IBM and Energy Efficiency  
Systems recommissioning and optimization

Since 1972, IBM’s Bromont plant has been committed to being a leader in environmental protection in every sector of its operations. An environmental policy has been in place since the very start of our operations and was revised many times until ISO 14001 certification was obtained in 1998. Over a period of 40 years, IBM’s Bromont plant has promoted the preservation of natural resources, worked towards meeting and exceeding environmental requirements, and put a great deal of effort into providing a healthy, safe working environment for its employees. The outcome of these commitments has been outstanding results in various spheres of activity related to environmental management and energy efficiency. Systems recommissioning is one of the ongoing activities that allowed us to improve their efficiency and increase energy conservation. The following two examples will be addressed in the presentation:

**HVAC systems recommissioning.** Multiple energy efficient measures were implemented such as reviewing actual control sequences and implementing new control strategies to optimize the operation of the systems. Existing instrumentation was reviewed and new instruments added to meet control requirements. PID control loop tuning was performed for optimal operation. Measures resulted in reducing the cooling and heating required for the systems as well as the electrical load on the fan motors. Some operational dynamic dashboards were implemented to provide key energy performance indicators allowing operators to identify and apply correctives to systems out of specification for optimal efficiency.

**Chilled water Central plant equipment optimization.** This project involved installing variable frequency drives on some condensate and evaporator chiller pumps and reviewing of the control sequences for optimal operation of the chillers and the free cooling. The measures have resulted in electricity savings associated to the pumps and to the overall efficiency improvement of the chilled water systems.

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