ASME POM 102-2014

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Operating Walkdowns of Power Plants

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

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The American Society of Mechanical Engineers

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NOTICE

This is not a test code, but instead, it is a Standard that provides guidance to improve the thermal performance and reliability of operating power plants. Although developed by a Performance Test Code Committee, this document is not a test code because it does not provide guidance for the execution of a test or the analysis of test data. Instead, this Standard provides procedures to conduct outage inspections to ultimately improve power plant thermal performance and reliability based on the best engineering knowledge and practice currently available. It has been developed by a balanced committee representing all concerned interests.

FOREWORD

ASME POM 102, Operating Walkdowns of Power Plants, is the second Standard in a planned series of power plant performance operation and maintenance standards supporting knowledge transfer of current industry experts. Related to and initially sponsored and staffed by the Performance Test Code Standards Committee, these standards do not prescribe testing activities, but if followed will assist in the improvement of power plant performance and reliability.

In June 2007, the Performance Test Code Standards Committee approved the charter for the series of standards on operation and maintenance activities related to power plant performance. A new committee on Power Plant Availability and Performance (PAP) was initiated in 2014, and the ASME POM 100 series standards now report through this new committee.

This Standard was approved as an American National Standard by the ANSI Board of Standards Review on August 15, 2014.

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Secretary, PAP Standards Committee
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Proposing Revisions. Revisions are made periodically to the Standard to incorporate changes that appear necessary or desirable, as demonstrated by the experience gained from the application of the Standard. Approved revisions will be published periodically.

The Committee welcomes proposals for revisions to this Standard. Such proposals should be as specific as possible, citing the paragraph number(s), the proposed wording, and a detailed description of the reasons for the proposal, including any pertinent documentation.

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The request for interpretation should be clear and unambiguous. It is further recommended that the inquirer submit his/her request in the following format:

Subject:	Cite the applicable paragraph number(s) and the topic of the inquiry.
Edition:	Cite the applicable edition of the Standard for which the interpretation is being requested.
Question:	Phrase the question as a request for an interpretation of a specific requirement suitable for general understanding and use, not as a request for an approval of a proprietary design or situation. The inquirer may also include any plans or drawings that are necessary to explain the question; however, they should not contain proprietary names or information.

Requests that are not in this format may be rewritten in the appropriate format by the Committee prior to being answered, which may inadvertently change the intent of the original request.

ASME procedures provide for reconsideration of any interpretation when or if additional information that might affect an interpretation is available. Further, persons aggrieved by an interpretation may appeal to the cognizant ASME Committee or Subcommittee. ASME does not "approve," "certify," "rate," or "endorse" any item, construction, proprietary device, or activity.

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INTRODUCTION

This Standard on operating walkdowns contains a series of sections, each pertaining to specific equipment and/or systems commonly found in power plants. Inspections covered in this Standard are intended to take place during plant operation. Each section of this Standard can be used independently and includes recommendations on what to look for during inspections. For additional information on inspections that can be done when the equipment is out of service, please consult ASME POM 101-2013, Performance-Related Outage Inspections, which was the first standard published in the planned series of POM standards.

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

LOTO: 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