

ASME OM-2009

(Revision and Consolidation of ASME OM Code-2004 and ASME OM-S/G-2007)

Operation and Maintenance of Nuclear Power Plants

AN AMERICAN NATIONAL STANDARD



The American Society of
Mechanical Engineers



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ASME issues written replies to inquiries concerning interpretations of technical aspects of this document. Periodically certain actions of the ASME OM Committee may be published as Code Cases. Code Cases and interpretations are published on the ASME Web site under the Committee Pages at <http://cstools.asme.org> as they are issued.

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CONTENTS

(A Detailed Contents Precedes Each Division)

Foreword	iv
Preparation of Technical Inquiries	v
Committee Roster	vii
Preface	ix
Summary of Changes	xi
Division 1 Section IST: Rules for Inservice Testing of Light-Water Reactor Power Plants	1
Division 2 Standards for Operation and Maintenance of Nuclear Power Plants	91
Division 3 Guides for Operation and Maintenance of Nuclear Power Plants	293



FOREWORD

This document was developed and is maintained by the ASME Committee on Operation and Maintenance (OM Committee) of Nuclear Power Plants. The Committee operates under procedures accredited by the American National Standards Institute as meeting the criteria of consensus procedures for American National Standards.

Due to the additional time required to consolidate the OM Code and OM-S/G documents, this edition encompasses all material that would have been included in the 2007 edition, 2008 addenda, and 2009 addenda.

The OM Committee develops, revises, and maintains Codes, Standards, and Guides applicable to the safe and reliable operation and maintenance of nuclear power plants.

This publication, the 2009 edition of Operation and Maintenance of Nuclear Power Plants was approved by the ASME Board on Nuclear Codes and Standards. ASME OM-2009 was approved by the American National Standards Institute on November 23, 2009.



PREPARATION OF TECHNICAL INQUIRIES TO THE COMMITTEE ON OPERATION AND MAINTENANCE OF NUCLEAR POWER PLANTS

INTRODUCTION

The ASME Committee on Operation and Maintenance of Nuclear Power Plants meets regularly to conduct standards development business. This includes consideration of written requests for interpretations, Code Cases, and revisions to Operation and Maintenance Code and development of new requirements as dictated by technological development. This supplement provides guidance to Code users for submitting technical inquiries to the Committee. Technical inquiries include requests for revisions or additions to the Code requirements, requests for Code Cases, and requests for Code interpretations.

Code Cases may be issued by the Committee when the need is urgent. Code Cases clarify the intent of existing Code requirements or provide alternative requirements. Code Cases are written as a question and a reply and are usually intended to be incorporated into the Code at a later date. Code interpretations provide the meaning of or the intent of existing requirements in the Code and are also presented as a question and reply. Both Code Cases and Code interpretations are published by the Committee.

The Code requirements, Code Cases, and Code interpretations established by the Committee are not to be considered as approving, recommending, certifying, or endorsing any proprietary or specific design or as limiting in any way the freedom of manufacturers or constructors to choose any method of design or any form of construction that conforms to the Code requirements.

Moreover, ASME does not act as a consultant on specific engineering problems or on the general application or understanding of the Code requirements. If, based on the inquiry information submitted, it is the opinion of the Committee that the inquirer should seek assistance, the inquiry will be returned with the recommendation that such assistance be obtained.

As an alternate to the requirements of this Supplement, members of the Committee and its subcommittees, subgroups, and working groups may introduce requests for Code revisions or additions, Code Cases, and Code interpretations at their respective Committee meetings or may submit such requests to the secretary of a subcommittee, subgroup, or working group.

All inquiries that do not provide the information needed for the Committee's full understanding will be returned.

INQUIRY FORMAT

Submittals to the Committee shall include:

(a) *Purpose.* Specify one of the following:

- (1) revision of present Code requirement(s)
- (2) new or additional Code requirement(s)
- (3) Code Case
- (4) Code interpretation

(b) *Background.* Provide the information needed for the Committee's understanding of the inquiry, being sure to include reference to the applicable Code subsection, appendix, edition, addenda, paragraphs, figures, and tables. Preferably, provide a copy of the specific referenced portions of the Code.

(c) *Presentations.* The inquirer may desire or be asked to attend a meeting of the Committee to make a formal presentation or to answer questions from the Committee members with regard to the inquiry. Attendance at a committee meeting shall be at the expense of the inquirer. The inquirer's attendance or lack of attendance at a meeting shall not be a basis for acceptance or rejection of the inquiry by the Committee.



CODE REVISIONS AND ADDITIONS

Requests for Code revisions or additions shall provide the following:

(a) *Proposed Revision(s) or Addition(s)*. For revisions, identify the requirements of the Code that require revision and submit a copy of the appropriate requirements as they appear in the Code marked up with the proposed revision. For additions, provide the recommended wording referenced to the existing Code requirements.

(b) *Statement of Need*. Provide a brief explanation of the need for the revision(s) or addition(s).

(c) *Background Information*. Provide background information to support the revision(s) or addition(s) including any data or changes in technology that form the basis for the request that will allow the Committee to adequately evaluate the proposed revision(s) or addition(s). Sketches, tables, figures, and graphs should be submitted as appropriate. When applicable, identify any pertinent paragraph in the Code that would be affected by the revision(s) or addition(s) and paragraphs in the Code that reference the paragraphs that are to be revised or added.

CODE CASES

Requests for Code Cases shall provide a *Statement of Need* and *Background Information* similar to that defined in subparas. (b) and (c) of “Code Revisions or Additions” section. The proposed Code Case should identify the Code Section and Division and be written as a *Question and Reply* in the same format as existing Code Cases. Requests for Code Cases should also indicate the applicable Code edition(s) and addenda to which the proposed Code Case applies.

CODE INTERPRETATIONS

Requests for Code interpretations shall provide the following:

(a) *Inquiry*. Provide a condensed and precise question, omitting superfluous background information, and, when possible, composed in such a way that a “yes” or a “no” *Reply*, possibly with brief provisos, is acceptable. The question should be technically and editorially correct.

(b) *Reply*. Provide a proposed *Reply* that will clearly and concisely answer the *Inquiry* question. Preferably, the *Reply* should be “yes” or “no” possibly with brief provisos.

(c) *Background Information*. Provide any background information that will assist the Committee in understanding the proposed *Inquiry* and *Reply*.

SUBMITTALS

Submittals to and responses from the Committee shall meet the following:

(a) *Submittal*. Inquiries from Code users shall preferably be submitted in typewritten form; however, legible handwritten inquiries will also be considered. They shall include the name, address, telephone number, and fax number, if available, of the inquirer and be mailed to the following address:

Secretary
Committee on Operation and Maintenance of
Nuclear Power Plants
The American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016-5990

(b) *Response*. The Secretary of the Operation and Maintenance Committee shall acknowledge receipt of each properly prepared inquiry and shall provide a written response to the inquirer upon completion of the requested action by the Committee.



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PREFACE

GENERAL

In 2008, the OM Committee directed that the two separately published OM Code and the OM Standards and Guides (OM-S/G) publications be combined into one document. This was done to ensure all of our standards and guides documents were readily available to users of the OM Code products. Some of the standards and guides were originally developed as part of the current operating nuclear power plants pre-operational testing program conducted during the 1970s and 1980s. These Standards and Guides will be useful for power uprate projects and for new reactor design plant construction. Combining the OM Code and OM-S/G into one document will make the publication schedules for the Committee more efficient and easier to track.

ORGANIZATION

The 2009 consolidated code, standards, and guides for nuclear power plants, titled Operation and Maintenance of Nuclear Power Plants, are arranged into three distinct divisions. The titles of some of the sections have been shortened to simplify the presentation purely for the user's ease of review and use. Reference to the individual published code, standard, or guide should be made for the specific title and the application requirements. Subsequent changes made to the Division contents will be detailed in future addenda publications in separately listed summary of changes sections. Interpretations and code cases are included as a separate section following Division 3 for the user's convenience.

Division 1: Section IST – Light-Water Reactor Nuclear Power Plants

Subsection ISTA	General Requirements
Subsection ISTB	Inservice Testing of Pumps
Subsection ISTC	Inservice Testing of Valves
Subsection ISTD	Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers)
Subsection ISTE	Risk-Informed Inservice Testing of Components

Mandatory Appendices

I	Inservice Testing of Pressure Relief Devices
II	Check Valve Condition Monitoring Program
III	Preservice and Inservice Testing of Active Electric Motor Operated Valve Assemblies
IV	Pneumatically and Hydraulically Operated Valves (in course of preparation)

Nonmandatory Appendices

A	Preparation of Test Plans
B	Dynamic Restraint Examination Checklist Items
C	Dynamic Restraint Design and Operating Information
D	Comparison of Sampling Plans for Inservice Testing of Dynamic Restraints
E	Flowchart for 10% and 37 Snubber Testing Plans
F	Dynamic Restraints (Snubbers) Service Life Monitoring Methods
G	Application of Table ISTD-4252-1, Snubber Visual Examination
H	Test Parameters and Methods
J	Check Valve Testing Following Valve Reassembly
K	Sample List of Component Deterministic Considerations
L	Acceptance Guidelines

Division 2: Standards – Light-Water Reactor Power Plants

Subsequent changes made to the 2009 Standards Division contents will be detailed in future addenda publications in separately listed summary of changes sections.



Part 3	Vibration Testing of Piping Systems
Part 12	Loose Part Monitoring
Part 16	Performance Testing and Inspection of Diesel Drive Assemblies
Part 21	Inservice Performance Testing of Heat Exchangers
Part 24	Reactor Coolant and Recirculation Pump Condition Monitoring
Part 26	Determination of Reactor Coolant Temperature From Diverse Measurements
Part 28	Standard for Performance Testing of Systems
Part 29	Alternative Treatment Requirements for RISC-3 Pumps and Valves

Division 3: Guides – Light-Water Reactor Power Plants

Subsequent changes made to the 2009 Guides Division contents will be detailed in future addenda publications in separately listed summary of changes sections.

Part 5	Inservice Monitoring of Core Support Barrel Axial Preload in Pressurized Water Reactor Power Plants
Part 7	Requirements for Thermal Expansion Testing of Nuclear Power Plant Piping Systems
Part 11	Vibration Testing and Assessment of Heat Exchangers
Part 14	Vibration Monitoring of Rotating Equipment in Nuclear Power Plants
Part 19	Preservice and Periodic Performance Testing of Pneumatically and Hydraulically Operated Valve Assemblies
Part 23	Inservice Monitoring of Reactor Internals Vibration in Pressurized Water Reactor Power Plants



ASME OM-2009 SUMMARY OF CHANGES

Following approval by the ASME Committee on Operation and Maintenance (OM Committee) and ASME, and after public review, ASME OM-2009 was approved by the American National Standards Institute on November 23, 2009.

ASME OM-2009 is a consolidation of ASME OM Code and ASME OM-S/G. This edition includes editorial changes, revisions, and corrections introduced in ASME OM Code-2004, ASME OMa Code-2005, ASME OMb Code-2006, and ASME OM-S/G-2007, as well as the following changes identified by a margin note, (09).

<i>Page</i>	<i>Location</i>	<i>Change</i>
6	Table ISTA-1400-1	Revised
9	ISTA-9230(f)	Revised
22	ISTC-3100(c)	Added
	ISTC-3310	Revised
23	Table ISTC-3500-1	Revised
	ISTC-3521(g)	Revised
	ISTC-3522(e)	Revised
25	ISTC-3700	Revised
26	ISTC-5120	Revised; subparas. ISTC-5121, ISTC-5122, and ISTC-5123 deleted
28	ISTC-5222	Revised
29	ISTC-9110(d)	Revised
33	ISTD-5200	Revised
34	Table ISTD-4252-1	Notes (2) and (3) revised
40–47	Subsection ISTE	Added
48	I-1200	Definitions of <i>ambient temperature</i> and <i>normal system operating conditions (fluid, pressure, temperature)</i> revised
54	I-4120	Subparagraphs (a) and (e) revised
54, 55	I-4130	Subparagraphs (a) and (e) revised
60, 61	I-8120	Subparagraphs (a) and (e) revised
61	I-8130	Subparagraphs (a) and (e) revised
66–70	Mandatory Appendix III	Added
85	Nonmandatory Appendix J	Footnote 1 revised
	Table J-2000-1	Renumbered from para. J-2000
86	Nonmandatory Appendix K	Added
87–89	Nonmandatory Appendix L	Added



<i>Page</i>	<i>Location</i>	<i>Change</i>
95	Part 2 (Standards)	Deleted; superseded by Part 28 of Division 2
96	Part 3 (Standards)	Title revised
	Part 3 (Standards), section 1	Revised
237	Part 25 (Standards)	Deleted; superseded by Part 28 of Division 2
243–288	Part 28 (Standards)	Added
289–291	Part 29 (Standards)	Added
390	Part 17 (Guides)	Deleted; superseded by Part 28 of Division 2

SPECIAL NOTE:

The Interpretations and Code Cases to ASME OM are included in this edition as a separate section at the end of this document for the user's convenience.



DIVISION 1: SECTION IST

RULES FOR INSERVICE TESTING

OF LIGHT-WATER REACTOR POWER PLANTS

CONTENTS

SUBSECTION ISTA	GENERAL REQUIREMENTS	6
ISTA-1000	Introduction	6
ISTA-1100	Scope	6
ISTA-1200	Jurisdiction	6
ISTA-1300	Application	6
ISTA-1400	Referenced Standards and Specifications	6
ISTA-1500	Owner's Responsibilities	6
ISTA-1600	Accessibility	7
ISTA-2000	Definitions	7
ISTA-3000	General Requirements	8
ISTA-3100	Test and Examination Program	8
ISTA-3200	Administrative Requirements	8
ISTA-3300	Corrective Actions	9
ISTA-4000	Instrumentation and Test Equipment	9
ISTA-4100	Range and Accuracy	9
ISTA-4200	Calibration	9
ISTA-5000	To Be Provided at a Later Date	9
ISTA-6000	To Be Provided at a Later Date	9
ISTA-7000	To Be Provided at a Later Date	9
ISTA-8000	To Be Provided at a Later Date	9
ISTA-9000	Records and Reports	9
ISTA-9100	Scope	9
ISTA-9200	Requirements	9
ISTA-9300	Retention	10
Table		
ISTA-1400-1	Referenced Standards and Specifications	6
SUBSECTION ISTB	INSERVICE TESTING OF PUMPS IN LIGHT-WATER REACTOR NUCLEAR POWER PLANTS	11
ISTB-1000	Introduction	11
ISTB-1100	Applicability	11
ISTB-1200	Exclusions	11
ISTB-1300	Pump Categories	11
ISTB-1400	Owner's Responsibility	11
ISTB-2000	Supplemental Definitions	11
ISTB-3000	General Testing Requirements	11
ISTB-3100	Preservice Testing	11



DIVISION 2: STANDARDS

OPERATION AND MAINTENANCE OF NUCLEAR POWER PLANTS

CONTENTS

PART 2	PERFORMANCE TESTING OF CLOSED COOLING WATER SYSTEMS IN LIGHT-WATER REACTOR POWER PLANTS	95
PART 3	VIBRATION TESTING OF PIPING SYSTEMS	96
1	Scope	96
2	Definitions	96
3	General Requirements	97
4	Visual Inspection Method	101
5	Simplified Method for Qualifying Piping Systems	101
6	Rigorous Verification Method for Steady-State and Transient Vibration	106
7	Instrumentation and Vibration Measurement Requirements	107
8	Corrective Action	108
Figures		
1	Typical Components of a Vibration Monitoring System (VMS)	97
2	Deflection Measurement at the Intersection of Pipe and Elbow	102
3	Single Span Deflection Measurement	102
4	Cantilever Span Deflection Measurement	102
5	Cantilever Span/Elbow Span in Plane Deflection Measurement	102
6	Cantilever Span/Elbow Guided Span in Plane Deflection Measurement	103
7	Span/Elbow Span Out-of-Plane Deflection Measurement, Span Ratio < 0.5	103
8	Span/Elbow Span Out-of-Plane Deflection Measurement, Span Ratio > 0.5	103
9	Span/Elbow Span Out-of-Plane Configuration Coefficient Versus Ratio of Spans	103
10	Correction Factor C_1	105
Tables		
1	System Tolerances	99
2	Examples of Specifications of VMS Minimum Requirements	108
Nonmandatory Appendices		
A	Instrumentation and Measurement Guidelines	109
B	Analysis Methods	112
C	Test/Analysis Correlation Methods	113
D	Velocity Criterion	114
E	Excitation Mechanisms, Responses, and Corrective Actions	115
F	Flow Chart — Outline of Vibration Qualification of Piping Systems	118
G	Qualitative Evaluations	120
H	Guidance for Monitoring Piping Steady-State Vibration Per Vibration Monitoring Group 2	121
I	Acceleration Limits for Small Branch Piping	126



PART 12	LOOSE PART MONITORING IN LIGHT-WATER REACTOR POWER PLANTS	128
1	Introduction.....	128
2	Definitions.....	128
3	References.....	129
4	Equipment.....	130
5	Program Elements.....	139
6	Documentation.....	144
Figures		
1	Typical Broadband Sensor Response to Nearby Impact.....	131
2	Typical Broadband Sensor Response to More Distant Impact.....	131
3	Range of Loose Part Signal Amplitude and Predominant Frequency Content.....	132
4	Field Equipment.....	132
5	Direct Stud Mount.....	133
6	Clamped Mount.....	133
7	Recommended Sensor Array for PWR With U-Tube Steam Generator.....	135
8	Recommended Sensor Array for PWR With Once-Through Steam Generator.....	136
9	Recommended Sensor Array for BWR.....	137
10	Block Diagram for Charge Converter Calibration Tests.....	141
11	Cable Properties.....	142
Tables		
1	Recommended PWR Accelerometer Locations.....	134
2	Recommended BWR Accelerometer Locations.....	136
Nonmandatory Appendix		
A	References.....	145
PART 16	PERFORMANCE TESTING AND INSPECTION OF DIESEL DRIVE ASSEMBLIES IN LIGHT-WATER REACTOR POWER PLANTS	146
1	Introduction.....	146
2	Post-Major Maintenance Check.....	149
3	Testing.....	149
4	Inservice Testing of Components.....	150
5	Other Diesel Drive Testing Guidelines.....	154
6	Alarm and Shutdown During Tests.....	154
7	Engine Operating Data and Records.....	155
Figure		
1	Boundary and Support Systems of Emergency Diesel Generator Systems.....	147
Nonmandatory Appendices		
A	Post-Major Maintenance Test Data.....	156
B	Functional/Inservice Test Data.....	157
C	Data Trending Examples.....	158
PART 21	INSERVICE PERFORMANCE TESTING OF HEAT EXCHANGERS IN LIGHT- WATER REACTOR POWER PLANTS	164
1	Introduction.....	164
2	Definitions.....	164



3	References	166
4	Selection and Prioritization of Heat Exchangers	167
5	Basic Requirements	167
6	Selection of Methods	168
7	Testing and Monitoring Conditions	175
8	Errors, Sensitivities, and Uncertainties	177
9	Acceptance Criteria	178
10	Corrective Action	179
11	Records and Record Keeping	179
Figures		
1	Intervals, Limits, and Parameter Trending (Typical)	169
2	Method Selection Chart	170
Nonmandatory Appendices		
A	Diagnostics	181
B	Precautions	184
C	Examples	187
PART 24	REACTOR COOLANT AND RECIRCULATION PUMP CONDITION MONITORING	218
1	Introduction	218
2	Definitions	218
3	References	220
4	Machine Faults	220
5	Vibration, Axial Position, and Bearing Temperature Monitoring Equipment	220
6	Vibration Data Analysis System Requirements	223
7	Seal Monitoring	225
8	Vibration, Axial Position, and Bearing Temperature Monitoring	226
9	Alarm Settings	228
10	Analysis and Diagnostics	229
11	Additional Technologies	230
12	Other	231
Tables		
1	Pumpset Mechanical Faults	221
2	Seal Faults	221
3	Electrical Motor Faults	222
4	Minimum Monitoring and Recording Intervals	226
5	Typical Thrust Position Alarm Setpoints for a Pump With Normal Upthrust	229
Nonmandatory Appendices		
A	References	232
B	Thermography	233
C	Lube Oil Analysis	234
D	Motor Current Signature Analysis	235
E	Loose Parts Monitoring	236
PART 25	PERFORMANCE TESTING OF EMERGENCY CORE COOLING SYSTEMS IN LIGHT-WATER REACTOR POWER PLANTS	237



PART 26	DETERMINATION OF REACTOR COOLANT TEMPERATURE FROM DIVERSE MEASUREMENTS	238
1	Introduction	238
2	Definitions	238
3	References	239
4	Requirements	239
5	Develop Test Procedures and Perform Testing	239
6	Documentation	241
Nonmandatory Appendix		
A	Measurement Equipment Uncertainties	242
PART 28	STANDARD FOR PERFORMANCE TESTING OF SYSTEMS IN LIGHT-WATER REACTOR POWER PLANTS	243
1	Introduction	243
2	Definitions	243
3	References	244
4	General Testing Requirements	244
5	Specific Testing Requirements	249
6	Evaluate Test Data	249
7	Documentation	249
Mandatory Appendices		
I	Specific Testing Requirements of Emergency Core Cooling Systems in BWR Power Plants	251
II	Specific Testing Requirements of Emergency Core Cooling Systems in PWR Power Plants	255
III	Specific Testing Requirements of Auxiliary or Emergency Feedwater Systems in LWR Power Plants	258
IV	Specific Testing Requirements of Closed Cooling Water Systems in LWR Power Plants	260
V	Specific Testing Requirements of Emergency Service Water Systems in LWR Power Plants (Open Cooling Water Systems)	264
VI	Specific Testing Requirements of Instrument Air Systems in LWR Power Plants	267
Nonmandatory Appendices		
A	Industry Guidance	272
B	Guidance for Testing Certain System Characteristics	276
C	Measurement Accuracy of System Characteristics	282
PART 29	ALTERNATIVE TREATMENT REQUIREMENTS FOR RISC-3 PUMPS AND VALVES	289
1	Introduction	289
2	Definitions	289
3	General Programmatic Requirements for RISC-3 Pumps and Valves	289
4	Alternative Treatment for Reasonable Confidence of RISC-3 Pump and Valve Performance	290
5	Corrective Action	290
6	Feedback and Treatment Adjustment	291
7	Records	291

