

Table of Contents

LECTURES

VIBRATION REDUCTION OF LARGE STEAM TURBINE GENERATOR THROUGH BEARING ANALYSIS/MODIFICATION	1
<i>Joseph W. Spencer Jr. and Don Osborne</i>	
SUBTRACTING RESIDUAL UNBALANCE FOR IMPROVED TEST STAND VIBRATION CORRELATION	7
<i>John C. Nicholas, Stephen L. Edney, John A. Kocur, and Jerry F. Hustak</i>	
FIELD TESTING OF GAS TURBINE DRIVEN CENTRIFUGAL COMPRESSOR PACKAGES— TEST PROCEDURES AND MEASUREMENT UNCERTAINTIES	19
<i>Rainer Kurz and Klaus Brun</i>	
CONFIRMING CENTRIFUGAL COMPRESSOR AERODYNAMIC PERFORMANCE USING LIMITED TEST DATA COMBINED WITH COMPUTATIONAL FLUID DYNAMIC TECHNIQUES	35
<i>Shreekant Shah and John C. Bartos</i>	
RERATE OF CENTRIFUGAL PROCESS COMPRESSORS— WIDER IMPELLERS OR HIGHER SPEED OR SUCTION SIDE BOOSTING?	43
<i>Klaus Lüdtke</i>	
DESIGN AND RETROFIT OF A LOW SOLIDITY DIFFUSER FOR A PIPELINE CENTRIFUGAL GAS COMPRESSOR APPLICATION	57
<i>Michael B. Flathers</i>	
DISCOVERING, THE HARD WAY, HOW A HIGH PERFORMANCE COUPLING INFLUENCED THE CRITICAL SPEEDS AND BEARING LOADING OF AN OVERHUNG RADIAL COMPRESSOR—A CASE HISTORY	67
<i>Joseph P. Corcoran, Harvey Rea, Guill A. Cornejo, and Martin L. Leonhard</i>	
FLOW-INDUCED TURBOCOMPRESSOR AND PIPING NOISE AND VIBRATION PROBLEMS— IDENTIFICATION, DIAGNOSIS, AND SOLUTION	79
<i>David E. Jungbauer and Linda L. Eckhardt</i>	
STEAM TURBINE RISK ASSESSMENT—A TOOL TO ASSIST IN OPTIMIZING INSPECTION AND OVERHAULS OF INDUSTRIAL STEAM TURBINES	87
<i>Timothy J. Christ, Michael J. Drosjack, and G. Mark Tanner</i>	
TURBINE REMANUFACTURE—ONE OPTION FOR RELIABILITY AND EFFICIENCY IMPROVEMENT	95
<i>David A. Johns, David Rasmussen, and James Beverly</i>	
AN ASSESSMENT OF THE FORCES ACTING UPON A CENTRIFUGAL IMPELLER USING FULL LOAD, FULL PRESSURE HYDROCARBON TESTING	111
<i>Cyril Borer, James M. Sorokes, Thomas McMahon, and Edward Abraham</i>	
COST EFFECTIVE RE-ENGINEERING OF A PROPYLENE COMPRESSOR STRING	123
<i>John F. Vanderhoff and John R. Dugas, Jr.</i>	
UNDERSTANDING AND PREVENTING STEAM TURBINE OVERSPEEDS	129
<i>William E. Nelson and Perry C. Monroe, Jr.</i>	
STRESS EVALUATION IN HIGH SPEED, ROTATING MACHINERY WITH THE L_{CR} ULTRASONIC TECHNIQUE	143
<i>Don E. Bray and Martin Dietrich</i>	
APPLICATION OF DRY GAS SEALS IN SPECIAL PURPOSE STEAM TURBINES	151
<i>Theodore E. Bond, Mark Pospisil, and E.V. Wilkinson</i>	

SPECIAL PAPER

INSTALLATION TOOLS FOR HYDRAULICALLY FITTED COUPLING HUBS—
PRECAUTIONS AND DESIGN REQUIREMENTS159
C.B. Gibbons and A. Nigel Hearne

TUTORIALS

HIGH SPEED ELECTRIC DRIVE APPLICATIONS—AN OVERVIEW167
John C. Rama and Miles Griggs

RISK BASED MAINTENANCE OF TURBOMACHINERY177
Anthony J. Smalley and David A. Mauney

RELIABILITY FOCUSED MAINTENANCE SYSTEM189
Bonz Hart and Paul Lane

EXPERT SYSTEMS PROVIDE SUPPORT
FOR A PROACTIVE MACHINERY MANAGEMENT METHODOLOGY195
Ronald Bosmans

ANNULAR GAS SEALS AND ROTORDYNAMICS OF COMPRESSORS AND TURBINES201
Dara W. Childs and John M. Vance

DISCUSSION GROUPS221

SHORT COURSES243

ADVISORY COMMITTEE255

PROFESSIONAL STAFF261

TURBOMACHINERY LABORATORY265