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Operating Walkdowns of Power Plants

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AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

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OPERATING WALKDOWNS OF POWER PLANTS

1 OBJECT AND SCOPE

1.1 Object

This Standard provides guidelines for operating equipment walkdowns that are designed to ultimately improve the thermal performance and efficiency of the power plant. Following these guidelines may also lead to more proactive maintenance practices, which can also be expected to improve the reliability of the plant.

1.2 Scope

This Standard provides guidelines for walkdowns of power plants using fossil fuels during operating periods. Some portions may be applicable to other types of power plants.

2 ACRONYMS

The following acronyms are used in this Standard:

ACC: air-cooled condenser

ACET: average cold end temperature

AH: air heater

CT: combustion turbine (see also gas turbine)

CW: circulating water

DP: differential pressure

ESP: electrostatic precipitator

FD: forced draft fan

GR: gas recirculation

GT: gas turbine (see also combustion turbine)

HHV: higher heating value

HP: high pressure

HRSG: heat recovery steam generator

HVT: high velocity thermocouple

ID: induced draft fan

IGV: inlet guide vane

IP: intermediate pressure

LO1O: lockout/tagout

LP: low pressure

NPSH: net positive suction head

OEM: original equipment manufacturer

OFA: over-fire air

P&ID: process and instrumentation diagram

PPE: personal protective equipment

SCR: selective catalytic reduction system

SNCR: selective noncatalytic reduction system

ST: steam turbine

3 GUIDING PRINCIPLES

Equipment reliability and performance have parallels. Indications of poor performance are closely tied to those of reduced reliability. Abnormal wear patterns, poor cleanliness, increased corrosion, and mechanical failures, no matter how small, have effects on both unit reliability and unit performance. Identifying the root cause is the first step in improving the overall performance of a piece of equipment and the power-generating unit of which it is a part. While these inspection guidelines are written to ultimately enhance the plant's performance, all observations should be noted and acted upon.

Nonmandatory Appendices A through M provide details on activities to be completed prior to starting an operating inspection–walkdown.

3.1 Safety Considerations

All plant safety procedures should be reviewed prior to inspecting equipment and shall be followed.

Prior to walking down the operating equipment, it is important to identify all potential hazards that may be encountered. High-temperature and/or high-pressure piping should be located and identified, along with the locations of safety valves and steam traps that may release energy unexpectedly. Maintain a safe distance from rotating equipment and moving parts that are in the inspection–walkdown area.

Refer to Nonmandatory Appendix N for some specific safety considerations.

3.2 Pre-Walkdown Activities

Prior to any inspection, the following documents and information should be gathered and reviewed:

(a) the last inspection–walkdown report

(b) recent operating data from control system historian and other available archives

(c) recent operating history as recalled by current plant operations staff

(d) actual versus expected performance for the component(s) of interest

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