15	31.08	36.22	25.95	24.80	30.00	32.00	33.00	36.00	44.00	18.00
16	31.20	35.94	26.47	26.40	30.00	32.00	34.00	36.20	40.00	18.00
17	31.20	35.80	26.61	26.60	31.00	32.00	34.00	35.20	42.00	17.00
18	31.53	36.10	26.96	25.80	31.00	32.00	33.00	36.00	40.00	19.00
19	31.59	36.69	26.49	25.40	30.00	32.00	34.00	37.00	43.00	17.00
20	31.67	36.79	26.56	25.60	30.00	32.00	34.00	37.00	44.00	19.00
21	32.18	37.33	27.04	25.00	31.00	33.00	35.00	38.00	44.00	19.00
22	32.14	37.07	27.22	27.80	31.00	33.00	35.00	38.00	41.00	19.00
23	32.20	36.82	27.59	26.80	31.00	33.00	34.00	37.20	40.00	19.00
24	32.31	37.39	27.23	27.60	30.00	33.00	34.00	36.20	47.00	19.00
Daily Values	743.08	851.14	635.02	598.40	725.00	767.00	797.00	862.80	904.00	437.00
Hourly Daily Sum	743.08	858.45	627.71	575.40	718.00	770.00	802.00	855.60	947.00	429.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.4-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87007 in Period 2

11.3.5. 87008 BN HQ Building

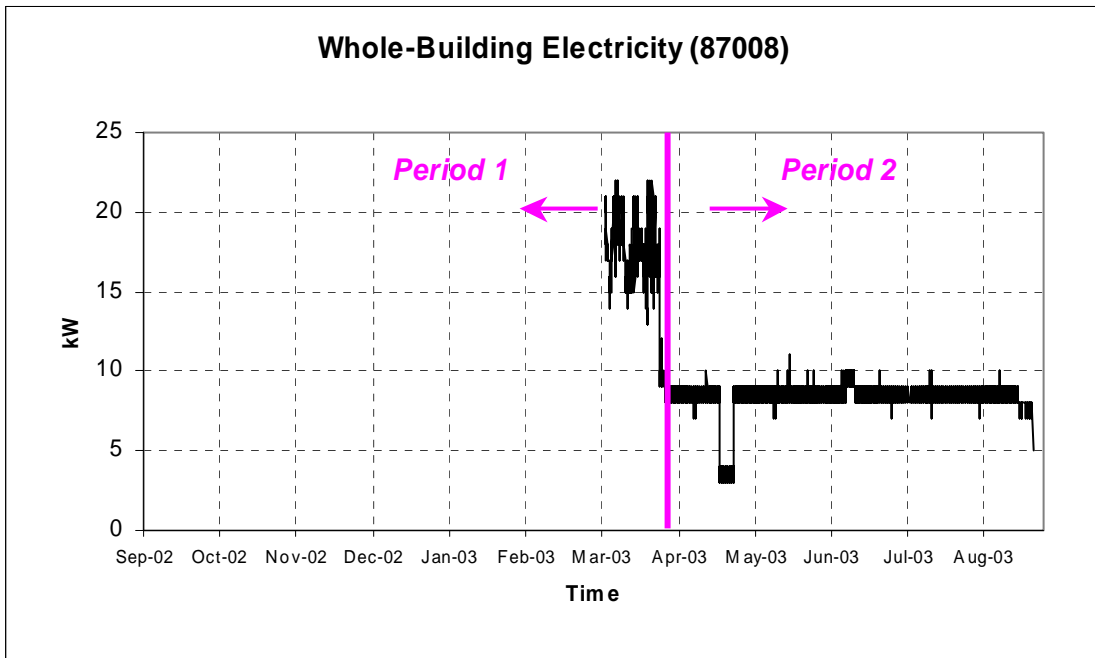


Figure 11.3.5-1: Building #87008 Electricity Usage

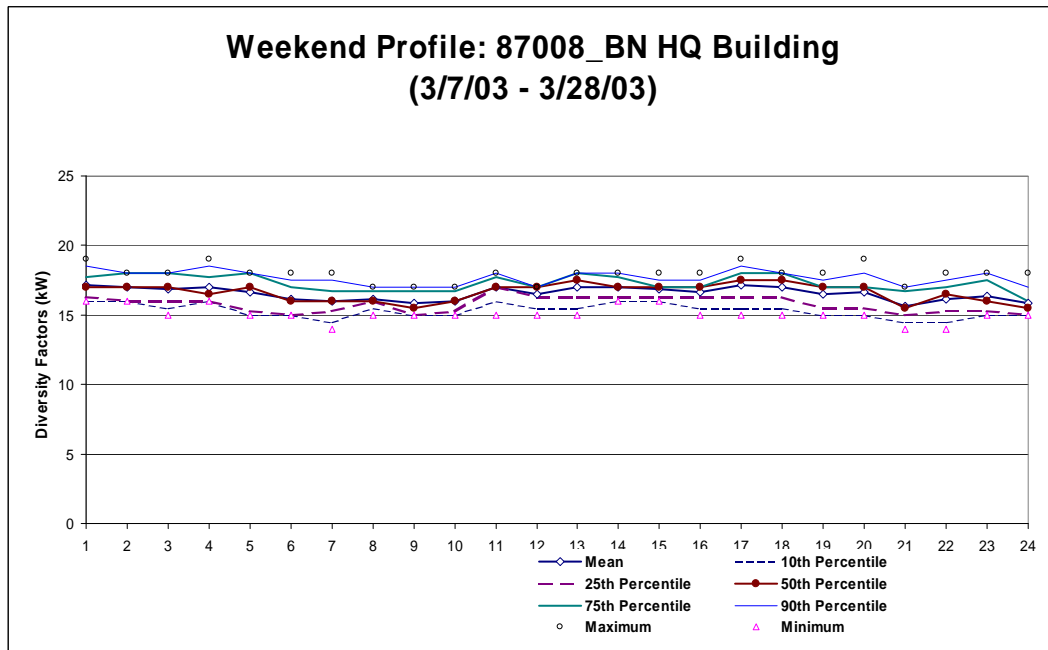
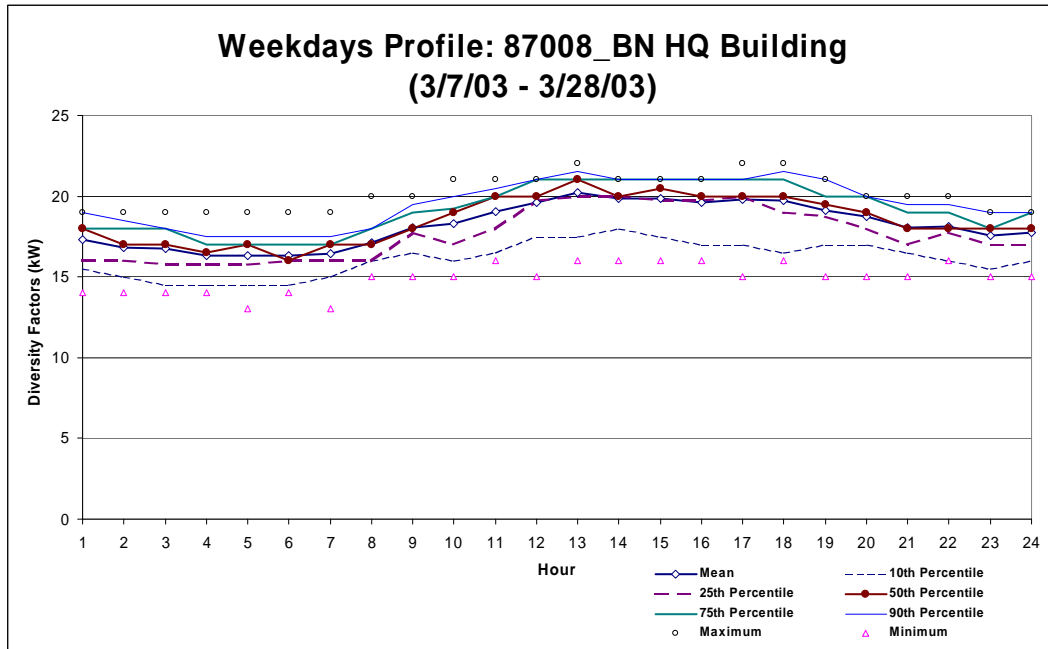


Figure 11.3.5-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87008 in Period 1

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS											
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min	
				10th	25th	50th	75th	90th			
1	17.31	18.81	15.82	15.50	16.00	18.00	18.00	19.00	19.00	14.00	
2	16.81	18.24	15.39	15.00	16.00	17.00	18.00	18.50	19.00	14.00	
3	16.75	18.32	15.18	14.50	15.75	17.00	18.00	18.00	19.00	14.00	
4	16.31	17.66	14.96	14.50	15.75	16.50	17.00	17.50	19.00	14.00	
5	16.31	17.81	14.82	14.50	15.75	17.00	17.00	17.50	19.00	13.00	
6	16.31	17.61	15.01	14.50	16.00	16.00	17.00	17.50	19.00	14.00	
7	16.44	17.80	15.07	15.00	16.00	17.00	17.00	17.50	19.00	13.00	
8	17.13	18.38	15.87	16.00	16.00	17.00	18.00	18.00	20.00	15.00	
9	18.06	19.40	16.72	16.50	17.75	18.00	19.00	19.50	20.00	15.00	
10	18.31	20.05	16.57	16.00	17.00	19.00	19.25	20.00	21.00	15.00	
11	19.06	20.67	17.45	16.50	18.00	20.00	20.00	20.50	21.00	16.00	
12	19.63	21.29	17.96	17.50	19.75	20.00	21.00	21.00	21.00	15.00	
13	20.25	21.98	18.52	17.50	20.00	21.00	21.00	21.50	22.00	16.00	
14	19.88	21.28	18.47	18.00	20.00	20.00	21.00	21.00	21.00	16.00	
15	19.88	21.46	18.29	17.50	19.75	20.50	21.00	21.00	21.00	16.00	
16	19.63	21.21	18.04	17.00	19.75	20.00	21.00	21.00	21.00	16.00	
17	19.81	21.72	17.91	17.00	20.00	20.00	21.00	21.00	22.00	15.00	
18	19.75	21.66	17.84	16.50	19.00	20.00	21.00	21.50	22.00	16.00	
19	19.13	20.83	17.42	17.00	18.75	19.50	20.00	21.00	21.00	15.00	
20	18.75	20.23	17.27	17.00	18.00	19.00	20.00	20.00	20.00	15.00	
21	18.06	19.45	16.67	16.50	17.00	18.00	19.00	19.50	20.00	15.00	
22	18.13	19.44	16.81	16.00	17.75	18.00	19.00	19.50	20.00	16.00	
23	17.56	18.83	16.30	15.50	17.00	18.00	18.00	19.00	19.00	15.00	
24	17.75	19.04	16.46	16.00	17.00	18.00	19.00	19.00	19.00	15.00	
Daily Values	437.00	462.31	411.69	405.50	425.75	443.00	455.25	459.50	462.00	375.00	
Hourly Daily Sum	437.00	473.20	400.80	387.50	423.75	444.50	460.25	469.50	484.00	358.00	

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

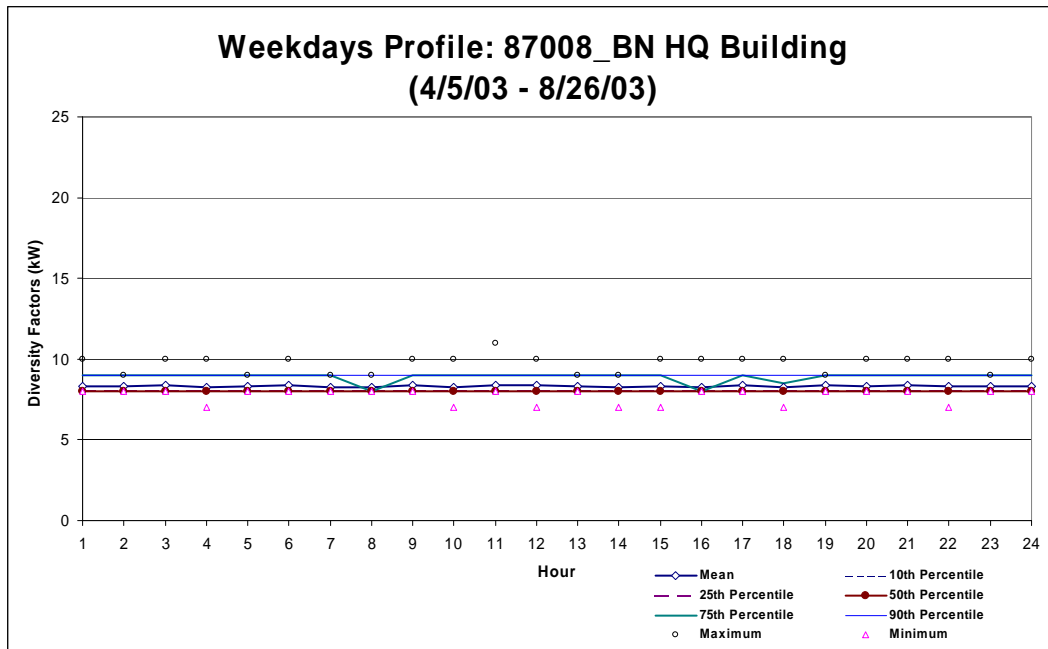
WEEKENDS/HOLIDAYS

WEEKEND											
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min	
				10th	25th	50th	75th	90th			
1	17.17	18.34	16.00	16.00	16.25	17.00	17.75	18.50	19.00	16.00	
2	17.00	18.10	15.90	16.00	16.00	17.00	18.00	18.00	18.00	16.00	
3	16.83	18.16	15.50	15.50	16.00	17.00	18.00	18.00	18.00	15.00	
4	17.00	18.26	15.74	16.00	16.00	16.50	17.75	18.50	19.00	16.00	
5	16.67	18.17	15.16	15.00	15.25	17.00	18.00	18.00	18.00	15.00	
6	16.17	17.50	14.84	15.00	15.00	16.00	17.00	17.50	18.00	15.00	
7	16.00	17.41	14.59	14.50	15.25	16.00	16.75	17.50	18.00	14.00	
8	16.17	16.92	15.41	15.50	16.00	16.00	16.75	17.00	17.00	15.00	
9	15.83	16.82	14.85	15.00	15.00	15.50	16.75	17.00	17.00	15.00	
10	16.00	16.89	15.11	15.00	15.25	16.00	16.75	17.00	17.00	15.00	
11	17.00	18.10	15.90	16.00	17.00	17.00	17.75	18.00	18.00	15.00	
12	16.50	17.34	15.66	15.50	16.25	17.00	17.00	17.00	17.00	15.00	
13	17.00	18.26	15.74	15.50	16.25	17.50	18.00	18.00	18.00	15.00	
14	17.00	17.89	16.11	16.00	16.25	17.00	17.75	18.00	18.00	16.00	
15	16.83	17.59	16.08	16.00	16.25	17.00	17.00	17.50	18.00	16.00	
16	16.67	17.70	15.63	15.50	16.25	17.00	17.00	17.50	18.00	15.00	
17	17.17	18.64	15.69	15.50	16.25	17.50	18.00	18.50	19.00	15.00	
18	17.00	18.26	15.74	15.50	16.25	17.50	18.00	18.00	18.00	15.00	
19	16.50	17.72	15.28	15.00	15.50	17.00	17.00	17.50	18.00	15.00	
20	16.67	18.17	15.16	15.00	15.50	17.00	17.00	18.00	19.00	15.00	
21	15.67	16.88	14.46	14.50	15.00	15.50	16.75	17.00	17.00	14.00	
22	16.17	17.64	14.69	14.50	15.25	16.50	17.00	17.50	18.00	14.00	
23	16.33	17.70	14.97	15.00	15.25	16.00	17.50	18.00	18.00	15.00	
24	15.83	17.00	14.66	15.00	15.00	15.50	16.00	17.00	18.00	15.00	
Daily Values	397.17	411.69	382.64	382.50	392.00	397.00	405.75	412.00	416.00	374.00	
Hourly Daily Sum	397.17	425.47	368.87	368.00	378.25	399.00	415.25	424.50	431.00	362.00	

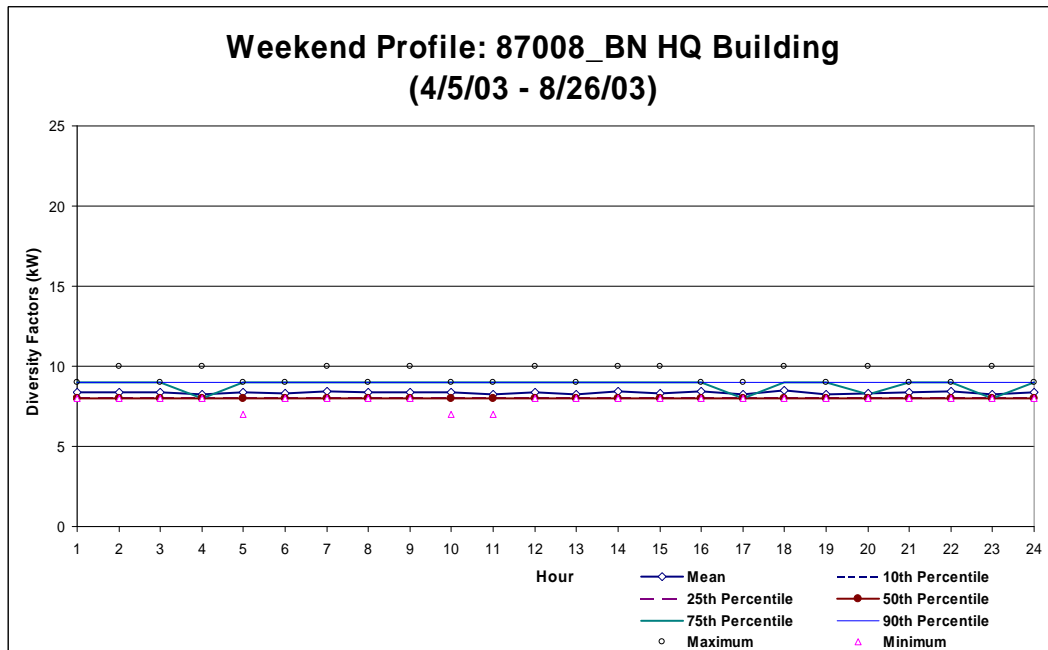
Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.5-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87007 in Period 1



* The dates that are excluded from the weekday profile are as follow: 04/22/03 to 04/25/03, 05/26/03, and 07/04/03.



* The dates that are excluded from the weekend profile are as follow: 04/26/03 and 04/27/03.

Figure 11.3.5-3: 24-hour weekday, weekend profiles for whole-building electricity use for #87008 in Period 2

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	8.29	8.78	7.81	8.00	8.00	8.00	9.00	9.00	10.00	8.00
2	8.32	8.78	7.85	8.00	8.00	8.00	9.00	9.00	9.00	8.00
3	8.39	8.90	7.88	8.00	8.00	8.00	9.00	9.00	10.00	8.00
4	8.26	8.75	7.77	8.00	8.00	8.00	9.00	9.00	10.00	7.00
5	8.32	8.78	7.85	8.00	8.00	8.00	9.00	9.00	9.00	8.00
6	8.35	8.87	7.83	8.00	8.00	8.00	9.00	9.00	10.00	8.00
7	8.27	8.72	7.83	8.00	8.00	8.00	9.00	9.00	9.00	8.00
8	8.24	8.67	7.81	8.00	8.00	8.00	8.00	9.00	9.00	8.00
9	8.37	8.90	7.84	8.00	8.00	8.00	9.00	9.00	10.00	8.00
10	8.27	8.77	7.78	8.00	8.00	8.00	9.00	9.00	10.00	7.00
11	8.38	8.95	7.81	8.00	8.00	8.00	9.00	9.00	11.00	8.00
12	8.36	8.94	7.78	8.00	8.00	8.00	9.00	9.00	10.00	7.00
13	8.31	8.77	7.84	8.00	8.00	8.00	9.00	9.00	9.00	8.00
14	8.26	8.75	7.77	8.00	8.00	8.00	9.00	9.00	9.00	7.00
15	8.29	8.82	7.77	8.00	8.00	8.00	9.00	9.00	10.00	7.00
16	8.24	8.72	7.76	8.00	8.00	8.00	8.00	9.00	10.00	8.00
17	8.35	8.87	7.83	8.00	8.00	8.00	9.00	9.00	10.00	8.00
18	8.24	8.74	7.74	8.00	8.00	8.00	8.50	9.00	10.00	7.00
19	8.40	8.89	7.91	8.00	8.00	8.00	9.00	9.00	9.00	8.00
20	8.31	8.79	7.82	8.00	8.00	8.00	9.00	9.00	10.00	8.00
21	8.36	8.88	7.83	8.00	8.00	8.00	9.00	9.00	10.00	8.00
22	8.34	8.91	7.76	8.00	8.00	8.00	9.00	9.00	10.00	7.00
23	8.34	8.81	7.86	8.00	8.00	8.00	9.00	9.00	9.00	8.00
24	8.29	8.78	7.81	8.00	8.00	8.00	9.00	9.00	10.00	8.00
Daily Values	199.55	205.39	193.70	194.00	195.00	199.00	203.00	207.60	223.00	190.00
Hourly Daily Sum	199.55	211.54	187.55	192.00	192.00	192.00	213.50	216.00	233.00	185.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	8.40	8.90	7.90	8.00	8.00	8.00	9.00	9.00	9.00	8.00
2	8.35	8.93	7.77	8.00	8.00	8.00	9.00	9.00	10.00	8.00
3	8.40	8.90	7.90	8.00	8.00	8.00	9.00	9.00	9.00	8.00
4	8.28	8.83	7.72	8.00	8.00	8.00	8.00	9.00	10.00	8.00
5	8.40	8.95	7.85	8.00	8.00	8.00	9.00	9.00	9.00	7.00
6	8.30	8.76	7.84	8.00	8.00	8.00	9.00	9.00	9.00	8.00
7	8.43	9.02	7.83	8.00	8.00	8.00	9.00	9.00	10.00	8.00
8	8.35	8.83	7.87	8.00	8.00	8.00	9.00	9.00	9.00	8.00
9	8.38	8.96	7.79	8.00	8.00	8.00	9.00	9.00	10.00	8.00
10	8.35	8.88	7.82	8.00	8.00	8.00	9.00	9.00	9.00	7.00
11	8.28	8.78	7.77	8.00	8.00	8.00	9.00	9.00	9.00	7.00
12	8.38	8.96	7.79	8.00	8.00	8.00	9.00	9.00	10.00	8.00
13	8.28	8.73	7.82	8.00	8.00	8.00	9.00	9.00	9.00	8.00
14	8.45	9.00	7.90	8.00	8.00	8.00	9.00	9.00	10.00	8.00
15	8.30	8.82	7.78	8.00	8.00	8.00	9.00	9.00	10.00	8.00
16	8.45	8.95	7.95	8.00	8.00	8.00	9.00	9.00	9.00	8.00
17	8.23	8.65	7.80	8.00	8.00	8.00	8.00	9.00	9.00	8.00
18	8.48	9.07	7.88	8.00	8.00	8.00	9.00	9.00	10.00	8.00
19	8.28	8.73	7.82	8.00	8.00	8.00	9.00	9.00	9.00	8.00
20	8.30	8.86	7.74	8.00	8.00	8.00	8.25	9.00	10.00	8.00
21	8.40	8.90	7.90	8.00	8.00	8.00	9.00	9.00	9.00	8.00
22	8.43	8.93	7.92	8.00	8.00	8.00	9.00	9.00	9.00	8.00
23	8.28	8.83	7.72	8.00	8.00	8.00	8.00	9.00	10.00	8.00
24	8.40	8.90	7.90	8.00	8.00	8.00	9.00	9.00	9.00	8.00
Daily Values	200.53	208.53	192.52	194.00	195.00	198.00	203.50	210.00	225.00	191.00
Hourly Daily Sum	200.53	213.06	187.99	192.00	192.00	192.00	212.25	216.00	226.00	189.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.5-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87008 in Period 2

11.3.6. 87009 BN HQ Building

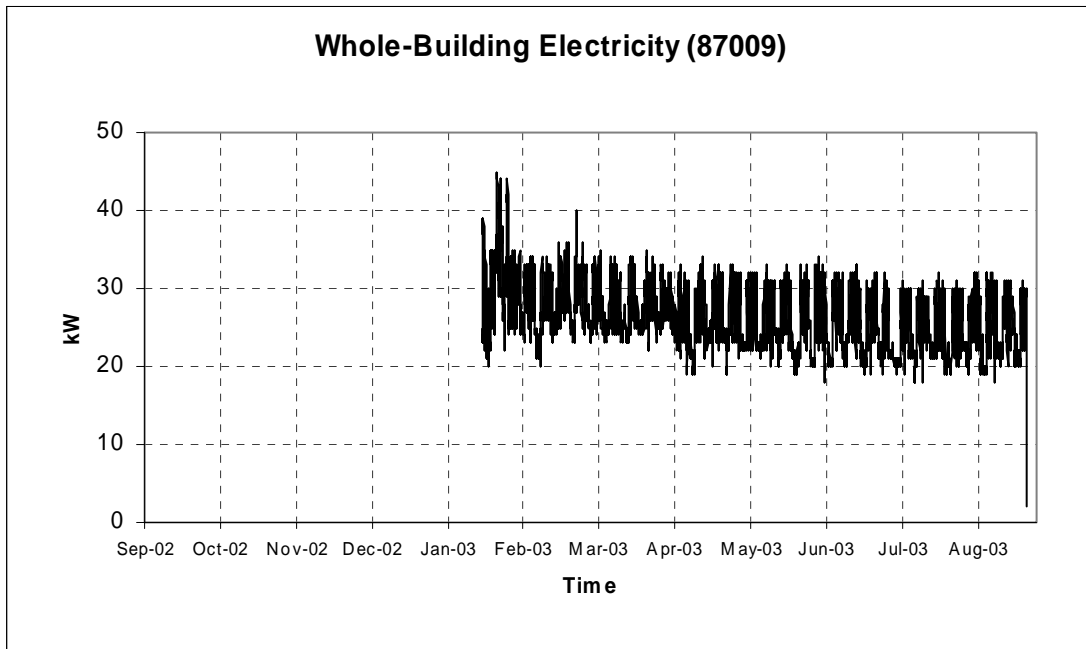
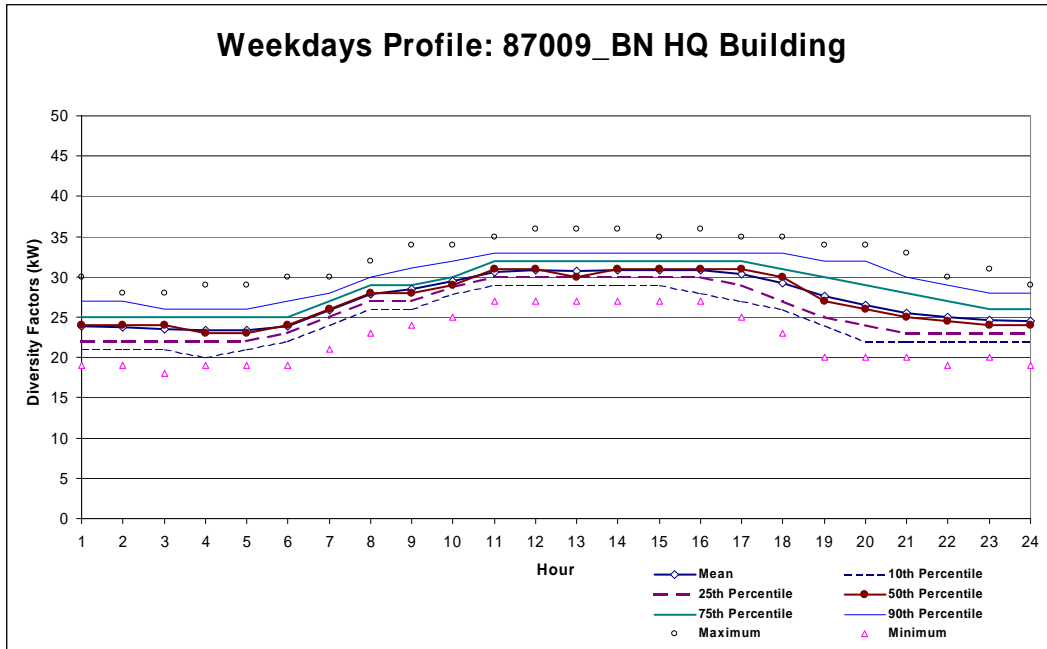
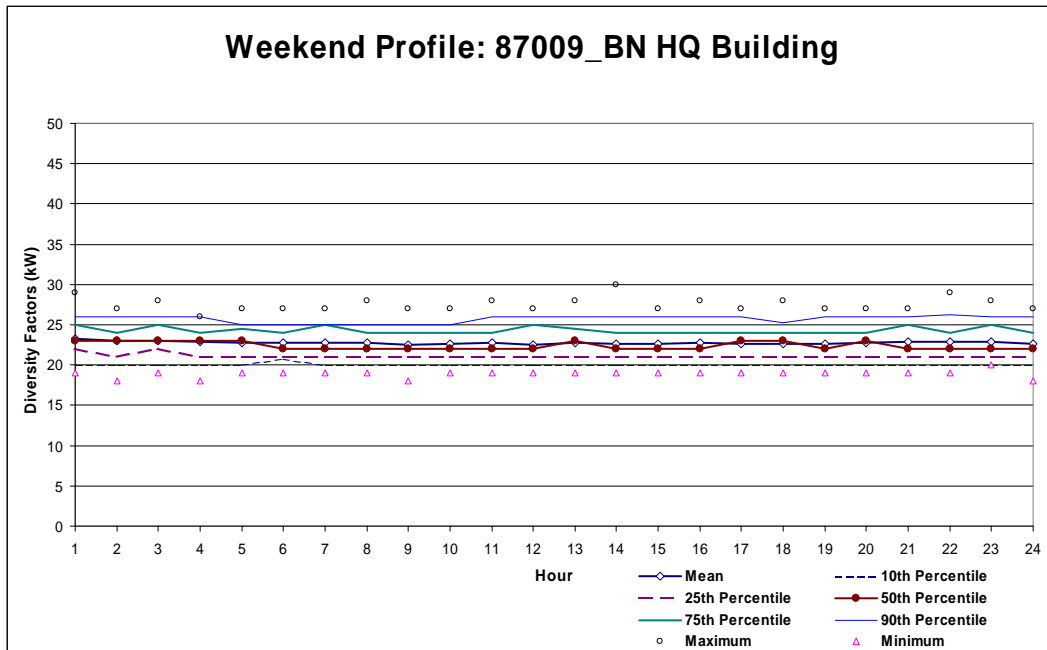


Figure 11.3.6-1: Building #87009 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 01/17/03, 01/20/03 to 01/24/03, 01/27/03, 02/24/03 to 02/26/03, 03/17/03, 03/21/03, 05/23/03, 05/26/03, 06/06/03, 07/03/03, 07/04/03, and 08/14/03.



* The dates that are excluded from the weekend profile are as follow: 01/18/03, 01/19/03, 02/25/03, 02/26/03, and 02/01/03.

Figure 11.3.6-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87009

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	23.88	26.11	21.65	21.00	22.00	24.00	25.00	27.00	30.00	19.00
2	23.77	26.00	21.55	21.00	22.00	24.00	25.00	28.00	28.00	19.00
3	23.54	25.68	21.40	21.00	22.00	24.00	25.00	26.00	28.00	18.00
4	23.39	25.59	21.18	20.00	22.00	23.00	25.00	26.00	29.00	19.00
5	23.36	25.51	21.22	21.00	22.00	23.00	25.00	26.00	29.00	19.00
6	23.92	25.90	21.94	22.00	23.00	24.00	25.00	27.00	30.00	19.00
7	25.89	27.78	23.99	24.00	25.00	26.00	27.00	28.00	30.00	21.00
8	27.91	29.42	26.40	26.00	27.00	28.00	29.00	30.00	32.00	23.00
9	28.48	30.37	26.59	26.00	27.00	28.00	29.00	31.10	34.00	24.00
10	29.45	31.10	27.80	27.90	28.75	29.00	30.00	32.00	34.00	25.00
11	30.64	32.13	29.14	29.00	30.00	31.00	32.00	33.00	35.00	27.00
12	30.85	32.66	29.04	29.00	30.00	31.00	32.00	33.00	36.00	27.00
13	30.74	32.52	28.97	29.00	30.00	30.00	32.00	33.00	36.00	27.00
14	30.84	32.41	29.28	29.00	30.00	31.00	32.00	33.00	36.00	27.00
15	30.82	32.32	29.33	29.00	30.00	31.00	32.00	33.00	35.00	27.00
16	30.84	32.69	28.98	28.00	30.00	31.00	32.00	33.00	36.00	27.00
17	30.30	32.45	28.15	27.00	29.00	31.00	32.00	33.00	35.00	25.00
18	29.23	31.83	26.63	26.00	27.00	30.00	31.00	33.00	35.00	23.00
19	27.67	30.80	24.54	24.00	25.00	27.00	30.00	32.00	34.00	20.00
20	26.44	29.81	23.08	22.00	24.00	26.00	29.00	32.00	34.00	20.00
21	25.49	28.46	22.53	22.00	23.00	25.00	28.00	30.00	33.00	20.00
22	25.00	27.66	22.34	22.00	23.00	24.50	27.00	29.00	30.00	19.00
23	24.67	26.92	22.43	22.00	23.00	24.00	26.00	28.00	31.00	20.00
24	24.49	26.69	22.29	22.00	23.00	24.00	26.00	28.00	29.00	19.00
Daily Values	651.62	689.23	614.01	604.90	621.75	646.50	677.25	709.00	749.00	570.00
Hourly Daily Sum	651.62	702.80	600.44	589.90	617.75	649.50	686.00	723.10	779.00	534.00

Daily Values: The Daily results as the statistics are applied on daily data.
 Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	23.29	25.58	21.00	20.00	22.00	23.00	25.00	26.00	29.00	19.00
2	23.00	25.17	20.83	20.00	21.00	23.00	24.00	26.00	27.00	18.00
3	23.05	25.11	20.99	20.00	22.00	23.00	25.00	26.00	28.00	19.00
4	22.90	24.90	20.89	20.00	21.00	23.00	24.00	26.00	26.00	18.00
5	22.75	24.80	20.69	20.00	21.00	23.00	24.50	25.00	27.00	19.00
6	22.71	24.61	20.82	20.80	21.00	22.00	24.00	25.00	27.00	19.00
7	22.71	24.86	20.56	20.00	21.00	22.00	25.00	25.00	27.00	19.00
8	22.75	24.77	20.72	20.00	21.00	22.00	24.00	25.00	28.00	19.00
9	22.56	24.50	20.62	20.00	21.00	22.00	24.00	25.00	27.00	18.00
10	22.58	24.54	20.61	20.00	21.00	22.00	24.00	25.00	27.00	19.00
11	22.71	24.87	20.55	20.00	21.00	22.00	24.00	26.00	28.00	19.00
12	22.56	24.83	20.29	20.00	21.00	22.00	25.00	26.00	27.00	19.00
13	22.75	24.95	20.54	20.00	21.00	23.00	24.50	26.00	28.00	19.00
14	22.68	25.02	20.34	20.00	21.00	22.00	24.00	26.00	30.00	19.00
15	22.59	24.91	20.27	20.00	21.00	22.00	24.00	26.00	27.00	19.00
16	22.76	24.96	20.56	20.00	21.00	22.00	24.00	26.00	28.00	19.00
17	22.59	24.80	20.39	20.00	21.00	23.00	24.00	26.00	27.00	19.00
18	22.64	24.83	20.46	20.00	21.00	23.00	24.00	25.20	28.00	19.00
19	22.63	24.72	20.54	20.00	21.00	22.00	24.00	26.00	27.00	19.00
20	22.80	24.87	20.72	20.00	21.00	23.00	24.00	26.00	27.00	19.00
21	22.93	25.14	20.73	20.00	21.00	22.00	25.00	26.00	27.00	19.00
22	22.83	25.11	20.56	20.00	21.00	22.00	24.00	26.20	29.00	19.00
23	22.90	25.07	20.73	20.00	21.00	22.00	25.00	26.00	28.00	20.00
24	22.66	24.86	20.46	20.00	21.00	22.00	24.00	26.00	27.00	18.00
Daily Values	546.32	592.03	500.61	489.00	512.00	540.00	585.00	613.60	641.00	474.00
Hourly Daily Sum	546.32	597.78	494.86	480.80	506.00	537.00	583.00	617.40	661.00	453.00

Daily Values: The Daily results as the statistics are applied on daily data.
 Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.6-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87009

11.3.7. 87010 PHYS FIT CTR Building

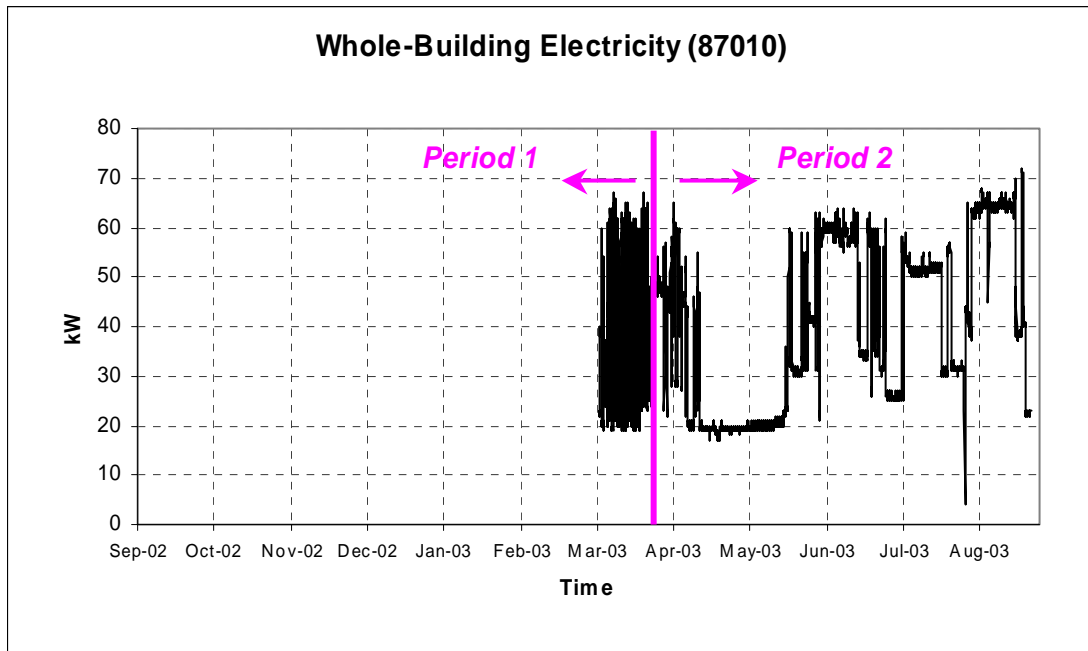
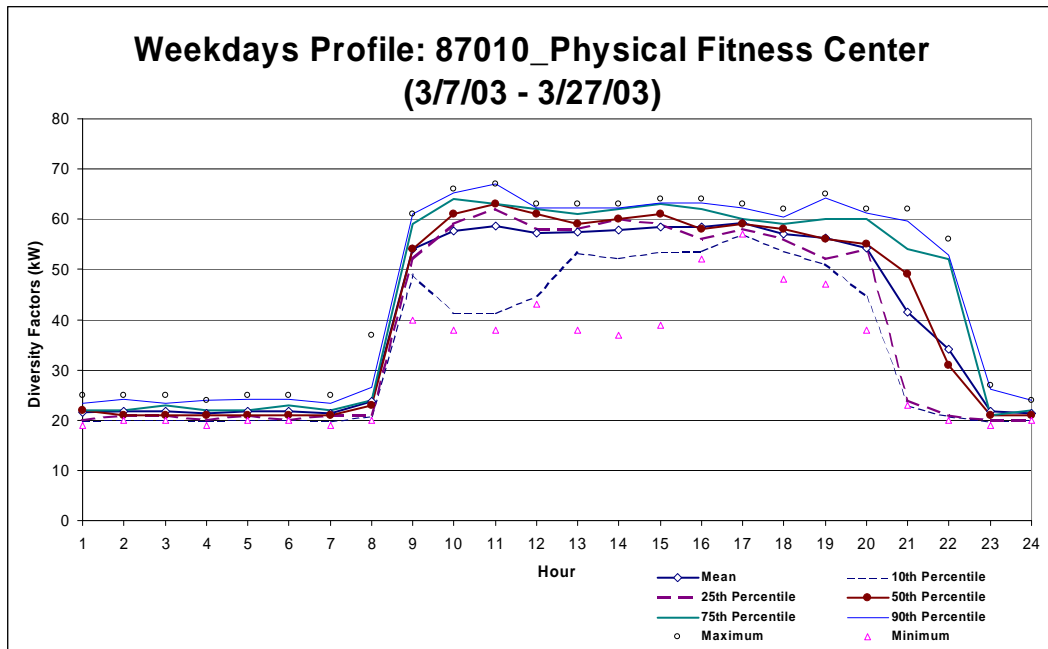


Figure 11.3.7-1: Building #87010 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 03/13/03, 03/17/03, 03/20/03, 03/21/03, 03/26/03 and 03/27/03.

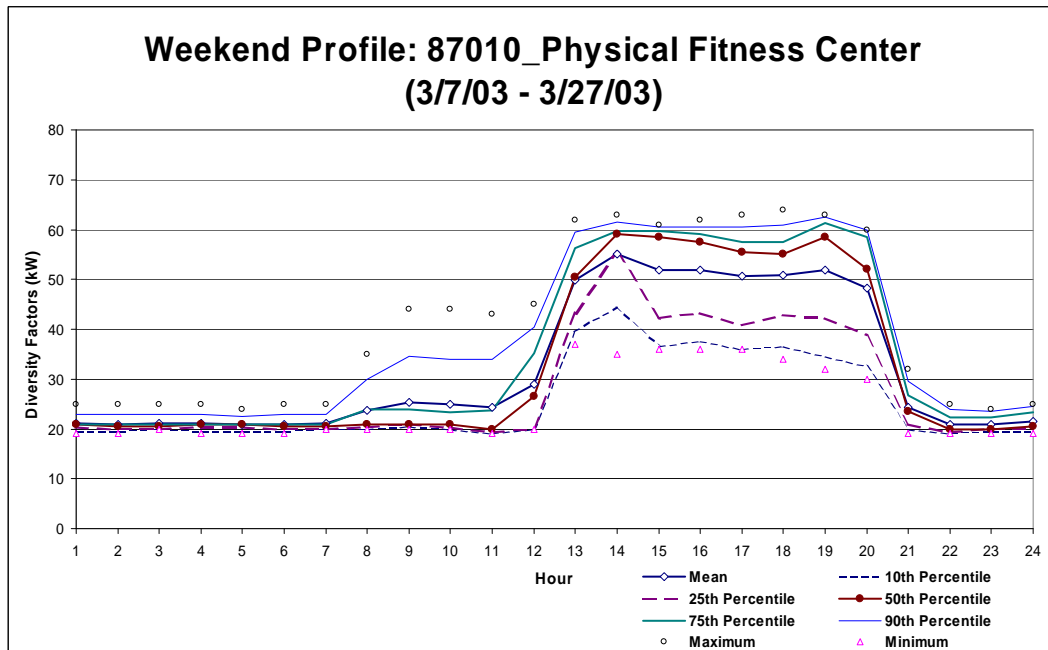


Figure 11.3.7-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87010 in Period 1

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	21.56	23.37	19.75	19.80	20.00	22.00	22.00	23.40	25.00	19.00
2	21.67	23.40	19.93	20.00	21.00	21.00	22.00	24.20	25.00	20.00
3	21.67	23.32	20.01	20.00	21.00	21.00	23.00	23.40	25.00	20.00
4	21.33	23.07	19.60	19.80	20.00	21.00	22.00	24.00	24.00	19.00
5	21.78	23.49	20.06	20.00	21.00	21.00	22.00	24.20	25.00	20.00
6	21.67	23.54	19.80	20.00	20.00	21.00	23.00	24.20	25.00	20.00
7	21.44	23.18	19.70	19.80	21.00	21.00	22.00	23.40	25.00	19.00
8	23.78	28.94	18.61	20.80	21.00	23.00	24.00	26.60	37.00	20.00
9	54.00	60.52	47.48	48.80	52.00	54.00	59.00	61.00	61.00	40.00
10	57.67	68.00	47.33	41.20	59.00	61.00	64.00	65.20	66.00	38.00
11	58.56	69.29	47.82	41.20	62.00	63.00	63.00	67.00	67.00	38.00
12	57.22	64.87	49.58	44.60	58.00	61.00	62.00	62.20	63.00	43.00
13	57.44	64.98	49.91	53.20	58.00	59.00	61.00	62.20	63.00	38.00
14	57.89	65.97	49.80	52.20	60.00	60.00	62.00	62.20	63.00	37.00
15	58.44	66.08	50.81	53.40	59.00	61.00	63.00	63.20	64.00	39.00
16	58.44	62.51	54.38	53.60	56.00	58.00	62.00	63.20	64.00	52.00
17	59.22	61.33	57.11	57.00	58.00	59.00	60.00	62.20	63.00	57.00
18	57.00	60.97	53.03	53.60	56.00	58.00	59.00	60.40	62.00	48.00
19	56.22	62.18	50.27	51.00	52.00	56.00	60.00	64.20	65.00	47.00
20	54.22	61.96	46.48	44.40	54.00	55.00	60.00	61.20	62.00	38.00
21	41.56	58.05	25.06	23.00	24.00	49.00	54.00	59.60	62.00	23.00
22	34.11	49.30	18.93	20.80	21.00	31.00	52.00	52.80	56.00	20.00
23	21.78	24.55	19.00	19.80	20.00	21.00	21.00	26.20	27.00	19.00
24	21.33	22.99	19.68	20.00	20.00	21.00	22.00	24.00	24.00	20.00
Daily Values	980.00	1062.94	897.06	874.40	974.00	994.00	1002.00	1078.60	1081.00	820.00
Hourly Daily Sum	980.00	1115.86	844.14	838.00	934.00	998.00	1064.00	1110.20	1143.00	754.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

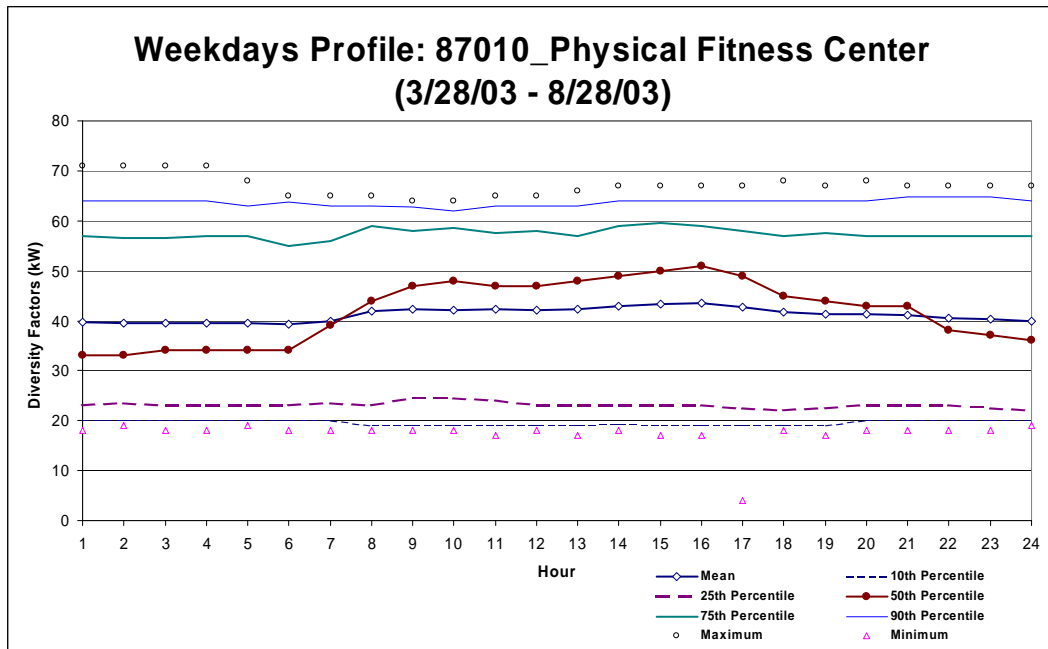
WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	21.17	23.21	19.13	19.50	20.25	21.00	21.00	23.00	25.00	19.00
2	21.00	23.10	18.90	19.50	20.00	20.50	21.00	23.00	25.00	19.00
3	21.17	23.11	19.23	20.00	20.00	20.50	21.00	23.00	25.00	20.00
4	21.17	23.21	19.13	19.50	20.25	21.00	21.00	23.00	25.00	19.00
5	21.00	22.67	19.33	19.50	20.25	21.00	21.00	22.50	24.00	19.00
6	21.00	23.10	18.90	19.50	20.00	20.50	21.00	23.00	25.00	19.00
7	21.17	23.11	19.23	20.00	20.00	20.50	21.00	23.00	25.00	20.00
8	23.67	29.52	17.81	20.00	20.25	21.00	24.00	30.00	35.00	20.00
9	25.33	34.64	16.02	20.50	21.00	21.00	24.00	34.50	44.00	20.00
10	25.00	34.42	15.58	20.00	20.25	21.00	23.25	34.00	44.00	20.00
11	24.33	33.75	14.92	19.00	19.25	20.00	23.75	34.00	43.00	19.00
12	29.00	39.62	18.38	20.00	20.00	26.50	35.25	40.50	45.00	20.00
13	49.83	59.33	40.34	39.50	43.25	50.50	56.25	59.50	62.00	37.00
14	55.00	65.22	44.78	44.50	55.25	59.00	59.75	61.50	63.00	35.00
15	51.83	63.76	39.91	36.50	42.25	58.50	59.75	60.50	61.00	36.00
16	51.83	63.14	40.53	37.50	43.25	57.50	59.00	60.50	62.00	36.00
17	50.67	62.36	38.98	36.00	40.75	55.50	57.50	60.50	63.00	36.00
18	50.83	62.54	39.13	36.50	42.75	55.00	57.50	61.00	64.00	34.00
19	51.83	65.48	38.19	34.50	42.25	58.50	61.25	62.50	63.00	32.00
20	48.17	60.98	35.35	32.50	38.75	52.00	58.50	60.00	60.00	30.00
21	24.33	29.22	19.45	20.00	21.00	23.50	26.75	29.50	32.00	19.00
22	21.00	23.45	18.55	19.00	19.25	20.00	22.25	24.00	25.00	19.00
23	21.00	23.00	19.00	19.50	20.00	20.00	22.25	23.50	24.00	19.00
24	21.50	23.93	19.07	19.50	20.00	20.50	23.25	24.50	25.00	19.00
Daily Values	772.83	867.81	677.85	670.50	699.75	788.00	794.50	860.00	925.00	669.00
Hourly Daily Sum	772.83	935.84	609.82	612.50	670.25	785.00	841.25	921.00	989.00	586.00

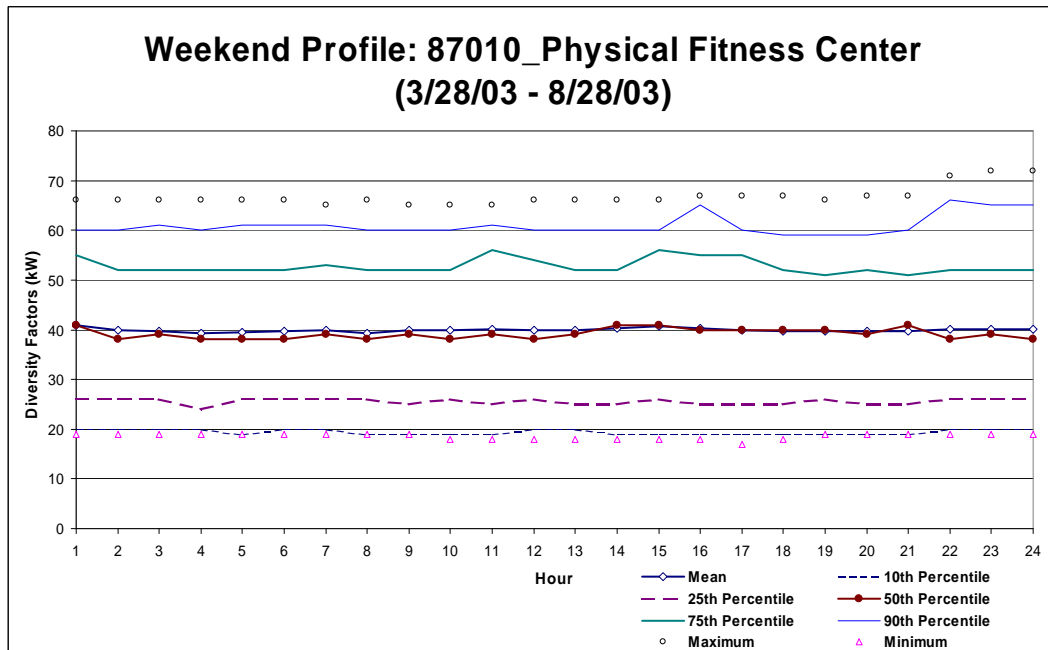
Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.7-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87010 in Period 1



* The dates that are excluded from the weekday profile are as follow: 03/28/03, 04/03/03, 04/14/03, 04/15/03, 05/26/03 and 07/04/03.



* The dates that are excluded from the weekend profile are as follow: 04/05/03, 04/12/03 and 04/13/03.

Figure 11.3.7-3: 24-hour weekday, weekend profiles for whole-building electricity use for #87010 in Period 2

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	39.68	56.62	22.74	20.00	23.00	33.00	57.00	64.00	71.00	18.00
2	39.57	56.47	22.68	20.00	23.50	33.00	56.50	64.00	71.00	19.00
3	39.53	56.29	22.78	20.00	23.00	34.00	56.50	64.00	71.00	18.00
4	39.56	56.46	22.67	20.00	23.00	34.00	57.00	64.00	71.00	18.00
5	39.45	56.09	22.80	20.00	23.00	34.00	57.00	63.00	68.00	19.00
6	39.21	55.51	22.91	20.00	23.00	34.00	55.00	63.80	65.00	18.00
7	39.90	56.09	23.71	20.00	23.50	39.00	56.00	63.00	65.00	18.00
8	41.89	59.01	24.78	19.00	23.00	44.00	59.00	63.00	65.00	18.00
9	42.22	59.10	25.34	19.00	24.50	47.00	58.00	62.80	64.00	18.00
10	42.18	58.99	25.38	19.00	24.50	48.00	58.50	62.00	64.00	18.00
11	42.34	59.16	25.52	19.00	24.00	47.00	57.50	63.00	65.00	17.00
12	42.12	59.05	25.18	19.00	23.00	47.00	58.00	63.00	65.00	18.00
13	42.30	59.25	25.35	19.00	23.00	48.00	57.00	63.00	66.00	17.00
14	42.98	60.20	25.76	19.20	23.00	49.00	59.00	64.00	67.00	18.00
15	43.41	60.86	25.95	19.00	23.00	50.00	59.50	64.00	67.00	17.00
16	43.57	61.38	25.76	19.00	23.00	51.00	59.00	64.00	67.00	17.00
17	42.69	60.31	25.07	19.00	22.50	49.00	58.00	64.00	67.00	4.00
18	41.76	58.92	24.60	19.00	22.00	45.00	57.00	64.00	68.00	18.00
19	41.21	58.40	24.03	19.00	22.50	44.00	57.50	64.00	67.00	17.00
20	41.33	58.43	24.23	20.00	23.00	43.00	57.00	64.00	68.00	18.00
21	41.14	58.23	24.05	20.00	23.00	43.00	57.00	64.80	67.00	18.00
22	40.51	57.48	23.55	20.00	23.00	38.00	57.00	64.80	67.00	18.00
23	40.31	57.46	23.17	20.00	22.50	37.00	57.00	64.80	67.00	18.00
24	40.00	57.00	23.00	20.00	22.00	36.00	57.00	64.00	67.00	19.00
Daily Values	988.88	1369.11	608.66	472.00	597.00	1048.00	1272.00	1530.80	1566.00	442.00
Hourly Daily Sum	988.88	1396.75	581.02	468.20	553.50	1007.00	1378.00	1529.00	1610.00	416.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	40.83	56.70	24.96	20.00	26.00	41.00	55.00	60.00	66.00	19.00
2	39.98	55.67	24.29	20.00	26.00	38.00	52.00	60.00	66.00	19.00
3	39.78	55.50	24.07	20.00	26.00	39.00	52.00	61.00	66.00	19.00
4	39.34	55.04	23.64	20.00	24.00	38.00	52.00	60.00	66.00	19.00
5	39.41	55.31	23.52	19.00	26.00	38.00	52.00	61.00	66.00	19.00
6	39.78	55.41	24.15	20.00	26.00	38.00	52.00	61.00	66.00	19.00
7	39.80	55.40	24.21	20.00	26.00	39.00	53.00	61.00	65.00	19.00
8	39.37	55.20	23.54	19.00	26.00	38.00	52.00	60.00	66.00	19.00
9	39.85	55.96	23.75	19.00	25.00	39.00	52.00	60.00	65.00	19.00
10	39.83	55.82	23.84	19.00	26.00	38.00	52.00	60.00	65.00	18.00
11	40.20	56.60	23.79	19.00	25.00	39.00	56.00	61.00	65.00	18.00
12	39.90	56.02	23.79	20.00	26.00	38.00	54.00	60.00	66.00	18.00
13	39.90	56.12	23.69	20.00	25.00	39.00	52.00	60.00	66.00	18.00
14	40.32	56.54	24.10	19.00	25.00	41.00	52.00	60.00	66.00	18.00
15	40.71	57.26	24.15	19.00	26.00	41.00	56.00	60.00	66.00	18.00
16	40.24	56.68	23.81	19.00	25.00	40.00	55.00	65.00	67.00	18.00
17	39.95	56.47	23.43	19.00	25.00	40.00	55.00	60.00	67.00	17.00
18	39.71	55.78	23.64	19.00	25.00	40.00	52.00	59.00	67.00	18.00
19	39.61	55.62	23.60	19.00	26.00	40.00	51.00	59.00	66.00	19.00
20	39.63	55.63	23.64	19.00	25.00	39.00	52.00	59.00	67.00	19.00
21	39.61	55.49	23.73	19.00	25.00	41.00	51.00	60.00	67.00	19.00
22	40.20	56.81	23.58	20.00	26.00	38.00	52.00	66.00	71.00	19.00
23	40.17	56.80	23.55	20.00	26.00	39.00	52.00	65.00	72.00	19.00
24	40.15	56.77	23.52	20.00	26.00	38.00	52.00	65.00	72.00	19.00
Daily Values	958.27	1336.58	579.96	464.00	620.00	988.00	1240.00	1435.00	1579.00	453.00
Hourly Daily Sum	958.27	1344.56	571.98	467.00	613.00	939.00	1266.00	1463.00	1602.00	446.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.7-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87010 in Period 2

11.3.8. 87011 CO HQ Building

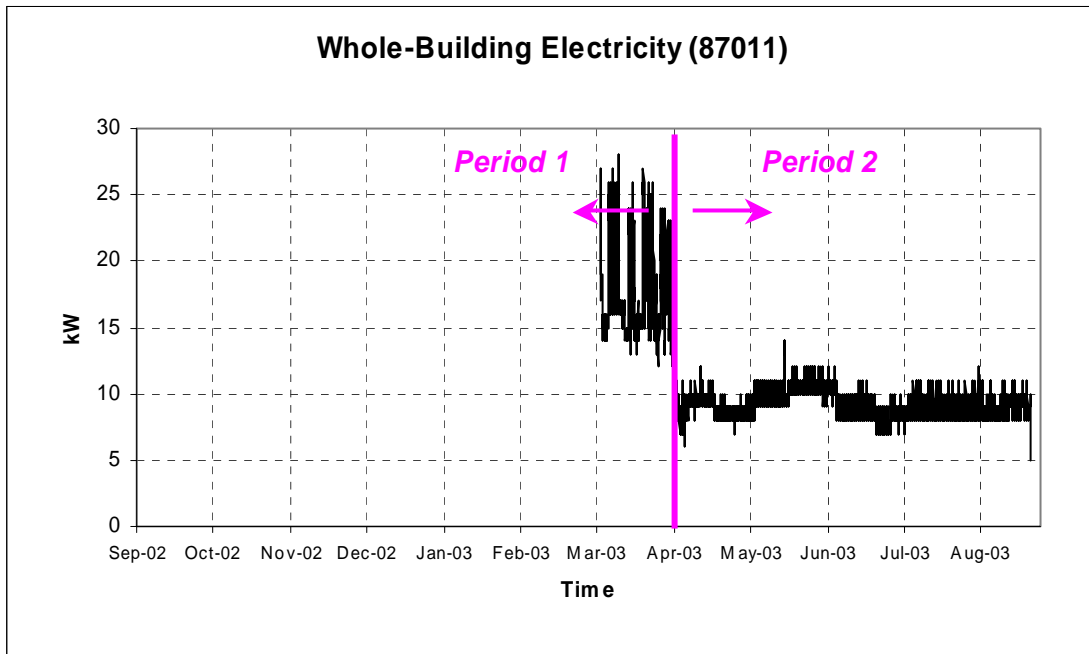
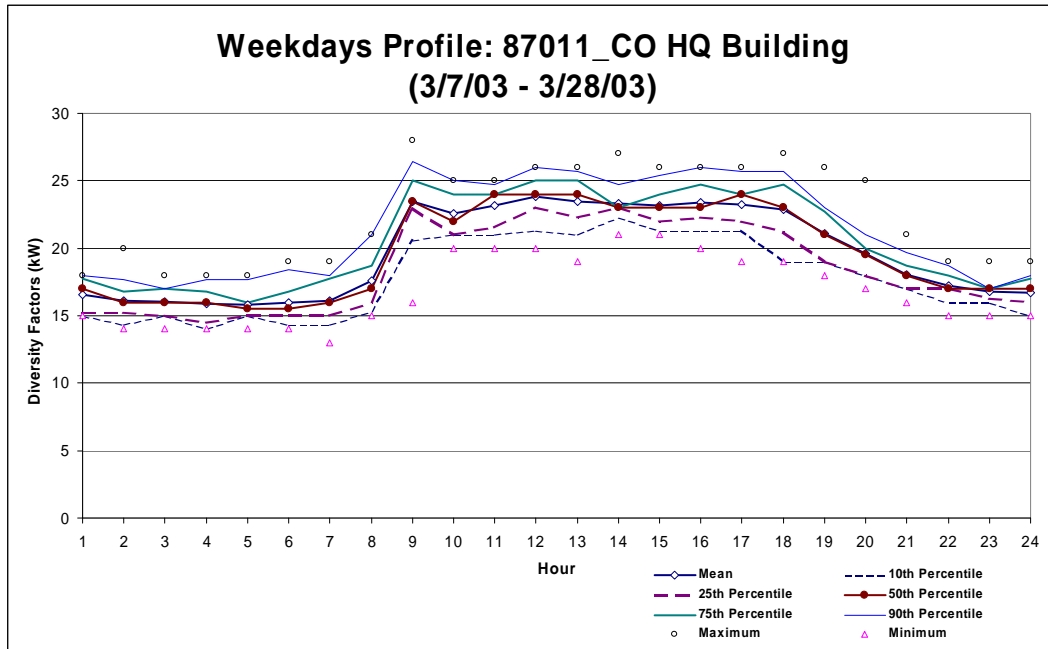


Figure 11.3.8-1: Building #87011 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 03/17/03 and 03/21/03.

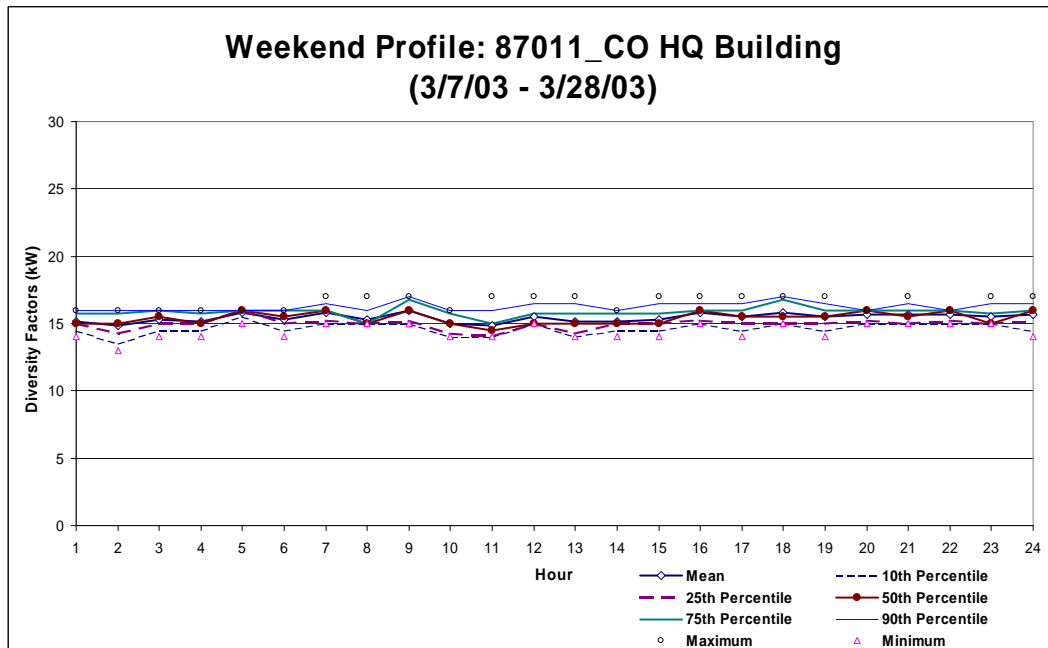


Figure 11.3.8-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87011 in Period 1

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	16.57	17.79	15.35	15.00	15.25	17.00	17.75	18.00	18.00	15.00
2	16.14	17.70	14.58	14.30	15.25	16.00	16.75	17.70	20.00	14.00
3	16.07	17.21	14.93	15.00	15.00	16.00	17.00	17.00	18.00	14.00
4	15.86	17.26	14.45	14.00	14.50	16.00	16.75	17.70	18.00	14.00
5	15.79	16.97	14.60	15.00	15.00	15.50	16.00	17.70	18.00	14.00
6	15.93	17.52	14.34	14.30	15.00	15.50	16.75	18.40	19.00	14.00
7	16.14	17.93	14.35	14.30	15.00	16.00	17.75	18.00	19.00	13.00
8	17.57	19.71	15.43	15.30	16.00	17.00	18.75	21.00	21.00	15.00
9	23.50	26.45	20.55	20.60	23.00	23.50	25.00	26.40	28.00	16.00
10	22.57	24.31	20.83	21.00	21.00	22.00	24.00	25.00	25.00	20.00
11	23.14	24.80	21.49	21.00	21.50	24.00	24.00	24.70	25.00	20.00
12	23.86	25.73	21.98	21.30	23.00	24.00	25.00	26.00	26.00	20.00
13	23.43	25.49	21.36	21.00	22.25	24.00	25.00	25.70	26.00	19.00
14	23.29	24.67	21.90	22.30	23.00	23.00	23.00	24.70	27.00	21.00
15	23.14	24.70	21.58	21.30	22.00	23.00	24.00	25.40	26.00	21.00
16	23.36	25.22	21.49	21.30	22.25	23.00	24.75	26.00	26.00	20.00
17	23.21	25.18	21.25	21.30	22.00	24.00	24.00	25.70	26.00	19.00
18	22.86	25.45	20.26	19.00	21.25	23.00	24.75	25.70	27.00	19.00
19	21.07	23.31	18.84	19.00	19.00	21.00	22.75	23.00	26.00	18.00
20	19.57	21.56	17.58	18.00	18.00	19.50	20.00	21.00	25.00	17.00
21	18.07	19.40	16.74	17.00	17.00	18.00	18.75	19.70	21.00	16.00
22	17.21	18.34	16.09	16.00	17.00	17.00	18.00	18.70	19.00	15.00
23	16.79	17.68	15.89	16.00	16.25	17.00	17.00	17.00	19.00	15.00
24	16.71	17.98	15.45	15.00	16.00	17.00	17.75	18.00	19.00	15.00
Daily Values	471.86	489.20	454.51	449.00	463.00	472.00	480.75	495.80	502.00	446.00
Hourly Daily Sum	471.86	512.40	431.31	428.30	445.50	472.00	495.25	518.20	542.00	404.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

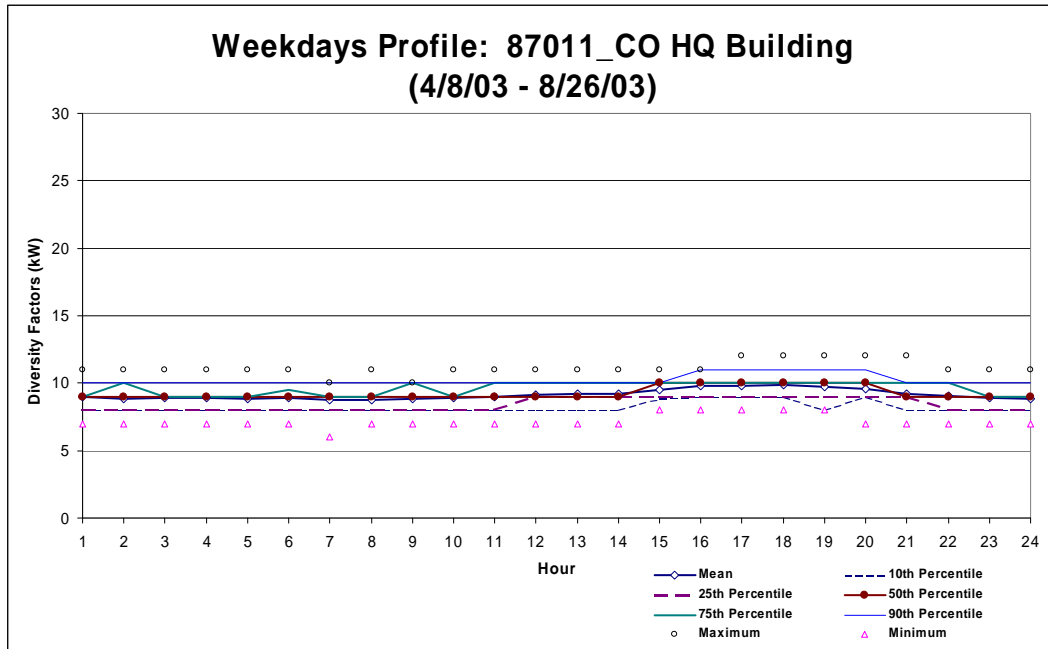
WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	15.17	15.92	14.41	14.50	15.00	15.00	15.75	16.00	16.00	14.00
2	14.83	16.00	13.66	13.50	14.25	15.00	15.75	16.00	16.00	13.00
3	15.33	16.15	14.52	14.50	15.00	15.50	16.00	16.00	16.00	14.00
4	15.17	15.92	14.41	14.50	15.00	15.00	15.75	16.00	16.00	14.00
5	15.83	16.24	15.43	15.50	16.00	16.00	16.00	16.00	16.00	15.00
6	15.33	16.15	14.52	14.50	15.00	15.50	16.00	16.00	16.00	14.00
7	15.83	16.59	15.08	15.00	15.25	16.00	16.00	16.50	17.00	15.00
8	15.33	16.15	14.52	15.00	15.00	15.00	15.00	16.00	17.00	15.00
9	16.00	16.89	15.11	15.00	15.25	16.00	16.75	17.00	17.00	15.00
10	15.00	15.89	14.11	14.00	14.25	15.00	15.75	16.00	16.00	14.00
11	14.83	16.00	13.66	14.00	14.00	14.50	15.00	16.00	17.00	14.00
12	15.50	16.34	14.66	15.00	15.00	15.00	15.75	16.50	17.00	15.00
13	15.17	16.34	14.00	14.00	14.25	15.00	15.75	16.50	17.00	14.00
14	15.17	15.92	14.41	14.50	15.00	15.00	15.75	16.00	16.00	14.00
15	15.33	16.37	14.30	14.50	15.00	15.00	15.75	16.50	17.00	14.00
16	15.83	16.59	15.08	15.00	15.25	16.00	16.00	16.50	17.00	15.00
17	15.50	16.55	14.45	14.50	15.00	15.50	16.00	16.50	17.00	14.00
18	15.83	16.82	14.85	15.00	15.00	15.50	16.75	17.00	17.00	15.00
19	15.50	16.55	14.45	14.50	15.00	15.50	16.00	16.50	17.00	14.00
20	15.67	16.18	15.15	15.00	15.25	16.00	16.00	16.00	16.00	15.00
21	15.67	16.48	14.85	15.00	15.00	15.50	16.00	16.50	17.00	15.00
22	15.67	16.18	15.15	15.00	15.25	16.00	16.00	16.00	16.00	15.00
23	15.50	16.34	14.66	15.00	15.00	15.00	15.75	16.50	17.00	15.00
24	15.67	16.70	14.63	14.50	15.25	16.00	16.00	16.50	17.00	14.00
Daily Values	370.67	387.23	354.11	355.50	358.50	366.50	378.25	390.00	398.00	355.00
Hourly Daily Sum	370.67	391.25	350.08	351.50	359.25	369.50	381.25	391.00	398.00	346.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.8-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87011 in Period 1



* The dates that are excluded from the weekday profile are as follow: 05/20/03, 05/26/03, and 07/04/03.

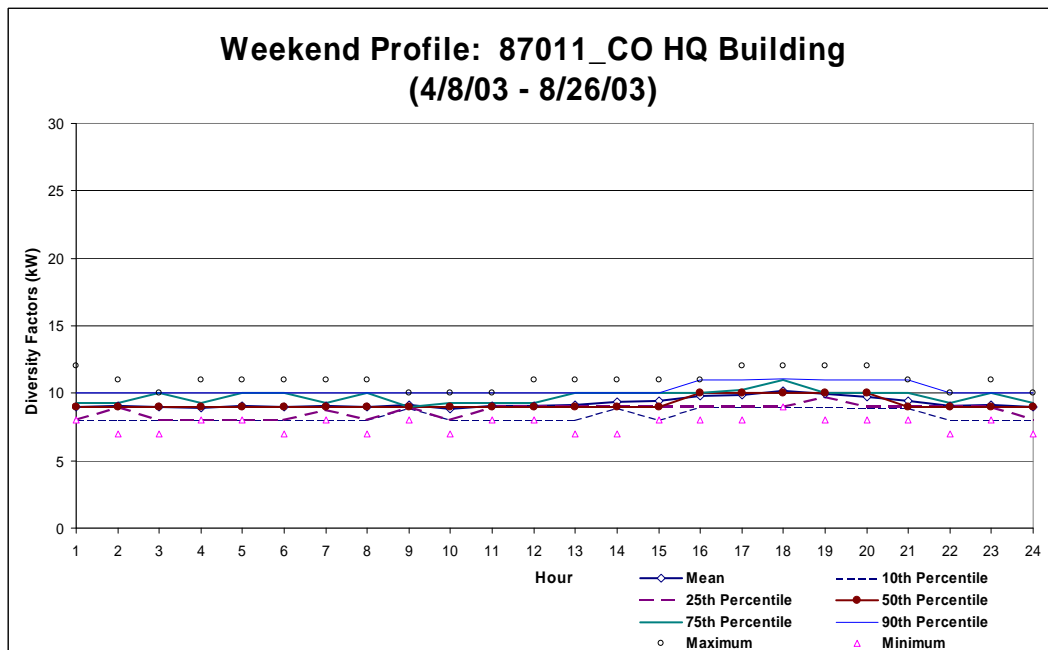


Figure 11.3.8-3: 24-hour weekday, weekend profiles for whole-building electricity use for #87011 in Period 2

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	8.98	9.74	8.22	8.00	8.00	9.00	9.00	10.00	11.00	7.00
2	8.86	9.84	7.88	8.00	8.00	9.00	10.00	10.00	11.00	7.00
3	8.89	9.66	8.12	8.00	8.00	9.00	9.00	10.00	11.00	7.00
4	8.93	9.81	8.05	8.00	8.00	9.00	9.00	10.00	11.00	7.00
5	8.87	9.71	8.03	8.00	8.00	9.00	9.00	10.00	11.00	7.00
6	8.92	9.84	8.00	8.00	8.00	9.00	9.50	10.00	11.00	7.00
7	8.75	9.67	7.83	8.00	8.00	9.00	9.00	10.00	10.00	6.00
8	8.80	9.55	8.04	8.00	8.00	9.00	9.00	10.00	11.00	7.00
9	8.87	9.71	8.03	8.00	8.00	9.00	10.00	10.00	10.00	7.00
10	8.92	9.80	8.04	8.00	8.00	9.00	9.00	10.00	11.00	7.00
11	8.97	9.84	8.10	8.00	8.00	9.00	10.00	10.00	11.00	7.00
12	9.13	9.93	8.33	8.00	9.00	9.00	10.00	10.00	11.00	7.00
13	9.18	9.98	8.38	8.00	9.00	9.00	10.00	10.00	11.00	7.00
14	9.22	10.09	8.36	8.00	9.00	9.00	10.00	10.00	11.00	7.00
15	9.51	10.31	8.70	8.80	9.00	10.00	10.00	10.00	11.00	8.00
16	9.80	10.62	8.98	9.00	9.00	10.00	10.00	11.00	11.00	8.00
17	9.80	10.72	8.87	9.00	9.00	10.00	10.00	11.00	12.00	8.00
18	9.88	10.79	8.97	9.00	9.00	10.00	10.00	11.00	12.00	8.00
19	9.71	10.70	8.71	8.00	9.00	10.00	10.00	11.00	12.00	8.00
20	9.62	10.58	8.65	9.00	9.00	10.00	10.00	11.00	12.00	7.00
21	9.21	10.18	8.24	8.00	9.00	9.00	10.00	10.00	12.00	7.00
22	9.04	9.88	8.20	8.00	8.00	9.00	10.00	10.00	11.00	7.00
23	8.93	9.80	8.06	8.00	8.00	9.00	9.00	10.00	11.00	7.00
24	8.86	9.68	8.04	8.00	8.00	9.00	9.00	10.00	11.00	7.00
Daily Values	219.63	235.80	203.45	199.80	209.00	217.00	233.00	243.40	254.00	185.00
Hourly Daily Sum	219.63	240.43	198.82	196.80	202.00	222.00	230.50	245.00	267.00	172.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	9.00	9.93	8.07	8.00	8.00	9.00	9.25	10.00	12.00	8.00
2	9.03	9.83	8.22	8.00	9.00	9.00	9.25	10.00	11.00	7.00
3	8.95	9.76	8.14	8.00	8.00	9.00	10.00	10.00	10.00	7.00
4	8.93	9.75	8.10	8.00	8.00	9.00	9.25	10.00	11.00	8.00
5	9.08	9.96	8.19	8.00	8.00	9.00	10.00	10.00	11.00	8.00
6	8.95	9.85	8.05	8.00	8.00	9.00	10.00	10.00	11.00	7.00
7	9.03	9.79	8.26	8.00	8.75	9.00	9.25	10.00	11.00	8.00
8	8.98	9.97	7.98	8.00	8.00	9.00	10.00	10.00	11.00	7.00
9	9.13	9.69	8.56	8.90	9.00	9.00	9.00	10.00	10.00	8.00
10	8.85	9.71	7.99	8.00	8.00	9.00	9.25	10.00	10.00	7.00
11	9.03	9.72	8.33	8.00	9.00	9.00	9.25	10.00	10.00	8.00
12	9.08	9.80	8.35	8.00	9.00	9.00	9.25	10.00	11.00	8.00
13	9.15	10.07	8.23	8.00	9.00	9.00	10.00	10.00	11.00	7.00
14	9.33	10.12	8.53	8.90	9.00	9.00	10.00	10.00	11.00	7.00
15	9.40	10.18	8.62	8.00	9.00	9.00	10.00	10.00	11.00	8.00
16	9.78	10.64	8.91	9.00	9.00	10.00	10.00	11.00	11.00	8.00
17	9.88	10.81	8.94	9.00	9.00	10.00	10.25	11.00	12.00	8.00
18	10.18	11.13	9.22	9.00	9.00	10.00	11.00	11.10	12.00	9.00
19	9.95	10.80	9.10	9.00	9.75	10.00	10.00	11.00	12.00	8.00
20	9.73	10.71	8.74	8.90	9.00	10.00	10.00	11.00	12.00	8.00
21	9.45	10.33	8.57	8.90	9.00	9.00	10.00	11.00	11.00	8.00
22	9.05	9.76	8.34	8.00	9.00	9.00	9.25	10.00	10.00	7.00
23	9.15	9.95	8.35	8.00	9.00	9.00	10.00	10.00	11.00	8.00
24	8.95	9.73	8.17	8.00	8.00	9.00	9.25	10.00	10.00	7.00
Daily Values	221.98	238.13	205.82	202.90	214.00	219.00	233.25	247.10	255.00	190.00
Hourly Daily Sum	221.98	242.03	201.92	199.60	208.50	221.00	233.50	246.10	263.00	184.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.8-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87011 in Period 2

11.3.9. 87012 Enlisted UPH Building

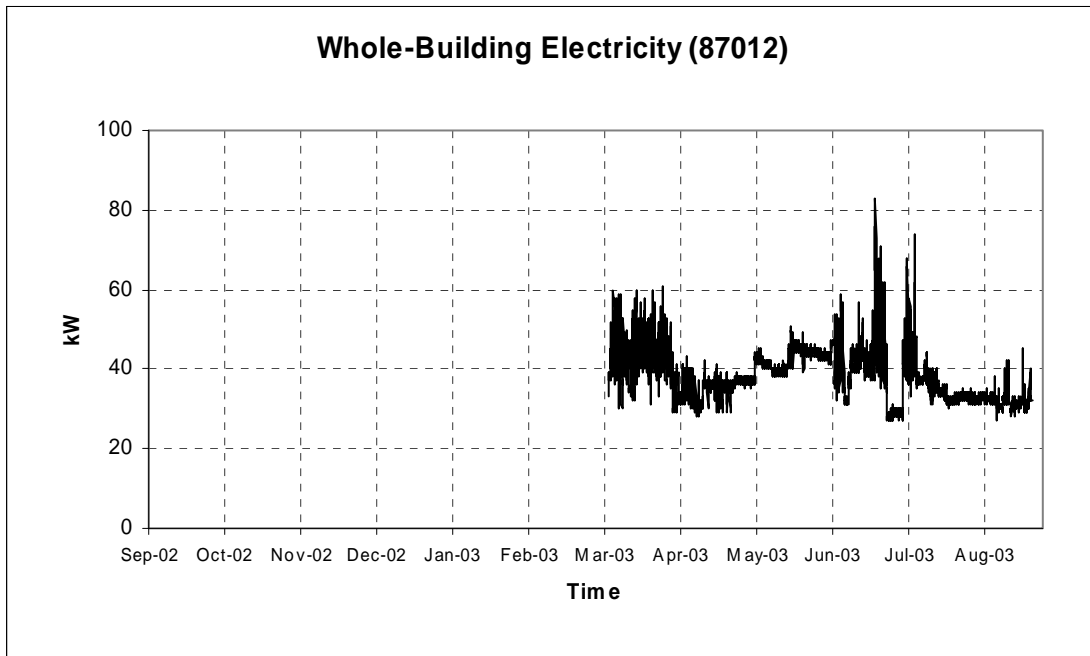
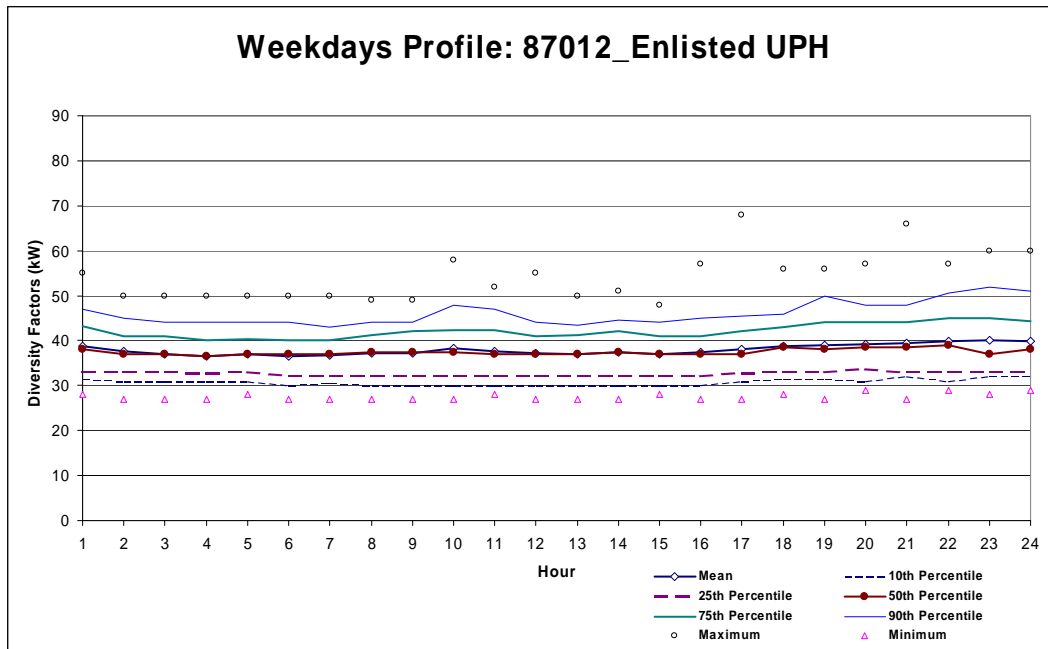


Figure 11.3.9-1: Building #87012 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 05/26/03, 06/24/03 to 06/27/03, 07/04/03, and 07/10/03.

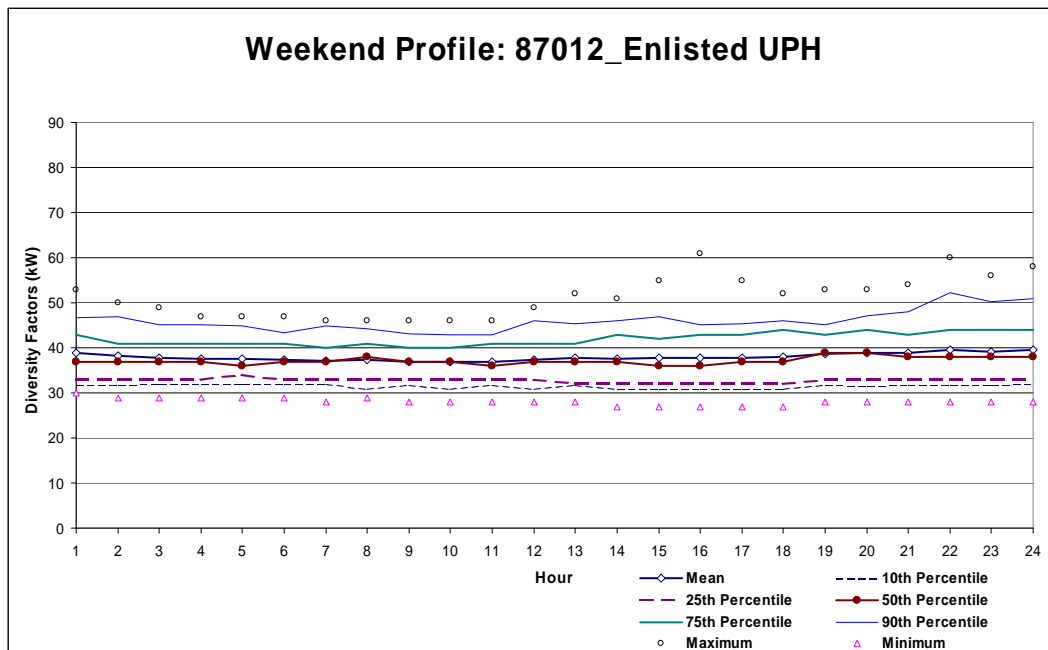


Figure 11.3.9-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87012

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	38.78	44.98	32.59	31.50	33.00	38.00	43.25	47.00	55.00	28.00
2	37.63	43.01	32.25	31.00	33.00	37.00	41.00	45.00	50.00	27.00
3	36.87	41.81	31.93	31.00	33.00	37.00	41.00	44.00	50.00	27.00
4	36.63	41.68	31.58	31.00	32.75	36.50	40.00	44.00	50.00	27.00
5	37.04	42.21	31.88	31.00	33.00	37.00	40.25	44.00	50.00	28.00
6	36.56	41.48	31.64	30.00	32.00	37.00	40.00	44.00	50.00	27.00
7	36.65	41.63	31.66	30.50	32.00	37.00	40.00	43.00	50.00	27.00
8	37.10	42.41	31.80	30.00	32.00	37.50	41.25	44.00	49.00	27.00
9	37.27	42.84	31.69	30.00	32.00	37.50	42.00	44.00	49.00	27.00
10	38.28	45.26	31.29	30.00	32.00	37.50	42.25	48.00	58.00	27.00
11	37.63	43.92	31.34	30.00	32.00	37.00	42.25	47.00	52.00	28.00
12	37.20	42.90	31.50	30.00	32.00	37.00	41.00	44.00	55.00	27.00
13	36.90	42.29	31.51	30.00	32.00	37.00	41.25	43.50	50.00	27.00
14	37.37	43.07	31.67	30.00	32.00	37.50	42.00	44.50	51.00	27.00
15	37.03	42.35	31.70	30.00	32.00	37.00	41.00	44.00	48.00	28.00
16	37.48	43.29	31.67	30.00	32.00	37.00	41.00	45.00	57.00	27.00
17	38.16	44.82	31.49	31.00	32.75	37.00	42.00	45.50	68.00	27.00
18	38.72	45.21	32.24	31.50	33.00	38.50	43.00	46.00	56.00	28.00
19	39.06	45.91	32.21	31.50	33.00	38.00	44.00	50.00	56.00	27.00
20	39.21	45.71	32.71	31.00	33.75	38.50	44.00	48.00	57.00	29.00
21	39.36	46.33	32.39	32.00	33.00	38.50	44.00	48.00	66.00	27.00
22	39.84	47.05	32.62	31.00	33.00	39.00	45.00	50.50	57.00	29.00
23	40.11	48.01	32.21	32.00	33.00	37.00	45.00	52.00	60.00	28.00
24	39.84	47.11	32.58	32.00	33.00	38.00	44.25	51.00	60.00	29.00
Daily Values	910.72	1037.05	784.38	754.00	789.75	907.50	1039.25	1064.50	1120.00	666.00
Hourly Daily Sum	910.72	1055.28	766.15	738.00	781.25	899.00	1010.75	1106.00	1304.00	660.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	38.88	45.27	32.49	31.80	33.00	37.00	43.00	46.60	53.00	30.00
2	38.29	44.09	32.48	31.80	33.00	37.00	41.00	47.00	50.00	29.00
3	37.82	43.11	32.53	32.00	33.00	37.00	41.00	45.20	49.00	29.00
4	37.65	42.58	32.73	32.00	33.00	37.00	41.00	45.20	47.00	29.00
5	37.55	42.15	32.95	32.00	34.00	36.00	41.00	45.00	47.00	29.00
6	37.39	41.99	32.78	32.00	33.00	37.00	41.00	43.40	47.00	29.00
7	37.20	42.02	32.39	32.00	33.00	37.00	40.00	45.00	46.00	28.00
8	37.33	42.09	32.56	31.00	33.00	38.00	41.00	44.20	46.00	29.00
9	36.80	41.34	32.25	31.80	33.00	37.00	40.00	43.20	46.00	28.00
10	36.90	41.49	32.31	31.00	33.00	37.00	40.00	43.00	46.00	28.00
11	36.90	41.57	32.22	31.80	33.00	36.00	41.00	43.00	46.00	28.00
12	37.27	42.85	31.68	31.00	33.00	37.00	41.00	46.00	49.00	28.00
13	37.76	43.77	31.74	31.80	32.00	37.00	41.00	45.40	52.00	28.00
14	37.55	43.65	31.45	30.80	32.00	37.00	43.00	46.00	51.00	27.00
15	37.78	44.54	31.01	30.80	32.00	36.00	42.00	47.00	55.00	27.00
16	37.82	44.67	30.96	30.80	32.00	36.00	43.00	45.20	61.00	27.00
17	37.88	44.38	31.38	30.80	32.00	37.00	43.00	45.40	55.00	27.00
18	38.08	44.38	31.78	31.00	32.00	37.00	44.00	46.00	52.00	27.00
19	38.59	44.94	32.24	31.80	33.00	39.00	43.00	45.20	53.00	28.00
20	38.88	45.32	32.44	31.60	33.00	39.00	44.00	47.20	53.00	28.00
21	38.88	45.73	32.03	31.80	33.00	38.00	43.00	48.00	54.00	28.00
22	39.59	47.18	32.00	31.80	33.00	38.00	44.00	52.20	60.00	28.00
23	39.10	46.05	32.16	31.80	33.00	38.00	44.00	50.20	56.00	28.00
24	39.57	47.14	32.01	32.00	33.00	38.00	44.00	51.00	58.00	28.00
Daily Values	911.43	1040.03	782.83	772.20	788.00	892.00	1003.00	1092.00	1170.00	684.00
Hourly Daily Sum	911.43	1052.28	770.58	757.00	787.00	893.00	1009.00	1105.60	1232.00	675.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.9-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87012

11.3.10. 87014 CO HQ Building

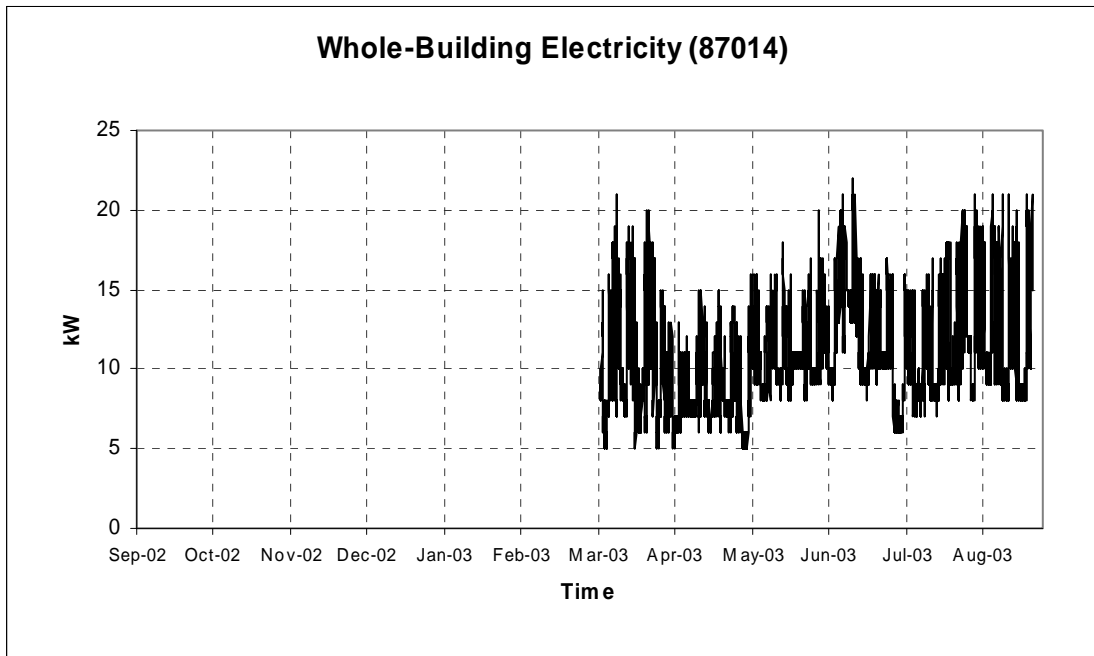
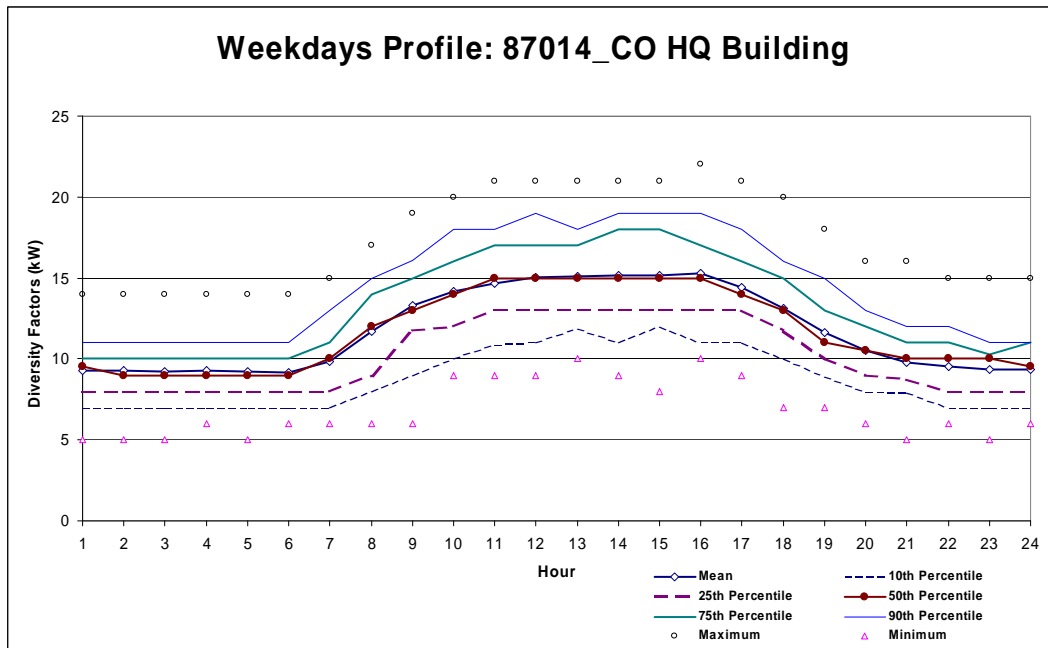
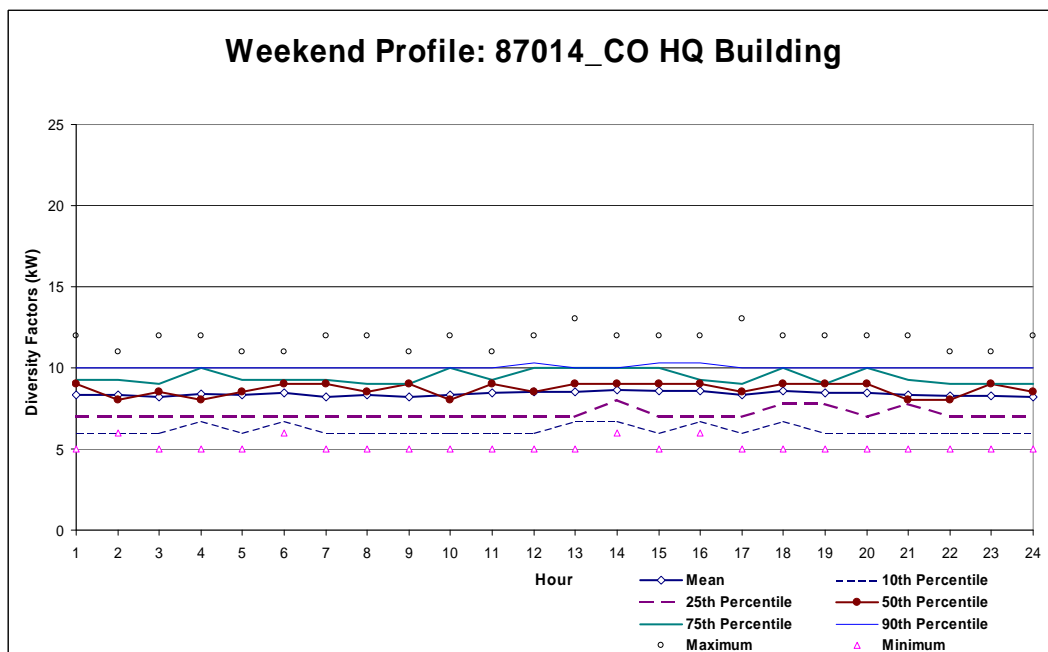


Figure 11.3.10-1: Building #87014 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 05/26/03 and 07/04/03.



* The dates that are excluded from the weekend profile are as follow: 06/14/03, 06/15/03 and 07/05/03.

Figure 11.3.10-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87014

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	9.31	11.01	7.60	7.00	8.00	9.50	10.00	11.00	14.00	5.00
2	9.26	11.04	7.47	7.00	8.00	9.00	10.00	11.00	14.00	5.00
3	9.20	10.91	7.49	7.00	8.00	9.00	10.00	11.00	14.00	5.00
4	9.27	11.01	7.52	7.00	8.00	9.00	10.00	11.00	14.00	6.00
5	9.19	10.90	7.48	7.00	8.00	9.00	10.00	11.00	14.00	5.00
6	9.18	10.86	7.49	7.00	8.00	9.00	10.00	11.00	14.00	6.00
7	9.87	11.96	7.78	7.00	8.00	10.00	11.00	13.00	15.00	6.00
8	11.68	14.46	8.90	8.00	9.00	12.00	14.00	15.00	17.00	6.00
9	13.29	16.00	10.58	9.00	11.75	13.00	15.00	16.10	19.00	6.00
10	14.18	16.93	11.42	10.00	12.00	14.00	16.00	18.00	20.00	9.00
11	14.67	17.51	11.83	10.90	13.00	15.00	17.00	18.00	21.00	9.00
12	15.03	17.61	12.46	11.00	13.00	15.00	17.00	19.00	21.00	9.00
13	15.09	17.64	12.54	11.90	13.00	15.00	17.00	18.00	21.00	10.00
14	15.15	18.15	12.15	11.00	13.00	15.00	18.00	19.00	21.00	9.00
15	15.19	18.07	12.32	12.00	13.00	15.00	18.00	19.00	21.00	8.00
16	15.28	18.11	12.44	11.00	13.00	15.00	17.00	19.00	22.00	10.00
17	14.43	17.11	11.76	11.00	13.00	14.00	16.00	18.00	21.00	9.00
18	13.09	15.58	10.61	10.00	11.75	13.00	15.00	16.00	20.00	7.00
19	11.62	14.09	9.14	8.90	10.00	11.00	13.00	15.00	18.00	7.00
20	10.53	12.68	8.39	8.00	9.00	10.50	12.00	13.00	16.00	6.00
21	9.80	11.70	7.90	7.90	8.75	10.00	11.00	12.00	16.00	5.00
22	9.51	11.32	7.69	7.00	8.00	10.00	11.00	12.00	15.00	6.00
23	9.37	11.16	7.57	7.00	8.00	10.00	10.25	11.00	15.00	5.00
24	9.36	11.21	7.50	7.00	8.00	9.50	11.00	11.00	15.00	6.00
Daily Values	282.53	326.59	238.47	213.00	256.75	287.50	309.25	336.20	396.00	192.00
Hourly Daily Sum	282.53	337.04	228.03	210.60	243.25	281.50	319.25	348.10	418.00	165.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	8.35	9.96	6.75	6.00	7.00	9.00	9.25	10.00	12.00	5.00
2	8.35	9.85	6.86	6.00	7.00	8.00	9.25	10.00	11.00	6.00
3	8.19	9.74	6.63	6.00	7.00	8.50	9.00	10.00	12.00	5.00
4	8.38	9.97	6.78	6.70	7.00	8.00	10.00	10.00	12.00	5.00
5	8.31	9.93	6.70	6.00	7.00	8.50	9.25	10.00	11.00	5.00
6	8.44	9.84	7.04	6.70	7.00	9.00	9.25	10.00	11.00	6.00
7	8.23	9.96	6.50	6.00	7.00	9.00	9.25	10.00	12.00	5.00
8	8.33	9.90	6.77	6.00	7.00	8.50	9.00	10.00	12.00	5.00
9	8.23	9.84	6.61	6.00	7.00	9.00	9.00	10.00	11.00	5.00
10	8.35	9.89	6.82	6.00	7.00	8.00	10.00	10.00	12.00	5.00
11	8.44	9.97	6.91	6.00	7.00	9.00	9.25	10.00	11.00	5.00
12	8.54	10.20	6.88	6.00	7.00	8.50	10.00	10.30	12.00	5.00
13	8.50	10.12	6.88	6.70	7.00	9.00	10.00	10.00	13.00	5.00
14	8.67	10.12	7.22	6.70	8.00	9.00	10.00	10.00	12.00	6.00
15	8.60	10.31	6.89	6.00	7.00	9.00	10.00	10.30	12.00	5.00
16	8.56	10.08	7.05	6.70	7.00	9.00	9.25	10.30	12.00	6.00
17	8.31	9.94	6.69	6.00	7.00	8.50	9.00	10.00	13.00	5.00
18	8.56	10.15	6.98	6.70	7.75	9.00	10.00	10.00	12.00	5.00
19	8.44	9.98	6.90	6.00	7.75	9.00	9.00	10.00	12.00	5.00
20	8.48	10.02	6.94	6.00	7.00	9.00	10.00	10.00	12.00	5.00
21	8.35	9.86	6.85	6.00	7.75	8.00	9.25	10.00	12.00	5.00
22	8.25	9.66	6.84	6.00	7.00	8.00	9.00	10.00	11.00	5.00
23	8.27	9.71	6.83	6.00	7.00	9.00	9.00	10.00	11.00	5.00
24	8.23	9.88	6.58	6.00	7.00	8.50	9.00	10.00	12.00	5.00
Daily Values	201.38	234.93	167.82	156.80	171.75	205.50	225.50	242.30	277.00	133.00
Hourly Daily Sum	201.38	238.87	163.88	148.20	171.25	208.00	226.00	240.90	283.00	124.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.10-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87014

11.3.11. 87015 Enlisted UPH Building

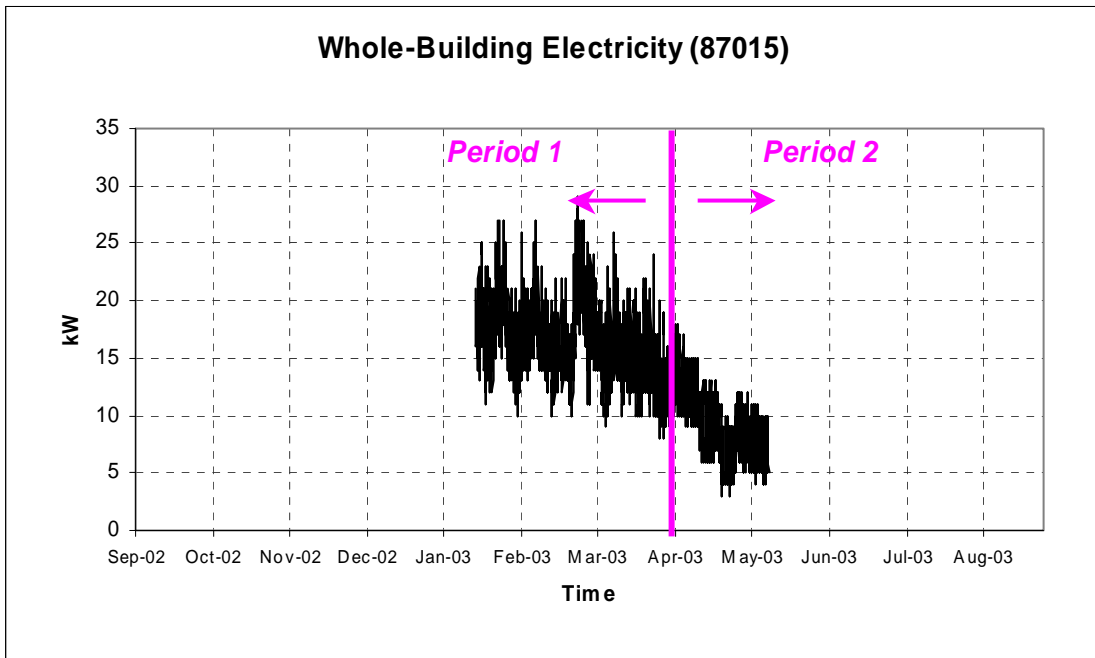


Figure 11.3.11-1: Building #87015 Electricity Usage

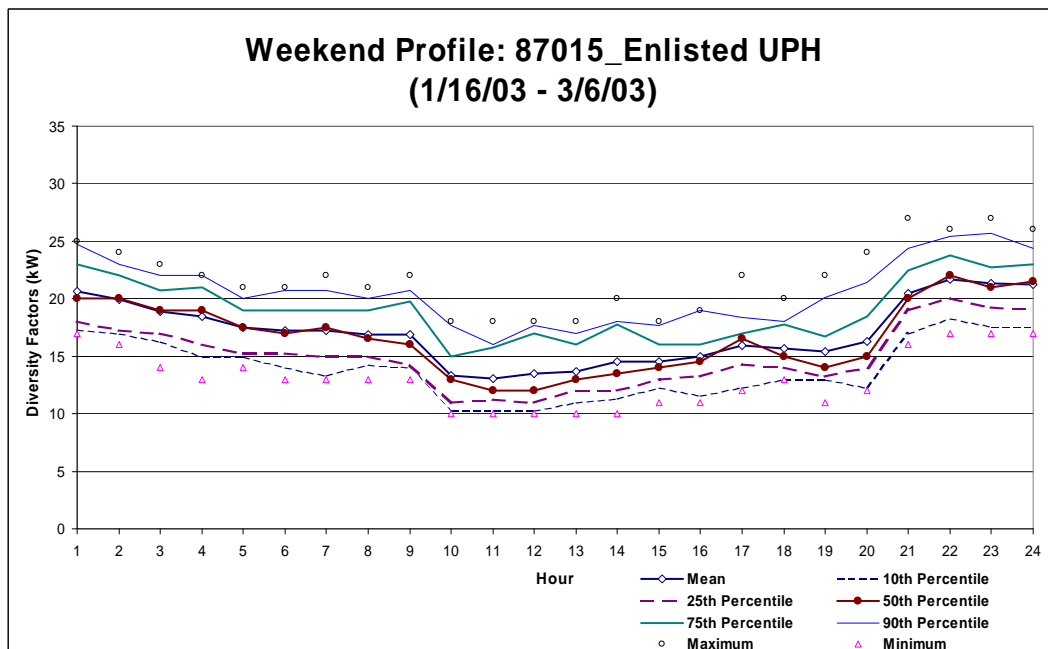
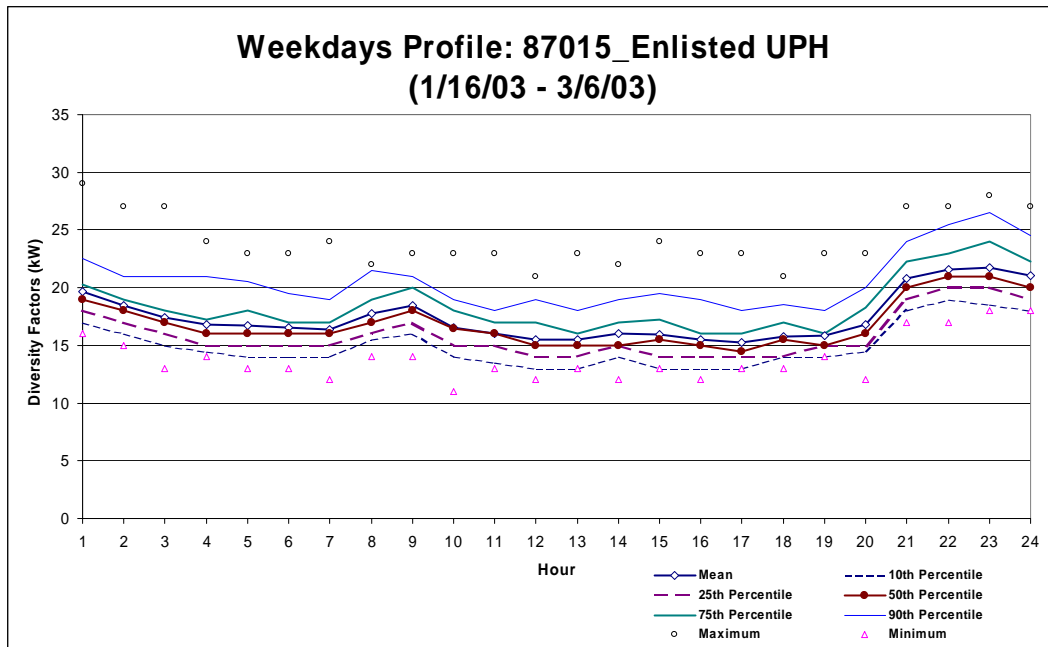


Figure 11.3.11-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87015 in Period 1

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	19.69	22.27	17.12	17.00	18.00	19.00	20.25	22.50	29.00	16.00
2	18.44	20.86	16.02	16.00	17.00	18.00	19.00	21.00	27.00	15.00
3	17.44	20.06	14.83	15.00	16.00	17.00	18.00	21.00	27.00	13.00
4	16.83	19.25	14.41	14.50	15.00	16.00	17.25	21.00	24.00	14.00
5	16.75	19.12	14.38	14.00	15.00	16.00	18.00	20.50	23.00	13.00
6	16.53	18.76	14.29	14.00	15.00	16.00	17.00	19.50	23.00	13.00
7	16.39	18.63	14.14	14.00	15.00	16.00	17.00	19.00	24.00	12.00
8	17.78	20.03	15.52	15.50	16.00	17.00	19.00	21.50	22.00	14.00
9	18.42	20.46	16.37	16.00	17.00	18.00	20.00	21.00	23.00	14.00
10	16.56	18.88	14.23	14.00	15.00	16.50	18.00	19.00	23.00	11.00
11	16.00	18.19	13.81	13.50	15.00	16.00	17.00	18.00	23.00	13.00
12	15.53	17.79	13.27	13.00	14.00	15.00	17.00	19.00	21.00	12.00
13	15.50	17.81	13.19	13.00	14.00	15.00	16.00	18.00	23.00	13.00
14	16.03	18.31	13.74	14.00	15.00	15.00	17.00	19.00	22.00	12.00
15	15.94	18.58	13.30	13.00	14.00	15.50	17.25	19.50	24.00	13.00
16	15.47	18.16	12.78	13.00	14.00	15.00	16.00	19.00	23.00	12.00
17	15.22	17.58	12.87	13.00	14.00	14.50	16.00	18.00	23.00	13.00
18	15.78	17.84	13.72	14.00	14.00	15.50	17.00	18.50	21.00	13.00
19	15.86	17.83	13.89	14.00	15.00	15.00	16.00	18.00	23.00	14.00
20	16.81	19.31	14.30	14.50	15.00	16.00	18.25	20.00	23.00	12.00
21	20.81	23.33	18.28	18.00	19.00	20.00	22.25	24.00	27.00	17.00
22	21.61	24.25	18.97	19.00	20.00	21.00	23.00	25.50	27.00	17.00
23	21.75	24.59	18.91	18.50	20.00	21.00	24.00	26.50	28.00	18.00
24	21.03	23.49	18.56	18.00	19.00	20.00	22.25	24.50	27.00	18.00
Daily Values	418.17	465.34	371.00	375.00	388.75	405.50	431.25	498.00	548.00	363.00
Hourly Daily Sum	418.17	475.42	360.91	358.50	381.00	404.00	442.50	493.50	580.00	332.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	20.64	23.54	17.74	17.30	18.00	20.00	23.00	24.70	25.00	17.00
2	19.93	22.57	17.28	17.00	17.25	20.00	22.00	23.00	24.00	16.00
3	18.93	21.54	16.31	16.30	17.00	19.00	20.75	22.00	23.00	14.00
4	18.50	21.53	15.47	15.00	16.00	19.00	21.00	22.00	22.00	13.00
5	17.50	19.74	15.26	15.00	15.25	17.50	19.00	20.00	21.00	14.00
6	17.21	19.91	14.52	14.00	15.25	17.00	19.00	20.70	21.00	13.00
7	17.21	20.10	14.33	13.30	15.00	17.50	19.00	20.70	22.00	13.00
8	16.93	19.48	14.37	14.30	15.00	16.50	19.00	20.00	21.00	13.00
9	16.86	19.84	13.87	14.00	14.25	16.00	19.75	20.70	22.00	13.00
10	13.36	16.23	10.49	10.30	11.00	13.00	15.00	17.70	18.00	10.00
11	13.07	15.66	10.49	10.30	11.25	12.00	15.75	16.00	18.00	10.00
12	13.50	16.63	10.37	10.30	11.00	12.00	17.00	17.70	18.00	10.00
13	13.64	16.26	11.02	11.00	12.00	13.00	16.00	17.00	18.00	10.00
14	14.57	17.85	11.30	11.30	12.00	13.50	17.75	18.00	20.00	10.00
15	14.57	16.75	12.40	12.30	13.00	14.00	16.00	17.70	18.00	11.00
16	15.00	17.69	12.31	11.60	13.25	14.50	16.00	19.00	19.00	11.00
17	15.93	18.66	13.20	12.30	14.25	16.50	17.00	18.40	22.00	12.00
18	15.64	17.88	13.40	13.00	14.00	15.00	17.75	18.00	20.00	13.00
19	15.43	18.58	12.27	13.00	13.25	14.00	16.75	20.10	22.00	11.00
20	16.29	20.04	12.54	12.30	14.00	15.00	18.50	21.40	24.00	12.00
21	20.43	23.56	17.30	17.00	19.00	20.00	22.50	24.40	27.00	16.00
22	21.71	24.47	18.96	18.30	20.00	22.00	23.75	25.40	26.00	17.00
23	21.36	24.44	18.28	17.60	19.25	21.00	22.75	25.70	27.00	17.00
24	21.21	23.96	18.46	17.60	19.00	21.50	23.00	24.40	26.00	17.00
Daily Values	409.43	467.97	350.88	345.40	357.50	398.00	463.25	484.70	501.00	328.00
Hourly Daily Sum	409.43	476.92	341.93	334.40	359.25	399.50	458.00	494.70	524.00	313.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.11-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87015 in Period 1

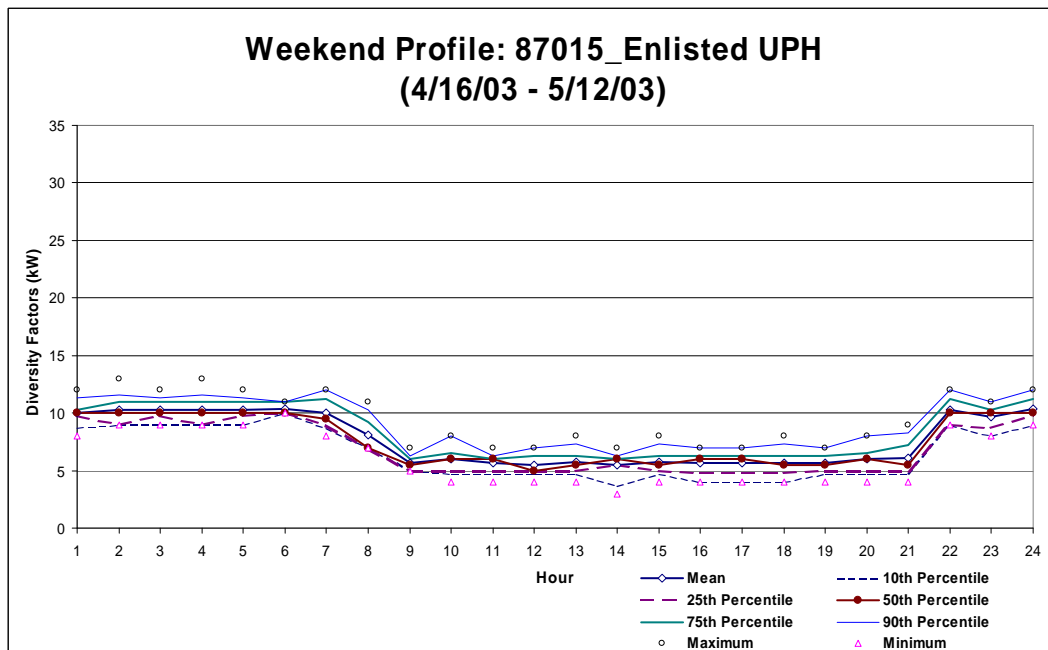
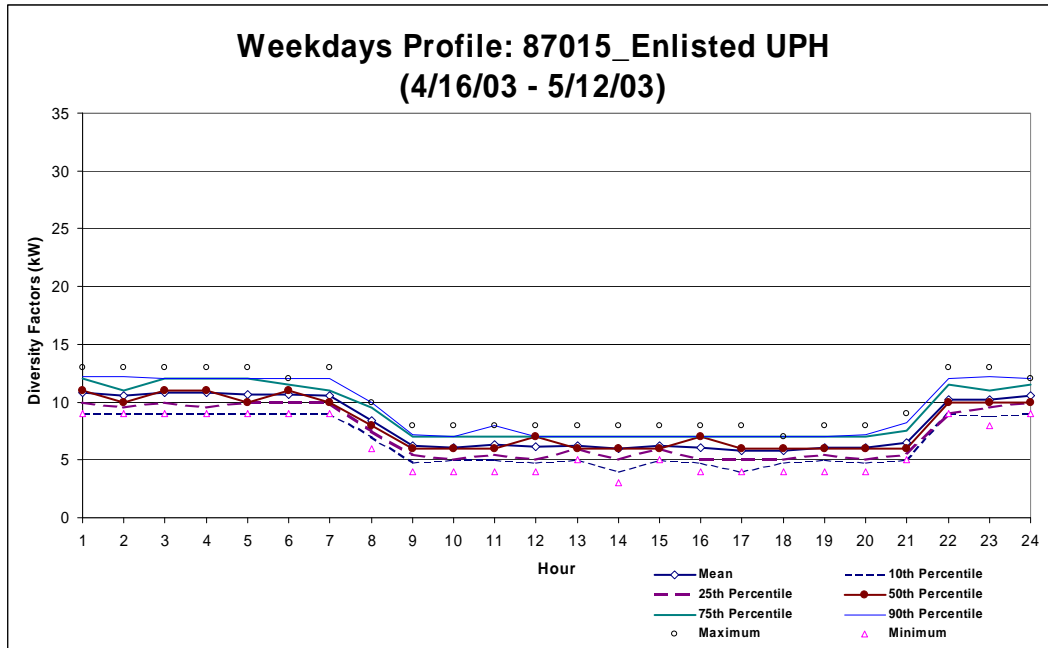


Figure 11.3.11-3: 24-hour weekday, weekend profiles for whole-building electricity use for #87015 in Period 2

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	10.84	12.14	9.54	9.00	10.00	11.00	12.00	12.20	13.00	9.00
2	10.53	11.83	9.22	9.00	9.50	10.00	11.00	12.20	13.00	9.00
3	10.79	11.97	9.61	9.00	10.00	11.00	12.00	12.00	13.00	9.00
4	10.79	12.11	9.47	9.00	9.50	11.00	12.00	12.00	13.00	9.00
5	10.63	11.89	9.38	9.00	10.00	10.00	12.00	12.00	13.00	9.00
6	10.68	11.74	9.63	9.00	10.00	11.00	11.50	12.00	12.00	9.00
7	10.53	11.65	9.40	9.00	10.00	10.00	11.00	12.00	13.00	9.00
8	8.42	9.68	7.16	7.00	7.50	8.00	9.50	10.00	10.00	6.00
9	6.21	7.39	5.03	4.80	5.50	6.00	7.00	7.20	8.00	4.00
10	6.11	7.15	5.06	5.00	5.00	6.00	7.00	7.00	8.00	4.00
11	6.32	7.47	5.16	5.00	5.50	6.00	7.00	8.00	8.00	4.00
12	6.16	7.33	4.99	4.80	5.00	7.00	7.00	7.00	8.00	4.00
13	6.21	7.07	5.36	5.00	6.00	6.00	7.00	7.00	8.00	5.00
14	5.95	7.30	4.59	4.00	5.00	6.00	7.00	7.00	8.00	3.00
15	6.26	7.14	5.39	5.00	6.00	6.00	7.00	7.00	8.00	5.00
16	6.11	7.30	4.91	4.80	5.00	7.00	7.00	7.00	8.00	4.00
17	5.84	7.01	4.67	4.00	5.00	6.00	7.00	7.00	8.00	4.00
18	5.84	6.91	4.77	4.80	5.00	6.00	7.00	7.00	7.00	4.00
19	6.05	7.02	5.08	5.00	5.50	6.00	7.00	7.00	8.00	4.00
20	6.05	7.28	4.83	4.80	5.00	6.00	7.00	7.20	8.00	4.00
21	6.53	7.87	5.18	5.00	5.50	6.00	7.50	8.20	9.00	5.00
22	10.26	11.63	8.90	9.00	9.00	10.00	11.50	12.00	13.00	9.00
23	10.26	11.67	8.86	8.80	9.50	10.00	11.00	12.20	13.00	8.00
24	10.58	11.65	9.51	9.00	10.00	10.00	11.50	12.00	12.00	9.00
Daily Values	193.95	217.73	170.16	167.00	174.00	198.00	213.50	222.40	232.00	155.00
Hourly Daily Sum	193.95	222.21	165.69	158.80	174.00	192.00	216.50	224.20	242.00	149.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	10.00	11.20	8.80	8.70	9.75	10.00	10.25	11.30	12.00	8.00
2	10.25	11.64	8.86	9.00	9.00	10.00	11.00	11.60	13.00	9.00
3	10.25	11.29	9.21	9.00	9.75	10.00	11.00	11.30	12.00	9.00
4	10.25	11.64	8.86	9.00	9.00	10.00	11.00	11.60	13.00	9.00
5	10.25	11.29	9.21	9.00	9.75	10.00	11.00	11.30	12.00	9.00
6	10.38	10.89	9.86	10.00	10.00	10.00	11.00	11.00	11.00	10.00
7	10.00	11.51	8.49	8.70	9.00	9.50	11.25	12.00	12.00	8.00
8	8.13	9.77	6.48	7.00	7.00	7.00	9.25	10.30	11.00	7.00
9	5.63	6.37	4.88	5.00	5.00	5.50	6.00	6.30	7.00	5.00
10	6.00	7.41	4.59	4.70	5.00	6.00	6.50	8.00	8.00	4.00
11	5.63	6.54	4.71	4.70	5.00	6.00	6.00	6.30	7.00	4.00
12	5.50	6.57	4.43	4.70	5.00	5.00	6.25	7.00	7.00	4.00
13	5.75	7.03	4.47	4.70	5.00	5.50	6.25	7.30	8.00	4.00
14	5.50	6.81	4.19	3.70	5.50	6.00	6.00	6.30	7.00	3.00
15	5.75	7.03	4.47	4.70	5.00	5.50	6.25	7.30	8.00	4.00
16	5.63	6.81	4.44	4.00	4.75	6.00	6.25	7.00	7.00	4.00
17	5.63	6.81	4.44	4.00	4.75	6.00	6.25	7.00	7.00	4.00
18	5.63	7.03	4.22	4.00	4.75	5.50	6.25	7.30	8.00	4.00
19	5.63	6.69	4.56	4.70	5.00	5.50	6.25	7.00	7.00	4.00
20	6.00	7.41	4.59	4.70	5.00	6.00	6.50	8.00	8.00	4.00
21	6.13	7.85	4.40	4.70	5.00	5.50	7.25	8.30	9.00	4.00
22	10.25	11.53	8.97	9.00	9.00	10.00	11.25	12.00	12.00	9.00
23	9.63	10.81	8.44	8.00	8.75	10.00	10.25	11.00	11.00	8.00
24	10.38	11.56	9.19	9.00	9.75	10.00	11.25	12.00	12.00	9.00
Daily Values	184.13	210.63	157.62	154.50	168.00	181.00	197.25	218.70	225.00	151.00
Hourly Daily Sum	184.13	213.50	154.75	154.70	165.50	180.50	200.50	218.50	229.00	147.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.11-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87015 in Period 2

11.3.12. 87016 CO HQ Building

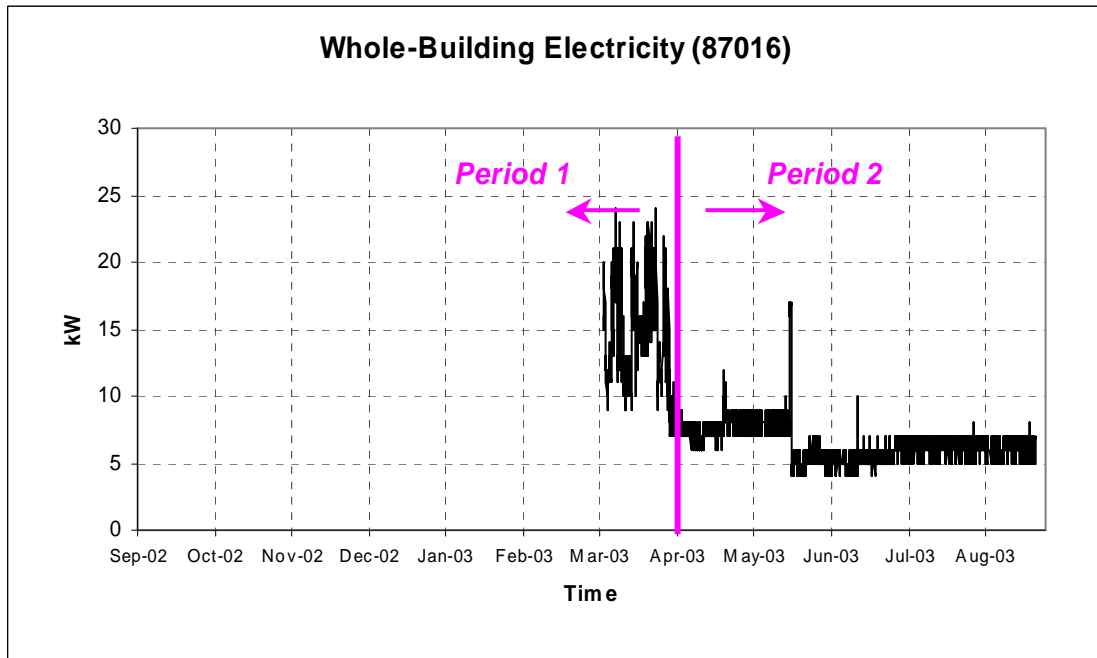
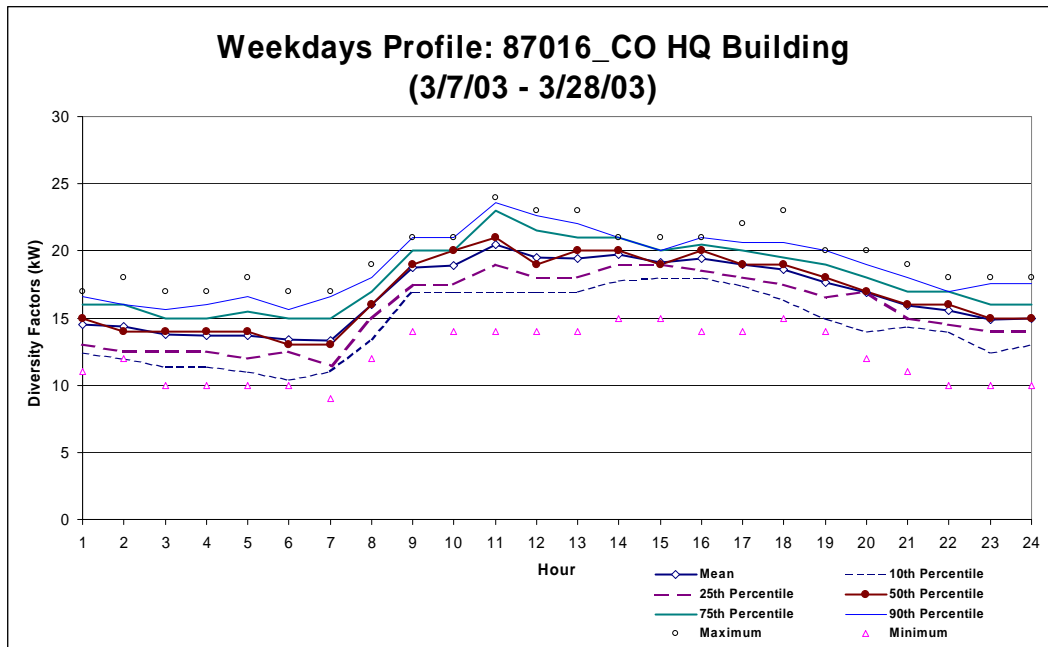


Figure 11.3.12-1: Building #87016 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 03/17/03.

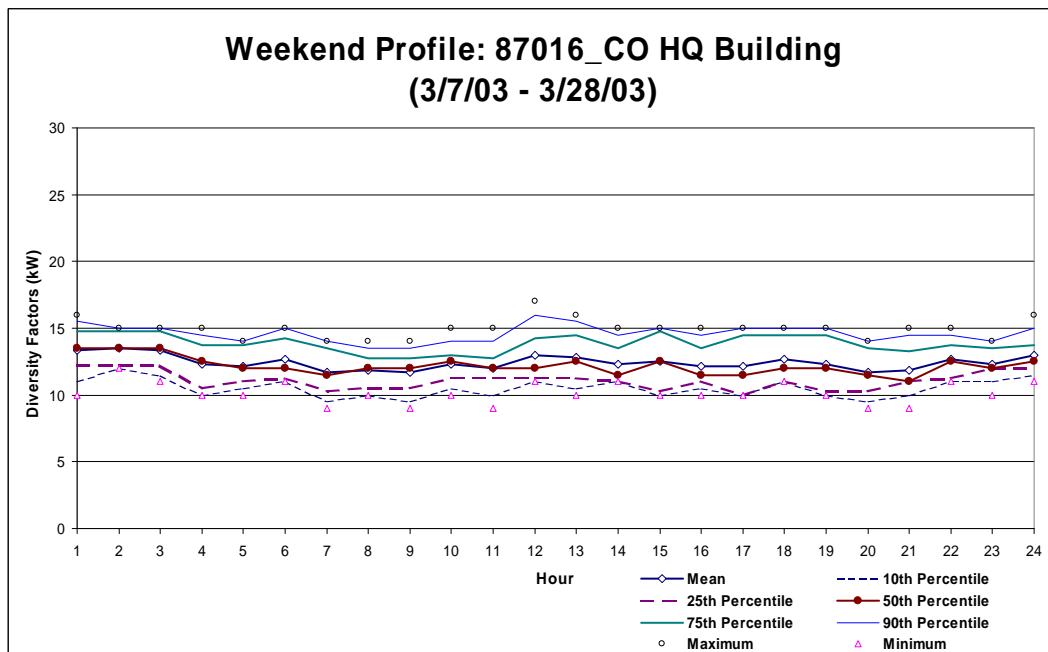


Figure 11.3.12-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87016 in Period 1

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	14.53	16.38	12.69	12.40	13.00	15.00	16.00	16.60	17.00	11.00
2	14.33	16.21	12.46	12.00	12.50	14.00	14.00	16.00	18.00	12.00
3	13.80	15.73	11.87	11.40	12.50	14.00	15.00	15.60	17.00	10.00
4	13.67	15.62	11.71	11.40	12.50	14.00	15.00	16.00	17.00	10.00
5	13.73	16.08	11.39	11.00	12.00	14.00	15.50	16.60	18.00	10.00
6	13.40	15.46	11.34	10.40	12.50	13.00	15.00	15.60	17.00	10.00
7	13.33	15.68	10.98	11.00	11.50	13.00	15.00	16.60	17.00	9.00
8	16.00	17.93	14.07	13.40	15.00	16.00	17.00	18.00	19.00	12.00
9	18.73	20.68	16.79	17.00	17.50	19.00	20.00	21.00	21.00	14.00
10	18.93	20.91	16.95	17.00	17.50	20.00	20.00	21.00	21.00	14.00
11	20.47	23.39	17.54	17.00	19.00	21.00	23.00	23.60	24.00	14.00
12	19.47	21.97	16.96	17.00	18.00	19.00	21.50	22.60	23.00	14.00
13	19.40	21.75	17.05	17.00	18.00	20.00	21.00	22.00	23.00	14.00
14	19.73	21.48	17.98	17.80	19.00	20.00	21.00	21.00	21.00	15.00
15	19.13	20.54	17.73	18.00	19.00	19.00	20.00	20.00	21.00	15.00
16	19.40	21.24	17.56	18.00	18.50	20.00	20.50	21.00	21.00	14.00
17	19.00	20.89	17.11	17.40	18.00	19.00	20.00	20.60	22.00	14.00
18	18.60	20.59	16.61	16.40	17.50	19.00	19.50	20.60	23.00	15.00
19	17.67	19.62	15.71	15.00	16.50	18.00	19.00	20.00	20.00	14.00
20	16.93	19.05	14.81	14.00	17.00	17.00	18.00	19.00	20.00	12.00
21	15.93	17.84	14.03	14.40	15.00	16.00	17.00	18.00	19.00	11.00
22	15.53	17.49	13.57	14.00	14.50	16.00	17.00	17.00	18.00	10.00
23	14.87	17.03	12.70	12.40	14.00	15.00	16.00	17.60	18.00	10.00
24	15.00	17.10	12.90	13.00	14.00	15.00	16.00	17.60	18.00	10.00
Daily Values	401.60	430.33	372.87	369.00	387.50	404.00	423.00	428.60	447.00	336.00
Hourly Daily Sum	401.60	450.70	352.50	348.40	374.50	406.00	434.00	453.60	473.00	294.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

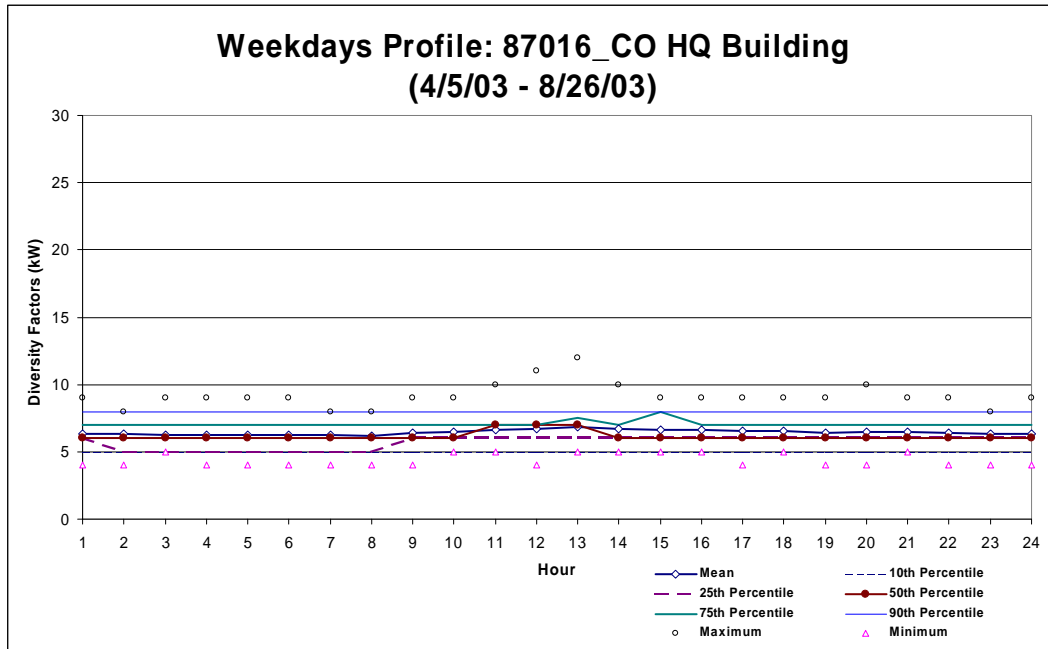
WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	13.33	15.49	11.17	11.00	12.25	13.50	14.75	15.50	16.00	10.00
2	13.50	14.88	12.12	12.00	12.25	13.50	14.75	15.00	15.00	12.00
3	13.33	14.97	11.70	11.50	12.25	13.50	14.75	15.00	15.00	11.00
4	12.33	14.40	10.27	10.00	10.50	12.50	13.75	14.50	15.00	10.00
5	12.17	13.89	10.44	10.50	11.00	12.00	13.75	14.00	14.00	10.00
6	12.67	14.53	10.80	11.00	11.25	12.00	14.25	15.00	15.00	11.00
7	11.67	13.73	9.60	9.50	10.25	11.50	13.50	14.00	14.00	9.00
8	11.83	13.44	10.23	10.00	10.50	12.00	12.75	13.50	14.00	10.00
9	11.67	13.53	9.80	9.50	10.50	12.00	12.75	13.50	14.00	9.00
10	12.33	14.08	10.58	10.50	11.25	12.50	13.00	14.00	15.00	10.00
11	12.00	14.00	10.00	10.00	11.25	12.00	12.75	14.00	15.00	9.00
12	13.00	15.45	10.55	11.00	11.25	12.00	14.25	16.00	17.00	11.00
13	12.83	15.15	10.52	10.50	11.25	12.50	14.50	15.50	16.00	10.00
14	12.33	14.08	10.58	11.00	11.00	11.50	13.50	14.50	15.00	11.00
15	12.50	14.93	10.07	10.00	10.25	12.50	14.75	15.00	15.00	10.00
16	12.17	14.11	10.23	10.50	11.00	11.50	13.50	14.50	15.00	10.00
17	12.17	14.65	9.68	10.00	10.00	11.50	14.50	15.00	15.00	10.00
18	12.67	14.63	10.70	11.00	11.00	12.00	14.50	15.00	15.00	11.00
19	12.33	14.67	10.00	10.00	10.25	12.00	14.50	15.00	15.00	10.00
20	11.67	13.73	9.60	9.50	10.25	11.50	13.50	14.00	14.00	9.00
21	11.83	14.06	9.60	10.00	11.00	11.00	13.25	14.50	15.00	9.00
22	12.67	14.30	11.03	11.00	11.25	12.50	13.75	14.50	15.00	11.00
23	12.33	13.84	10.83	11.00	12.00	12.00	13.50	14.00	14.00	10.00
24	13.00	14.79	11.21	11.50	12.00	12.50	13.75	15.00	16.00	11.00
Daily Values	298.33	338.30	258.37	265.00	274.50	281.50	329.75	348.50	352.00	257.00
Hourly Daily Sum	298.33	345.33	251.33	252.50	265.75	292.00	332.50	350.50	359.00	244.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.12-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87016 in Period 1



* The dates that are excluded from the weekday profile are as follow: 05/21/03, 05/26/03 and 07/04/03.

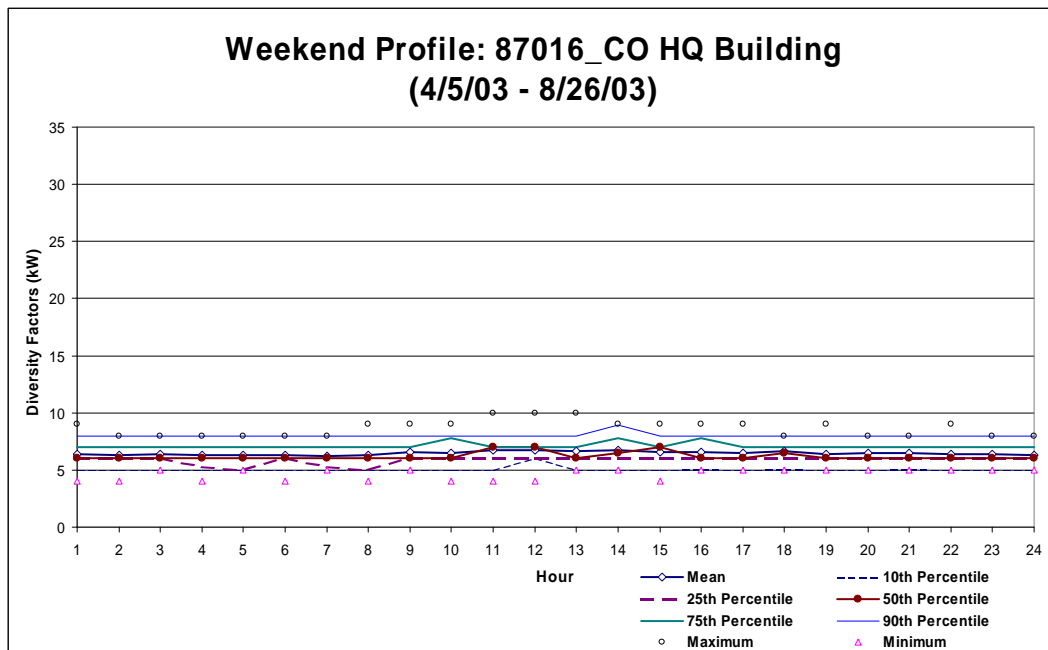


Figure 11.3.12-3: 24-hour weekday, weekend profiles for whole-building electricity use for #87016 in Period 2

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	6.36	7.52	5.21	5.00	6.00	6.00	7.00	8.00	9.00	4.00
2	6.30	7.41	5.19	5.00	5.00	6.00	7.00	8.00	8.00	4.00
3	6.24	7.38	5.11	5.00	5.00	6.00	7.00	8.00	9.00	5.00
4	6.25	7.37	5.13	5.00	5.00	6.00	7.00	8.00	9.00	4.00
5	6.26	7.37	5.15	5.00	5.00	6.00	7.00	8.00	9.00	4.00
6	6.28	7.47	5.10	5.00	5.00	6.00	7.00	8.00	9.00	4.00
7	6.22	7.28	5.17	5.00	5.00	6.00	7.00	8.00	8.00	4.00
8	6.19	7.25	5.14	5.00	5.00	6.00	7.00	8.00	8.00	4.00
9	6.37	7.54	5.21	5.00	6.00	6.00	7.00	8.00	9.00	4.00
10	6.49	7.51	5.48	5.00	6.00	6.00	7.00	8.00	9.00	5.00
11	6.66	7.83	5.49	5.00	6.00	7.00	7.00	8.00	10.00	5.00
12	6.68	7.86	5.49	5.00	6.00	7.00	7.00	8.00	11.00	4.00
13	6.83	8.00	5.66	5.00	6.00	7.00	7.50	8.00	12.00	5.00
14	6.67	7.77	5.56	5.00	6.00	6.00	7.00	8.00	10.00	5.00
15	6.62	7.69	5.54	5.00	6.00	6.00	8.00	8.00	9.00	5.00
16	6.63	7.74	5.51	5.00	6.00	6.00	7.00	8.00	9.00	5.00
17	6.53	7.67	5.38	5.00	6.00	6.00	7.00	8.00	9.00	4.00
18	6.52	7.60	5.43	5.00	6.00	6.00	7.00	8.00	9.00	5.00
19	6.43	7.52	5.34	5.00	6.00	6.00	7.00	8.00	9.00	4.00
20	6.44	7.61	5.28	5.00	6.00	6.00	7.00	8.00	10.00	4.00
21	6.48	7.55	5.42	5.00	6.00	6.00	7.00	8.00	9.00	5.00
22	6.38	7.45	5.32	5.00	6.00	6.00	7.00	8.00	9.00	4.00
23	6.33	7.41	5.25	5.00	6.00	6.00	7.00	8.00	8.00	4.00
24	6.30	7.41	5.19	5.00	6.00	6.00	7.00	8.00	9.00	4.00
Daily Values	154.48	178.39	130.58	123.80	137.00	148.00	175.00	192.00	203.00	118.00
Hourly Daily Sum	154.48	181.21	127.76	120.00	137.00	147.00	169.50	192.00	220.00	105.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	6.40	7.55	5.26	5.00	6.00	6.00	7.00	8.00	9.00	4.00
2	6.29	7.37	5.20	5.00	6.00	6.00	7.00	8.00	8.00	4.00
3	6.36	7.44	5.28	5.00	6.00	6.00	7.00	8.00	8.00	5.00
4	6.31	7.49	5.13	5.00	5.25	6.00	7.00	8.00	8.00	4.00
5	6.29	7.42	5.15	5.00	5.00	6.00	7.00	8.00	8.00	5.00
6	6.26	7.30	5.22	5.00	6.00	6.00	7.00	8.00	8.00	4.00
7	6.24	7.25	5.23	5.00	5.25	6.00	7.00	8.00	8.00	5.00
8	6.26	7.51	5.01	5.00	5.00	6.00	7.00	8.00	9.00	4.00
9	6.55	7.59	5.51	5.00	6.00	6.00	7.00	8.00	9.00	5.00
10	6.48	7.65	5.30	5.00	6.00	6.00	7.75	8.00	9.00	4.00
11	6.74	8.03	5.45	5.00	6.00	7.00	7.00	8.00	10.00	4.00
12	6.74	7.78	5.70	6.00	6.00	7.00	7.00	8.00	10.00	4.00
13	6.64	7.87	5.42	5.00	6.00	6.00	7.00	8.00	10.00	5.00
14	6.74	7.97	5.51	5.00	6.00	6.50	7.75	8.90	9.00	5.00
15	6.60	7.68	5.51	5.00	6.00	7.00	7.00	8.00	9.00	4.00
16	6.57	7.68	5.46	5.10	6.00	6.00	7.75	8.00	9.00	5.00
17	6.50	7.65	5.35	5.00	6.00	6.00	7.00	8.00	9.00	5.00
18	6.62	7.61	5.63	5.10	6.00	6.50	7.00	8.00	8.00	5.00
19	6.40	7.47	5.34	5.00	6.00	6.00	7.00	8.00	9.00	5.00
20	6.48	7.52	5.43	5.00	6.00	6.00	7.00	8.00	8.00	5.00
21	6.45	7.39	5.51	5.10	6.00	6.00	7.00	8.00	8.00	5.00
22	6.40	7.55	5.26	5.00	6.00	6.00	7.00	8.00	9.00	5.00
23	6.36	7.39	5.33	5.00	6.00	6.00	7.00	8.00	8.00	5.00
24	6.33	7.41	5.26	5.00	6.00	6.00	7.00	8.00	8.00	5.00
Daily Values	155.00	179.05	130.95	123.30	141.50	148.00	173.75	192.00	194.00	120.00
Hourly Daily Sum	155.00	181.55	128.45	121.30	140.50	148.00	170.25	192.90	208.00	111.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.12-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87016 in Period 2

11.3.13. 87017 dining Facility

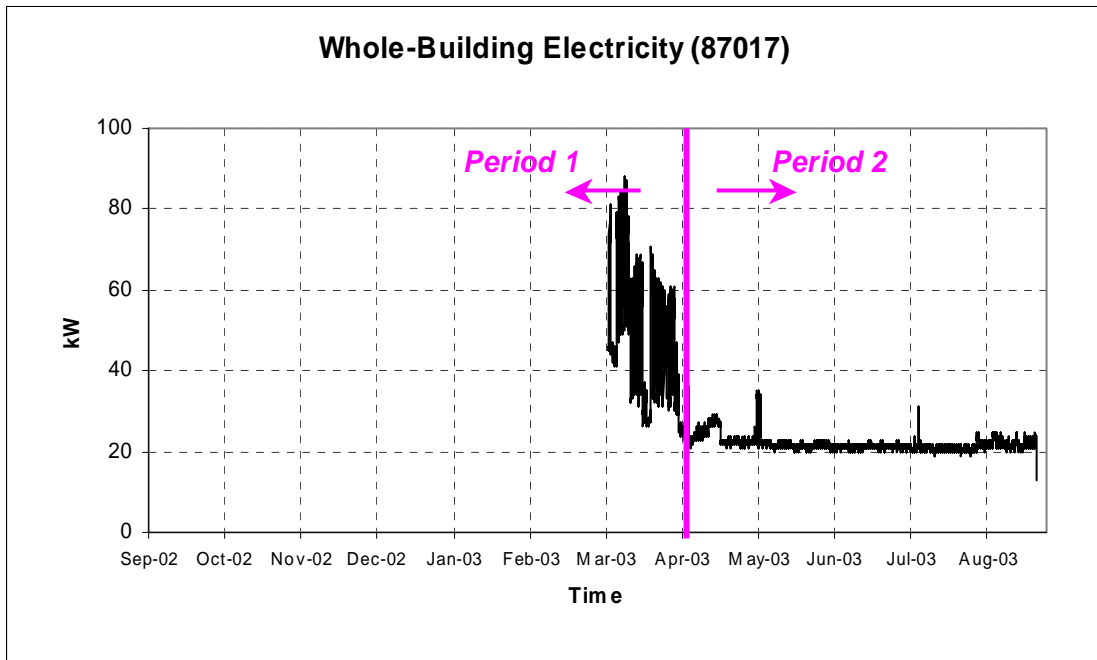
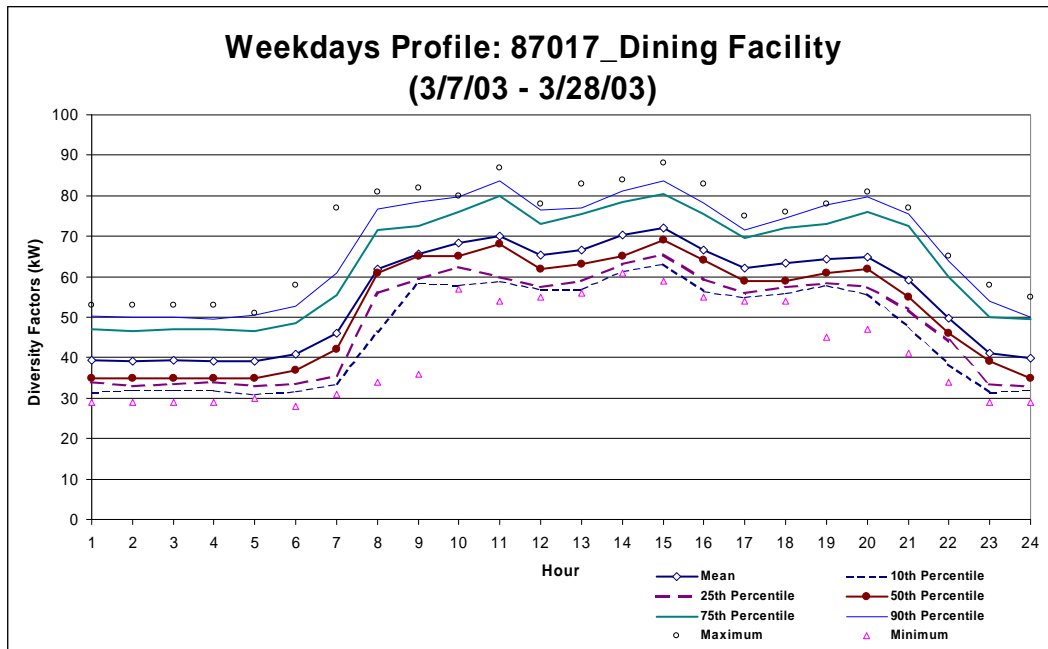


Figure 11.3.13-1: Building #87017 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 03/21/03.

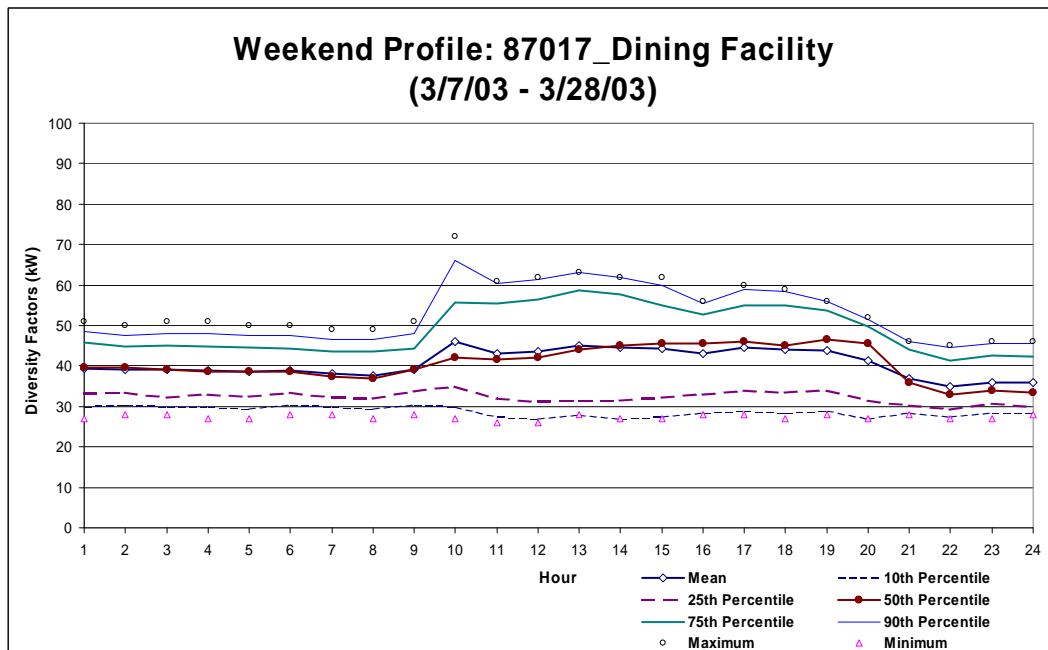


Figure 11.3.13-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87017 in Period 1

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	39.33	47.49	31.18	31.40	34.00	35.00	47.00	50.20	53.00	29.00
2	39.00	47.03	30.97	32.00	33.00	35.00	46.50	50.00	53.00	29.00
3	39.33	47.39	31.27	32.00	33.50	35.00	47.00	50.00	53.00	29.00
4	39.13	47.11	31.15	32.00	34.00	35.00	47.00	49.60	53.00	29.00
5	39.07	46.97	31.16	31.00	33.00	35.00	46.50	50.60	51.00	30.00
6	40.87	50.29	31.44	31.80	33.50	37.00	48.50	52.60	58.00	28.00
7	46.00	59.28	32.72	33.40	35.50	42.00	55.50	61.00	77.00	31.00
8	61.87	74.95	48.78	46.20	56.00	61.00	71.50	76.80	81.00	34.00
9	65.53	76.76	54.30	58.40	59.50	65.00	72.50	78.40	82.00	36.00
10	68.20	76.63	59.77	58.00	62.50	65.00	76.00	79.60	80.00	57.00
11	70.00	80.83	59.17	59.00	60.00	68.00	80.00	83.60	87.00	54.00
12	65.33	73.90	56.77	57.00	57.50	62.00	73.00	76.60	78.00	55.00
13	66.47	75.63	57.30	57.00	59.00	63.00	75.50	77.00	83.00	56.00
14	70.33	78.98	61.68	61.40	63.00	65.00	78.50	81.20	84.00	61.00
15	72.07	81.24	62.89	63.00	65.50	69.00	80.50	83.60	88.00	59.00
16	66.67	75.90	57.43	56.40	59.50	64.00	75.50	78.20	83.00	55.00
17	62.20	69.52	54.88	55.00	56.00	59.00	69.50	71.60	75.00	54.00
18	63.40	71.36	55.44	56.00	57.50	59.00	72.00	74.60	76.00	54.00
19	64.40	73.94	54.86	58.00	58.50	61.00	73.00	77.60	78.00	45.00
20	64.93	75.61	54.26	55.80	57.50	62.00	76.00	79.60	81.00	47.00
21	59.20	71.20	47.20	47.60	52.00	55.00	72.50	75.60	77.00	41.00
22	49.80	60.06	39.54	38.40	44.00	46.00	60.00	63.80	65.00	34.00
23	41.20	50.90	31.50	31.40	33.50	39.00	50.00	54.00	58.00	29.00
24	39.80	48.63	30.97	32.00	33.00	35.00	49.50	50.00	55.00	29.00
Daily Values	1334.13	1534.19	1134.08	1161.80	1184.50	1221.00	1531.50	1615.20	1672.00	1121.00
Hourly Daily Sum	1334.13	1561.62	1106.64	1114.20	1171.00	1252.00	1543.50	1625.80	1709.00	1005.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

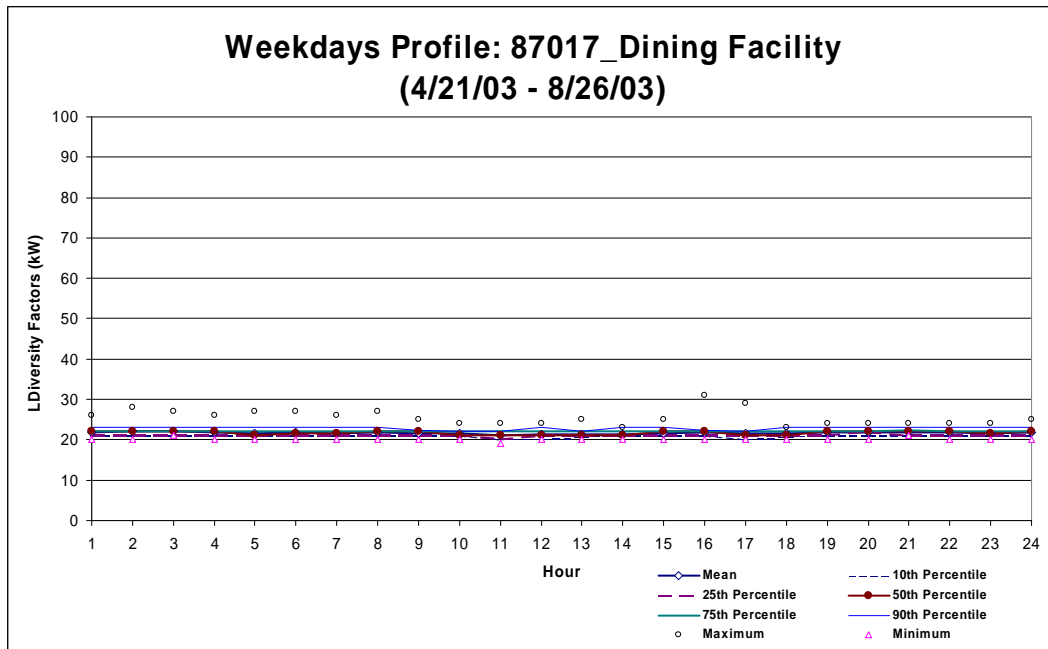
WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	39.33	48.64	30.02	30.00	33.25	39.50	45.75	48.50	51.00	27.00
2	39.17	47.59	30.74	30.50	33.50	39.50	44.75	47.50	50.00	28.00
3	39.00	48.19	29.81	30.00	32.25	39.00	45.00	48.00	51.00	28.00
4	38.83	48.01	29.66	30.00	33.00	38.50	44.75	48.00	51.00	27.00
5	38.50	47.33	29.67	29.50	32.50	38.50	44.50	47.50	50.00	27.00
6	38.83	47.07	30.60	30.50	33.50	38.50	44.25	47.50	50.00	28.00
7	38.00	46.17	29.83	30.00	32.25	37.50	43.50	46.50	49.00	28.00
8	37.67	46.21	29.12	29.50	32.00	37.00	43.50	46.50	49.00	27.00
9	39.17	47.59	30.74	30.50	33.75	39.00	44.25	48.00	51.00	28.00
10	46.00	62.95	29.05	30.00	35.00	42.00	55.75	66.00	72.00	27.00
11	43.17	58.02	28.32	27.50	32.00	41.50	55.50	60.50	61.00	26.00
12	43.50	59.00	28.00	27.00	31.25	42.00	56.50	61.50	62.00	26.00
13	45.00	60.72	29.28	28.00	31.50	44.00	58.75	63.00	63.00	28.00
14	44.67	60.32	29.01	27.00	31.50	45.00	57.75	62.00	62.00	27.00
15	44.33	58.96	29.71	27.50	32.25	45.50	55.00	60.00	62.00	27.00
16	43.17	55.39	30.95	28.50	33.00	45.50	52.75	55.50	56.00	28.00
17	44.67	58.15	31.18	29.00	34.00	46.00	55.00	59.00	60.00	28.00
18	44.00	57.49	30.51	28.50	33.50	45.00	55.00	58.50	59.00	27.00
19	43.83	56.10	31.56	29.00	34.00	46.50	53.75	56.00	56.00	28.00
20	41.33	52.76	29.90	27.00	31.50	45.50	49.75	51.50	52.00	27.00
21	36.83	44.79	28.87	28.50	30.25	36.00	44.00	46.00	46.00	28.00
22	35.00	42.77	27.23	27.50	29.25	33.00	41.25	44.50	45.00	27.00
23	36.00	43.85	28.15	28.50	30.75	34.00	42.50	45.50	46.00	27.00
24	35.83	43.67	28.00	28.50	30.00	33.50	42.25	45.50	46.00	28.00
Daily Values	975.83	1203.07	748.60	697.00	803.75	1066.50	1079.50	1164.00	1248.00	674.00
Hourly Daily Sum	975.83	1241.75	709.92	692.50	775.75	972.00	1175.75	1263.00	1300.00	657.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.13-1: 24-hour weekday, weekend profiles for whole-building electricity use for #87017 in Period 1



* The dates that are excluded from the weekday profile are as follow: 05/06/03, 05/07/03, 05/26/03 and 07/04/03.

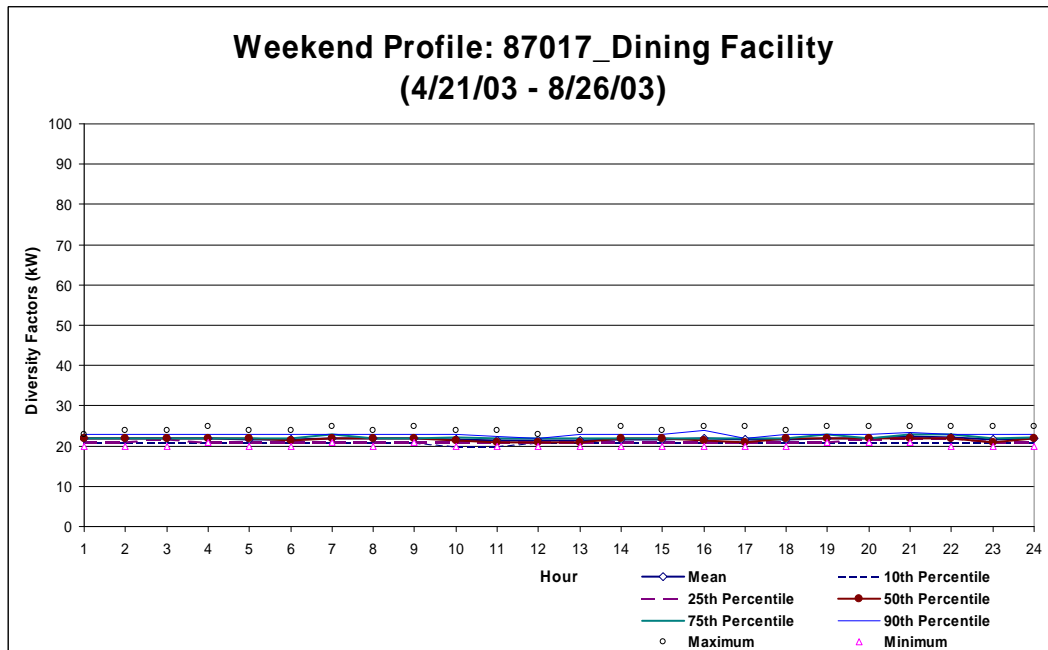


Figure 11.3.13-3: 24-hour weekday, weekend profiles for whole-building electricity use for #87017 in Period 2

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	21.91	22.83	20.99	21.00	21.00	22.00	22.00	23.00	26.00	20.00
2	22.01	23.13	20.89	21.00	21.00	22.00	22.00	23.00	28.00	20.00
3	22.02	22.99	21.05	21.00	21.00	22.00	22.00	23.00	27.00	21.00
4	21.93	22.96	20.91	21.00	21.00	22.00	22.00	23.00	26.00	20.00
5	21.65	22.69	20.61	21.00	21.00	21.00	22.00	23.00	27.00	20.00
6	21.74	22.82	20.66	21.00	21.00	21.50	22.00	23.00	27.00	20.00
7	21.65	22.65	20.64	21.00	21.00	21.50	22.00	23.00	26.00	20.00
8	21.77	22.80	20.75	21.00	21.00	22.00	22.00	23.00	27.00	20.00
9	21.66	22.50	20.82	21.00	21.00	22.00	22.00	22.30	25.00	20.00
10	21.56	22.37	20.74	21.00	21.00	21.00	22.00	22.00	24.00	20.00
11	21.01	21.96	20.06	20.00	20.00	21.00	22.00	22.00	24.00	19.00
12	21.40	22.37	20.42	20.00	21.00	21.00	22.00	23.00	24.00	20.00
13	21.42	22.41	20.43	20.70	21.00	21.00	22.00	22.00	25.00	20.00
14	21.40	22.22	20.57	21.00	21.00	21.00	22.00	23.00	23.00	20.00
15	21.65	22.65	20.64	21.00	21.00	22.00	22.00	23.00	25.00	20.00
16	21.77	23.07	20.48	21.00	21.00	22.00	22.00	22.30	31.00	20.00
17	21.58	22.85	20.30	20.00	21.00	21.00	22.00	22.00	29.00	20.00
18	21.50	22.34	20.66	20.70	21.00	21.00	22.00	23.00	23.00	20.00
19	21.83	22.64	21.02	21.00	21.00	22.00	22.00	23.00	24.00	20.00
20	21.94	22.76	21.12	21.00	21.75	22.00	22.00	23.00	24.00	20.00
21	21.94	22.78	21.11	21.00	21.00	22.00	22.25	23.00	24.00	21.00
22	21.82	22.63	21.01	21.00	21.00	22.00	22.00	23.00	24.00	20.00
23	21.58	22.42	20.74	21.00	21.00	21.50	22.00	23.00	24.00	20.00
24	21.73	22.58	20.87	21.00	21.00	22.00	22.00	23.00	25.00	20.00
Daily Values	520.47	536.16	504.77	503.00	509.00	518.00	529.00	540.60	576.00	495.00
Hourly Daily Sum	520.47	543.44	497.50	500.40	503.75	518.50	528.25	546.60	612.00	481.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	21.89	22.64	21.14	21.00	21.00	22.00	22.00	23.00	23.00	20.00
2	21.86	22.73	20.99	21.00	21.00	22.00	22.00	23.00	24.00	20.00
3	21.97	22.82	21.13	21.00	21.75	22.00	22.00	23.00	24.00	20.00
4	21.92	22.72	21.11	21.00	21.00	22.00	22.00	23.00	25.00	21.00
5	21.72	22.60	20.84	21.00	21.00	22.00	22.00	23.00	24.00	20.00
6	21.69	22.70	20.69	21.00	21.00	21.50	22.00	23.00	24.00	20.00
7	21.97	23.00	20.94	21.00	21.00	22.00	23.00	23.00	25.00	21.00
8	21.86	22.73	20.99	21.00	21.00	22.00	22.00	23.00	24.00	20.00
9	21.94	22.84	21.05	21.00	21.00	22.00	22.00	23.00	25.00	21.00
10	21.64	22.71	20.57	20.00	21.00	21.50	22.25	23.00	24.00	20.00
11	21.36	22.35	20.37	20.00	21.00	21.00	22.00	22.50	24.00	20.00
12	21.39	22.16	20.62	21.00	21.00	21.00	22.00	22.00	23.00	20.00
13	21.50	22.41	20.59	21.00	21.00	21.00	22.00	23.00	24.00	20.00
14	21.72	22.81	20.64	21.00	21.00	22.00	22.00	23.00	25.00	20.00
15	21.75	22.66	20.84	21.00	21.00	22.00	22.00	23.00	24.00	20.00
16	21.78	22.95	20.60	21.00	21.00	21.50	22.00	24.00	25.00	20.00
17	21.56	22.46	20.65	21.00	21.00	21.00	22.00	22.00	25.00	20.00
18	21.75	22.77	20.73	21.00	21.00	22.00	22.00	23.00	24.00	20.00
19	22.00	23.07	20.93	21.00	21.00	22.00	23.00	23.00	25.00	21.00
20	22.00	22.86	21.14	21.00	21.75	22.00	22.00	23.00	25.00	21.00
21	22.31	23.37	21.24	21.00	22.00	22.00	23.00	23.50	25.00	21.00
22	22.17	23.08	21.26	21.00	22.00	22.00	23.00	23.00	25.00	20.00
23	21.61	22.55	20.68	21.00	21.00	21.00	22.00	23.00	25.00	20.00
24	21.94	22.98	20.90	21.00	21.00	22.00	22.25	23.00	25.00	20.00
Daily Values	523.31	539.78	506.83	504.50	510.00	521.50	531.75	543.00	576.00	497.00
Hourly Daily Sum	523.31	545.97	500.64	502.00	507.50	521.50	532.50	551.00	586.00	486.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.13-2: 24-hour weekday, weekend profiles for whole-building electricity use for #87017 in Period 2

11.3.14. 194 NCO Club (Phantom Warrior Club)

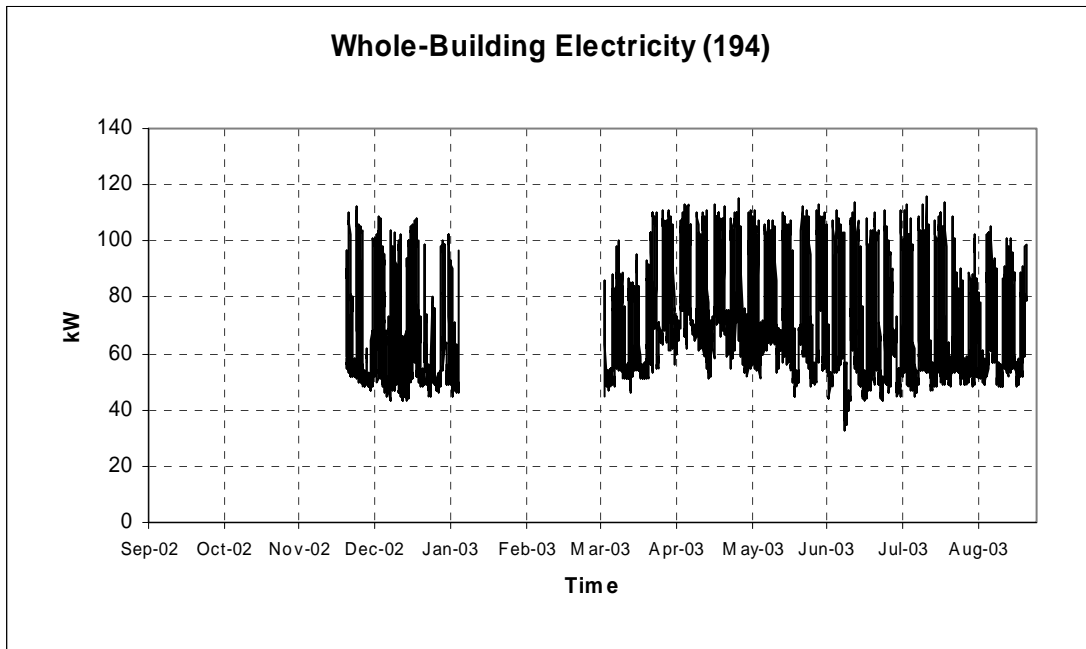
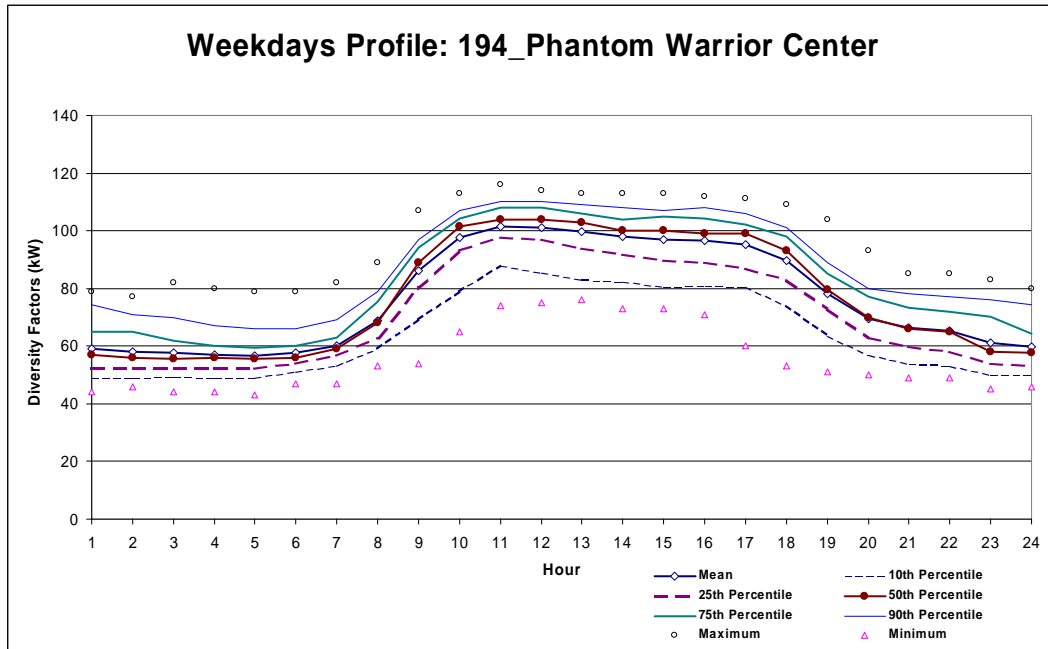
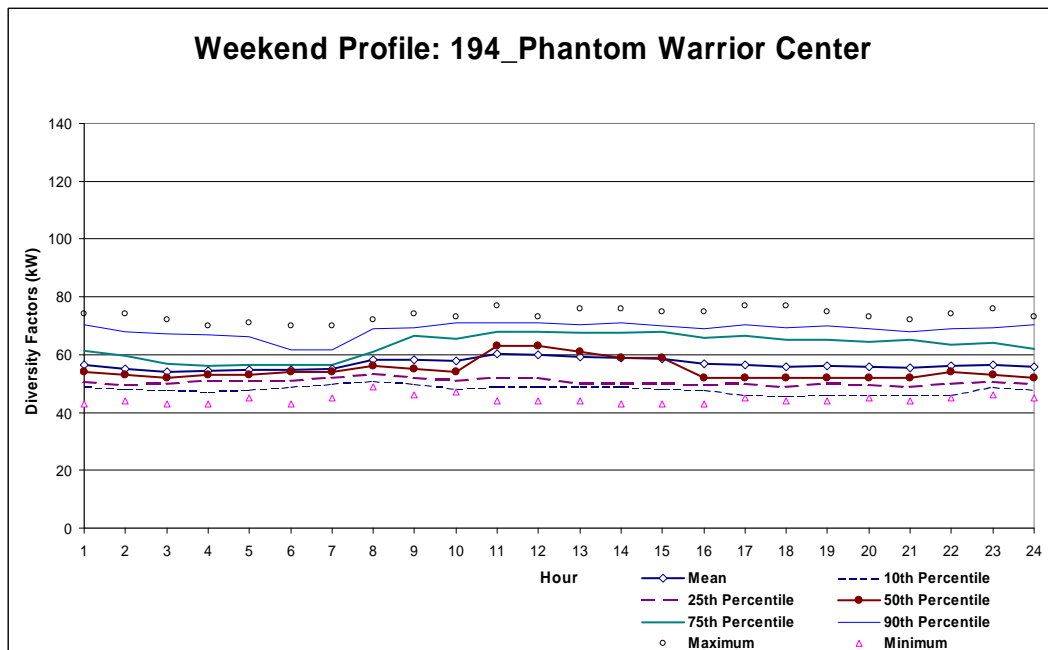


Figure 11.3.14-1: Building #194 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 12/24/02, 12/25/02, 01/01/03, 05/26/03, 06/13/03, 06/16/03, and 07/04/03.



* The dates that are excluded from the weekend profile are as follow: 06/14/03 and 06/15/03.

Figure 11.3.14-2: 24-hour weekday, weekend profiles for whole-building electricity use for #194

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	59.13	68.23	50.03	49.00	52.00	57.00	65.00	74.50	79.00	44.00
2	58.13	66.34	49.92	49.00	52.00	56.00	65.00	71.00	77.00	46.00
3	57.71	65.51	49.90	49.50	52.00	55.50	62.00	70.00	82.00	44.00
4	56.95	63.98	49.91	49.00	52.00	56.00	60.25	67.00	80.00	44.00
5	56.57	63.38	49.76	49.00	52.00	55.50	59.25	66.00	79.00	43.00
6	57.76	64.00	51.52	51.00	54.00	56.00	60.25	66.00	79.00	47.00
7	60.19	66.39	54.00	53.00	56.75	59.00	63.00	69.00	82.00	47.00
8	68.93	76.98	60.89	59.00	63.00	68.00	75.25	79.00	89.00	53.00
9	86.12	96.97	75.26	69.00	79.75	89.00	94.00	97.00	107.00	54.00
10	97.48	108.03	86.93	79.00	93.00	101.50	104.25	107.00	113.00	65.00
11	101.45	110.33	92.56	88.00	97.75	104.00	108.00	110.00	116.00	74.00
12	100.93	110.01	91.86	85.50	96.75	104.00	108.00	110.00	114.00	75.00
13	99.53	108.97	90.08	83.00	93.75	103.00	106.00	109.00	113.00	76.00
14	97.79	107.07	88.52	82.50	91.75	100.00	104.00	108.00	113.00	73.00
15	96.97	106.70	87.24	80.50	89.75	100.00	105.00	107.00	113.00	73.00
16	96.71	106.74	86.68	81.00	89.00	99.00	104.25	108.00	112.00	71.00
17	95.24	105.53	84.94	80.50	87.00	99.00	102.25	106.00	111.00	60.00
18	89.66	100.82	78.50	74.00	83.00	93.00	98.00	101.00	109.00	53.00
19	78.21	88.27	68.14	63.50	73.00	79.50	85.00	89.00	104.00	51.00
20	69.63	78.55	60.70	57.00	63.00	70.00	77.00	80.00	93.00	50.00
21	66.31	75.03	57.59	54.00	59.75	66.00	73.25	78.00	85.00	49.00
22	65.18	74.02	56.34	53.00	58.00	65.00	72.00	77.00	85.00	49.00
23	61.21	70.75	51.66	50.00	54.00	58.00	70.25	76.00	83.00	45.00
24	59.68	68.43	50.94	50.00	53.00	57.50	64.25	74.50	80.00	46.00
Daily Values	1837.46	2001.31	1673.61	1612.00	1724.75	1846.00	1957.75	2055.00	2145.00	1423.00
Hourly Daily Sum	1837.46	2051.04	1623.88	1539.00	1696.00	1851.50	1985.50	2100.00	2298.00	1332.00

Daily Values: The Daily results as the statistics are applied on daily data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	56.49	64.85	48.13	48.80	50.50	54.00	61.50	70.20	74.00	43.00
2	55.07	62.66	47.48	48.00	49.50	53.00	59.50	68.00	74.00	44.00
3	54.17	61.23	47.11	47.80	50.00	52.00	57.00	67.20	72.00	43.00
4	54.58	61.25	47.90	47.00	51.00	53.00	56.00	67.00	70.00	43.00
5	54.63	60.80	48.45	47.80	51.00	53.00	56.50	66.20	71.00	45.00
6	54.61	60.28	48.94	49.00	51.00	54.00	56.50	61.60	70.00	43.00
7	54.93	60.35	49.52	49.80	52.00	54.00	56.50	61.80	70.00	45.00
8	58.19	64.71	51.66	51.00	53.50	56.00	61.00	69.00	72.00	49.00
9	58.27	66.18	50.37	49.80	52.00	55.00	66.50	69.20	74.00	46.00
10	57.85	66.15	49.55	48.00	51.00	54.00	65.50	71.00	73.00	47.00
11	60.44	69.51	51.37	48.80	52.00	63.00	68.00	71.00	77.00	44.00
12	60.12	69.02	51.21	48.80	52.00	63.00	68.00	71.00	73.00	44.00
13	59.32	68.75	49.89	48.80	50.00	61.00	67.50	70.40	76.00	44.00
14	58.86	68.23	49.50	48.80	50.00	59.00	67.50	71.00	76.00	43.00
15	58.69	67.89	49.50	48.00	50.00	59.00	68.00	70.00	75.00	43.00
16	56.73	65.63	47.82	47.80	49.50	52.00	66.00	69.00	75.00	43.00
17	56.49	66.13	46.85	46.00	50.00	52.00	66.50	70.20	77.00	45.00
18	55.83	65.12	46.55	45.80	49.00	52.00	65.00	69.20	77.00	44.00
19	56.27	65.47	47.07	46.00	50.00	52.00	65.00	70.00	75.00	44.00
20	55.78	64.41	47.15	46.00	49.50	52.00	64.50	69.00	73.00	45.00
21	55.49	64.22	46.76	46.00	49.00	52.00	65.00	68.00	72.00	44.00
22	56.27	64.87	47.67	46.00	50.00	54.00	63.50	69.00	74.00	45.00
23	56.41	64.78	48.03	48.80	50.50	53.00	64.00	69.20	76.00	46.00
24	55.88	64.28	47.49	47.80	50.00	52.00	62.00	70.20	73.00	45.00
Daily Values	1361.37	1518.63	1204.11	1207.00	1245.50	1294.00	1512.00	1601.40	1678.00	1127.00
Hourly Daily Sum	1361.37	1556.77	1165.97	1150.40	1213.00	1314.00	1517.00	1648.40	1769.00	1067.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.14-1: 24-hour weekday, weekend profiles for whole-building electricity use for #194

11.3.15. 410 Headquarters Building

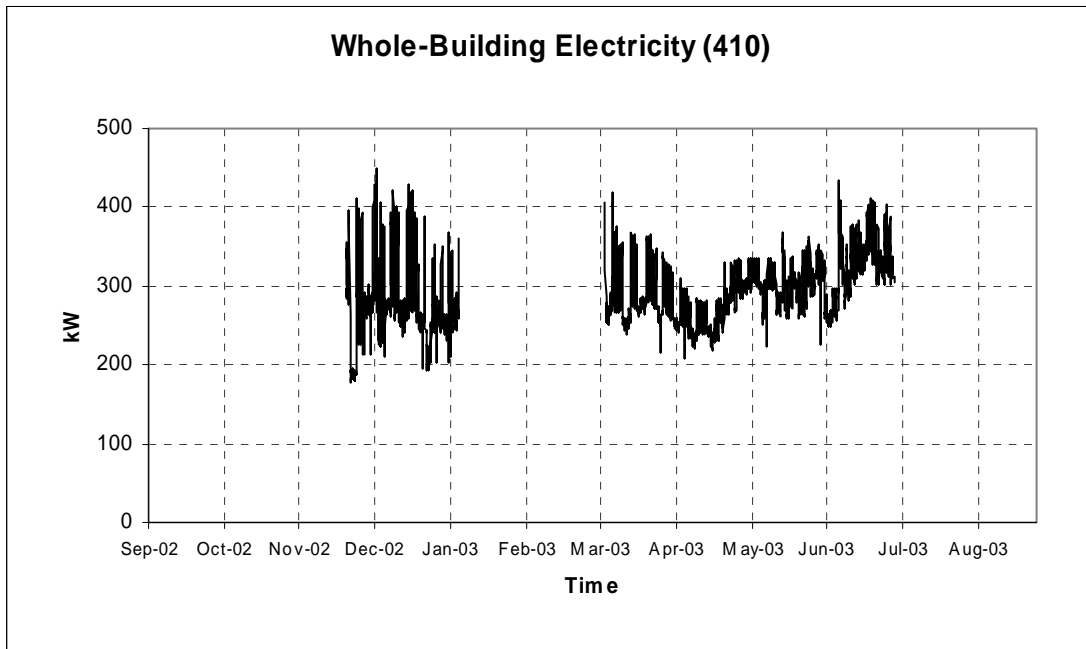
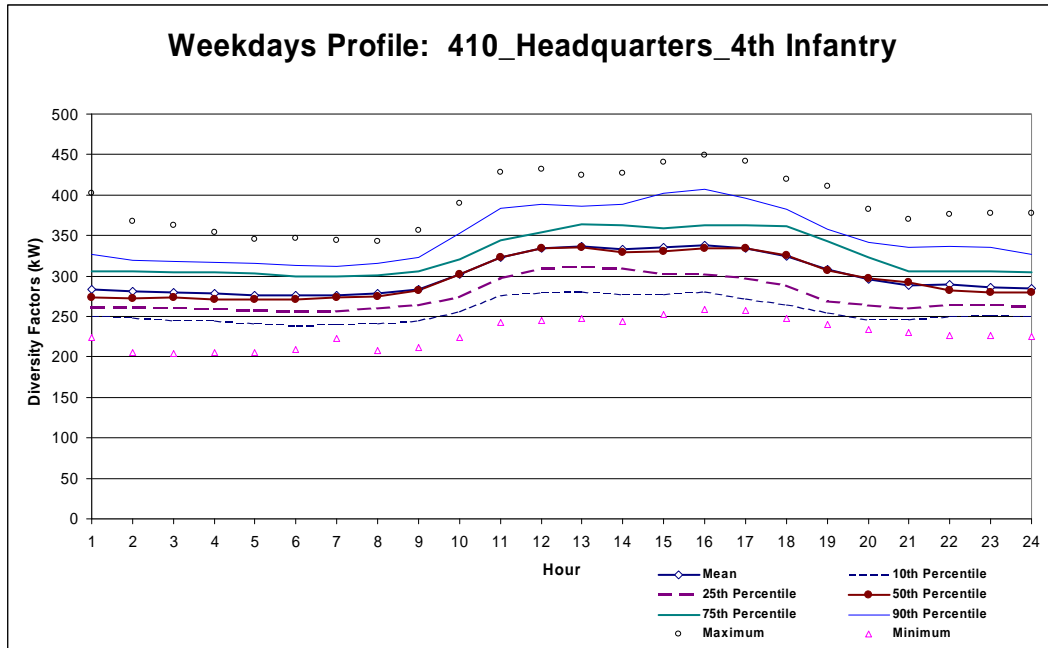


Figure 11.3.15-1: Building #410 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 12/24/02 to 12/26/02, 01/01/03, 05/26/03, and 06/11/03.

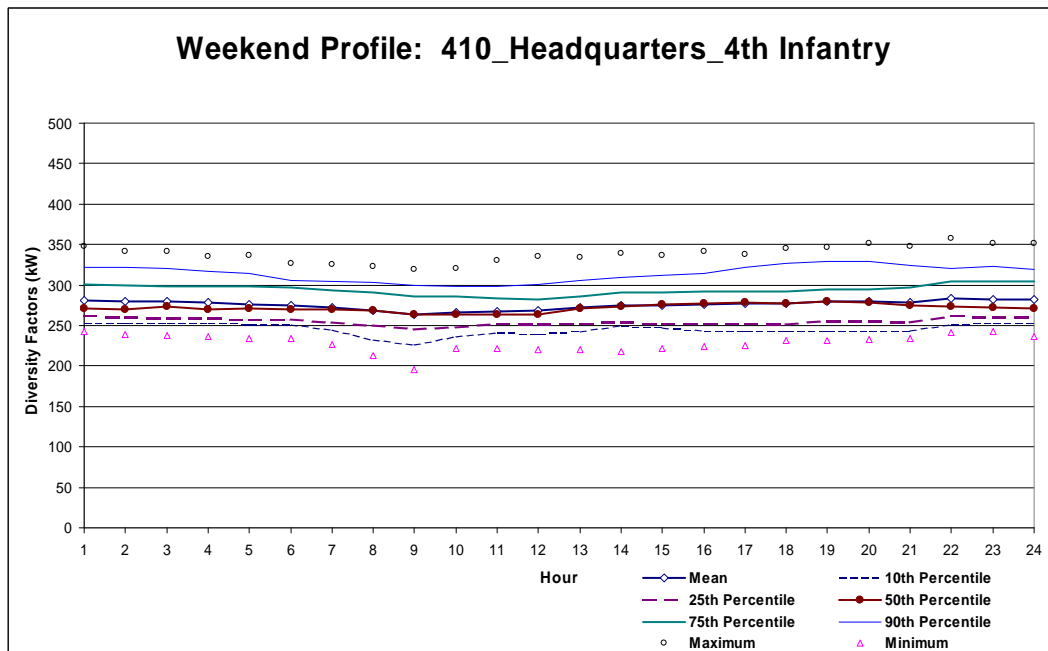


Figure 11.3.15-2: 24-hour weekday, weekend profiles for whole-building electricity use for #410

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	283.52	316.80	250.23	249.80	261.50	274.00	305.50	327.00	402.00	224.00
2	281.09	312.93	249.25	248.80	261.00	272.00	305.50	319.20	367.00	206.00
3	279.67	310.65	248.68	245.00	260.50	273.00	304.50	318.40	363.00	204.00
4	278.15	309.15	247.16	245.00	258.50	271.00	304.00	317.40	354.00	206.00
5	276.60	306.73	246.46	241.40	257.50	271.00	303.00	316.00	345.00	206.00
6	275.71	305.20	246.21	238.80	256.50	271.00	299.00	313.40	346.00	209.00
7	276.46	304.64	248.29	239.80	256.00	273.00	299.50	312.20	344.00	223.00
8	278.39	306.54	250.25	241.80	259.50	275.00	300.50	315.00	343.00	208.00
9	283.61	313.88	253.34	245.40	263.00	282.00	306.00	323.20	357.00	212.00
10	301.91	337.60	266.22	256.80	274.00	302.00	320.50	352.60	390.00	224.00
11	323.62	361.57	285.66	275.40	296.50	323.00	343.50	383.20	428.00	242.00
12	334.07	372.76	295.38	280.00	310.00	334.00	354.50	388.40	432.00	245.00
13	336.33	374.88	297.79	280.80	311.00	335.00	364.00	386.00	424.00	247.00
14	333.40	373.86	292.95	276.80	309.50	329.00	363.00	389.20	427.00	244.00
15	335.19	378.39	291.99	276.80	302.00	331.00	358.50	402.40	441.00	253.00
16	337.91	382.03	293.79	280.80	302.00	334.00	362.50	407.00	449.00	259.00
17	334.30	378.76	289.84	272.80	297.50	334.00	362.50	396.20	442.00	257.00
18	324.61	368.18	281.03	265.00	288.50	326.00	361.50	382.40	419.00	247.00
19	308.58	348.83	268.32	254.80	269.00	307.00	343.00	357.40	411.00	240.00
20	295.87	332.23	259.51	246.80	263.50	297.00	322.50	342.00	382.00	234.00
21	288.90	322.35	255.45	246.00	260.50	292.00	306.00	336.00	370.00	230.00
22	289.06	322.29	255.84	249.80	263.50	282.00	306.00	336.40	376.00	226.00
23	286.08	318.60	253.57	251.60	263.00	280.00	306.00	335.00	377.00	227.00
24	284.49	315.58	253.41	249.80	262.00	280.00	305.00	327.20	377.00	225.00
Daily Values	7227.52	7946.81	6508.22	6226.80	6616.00	7284.00	7623.50	8071.40	8950.00	5839.00
Hourly Daily Sum	7227.52	8074.43	6380.60	6159.80	6606.50	7148.00	7806.50	8383.20	9366.00	5498.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	281.04	308.84	253.25	254.20	261.00	271.00	301.00	322.20	348.00	242.00
2	279.80	306.94	252.66	253.40	260.00	270.00	299.00	321.40	342.00	239.00
3	279.47	305.64	253.29	254.20	259.00	274.00	298.00	320.60	341.00	238.00
4	277.93	303.38	252.48	253.40	259.00	270.00	298.00	316.80	335.00	236.00
5	276.38	301.72	251.03	250.80	258.00	271.00	298.00	314.00	337.00	234.00
6	275.11	299.35	250.88	251.40	257.00	270.00	297.00	306.20	327.00	234.00
7	272.49	296.95	248.02	245.60	254.00	270.00	293.00	304.20	325.00	227.00
8	268.56	296.16	240.96	232.20	250.00	269.00	291.00	303.40	323.00	213.00
9	263.42	292.86	233.99	226.80	245.00	263.00	286.00	299.20	319.00	195.00
10	266.44	291.85	241.04	236.40	248.00	263.00	286.00	298.60	321.00	221.00
11	267.78	293.07	242.48	241.80	253.00	263.00	283.00	298.40	331.00	221.00
12	268.18	293.61	242.74	240.00	251.00	264.00	282.00	300.20	336.00	220.00
13	272.22	298.55	245.89	242.40	252.00	271.00	286.00	305.20	334.00	220.00
14	275.09	302.43	247.75	249.40	254.00	273.00	291.00	310.00	339.00	218.00
15	274.89	302.48	247.29	247.40	252.00	276.00	291.00	311.60	337.00	221.00
16	276.56	305.75	247.36	243.80	252.00	277.00	292.00	314.20	342.00	224.00
17	277.18	306.84	247.52	244.20	253.00	279.00	292.00	322.40	338.00	225.00
18	277.80	309.16	246.44	242.20	251.00	277.00	292.00	326.40	345.00	231.00
19	279.27	310.31	248.23	244.00	255.00	280.00	294.00	329.20	346.00	231.00
20	279.09	310.37	247.81	243.60	255.00	279.00	295.00	329.00	352.00	233.00
21	278.58	309.54	247.62	244.40	254.00	275.00	297.00	324.40	348.00	234.00
22	283.24	314.20	252.29	250.80	261.00	274.00	305.00	320.00	358.00	241.00
23	282.33	312.63	252.04	252.00	260.00	272.00	305.00	323.00	352.00	242.00
24	282.04	311.34	252.75	253.40	260.00	271.00	305.00	319.20	352.00	237.00
Daily Values	6614.89	7246.22	5983.56	5972.80	6192.00	6471.00	7114.00	7428.40	8087.00	5595.00
Hourly Daily Sum	6614.89	7283.97	5945.81	5897.80	6114.00	6522.00	7057.00	7539.80	8128.00	5477.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.15-1: 24-hour weekday, weekend profiles for whole-building electricity use for #410

11.3.16. 1001 Third Corp Headquarters

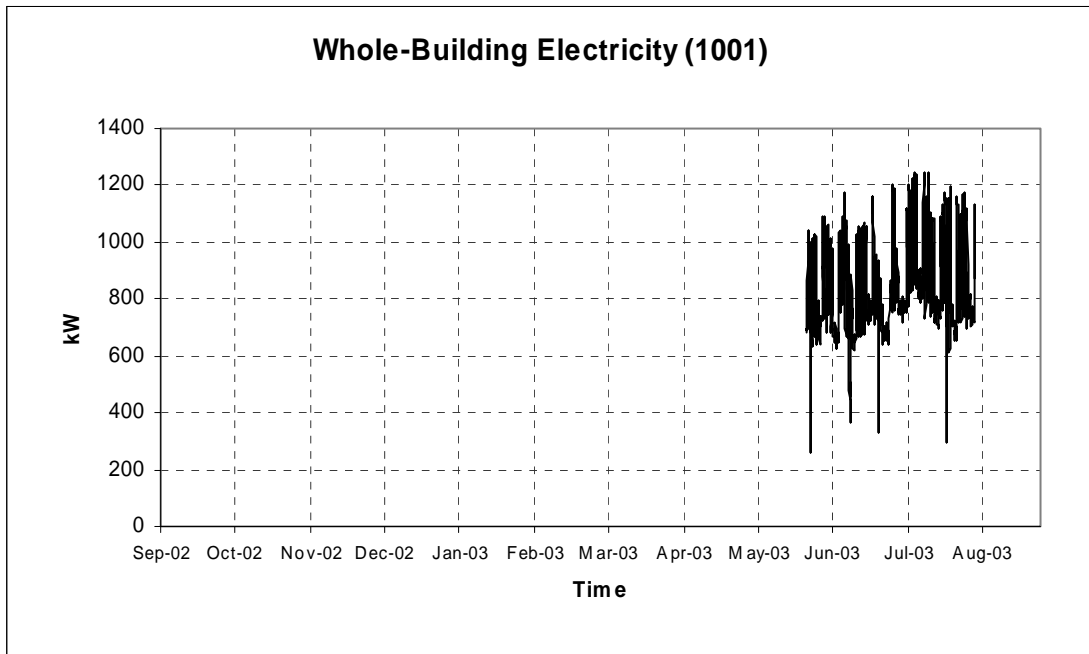
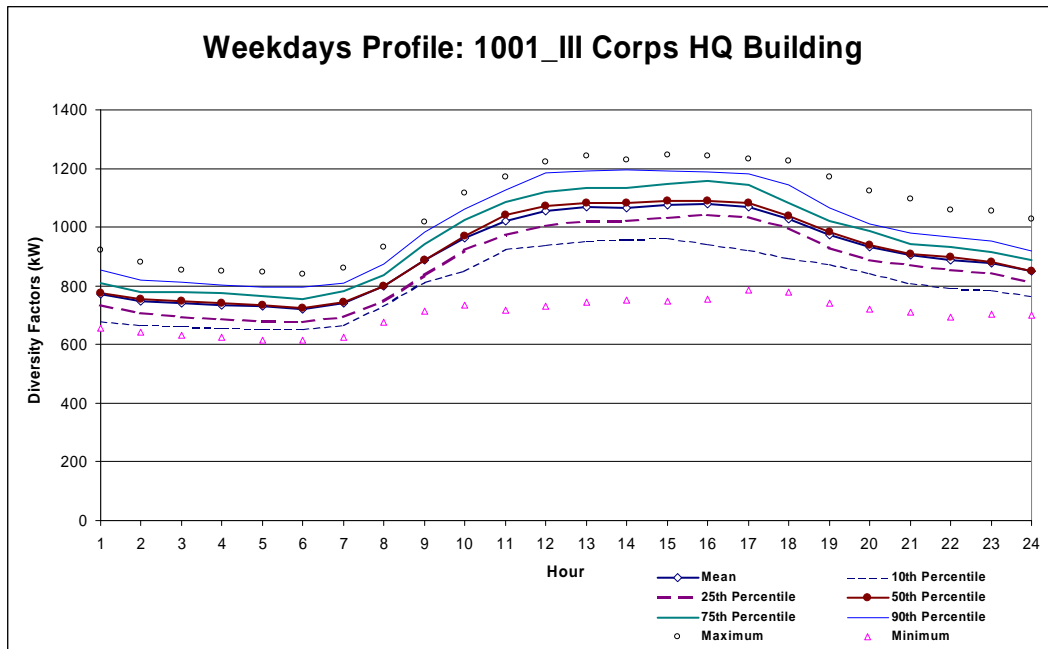
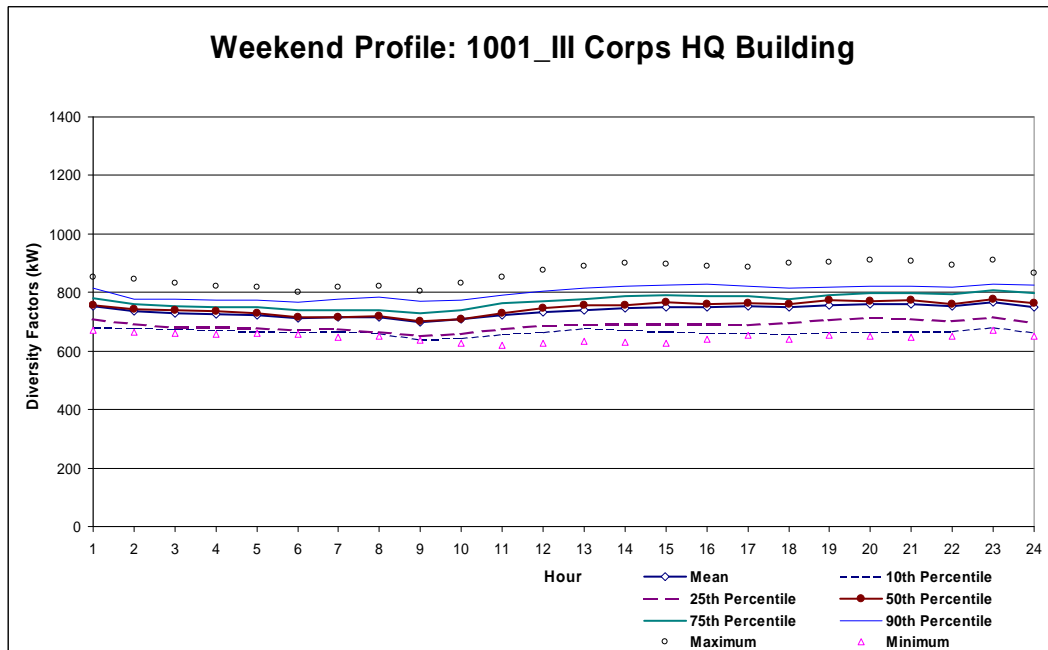


Figure 11.3.16-1: Building #1001 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 05/28/03, 06/13/03, 06/25/03, and 07/23/03.



* The dates that are excluded from the weekend profile are as follow: 06/14/03.

Figure 11.3.16-2: 24-hour weekday, weekend profiles for whole-building electricity use for #1001

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	773.35	839.85	706.85	679.62	734.37	773.97	808.60	854.58	920.77	654.87
2	749.40	807.97	690.83	664.70	707.02	754.72	780.00	821.04	879.44	640.48
3	740.84	797.52	684.16	662.95	693.73	746.56	779.58	812.04	854.06	633.05
4	734.84	791.73	677.96	657.02	685.24	741.46	774.03	801.55	849.46	624.83
5	729.50	785.96	673.05	652.82	679.56	735.84	766.41	795.48	848.30	615.94
6	721.62	777.03	666.20	651.38	675.05	723.72	756.15	794.52	839.83	613.53
7	740.51	797.46	683.56	665.04	691.69	743.81	780.48	809.90	861.28	624.73
8	798.10	859.35	736.85	729.35	749.02	798.15	837.37	875.30	931.97	674.80
9	889.10	962.02	816.17	812.35	837.29	888.80	942.95	984.81	1017.67	712.36
10	963.57	1051.27	875.88	850.93	921.16	971.26	1023.22	1061.10	1115.09	734.27
11	1021.42	1122.66	920.18	926.16	972.18	1042.78	1087.47	1127.81	1170.45	718.30
12	1055.03	1166.43	943.62	938.98	1003.78	1073.03	1120.38	1183.79	1221.52	729.33
13	1068.54	1181.54	955.55	954.12	1021.07	1082.86	1133.49	1190.39	1244.33	745.19
14	1064.33	1174.84	953.82	958.17	1020.36	1080.93	1134.45	1195.78	1229.26	751.67
15	1073.91	1185.97	961.84	964.10	1032.19	1089.46	1147.69	1192.95	1246.11	747.04
16	1079.02	1188.58	969.47	940.98	1041.32	1090.71	1157.60	1187.40	1243.39	753.87
17	1069.31	1175.92	962.71	920.25	1035.85	1083.86	1143.48	1181.13	1234.28	783.77
18	1029.16	1128.81	929.51	895.45	998.34	1038.81	1082.94	1142.20	1226.54	776.96
19	971.57	1059.20	883.95	873.99	930.13	983.87	1021.18	1065.60	1172.02	741.10
20	931.27	1011.00	851.54	845.11	888.80	940.29	985.52	1010.66	1123.15	719.83
21	904.92	979.98	829.85	809.43	869.99	907.69	943.16	979.68	1097.20	709.46
22	888.86	959.48	818.23	791.16	854.65	896.81	930.92	965.14	1057.65	693.55
23	878.51	946.14	810.88	785.83	841.79	879.59	915.80	952.11	1055.66	703.59
24	849.74	914.71	784.77	765.83	808.12	850.08	889.51	917.00	1028.14	701.63
Daily Values	21726.41	23432.55	20020.27	19890.79	20734.62	21962.79	22816.15	23727.31	25082.97	17039.76
Hourly Daily Sum	21726.41	23665.42	19787.41	19395.71	20692.69	21919.06	22942.36	23901.96	25467.55	16804.14

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	751.86	806.05	697.68	682.01	708.99	754.80	780.15	816.17	852.49	669.88
2	735.33	785.30	685.37	677.58	693.04	743.24	760.51	777.53	844.06	663.14
3	729.05	777.94	680.17	674.91	682.65	739.05	752.16	778.31	830.20	661.20
4	724.50	772.99	676.02	670.75	679.83	735.60	749.88	774.08	820.78	656.38
5	721.76	770.32	673.20	667.38	676.68	729.43	749.52	774.35	817.49	658.95
6	712.27	756.56	667.97	664.38	671.53	715.30	740.60	765.51	802.21	658.06
7	714.17	762.38	665.97	666.05	673.08	716.08	740.44	778.18	819.79	647.80
8	714.42	766.28	662.57	660.15	664.45	719.12	740.57	783.70	821.88	650.42
9	699.51	753.40	645.63	640.41	650.11	701.02	729.01	768.50	806.08	635.77
10	708.03	767.86	648.20	643.80	657.12	709.86	740.00	774.08	833.08	624.78
11	723.90	787.46	660.33	656.29	672.89	730.21	761.92	791.74	853.80	620.96
12	733.61	800.36	666.87	664.68	684.99	747.37	769.85	803.80	875.14	627.19
13	740.77	808.58	672.96	676.08	688.63	755.48	777.30	815.74	890.84	632.84
14	745.81	816.20	675.42	669.63	690.11	758.15	787.01	822.25	900.89	630.96
15	747.97	819.69	676.25	669.12	690.71	768.46	789.65	825.50	895.86	627.40
16	750.15	821.52	678.78	659.34	689.79	760.45	787.16	829.02	891.47	639.90
17	751.54	820.39	682.69	661.08	689.32	764.69	788.13	821.25	887.49	652.90
18	749.52	817.97	681.07	657.62	695.38	760.87	777.72	815.60	899.42	640.85
19	755.71	823.06	688.35	663.75	705.97	772.17	792.03	816.54	903.19	652.64
20	759.46	827.82	691.09	664.85	713.28	768.88	799.25	820.31	910.20	649.44
21	758.68	827.19	690.16	667.62	708.60	773.74	799.09	822.58	907.27	645.46
22	754.55	819.20	689.91	667.65	702.53	761.24	795.77	817.30	892.72	649.99
23	765.97	831.66	700.27	682.74	715.38	775.89	807.41	828.85	909.36	669.43
24	750.95	816.26	685.63	664.30	696.43	761.87	796.32	823.44	867.72	651.22
Daily Values	17699.50	19095.57	16303.44	16005.56	16473.41	17926.85	18435.05	19095.63	20694.28	15672.38
Hourly Daily Sum	17699.50	19156.44	16242.56	15972.17	16501.47	17922.97	18511.44	19244.30	20733.42	15517.55

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.16-1: 24-hour weekday, weekend profiles for whole-building electricity use for #1001

11.3.17. 5764 Officers Club

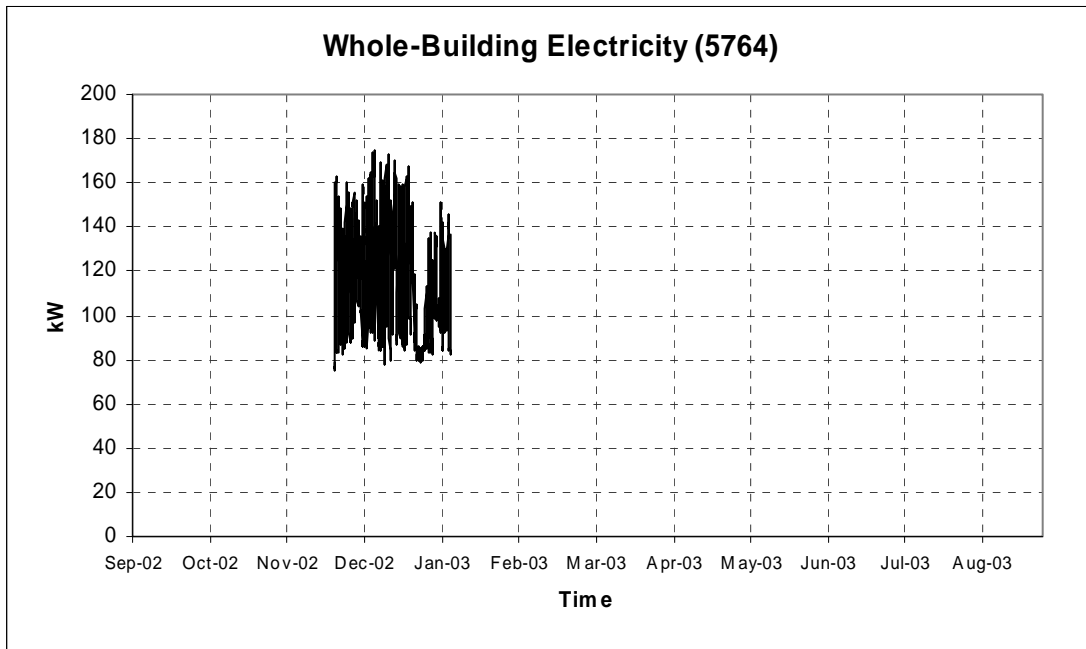
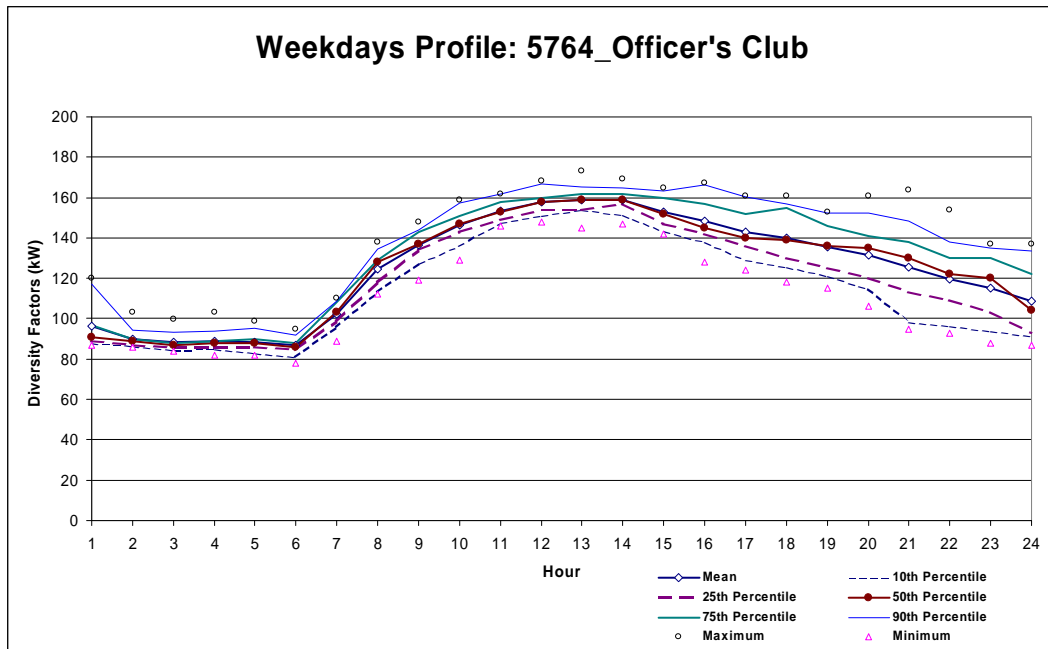
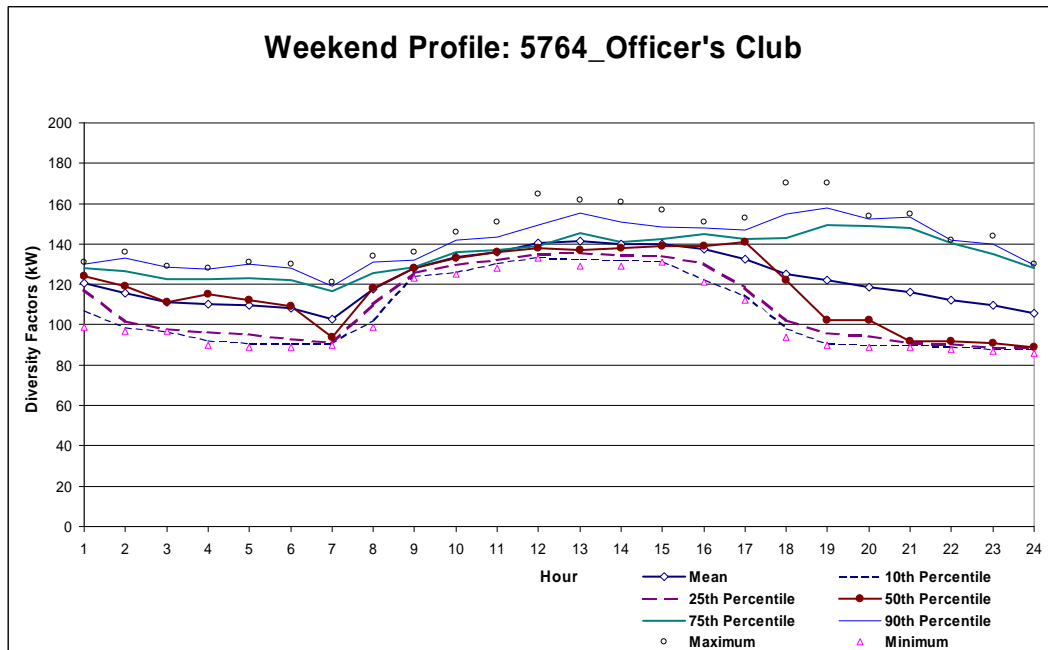


Figure 11.3.17-1: Building #5764 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 12/23/02 to 12/27/02, and 12/30/02 to 01/03/03.



* The dates that are excluded from the weekend profile are as follow: 12/28/02, 12/29/02, 01/04/03, and 01/05/03.

Figure 11.3.17-2: 24-hour weekday, weekend profiles for whole-building electricity use for #5764

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	96.46	108.54	84.39	88.00	89.00	91.00	97.00	117.00	120.00	87.00
2	90.00	94.64	85.36	86.20	87.00	89.00	90.00	94.40	103.00	86.00
3	88.38	92.72	84.05	84.40	86.00	87.00	88.00	93.20	100.00	84.00
4	88.69	94.01	83.38	85.00	86.00	88.00	89.00	93.60	103.00	82.00
5	88.54	93.40	83.68	82.80	86.00	88.00	90.00	95.20	99.00	82.00
6	86.69	91.30	82.08	81.00	85.00	86.00	88.00	92.00	95.00	78.00
7	102.38	108.54	96.23	95.60	99.00	103.00	108.00	108.80	110.00	89.00
8	124.62	133.11	116.12	113.00	118.00	128.00	129.00	134.40	138.00	112.00
9	136.31	144.11	128.50	126.80	134.00	137.00	143.00	143.80	148.00	119.00
10	146.23	154.73	137.73	136.00	143.00	147.00	151.00	157.40	159.00	129.00
11	153.46	158.98	147.94	147.20	149.00	153.00	158.00	161.60	162.00	146.00
12	157.77	163.77	151.77	151.00	154.00	158.00	160.00	166.60	168.00	148.00
13	158.69	165.49	151.89	154.00	154.00	159.00	162.00	165.20	173.00	145.00
14	158.62	164.50	152.73	151.40	157.00	159.00	162.00	164.60	169.00	147.00
15	152.85	160.76	144.93	143.20	147.00	152.00	160.00	163.40	165.00	142.00
16	148.46	160.64	136.28	138.00	142.00	145.00	157.00	166.40	167.00	128.00
17	142.85	154.82	130.87	129.20	136.00	140.00	152.00	160.40	161.00	124.00
18	139.92	153.64	126.20	125.40	130.00	139.00	155.00	156.80	161.00	118.00
19	135.54	148.32	122.75	121.00	125.00	136.00	146.00	152.60	153.00	115.00
20	131.46	147.57	115.35	114.80	120.00	135.00	141.00	152.40	161.00	106.00
21	125.62	147.12	104.11	98.40	113.00	130.00	138.00	148.20	164.00	95.00
22	119.77	138.33	101.21	96.20	109.00	122.00	130.00	137.80	154.00	93.00
23	115.00	132.32	97.68	93.60	103.00	120.00	130.00	135.20	137.00	88.00
24	108.69	126.48	90.90	91.40	93.00	104.00	122.00	133.60	137.00	87.00
Daily Values	2997.00	3177.95	2816.05	2801.40	2876.00	2952.00	3059.00	3228.80	3377.00	2785.00
Hourly Daily Sum	2997.00	3237.83	2756.17	2733.60	2845.00	2996.00	3146.00	3294.60	3407.00	2630.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	120.71	131.95	109.48	107.40	117.50	124.00	128.00	129.80	131.00	99.00
2	115.43	130.99	99.86	98.80	101.50	119.00	126.50	133.00	136.00	97.00
3	111.14	125.20	97.09	97.00	98.00	111.00	122.50	128.40	129.00	97.00
4	110.14	125.84	94.44	92.40	96.50	115.00	122.50	127.40	128.00	90.00
5	109.86	126.89	92.82	90.80	95.50	112.00	123.00	129.80	131.00	89.00
6	108.29	125.31	91.26	90.80	93.00	109.00	122.00	128.20	130.00	89.00
7	102.86	117.18	88.53	90.60	91.00	94.00	116.50	119.20	121.00	90.00
8	117.43	130.02	104.83	102.00	110.00	118.00	125.50	131.00	134.00	99.00
9	127.86	132.00	123.72	124.20	125.50	128.00	128.50	131.80	136.00	123.00
10	133.57	140.69	126.46	126.20	129.50	133.00	136.00	141.80	146.00	125.00
11	136.14	143.50	128.78	130.40	132.00	136.00	137.00	143.20	151.00	128.00
12	140.57	151.60	129.54	133.60	135.00	138.00	139.00	149.40	165.00	133.00
13	141.43	152.70	130.16	132.60	135.50	137.00	145.50	155.40	162.00	129.00
14	139.86	150.24	129.47	132.00	134.50	138.00	141.00	150.80	161.00	129.00
15	140.00	148.79	131.21	131.60	134.00	139.00	142.50	148.60	157.00	131.00
16	137.43	148.64	126.22	122.80	130.50	139.00	145.00	148.00	151.00	121.00
17	132.57	148.48	116.67	114.40	118.50	141.00	142.50	147.00	153.00	112.00
18	125.14	153.16	97.12	98.20	102.00	122.00	143.00	155.00	170.00	94.00
19	121.86	155.13	88.58	90.60	96.00	102.00	149.50	158.00	170.00	90.00
20	118.86	149.03	88.68	89.60	94.50	102.00	149.00	152.20	154.00	89.00
21	116.29	148.32	84.25	89.60	91.00	92.00	148.00	153.20	155.00	89.00
22	112.00	139.17	84.83	89.20	90.50	92.00	140.50	142.00	142.00	88.00
23	109.86	136.41	83.31	87.60	88.50	91.00	135.00	139.80	144.00	87.00
24	105.57	127.22	83.92	87.80	89.00	89.00	128.00	129.40	130.00	86.00
Daily Values	2934.86	3085.05	2784.67	2749.80	2808.50	3022.00	3043.50	3074.80	3091.00	2727.00
Hourly Daily Sum	2934.86	3338.46	2531.26	2550.20	2629.50	2821.00	3236.50	3372.40	3487.00	2504.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.17-1: 24-hour weekday, weekend profiles for whole-building electricity use for #5764

11.3.18. 6602 Bronco Youth Center

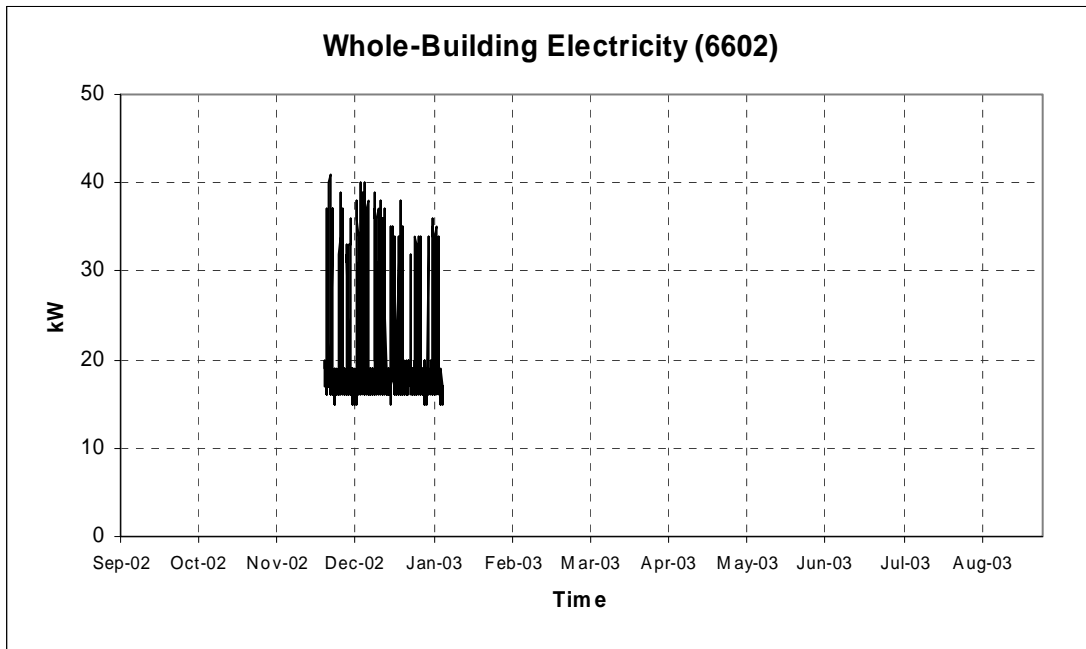
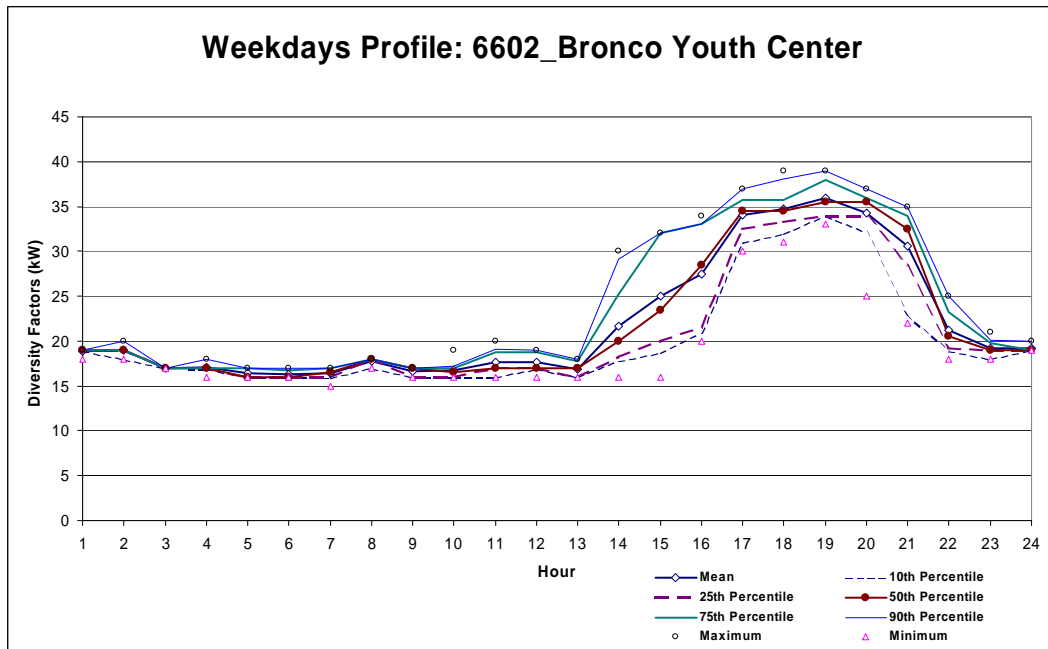
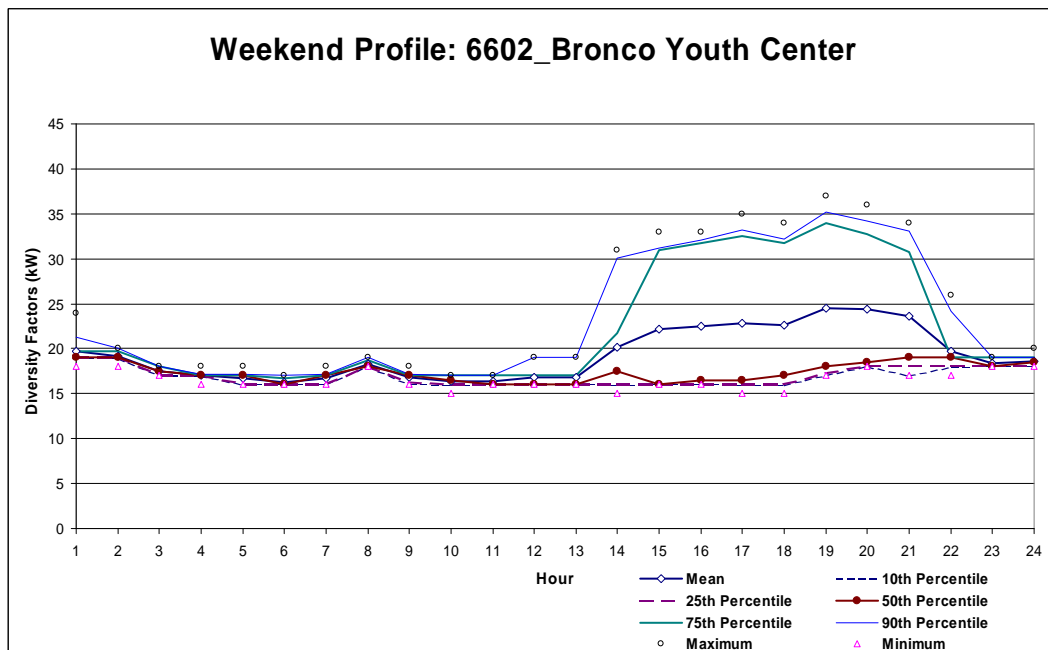


Figure 11.3.18-1: Building #6602 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 12/02/02, 12/04/02, 12/06/02, 12/11/02, 12/13/02, 12/16/02, 12/17/02, 12/13/02 to 12/25/02, and 12/30/02 to 01/01/03.



* The dates that are excluded from the weekend profile are as follow: 12/07/02.

Figure 11.3.18-2: 24-hour weekday, weekend profiles for whole-building electricity use for #6602

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	18.90	19.22	18.58	18.90	19.00	19.00	19.00	19.00	19.00	18.00
2	19.00	19.67	18.33	18.00	19.00	19.00	19.00	20.00	20.00	18.00
3	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00
4	17.10	17.67	16.53	16.90	17.00	17.00	17.00	18.00	18.00	16.00
5	16.40	16.92	15.88	16.00	16.00	16.00	17.00	17.00	17.00	16.00
6	16.30	16.78	15.82	16.00	16.00	16.00	16.75	17.00	17.00	16.00
7	16.40	17.10	15.70	15.90	16.00	16.50	17.00	17.00	17.00	15.00
8	17.80	18.22	17.38	17.00	18.00	18.00	18.00	18.00	18.00	17.00
9	16.60	17.12	16.08	16.00	16.00	17.00	17.00	17.00	17.00	16.00
10	16.70	17.65	15.75	16.00	16.00	16.50	17.00	17.20	19.00	16.00
11	17.60	18.95	16.25	16.00	17.00	17.00	18.75	19.10	20.00	16.00
12	17.60	18.67	16.53	16.90	17.00	17.00	18.75	19.00	19.00	16.00
13	16.90	17.78	16.02	16.00	16.00	17.00	17.75	18.00	18.00	16.00
14	21.70	26.71	16.69	17.80	18.25	20.00	25.25	29.10	30.00	16.00
15	25.00	31.60	18.40	18.70	20.00	23.50	32.00	32.00	32.00	16.00
16	27.50	33.28	21.72	20.90	21.50	28.50	33.00	33.10	34.00	20.00
17	34.10	36.52	31.68	30.90	32.50	34.50	35.75	37.00	37.00	30.00
18	34.70	37.20	32.20	31.90	33.25	34.50	35.75	38.10	39.00	31.00
19	36.00	38.31	33.69	33.90	34.00	35.50	38.00	39.00	39.00	33.00
20	34.30	37.83	30.77	32.20	34.00	35.50	36.00	37.00	37.00	25.00
21	30.60	35.46	25.74	22.90	28.50	32.50	34.00	35.00	35.00	22.00
22	21.20	23.77	18.63	18.90	19.25	20.50	23.25	25.00	25.00	18.00
23	19.20	20.12	18.28	18.00	19.00	19.00	19.75	20.10	21.00	18.00
24	19.20	19.62	18.78	19.00	19.00	19.00	19.00	20.00	20.00	19.00
Daily Values	527.80	549.08	506.52	496.10	524.00	532.00	537.50	547.30	559.00	488.00
Hourly Daily Sum	527.80	573.16	482.44	481.70	499.25	526.00	561.75	578.70	585.00	461.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	19.70	21.40	18.00	18.90	19.00	19.00	19.75	21.30	24.00	18.00
2	19.20	19.83	18.57	18.90	19.00	19.00	19.75	20.00	20.00	18.00
3	17.50	18.03	16.97	17.00	17.00	17.50	18.00	18.00	18.00	17.00
4	17.00	17.47	16.53	16.90	17.00	17.00	17.00	17.10	18.00	16.00
5	16.70	17.37	16.03	16.00	16.00	17.00	17.00	17.10	18.00	16.00
6	16.30	16.78	15.82	16.00	16.00	16.00	16.75	17.00	17.00	16.00
7	16.70	17.37	16.03	16.00	16.00	17.00	17.00	17.10	18.00	16.00
8	18.30	18.78	17.82	18.00	18.00	18.00	18.75	19.00	19.00	18.00
9	16.80	17.43	16.17	16.00	16.25	17.00	17.00	17.10	18.00	16.00
10	16.40	17.10	15.70	15.90	16.00	16.50	17.00	17.00	17.00	15.00
11	16.40	16.92	15.88	16.00	16.00	16.00	17.00	17.00	17.00	16.00
12	16.80	18.03	15.57	16.00	16.00	16.00	17.00	19.00	19.00	16.00
13	16.80	18.03	15.57	16.00	16.00	16.00	17.00	19.00	19.00	16.00
14	20.20	26.08	14.32	15.90	16.00	17.50	21.75	30.10	31.00	15.00
15	22.20	30.22	14.18	16.00	16.00	16.00	31.00	31.20	33.00	16.00
16	22.50	30.70	14.30	16.00	16.00	16.50	31.75	32.10	33.00	16.00
17	22.80	31.64	13.96	15.90	16.00	16.50	32.50	33.20	35.00	15.00
18	22.60	30.96	14.24	15.90	16.00	17.00	31.75	32.20	34.00	15.00
19	24.50	33.58	15.42	17.00	17.25	18.00	34.00	35.20	37.00	17.00
20	24.40	32.51	16.29	18.00	18.00	18.50	32.75	34.20	36.00	18.00
21	23.60	30.94	16.26	17.00	18.00	19.00	30.75	33.10	34.00	17.00
22	19.70	22.61	16.79	17.90	18.00	19.00	19.00	24.20	26.00	17.00
23	18.40	18.92	17.88	18.00	18.00	18.00	19.00	19.00	19.00	18.00
24	18.60	19.30	17.90	18.00	18.00	18.50	19.00	19.10	20.00	18.00
Daily Values	464.10	533.73	394.47	403.80	409.50	419.50	534.75	547.10	566.00	402.00
Hourly Daily Sum	464.10	542.01	386.19	403.20	405.50	416.50	532.25	559.30	580.00	396.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.18-1: 24-hour weekday, weekend profiles for whole-building electricity use for #6602

11.3.19. 9112 Motor Pool

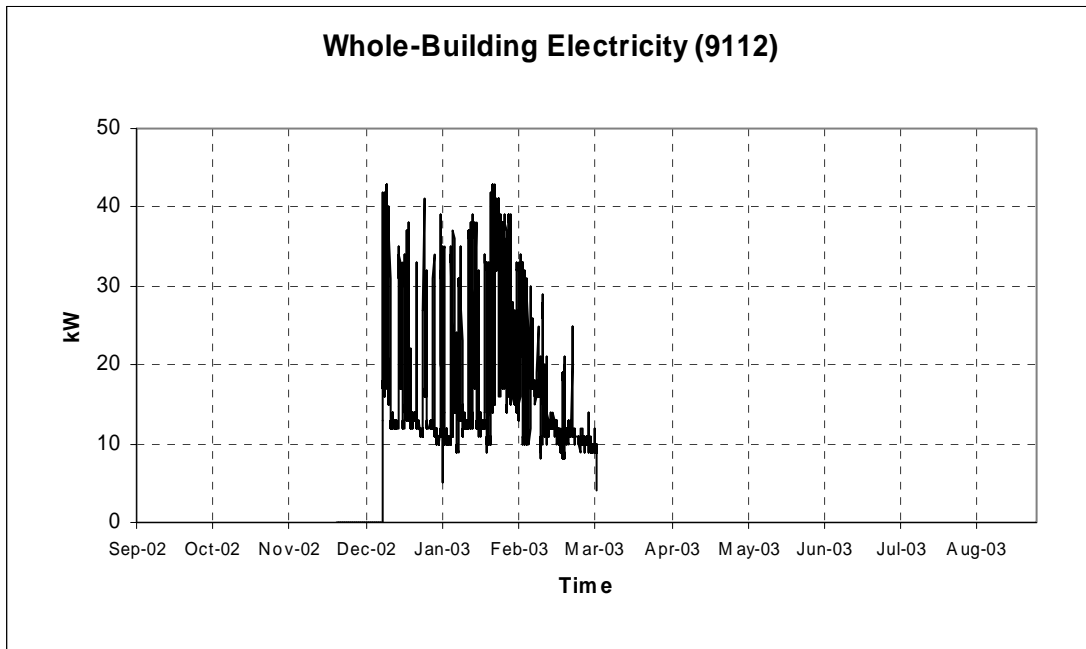
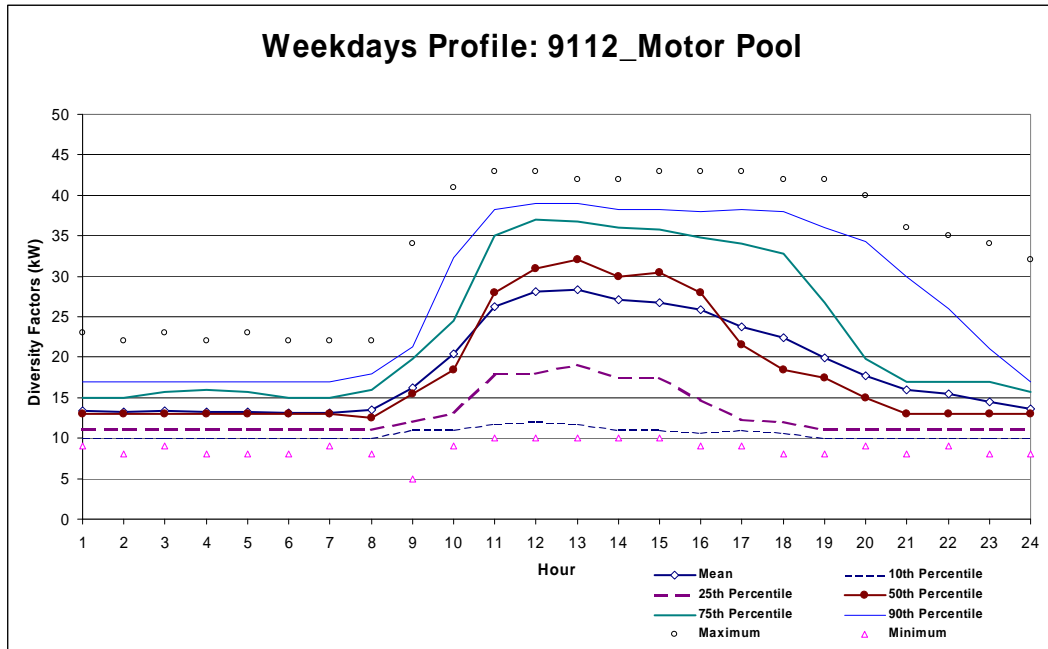
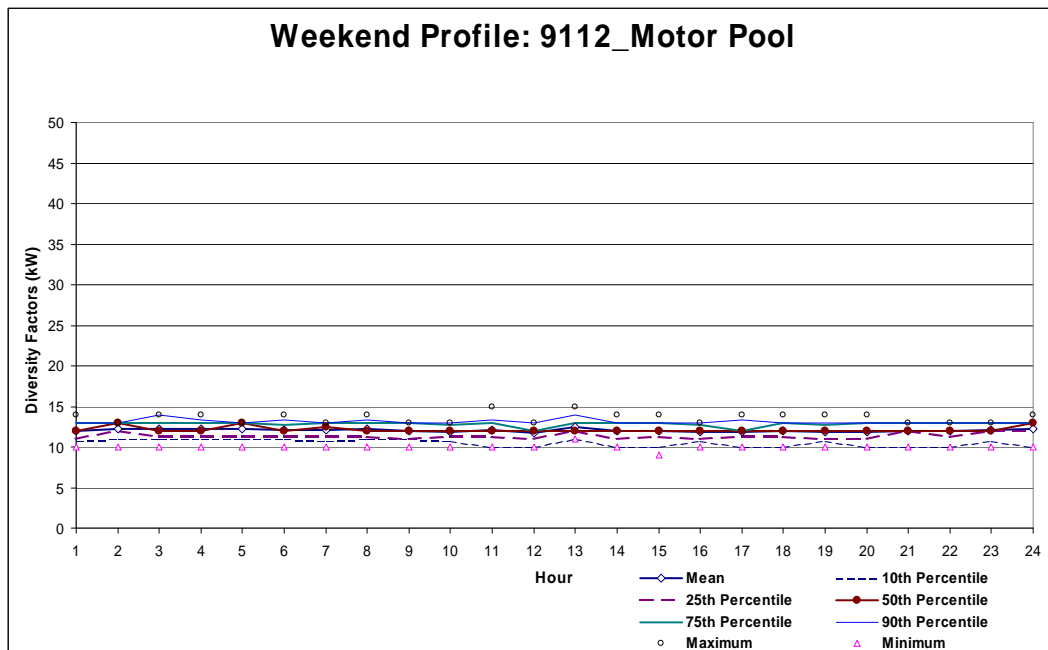


Figure 11.3.19-1: Building #9112 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 12/24/02, 12/25/02, 12/31/02, and 01/01/03.



* The dates that are excluded from the weekend profile are as follow: 01/25/03, 01/26/03, 02/01/03, 02/02/03, 02/08/03, and 02/09/03.

Figure 11.3.19-2: 24-hour weekday, weekend profiles for whole-building electricity use for #9112

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	13.36	16.32	10.40	10.00	11.00	13.00	15.00	17.00	23.00	9.00
2	13.24	16.18	10.31	10.00	11.00	13.00	15.00	17.00	22.00	8.00
3	13.34	16.34	10.35	10.00	11.00	13.00	15.75	17.00	23.00	9.00
4	13.24	16.17	10.31	10.00	11.00	13.00	16.00	17.00	22.00	8.00
5	13.21	16.22	10.19	10.00	11.00	13.00	15.75	17.00	23.00	8.00
6	13.16	15.95	10.36	10.00	11.00	13.00	15.00	17.00	22.00	8.00
7	13.14	15.99	10.29	10.00	11.00	13.00	15.00	17.00	22.00	9.00
8	13.45	16.57	10.32	10.00	11.00	12.50	16.00	18.00	22.00	8.00
9	16.21	21.36	11.06	11.00	12.00	15.50	19.75	21.30	34.00	5.00
10	20.40	28.95	11.85	11.00	13.00	18.50	24.50	32.30	41.00	9.00
11	26.29	36.26	16.33	11.70	18.00	28.00	35.00	38.30	43.00	10.00
12	28.16	38.49	17.82	12.00	18.00	31.00	37.00	39.00	43.00	10.00
13	28.33	38.69	17.97	11.70	19.00	32.00	36.75	39.00	42.00	10.00
14	27.12	37.44	16.80	11.00	17.50	30.00	36.00	38.30	42.00	10.00
15	26.67	37.27	16.08	11.00	17.50	30.50	35.75	38.30	43.00	10.00
16	25.91	36.60	15.23	10.70	14.75	28.00	34.75	38.00	43.00	9.00
17	23.79	35.00	12.59	11.00	12.25	21.50	34.00	38.30	43.00	9.00
18	22.45	33.62	11.28	10.70	12.00	18.50	32.75	38.00	42.00	8.00
19	19.97	29.70	10.23	10.00	11.00	17.50	26.75	36.00	42.00	8.00
20	17.69	26.54	8.84	10.00	11.00	15.00	19.75	34.30	40.00	9.00
21	15.98	23.75	8.22	10.00	11.00	13.00	17.00	29.90	36.00	8.00
22	15.47	22.32	8.61	10.00	11.00	13.00	17.00	26.00	35.00	9.00
23	14.53	20.03	9.03	10.00	11.00	13.00	17.00	21.00	34.00	8.00
24	13.57	17.51	9.63	10.00	11.00	13.00	15.75	17.00	32.00	8.00
Daily Values	448.67	580.93	316.42	263.70	342.75	456.00	529.00	626.60	747.00	231.00
Hourly Daily Sum	448.67	613.25	284.09	251.80	308.00	441.50	563.00	662.00	814.00	207.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	11.94	13.05	10.83	10.70	11.00	12.00	13.00	13.00	14.00	10.00
2	12.28	13.24	11.32	11.00	12.00	13.00	13.00	13.00	13.00	10.00
3	12.22	13.39	11.06	11.00	11.25	12.00	13.00	14.00	14.00	10.00
4	12.17	13.26	11.07	11.00	11.25	12.00	13.00	13.30	14.00	10.00
5	12.22	13.23	11.22	11.00	11.25	13.00	13.00	13.00	13.00	10.00
6	12.06	13.11	11.00	11.00	11.25	12.00	12.75	13.30	14.00	10.00
7	12.11	13.19	11.03	10.70	11.25	12.50	13.00	13.00	13.00	10.00
8	12.17	13.26	11.07	11.00	11.25	12.00	13.00	13.30	14.00	10.00
9	12.00	12.97	11.03	11.00	11.00	12.00	13.00	13.00	13.00	10.00
10	11.89	12.85	10.93	10.70	11.25	12.00	12.75	13.00	13.00	10.00
11	12.06	13.40	10.71	10.00	11.25	12.00	13.00	13.30	15.00	10.00
12	11.71	12.75	10.66	10.00	11.00	12.00	12.00	13.00	13.00	10.00
13	12.50	13.70	11.30	11.00	12.00	12.00	13.00	14.00	15.00	11.00
14	11.94	13.16	10.73	10.00	11.00	12.00	13.00	13.00	14.00	10.00
15	12.00	13.33	10.67	10.00	11.25	12.00	13.00	13.00	14.00	9.00
16	11.83	12.82	10.85	10.70	11.00	12.00	12.75	13.00	13.00	10.00
17	11.89	13.07	10.71	10.00	11.25	12.00	12.00	13.30	14.00	10.00
18	12.00	13.28	10.72	10.00	11.25	12.00	13.00	13.00	14.00	10.00
19	11.89	12.97	10.81	10.70	11.00	12.00	12.75	13.00	14.00	10.00
20	11.83	13.08	10.58	10.00	11.00	12.00	13.00	13.00	14.00	10.00
21	12.00	13.19	10.81	10.00	12.00	12.00	13.00	13.00	13.00	10.00
22	11.94	13.05	10.83	10.00	11.25	12.00	13.00	13.00	13.00	10.00
23	12.06	13.05	11.06	10.70	12.00	12.00	13.00	13.00	13.00	10.00
24	12.22	13.53	10.91	10.00	12.00	13.00	13.00	13.00	14.00	10.00
Daily Values	289.50	313.84	265.16	249.40	272.75	297.50	304.75	310.80	326.00	248.00
Hourly Daily Sum	288.93	315.95	261.91	252.20	272.00	291.50	309.00	315.50	328.00	240.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.19-1: 24-hour weekday, weekend profiles for whole-building electricity use for #9112

11.3.20. 9122 Motor Pool

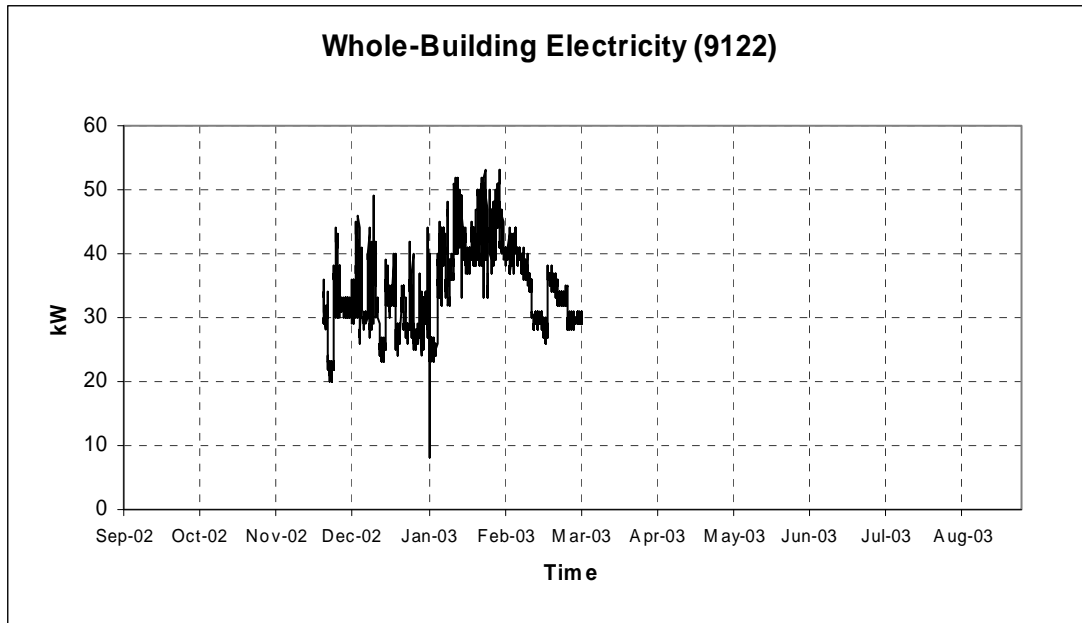
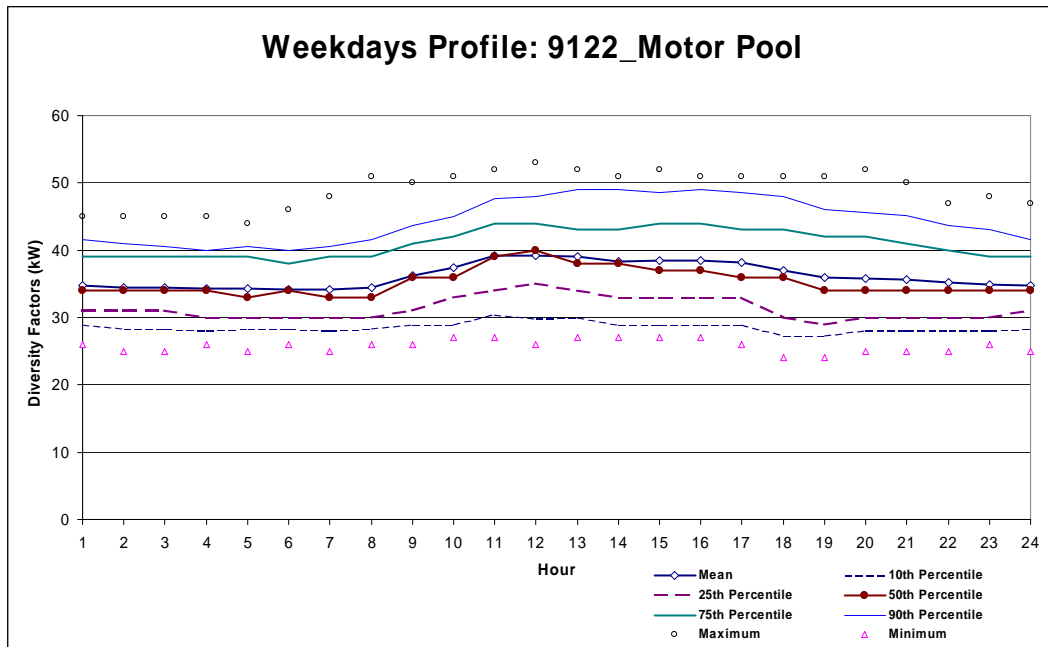


Figure 11.3.20-1: Building #9122 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 12/25/03, 01/01/03, and 01/03/03.

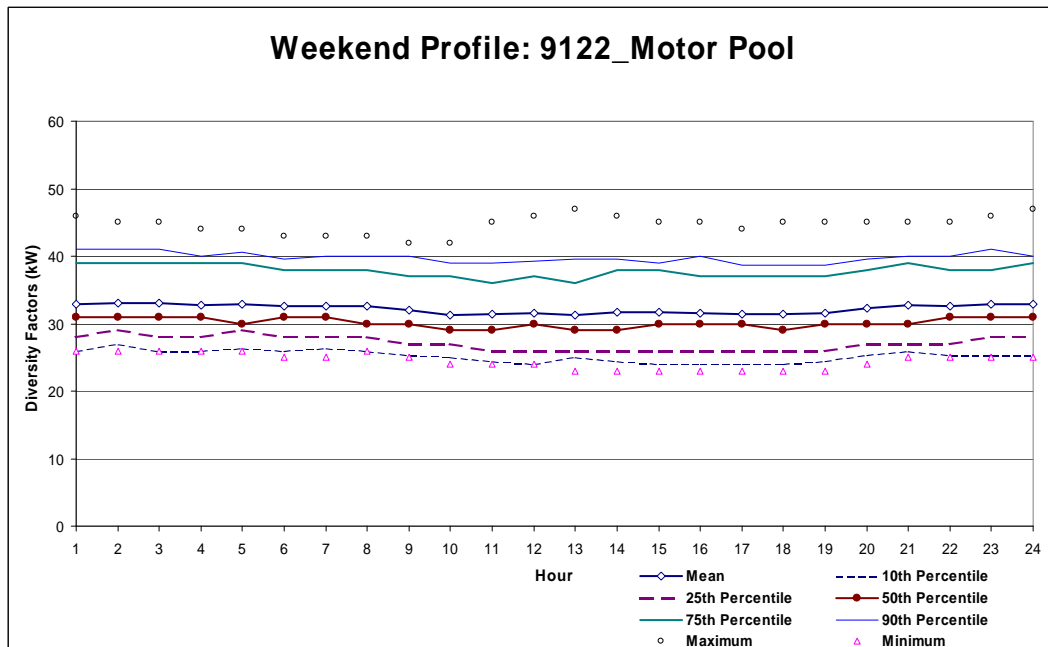


Figure 11.3.20-2: 24-hour weekday, weekend profiles for whole-building electricity use for #9122

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	34.72	39.74	29.71	29.00	31.00	34.00	39.00	41.60	45.00	26.00
2	34.51	39.31	29.71	28.40	31.00	34.00	39.00	41.00	45.00	25.00
3	34.43	39.24	29.63	28.40	31.00	34.00	39.00	40.60	45.00	25.00
4	34.37	39.11	29.63	28.00	30.00	34.00	39.00	40.00	45.00	26.00
5	34.25	39.09	29.40	28.40	30.00	33.00	39.00	40.60	44.00	25.00
6	34.23	38.97	29.49	28.40	30.00	34.00	38.00	40.00	46.00	26.00
7	34.09	39.19	29.00	28.00	30.00	33.00	39.00	40.60	48.00	25.00
8	34.46	39.74	29.19	28.40	30.00	33.00	39.00	41.60	51.00	26.00
9	36.28	42.16	30.39	29.00	31.00	36.00	41.00	43.60	50.00	26.00
10	37.37	43.55	31.19	29.00	33.00	36.00	42.00	45.00	51.00	27.00
11	39.14	45.57	32.71	30.40	34.00	39.00	44.00	47.60	52.00	27.00
12	39.25	45.92	32.58	29.80	35.00	40.00	44.00	48.00	53.00	26.00
13	39.00	45.66	32.34	30.00	34.00	38.00	43.00	49.00	52.00	27.00
14	38.34	45.16	31.51	29.00	33.00	38.00	43.00	49.00	51.00	27.00
15	38.45	45.45	31.44	29.00	33.00	37.00	44.00	48.60	52.00	27.00
16	38.45	45.51	31.38	29.00	33.00	37.00	44.00	49.00	51.00	27.00
17	38.12	45.19	31.06	29.00	33.00	36.00	43.00	48.60	51.00	26.00
18	37.03	44.75	29.31	27.40	30.00	36.00	43.00	48.00	51.00	24.00
19	35.98	43.12	28.85	27.40	29.00	34.00	42.00	46.00	51.00	24.00
20	35.83	42.74	28.92	28.00	30.00	34.00	42.00	45.60	52.00	25.00
21	35.60	42.03	29.17	28.00	30.00	34.00	41.00	45.20	50.00	25.00
22	35.15	40.99	29.32	28.00	30.00	34.00	40.00	43.60	47.00	25.00
23	34.97	40.53	29.40	28.00	30.00	34.00	39.00	43.00	48.00	26.00
24	34.77	40.01	29.53	28.40	31.00	34.00	39.00	41.60	47.00	25.00
Daily Values	868.78	996.56	741.01	710.80	772.00	839.00	977.00	1058.60	1139.00	670.00
Hourly Daily Sum	868.78	1012.72	724.85	686.40	752.00	846.00	985.00	1067.40	1178.00	618.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	32.96	39.07	26.85	26.00	28.00	31.00	39.00	41.00	46.00	26.00
2	33.00	38.61	27.39	27.00	29.00	31.00	39.00	41.00	45.00	26.00
3	33.04	38.99	27.09	26.00	28.00	31.00	39.00	41.00	45.00	26.00
4	32.72	38.36	27.08	26.00	28.00	31.00	39.00	40.00	44.00	26.00
5	32.88	38.53	27.23	26.40	29.00	30.00	39.00	40.60	44.00	26.00
6	32.64	38.15	27.13	26.00	28.00	31.00	38.00	39.60	43.00	25.00
7	32.64	38.26	27.02	26.40	28.00	31.00	38.00	40.00	43.00	25.00
8	32.56	38.08	27.04	26.00	28.00	30.00	38.00	40.00	43.00	26.00
9	32.04	37.81	26.27	25.40	27.00	30.00	37.00	40.00	42.00	25.00
10	31.32	37.02	25.62	25.00	27.00	29.00	37.00	39.00	42.00	24.00
11	31.40	37.57	25.23	24.40	26.00	29.00	36.00	39.00	45.00	24.00
12	31.56	37.78	25.34	24.00	26.00	30.00	37.00	39.20	46.00	24.00
13	31.32	37.60	25.04	25.00	26.00	29.00	36.00	39.60	47.00	23.00
14	31.68	38.09	25.27	24.40	26.00	29.00	38.00	39.60	46.00	23.00
15	31.72	38.03	25.41	24.00	26.00	30.00	38.00	39.00	45.00	23.00
16	31.60	37.98	25.22	24.00	26.00	30.00	37.00	40.00	45.00	23.00
17	31.36	37.39	25.33	24.00	26.00	30.00	37.00	38.60	44.00	23.00
18	31.44	37.61	25.27	24.00	26.00	29.00	37.00	38.60	45.00	23.00
19	31.60	37.51	25.69	24.40	26.00	30.00	37.00	38.60	45.00	23.00
20	32.32	38.16	26.48	25.40	27.00	30.00	38.00	39.60	45.00	24.00
21	32.72	38.56	26.88	26.00	27.00	30.00	39.00	40.00	45.00	25.00
22	32.60	38.53	26.67	25.40	27.00	31.00	38.00	40.00	45.00	25.00
23	32.88	38.97	26.79	25.40	28.00	31.00	38.00	41.00	46.00	25.00
24	32.96	39.09	26.83	25.40	28.00	31.00	39.00	40.00	47.00	25.00
Daily Values	772.96	913.01	632.91	601.00	649.00	716.00	902.00	953.80	1050.00	595.00
Hourly Daily Sum	772.96	915.75	630.17	606.00	651.00	724.00	908.00	955.00	1073.00	588.00

Daily Values: The Daily results as the statistics are applied on daily data.

Table 11.3.20-1: 24-hour weekday, weekend profiles for whole-building electricity use for #9122

11.3.21. 15060 Motor Pool

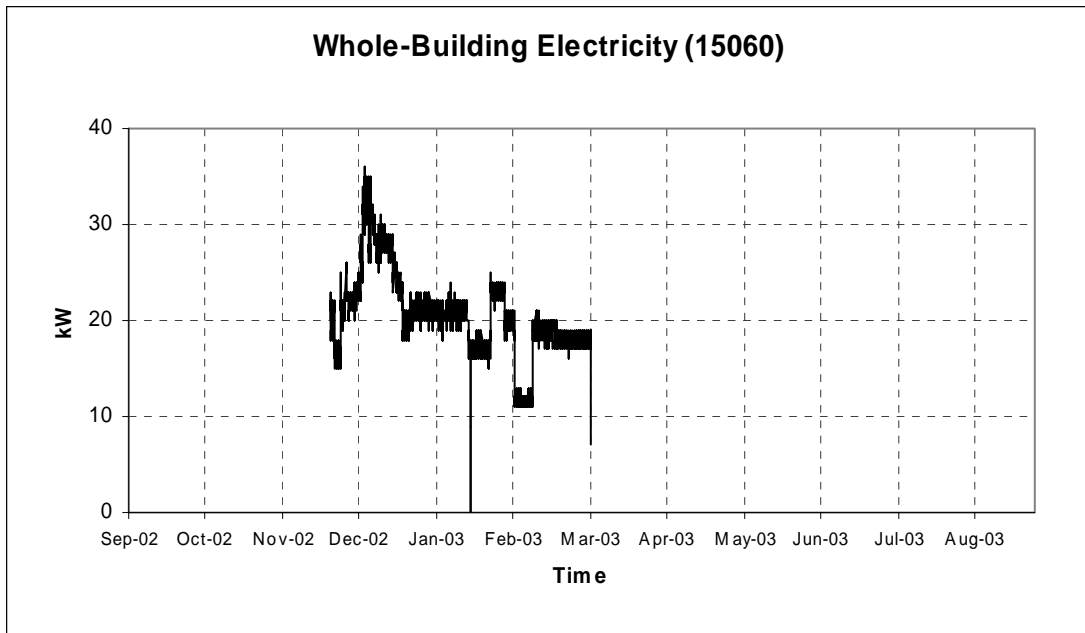
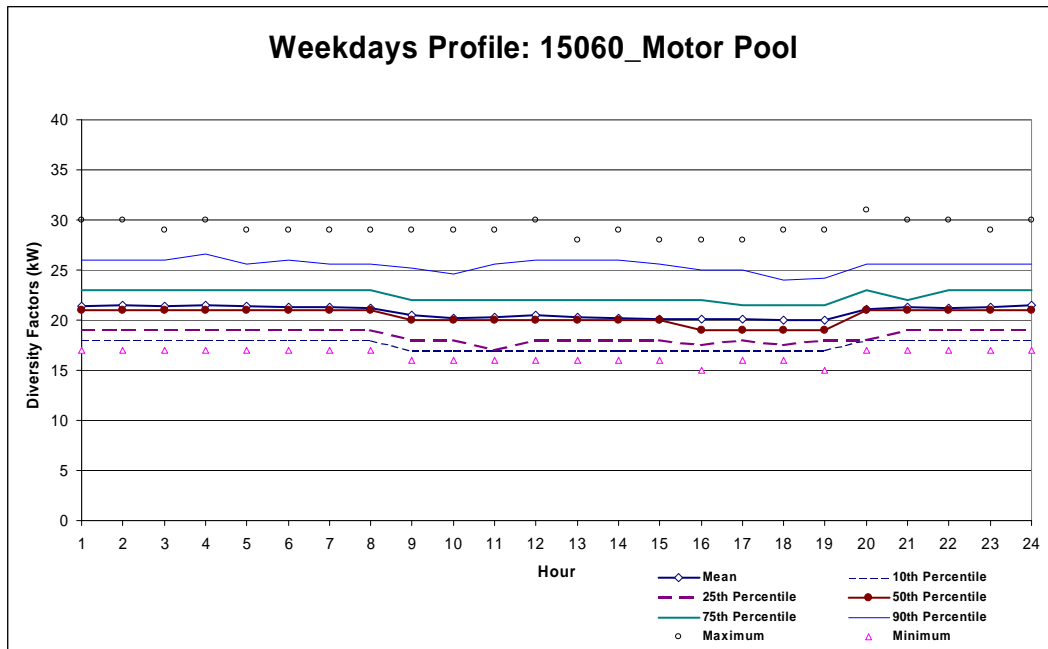
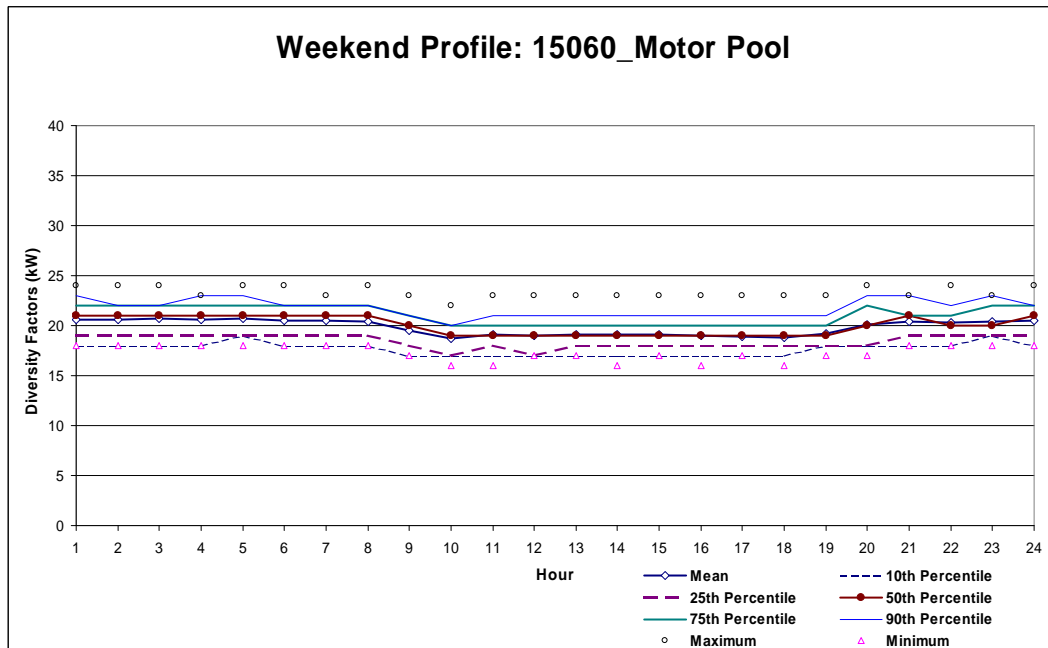


Figure 11.3.21-1: Building #15060 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 12/04/02, 12/05/02, 12/25/02, 01/01/03, 01/16/03, 02/03/03 to 02/07/03, and 02/10/03.



* The dates that are excluded from the weekend profile are as follow: 12/07/02, 12/08/02, 12/14/02, 12/15/02, 02/08/03, and 02/09/03.

Figure 11.3.21-2: 24-hour weekday, weekend profiles for whole-building electricity use for #15060

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	21.40	24.60	18.20	18.00	19.00	21.00	23.00	26.00	30.00	17.00
2	21.51	24.59	18.42	18.00	19.00	21.00	23.00	26.00	30.00	17.00
3	21.36	24.37	18.36	18.00	19.00	21.00	23.00	26.00	29.00	17.00
4	21.49	24.76	18.23	18.00	19.00	21.00	23.00	26.60	30.00	17.00
5	21.42	24.33	18.51	18.00	19.00	21.00	23.00	25.60	29.00	17.00
6	21.31	24.36	18.25	18.00	19.00	21.00	23.00	26.00	29.00	17.00
7	21.25	24.32	18.19	18.00	19.00	21.00	23.00	25.60	29.00	17.00
8	21.18	24.32	18.05	18.00	19.00	21.00	23.00	25.60	29.00	17.00
9	20.47	23.80	17.15	17.00	18.00	20.00	22.00	25.20	29.00	16.00
10	20.18	23.49	16.88	17.00	18.00	20.00	22.00	24.60	29.00	16.00
11	20.31	23.77	16.85	17.00	17.00	20.00	22.00	25.60	29.00	16.00
12	20.53	24.08	16.98	17.00	18.00	20.00	22.00	26.00	30.00	16.00
13	20.31	23.74	16.88	17.00	18.00	20.00	22.00	26.00	28.00	16.00
14	20.24	23.56	16.91	17.00	18.00	20.00	22.00	26.00	29.00	16.00
15	20.15	23.49	16.80	17.00	18.00	20.00	22.00	25.60	28.00	16.00
16	20.07	23.49	16.66	17.00	17.50	19.00	22.00	25.00	28.00	15.00
17	20.07	23.38	16.76	17.00	18.00	19.00	21.50	25.00	28.00	16.00
18	19.96	23.25	16.68	17.00	17.50	19.00	21.50	24.00	29.00	16.00
19	19.98	23.22	16.74	17.00	18.00	19.00	21.50	24.20	29.00	15.00
20	21.05	24.42	17.69	18.00	18.00	21.00	23.00	25.60	31.00	17.00
21	21.27	24.31	18.23	18.00	19.00	21.00	22.00	25.60	30.00	17.00
22	21.24	24.32	18.16	18.00	19.00	21.00	23.00	25.60	30.00	17.00
23	21.33	24.35	18.31	18.00	19.00	21.00	23.00	25.60	29.00	17.00
24	21.47	24.51	18.43	18.00	19.00	21.00	23.00	25.60	30.00	17.00
Daily Values	499.56	573.47	425.66	422.20	439.50	498.00	522.50	609.20	689.00	399.00
Hourly Daily Sum	499.56	576.82	422.31	421.00	442.00	489.00	538.50	612.60	701.00	395.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	20.62	22.45	18.79	18.00	19.00	21.00	22.00	23.00	24.00	18.00
2	20.57	22.26	18.88	18.00	19.00	21.00	22.00	22.00	24.00	18.00
3	20.71	22.53	18.89	18.00	19.00	21.00	22.00	22.00	24.00	18.00
4	20.57	22.29	18.85	18.00	19.00	21.00	22.00	23.00	23.00	18.00
5	20.71	22.36	19.07	19.00	19.00	21.00	22.00	23.00	24.00	18.00
6	20.52	22.30	18.75	18.00	19.00	21.00	22.00	22.00	24.00	18.00
7	20.48	22.11	18.84	18.00	19.00	21.00	22.00	22.00	23.00	18.00
8	20.43	22.18	18.68	18.00	19.00	21.00	22.00	22.00	24.00	18.00
9	19.52	21.30	17.75	17.00	18.00	20.00	21.00	21.00	23.00	17.00
10	18.71	20.33	17.10	17.00	17.00	19.00	20.00	20.00	22.00	16.00
11	19.10	20.96	17.23	17.00	18.00	19.00	20.00	21.00	23.00	16.00
12	19.05	20.98	17.11	17.00	17.00	19.00	20.00	21.00	23.00	17.00
13	19.14	20.73	17.55	17.00	18.00	19.00	20.00	21.00	23.00	17.00
14	19.10	20.94	17.25	17.00	18.00	19.00	20.00	21.00	23.00	16.00
15	19.10	20.88	17.31	17.00	18.00	19.00	20.00	21.00	23.00	17.00
16	19.00	20.84	17.16	17.00	18.00	19.00	20.00	21.00	23.00	16.00
17	18.90	20.58	17.23	17.00	18.00	19.00	20.00	21.00	23.00	17.00
18	18.81	20.67	16.95	17.00	18.00	19.00	20.00	21.00	23.00	16.00
19	19.19	20.73	17.65	18.00	18.00	19.00	20.00	21.00	23.00	17.00
20	20.10	22.21	17.98	18.00	18.00	20.00	22.00	23.00	24.00	17.00
21	20.38	21.98	18.78	18.00	19.00	21.00	21.00	23.00	23.00	18.00
22	20.29	22.08	18.49	18.00	19.00	20.00	21.00	22.00	24.00	18.00
23	20.43	22.06	18.80	19.00	19.00	20.00	22.00	23.00	23.00	18.00
24	20.52	22.19	18.86	18.00	19.00	21.00	22.00	22.00	24.00	18.00
Daily Values	475.95	515.90	436.00	429.00	440.00	479.00	497.00	531.00	553.00	417.00
Hourly Daily Sum	475.95	517.95	433.96	424.00	442.00	480.00	505.00	522.00	560.00	415.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.21-1: 24-hour weekday, weekend profiles for whole-building electricity use for #15060

11.3.22. 22020 Admin

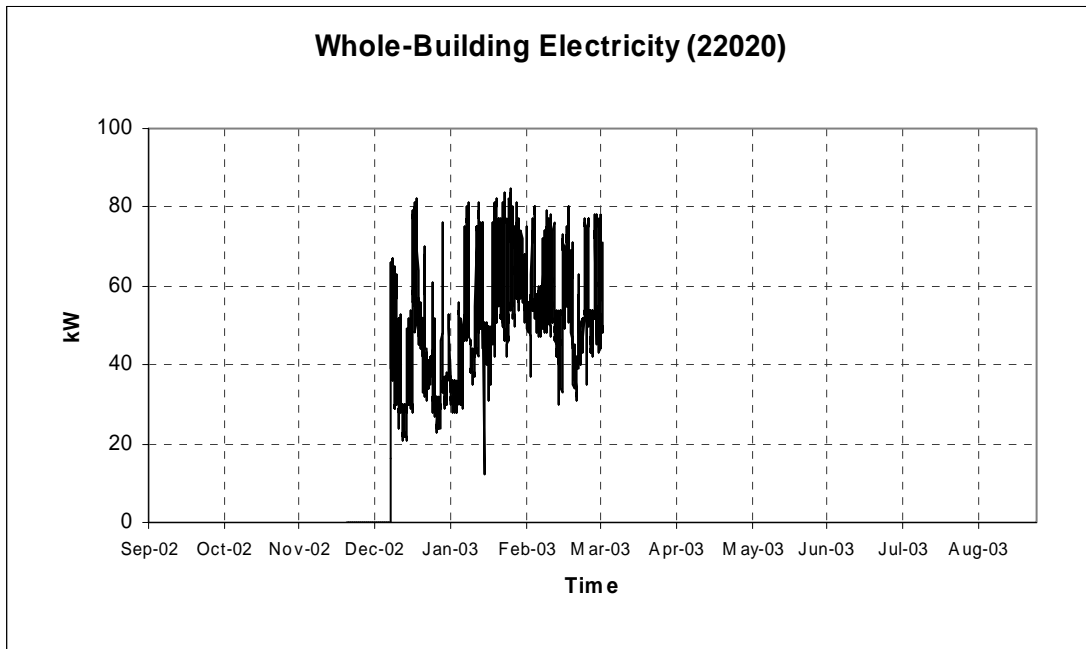
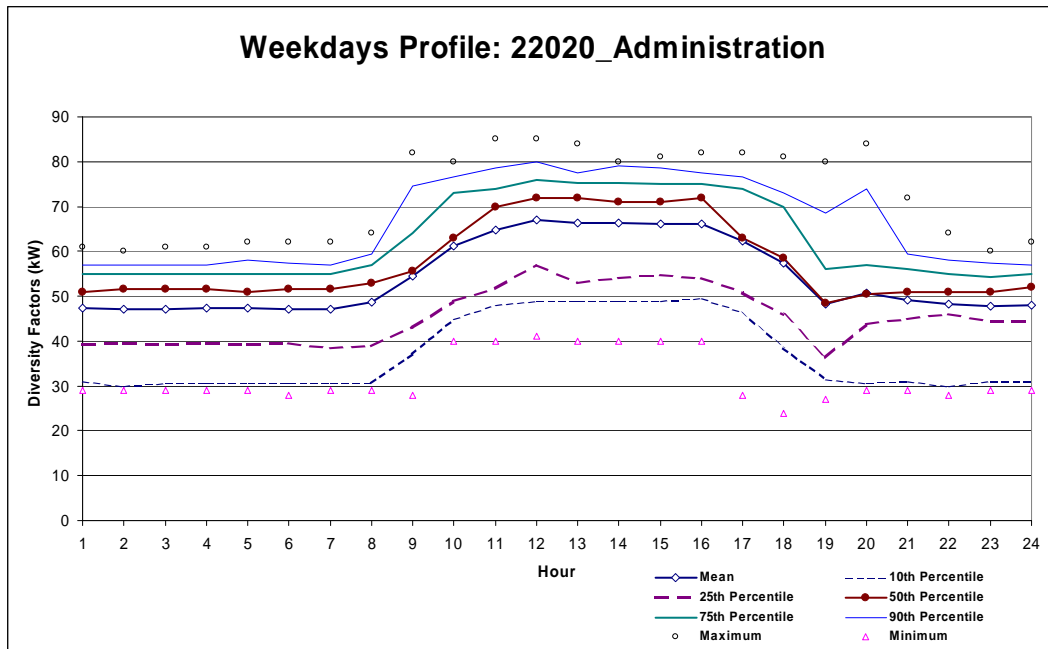


Figure 11.3.22-1: Building #22020 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 12/24/02, 12/25/02, 12/31/02, 01/01/03, 01/03/03, and 01/16/03.

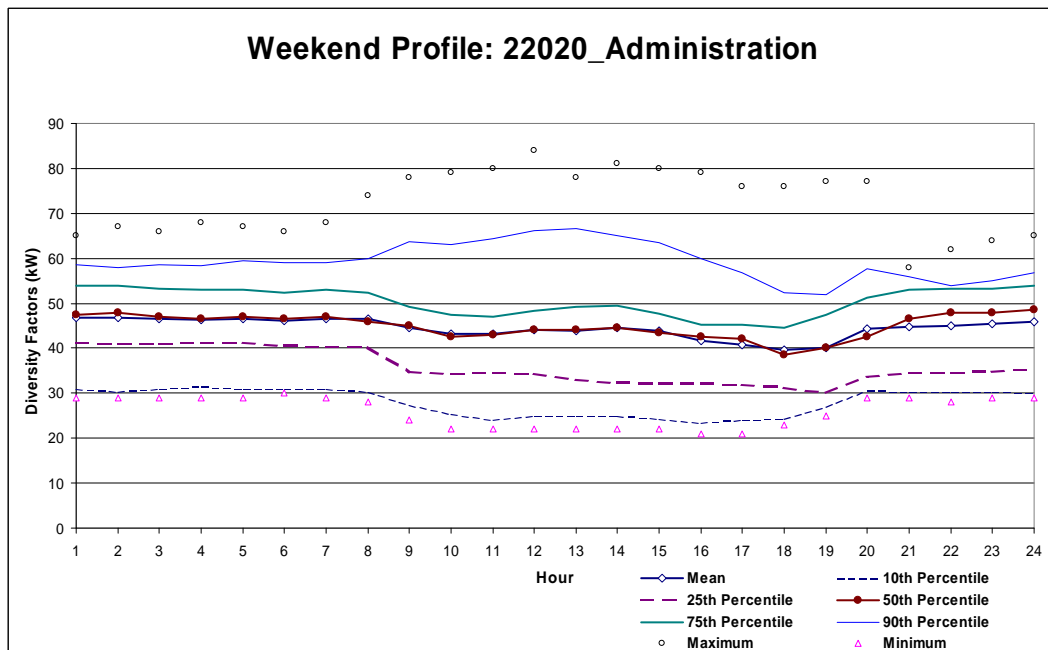


Figure 11.3.22-2: 24-hour weekday, weekend profiles for whole-building electricity use for #22020

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	47.45	57.55	37.35	31.00	39.25	51.00	55.00	57.00	61.00	29.00
2	47.20	57.27	37.13	30.00	39.50	51.50	55.00	57.00	60.00	29.00
3	47.05	57.19	36.92	30.50	39.25	51.50	55.00	57.00	61.00	29.00
4	47.30	57.34	37.27	30.50	39.50	51.50	55.00	57.00	61.00	29.00
5	47.32	57.56	37.09	30.50	39.25	51.00	55.00	58.00	62.00	29.00
6	47.14	57.43	36.85	30.50	39.50	51.50	55.00	57.50	62.00	28.00
7	47.05	57.24	36.87	30.50	38.50	51.50	55.00	57.00	62.00	29.00
8	48.61	59.41	37.80	30.50	38.75	53.00	57.00	59.50	64.00	29.00
9	54.54	68.25	40.82	37.00	43.00	55.50	64.00	74.50	82.00	28.00
10	61.11	73.75	48.46	45.00	49.00	63.00	73.00	76.50	80.00	40.00
11	64.84	77.11	52.57	48.00	51.75	70.00	74.00	78.50	85.00	40.00
12	67.02	79.15	54.89	49.00	57.00	72.00	76.00	80.00	85.00	41.00
13	66.25	78.24	54.26	49.00	53.00	72.00	75.25	77.50	84.00	40.00
14	66.32	77.99	54.65	49.00	54.00	71.00	75.25	79.00	80.00	40.00
15	66.13	78.24	54.01	49.00	54.75	71.00	75.00	78.50	81.00	40.00
16	66.21	78.13	54.30	49.50	54.00	72.00	75.00	77.50	82.00	40.00
17	62.30	75.33	49.28	46.50	51.00	63.00	74.00	76.50	82.00	28.00
18	57.30	71.64	42.97	38.50	45.75	58.50	70.00	73.00	81.00	24.00
19	48.25	61.63	34.87	31.50	36.50	48.50	56.00	68.50	80.00	27.00
20	50.77	65.14	36.39	30.50	43.75	50.50	57.00	74.00	84.00	29.00
21	49.04	59.73	38.34	31.00	45.00	51.00	56.00	59.50	72.00	29.00
22	48.20	58.29	38.11	30.00	46.00	51.00	55.00	58.00	64.00	28.00
23	47.88	57.55	38.20	31.00	44.50	51.00	54.25	57.50	60.00	29.00
24	48.11	57.94	38.27	31.00	44.50	52.00	55.00	57.00	62.00	29.00
Daily Values	1303.38	1527.46	1079.29	945.50	1117.50	1401.00	1491.00	1531.50	1610.00	859.00
Hourly Daily Sum	1303.38	1579.09	1027.66	889.50	1087.00	1384.50	1506.75	1606.00	1737.00	763.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	46.79	57.24	36.34	31.00	41.25	47.50	54.00	58.70	65.00	29.00
2	46.79	57.33	36.25	30.30	41.00	48.00	54.00	58.00	67.00	29.00
3	46.46	56.85	36.07	31.00	41.00	47.00	53.25	58.70	66.00	29.00
4	46.42	56.73	36.10	31.30	41.25	46.50	53.00	58.40	68.00	29.00
5	46.46	57.02	35.89	31.00	41.25	47.00	53.00	59.40	67.00	29.00
6	46.17	56.27	36.06	31.00	40.50	46.50	52.25	59.00	66.00	30.00
7	46.50	57.41	35.59	31.00	40.25	47.00	53.00	59.00	68.00	29.00
8	46.58	58.53	34.64	30.30	40.25	46.00	52.25	60.00	74.00	28.00
9	44.63	58.70	30.55	27.30	34.75	45.00	49.25	63.70	78.00	24.00
10	43.21	57.94	28.48	25.30	34.25	42.50	47.50	63.10	79.00	22.00
11	43.25	58.18	28.32	24.00	34.50	43.00	47.00	64.40	80.00	22.00
12	44.08	59.60	28.57	25.00	34.25	44.00	48.25	66.10	84.00	22.00
13	43.88	58.89	28.86	25.00	33.00	44.00	49.25	66.70	78.00	22.00
14	44.58	60.37	28.80	25.00	32.25	44.50	49.50	65.10	81.00	22.00
15	43.79	59.04	28.55	24.30	32.00	43.50	47.75	63.40	80.00	22.00
16	41.75	55.71	27.79	23.30	32.00	42.50	45.25	59.90	79.00	21.00
17	40.79	54.11	27.47	24.00	31.75	42.00	45.25	56.90	76.00	21.00
18	39.58	52.27	26.90	24.30	31.25	38.50	44.50	52.40	76.00	23.00
19	40.17	52.71	27.62	27.00	30.00	40.00	47.50	52.00	77.00	25.00
20	44.33	56.29	32.37	30.60	33.75	42.50	51.25	57.80	77.00	29.00
21	44.79	54.80	34.78	30.30	34.50	46.50	53.00	56.00	58.00	29.00
22	44.92	55.05	34.78	30.30	34.50	48.00	53.25	54.00	62.00	28.00
23	45.50	55.92	35.08	30.30	34.75	48.00	53.25	55.00	64.00	29.00
24	45.83	56.47	35.20	30.00	35.50	48.50	54.00	56.70	65.00	29.00
Daily Values	1067.25	1338.31	796.19	673.20	891.25	1102.50	1194.75	1431.80	1537.00	628.00
Hourly Daily Sum	1067.25	1363.44	771.06	672.90	859.75	1078.50	1210.50	1424.40	1735.00	622.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.22-1: 24-hour weekday, weekend profiles for whole-building electricity use for #22020

11.3.23. 28000 Headquarters Building

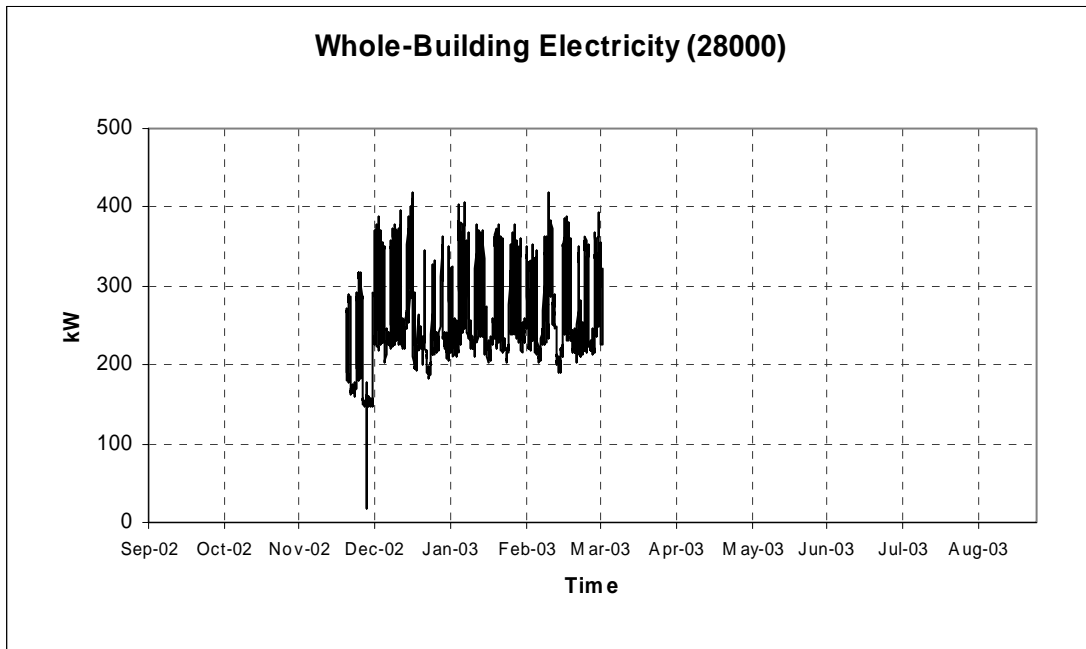
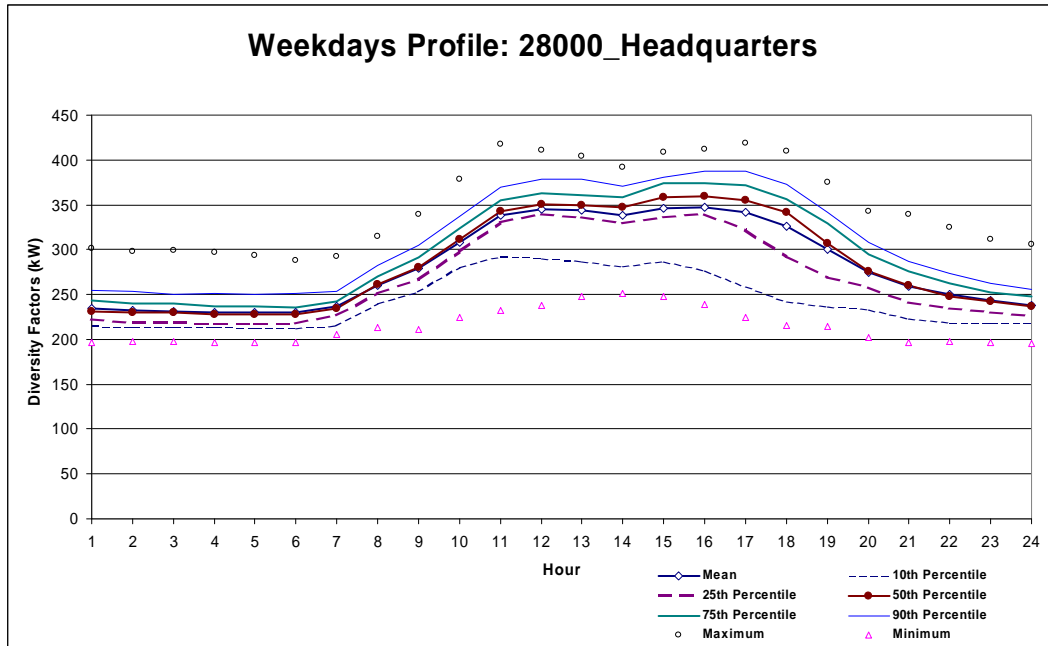
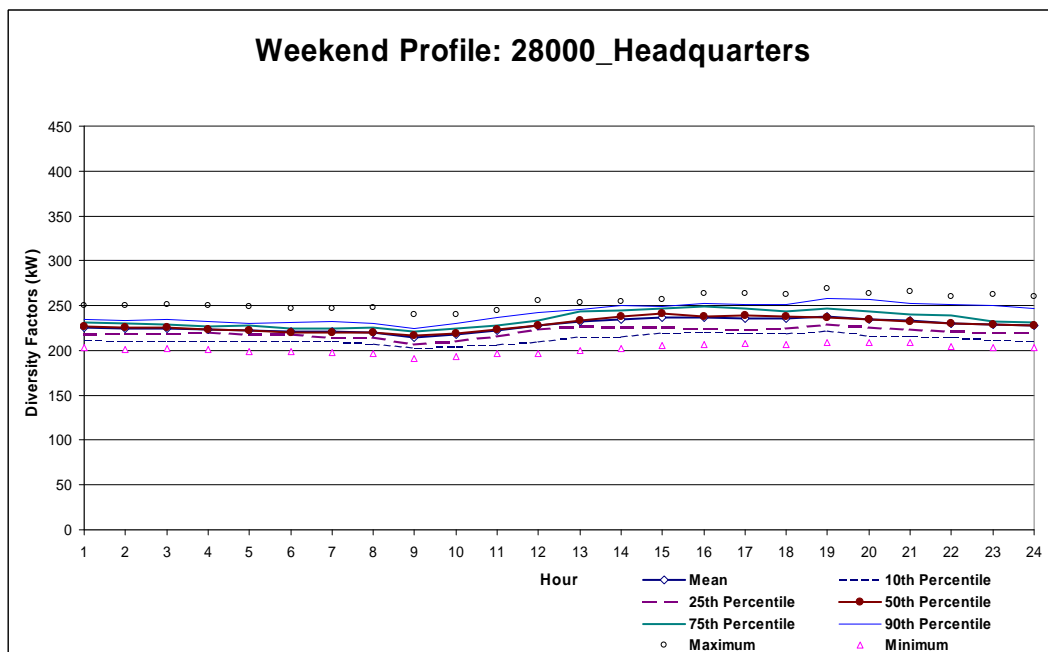


Figure 11.3.23-1: Building #28000 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 12/02/02, 12/20/02, 12/24/02, 12/25/02, 12/31/02, 01/01/03, and 02/17/03.



* The dates that are excluded from the weekend profile are as follow: 12/01/02.

Figure 11.3.23-2: 24-hour weekday, weekend profiles for whole-building electricity use for #28000

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	234.70	254.52	214.89	216.00	222.00	231.00	243.00	255.00	301.00	196.00
2	232.54	251.46	213.62	213.00	219.00	230.00	240.00	253.00	298.00	198.00
3	231.36	249.95	212.77	214.00	219.00	230.00	240.00	250.00	299.00	198.00
4	230.43	248.49	212.36	213.00	218.00	228.00	237.00	251.00	297.00	197.00
5	229.75	247.46	212.05	212.00	217.00	228.00	237.00	250.00	294.00	196.00
6	229.57	246.47	212.68	212.00	218.00	228.00	236.00	251.00	288.00	196.00
7	236.21	253.12	219.30	216.00	227.00	235.00	242.00	253.00	292.00	205.00
8	260.46	280.63	240.29	240.00	251.00	261.00	270.00	283.00	315.00	213.00
9	278.61	304.22	253.00	253.00	267.00	280.00	291.00	305.00	340.00	211.00
10	308.16	336.88	279.45	280.00	298.00	312.00	324.00	337.00	378.00	225.00
11	338.62	371.60	305.65	292.00	331.00	343.00	355.00	370.00	418.00	232.00
12	345.26	378.88	311.64	290.00	340.00	351.00	363.00	379.00	411.00	238.00
13	343.72	375.87	311.57	287.00	336.00	350.00	361.00	379.00	404.00	248.00
14	338.11	371.31	304.92	281.00	329.00	347.00	358.00	371.00	392.00	251.00
15	345.66	384.88	306.43	287.00	336.00	358.00	374.00	381.00	409.00	248.00
16	347.15	389.98	304.32	277.00	339.00	359.00	374.00	388.00	412.00	239.00
17	342.00	388.60	295.40	259.00	323.00	355.00	372.00	387.00	419.00	225.00
18	325.74	373.18	278.30	242.00	292.00	342.00	356.00	373.00	410.00	215.00
19	300.62	339.63	261.62	237.00	269.00	307.00	329.00	342.00	375.00	214.00
20	274.95	305.43	244.47	233.00	258.00	276.00	295.00	308.00	343.00	202.00
21	259.59	286.96	232.22	223.00	241.00	260.00	276.00	287.00	339.00	196.00
22	249.85	273.26	226.44	219.00	234.00	248.00	262.00	274.00	325.00	198.00
23	242.92	264.26	221.57	218.00	230.00	242.00	252.00	262.00	311.00	197.00
24	238.07	258.16	217.97	218.00	226.00	237.00	248.00	256.00	306.00	195.00
Daily Values	6764.07	7301.57	6226.56	5978.00	6509.00	6858.00	7050.00	7399.00	7803.00	5450.00
Hourly Daily Sum	6764.07	7435.16	6092.97	5832.00	6440.00	6838.00	7135.00	7445.00	8376.00	5133.00

Daily Values: The Daily results as the statistics are applied on daily data.
 Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	225.31	235.58	215.03	212.50	218.25	227.00	230.75	234.50	250.00	203.00
2	224.50	235.04	213.96	211.00	219.25	226.00	230.00	233.50	250.00	201.00
3	223.96	234.50	213.42	210.00	219.00	226.00	228.75	234.50	251.00	202.00
4	222.85	232.94	212.75	209.50	220.25	223.00	226.75	232.50	250.00	201.00
5	221.73	231.60	211.86	209.50	217.25	222.00	227.50	230.00	249.00	199.00
6	220.96	230.62	211.30	210.00	218.00	220.50	225.00	231.50	247.00	199.00
7	220.65	230.63	210.67	209.50	214.50	220.00	225.00	232.00	247.00	198.00
8	220.42	230.75	210.10	208.00	214.00	220.00	226.00	229.50	248.00	197.00
9	214.62	225.04	204.19	203.00	206.25	216.50	221.00	224.00	240.00	191.00
10	217.65	229.00	206.31	204.50	210.00	219.00	224.75	229.50	240.00	193.00
11	222.04	233.48	210.59	207.00	215.25	223.00	227.75	237.00	245.00	197.00
12	228.12	240.98	215.25	210.00	223.75	228.00	233.50	242.00	256.00	197.00
13	232.65	245.24	220.07	215.00	226.25	233.50	243.00	245.50	254.00	200.00
14	234.38	248.08	220.69	216.00	225.50	237.50	244.00	250.00	255.00	202.00
15	236.27	249.46	223.08	220.50	225.75	241.00	246.75	249.00	257.00	206.00
16	236.73	251.16	222.30	221.00	224.75	237.50	249.50	252.00	263.00	207.00
17	236.15	250.47	221.84	220.00	223.50	239.00	246.25	251.50	263.00	208.00
18	235.15	249.62	220.69	218.50	224.50	237.50	243.00	251.50	262.00	207.00
19	238.35	253.35	223.34	222.00	229.25	236.50	247.00	257.50	269.00	209.00
20	234.81	249.41	220.20	217.00	226.00	235.00	243.75	256.50	263.00	209.00
21	232.88	247.09	218.68	217.00	223.00	232.50	240.50	252.00	266.00	209.00
22	230.08	244.60	215.55	214.50	221.25	230.50	238.50	251.50	260.00	204.00
23	228.69	243.51	213.87	212.00	220.00	228.50	232.75	250.00	260.00	203.00
24	227.27	241.84	212.70	211.00	220.00	227.50	231.00	247.00	260.00	203.00
Daily Values	5466.23	5700.86	5231.60	5188.00	5362.50	5454.00	5625.50	5716.50	5933.00	4849.00
Hourly Daily Sum	5466.23	5764.04	5168.43	5109.00	5285.50	5487.50	5632.75	5804.50	6107.00	4845.00

Daily Values: The Daily results as the statistics are applied on daily data.
 Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.23-1: 24-hour weekday, weekend profiles for whole-building electricity use for #28000

11.3.24. 42000 Sports USA

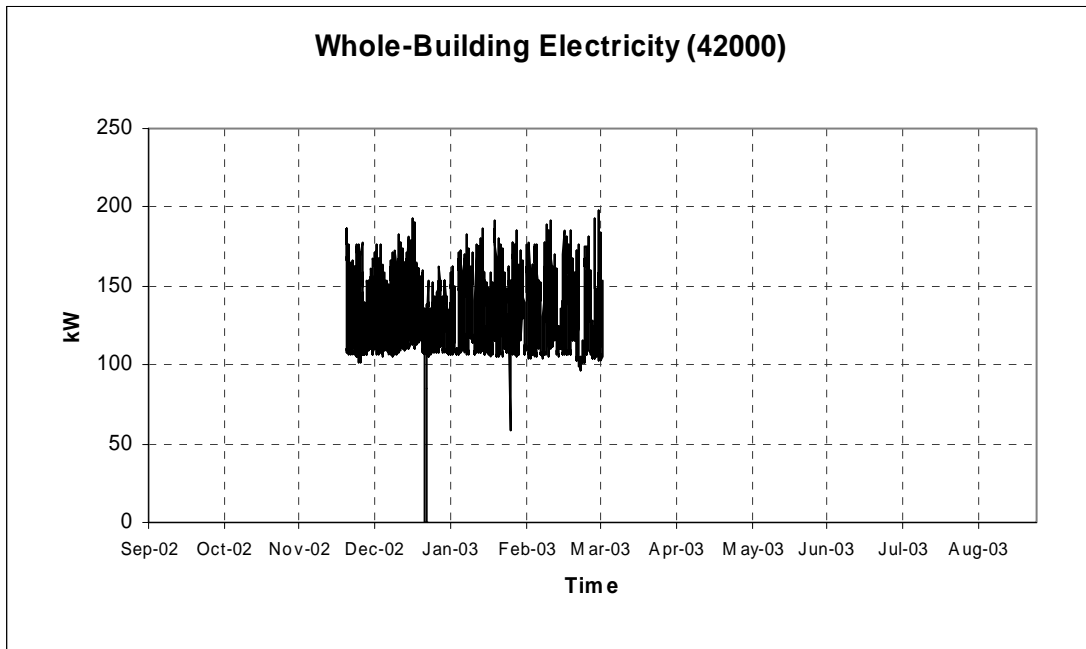
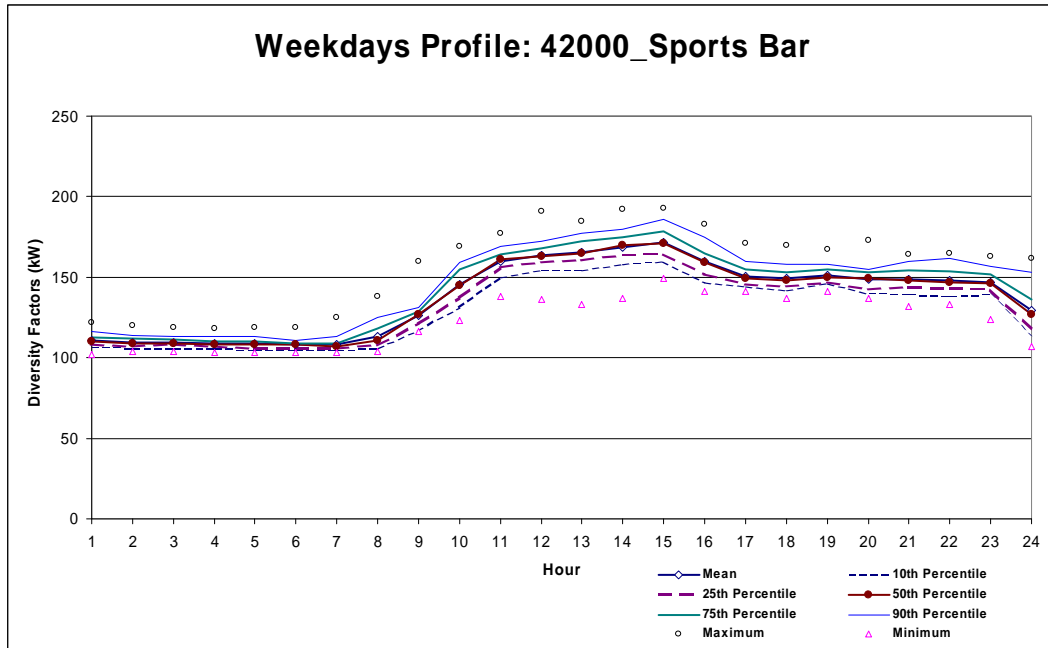


Figure 11.3.24-1: Building #42000 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 12/23/03 to 12/27/02, 12/30/02 to 01/02/03, 01/17/03, 01/20/03, 01/27/03, 02/17/03, 02/25/03, 02/26/03, 03/04/03, and 03/05/03.

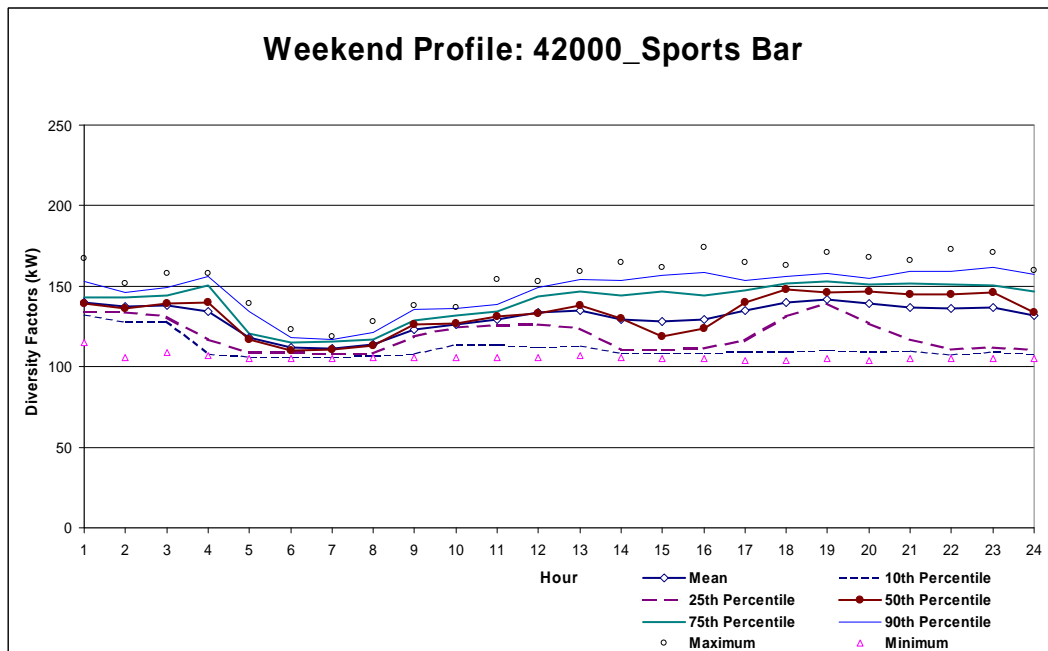


Figure 11.3.24-2: 24-hour weekday, weekend profiles for whole-building electricity use for #42000

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	110.59	114.73	106.45	107.00	108.00	110.00	112.50	116.00	122.00	102.00
2	109.55	113.16	105.94	106.00	107.00	109.00	112.00	114.00	120.00	104.00
3	109.55	112.69	106.40	106.00	108.00	109.00	111.50	113.00	119.00	104.00
4	108.88	112.00	105.77	106.00	107.00	108.00	110.00	113.00	118.00	103.00
5	108.65	112.02	105.28	105.00	106.00	108.00	110.00	113.00	119.00	103.00
6	108.20	111.17	105.22	105.00	106.00	108.00	109.00	111.00	119.00	103.00
7	108.41	112.47	104.35	105.00	106.00	107.00	109.00	113.00	125.00	103.00
8	113.14	120.86	105.41	106.00	107.50	111.00	118.00	125.00	138.00	104.00
9	126.35	133.89	118.81	117.00	121.00	127.00	129.00	131.00	160.00	116.00
10	145.73	156.57	134.88	131.00	137.50	145.00	155.00	159.00	169.00	123.00
11	159.78	167.82	151.75	150.00	156.00	161.00	164.00	169.00	177.00	138.00
12	163.27	171.74	154.81	154.00	159.00	163.00	168.00	172.00	191.00	136.00
13	165.51	174.95	156.07	154.00	160.50	165.00	172.50	177.00	185.00	133.00
14	168.69	178.85	158.52	158.00	163.50	170.00	174.50	180.00	192.00	137.00
15	171.94	182.92	160.97	160.00	164.00	171.00	178.50	186.00	193.00	149.00
16	159.84	170.16	149.53	147.00	151.50	159.00	165.00	175.00	183.00	141.00
17	150.78	157.38	144.19	144.00	145.50	149.00	155.00	160.00	171.00	141.00
18	149.14	156.13	142.14	142.00	144.00	148.00	153.00	158.00	170.00	137.00
19	151.41	157.03	145.80	146.00	147.00	150.00	155.00	158.00	167.00	141.00
20	148.61	156.01	141.20	140.00	142.50	149.00	153.00	155.00	173.00	137.00
21	148.76	156.36	141.17	139.00	143.50	148.00	154.50	160.00	164.00	132.00
22	147.98	156.08	139.88	138.00	143.00	147.00	153.50	162.00	165.00	133.00
23	146.78	154.30	139.27	139.00	142.50	146.00	151.50	157.00	163.00	124.00
24	129.51	143.40	115.62	114.00	118.00	127.00	136.00	153.00	162.00	107.00
Daily Values	3311.06	3387.74	3234.38	3235.00	3266.50	3302.00	3350.00	3396.00	3542.00	3133.00
Hourly Daily Sum	3311.06	3482.68	3139.43	3119.00	3194.50	3295.00	3410.00	3530.00	3765.00	2951.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	140.11	150.19	130.03	132.20	134.00	139.00	143.00	152.80	167.00	115.00
2	137.19	146.29	128.08	128.20	134.00	136.00	143.00	146.40	152.00	106.00
3	137.93	148.52	127.33	128.00	131.50	139.00	144.50	149.40	158.00	109.00
4	134.19	152.73	115.64	108.00	117.00	140.00	150.50	156.00	158.00	107.00
5	117.85	128.01	107.69	106.60	109.00	117.00	120.50	134.40	139.00	105.00
6	111.89	116.47	107.31	106.60	109.00	110.00	115.00	118.00	123.00	105.00
7	111.11	115.27	106.95	106.60	108.00	111.00	115.50	117.00	119.00	105.00
8	113.74	119.88	107.60	107.00	108.50	113.00	117.00	121.40	128.00	106.00
9	123.44	133.05	113.84	108.20	118.50	126.00	128.50	135.40	138.00	106.00
10	126.44	135.02	117.87	113.60	124.50	127.00	132.00	136.00	137.00	106.00
11	129.11	139.48	118.74	114.00	125.50	131.00	134.50	138.40	154.00	106.00
12	133.48	146.98	119.98	112.40	126.50	133.00	143.50	149.40	153.00	106.00
13	134.70	150.48	118.93	113.20	124.00	138.00	147.00	154.40	159.00	107.00
14	129.30	147.78	110.81	108.60	111.00	130.00	144.00	153.60	165.00	106.00
15	128.00	147.13	108.87	108.60	111.00	119.00	146.50	157.00	162.00	105.00
16	129.44	149.71	109.18	108.60	111.50	124.00	144.00	158.60	174.00	105.00
17	135.11	152.51	117.71	109.60	116.50	140.00	147.50	153.80	165.00	104.00
18	140.00	157.91	122.09	109.60	131.00	148.00	152.00	156.00	163.00	104.00
19	141.48	159.94	123.03	110.60	139.00	146.00	153.00	157.80	171.00	105.00
20	139.26	157.59	120.93	109.20	127.00	147.00	151.00	155.00	168.00	104.00
21	136.67	156.61	116.72	110.00	117.00	145.00	152.00	159.00	166.00	105.00
22	136.07	158.03	114.12	107.60	110.50	145.00	151.00	159.40	173.00	105.00
23	136.81	158.64	114.99	109.20	112.00	146.00	150.50	161.40	171.00	105.00
24	131.63	151.24	112.02	108.00	110.50	134.00	146.50	157.40	160.00	105.00
Daily Values	3134.96	3384.63	2885.29	2704.80	3040.00	3162.00	3335.50	3390.40	3454.00	2631.00
Hourly Daily Sum	3134.96	3479.46	2790.46	2684.20	2867.00	3184.00	3372.50	3538.00	3723.00	2542.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.24-1: 24-hour weekday, weekend profiles for whole-building electricity use for #42000

11.3.25. 52024 COMMAND Child Care

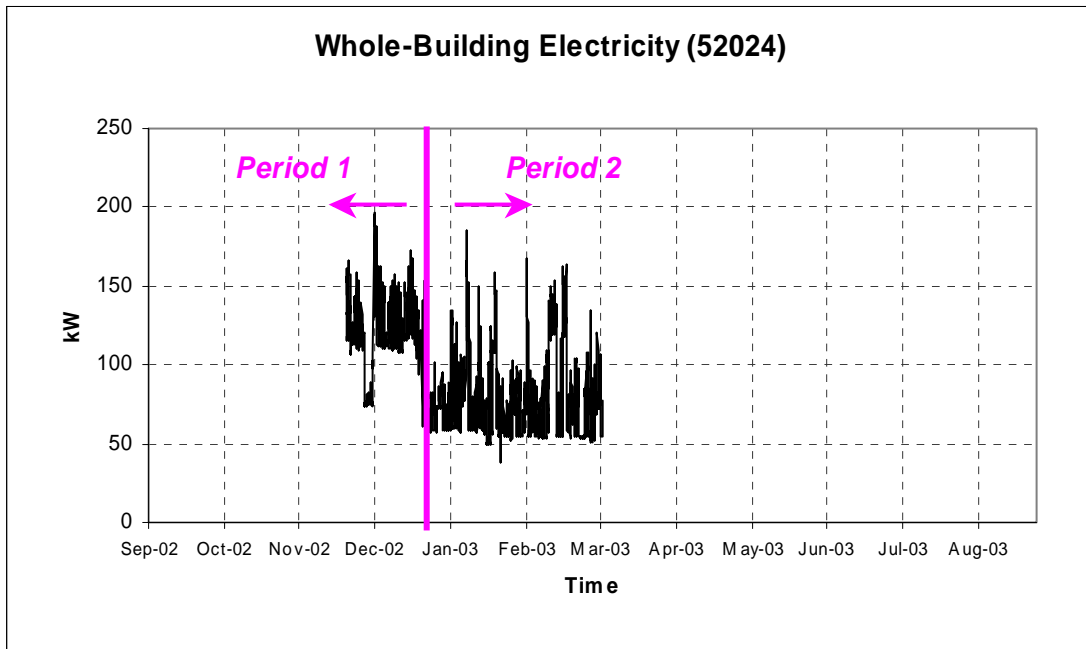


Figure 11.3.25-1: Building #52024 Electricity Usage

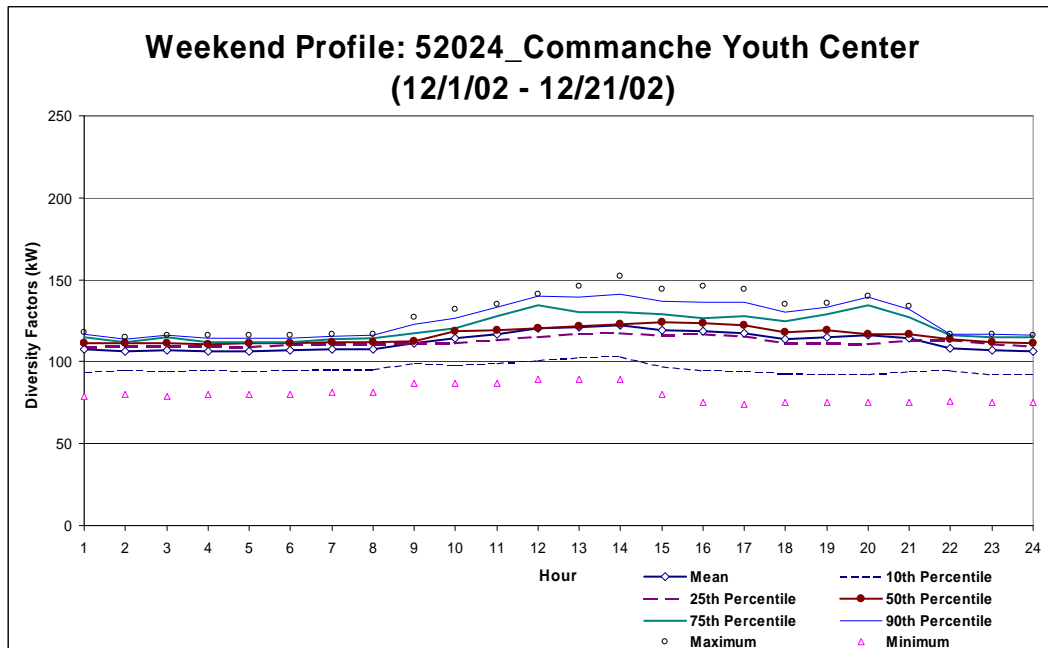
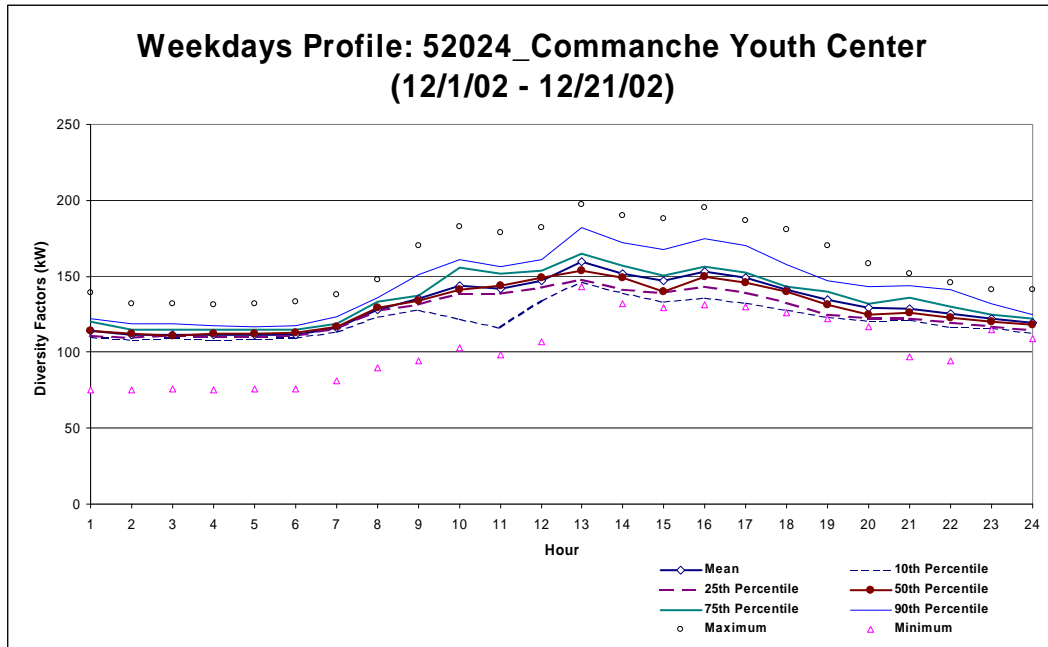


Figure 11.3.25-2: 24-hour weekday, weekend profiles for whole-building electricity use for #52024 in Period 1

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	114.27	127.40	101.13	110.40	111.00	114.00	120.00	122.00	139.00	75.00
2	111.27	122.94	99.60	108.40	109.50	112.00	114.50	118.60	132.00	75.00
3	111.53	122.92	100.15	109.40	110.50	111.00	114.50	118.60	132.00	76.00
4	111.27	122.75	99.79	108.40	110.00	112.00	115.00	117.60	131.00	75.00
5	111.27	122.55	99.98	108.80	110.00	112.00	114.50	117.00	132.00	76.00
6	111.73	123.19	100.28	109.40	111.00	113.00	115.00	117.60	133.00	76.00
7	116.33	127.81	104.86	113.40	115.50	117.00	118.50	123.20	138.00	81.00
8	128.20	140.38	116.02	123.40	127.00	129.00	133.50	135.60	148.00	90.00
9	135.47	151.34	119.60	128.00	131.50	134.00	137.00	150.80	170.00	94.00
10	143.67	163.12	124.21	121.80	138.50	141.00	155.50	160.80	183.00	103.00
11	142.00	161.85	122.15	116.00	138.50	144.00	151.50	156.60	179.00	98.00
12	147.27	163.53	131.01	134.20	142.50	149.00	154.00	160.80	182.00	107.00
13	159.53	175.51	143.56	146.40	147.50	154.00	165.00	182.00	197.00	143.00
14	151.80	167.42	136.18	139.00	141.00	149.00	157.00	172.20	190.00	132.00
15	147.07	163.00	131.13	133.40	139.00	140.00	150.50	167.80	188.00	129.00
16	152.80	169.94	135.66	136.20	143.00	150.00	156.50	174.80	195.00	131.00
17	148.80	164.97	132.63	132.40	139.50	146.00	152.50	170.40	187.00	130.00
18	141.47	156.03	126.91	127.80	132.50	140.00	143.00	157.80	181.00	126.00
19	134.33	147.34	121.33	123.40	125.00	131.00	140.00	147.20	170.00	122.00
20	129.07	140.21	117.93	120.40	122.00	125.00	132.00	143.40	158.00	117.00
21	128.60	141.51	115.69	121.40	122.00	126.00	136.00	143.80	152.00	97.00
22	125.13	137.71	112.56	116.80	119.50	123.00	130.00	141.40	146.00	94.00
23	122.27	129.74	114.79	116.00	117.00	120.00	125.00	132.00	141.00	115.00
24	119.40	127.03	111.77	113.00	114.00	118.00	122.00	125.00	141.00	109.00
Daily Values	3144.53	3343.09	2945.97	3007.00	3052.50	3072.00	3211.00	3307.60	3714.00	2835.00
Hourly Daily Sum	3144.53	3470.17	2818.90	2917.80	3017.50	3110.00	3253.00	3457.00	3845.00	2471.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

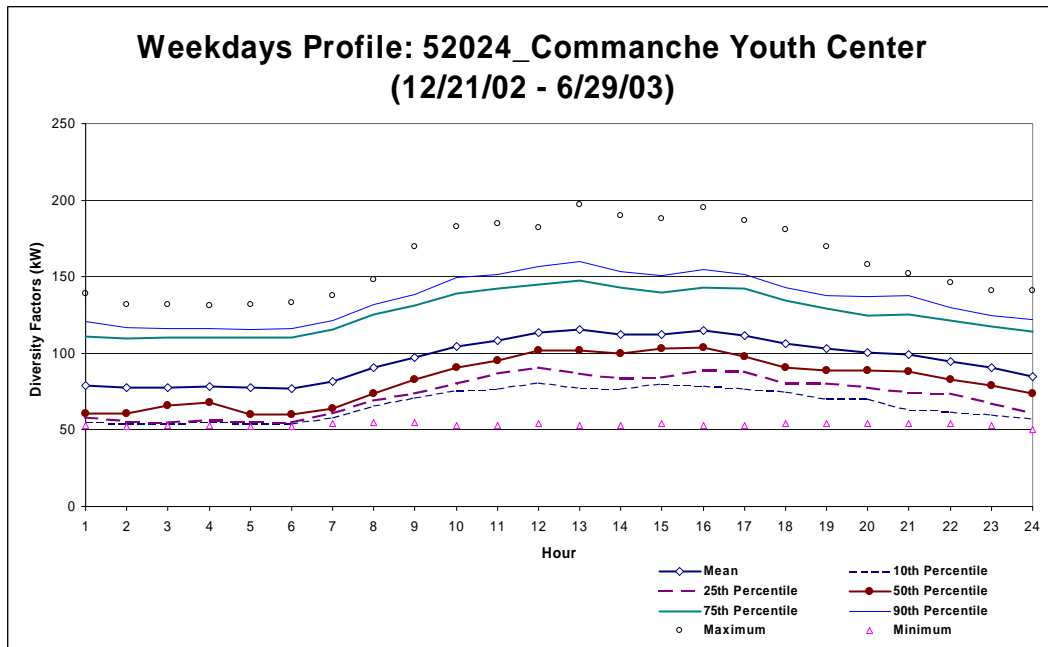
WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	107.33	121.67	93.00	93.50	108.75	111.50	115.00	117.00	118.00	79.00
2	106.33	119.38	93.28	94.50	109.50	111.00	111.75	113.50	115.00	80.00
3	107.17	121.24	93.09	94.00	109.50	111.50	115.00	116.00	116.00	79.00
4	106.33	119.46	93.21	94.50	109.25	110.50	111.75	114.00	116.00	80.00
5	106.33	119.49	93.18	94.00	108.75	111.00	111.75	114.00	116.00	80.00
6	106.83	120.14	93.53	95.00	110.25	111.50	112.00	114.00	116.00	80.00
7	107.67	120.94	94.39	95.50	110.50	112.00	113.50	115.50	117.00	81.00
8	107.83	121.21	94.46	95.50	110.50	112.00	114.25	116.00	117.00	81.00
9	111.50	124.91	98.09	99.00	111.25	112.50	117.50	123.00	127.00	87.00
10	114.33	129.61	99.05	98.00	111.25	118.50	120.50	126.50	132.00	87.00
11	117.00	134.11	99.89	99.00	113.00	119.00	128.00	133.00	135.00	87.00
12	120.50	139.53	101.47	101.00	114.75	120.50	134.50	140.00	141.00	89.00
13	121.17	140.26	102.07	102.50	117.00	121.50	130.50	139.50	146.00	89.00
14	122.50	143.13	101.87	103.00	117.50	123.00	130.00	141.50	152.00	89.00
15	119.33	141.01	97.66	97.00	116.00	124.00	129.00	137.00	144.00	80.00
16	118.33	141.94	94.72	95.00	116.75	123.50	126.50	136.50	146.00	75.00
17	117.50	141.11	93.89	94.00	115.50	122.00	127.75	136.50	144.00	74.00
18	113.67	134.52	92.82	93.00	111.50	118.00	124.50	130.00	135.00	75.00
19	115.00	136.84	93.16	92.50	111.25	119.00	129.00	133.50	136.00	75.00
20	116.33	140.23	92.44	92.50	110.75	117.00	134.50	139.50	140.00	75.00
21	114.17	135.16	93.18	94.00	113.25	116.50	127.25	132.00	134.00	75.00
22	108.33	124.28	92.39	94.50	113.00	113.50	116.25	117.00	117.00	76.00
23	107.00	122.90	91.10	92.50	110.50	112.00	115.00	116.50	117.00	75.00
24	106.33	121.96	90.70	92.00	109.25	111.00	115.00	116.00	116.00	75.00
Daily Values	2698.83	3100.60	2297.07	2324.50	2726.50	2770.50	2909.00	3001.50	3062.00	1923.00
Hourly Daily Sum	2698.83	3115.04	2282.62	2296.00	2689.50	2782.50	2910.75	3018.00	3093.00	1923.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.25-1: 24-hour weekday, weekend profiles for whole-building electricity use for #52024 in Period 1



* The dates that are excluded from the weekday profile are as follow: 12/24/02, 12/25/02, 12/31/02, 01/01/03, and 01/23/03.

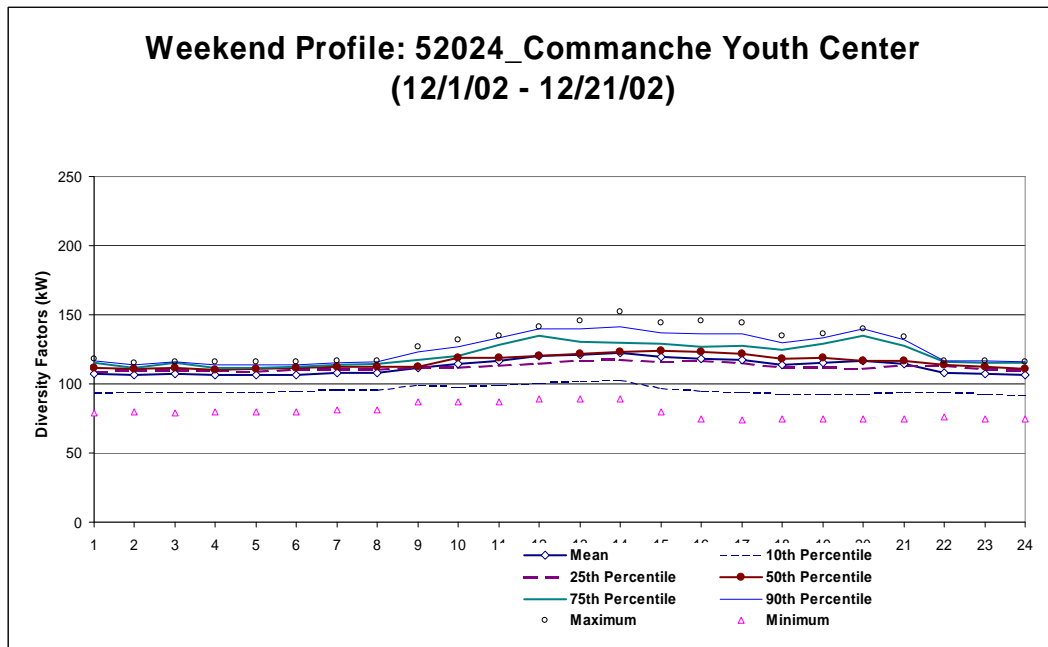


Figure 11.3.25-3: 24-hour weekday, weekend profiles for whole-building electricity use for #52024 in Period 2

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	79.25	106.92	51.58	55.00	58.00	61.00	111.00	120.80	139.00	53.00
2	77.48	103.98	50.97	54.00	55.50	61.00	109.50	117.00	132.00	52.00
3	77.65	104.02	51.28	54.00	55.00	66.00	110.50	116.00	132.00	53.00
4	78.35	104.92	51.78	55.00	56.00	68.00	110.00	116.00	131.00	53.00
5	77.52	103.89	51.16	54.00	55.50	60.00	110.00	115.80	132.00	52.00
6	76.98	103.74	50.23	54.00	55.00	60.00	110.50	116.00	133.00	52.00
7	81.62	108.61	54.63	58.20	60.50	64.00	115.50	121.40	138.00	54.00
8	90.62	118.73	62.51	66.20	69.00	74.00	125.50	131.80	148.00	55.00
9	97.03	126.66	67.41	71.20	74.00	83.00	131.50	138.60	170.00	55.00
10	104.46	136.77	72.15	76.00	80.00	91.00	139.00	149.20	183.00	53.00
11	108.46	140.64	76.28	76.80	86.50	95.00	142.00	151.60	185.00	53.00
12	113.32	145.60	81.04	81.20	90.50	102.00	145.00	156.40	182.00	54.00
13	115.62	151.20	80.04	77.40	87.00	102.00	147.50	160.00	197.00	53.00
14	112.03	145.38	78.68	77.00	83.50	100.00	143.00	153.60	190.00	53.00
15	112.35	143.44	81.26	80.00	84.50	103.00	140.00	150.80	188.00	54.00
16	114.83	147.10	82.55	79.20	89.00	104.00	143.00	154.40	195.00	53.00
17	111.43	143.64	79.21	77.20	88.00	98.00	142.00	151.60	187.00	53.00
18	106.56	137.22	75.89	75.20	80.50	91.00	134.50	143.00	181.00	54.00
19	103.27	132.00	74.54	70.60	80.00	89.00	129.00	137.80	170.00	54.00
20	100.71	128.66	72.77	70.20	78.00	89.00	124.50	137.00	158.00	54.00
21	99.19	128.23	70.15	63.60	74.50	88.00	125.50	138.00	152.00	54.00
22	94.60	122.64	66.56	62.00	73.50	83.00	121.50	130.00	146.00	54.00
23	90.63	118.14	63.13	60.00	67.00	79.00	117.50	125.00	141.00	53.00
24	84.83	112.40	57.25	57.40	61.00	74.00	114.00	122.00	141.00	50.00
Daily Values	2308.79	2949.90	1667.69	1698.20	1761.00	1971.00	3036.50	3187.80	3714.00	1298.00
Hourly Daily Sum	2308.79	3014.54	1603.05	1605.40	1742.00	1985.00	3042.00	3253.80	3851.00	1278.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	80.96	107.49	54.44	53.20	56.00	73.00	111.50	114.20	119.00	50.00
2	79.52	105.39	53.65	53.20	56.00	71.00	111.00	112.40	121.00	50.00
3	77.37	103.91	50.83	52.80	55.00	71.00	110.00	113.60	120.00	50.00
4	75.74	101.44	50.04	53.20	55.50	60.00	109.50	112.00	121.00	50.00
5	73.48	98.24	48.73	53.20	56.00	60.00	94.00	111.40	120.00	50.00
6	71.74	95.76	47.72	53.20	55.00	60.00	77.00	112.00	121.00	50.00
7	71.70	96.03	47.37	53.60	56.00	60.00	77.50	112.80	122.00	50.00
8	73.41	97.10	49.71	56.00	58.00	61.00	77.50	113.20	124.00	51.00
9	79.63	103.58	55.68	57.60	62.50	72.00	84.50	115.40	136.00	50.00
10	81.48	106.33	56.63	57.00	66.50	72.00	86.00	119.80	138.00	49.00
11	87.00	110.82	63.18	62.80	72.00	80.00	100.50	123.80	135.00	51.00
12	94.37	120.93	67.82	69.00	73.00	86.00	116.50	136.80	141.00	53.00
13	95.15	123.84	66.45	64.60	73.00	86.00	121.50	135.20	146.00	51.00
14	96.04	124.30	67.77	65.80	75.50	86.00	122.00	133.00	152.00	53.00
15	91.00	117.94	64.06	61.60	72.00	80.00	113.00	127.60	144.00	52.00
16	89.67	115.32	64.01	64.40	72.00	80.00	114.00	125.80	146.00	55.00
17	89.19	115.26	63.11	62.00	72.00	76.00	113.00	125.40	144.00	52.00
18	87.37	112.06	62.68	63.20	70.50	75.00	111.50	123.80	135.00	52.00
19	87.30	111.83	62.76	61.20	71.00	75.00	110.00	124.20	136.00	54.00
20	87.33	112.96	61.70	57.20	71.50	79.00	109.00	122.20	140.00	54.00
21	84.74	109.58	59.90	57.60	69.50	74.00	110.50	120.20	134.00	55.00
22	78.56	103.45	53.66	55.00	57.50	70.00	110.00	115.20	122.00	50.00
23	78.15	102.84	53.46	55.00	57.00	71.00	109.50	113.60	122.00	50.00
24	75.00	99.40	50.60	54.00	55.00	69.00	92.00	113.60	120.00	49.00
Daily Values	1985.89	2508.68	1463.09	1515.00	1555.50	1831.00	2403.00	2762.00	3062.00	1365.00
Hourly Daily Sum	1985.89	2595.80	1375.98	1396.40	1538.00	1747.00	2491.50	2877.20	3159.00	1231.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.25-2: 24-hour weekday, weekend profiles for whole-building electricity use for #52024 in Period 2

11.3.26. 85020 Commissary

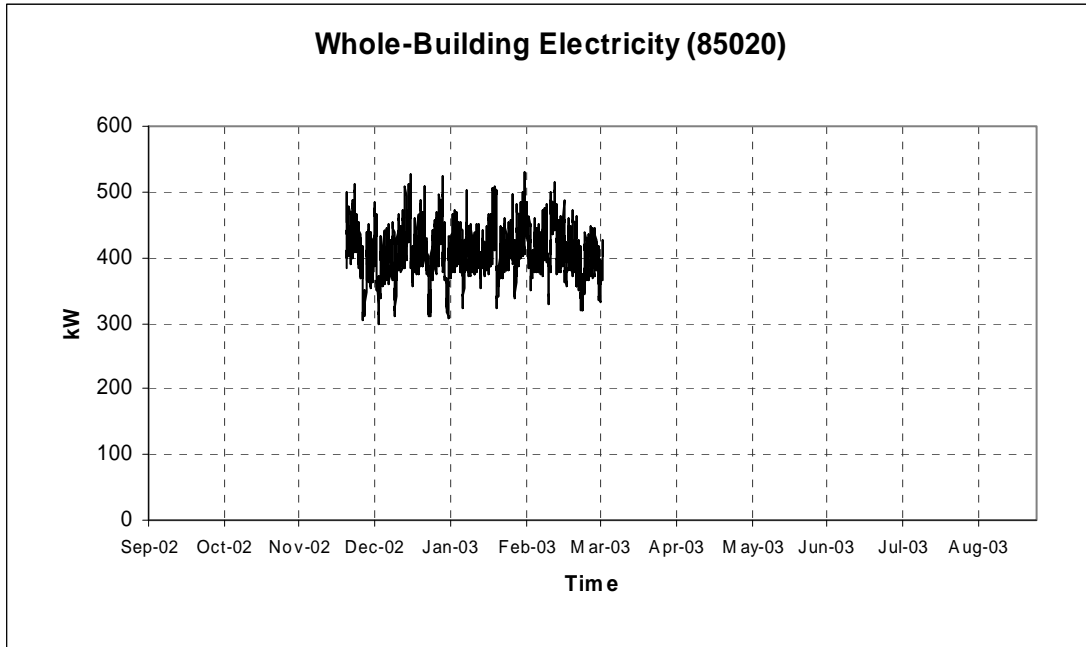
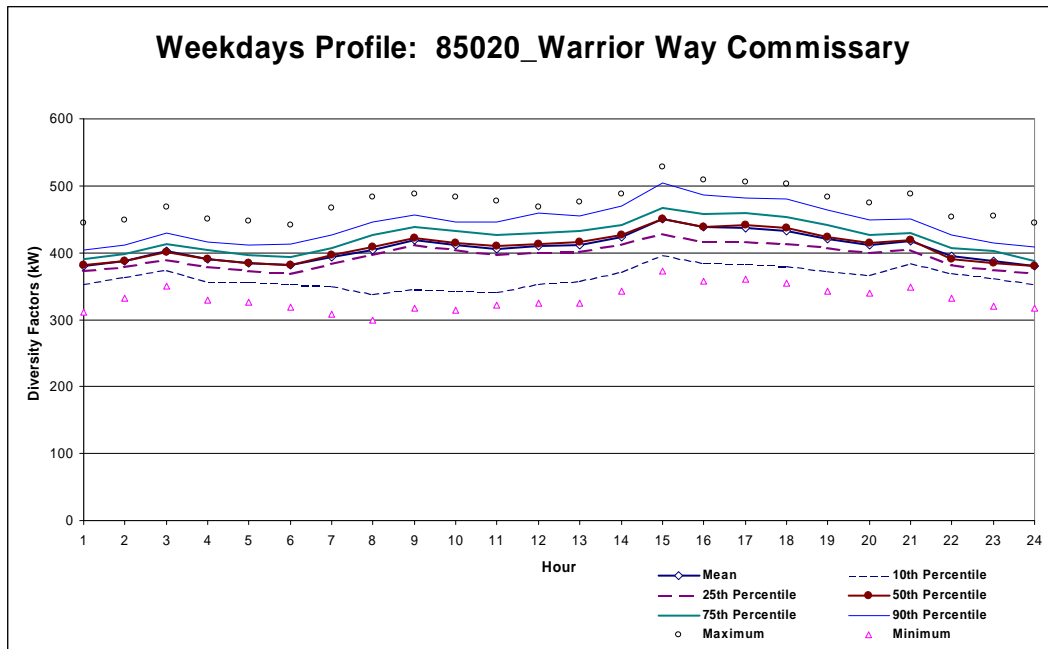


Figure 11.3.26-1: Building #85020 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 12/25/02 and 01/01/03.

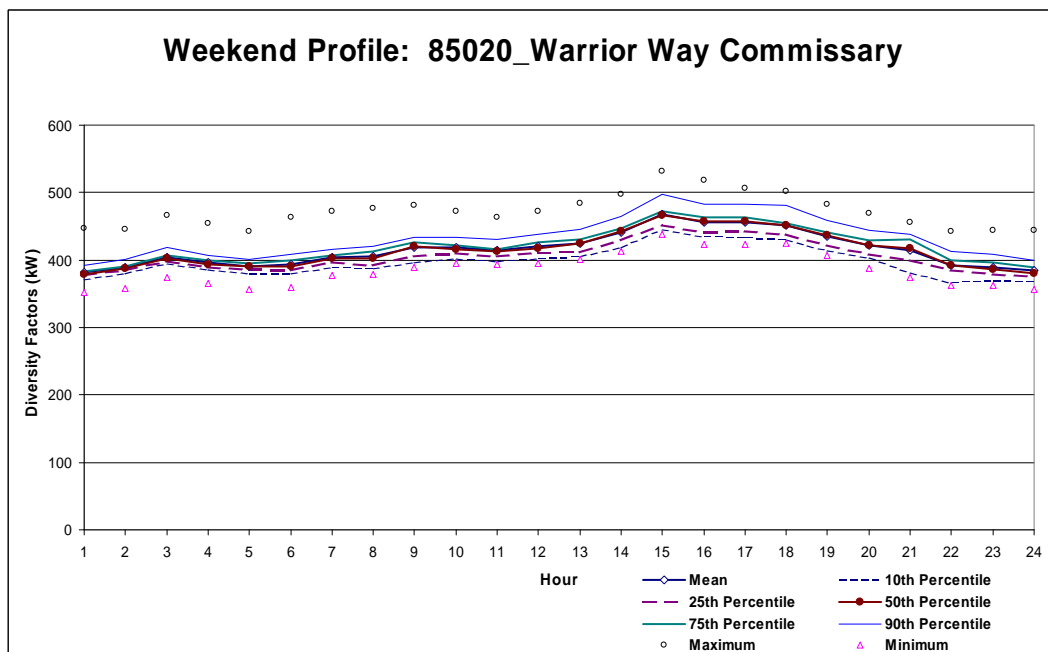


Figure 11.3.26-2: 24-hour weekday, weekend profiles for whole-building electricity use for #85020

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	380.08	404.46	355.69	353.50	372.00	381.00	391.00	403.50	444.00	311.00
2	387.91	410.42	365.40	363.00	378.25	388.00	398.00	411.00	449.00	332.00
3	402.48	426.34	378.63	374.00	389.25	401.00	413.00	430.00	469.00	350.00
4	390.14	415.92	364.35	356.50	379.25	390.50	403.25	416.50	451.00	329.00
5	384.52	409.56	359.47	356.50	372.50	384.00	396.00	411.50	447.00	326.00
6	381.36	405.98	356.75	352.50	368.50	382.00	393.50	413.00	441.00	318.00
7	393.70	425.73	361.66	349.50	383.25	396.50	407.00	427.00	467.00	308.00
8	404.73	444.82	364.63	338.50	397.25	409.00	426.00	445.50	483.00	299.00
9	418.50	457.55	379.45	345.50	411.00	422.50	439.00	456.50	488.00	317.00
10	412.12	449.67	374.57	342.50	403.75	415.00	432.75	446.00	484.00	314.00
11	406.02	442.13	369.90	341.00	396.25	415.75	425.75	446.50	478.00	321.00
12	410.32	445.38	375.26	353.50	399.50	413.50	429.00	459.50	469.00	324.00
13	411.97	447.57	376.37	357.50	400.25	415.50	432.00	455.50	476.00	324.00
14	423.62	459.73	387.51	370.50	411.00	427.00	442.00	469.50	488.00	342.00
15	450.18	487.66	412.70	397.00	427.25	450.50	466.75	504.00	528.00	373.00
16	437.74	474.90	400.59	385.00	416.25	438.00	457.75	487.00	508.00	357.00
17	436.98	473.92	400.05	383.50	415.75	441.00	458.75	481.50	506.00	360.00
18	432.56	469.49	395.63	379.50	412.75	437.50	454.00	480.50	502.00	355.00
19	419.80	453.93	385.68	372.50	406.75	424.00	441.75	464.50	484.00	343.00
20	410.97	442.36	379.58	366.50	399.25	415.00	427.00	449.50	475.00	339.00
21	417.33	446.39	388.28	384.00	404.50	418.50	429.50	451.00	488.00	348.00
22	394.85	420.04	369.66	369.50	381.25	391.00	407.00	426.00	454.00	332.00
23	388.12	413.91	362.33	362.00	374.00	385.00	402.75	414.50	455.00	320.00
24	380.24	403.37	357.11	353.50	370.00	380.00	387.00	409.00	444.00	317.00
Daily Values	9776.24	10454.76	9097.73	8849.50	9373.00	9833.50	10132.00	10677.50	11243.00	8176.00
Hourly Daily Sum	9776.24	10531.23	9021.26	8707.50	9469.75	9816.50	10160.50	10659.00	11378.00	7959.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	381.81	398.02	365.61	371.20	376.50	379.00	382.50	392.00	447.00	352.00
2	389.52	404.44	374.60	379.60	384.50	388.00	390.00	401.60	445.00	358.00
3	404.37	420.50	388.24	395.00	397.50	402.00	407.00	418.40	467.00	375.00
4	396.22	411.16	381.28	386.20	388.50	394.00	400.00	406.40	454.00	365.00
5	391.04	405.01	377.06	380.80	385.50	390.00	395.00	400.80	443.00	357.00
6	393.15	411.10	375.19	380.60	384.50	391.00	399.00	407.80	463.00	359.00
7	403.37	420.25	386.49	389.80	396.00	402.00	407.50	416.40	473.00	377.00
8	405.33	424.55	386.12	387.20	391.50	402.00	413.50	419.60	476.00	379.00
9	418.30	437.45	399.14	396.80	406.00	420.00	426.00	434.20	481.00	389.00
10	418.89	435.52	402.26	402.20	410.50	416.00	421.50	433.00	473.00	395.00
11	414.52	431.08	397.96	398.60	405.50	413.00	416.00	430.20	463.00	393.00
12	419.74	436.31	403.17	402.40	410.00	418.00	426.00	438.80	473.00	395.00
13	425.00	442.83	407.17	405.80	411.50	425.00	430.50	445.00	484.00	401.00
14	440.85	459.27	422.43	419.40	428.50	442.00	446.50	465.20	497.00	413.00
15	467.78	489.54	446.01	445.20	451.50	467.00	472.50	497.80	531.00	438.00
16	455.96	477.12	434.81	434.60	441.00	457.00	463.50	483.20	518.00	424.00
17	456.15	475.84	436.45	433.60	442.00	457.00	463.00	482.80	507.00	424.00
18	452.11	471.46	432.76	430.60	437.50	452.00	455.00	481.00	502.00	425.00
19	435.74	453.87	417.61	414.80	422.50	436.00	441.00	459.60	482.00	407.00
20	422.30	440.47	404.12	403.60	409.00	422.00	429.00	443.40	469.00	388.00
21	414.19	436.51	391.86	381.00	400.00	417.00	430.00	438.80	456.00	374.00
22	392.37	410.40	374.34	367.40	385.00	392.00	399.50	413.20	442.00	362.00
23	388.63	406.20	371.06	369.20	379.00	386.00	396.00	408.40	444.00	363.00
24	384.15	402.34	365.95	367.80	376.00	380.00	388.50	399.40	444.00	356.00
Daily Values	9971.48	10330.57	9612.39	9614.60	9716.00	9948.00	10076.00	10424.80	10936.00	9298.00
Hourly Daily Sum	9971.48	10401.26	9541.70	9543.40	9720.00	9948.00	10099.00	10417.00	11334.00	9269.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.26-1: 24-hour weekday, weekend profiles for whole-building electricity use for #85020

11.3.27. 91002 Headquarters Bldg

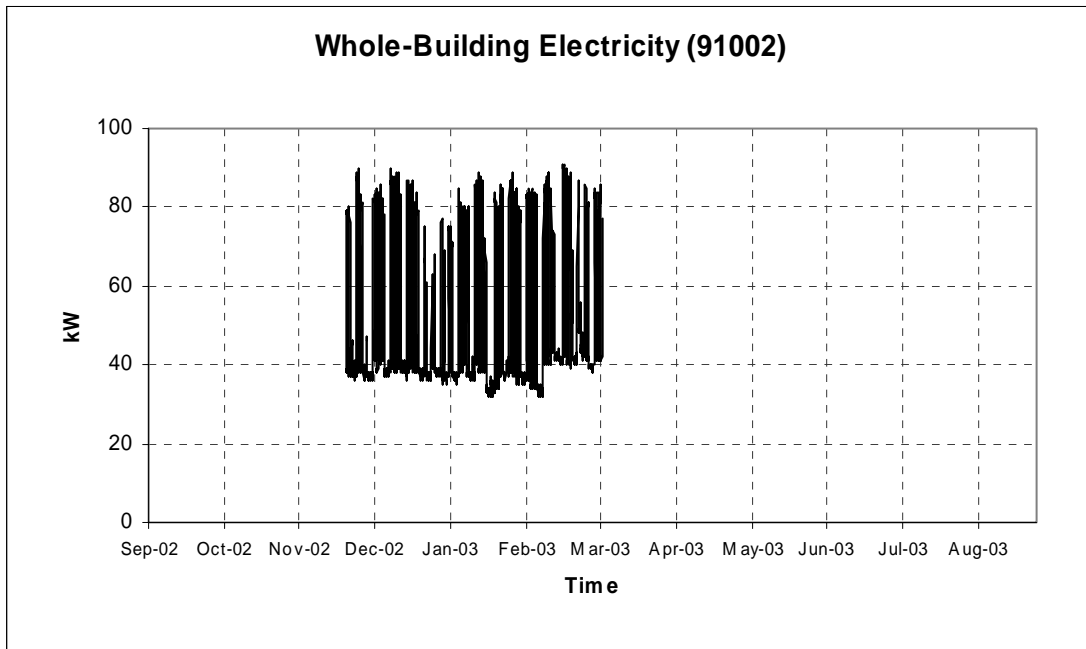
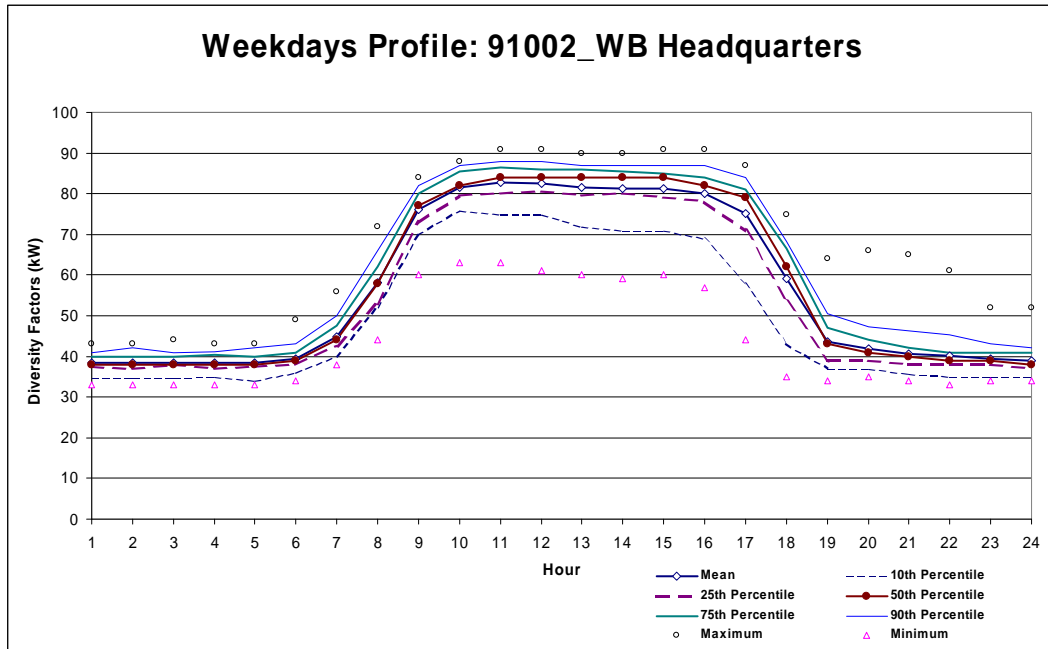
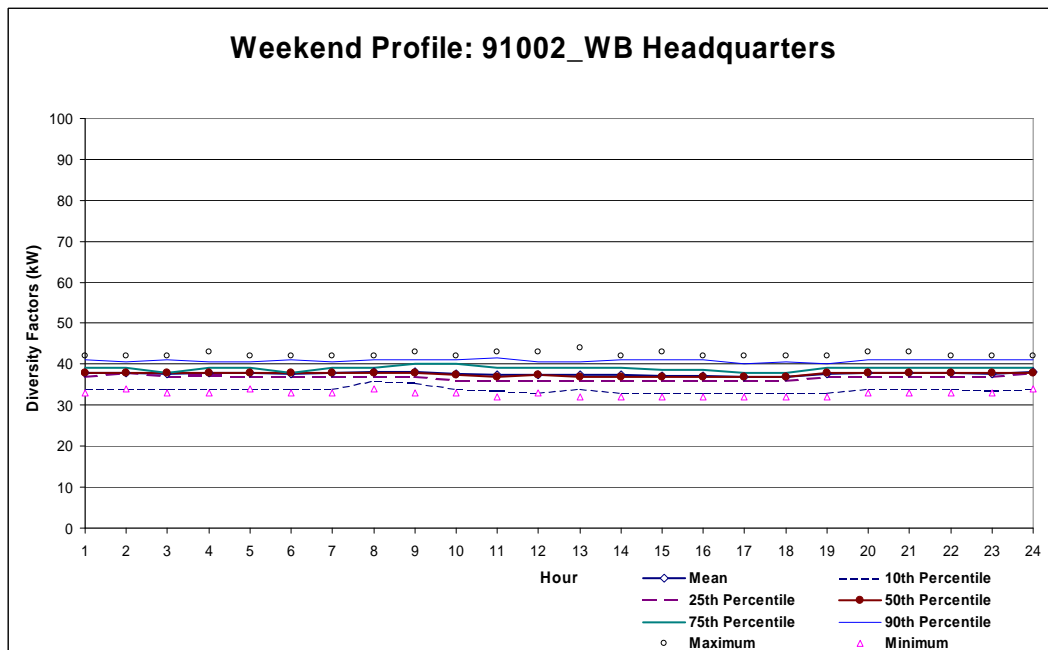


Figure 11.3.27-1: Building #91002 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 12/24/02, 12/25/02, 12/31/02, 01/01/03, 01/17/03, 01/20/03, 02/17/03, 02/25/03, and 02/26/03.



* The dates that are excluded from the weekend profile are as follow: 02/22/03.

Figure 11.3.27-2: 24-hour weekday, weekend profiles for whole-building electricity use for #91002

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	38.47	40.88	36.07	34.80	37.50	38.00	40.00	41.00	43.00	33.00
2	38.44	40.93	35.95	34.80	37.00	38.00	40.00	42.00	43.00	33.00
3	38.49	40.89	36.10	34.80	38.00	38.00	40.00	41.00	44.00	33.00
4	38.53	40.96	36.09	35.00	37.00	38.00	40.50	41.20	43.00	33.00
5	38.54	40.97	36.12	34.00	37.50	38.00	40.00	42.00	43.00	33.00
6	39.37	42.37	36.38	36.00	38.00	39.00	41.00	43.00	49.00	34.00
7	44.78	48.79	40.77	39.80	42.50	44.00	47.50	50.00	56.00	38.00
8	58.02	63.92	52.11	52.00	53.00	58.00	62.00	66.00	72.00	44.00
9	76.08	81.14	71.03	70.00	73.00	77.00	80.00	82.00	84.00	60.00
10	81.58	86.79	76.37	75.80	79.50	82.00	85.50	87.00	88.00	63.00
11	82.85	88.21	77.49	75.00	80.00	84.00	86.50	88.00	91.00	63.00
12	82.56	88.74	76.38	74.80	80.50	84.00	86.00	88.00	91.00	61.00
13	81.44	87.90	74.98	72.00	79.50	84.00	86.00	87.00	90.00	60.00
14	81.17	87.82	74.52	71.00	80.00	84.00	85.50	87.00	90.00	59.00
15	81.20	88.04	74.37	71.00	79.00	84.00	85.00	87.00	91.00	60.00
16	79.97	87.50	72.43	69.00	78.00	82.00	84.00	87.00	91.00	57.00
17	75.02	84.58	65.45	58.00	71.00	79.00	81.00	84.00	87.00	44.00
18	59.19	68.72	49.66	43.00	53.50	62.00	66.50	68.20	75.00	35.00
19	43.61	49.62	37.60	37.00	39.00	43.00	47.00	50.40	64.00	34.00
20	41.83	46.95	36.71	37.00	39.00	41.00	44.00	47.40	66.00	35.00
21	40.73	45.81	35.64	35.80	38.00	40.00	42.00	46.20	65.00	34.00
22	40.05	44.74	35.36	35.00	38.00	39.00	41.00	45.20	61.00	33.00
23	39.39	42.85	35.93	35.00	38.00	39.00	41.00	43.20	52.00	34.00
24	38.97	42.10	35.83	35.00	37.00	38.00	41.00	42.00	52.00	34.00
Daily Values	1360.27	1447.75	1272.79	1232.00	1298.50	1375.00	1419.50	1454.80	1544.00	1127.00
Hourly Daily Sum	1360.27	1481.19	1239.35	1195.60	1303.50	1373.00	1433.00	1485.80	1631.00	1047.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1Std)	Mean (-1Std)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	37.85	40.24	35.45	34.00	37.00	38.00	39.00	41.00	42.00	33.00
2	38.00	40.17	35.83	34.00	38.00	38.00	39.00	40.50	42.00	34.00
3	37.73	40.12	35.34	34.00	37.00	38.00	38.00	41.00	42.00	33.00
4	37.96	40.25	35.67	34.00	37.25	38.00	39.00	40.50	43.00	33.00
5	37.88	40.10	35.67	34.00	37.00	38.00	39.00	40.50	42.00	34.00
6	37.73	40.12	35.34	34.00	37.00	38.00	38.00	41.00	42.00	33.00
7	37.88	40.17	35.60	34.00	37.00	38.00	39.00	40.50	42.00	33.00
8	38.12	40.18	36.05	36.00	37.00	38.00	39.00	41.00	42.00	34.00
9	38.15	40.60	35.71	35.50	37.00	38.00	40.00	41.00	43.00	33.00
10	37.69	40.39	35.00	34.00	36.00	37.50	40.00	41.00	42.00	33.00
11	37.42	40.31	34.54	33.50	36.00	37.00	39.00	41.50	43.00	32.00
12	37.42	40.03	34.81	33.00	36.00	37.50	39.00	40.50	43.00	33.00
13	37.35	40.12	34.58	34.00	36.00	37.00	39.00	40.50	44.00	32.00
14	37.31	40.05	34.57	33.00	36.00	37.00	39.00	41.00	42.00	32.00
15	37.19	40.04	34.35	33.00	36.00	37.00	38.75	41.00	43.00	32.00
16	37.19	39.92	34.46	33.00	36.00	37.00	38.75	41.00	42.00	32.00
17	37.00	39.58	34.42	33.00	36.00	37.00	38.00	40.00	42.00	32.00
18	36.85	39.40	34.29	33.00	36.00	37.00	38.00	40.50	42.00	32.00
19	37.54	40.06	35.02	33.00	37.00	38.00	39.00	40.00	42.00	32.00
20	37.92	40.35	35.49	34.00	37.00	38.00	39.00	41.00	43.00	33.00
21	37.92	40.40	35.44	34.00	37.00	38.00	39.00	41.00	43.00	33.00
22	37.92	40.29	35.56	34.00	37.00	38.00	39.00	41.00	42.00	33.00
23	37.69	40.19	35.20	33.50	37.00	38.00	39.00	41.00	42.00	33.00
24	38.08	40.32	35.83	34.00	38.00	38.00	39.00	41.00	42.00	34.00
Daily Values	903.81	960.61	847.00	805.50	883.25	905.00	928.75	973.50	1010.00	797.00
Hourly Daily Sum	903.81	963.40	844.22	811.50	881.25	904.00	933.50	979.00	1017.00	788.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.27-1: 24-hour weekday, weekend profiles for whole-building electricity use for #91002

11.3.28. 91012 Admin/Operational Testing

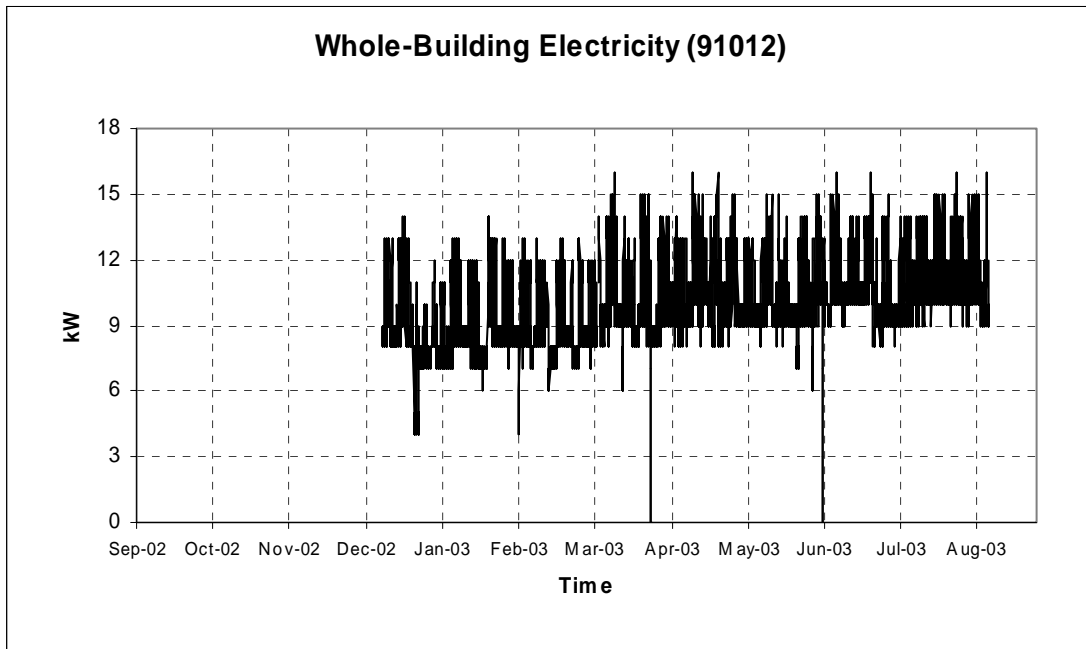
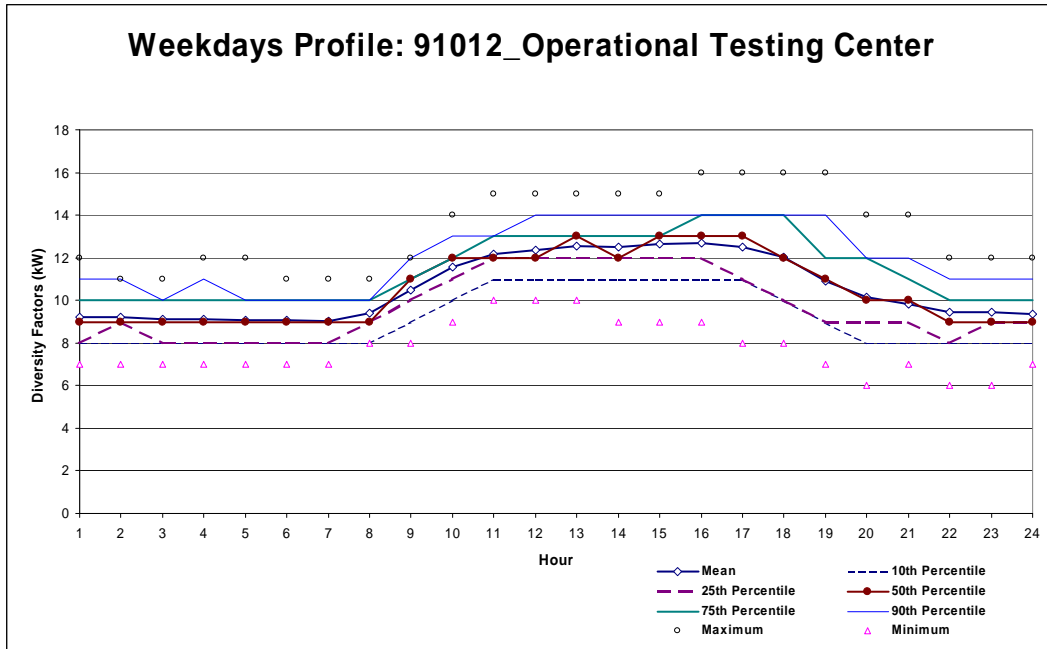
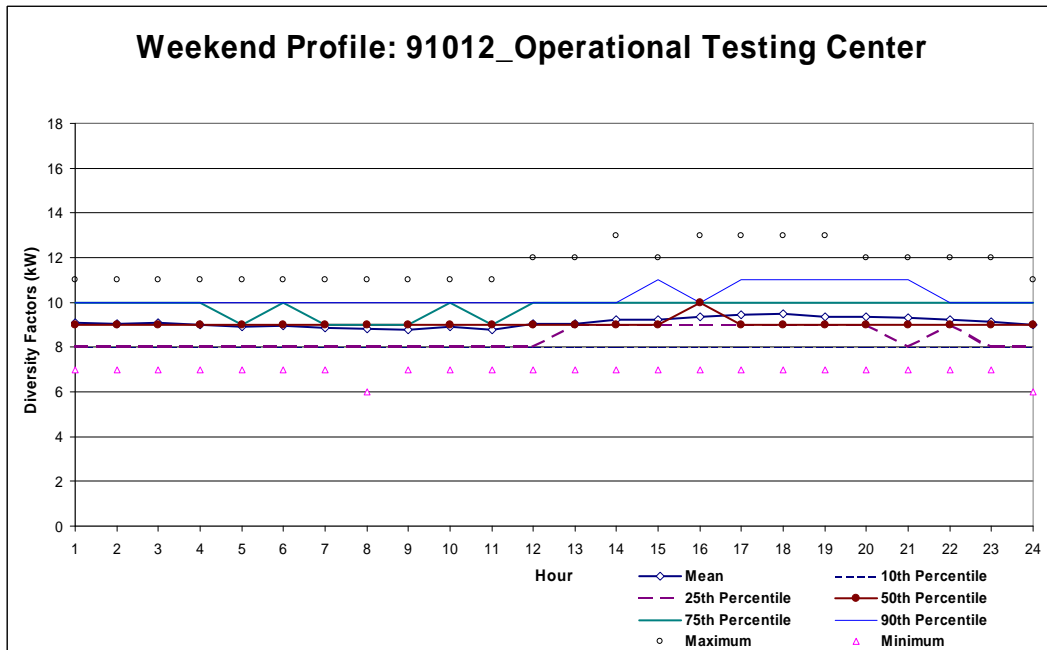


Figure 11.3.28-1: Building #91012 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 12/11/02, 12/16/02, 12/23/02 to 12/25/02, 01/01/03, 01/14/03, 01/20/03, 01/24/03, 02/03/03, 02/17/03, 02/20/03, 02/25/03, 02/26/03, 03/06/03, 03/07/03, 03/27/03, 03/28/03, 04/25/03, 05/26/03, and 06/02/03.



* The dates that are excluded from the weekend profile are as follow: 12/14/02, 12/22/02, 02/01/03, 02/15/03, and 03/02/03.

Figure 11.3.28-2: 24-hour weekday, weekend profiles for whole-building electricity use for #91012

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	9.22	10.33	8.12	8.00	8.00	9.00	10.00	11.00	12.00	7.00
2	9.19	10.26	8.12	8.00	9.00	9.00	10.00	11.00	11.00	7.00
3	9.12	10.09	8.16	8.00	8.00	9.00	10.00	10.00	11.00	7.00
4	9.13	10.17	8.09	8.00	8.00	9.00	10.00	11.00	12.00	7.00
5	9.07	10.10	8.04	8.00	8.00	9.00	10.00	10.00	12.00	7.00
6	9.07	10.04	8.09	8.00	8.00	9.00	10.00	10.00	11.00	7.00
7	9.02	9.98	8.05	8.00	8.00	9.00	10.00	10.00	11.00	7.00
8	9.38	10.19	8.57	8.00	9.00	9.00	10.00	10.00	11.00	8.00
9	10.49	11.43	9.55	9.00	10.00	11.00	11.00	12.00	12.00	8.00
10	11.55	12.59	10.51	10.00	11.00	12.00	12.00	13.00	14.00	9.00
11	12.17	13.13	11.20	11.00	12.00	12.00	13.00	13.00	15.00	10.00
12	12.35	13.32	11.37	11.00	12.00	12.00	13.00	14.00	15.00	10.00
13	12.54	13.56	11.51	11.00	12.00	13.00	13.00	14.00	15.00	10.00
14	12.49	13.67	11.30	11.00	12.00	12.00	13.00	14.00	15.00	9.00
15	12.64	13.83	11.46	11.00	12.00	13.00	13.00	14.00	15.00	9.00
16	12.68	14.00	11.36	11.00	12.00	13.00	14.00	14.00	16.00	9.00
17	12.51	14.19	10.84	11.00	11.00	13.00	14.00	14.00	16.00	8.00
18	12.02	13.96	10.09	10.00	10.00	12.00	14.00	14.00	16.00	8.00
19	10.88	12.85	8.92	9.00	9.00	11.00	12.00	14.00	16.00	7.00
20	10.14	11.87	8.41	8.00	9.00	10.00	12.00	12.00	14.00	6.00
21	9.81	11.28	8.34	8.00	9.00	10.00	11.00	12.00	14.00	7.00
22	9.43	10.69	8.17	8.00	8.00	9.00	10.00	11.00	12.00	6.00
23	9.45	10.64	8.26	8.00	9.00	9.00	10.00	11.00	12.00	6.00
24	9.36	10.46	8.27	8.00	9.00	9.00	10.00	11.00	12.00	7.00
Daily Values	253.71	276.79	230.63	227.00	236.00	254.00	273.00	284.00	302.00	199.00
Hourly Daily Sum	253.71	282.62	224.80	219.00	233.00	253.00	275.00	290.00	320.00	186.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	9.09	10.08	8.11	8.00	8.00	9.00	10.00	10.00	11.00	7.00
2	9.04	9.98	8.10	8.00	8.00	9.00	10.00	10.00	11.00	7.00
3	9.08	10.09	8.06	8.00	8.00	9.00	10.00	10.00	11.00	7.00
4	9.02	9.95	8.09	8.00	8.00	9.00	10.00	10.00	11.00	7.00
5	8.92	9.84	8.01	8.00	8.00	9.00	9.00	10.00	11.00	7.00
6	8.94	9.89	7.99	8.00	8.00	9.00	10.00	10.00	11.00	7.00
7	8.89	9.73	8.04	8.00	8.00	9.00	9.00	10.00	11.00	7.00
8	8.83	9.79	7.87	8.00	8.00	9.00	9.00	10.00	11.00	6.00
9	8.79	9.74	7.84	8.00	8.00	9.00	9.00	10.00	11.00	7.00
10	8.92	9.80	8.05	8.00	8.00	9.00	10.00	10.00	11.00	7.00
11	8.79	9.68	7.91	8.00	8.00	9.00	9.00	10.00	11.00	7.00
12	9.06	10.06	8.05	8.00	8.00	9.00	10.00	10.00	12.00	7.00
13	9.06	10.05	8.07	8.00	9.00	9.00	10.00	10.00	12.00	7.00
14	9.21	10.29	8.13	8.00	9.00	9.00	10.00	10.00	13.00	7.00
15	9.23	10.31	8.14	8.00	9.00	9.00	10.00	11.00	12.00	7.00
16	9.38	10.46	8.30	8.00	9.00	10.00	10.00	10.00	13.00	7.00
17	9.45	10.59	8.32	8.00	9.00	9.00	10.00	11.00	13.00	7.00
18	9.49	10.68	8.30	8.00	9.00	9.00	10.00	11.00	13.00	7.00
19	9.38	10.67	8.09	8.00	9.00	9.00	10.00	11.00	13.00	7.00
20	9.38	10.59	8.16	8.00	9.00	9.00	10.00	11.00	12.00	7.00
21	9.30	10.55	8.05	8.00	8.00	9.00	10.00	11.00	12.00	7.00
22	9.23	10.35	8.11	8.00	9.00	9.00	10.00	10.00	12.00	7.00
23	9.11	10.20	8.03	8.00	8.00	9.00	10.00	10.00	12.00	7.00
24	9.00	10.11	7.89	8.00	8.00	9.00	10.00	10.00	11.00	6.00
Daily Values	218.58	240.09	197.08	189.20	204.00	219.00	233.00	241.00	280.00	169.00
Hourly Daily Sum	218.58	243.46	193.71	192.00	201.00	217.00	235.00	246.00	281.00	166.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.28-1: 24-hour weekday, weekend profiles for whole-building electricity use for #91012

11.3.29. 91014 Admin

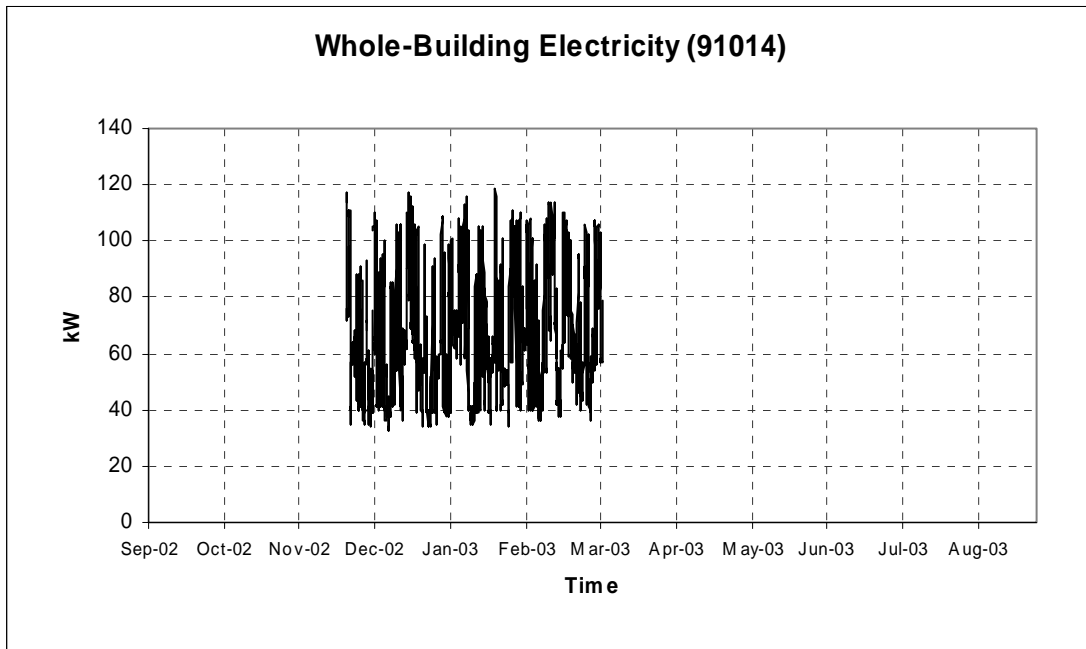
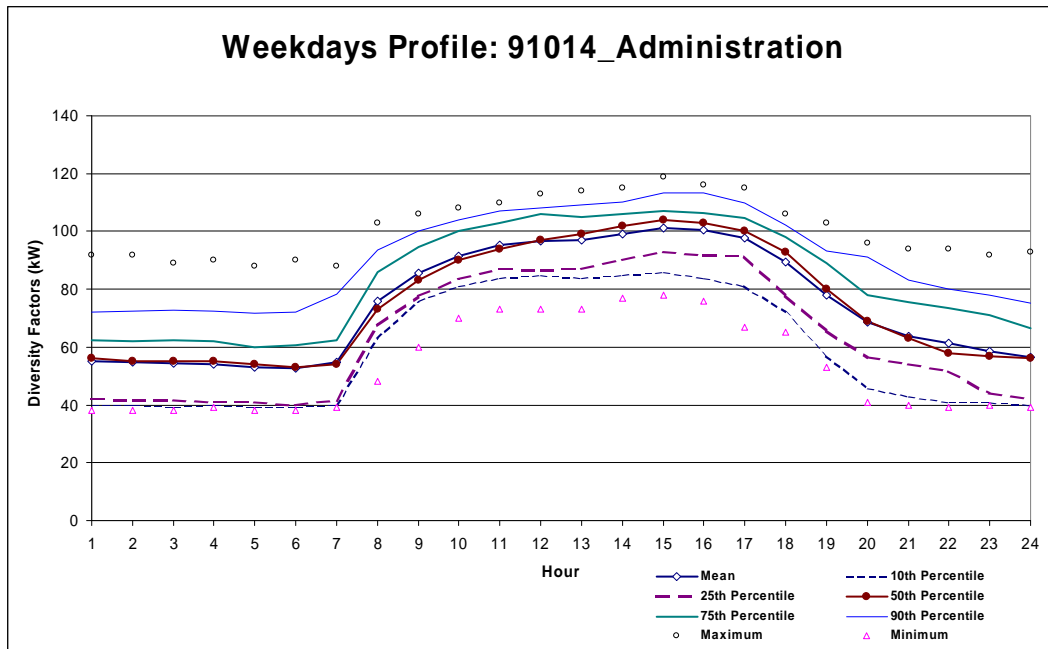


Figure 11.3.29-1: Building #91014 Electricity Usage



* The dates that are excluded from the weekday profile are as follow: 12/02/02, 12/24/02, 12/25/02, 12/31/02, 01/01/03, 01/20/03, 02/17/03, 02/25/03 and 02/26/03.

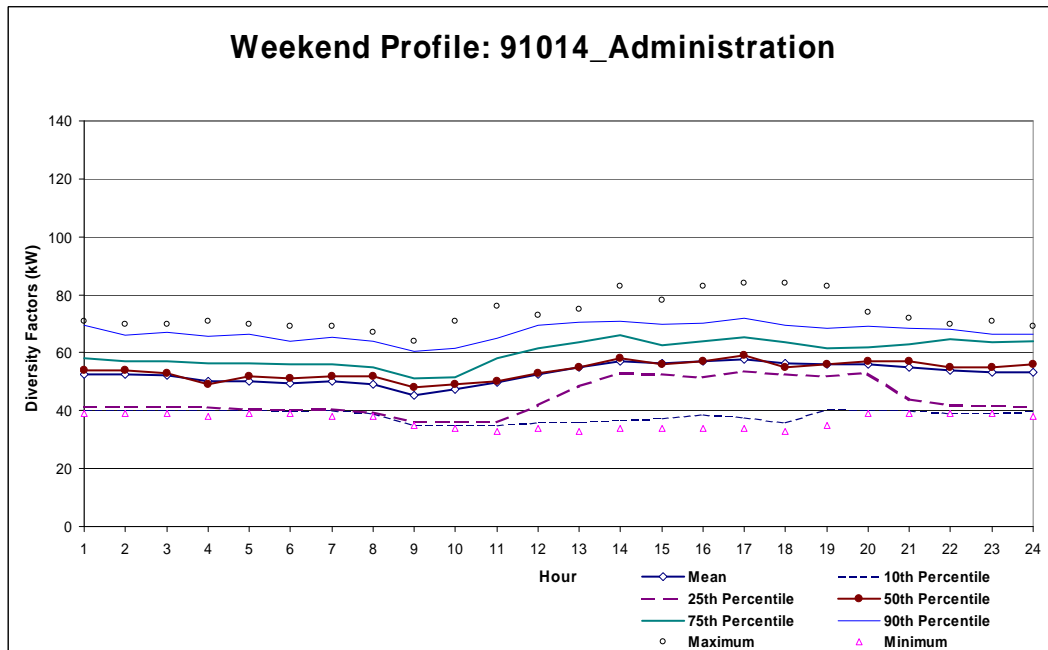


Figure 11.3.29-2: 24-hour weekday, weekend profiles for whole-building electricity use for #91014

WBE Diversity Factors and Statistics (WEEKDAYS)

WEEKDAYS										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	55.25	68.78	41.73	40.00	42.00	56.00	62.50	72.00	92.00	38.00
2	54.71	68.48	40.94	40.00	41.50	55.00	62.00	72.40	92.00	38.00
3	54.24	67.83	40.65	39.00	41.50	55.00	62.50	72.60	89.00	38.00
4	54.00	67.74	40.26	39.80	41.00	55.00	62.00	72.40	90.00	39.00
5	52.92	66.65	39.18	39.00	41.00	54.00	60.00	71.60	88.00	38.00
6	52.66	66.69	38.63	39.00	40.00	53.00	60.50	72.20	90.00	38.00
7	54.73	69.22	40.24	40.00	41.50	54.00	62.50	78.20	88.00	39.00
8	75.83	88.33	63.33	62.80	67.50	73.00	86.00	93.40	103.00	48.00
9	85.73	95.99	75.46	75.80	77.50	83.00	94.50	100.00	106.00	60.00
10	91.47	101.15	81.80	81.00	83.50	90.00	100.00	104.00	108.00	70.00
11	95.15	104.53	85.77	84.00	87.00	94.00	103.00	107.20	110.00	73.00
12	96.54	106.56	86.53	84.80	86.50	97.00	106.00	108.00	113.00	73.00
13	96.98	107.43	86.53	83.80	87.00	99.00	105.00	109.20	114.00	73.00
14	99.25	109.01	89.50	85.00	90.00	102.00	106.00	110.20	115.00	77.00
15	101.22	111.33	91.11	85.80	93.00	104.00	107.00	113.20	119.00	78.00
16	100.58	110.82	90.33	84.00	92.00	103.00	106.50	113.20	116.00	76.00
17	97.68	108.58	86.77	81.00	91.50	100.00	104.50	110.00	115.00	67.00
18	89.53	101.34	77.71	72.00	78.00	93.00	98.00	102.20	106.00	65.00
19	78.12	92.05	64.19	56.80	66.00	80.00	89.00	93.20	103.00	53.00
20	68.73	84.02	53.44	45.80	56.50	69.00	78.00	91.00	96.00	41.00
21	63.86	78.96	48.77	42.80	54.00	63.00	75.50	83.00	94.00	40.00
22	61.22	75.86	46.58	41.00	51.50	58.00	73.50	80.20	94.00	39.00
23	58.42	72.56	44.28	41.00	44.00	57.00	71.00	77.80	92.00	40.00
24	56.44	70.54	42.34	40.00	42.00	56.00	66.50	75.20	93.00	39.00
Daily Values	1795.27	2040.45	1550.10	1489.60	1593.50	1761.00	2012.50	2082.60	2242.00	1380.00
Hourly Daily Sum	1795.27	2094.47	1496.08	1424.20	1536.00	1803.00	2002.00	2182.40	2426.00	1280.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

WEEKENDS/HOLIDAYS

WEEKEND										
Hour	Mean	Mean (+1StD)	Mean (-1StD)	Percentile					Max	Min
				10th	25th	50th	75th	90th		
1	52.59	63.83	41.36	40.00	41.00	54.00	58.00	69.40	71.00	39.00
2	52.44	62.38	42.50	40.00	41.00	54.00	57.00	66.00	70.00	39.00
3	52.33	62.33	42.34	40.00	41.00	53.00	57.00	67.20	70.00	39.00
4	50.22	60.73	39.71	40.00	41.00	49.00	56.50	65.80	71.00	38.00
5	50.30	60.71	39.89	40.00	40.50	52.00	56.50	66.20	70.00	39.00
6	49.52	59.63	39.40	39.60	40.00	51.00	56.00	63.80	69.00	39.00
7	50.07	60.43	39.72	40.00	40.50	52.00	56.00	65.20	69.00	38.00
8	49.15	58.78	39.52	39.00	39.50	52.00	55.00	64.00	67.00	38.00
9	45.37	55.52	35.22	35.00	36.00	48.00	51.00	60.40	64.00	35.00
10	47.44	57.93	36.96	35.00	36.00	49.00	51.50	61.40	71.00	34.00
11	49.67	61.66	37.67	35.00	36.00	50.00	58.00	65.00	76.00	33.00
12	52.44	64.63	40.26	36.00	42.00	53.00	61.50	69.40	73.00	34.00
13	54.96	67.17	42.75	36.00	48.50	55.00	63.50	70.40	75.00	33.00
14	57.19	69.87	44.50	36.80	53.00	58.00	66.00	71.00	83.00	34.00
15	56.33	67.63	45.04	37.20	52.50	56.00	62.50	69.80	78.00	34.00
16	57.07	68.92	45.23	38.60	51.50	57.00	64.00	70.00	83.00	34.00
17	57.78	70.41	45.14	37.60	53.50	59.00	65.50	72.00	84.00	34.00
18	56.30	68.48	44.11	36.00	52.50	55.00	63.50	69.60	84.00	33.00
19	55.89	66.54	45.24	40.60	52.00	56.00	61.50	68.60	83.00	35.00
20	55.89	65.97	45.81	40.00	53.00	57.00	62.00	69.20	74.00	39.00
21	55.11	65.69	44.53	40.00	44.00	57.00	63.00	68.40	72.00	39.00
22	53.81	64.79	42.84	39.00	42.00	55.00	64.50	68.00	70.00	39.00
23	53.22	64.27	42.18	39.00	41.50	55.00	63.50	66.40	71.00	39.00
24	53.19	64.12	42.26	39.60	41.00	56.00	64.00	66.40	69.00	38.00
Daily Values	1268.30	1488.61	1047.98	978.20	1118.00	1248.00	1416.50	1552.60	1653.00	899.00
Hourly Daily Sum	1268.30	1532.42	1004.17	920.00	1059.50	1293.00	1437.50	1613.60	1767.00	876.00

Daily Values: The Daily results as the statistics are applied on daily data.

Daily Sum from Hourly: The aggregated Daily results as the statistics are applied on Hour-of-Day data.

Table 11.3.29-1: 24-hour weekday, weekend profiles for whole-building electricity use for #91014

11.4. Cross Check of Electric Data for Fort Hood Main, West and North Electrical Substation

11.4.1. Main Electrical Substation

11.4.1.1. Consistency Check of Main Electrical Substation Utility Data

A consistency check of 15-minute data from Oncor downloads and monthly utility bills of South Fort Hood shows reasonably good agreement for the period September 2002 to June 2003, as demonstrated in Table 11.4.1.1-1 and Figure 11.4.1.1-1. The electricity usage of two schools at South Fort Hood needs to be subtracted from the utility data in order to get the electricity usage for the Main Electrical Substation.

Year	Month	Total Elec. Use (MWh) of Metered period	
		Oncor Data	Utility Bill
2002-2003	Sep	29,119	29,625
	Oct	25,073	26,865
	Nov	20,135	20,024
	Dec	20,552	20,651
	Jan	21,101	21,988
	Feb	18,429	19,164
	Mar	20,738	19,582
	Apr	21,579	22,426
	May	27,389	26,232
	Jun	29,015	27,920

Table 11.4.1.1-1: Comparison of Utility Bills and Oncor 15-minute Data for Main Electrical Substation

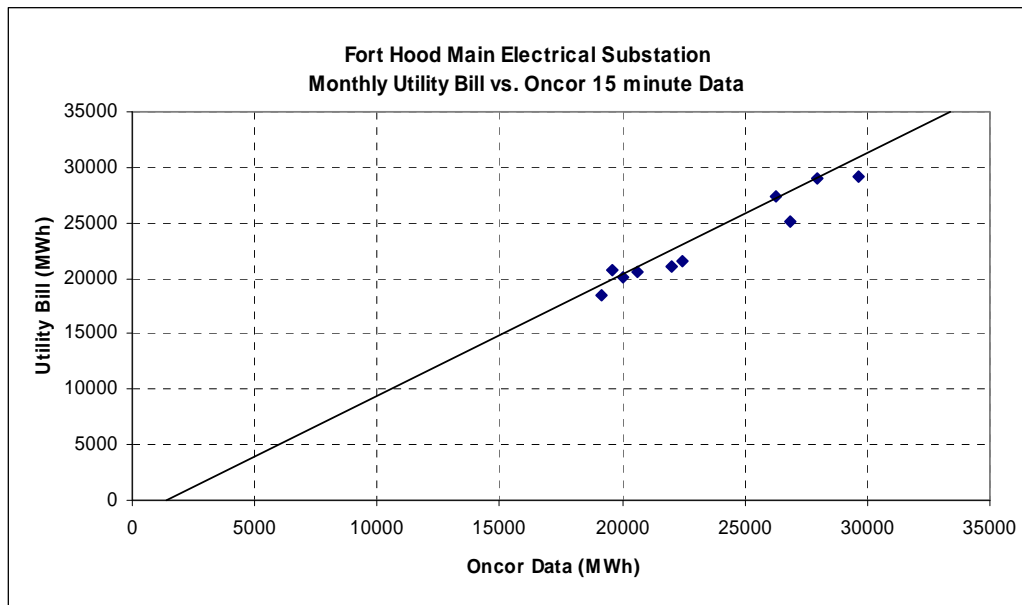


Figure 11.4.1.1-1: Cross Check of Utility Bills and Oncor 15-minute Data for Main Electrical Substation

11.4.1.2. Cross Check of Utility Data and Logger Data

Figure 11.4.1.2-1 shows the total electricity use of Main Electrical Substation for the month of July 2003 from 15-minute data from Oncor downloads and installed loggers. The comparison shows clearly that the data collected by the loggers were much lower than the utility data although the shape looks similar.

To resolve this issue, several steps were initiated. First all metering channels were inspected to assure that none contained missing data. This inspection consisted of the channels shown in Figure 2.3.4-1, Figure 2.3.4-2, and Figure 2.3.4-3. This inspection reveals that all channels were recording as expected. Second, a visit was made to Fort Hood in August 2003 to physically verify and investigate the Main Substations feeders and breakers. The Main Substation secondary metering was studied comparing the General Electric metering with ESL metering. It is found that the metering is complete in terms of what is listed in parameter sets and what is physically there. It is also determined the ESL metering is matching the General Electric Metering. Currently, we do not have sufficient information to suggest a cause for the big difference. Assistance from TXU metering or Texas Metering Devices may be needed in another visit.

Next, the difference between the utility data and collected data were evaluated and a scale factor was calculated to force the logger data to match the utility data. This evaluation is shown in Figure 11.4.1.2-2 and Figure 11.4.1.2-3. This comparison reveals a linear offset between channels, which would seem to indicate that, the scale of one or more of the channels need re-examining. The scale factor shown in Figure 11.4.1.2-3 was adjusted to 59.28 because the electric usage of the two schools at South Fort Hood is included in the utility data but not in the logger data (Table 11.4.1.2-1). When the sum of channels is rescaled with the adjusted scale factor the total agrees well with the utility data (Figure 11.4.1.2-4 and Figure 11.4.1.2-5). As shown in Table 11.4.1.2-1 and Figure 11.4.1.2-6, the difference of 94667 kWh between the utility data and scaled logger data for July 2003 is very close to the school usage of this month, which is 95046 kWh.

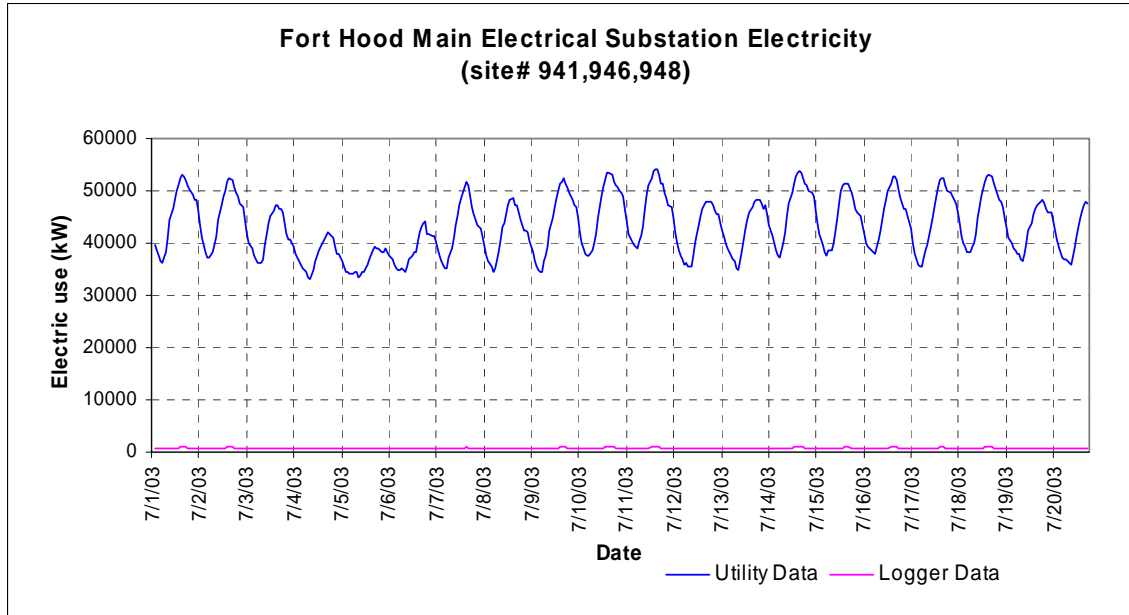


Figure 11.4.1.2-1: Main Electrical Substation Electricity Use from Utility Data and Logger Data

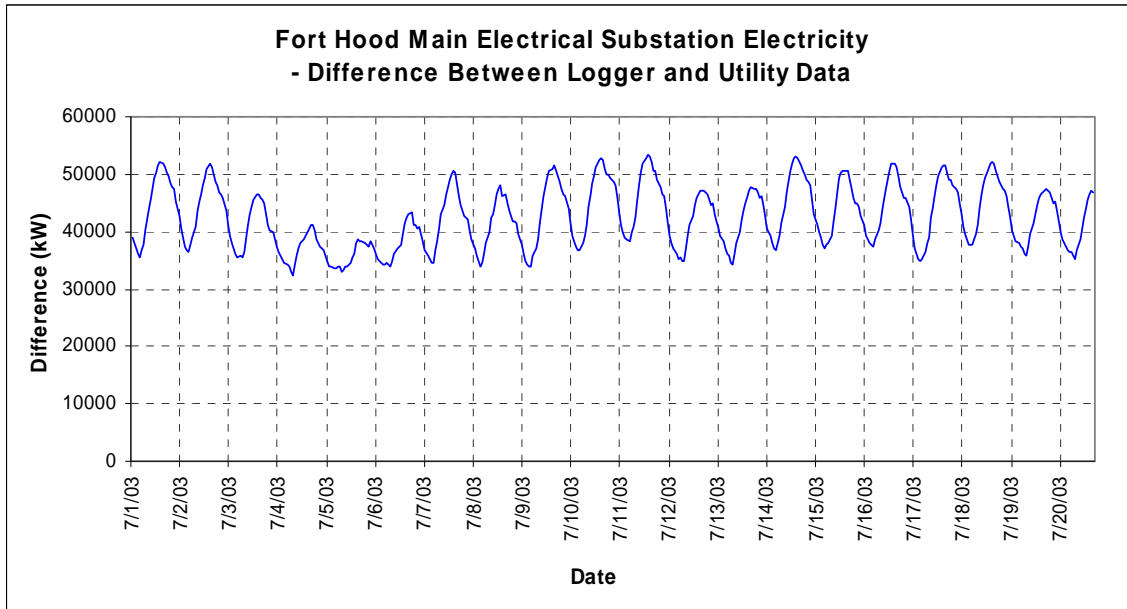


Figure 11.4.1.2-2: Main Electrical Substation Electricity Use -The Difference Between Utility and Logger Data

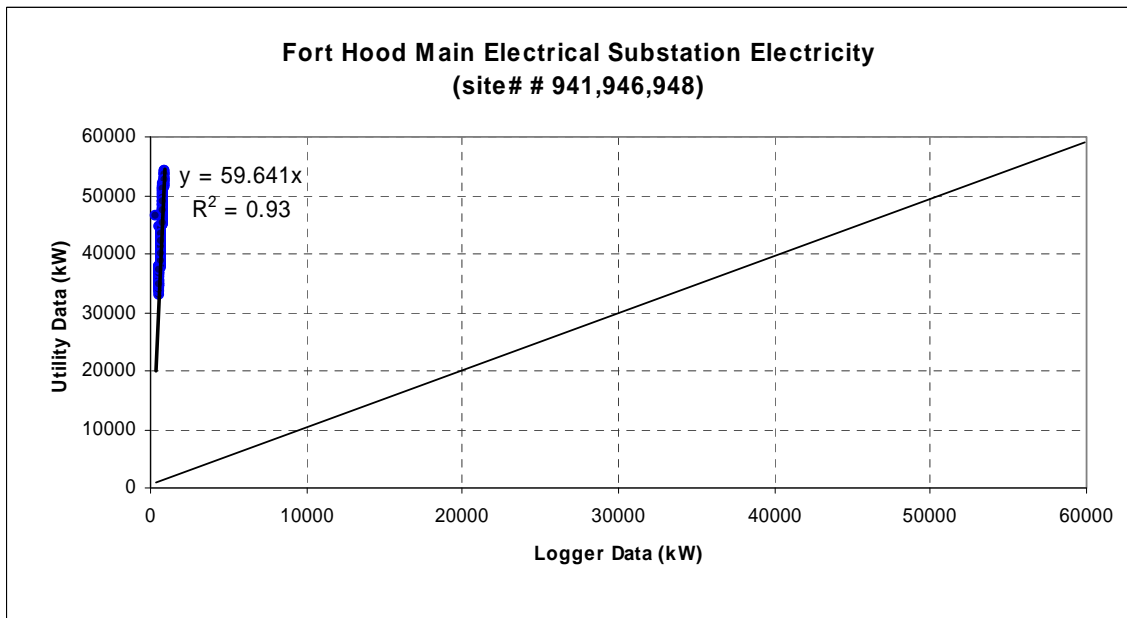


Figure 11.4.1.2-3: Main Electrical Substation Electricity Use – Comparison of Utility and Logger Data

Month	South Fort Hood Electricity Use - Oncor Data (kWh)	South Fort Hood Schools Electricity Use (kWh)	Main Substation Electricity Use - Oncor Data minus School Usage (kWh)	Main Substation Electricity Use - Scaled Logger data (kWh)	Diff. between the Oncor and Scaled Logger Data (kWh)
May-03	27,387,827	157,611	27,230,216		
Jun-03	29,014,705	87,645	28,927,060		
Jul-03	32,590,269	95,046	32,495,602	32,538,092	94,667
Aug-03	33,101,772	165,242	32,936,530		

Table 11.4.1.2-1: Main Electrical Substation and Schools Monthly Energy Usage

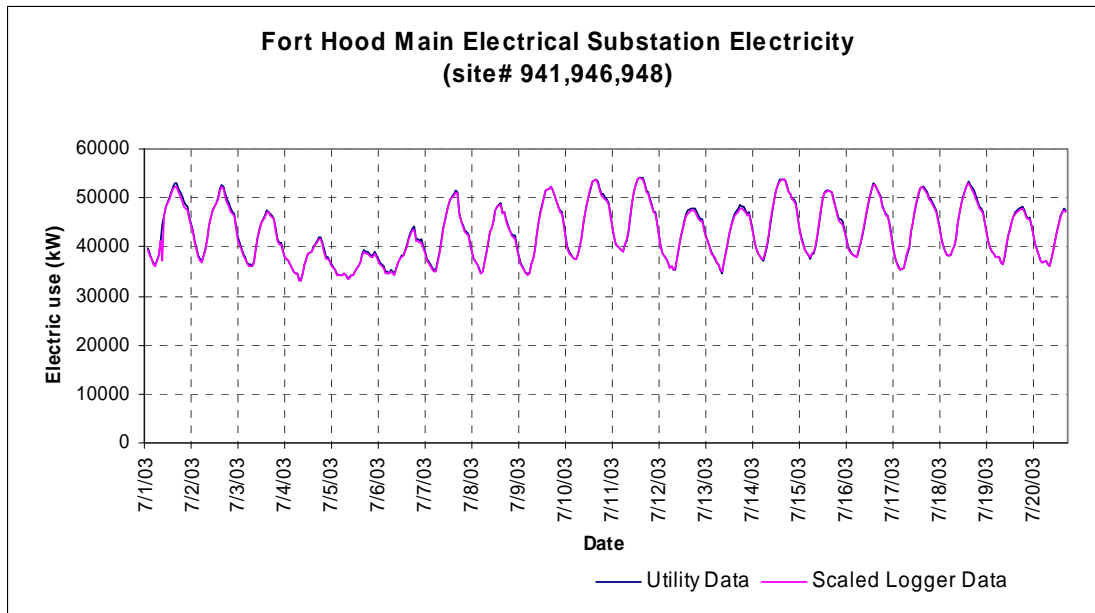


Figure 11.4.1.2-4: Main Electrical Substation Electricity Use – Utility and Scaled Logger Data

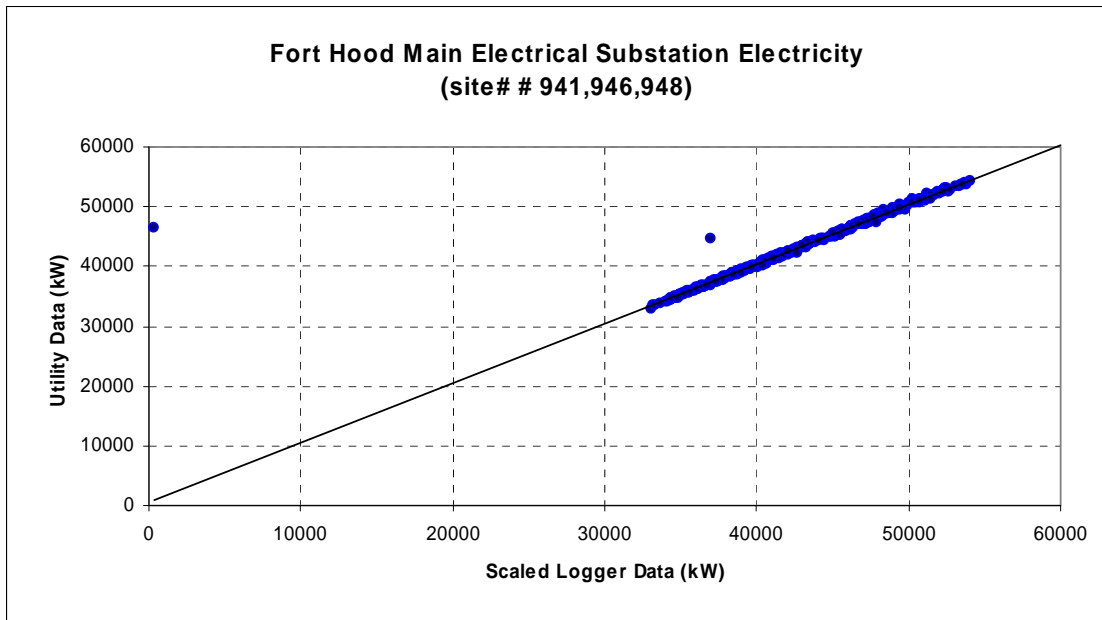


Figure 11.4.1.2-5: Main Electrical Substation Electricity Use – Comparison of Utility and Scaled Logger Data

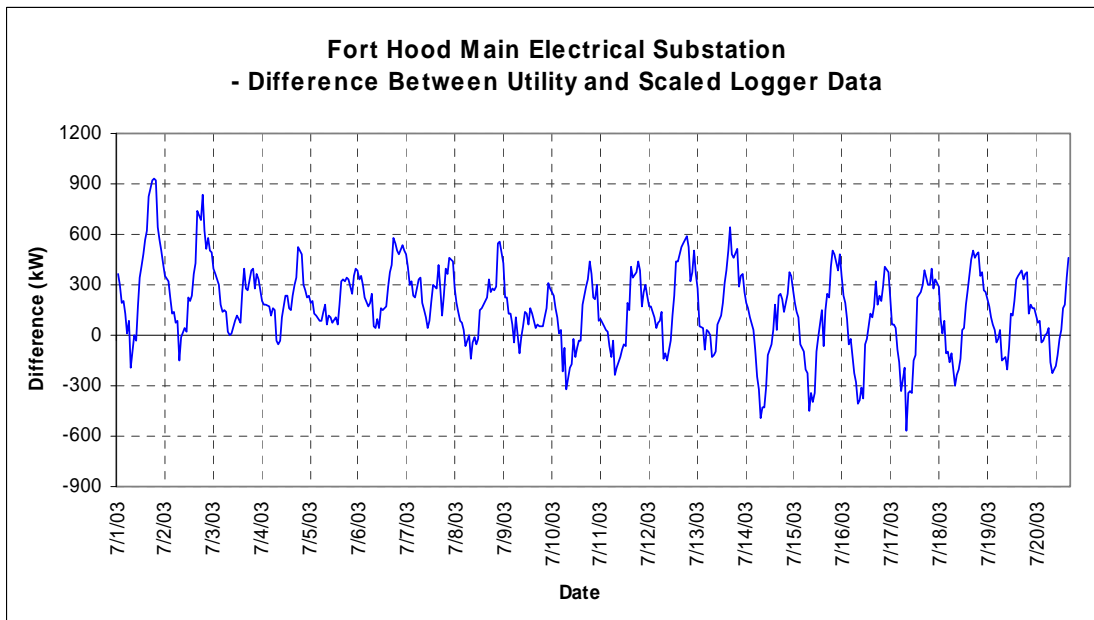


Figure 11.4.1.2-6: Main Electrical Substation Electricity Use -The Difference Between Utility and Scaled Logger Data

11.4.2. West Electrical Substation

11.4.2.1. Consistency Check of West Electrical Substation Utility Data

A consistency check of 15-minute data from the Oncor downloads and monthly utility bills of West Fort Hood shows reasonably good agreement for the period September 2002 to June 2003, as demonstrated in Table 11.4.2.1-1 and Figure 11.4.2.1-1. The electricity usage of two schools at West Fort Hood needs to be subtracted from the utility data in order to get the electricity usage for the West Electrical Substation.

Year	Month	Total Elec. Use (MWh) of Metered period	
		Oncor Data	Utility Bill
2002-2003	Sep	12,515	13,186
	Oct	9,244	10,057
	Nov	7,524	7,328
	Dec	8,078	8,132
	Jan	8,356	8,717
	Feb	7,859	8,096
	Mar	8,216	7,695
	Apr	8,810	9,136
	May	11,475	10,914
Jun	12,115	11,721	

Table 11.4.2.1-1: Comparison of Utility Bills and Oncor 15-minute Data for West Electrical Substation

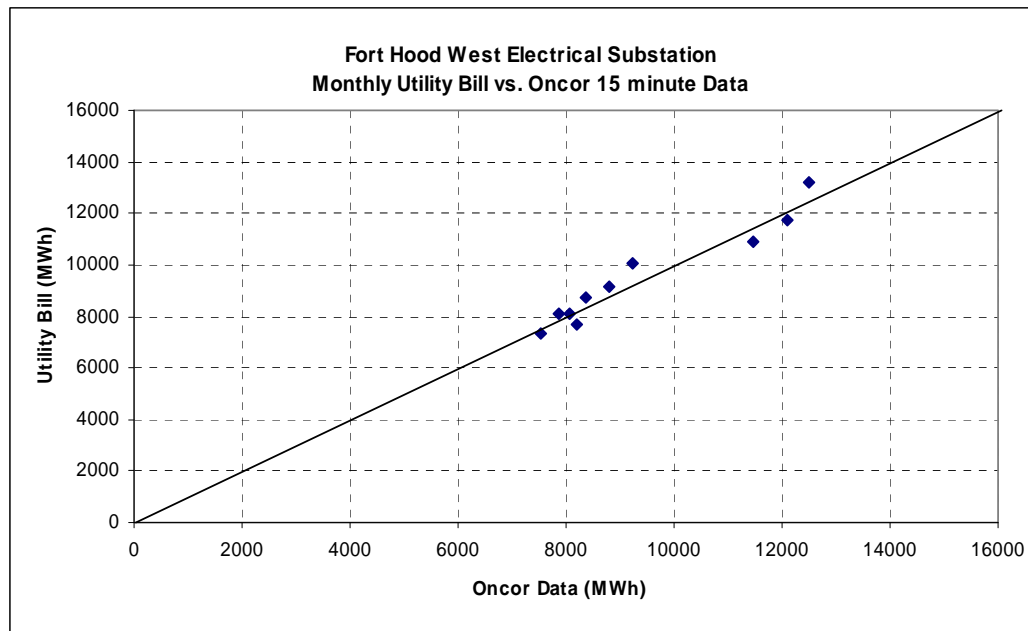


Figure 11.4.2.1-1: Cross Check of Utility Bills and Oncor 15-minute Data for West Electrical Substation

11.4.2.2. Cross Check of Utility Data and Logger Data

Figure 11.4.2.2-1 and Figure 11.4.2.2-2 show good agreement between the total electricity use of West Electrical Substation from 15-minute Oncor downloads and installed loggers for the month of August 2003 except that the utility data is about 500 to 1000 kW higher than the data collected by loggers during the on-peak hours and 0 to 500 kW higher than the collected data during the off-peak hours for most of the month (Figure 11.4.2.2-3). This is because the usage of four schools at West Fort Hood is included in the utility data but not in the logger data. The electricity use of the schools is 238,562 kWh in August 2003 according to the utility bill (Table 11.4.2.2-1). The difference of 387,885 kWh between these two measurements is in a reasonable range when compared to the school electricity use, as shown in Figure 11.4.2.2-3 and Figure 11.4.2.2-4.

Month	West Fort Hood Electricity Use - Oncor Data (kWh)	West Fort Hood Schools Electricity Use (kWh)	West Substation Electricity Use - Oncor Data minus School Usage (kWh)	West Substation Electricity Use - Logger data (kWh)	Diff. between the Oncor and Logger Data (kWh)
May-03	11,474,043	232,114	11,241,929		
Jun-03	12,115,257	135,638	11,979,619		
Jul-03	13,858,304	182,639	13,675,665		
Aug-03	13,813,868	238,562	13,575,306	13,425,983	387,885

* Data are missing for 24 hours for August 2003.

Table 11.4.2.2-1: West Electrical Substation and Schools Monthly Energy Usage

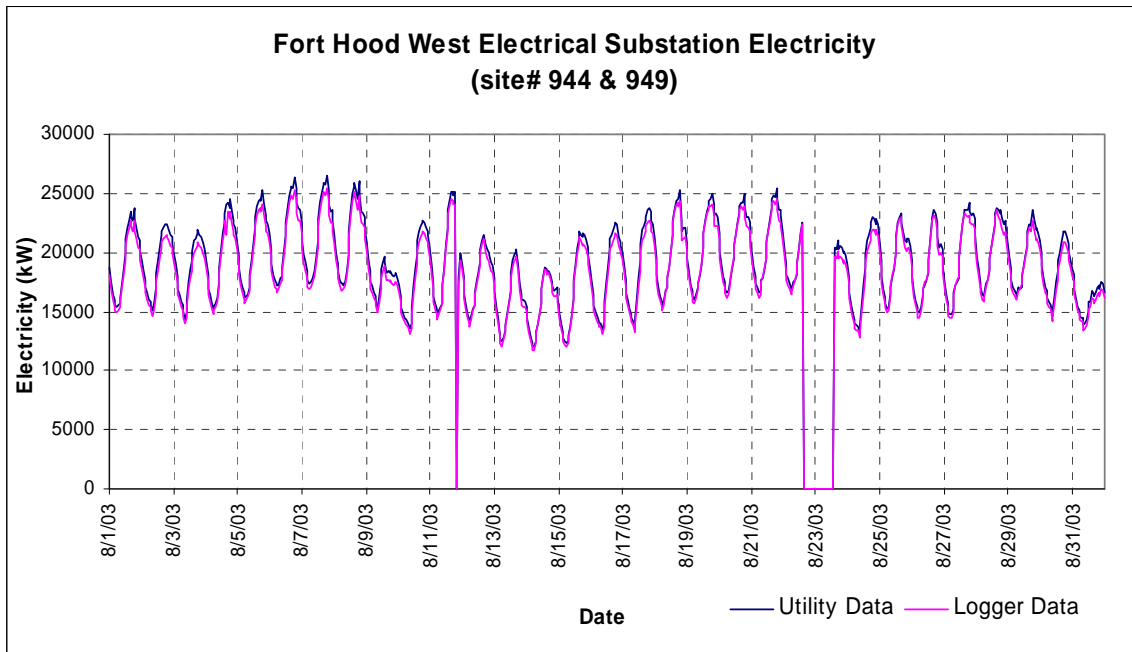


Figure 11.4.2.2-1: West Electrical Substation Electricity Use from Utility Data and Logger Data

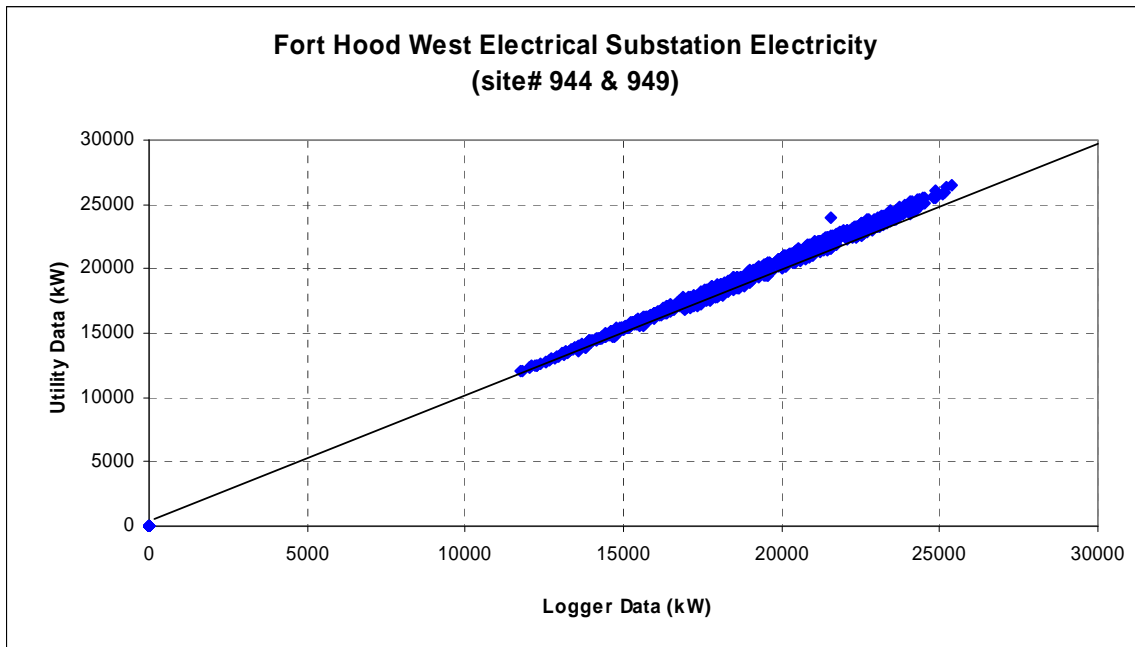


Figure 11.4.2.2-2: West Electrical Substation Electricity Use – Comparison of Utility Data and Logger Data

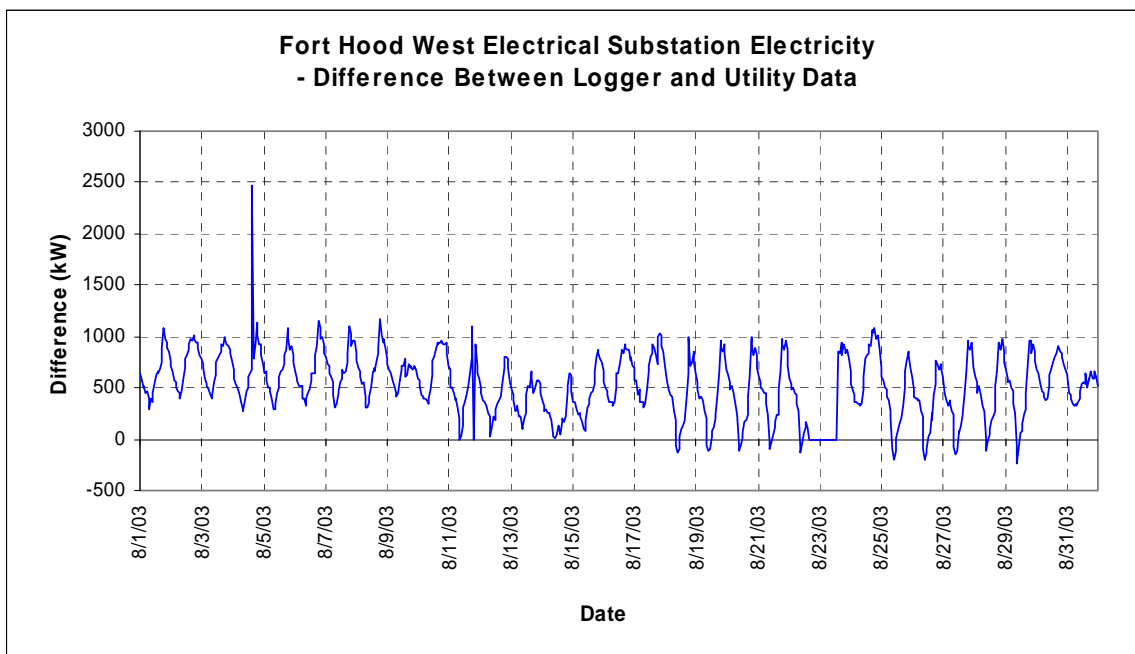


Figure 11.4.2.2-3: West Electrical Substation Electricity Use - Difference Between Utility Data and Logger Data

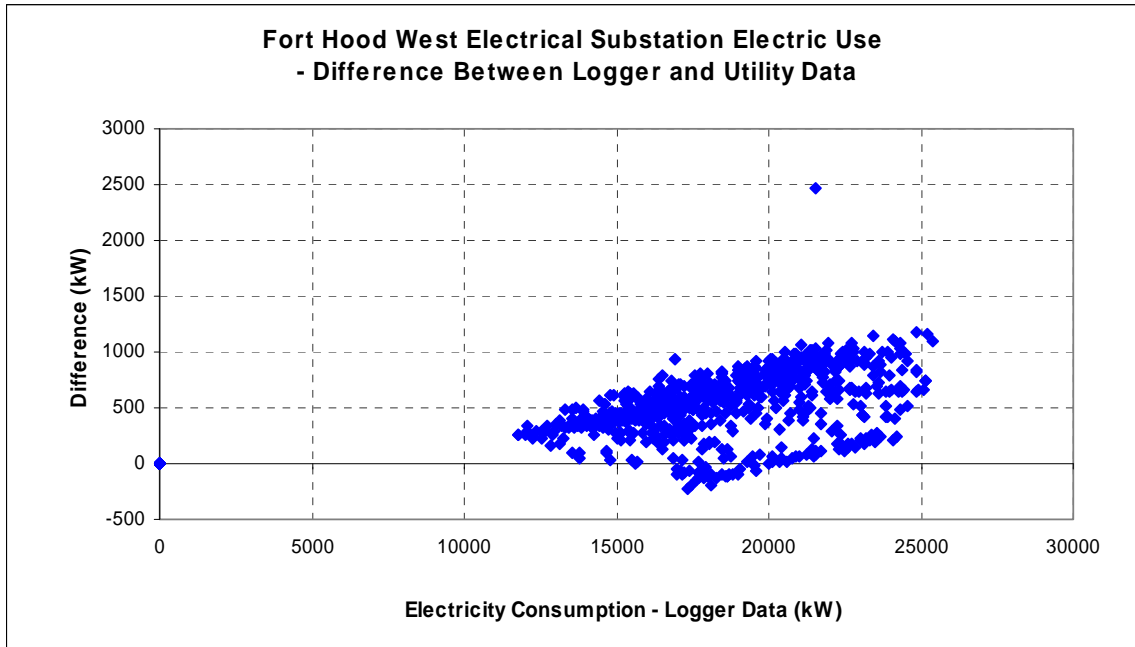


Figure 11.4.2.2-4: West Electrical Substation Electricity Use - Difference Between Utility Data and Logger Data

11.4.3. North Electrical Substation

11.4.3.1. Consistency Check of North Electrical Substation Utility Data

A consistency check of 15-minute data from Oncor downloads and monthly utility bills of North Fort Hood is demonstrated in Table 11.4.3.1-1 and Figure 11.4.3.1-1. This comparison shows good agreement for the period September 2002 to June 2003.

Year	Month	Total Elec. Use (MWh) of Metered period	
		Oncor Data	Utility Bill
2002-2003	Sep	862	862
	Oct	756	757
	Nov	723	723
	Dec	776	776
	Jan	880	880
	Feb	872	872
	Mar	956	956
	Apr	881	880
	May	984	984
	Jun	997	997

Table 11.4.3.1-1: Comparison of Utility Bills and Oncor 15-minute Data for North Electrical Substation

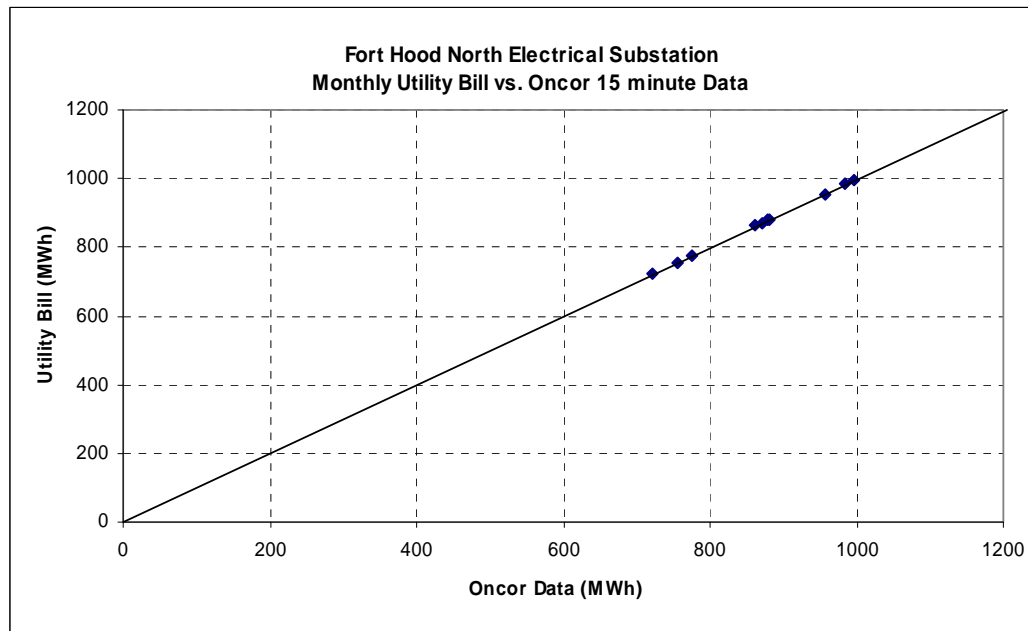


Figure 11.4.3.1-1: Cross Check of Utility Bills and Oncor 15-minute Data for North Electrical Substation

11.4.3.2. Cross Check of Utility Data and Logger Data

The comparison of the total electricity use of North Electrical Substation from 15-minute Oncor downloads and installed logger for the period July to August 2003 is shown in Figure 11.4.3.2-1 and Figure 11.4.3.2-2. The difference between these two measurements is also shown in Figure 11.4.3.2-3. This comparison shows good agreement for most of the time, although the data collected by the logger does not always equal to the utility data, especially for the period August 1, 2003 through August 13, 2003.

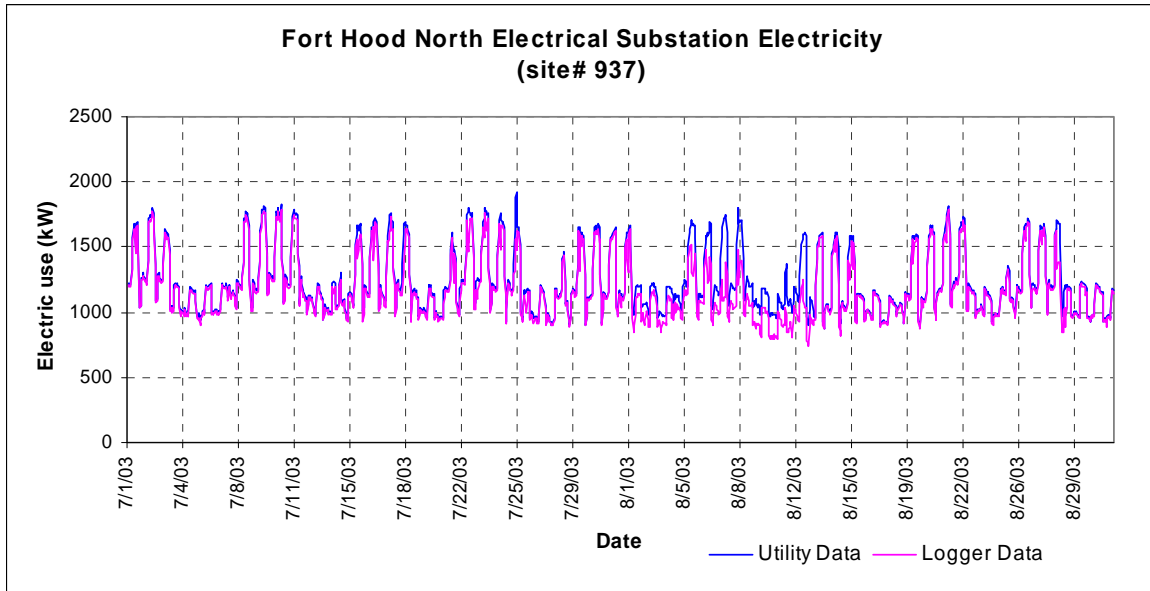


Figure 11.4.3.2-1: North Electrical Substation Electricity Use from Utility Data and Logger Data

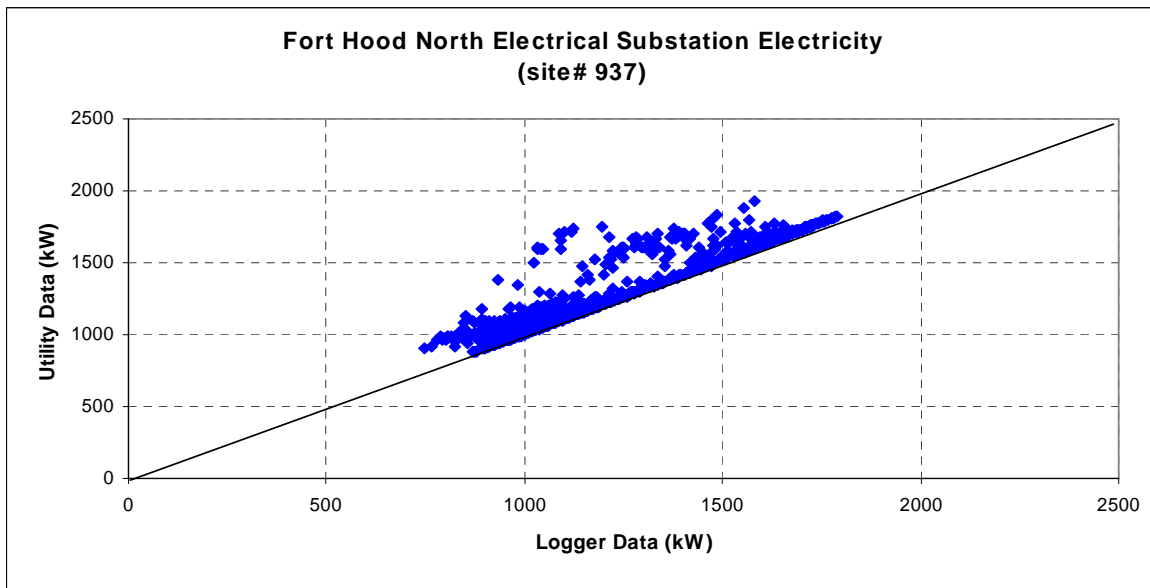


Figure 11.4.3.2-2: North Electrical Substation Electricity Use- Comparison of Utility Data and Logger Data

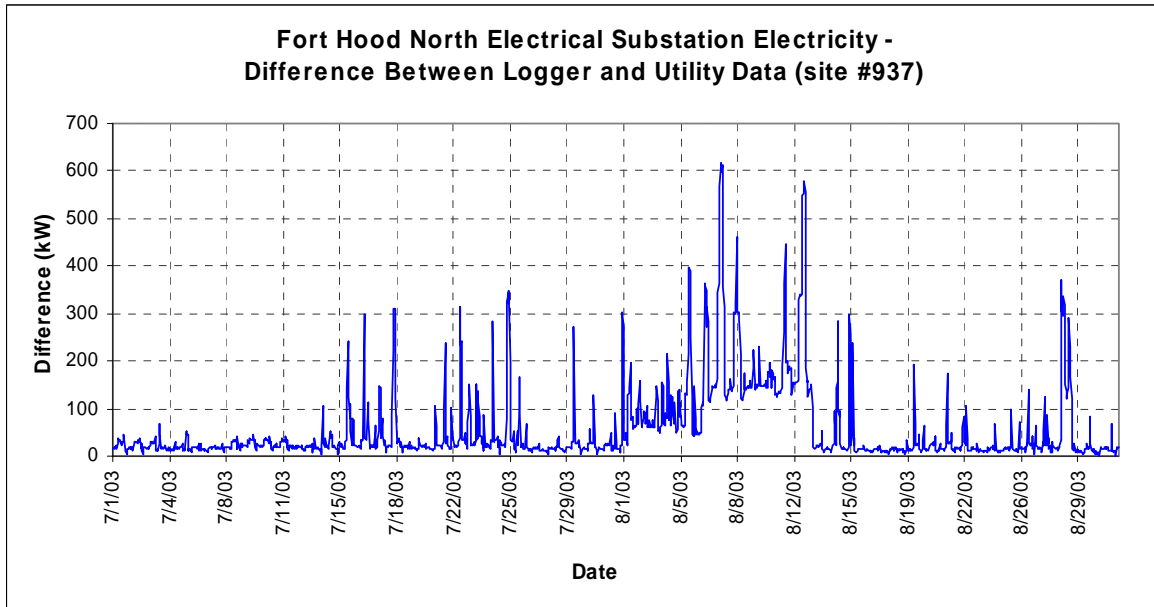


Figure 11.4.3.2-3: North Electrical Substation Electricity Use – Difference between Utility Data and Logger Data

11.5. Resolution of Steam Metering Problem at 87000 Block

Resolution of steam and gas metering problems at the 87000 block thermal plant is discussed in this section. Boiler specification information obtained from the manufacture is presented in Table 11.5-1. There are three Burnham 4FL-993-45 Firebox in the thermal plant. The gross steam output for each of them is 7388kBtu/hr (7617lb/hr). The gas input is 9235kBtu/hr. The enthalpy of steam is about 970 Btu/lb and the design boiler efficiency is 80%.

The measured steam and natural gas consumption data as a time series from October 2001 to March 2003 are presented in Figure 11.5-1. The measured steam temperature, steam pressure, and ambient temperature as a time series for the same period are shown in Figure 11.5-2. The measured steam temperature averages at 240F and the pressure varies from 8 psi to 10 psi. The measured steam and natural gas consumption vs. temperature are shown in Figure 11.5-3. Boiler overall efficiency are calculated and plotted in Figure 11.5-4. The boiler efficiency ranges from 0 to 12 during this period.

The steam and gas consumption during the winter time (October 2002 to March 2003) are also plotted in different scale in Figure 11.5-5. It shows that the gas consumption curve demonstrate a similar trend to the steam curve though the gas consumption was much lower than the steam use. The Energy Systems Lab's analysis of the boiler efficiency profiles yielded good efficiency trend shape, although the scale is meaningless (Figure 11.5-6). The boiler specifications combined with the information the steam meter was reporting seem to indicate that the gas meter was reading low. When one boiler was running fully in February of this year the steam meter reported a value consistent with the manufacturer's specifications. For example, at high boiler output the steam meter was reading at 7400 kBtu, and the boiler specification was 7388 kBtu. The gas consumed by the boiler was not consistent with the boiler's specifications. The gas meter was averaging around 738 kBtu, whereas the boiler specification is 9235 kBtu. This is approximately 12X. When this factor is utilized to compute the efficiency plots, the plots look correct (Figure 11.5-7). This scale factor problem is either the probable combination of a 10X scale factor oversight and/or an additional meter problem that needs to be resolved. There have been verbal reports from SiTEX Corporation and Ft Hood's DPW that there are gas pressure problems on the boiler gas lines. It has also been un-officially reported and that the gas meter is twenty-five years old and may need recalibrating.

Giving the above mentioned gas issues; it is our recommendation that Ft Hood have the gas meter verified and or replaced and the gas pressure on the boiler lines be checked for correctness and possibly monitored with existing data logging equipment. A by-pass already exists on the gas feed and taking the meter out of line can easily identify possible gas pressure problems due to the gas meter. SiTEX Corporation estimates that a meter replacement will be \$8-10,000 dollars, parts and labor. Once this has been done the Energy Systems Lab may then re-run the thermal calculations comparisons to re-verify the steam measurements if deemed necessary.

In this report, it is assumed that the steam data is right. A factor of 12.52 is utilized to scale the measured gas data. The scaled gas and measured steam consumption data as a time series and versus temperature for the period October 2002 to March 2003 are shown in Figure 11.5-8 and Figure 11.5-9 respectively. The monthly boiler performance plots from November 2002 to March 2003 after scaling the gas data are shown in Figure 11.5-10.

Burnham Model: 4FL-993-45 Firebox	
Saturated Steam Average Temperature:	240 F
Average Steam Pressure:	8~10 Psi
Gross Output:	7388 MBH
	220.7 BHP
	7617 lb stm/hr
Gas Input:	9235 MBH
Light Oil:	66 GPH
Maximum Pressure:	15 Psi
Steam Enthalpy:	970.0 Btu/lb
Boiler Efficiency	80%
100% firing rate:	81%
75% firing rate:	82%
50% firing rate:	82.50%
25% firing rate:	82%

Table 11.5-1: Boiler Specification Information

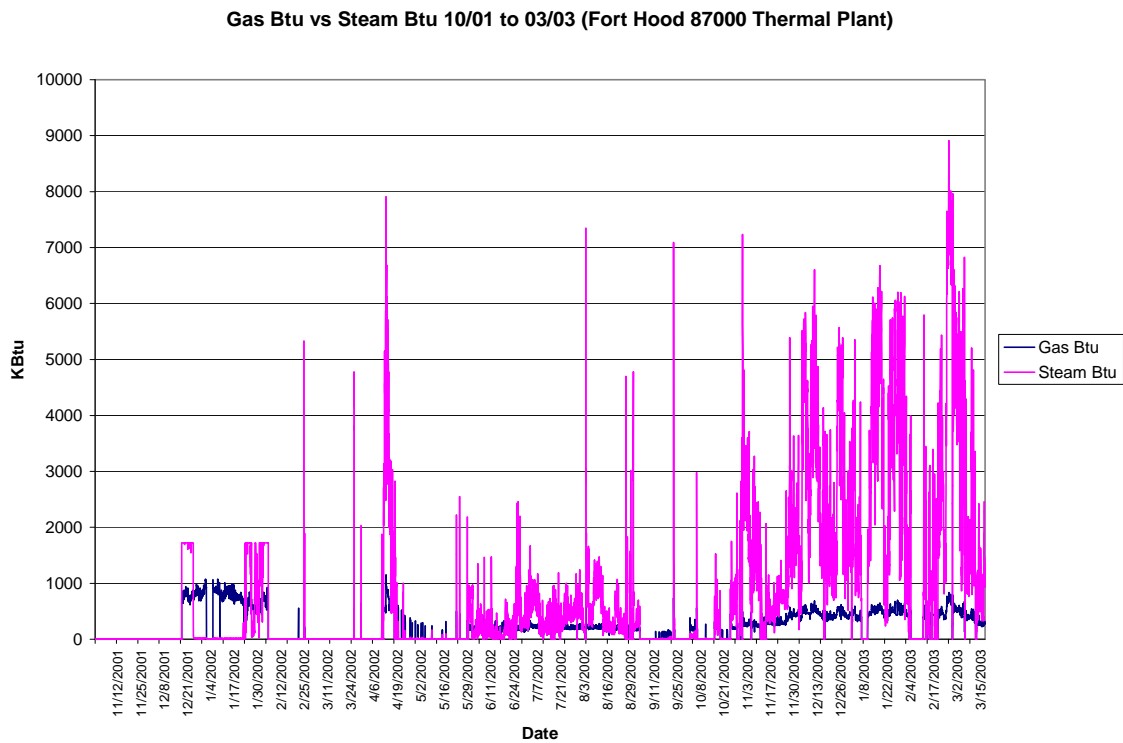


Figure 11.5-1: Measured Steam and Gas Consumption Data as a Time Series.

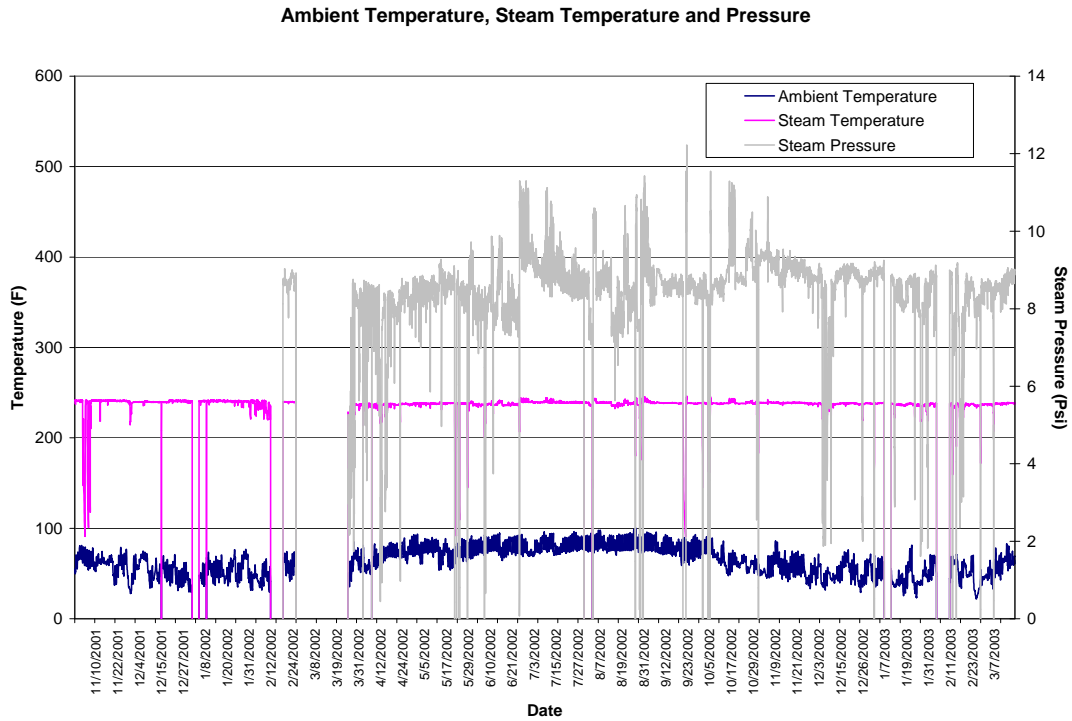


Figure 11.5-2: Measured Steam Temperature, Pressure, and Ambient Temperature Data as a Time Series.

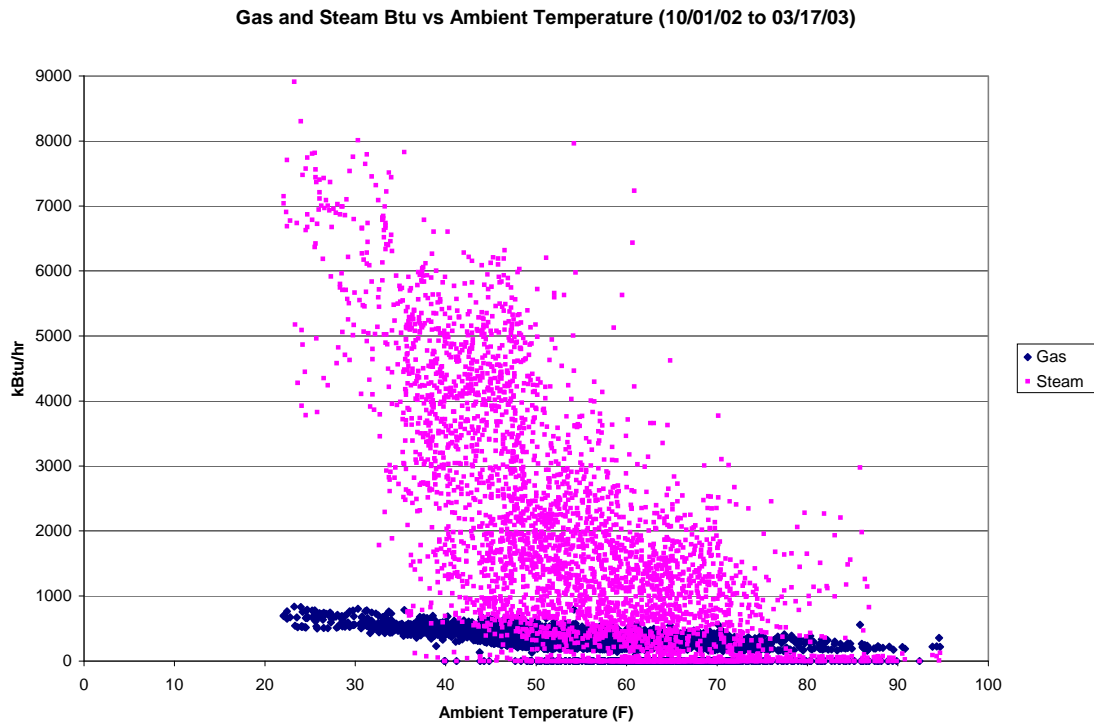


Figure 11.5-3: Measured Gas and Steam Btu Consumption vs Temperature.

Boiler Performance (10/01 to 03/03)

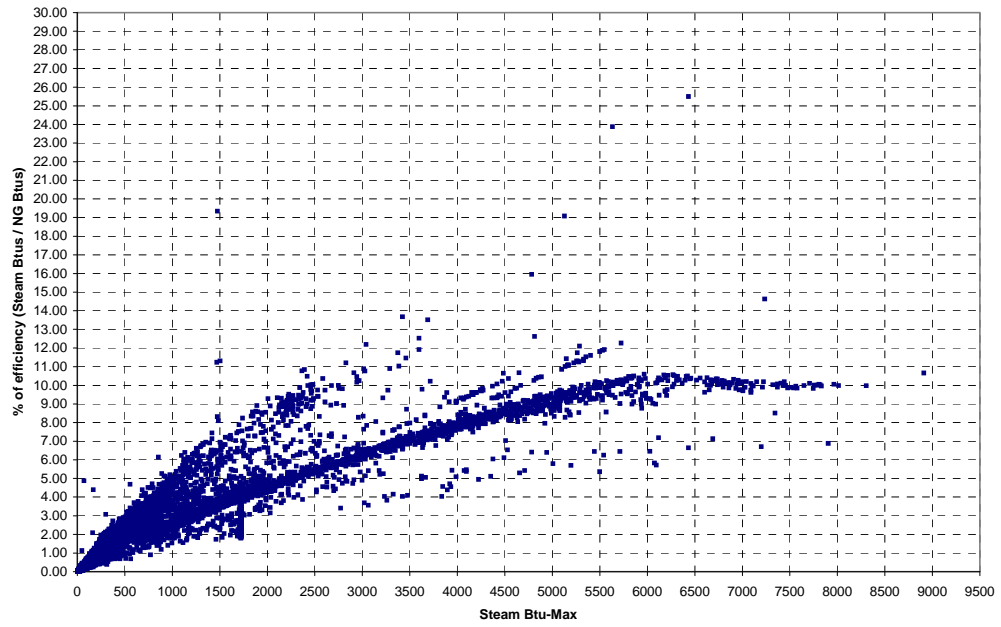


Figure 11.5-4: Boiler Performance.

Gas kBtu vs Steam Btu 10/01/02 to 03/17/03 (Fort Hood 87000 Thermal Plant)

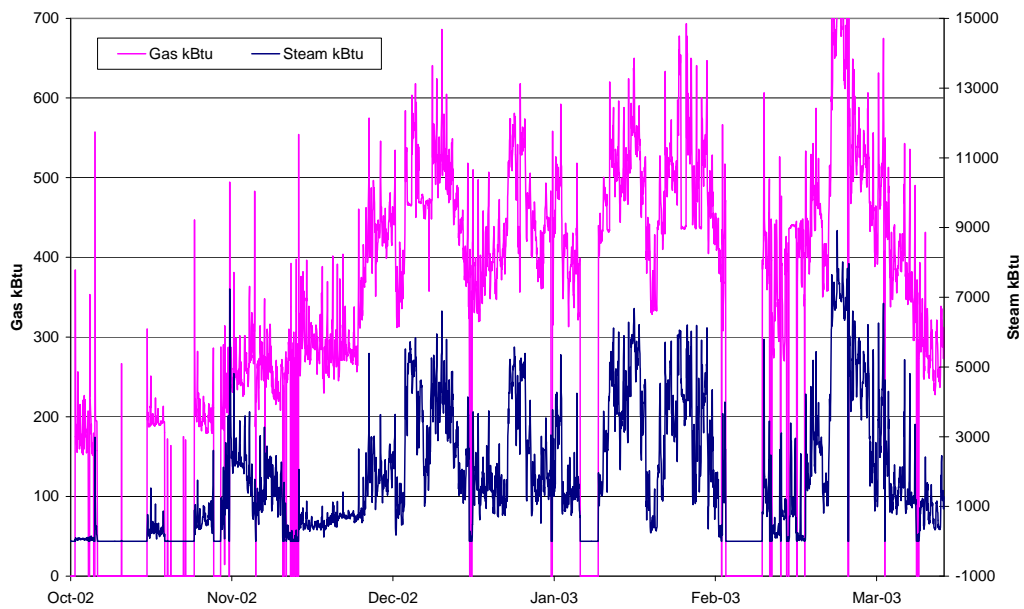


Figure 11.5-5: Original Gas and Steam Btu Data as a Time Series.

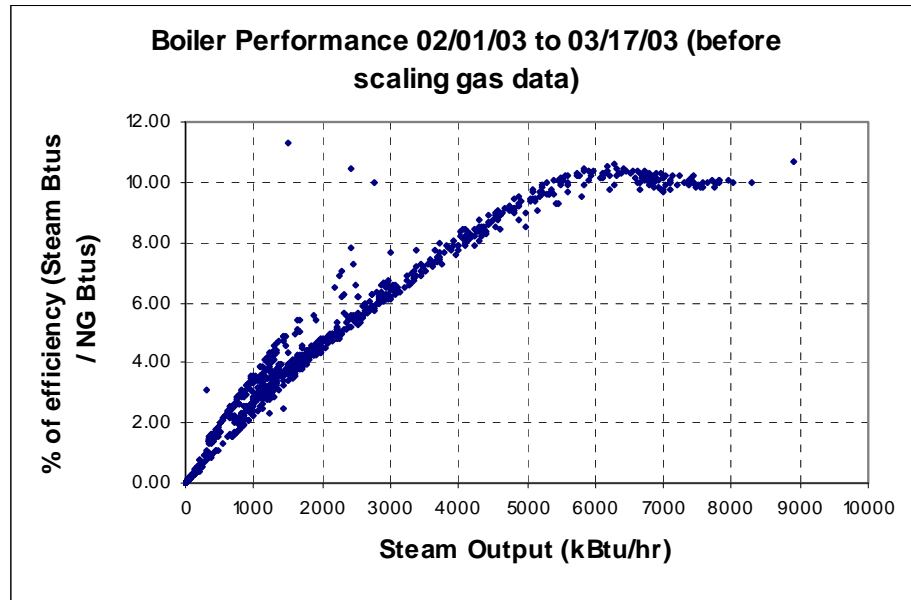


Figure 11.5-6: Boiler Performance (Feb 03-Mar 03) Before Scaling Gas data.

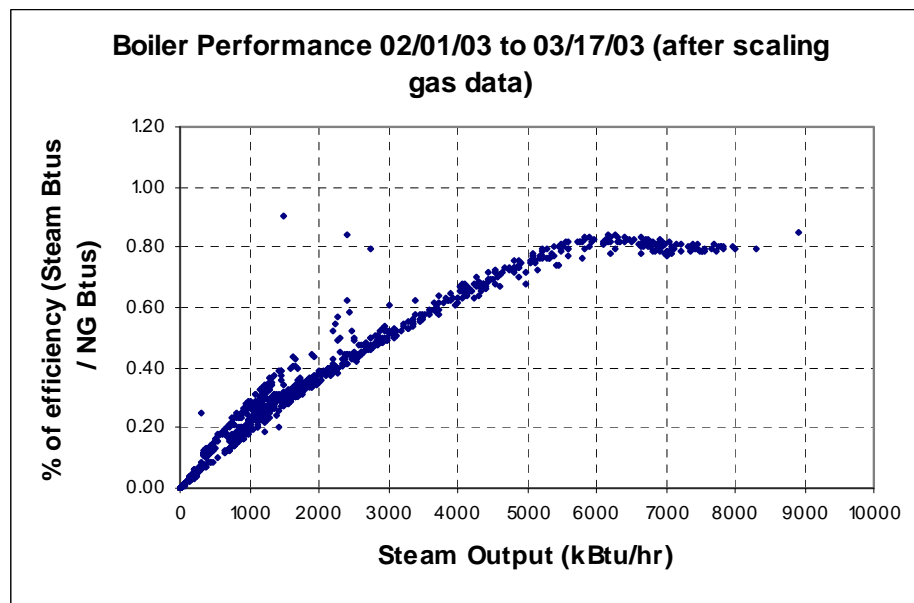


Figure 11.5-7: Boiler Performance (Feb 03-Mar 03) After Scaling Gas data.

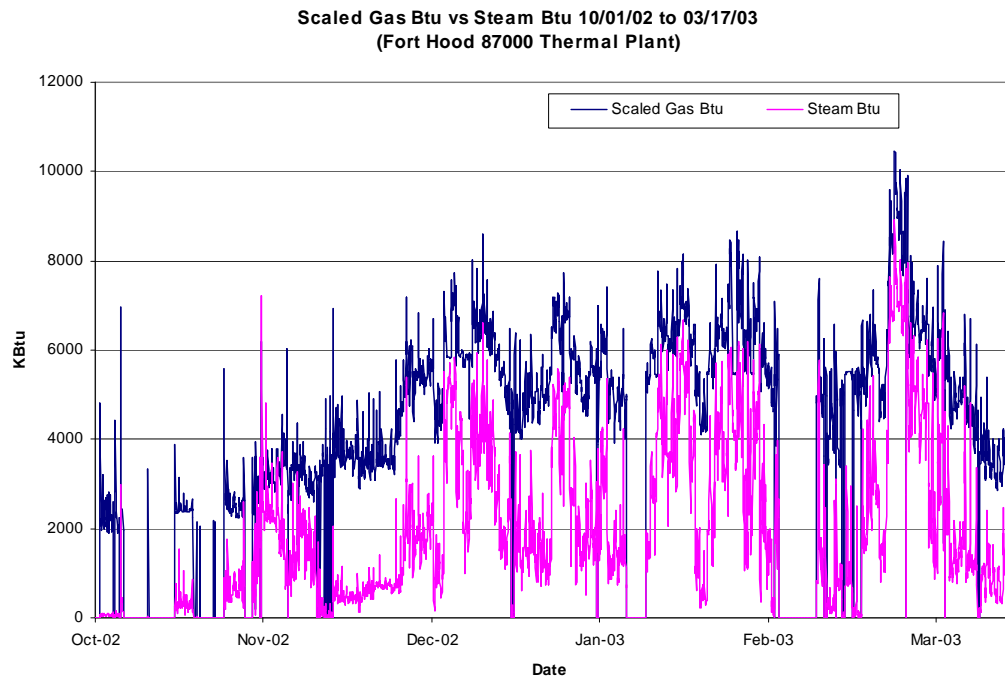


Figure 11.5-8: Steam and Scaled Gas Btu Data as a Time Series.

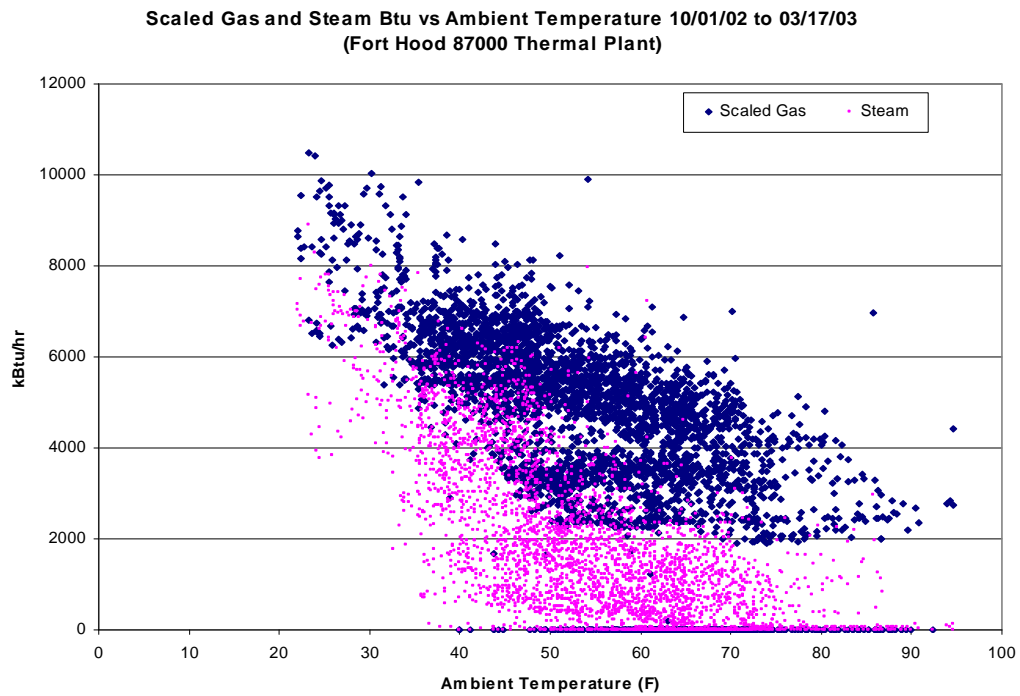
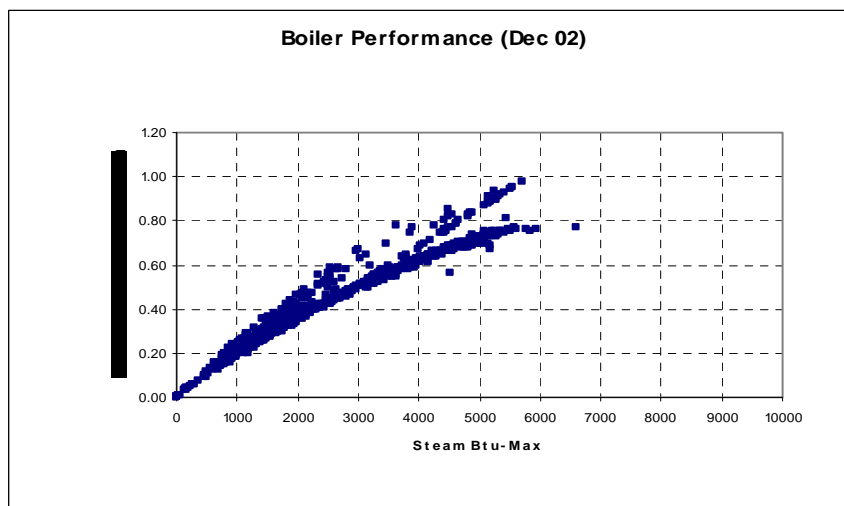
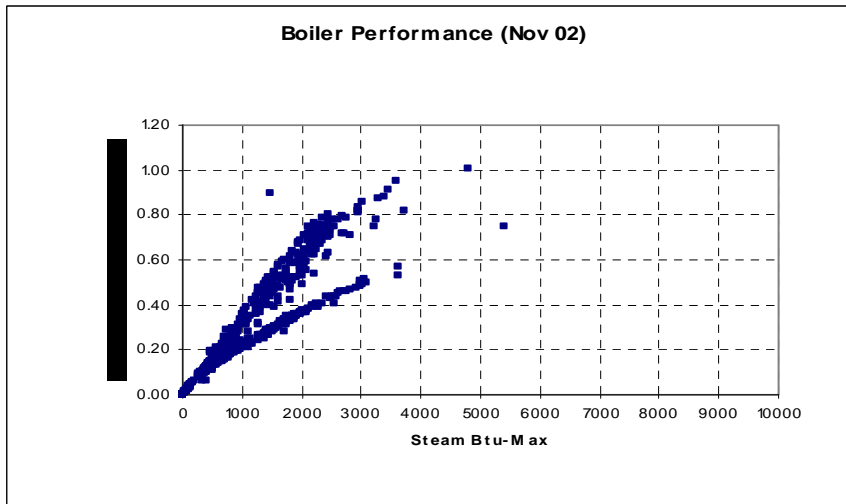
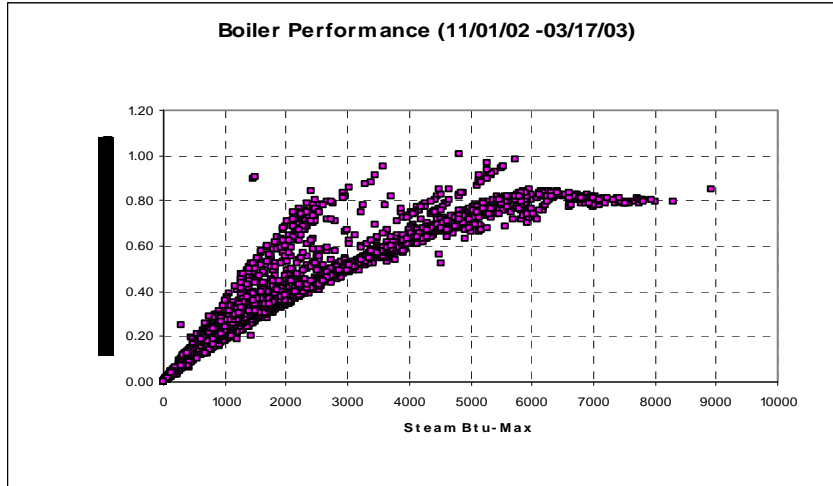


Figure 11.5-9: Steam and Scaled Gas Btu Consumption vs Temperature.



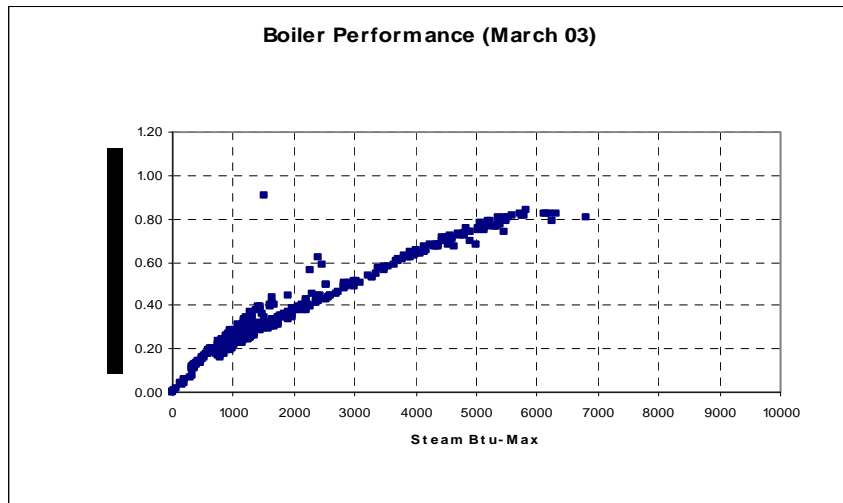
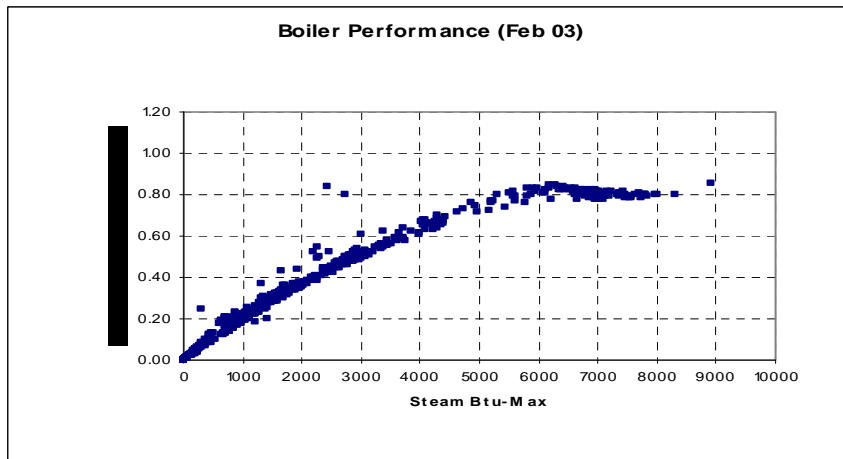
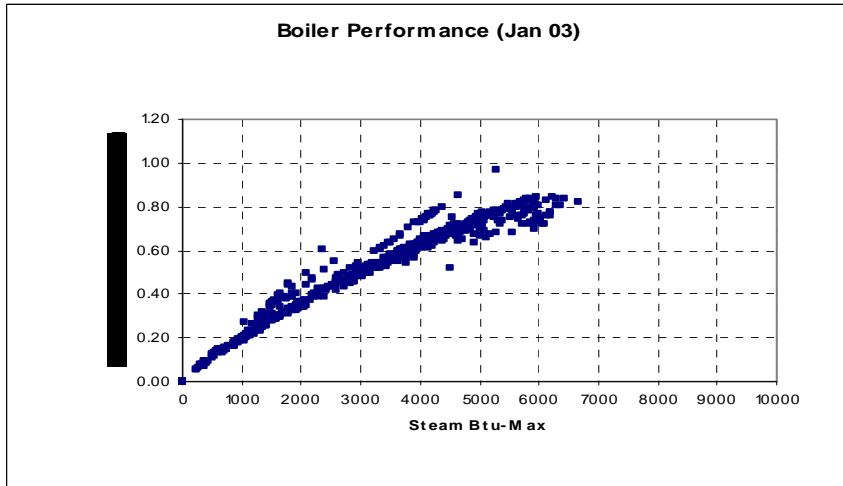


Figure 11.5-10: Boiler Performance Plots After Scaling Gas Data (Nov 02 to Mar 03).

11.6. List of Data Files

In Figure 11.6-1 the organization of the data files is shown for the CDROM that accompanies this report. This CD contains all data collected to date from Ft. Hood by the ESL. In general these files are organized by logger number, with the exception of the Misc. buildings and the whole-base natural gas use, which did not have numbered loggers associated with them.

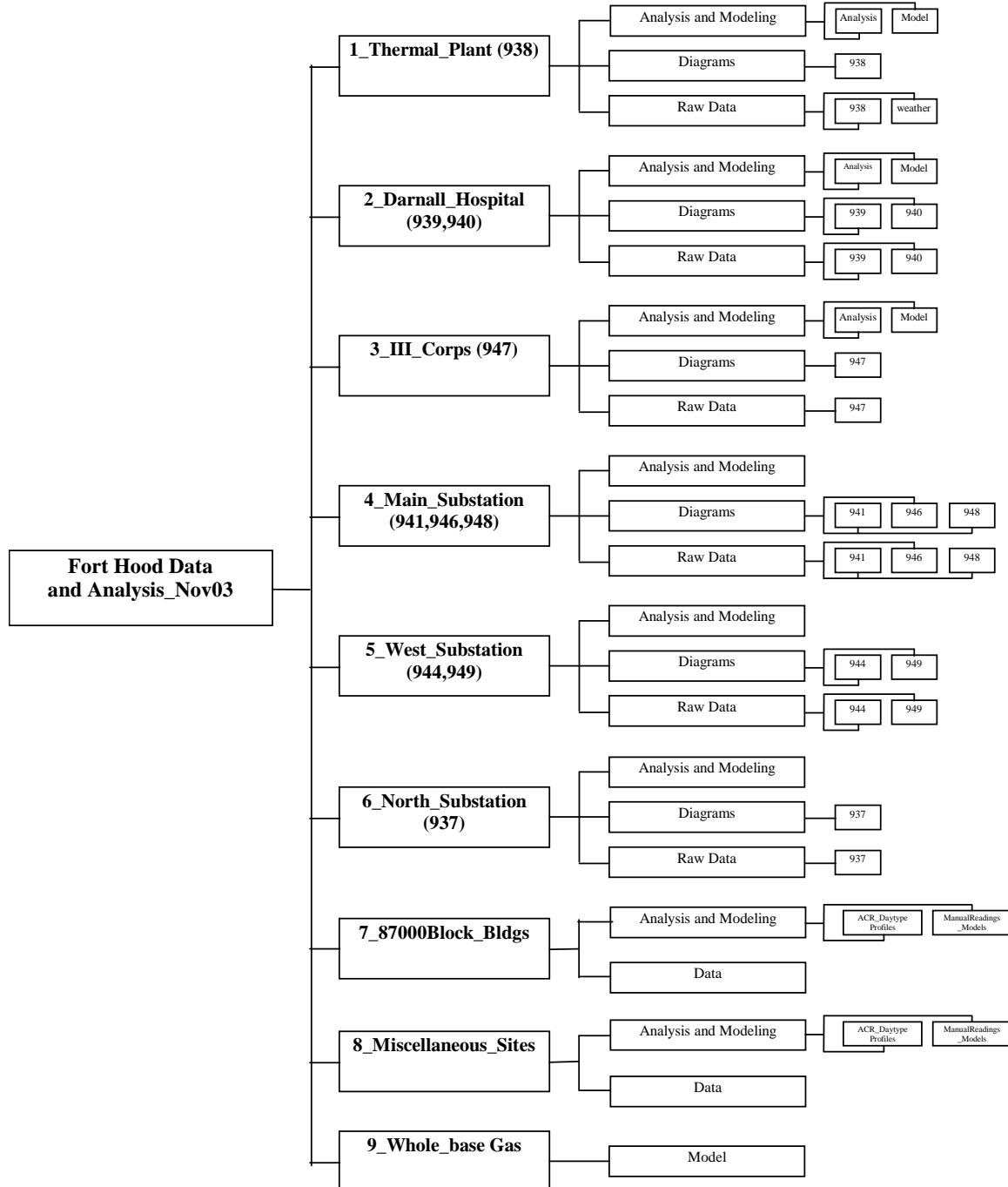


Figure 11.6-1 Organization of Files on the Accompanying CDROM.