ABB’s turbine automation audit services evaluate the status of both the control system and the mechanical/hydraulic equipment associated with any manufacturer and any style of steam or combustion turbine and the associated auxiliary systems. Our comprehensive site assessment and subsequent audit report for the plant’s turbine equipment identify areas of concern including poor performance and highlight opportunities for improvement in operation and maintenance.

ABB’s site assessment and audit report services are designed to help you make an informed decision as to whether your systems need to be repaired and maintained, upgraded and enhanced, or replaced in their entirety. Our goal is to provide you with the necessary data to increase turbine reliability and maximize operational performance to improve unit efficiency.

A site assessment is typically 2 to 4 days on-site and consists of some or all of the following activities:

**Discussions with operations personnel**
- Current operation of the unit
- Operational problems or concerns
- Status of auxiliary systems and controls
- Options and preferences for operator interface (hard panels, annunciators, recorders, CRTs, printers, etc.)
- Understanding operating procedures and limitations (obtaining written procedures when available)
- Identifying area for operational enhancements

**ABB’s turbine automation audit services provide value to your plant, particularly when the following plant situations arise:**
- Lack of internal plant resources to perform this type of equipment assessment
- Scope document required to present to management for justification and approval of a future project
- Demands of a changing operational environment do not match what the existing control and mechanical/hydraulic devices can provide
- Overall degradation of turbine performance due to age and maintainability of existing control and mechanical/hydraulic equipment
- Lack of a knowledge-base for maintaining the existing controls and mechanical/hydraulic devices
- Turbine OEM can no longer provide support for the control and mechanical/hydraulic equipment
- Increasing number of delayed start-ups and/or forced outages

With ABB as your partner, you get the benefit of our center of excellence for turbine automation in North America, located in Natrona Heights, Pennsylvania. Personnel at this facility have years of turbine automation expertise to deliver a comprehensive assessment of your current system needs. Our local expertise combined with ABB’s global presence provides a knowledge-base to supply you with the right cost effective solution to meet your needs.
Discussions with maintenance personnel
- Health of the existing control and mechanical/hydraulic systems
- Reoccurring maintenance problems
- Condition of field devices and associated wiring/cabling
- Requirements for power, UPS, inverters, etc.

Control Room Assessment
- Examine existing operator interface
- Determine feasibility of bench board or panel mount operator interfaces
- Determine feasibility of floor mount or desk top operator consoles
- Determine footprint reductions and any operational improvements by combining multiple vendors’ systems and functions into a single common platform

Equipment/Relay Room Assessment
- Examine all existing cabinetry and panels
- Determine feasibility of new cabinets and/or existing cabinet inserts
- Consider I/O wiring to/from the field for existing and new field device
- Establish condition of existing field wiring issues and/or concerns

System I/O Review
- Develop preliminary I/O list
- Examine P&IDs and elementary wiring diagrams

Turbine Mechanical/Hydraulic System Assessment
- Review existing mechanical and hydraulic drawings
- Evaluate condition of existing equipment
- Determine viable options for mechanical/hydraulic retrofit
- Assess the need for upgrades or new equipment to increase reliability and on-line testing

At the conclusion of the site assessment phase, ABB organizes and evaluates the data obtained to generate and issue an audit report providing you with detailed analysis, purposeful insight and useful recommendations.

The audit report format, depending on the scope, includes some or all of the following:

Introduction
- Executive summary
- Definition of Site Assessment Scope

System Hardware (Cabinets, Transducers, Existing Equipment)
- Description/analysis of existing cabinetry (including I/O terminations)
- Discussion/analysis of demolition of existing equipment and replacement/installation of new equipment
- Discussion of available options

Operator Interface
- Description/analysis of existing operator interface
- Discussion of available options

System I/O
- Define I/O list and determine I/O counts
- Discussion of any special interfaces required to interface to existing I/O
- Discussion of any special or new wiring required
- Discussion of present field wiring condition
- Discussion of any new I/O
Functional Description
- Description of the proposed control functions (text, logic diagrams, SAMA, etc., as necessary)
- Identification of the differences/advantages in control between the existing and the available new control systems
- Description of mechanical/hydraulic equipment
- Discussion of the operation/advantages of new equipment
- Discussion of available options

Conclusion and Recommendations
- Statement of conclusions
- Discussion of recommendations
- Definition of action items
- Preliminary cost justification and value statements
- Budgetary pricing for selected options

Contracts can vary in size and scope, depending on your individual needs. The on-site work entails one or two ABB engineers for approximately 2 to 4 days with all travel and living expenses billed additionally at cost. The complete audit report, as defined above, is delivered within 3-5 weeks.

ABB’s technology and application experts work side-by-side with your plant personnel to assess equipment status, evaluate available options and provide solutions that expand the functionality and extend the life of your equipment, allowing you to maintain the core investment in your plant assets. ABB outlines the best plan forward for your turbine and associated auxiliaries using the latest control strategies and equipment available. Our dedicated team of turbine automation experts will help you develop the justification and the return on investment information necessary to obtain project funding.

ABB (www.abb.com) is a leader in power and automation technologies that enable utility and industry customers to improve performance while lowering environmental impact. The ABB Group of companies operates in over 100 countries and employs over 120,000 people. The company’s North American operations, headquartered in Cary, North Carolina, employs 15,000 people in 20 manufacturing and other major facilities. Our Power Generation Business Unit is headquartered in Wickliffe, Ohio with operations in Natrona Heights, Pennsylvania; Burlington, Ontario; and San Luis Potosi, Mexico.

ABB is your focused partner in power generation and we look forward to helping you improve the operation of your power plant. For more information please contact your local account manager.