

OPERATING SURVEILLANCE PROGRAM

MD&A Turbine-Generator Engineering & Outage Services

Operating Surveillance Program can be performed to identify various issues and leaks for a steam turbine and/or generator. The Operating Surveillance Service is typically performed while the unit is online and takes 2-3 days depending on the size and complexity of the unit.



MD&A prides itself on providing expert advice & recommendations to our customers through our Operating Surveillance Program. Our recommendations include a clear and objective roadmap for future operations, realistic unit expectations, future component inspection advice, and specific operating suggestions. All findings are summarized in a written report that is left with the customer at the completion of the service.

MECHANICAL DYNAMICS & ANALYSIS **Operating Surveillance Process Plan**

PROCESS	DESCRIPTION
Review Documentation	Review unit specific documentation; previous inspections, past outage reports, open work orders, etc.
Unit Online	Assure that the unit is online under normal operating load. Walk down the unit record any abnormal conditions observed (noises, leaks, missing insulation etc.)
Turbine Performance Data Log	Obtain turbine performance data throughout the plan process: <ul style="list-style-type: none"> Collect data points at 4 different times throughout the day. Data is often obtained from the Customer's DCS and/or local instrumentation.
Generator Operation Surveillance	Obtain generator operation surveillance data. Data is often obtained from the Customer's DCS and/or local control panels
Auxiliary Systems Surveillance	Obtain auxiliary systems surveillance data: <ul style="list-style-type: none"> Record collector ring brush vibration (use wooden extension). Observe / Record collector ring condition (strobe light). Test MSV and NRVs.
Lube Oil System Surveillance	Obtain lube oil system surveillance data: <ul style="list-style-type: none"> Record lube oil system component data (temperatures, pressures, levels etc.). Record lube oil pump / vapor extractor vibration data.
Lube Oil Analysis	Obtain third party lube oil analysis results
Bearing Operation Surveillance	Obtain bearing surveillance data: <ul style="list-style-type: none"> Record lube oil temperature at each bearing. Record bearing metal temperature (DCS) or bearing cap temperature data.
Bearing Vibration Surveillance	Obtain turbine-generator bearing vibration data: <ul style="list-style-type: none"> Record bearing cap vibration data. Record bearing vibration data from DCS.
Hydrogen System Surveillance	Obtain generator hydrogen system data: <ul style="list-style-type: none"> Record data from the hydrogen cabinet. Conduct Hydrogen leak check at hydrogen cabinet and seal oil skid.
Hydrogen / Seal Oil System Surveillance	Obtain generator seal oil system data: <ul style="list-style-type: none"> Record seal oil data (temperature, pressure, etc.) Record CE seal and bearing insulation. Record seal oil pump data (current, pressure, vibration)
Battery / Emergency Power Surveillance	Obtain / Record battery system data:
Sound Surveillance	Obtain sound surveillance data: <ul style="list-style-type: none"> Record sound at various locations around the turbine-generator. Record contact sound at various locations on the turbine-generator.
EHC System	Obtain EHC system surveillance data: <ul style="list-style-type: none"> Record EHC system component data (pumps, filters, dryers, etc.). Record EHC cabinet data.
EHC System	Obtain third party EHC oil analysis results

MECHANICAL DYNAMICS & ANALYSIS

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