

End-use System Guidelines for an Industrial Energy Efficiency Feasibility Study - Process Control

Purpose:

These are guidelines for an Energy Efficiency Feasibility Study on a process system and are in addition to those listed in BCH-QMS-9462-C-001 Guidelines for an Industrial Energy Efficiency Feasibility Study. Changes are acceptable if approved in writing by a responsible BC Hydro employee appointed by BC Hydro.

This Energy Efficiency Feasibility Study may use methodologies such as process modelling (to determine recommended loop tuning), advanced control, and equipment or system optimization. This study shall not include the implementation of any permanent facilities or equipment.

1. Executive Summary

- 1.1. Chief process(s) and characteristics.
- 1.2. Beneficial and potential detrimental consequences of recommended modifications.

2. Process System Description

- 2.1. Electrical energy usage characteristics and load profiles for the process system.
- 2.2. Process behaviour in terms of stability and energy efficiency.
- 2.3. Process energy balance with losses.
- 2.4. Process flow diagrams for the chief processes.
- 2.5. Process block (logic) diagrams for the chief processes.
- 2.6. Environmental conditions affecting the energy consumption.
- 2.7. Maintenance conditions and recurring repair items affecting the energy consumption.
- 2.8. Process data collected if requested by a BC Hydro Power Smart Engineering employee.
- 2.9. Process Control
 - 2.9.1.1. Monitoring and control systems description.
 - 2.9.1.2. Make, model and type of system(s).
 - 2.9.1.3. Consequences of recently completed, in progress and proposed changes.
- 2.10. Testing
 - 2.10.1.1. Describe testing methodology.
 - 2.10.1.2. Describe verification of any new or novel testing methodologies.
 - 2.10.1.3. Summarize the testing.

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3. Recommendations

- 3.1. Process control improvement options.
- 3.2. For each Energy Conservation Measure describe the controls and the process settings to be manipulated. Consider the manipulated values, disturbance values, controlled values, set points, algorithms, dead bands, control precision, calibration and reliability.
- 3.3. Consideration for employing Monitoring Targeting and Reporting (MT&R) techniques.
- 3.4. Generic specifications for replacement components.