

# U.S. NUCLEAR REGULATORY COMMISSION

## REGULATORY GUIDE 1.192, REVISION 3



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## OPERATION AND MAINTENANCE CODE CASE ACCEPTABILITY, ASME OM CODE

### A. INTRODUCTION

#### Purpose

This regulatory guide (RG) lists Code Cases associated with the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code) (Ref. 1) that the U.S. Nuclear Regulatory Commission (NRC) has approved for use as voluntary alternatives to the mandatory ASME OM Code provisions that are incorporated by reference into Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities" (Ref. 2). The editions and addenda of the ASME Code for Operation and Maintenance of Nuclear Power Plants have had different titles from 2005 to 2017 and are referred to collectively in this RG as the OM Code.

#### Applicability

This RG applies to reactor licensees subject to 10 CFR Part 50, Section 50.55a, "Codes and standards."

#### Applicable Rules and Regulations

- General Design Criterion (GDC) 1, "Quality Standards and Records," of Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50 requires, in part, that structures, systems, and components important to safety be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety function to be performed. Where generally recognized codes and standards are used, GDC 1 requires that they be identified and evaluated to determine their applicability, adequacy, and sufficiency and be supplemented or modified as necessary to ensure a quality product in keeping with the required safety function.

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Electronic copies of this RG, previous versions of RGs, and other recently issued guides are also available through the NRC's public Web site in the NRC Library at <https://nrcweb.nrc.gov/reading-rm/doc-collections/reg-guides/>, under Document Collections, in Regulatory Guides. This RG is also available through the NRC's Agencywide Documents Access and Management System (ADAMS) at <http://www.nrc.gov/reading-rm/adams.html>, under ADAMS Accession Number (No.) ML19128A261. The regulatory analysis for this guide is the regulatory analysis prepared for the amendment to 10 CFR 50.55a and may be found in ADAMS under Accession No. ML19156A178. The associated draft guide DG-1343 may be found in ADAMS under Accession No. ML18114A226, and the staff responses to the public comments on DG-1343 may be found in the Federal Register Notice for the Final Rule under ADAMS Accession No. ML19156A174.

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- 10 CFR Part 50, Appendix A, GDC 30, “Quality of Reactor Coolant Pressure Boundary,” requires, in part, that components that are part of the reactor coolant pressure boundary be designed, fabricated, erected, and tested to the highest practical quality standards.
- 10 CFR Part 50, Appendix B, “Quality Assurance Criteria for Nuclear Power Plants and Fuel Processing Plants,” requires, in part, a program for inspection of activities affecting quality to verify conformance with documented instructions and procedures.
- 10 CFR 50.55a(f) requires, in part, that Class 1, 2, and 3 components and their supports meet the requirements of the ASME OM Code or equivalent quality standards.
- 10 CFR 52.79(a)(11) (Ref. 3) requires the final safety analysis report to include “a description of the program(s), and their implementation, necessary to ensure that the systems and components meet the requirements of the ASME Boiler and Pressure Vessel Code and the ASME Code for Operation and Maintenance of Nuclear Power Plants in accordance with 50.55a of this chapter.”

## **Related Guidance**

- RG 1.84, “Design, Fabrication, and Materials Code Case Acceptability, ASME Section III” (Ref. 4), lists the ASME Boiler and Pressure Vessel Code (BPV Code), Section III, Code Cases that the NRC has approved for use as voluntary alternatives to the mandatory ASME BPV Code provisions that are incorporated into 10 CFR 50.55a.
- RG 1.147, “Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1” (Ref. 5), lists the ASME BPV Code, Section XI, Code Cases that the NRC has approved for use as voluntary alternatives to the mandatory ASME BPV Code provisions that are incorporated into 10 CFR 50.55a.
- RG 1.193, “ASME Code Cases Not Approved for Use” (Ref. 6), lists the ASME BPV Code, Section III and Section XI, Code Cases and ASME OM Code Cases that the NRC has not approved for generic use.

## **Purpose of This Regulatory Guide**

This RG is incorporated into 10 CFR 50.55a by reference. The RG contains new OM Code Cases and revisions to existing OM Code Cases that the staff has approved for use, as listed in Tables 1 and 2 of this guide. The RG also states the requirements governing the use of OM Code Cases. Applicants or licensees may voluntarily use OM Code Cases the NRC has approved as an alternative to compliance with OM Code provisions that have been incorporated by reference into 10 CFR 50.55a. Because of continuing change in the status of OM Code Cases, the staff plans periodic updates to 10 CFR 50.55a and to this guide to accommodate new OM Code Cases and any revisions of existing OM Code Cases.

## **Paperwork Reduction Act**

This RG provides voluntary guidance for implementing the mandatory information collections in 10 CFR Parts 50 and 52 that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et. seq.). These information collections were approved by the Office of Management and Budget (OMB), approval numbers 3150-0011 and 3150-0151. Send comments regarding this information collection to the Information Services Branch (T6-A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to [Infocollects.Resource@nrc.gov](mailto:Infocollects.Resource@nrc.gov), and to the OMB reviewer at: OMB Office of Information and Regulatory Affairs (3150-0011 and 3150-0151), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street, NW Washington, DC20503; e-mail: [oira\\_submission@omb.eop.gov](mailto:oira_submission@omb.eop.gov).

### **Public Protection Notification**

The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

## B. DISCUSSION

### Reason for Revision

Revision 3 of RG 1.192 includes information reviewed by the NRC on OM Code Cases listed in the 2015 and the 2017 Editions of the OM Code. This revision updates and supersedes RG 1.192, Revision 2, which included information from the 2009 through the 2012 Editions of the OM Code (Note: ASME did not publish any new editions of the OM Code between 2012 and 2015.)

### Background

Provisions of the ASME BPV Code have been used since 1971 as one part of the framework to establish the necessary design, fabrication, construction, testing, and performance requirements for structures, systems, and components important to safety in nuclear power plants. Among other things, ASME standards committees develop improved methods for the construction, inservice inspection, and inservice testing (IST) of ASME Class 1, 2, 3, metal containment (MC), and concrete containment (CC) nuclear power plant components. A broad spectrum of stakeholders participates in the ASME process to help ensure consideration of the various interests.

In 1990, ASME published the initial edition of the OM Code that provides rules for IST and inservice examination of pumps, valves, and dynamic restraints (snubbers). The ASME Committee on Operation and Maintenance of Nuclear Power Plants maintains the OM Code, which it developed in response to the ASME Board on Nuclear Codes and Standards directive that transferred responsibility for development and maintenance of rules for the IST and inservice examination of pumps, valves, and dynamic restraints (snubbers) from the ASME Section XI Subcommittee on Nuclear Inservice Inspection to the ASME OM Committee on Operation and Maintenance of Nuclear Power Plants. ASME intended the OM Code to replace Section XI, rules for IST and inservice examination of pumps, valves, and dynamic restraints (snubbers), and the Section XI rules for IST and inservice examination of these components that had been incorporated by reference into NRC regulations have been deleted from Section XI. The NRC endorsed the OM Code for the first time in an amendment to 10 CFR 50.55a (Volume 64 of the *Federal Register*, page 51370 (64 FR 51370), September 22, 1999)). The NRC endorsed OM Code Cases through this guide for the first time in June 2003. Beginning with the 2009 Edition, ASME changed the title of the OM Code to “Operation and Maintenance of Nuclear Power Plants.”

ASME periodically publishes a new edition of the OM Code. The latest editions and addenda of the OM Code that the NRC has approved for use are referenced in 10 CFR 50.55a(a)(1)(iv). ASME also periodically publishes OM Code Cases, which provide alternatives to existing OM Code requirements that ASME developed and approved. This RG identifies the OM Code Cases that the NRC has determined to be acceptable alternatives to applicable parts of the OM Code. Applicants or licensees may use these OM Code Cases without requesting authorization from the NRC, provided that they are used with any identified limitations or modifications. Under 10 CFR 50.55a(z), a licensee or applicant may use OM Code Cases that the NRC has not yet endorsed. That section permits the use of alternatives to the OM Code requirements referenced in 10 CFR 50.55a, provided that the proposed alternatives result in an acceptable level of quality and safety and their use is authorized by the Director of the Office of Nuclear Reactor Regulation or the Director of the Office of New Reactors, as applicable.

The OM Code is incorporated by reference into 10 CFR 50.55a, which the NRC will amend to incorporate this guide by reference; 10 CFR 50.55a(b)(6) states the requirements governing the use of OM Code Cases. Because of continuing change in the status of OM Code Cases, the NRC staff plans periodic updates to 10 CFR 50.55a and to this guide to accommodate new OM Code Cases and any revisions of existing OM Code Cases. OM Code Cases that the NRC approves provide an acceptable voluntary alternative to the mandatory OM Code provisions.

When an applicant or licensee initially implements an OM Code Case, 10 CFR 50.55a requires implementation of the most recent version of that Code Case as listed in Tables 1 and 2. If an applicant or licensee implements an OM Code Case and a later version of the Code Case is incorporated by reference into 10 CFR 50.55a and listed in Tables 1 and 2 during the licensee's present 120-month IST program interval, that licensee may use either the later version or the previous version. An exception to this provision would be the inclusion of a condition on the use of the OM Code Case that is necessary, for example, to enhance safety. Licensees who choose to continue use of the OM Code Case during the subsequent 120-month IST program interval will be required to implement the latest version incorporated by reference into 10 CFR 50.55a and listed in Tables 1 and 2.

ASME may annul OM Code Cases because the provisions have been incorporated into the OM Code, the application for which it was specifically developed no longer exists, or experience has shown that an examination or testing method is no longer adequate. After ASME has annulled an OM Code Case, and the NRC has amended 10 CFR 50.55a and this guide, applicants or licensees may not implement that OM Code Case for the first time. However, an applicant or licensee who implemented the OM Code Case prior to annulment may continue to use that Code Case through the end of the present IST interval. An annulled OM Code Case cannot be used in the subsequent IST interval unless implemented as an approved alternative under 10 CFR 50.55a(z). If an OM Code Case is incorporated by reference into 10 CFR 50.55a and ASME later annuls it because experience has shown that an examination or testing method is inadequate, the NRC will amend 10 CFR 50.55a and this guide to remove the approval of the annulled Code Case. Applicants or licensees should not begin to implement such annulled OM Code Cases before the rulemaking. Notwithstanding these requirements, the Commission may impose new or revised OM Code requirements, including implementation schedules, which it determines are consistent with the Backfit Rule (10 CFR 50.109, "Backfitting").

ASME may revise an OM Code Case, for example, to incorporate user experience. The licensee or applicant cannot apply the older or superseded version of the OM Code Case for the first time. If an applicant or a licensee applied a Code Case before it was listed as superseded, the applicant or the licensee may continue to use the Code Case until the applicant or the licensee updates its Construction Code of Record (an applicant would update its application) or until the licensee's 120-month IST update interval expires, after which the continued use of the OM Code Case is prohibited unless the NRC grants approval under 10 CFR 50.55a(z). If an OM Code Case is incorporated by reference into 10 CFR 50.55a and later ASME issues a revised version because experience has shown that the design analysis, construction method, examination method, or testing method is inadequate, the NRC will amend 10 CFR 50.55a and the relevant RG to remove the approval of the superseded OM Code Case. Applicants and licensees should not begin to implement such superseded OM Code Cases in advance of the rulemaking.

RG 1.193, "ASME Code Cases Not Approved for Use," lists the OM Code Cases that the NRC determined to be unacceptable.

With regard to the use of any OM Code Case, the user is responsible for ensuring that the provisions of the OM Code Case do not conflict with regulatory requirements or licensee commitments.

## C. REGULATORY POSITION

RG 1.192, Revision 3, supersedes Revision 2. For Revision 3 of RG 1.192, the NRC reviewed the OM Code Cases listed in the 2015 and the 2017 Editions of the OM Code. Appendix A to this guide gives a complete list of all OM Code Cases published by ASME. The table in Appendix A lists the action ASME has taken (e.g., new or revised OM Code Case), the edition or addenda in which the OM Code Case was published, and the table in the RG that lists each OM Code Case. The following four tables list the OM Code Cases addressed by this RG:

- a. Table 1, “Acceptable OM Code Cases,” lists the OM Code Cases that are acceptable to the NRC for implementation in the IST of light-water-cooled nuclear power plants.
- b. Table 2, “Conditionally Acceptable OM Code Cases,” lists the OM Code Cases that are acceptable, provided that they are used with the identified conditions (i.e., the OM Code Case is generally acceptable, but the NRC has determined that the requirements in the Code Case, which are alternatives to the OM Code, must be supplemented in order to provide an acceptable level of quality and safety).
- c. Table 3, “OM Code Cases That Have Been Superseded by Revised OM Code Cases,” lists OM Code Cases that have been superseded through revision.
- d. Table 4, “Annulled OM Code Cases,” lists the OM Code Cases that have been annulled by ASME.
- e.

## 1. Acceptable OM Code Cases

The OM Code Cases listed in Table 1 are acceptable to the NRC for application in applicant or licensee IST programs. The OM Code uses two approaches to list revisions of OM Code Cases. The first lists OM Code Cases according to edition or addenda (e.g., OMN-6, 2012 Edition). The second uses a numbering system (e.g., OMN-1, Revision 1). Thus, the tables below show either the latest edition or addenda in which an OM Code Case was published or the latest revision number of an OM Code Case, in accordance with the requirement in 10 CFR 50.55a that licensees or applicants implement the most recent version of an OM Code Case. The edition and addenda are listed in addition to the revision number because the OM Code in some cases reaffirms OM Code Cases with minor changes. Listing both the revision number and edition or addenda ensures that the latest version of the OM Code Case is implemented. To assist users, new and revised OM Code Cases are shaded to distinguish them from those approved in previous versions of this guide.

**Table 1. Acceptable OM Code Cases**

<b>Code Case Number</b>	<b>Table 1 Acceptable OM Code Cases</b>
OMN-6 (2017 Edition)	<i>Alternate Rules for Digital Instruments</i>
OMN-7 (2017 Edition)	<i>Alternative Requirements for Pump Testing</i>
OMN-8 (2017 Edition)	<i>Alternative Rules for Preservice and Inservice Testing of Power-Operated Valves That Are Used for System Control and Have a Safety Function per OM-10, ISTC-1.1, or ISTA-1100</i>
OMN-15, Revision 2 (2017 Edition)	<i>Performance-Based Requirements for Extending the Snubber Operational Readiness Testing Interval at LWR Power Plants</i> (The NRC did not approve OMN-15, 2004 Edition and 2006 Addenda, for use and listed them in RG 1.193)
OMN-16, Revision 2 (2017 Edition)	<i>Use of a Pump Curve for Testing</i>
OMN-17 (2017 Edition)	<i>Alternative Rules for Testing ASME Class 1 Pressure Relief/Safety Valves</i>
OMN-21 (2017 Edition)	<i>Alternative Requirements for Adjusting Hydraulic Parameters to Specified Reference Points</i>

## 2. Conditionally Acceptable OM Code Cases

The OM Code Cases listed in Table 2 are acceptable to the NRC for application in applicant or licensee IST programs within the conditions indicated by the NRC. The OM Code uses two approaches to list revisions of OM Code Cases. The first lists OM Code Cases according to edition or addenda (e.g., OMN-6, 2012 Edition). The second uses a numbering system (e.g., OMN-1, Revision 1). Thus, the tables below show either the latest edition or addenda in which an OM Code Case was published or the latest revision number of an OM Code Case, in accordance with the requirement in 10 CFR 50.55a that licensees or applicants implement the most recent version of an OM Code Case. The edition and addenda are listed in addition to the revision number because the OM Code in some cases reaffirms OM Code Cases with minor changes. Listing both the revision number and edition or addenda ensures that the latest version of the OM Code Case is implemented. To assist users, new and revised OM Code Cases are shaded to distinguish them from those approved in previous versions of this guide.

**Table 2. Conditionally Acceptable OM Code Cases**

Code Case Number	<b>Table 2</b> <b>Conditionally Acceptable OM Code Cases</b>
Title/Condition	
OMN-1 Revision 2 (2017 Edition)	<p><i>Alternative Rules for Preservice and Inservice Testing of Active Electric Motor-Operated Valve Assemblies in Light-Water Reactor Power Plants</i></p> <p>Applicants and licensees may use this OM Code Case in lieu of the provisions for stroke-time testing in Subsection ISTC of the 1995 Edition up to and including the 2012 Edition of the OM Code when applied in conjunction with the provisions for leakage rate testing in, as applicable, ISTC 4.3 (1995 Edition with the 1996 and 1997 Addenda) and ISTC-3600 (1998 Edition through the 2012 Edition). In addition, applicants and licensees who continue to implement Section XI of the ASME BPV Code as their Code of Record may use OMN-1 in lieu of the provisions for stroke-time testing specified in Paragraph 4.2.1 of ASME/ANSI OM Part 10 as required by 10 CFR 50.55a(b)(2)(vii) subject to the conditions in this RG. Applicants and licensees who choose to apply OMN-1 must apply all its provisions.</p> <p class="list-item-l1">(1) The adequacy of the diagnostic test interval for each motor-operated valve (MOV) must be evaluated and adjusted as necessary, but not later than 5 years or three refueling outages (whichever is longer) from initial implementation of OMN-1.</p> <p class="list-item-l1">(2) When extending exercise test intervals for high risk MOVs beyond a quarterly frequency, applicants or licensees must ensure that the potential increase in core damage frequency (CDF) and risk associated with the extension is small and consistent with the intent of the Commission's Safety Goal Policy Statement.</p> <p class="list-item-l1">(3) When applying risk insights as part of the implementation of OMN-1, applicants or licensees must categorize MOVs according to their safety significance using the methodology described in OM Code Case OMN-3, "Requirements for Safety Significance Categorization of Components Using Risk Insights for Inservice Testing of LWR Power Plants," with the conditions discussed in this RG, or using other MOV risk ranking methodologies accepted by the NRC on a plant-specific or industrywide basis with the conditions in the applicable safety evaluations.</p> <p>Note 1: As indicated at 64 FR 51370–51386, applicants and licensees are cautioned that, when implementing OMN-1, the benefits of performing a particular test should be balanced against the potential adverse effects placed on the valves or systems caused by this testing.</p> <p>Note 2: These conditions are identical to those imposed on OMN-1, Revision 1 (2012 Edition), in Revision 2 to RG 1.192.</p>
OMN-3 (2017 Edition)	<p><i>Requirements for Safety Significance Categorization of Components Using Risk Insights for Inservice Testing of LWR Power Plants</i></p>

Code Case Number	<b>Table 2</b> <b>Conditionally Acceptable OM Code Cases</b>
	<b>Title/Condition</b>
	<p>(1) In addition to those components identified in the ASME IST Program Plan, implementation of Section 1, “Applicability,” of the OM Code Case must include within the scope of an applicant’s or licensee’s risk-informed IST program, non- OM Code Case components categorized as high safety-significant components (HSSCs) that might not currently be included in the IST Program Plan.</p> <p>(2) The decision criteria discussed in Section 4.4.1, “Decision Criteria,” of the OM Code Case for evaluating the acceptability of aggregate risk effects (i.e., for CDF and large early release frequency) must be consistent with the guidance provided in RG 1.174, “An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis” (Ref. 7).</p> <p>(3) Section 4.4.4, “Defense in Depth,” of the OM Code Case must be consistent with the guidance contained in Sections 2.2.1, “Defense-in-Depth Evaluation,” and 2.2.2, “Safety Margin Evaluation,” of RG 1.175, “An Approach for Plant-Specific, Risk-Informed Decisionmaking: Inservice Testing” (Ref. 8).</p> <p>(4) Implementation of Section 4.5, “Inservice Testing Program,” and Section 4.6, “Performance Monitoring,” of the OM Code Case must be consistent with the guidance pertaining to IST of pumps and valves provided in Section 3.2, “Program Implementation,” and Section 3.3, “Performance Monitoring,” of RG 1.175. Testing and performance monitoring of individual components must be performed as specified in the risk-informed components OM Code Cases (e.g., OMN-1, OMN-4, OMN-7, and OMN-12, as modified by the conditions discussed in this RG).</p> <p>(5) Implementation of Section 3.2, “Plant Specific PRA,” of the OM Code Case must be consistent with the guidance that the owner is responsible for demonstrating and justifying the technical adequacy of the probabilistic risk assessment (PRA) analyses used as the basis to perform component risk ranking and for estimating the aggregate risk impact. RG 1.200, “An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities” (Ref. 9), provides guidance for determining the technical adequacy of the PRA used in a risk-informed regulatory activity. RG 1.201, “Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to Their Safety Significance” (Ref. 10), describes one acceptable method to categorize the safety significance of an active component, including methods to use when a plant-specific PRA that meets the appropriate RG 1.200 capability for specific hazard group(s) (e.g., seismic and fire) is not available.</p> <p>(6) Section 4.2.4, “Reconciliation,” Paragraph (b), is not endorsed. The expert panel may not classify components that are ranked HSSC by the results of a qualitative or quantitative PRA evaluation (excluding the sensitivity studies) or the defense-in-depth assessment as a low safety-significant component (LSSC).</p>

Code Case Number	<b>Table 2</b> <b>Conditionally Acceptable OM Code Cases</b>
	<b>Title/Condition</b>
OMN-3 (2017 Edition) (cont'd)	<p><i>Requirements for Safety Significance Categorization of Components Using Risk Insights for Inservice Testing of LWR Power Plants</i></p> <p>(7) Implementation of Section 3.3, “Living PRA,” must be consistent with the following: (1) To account for potential changes in failure rates and other changes that could affect the PRA, changes to the plant must be reviewed, and, as appropriate, the PRA updated. (2) When the PRA is updated, the categorization of structures, systems, and components must be reviewed and changed if necessary to remain consistent with the categorization process. (3) The review of plant changes must be performed in a timely manner and must be performed once every two refueling outages or as required by 10 CFR 50.71(h)(2) for combined license holders.</p> <p>Note 1: The OM Code Case methodology for risk ranking uses two categories of safety significance. The NRC staff has determined that this is acceptable for ranking all component types. However, the NRC staff has accepted other methodologies for risk ranking MOVs, with certain conditions, that use three categories of safety significance.</p> <p>Note 2: These conditions are identical to those imposed on OMN-3 (2012 Edition) in Revision 2 to RG 1.192.</p>
OMN-4 (2017 Edition)	<p><i>Requirements for Risk Insights for Inservice Testing of Check Valves at LWR Power Plants</i></p> <p>(1) Valve opening and closing functions must be demonstrated when flow testing or examination methods (nonintrusive, or disassembly and inspection) are used.</p> <p>(2) The initial interval for tests and associated examinations may not exceed two fuel cycles or 3 years, whichever is longer; any extension of this interval may not exceed one fuel cycle per extension, with the maximum interval not to exceed 10 years. Trending and evaluation of existing data must be used to reduce or extend the time interval between tests.</p> <p>(3) If the Appendix II condition monitoring program is discontinued, the requirements of ISTC 4.5.1, “Excercising Test Frequency,” through ISTC 4.5.4, “Valve Obturator Movement” (1996 and 1997 Addenda), or ISTC 3510, 3520, 3540, and 5221 (1998 Edition through 2012 Edition), as applicable, must be implemented.</p> <p>Note 1: The conditions are identical to those imposed on OMN-4 (2004 Edition) in Revision 2 to RG 1.192.</p> <p>Note 2: The conditions with respect to allowable methodologies for OMN-3 risk ranking specified for the use of OMN-1 also apply to OMN-4.</p>
OMN-9 (2017 Edition)	<p><i>Use of a Pump Curve for Testing</i></p> <p>(1) When a reference curve may have been affected by repair, replacement, or routine servicing of a pump, a new reference curve must be determined, or an existing reference curve must be reconfirmed, in accordance with Section 3 of this OM Code Case.</p> <p>(2) If it is necessary or desirable, for some reason other than that stated in Section 4 of this OM Code Case, to establish an additional reference curve or set of curves, these new curves must be determined in accordance with Section 3.</p> <p>Note 1: The conditions are identical to those imposed on OMN-9 (2012 Edition) in Revision 2 to RG 1.192.</p>
OMN-12 (2017 Edition)	<p><i>Alternative Requirements for Inservice Testing Using Risk Insights for Pneumatically and Hydraulically Operated Valve Assemblies in Light-Water Reactor Power Plants (OM-Code 1998, Subsection ISTC)</i></p> <p>(1) Paragraph 4.2, “Inservice Test Requirements,” of OMN-12 specifies inservice test requirements for pneumatically and hydraulically operated valve assemblies categorized as high safety significant within the scope of the OM Code Case. The inservice testing program must include a mix of static and dynamic valve assembly performance testing. The mix of valve assembly performance testing may be altered when justified by an engineering evaluation of test data.</p>

Code Case Number	<b>Table 2</b> <b>Conditionally Acceptable OM Code Cases</b>
	<b>Title/Condition</b>
	<p>(2) Paragraph 4.2.2.3 of OMN-12 specifies the periodic test requirements for pneumatically and hydraulically operated valve assemblies categorized as high safety significant within the scope of the code case. The adequacy of the diagnostic test interval for each high safety significant valve assembly must be evaluated and adjusted as necessary, but not later than 5 years or three refueling outages (whichever is longer) from initial implementation of OMN-12.</p> <p>(3) Paragraph 4.2.3, “Periodic Valve Assembly Exercising,” of OMN-12 specifies periodic exercising for pneumatically and hydraulically operated valve assemblies categorized as high safety significant within the scope of the OM Code Case. Consistent with the requirement in OMN-3 to evaluate the aggregate change in risk associated with changes in test strategies, when extending exercise test intervals for high safety significant valve assemblies beyond a quarterly frequency, the potential increase in CDF and risk associated with the extension must be evaluated and determined to be small and consistent with the intent of the Commission’s Safety Goal Policy Statement.</p> <p>(4) Paragraph 4.4.1, “Acceptance Criteria,” of OMN-12 specifies that acceptance criteria must be established for the analysis of test data for pneumatically and hydraulically operated valve assemblies categorized as high safety significant within the scope of the OM Code Case. When establishing these acceptance criteria, the potential degradation rate and available capability margin for each valve assembly must be evaluated and determined to provide assurance that the valve assemblies are capable of performing their design-basis functions until the next scheduled test.</p> <p>(5) Paragraph 5, “Low Safety Significant Valve Assemblies,” of OMN-12 specifies that the purpose of its provisions is to provide a high degree of confidence that pneumatically and hydraulically operated valve assemblies categorized as low safety significant within the scope of the OM Code Case will perform their intended safety function if called upon. The applicant or licensee must have reasonable confidence that low safety significant valve assemblies remain capable of performing their intended design-basis safety functions until the next scheduled test. The test and evaluation methods may be less rigorous than those applied to high safety significant valve assemblies.</p> <p>(6) Paragraph 5.1, “Set Points and/or Critical Parameters,” of OMN-12 specifies requirements and guidance for establishing setpoints and critical parameters of pneumatically and hydraulically operated valve assemblies categorized as low safety significant within the scope of the OM Code Case. Setpoints for these valve assemblies must be based on direct dynamic test information, a test-based methodology, or grouping with dynamically tested valves, and documented according to Paragraph 5.1.4. The setpoint justification methods may be less rigorous than provided for high risk-significant valve assemblies.</p> <p>(7) Paragraph 5.4, “Evaluations,” of OMN-12, specifies evaluations to be performed of pneumatically and hydraulically operated valve assemblies categorized as low safety significant within the scope of the OM Code Case. Initial and periodic diagnostic testing must be performed to establish and verify the setpoints of these valve assemblies to ensure that they are capable of performing their design-basis safety functions. Methods for testing and establishing test frequencies may be less rigorous than applied to high risk-significant valve assemblies.</p> <p>(8) Paragraph 5.6, “Corrective Action,” of OMN-12 specifies that corrective action must be initiated if the parameters monitored and evaluated for pneumatically and hydraulically operated valve assemblies categorized as low safety significant within the scope of the OM Code Case do not meet the established criteria. Further, if the valve assembly does not satisfy its acceptance criteria, the operability of the valve assembly must be evaluated.</p> <p>Note 1: Applicants and licensees are cautioned that, when implementing OMN-12, the benefits of performing a particular test should be balanced against the potential adverse effects placed on the valves or systems caused by this testing.</p> <p>Note 2: Paragraph 3.1 of OMN-12 states that “Valve assemblies shall be classified as either high safety significant or low safety significant in accordance with Code Case OMN-3.” This note as well</p>

Code Case Number	<b>Table 2</b> <b>Conditionally Acceptable OM Code Cases</b>
	<b>Title/Condition</b>
	<p>as Note 2 to OMN-4 have been added to ensure the consistent consideration of risk insights.</p> <p>Note 3: The conditions are identical to those imposed on OMN-12 (2012 Edition) in Revision 2 to RG 1.192.</p>
OMN-13, Revision 2 (2017 Edition)	<p><i>Performance-Based Requirements for Extending Snubber Inservice Visual Examination Interval at LWR Power Plants</i></p> <p>This OM Code Case is applicable to the editions and addenda of the OM Code listed in 10 CFR 50.55a(a)(1)(iv). Although OM Code Case OMN-13 has an applicability statement in its inquiry and reply, the guidance in OM Code Case OMN-13 is acceptable for application at nuclear power plants with a Code of Record of any edition or addenda of the OM Code incorporated by reference in 10 CFR 50.55a(a)(1)(iv).</p>
OMN-18 (2017 Edition)	<p><i>Alternate Testing Requirements for Pumps Tested Quarterly Within <math>\pm 20\%</math> of Design Flow</i></p> <p>The upper-end values of the Group A test acceptable ranges for flow and differential pressure (or discharge pressure) must be <math>1.06Q_r</math> and <math>1.06\Delta P_r</math> (or <math>1.06P_r</math>), respectively, as applicable to the pump type. The high values of the required action ranges for flow and differential pressure (or discharge pressure) must be <math>&gt;1.06Q_r</math> and <math>&gt;1.06\Delta P_r</math> (or <math>1.06P_r</math>), respectively, as applicable to the pump type.</p> <p>Note 1: The conditions are identical to those imposed on OMN-18 (2012 Edition) in Revision 2 to RG 1.192.</p>
OMN-19 (2017 Edition)	<p><i>Alternative Upper Limit for the Comprehensive Pump Test</i></p> <p>Applicants or licensees who use this OM Code Case must implement a pump periodic verification test program. A pump periodic verification test is defined as a test that verifies a pump can meet the required (differential or discharge) pressure as applicable, at its highest design-basis accident flow rate.</p> <p>The applicant or licensee must do the following:</p> <ul style="list-style-type: none"> <li>(a) Identify those certain applicable pumps with specific design-basis accident flow rates in the applicant's or licensee's credited safety analysis (e.g., technical specifications, technical requirements program, or updated safety analysis report) for inclusion in this program.</li> <li>(b) Perform the pump periodic verification test at least once every 2 years.</li> <li>(c) Determine whether the pump periodic verification test is required before declaring the pump operable following replacement, repair, or maintenance of the pump.</li> <li>(d) Declare the pump inoperable if the pump periodic verification test flow rate and associated differential pressure (or discharge pressure for positive displacement pumps) cannot be achieved.</li> <li>(e) Maintain the necessary records for the pump periodic verification tests, including the applicable test parameters (e.g., flow rate and associated differential pressure, or flow rate and associated discharge pressure, and speed for variable speed pumps) and their basis.</li> <li>(f) Account for the pump periodic verification test instrument accuracies in the test acceptance criteria.</li> </ul> <p>The applicant or licensee need not perform a pump periodic verification test if the design-basis accident flow rate in the applicant's or licensee's safety analysis is bounded by the comprehensive pump test or Group A test.</p> <p>Note 1: The conditions are identical to those imposed on OMN-19 (2012 Edition) in Revision 2 to RG 1.192</p>

Code Case Number	<b>Table 2</b> <b>Conditionally Acceptable OM Code Cases</b>
	<b>Title/Condition</b>
OMN-20 (2017 Edition)	<p><i>Inservice Test Frequency</i></p> <p>This OM Code Case is applicable to the editions and addenda of the OM Code listed in 10 CFR 50.55a(a)(1)(iv). Although OM Code Case OMN-20 has an applicability statement in its inquiry and reply, the guidance in OM Code Case OMN-20 is acceptable for application at nuclear power plants with a Code of Record of any edition or addenda of the OM Code incorporated by reference in 10 CFR 50.55a(a)(1)(iv).</p>

### 3. OM Code Cases Superseded by Revised OM Code Cases

Table 3 lists OM Code Cases that have been superseded by revision.

**Table 3. OM Code Cases That Have Been Superseded by Revised OM Code Cases**

1 Code Case Number	<b>Table 3</b> <b>OM Code Cases That Have Been Superseded by Revised OM Code Cases</b>
OMN-1 (1996 Addenda) (1999 Addenda) (2001 Edition) (2002 Addenda) (2004 Edition) (2006 Addenda) (2009 Edition) (2012 Edition) (2015 Edition)  Rev. 1 (2012 Edition) (2015 Edition)	<p><i>Alternative Rules for Preservice and Inservice Testing of Certain Motor-Operated Valve Assemblies in Light-Water Reactor Power Plants (OM Code-1995, Subsection ISTC)</i></p> <p>Licensees may use this OM Code Case in lieu of the provisions for stroke-time testing in Subsection ISTC of the 1995 Edition up to and including the 2000 Addenda of the OM Code when applied in conjunction with the provisions for leakage rate testing in, as applicable, ISTC 4.3 (1995 Edition with the 1996 and 1997 Addenda) and ISTC-3600 (1998 Edition through the 2004 Addenda). In addition, licensees who continue to implement Section XI of the ASME BPV Code as their Code of Record may use OMN-1 in lieu of the provisions for stroke-time testing specified in Paragraph 4.2.1 of ASME/ANSI OM Part 10 as required by 10 CFR 50.55a(b)(2)(vii) subject to the conditions in this RG. Licensees who choose to apply OMN-1 must apply all its provisions.</p> <p class="list-item-l1">(1) The adequacy of the diagnostic test interval for each MOV must be evaluated and adjusted as necessary, but not later than 5 years or three refueling outages (whichever is longer) from initial implementation of OMN-1.</p> <p class="list-item-l1">(2) When extending exercise test intervals for high-risk MOVs beyond a quarterly frequency, licensees must ensure that the potential increase in CDF and risk associated with the extension is small and consistent with the intent of the Commission's Safety Goal Policy Statement.</p> <p class="list-item-l1">(3) When applying risk insights as part of the implementation of OMN-1, licensees must categorize MOVs according to their safety significance using the methodology described in OM Code Case OMN-3, with the conditions discussed in this RG, or using other MOV risk-ranking methodologies accepted by the NRC on a plant-specific or industrywide basis with the conditions in the applicable safety evaluations.</p> <p>NOTE: As indicated at 64 FR 51370–51386, licensees are cautioned that, when implementing OMN-1, the benefits of performing a particular test should be balanced against the potential adverse effects placed on the valves or systems caused by this testing.</p>
OMN-2 (1998 Addenda) (2001 Edition) (2004 Edition) (2009 Edition) (2012 Edition)	<p><i>Thermal Relief Valve Code Case, OM Code-1995, Appendix I</i></p>
OMN-3 (1998 Edition) (2001 Edition) (2002 Addenda) (2004 Edition) (2009 Edition) (2012 Edition) (2015 Edition)	<p><i>Requirements for Safety Significance Categorization of Components Using Risk Insights for Inservice Testing of LWR Power Plants</i></p> <p class="list-item-l1">(1) In addition to those components identified in the ASME IST Program Plan, implementation of Section 1, "Applicability," of the Code Case must include within the scope of a licensee's risk-informed IST program non-ASME Code components categorized as high safety significant components (HSSCs) that might not currently be included in the IST Program Plan.</p> <p class="list-item-l1">(2) The decision criteria discussed in Section 4.4.1, "Decision Criteria," of the Code Case for evaluating the acceptability of aggregate risk effects (i.e., for Core Damage Frequency [CDF] and Large Early Release Frequency [LERF]) must be consistent with the guidance provided in Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis."</p> <p class="list-item-l1">(3) Section 4.4.4, "Defense in Depth," of the Code Case must be consistent with the guidance contained in Sections 2.2.1, "Defense-in-Depth Evaluation," and 2.2.2, "Safety Margin"</p>

Code Case Number	<b>Table 3</b> <b>OM Code Cases That Have Been Superseded by Revised OM Code Cases</b>
	<p>Evaluation,” of Regulatory Guide 1.175, “An Approach for Plant-Specific, Risk-Informed Decisionmaking: Inservice Testing.”</p> <p>(4) Implementation of Sections 4.5, “Inservice Testing Program,” and 4.6, “Performance Monitoring,” of the Code Case must be consistent with the guidance pertaining to inservice testing of pumps and valves provided in Section 3.2, “Program Implementation,” and Section 3.3, “Performance Monitoring,” of Regulatory Guide 1.175. Testing and performance monitoring of individual components must be performed as specified in the risk-informed components Code Cases (e.g., OMN-1, OMN-4, OMN-7, and OMN-12, as modified by the conditions discussed in this regulatory guide).</p> <p>Note: The Code Case methodology for risk ranking uses two categories of safety significance. The NRC staff has determined that this is acceptable for ranking MOVs, air-operated valves (AOVs), and check valves. However, the NRC staff has accepted other methodologies for risk ranking MOVs, with certain conditions, that use three categories of safety significance.</p>
OMN-4 (1999 Addenda) (2001 Edition) (2004 Edition) (2009 Edition) (2012 Edition) (2015 Edition)	<p><i>Requirements for Risk Insights for Inservice Testing of Check Valves at LWR Power Plants</i></p> <p>(1) Valve opening and closing functions must be demonstrated when flow testing or examination methods (nonintrusive, or disassembly and inspection) are used.</p> <p>(2) The initial interval for tests and associated examinations may not exceed two fuel cycles or 3 years, whichever is longer; any extension of this interval may not exceed one fuel cycle per extension, with the maximum interval not to exceed 10 years. Trending and evaluation of existing data must be used to reduce or extend the time interval between tests.</p> <p>(3) If the Appendix II condition monitoring program is discontinued, the requirements of ISTC 4.5.1, “Exercising Test Frequency,” through ISTC 4.5.4, “Valve Obturator Movement” (1996 and 1997 Addenda), or ISTC 3510, 3520, 3540, and 5221 (1998 Edition with the 1999 and 2000 Addenda), as applicable, must be implemented.</p>
OMN-5 (1999 Addenda) (2001 Edition) (2004 Edition) (2006 Addenda) (2009 Edition) (2012 Edition)	<p><i>Testing of Liquid Service Relief Valves Without Insulation</i></p> <p><i>(Note: This OM Code Case was annulled in the 2017 Edition of the OM Code.)</i></p>
OMN-6 (1999 Addenda) (2001 Edition) (2002 Addenda) (2004 Edition) (2006 Addenda) (2009 Edition) (2012 Edition) (2015 Edition)	<p><i>Alternate Rules for Digital Instruments</i></p>

Code Case Number	Table 3 OM Code Cases That Have Been Superseded by Revised OM Code Cases
OMN-7 (2000 Addenda) (2001 Edition) (2002 Addenda) (2004 Edition) (2005 Addenda) (2006 Addenda) (2009 Edition) (2012 Edition) (2015 Edition)	<i>Alternative Requirements for Pump Testing</i>
OMN-8 (2000 Addenda) (2001 Edition) (2003 Addenda) (2004 Edition) (2005 Addenda) (2006 Addenda) (2009 Edition) (2012 Edition) (2015 Edition)	<i>Alternative Rules for Preservice and Inservice Testing of Power-Operated Valves That Are Used for System Control and Have a Safety Function per OM-10, ISTC-1.1, or ISTA-1100</i>
OMN-9 (2000 Addenda) (2001 Edition) (2003 Addenda) (2004 Edition) (2009 Edition) (2012 Edition) (2015 Edition)	<p><i>Use of a Pump Curve for Testing</i></p> <p>(1) When a reference curve may have been affected by repair, replacement, or routine servicing of a pump, a new reference curve must be determined, or an existing reference curve must be reconfirmed, in accordance with Section 3 of this OM Code Case.</p> <p>(2) If it is necessary or desirable, for some reason other than that stated in Section 4 of this OM Code Case, to establish an additional reference curve or set of curves, these new curves must be determined in accordance with Section 3.</p>

<b>Code Case Number</b>	<b>Table 3</b> <b>OM Code Cases That Have Been Superseded by Revised OM Code Cases</b>
OMN-11 (2001 Edition) (2003 Addenda) (2004 Edition) (2006 Addenda) (2009 Edition) (2012 Edition) (2015 Edition)	<p><i>Risk-Informed Testing for Motor-Operated Valves</i></p> <p>Where a licensee is implementing OM Code Case OMN-1 as a justified alternative to the requirements for stroke-time testing of MOVs in Subsection ISTC of the OM Code, the licensee may apply risk insights to its MOV program as indicated in Paragraph 3.7, “Risk-Based Criteria for MOV Testing,” of OMN-1 and as supplemented by OM Code Case OMN-11 with the following conditions:</p> <ol style="list-style-type: none"> <li>(1) In addition to the IST provisions of Paragraph 3 of OMN-11, MOVs within the scope of OMN-1 that are categorized as LSSCs must satisfy the other provisions of OMN-1, including determination of proper MOV test intervals as specified in Paragraph 6 of OMN-1.</li> <li>(2) Paragraph 3(a) of OMN-11 must be interpreted as allowing the provisions of Paragraphs 3.5(a) and (d) of OMN-1 related to similarity and test sample, respectively, to be relaxed for the grouping of LSSC MOVs. The provisions of Paragraphs 3.5(b), (c), and (e) of OMN-1, related to evaluation of test results for MOVs in the group, sequential testing of a representative MOV, and analysis of test results in accordance with Paragraph 6 of OMN-1 for each MOV in the group, respectively, continue to be applicable to all MOVs within the scope of OMN-1.</li> <li>(3) When extending exercise test intervals for high-risk MOVs beyond a quarterly frequency, the licensee must ensure that the potential increase in CDF and risk associated with the extension is small and consistent with the intent of the Commission’s Safety Goal Policy Statement.</li> </ol> <p>Note 1: The condition on allowable methodologies for MOV risk ranking specified for the use of OMN-1 also applies to OMN-11.</p>
OMN-12 (2001 Edition) (2004 Edition) (2009 Edition) (2012 Edition) (2015 Edition)	<p><i>Alternative Requirements for Inservice Testing Using Risk Insights for Pneumatically and Hydraulically Operated Valve Assemblies in Light-Water Reactor Power Plants (OM Code 1998, Subsection ISTC)</i></p> <ol style="list-style-type: none"> <li>(1) Paragraph 4.2, “Inservice Test Requirements,” of OMN-12 specifies inservice test requirements for pneumatically and hydraulically operated valve assemblies categorized as high safety significant within the scope of the OM Code Case. The inservice testing program must include a mix of static and dynamic valve assembly performance testing. The mix of valve assembly performance testing may be altered when justified by an engineering evaluation of test data.</li> <li>(2) Paragraph 4.2.2.3 of OMN-12 specifies the periodic test requirements for pneumatically and hydraulically operated valve assemblies categorized as high safety significant within the scope of the OM Code Case. The adequacy of the diagnostic test interval for each high safety significant valve assembly must be evaluated and adjusted as necessary, but not later than 5 years or three refueling outages (whichever is longer) from initial implementation of OMN-12.</li> <li>(3) Paragraph 4.2.3, “Periodic Valve Assembly Exercising,” of OMN-12 specifies periodic exercising for pneumatically and hydraulically operated valve assemblies categorized as high safety significant within the scope of the OM Code Case. Consistent with the requirement in OMN-3 to evaluate the aggregate change in risk associated with changes in test strategies, when extending exercise test intervals for high safety significant valve assemblies beyond a quarterly frequency, the potential increase in CDF and risk associated with the extension must be evaluated and determined to be small and consistent with the intent of the Commission’s Safety Goal Policy Statement.</li> <li>(4) Paragraph 4.4.1, “Acceptance Criteria,” of OMN-12 specifies that acceptance criteria must be established for the analysis of test data for pneumatically and hydraulically operated valve assemblies categorized as high safety significant within the scope of the OM Code Case. When establishing these acceptance criteria, the potential degradation rate and available capability margin for each valve assembly must be evaluated and determined to provide assurance that the valve assemblies are capable of performing their design-basis functions until the next scheduled test.</li> </ol>

Code Case Number	<b>Table 3</b> <b>OM Code Cases That Have Been Superseded by Revised OM Code Cases</b>
	<p>(5) Paragraph 5, “Low Safety Significant Valve Assemblies,” of OMN-12 specifies that the purpose of its provisions is to provide a high degree of confidence that pneumatically and hydraulically operated valve assemblies categorized as low safety significant within the scope of the OM Code Case will perform their intended safety function if called upon. The licensee must have reasonable confidence that low safety significant valve assemblies remain capable of performing their intended design-basis safety functions until the next scheduled test. The test and evaluation methods may be less rigorous than those applied to high safety significant valve assemblies.</p> <p>(6) Paragraph 5.1, “Set Points and/or Critical Parameters,” of OMN-12 specifies requirements and guidance for establishing set points and critical parameters of pneumatically and hydraulically operated valve assemblies categorized as low safety significant within the scope of the OM Code Case. Setpoints for these valve assemblies must be based on direct dynamic test information, a test-based methodology, or grouping with dynamically tested valves, and documented according to Paragraph 5.1.4. The setpoint justification methods may be less rigorous than provided for high risk significant valve assemblies.</p> <p>(7) Paragraph 5.4, “Evaluations,” of OMN-12 specifies evaluations to be performed of pneumatically and hydraulically operated valve assemblies categorized as low safety significant within the scope of the OM Code Case. Initial and periodic diagnostic testing must be performed to establish and verify the setpoints of these valve assemblies to ensure that they are capable of performing their design-basis safety functions. Methods for testing and establishing test frequencies may be less rigorous than applied to high risk significant valve assemblies.</p> <p>(8) Paragraph 5.6, “Corrective Action,” of OMN-12 specifies that corrective action must be initiated if the parameters monitored and evaluated for pneumatically and hydraulically operated valve assemblies categorized as low safety significant within the scope of the OM Code Case do not meet the established criteria. Further, if the valve assembly does not satisfy its acceptance criteria, the operability of the valve assembly must be evaluated.</p> <p>Note: Licensees are cautioned that, when implementing OMN-12, the benefits of performing a particular test should be balanced against the potential adverse effects placed on the valves or systems caused by this testing.</p>
OMN-13 (2001 Edition) (2004 Edition) (2009 Edition) (2012 Edition)	<i>Requirements for Extending Snubber Inservice Visual Examination Interval at LWR Power Plants</i>
OMN-13 Revision 1 (2009 Edition) (2012 Edition)	<i>Requirements for Extending Snubber Inservice Visual Examination Interval at LWR Power Plants</i>
OMN-13 Revision 2 (2009 Edition) (2012 Edition) (2015 Edition)	<i>Performance-Based Requirements for Extending Snubber Inservice Visual Examination Interval at LWR Power Plants</i>
OMN-14 (2003 Addenda) (2004 Edition) (2009 Edition) (2012 Edition)	<i>Alternative Rules for Valve Testing Operations and Maintenance, Appendix I: BWR CRD Rupture Disk Exclusion</i> <i>(Note: This OM Code Case was annulled in the 2017 Edition of the OM Code.)</i>

<b>Code Case Number</b>	<b>Table 3 OM Code Cases That Have Been Superseded by Revised OM Code Cases</b>
OMN-15 (2004 Edition)	<i>Performance-Based Requirements for Extending the Snubber Operational Readiness Testing Interval at LWR Power Plants</i>
OMN-15 Revision 2 (2011 Addenda) (2012 Edition) (2015 Edition)	<i>Performance-Based Requirements for Extending the Snubber Operational Readiness Testing Interval at LWR Power Plants</i>
OMN-16 (2006 Addenda) (2009 Edition) (2012 Edition) (2015 Edition)	<i>Use of a Pump Curve for Testing</i>
OMN-16 Revision 1 (2015 Edition)	<i>Use of a Pump Curve for Testing</i>
OMN-17 (2009 Edition) (2012 Edition) (2015 Edition)	<i>Alternative Rules for Testing ASME Class 1 Pressure Relief/Safety Valves</i>
OMN-18 (2009 Edition) (2012 Edition) (2015 Edition)	<i>Alternate Testing Requirements for Pumps Testing Quarterly Within <math>\pm 20\%</math> of Design Flow</i>
OMN-19 (2011 Addenda) (2012 Edition) (2015 Edition)	<i>Alternative Upper Limit for the Comprehensive Pump Test</i>
OMN-20 (2012 Edition) (2015 Edition)	<i>Inservice Test Frequency</i>
OMN-21 (2015 Edition)	<i>Alternative Requirements for Adjusting Hydraulic Parameters to Specified Reference Points</i>

#### 4. Annulled OM Code Cases

ASME has annulled the OM Code Cases listed in Table 4.

**Table 4. Annulled OM Code Cases**

<b>Code Case Number and Year Annulled</b>	<b>Table 4 Annulled OM Code Cases</b>
OMN-2 2014	<i>Thermal Relief Valve Code Case, OM Code 1995, Appendix I</i>
OMN-5 2014	<i>Testing of Liquid Service Relief Valves Without Insulation</i>
OMN-14 2014	<i>Alternative Rules for Valve Testing Operations and Maintenance, Appendix I: BWR CRD Rupture Disk Exclusion</i>

## **D. IMPLEMENTATION**

The purpose of this section is to provide information to applicants and licensees regarding the NRC staff's plans for using this regulatory guide. The requirements addressing implementation of OM Code Cases are contained in 10 CFR 50.55a(b)(6). No backfitting is intended or approved in connection with the issuance of this guide.

## REFERENCES<sup>1</sup>

1. American Society of Mechanical Engineers (ASME) *Code for Operation and Maintenance of Nuclear Power Plants*, New York, NY. 2017<sup>2</sup>
2. *U.S. Code of Federal Regulations* (CFR), Part 50, “Domestic Licensing of Production and Utilization Facilities,” Chapter 1, Title 10, “Energy.”
3. CFR, Part 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants,” Chapter 1, Title 10, “Energy.”
4. U.S. Nuclear Regulatory Commission (NRC), Regulatory Guide (RG) 1.84, “Design, Fabrication, and Materials Code Case Acceptability, ASME Section III,” Washington, DC.
5. NRC, RG 1.147, “Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1,” Washington, DC.
6. NRC, RG 1.193, “ASME Code Cases Not Approved for Use,” Washington, DC.
7. NRC, RG 1.174, “An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis,” Washington, DC.
8. NRC, RG 1.175, “An Approach for Plant-Specific, Risk-Informed Decisionmaking: Inservice Testing,” Washington, DC.
9. NRC, RG 1.200, “An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities,” Washington, DC.
10. NRC, RG 1.201, “Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to Their Safety Significance,” Washington, DC.

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<sup>2</sup> Publicly available NRC published documents are available electronically through the NRC Library on the NRC’s public Web site at <http://www.nrc.gov/reading-rm/doc-collections/> and through the NRC’s Agencywide Documents Access and Management System (ADAMS) at <http://www.nrc.gov/reading-rm/adams.html>. The documents can also be viewed online or printed for a fee in the NRC’s Public Document Room at 11555 Rockville Pike, Rockville, MD. For problems with ADAMS, contact the Public Document Room staff at 301-415-4737 or (800) 397-4209; fax (301) 415-3548; or e-mail [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov).

<sup>2</sup> Copies may be purchased from the American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016-5990; phone (212) 591-8500; fax (212) 591-8501; [www.asme.org](http://www.asme.org).

## APPENDIX A

### NUMERICAL LISTING OF ASME OPERATION AND MAINTENANCE CODE CASES

OM Code Case	ASME Action Regarding Code Case	Year OM Code Case Was Developed/Revised	OM Code Case Was Approved in RG 1.192 (Y/N) / Which Revision of RG 1.192	Table Where OM Code Case Is Listed in Revision 3 of RG 1.192
OMN-1	New Reaffirmed <sup>5</sup> Reaffirmed Revised Reaffirmed Revised Reaffirmed Reaffirmed	1996 Addenda 1999 Addenda 2001 Edition 2002 Addenda 2004 Edition 2006 Addenda 2009 Edition 2012 Edition	50.55a <sup>26</sup> Y / Revision 0 N N N Y / Revision 1 N N	All versions of OMN-1 are listed in Table 3
OMN-1, Revision 1	New Reaffirmed Reaffirmed	2009 Edition 2012 Edition 2015 Edition	N Y / Revision 2 N	Table 3 Table 3 Table 3
OMN-1, Revision 2	New	2017 Edition	Y / Revision 3	Table 2
OMN-2	New Reaffirmed Reaffirmed Reaffirmed Reaffirmed Annulled	1998 Edition 2001 Edition 2004 Edition 2009 Edition 2012 Edition 2017 Edition	Y / Revision 0 N Y / Revision 1 N Y / Revision 2 N	Table 3 Table 3 Table 3 Table 3 Table 3 Table 4
OMN-3	New Reaffirmed Revised Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed	1998 Edition 2001 Edition 2002 Addenda 2004 Edition 2009 Edition 2012 Edition 2015 Edition 2017 Edition	Y / Revision 0 N N Y / Revision 1 N Y / Revision 2 N Y / Revision 3	Table 3 Table 3 Table 3 Table 3 Table 3 Table 3 Table 3 Table 2

5 Note pertaining to reaffirmed American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code) Code Cases: In some cases, clarifications or editorial changes were made in reaffirmed ASME OM Code Cases, and notations on where those changes occurred may not have been provided with the ASME OM Code Case.

6 The U.S. Nuclear Regulatory Commission approved OMN-1, 1996 Addenda, directly in Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a, "Codes and standards."

<b>OM Code Case</b>	<b>ASME Action Regarding Code Case</b>	<b>Year OM Code Case Was Developed/Revised</b>	<b>OM Code Case Was Approved in RG 1.192 (Y/N) / Which Revision of RG 1.192</b>	<b>Table Where OM Code Case Is Listed in Revision 3 of RG 1.192</b>
OMN-4	New Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed	1999 Addenda 2001 Edition 2004 Edition 2009 Edition 2012 Edition 2015 Edition 2017 Edition	Y/ Revision 0 N Y / Revision 1 N Y / Revision 2 N Y / Revision 3	Table 3 Table 3 Table 3 Table 3 Table 3 Table 3 Table 3 Table 2
OMN-5	New Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed Annulled	1999 Addenda 2001 Edition 2004 Edition 2006 Addenda 2009 Edition 2012 Edition 2017 Edition	Y / Revision 0 N N Y / Revision 1 N Y / Revision 2 N	Table 3 Table 3 Table 3 Table 3 Table 3 Table 3 Table 4
OMN-6	New Reaffirmed Reaffirmed Reaffirmed Revised Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed	1999 Addenda 2001 Edition 2002 Addenda 2004 Edition 2006 Addenda 2009 Edition 2012 Edition 2015 Edition 2017 Edition	Y/ Revision 0 N N N Y/ Revision 1 N Y / Revision 2 N Y / Revision 3	Table 3 Table 3 Table 3 Table 3 Table 3 Table 3 Table 3 Table 3 Table 1
OMN-7	New Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed	2000 Addenda 2001 Edition 2002 Addenda 2004 Edition 2005 Addenda 2006 Addenda 2009 Edition 2012 Edition 2015 Edition 2017 Edition	Y/ Revision 0 N N N N Y / Revision 1 N Y / Revision 2 N Y / Revision 3	Table 3 Table 3 Table 3 Table 3 Table 3 Table 3 Table 3 Table 3 Table 3 Table 1
OMN-8	New Reaffirmed Reaffirmed Reaffirmed Reaffirmed Revised Reaffirmed Reaffirmed Reaffirmed Reaffirmed	2000 Addenda 2001 Edition 2003 Addenda 2004 Edition 2005 Addenda 2006 Addenda 2009 Edition 2012 Edition 2015 Edition 2017 Edition	Y/ Revision 0 N N N N Y / Revision 1 N Y / Revision 2 N Y / Revision 3	Table 3 Table 3 Table 3 Table 3 Table 3 Table 3 Table 3 Table 3 Table 3 Table 1

OM Code Case	ASME Action Regarding Code Case	Year OM Code Case Was Developed/Revised	OM Code Case Was Approved in RG 1.192 (Y/N) / Which Revision of RG 1.192	Table Where OM Code Case Is Listed in Revision 3 of RG 1.192
OMN-9	New Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed	2000 Addenda 2001 Edition 2003 Addenda 2004 Edition 2009 Edition 2012 Edition 2015 Edition 2017 Edition	Y/ Revision 0 N N Y / Revision 1 N Y / Revision 2 N Y / Revision 3	Table 3 Table 3 Table 3 Table 3 Table 3 Table 3 Table 3 Table 3 Table 2
OMN-10	New Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed	2000 Addenda 2001 Edition 2003 Addenda 2004 Edition 2006 Addenda 2009 Edition 2012 Edition 2015 Edition 2017 Edition	N N N N N N N N N	Code Case OMN-10 has not been approved for use and is listed in RG 1.193
OMN-11 <sup>7</sup>	New Reaffirmed Reaffirmed	2001 Edition 2003 Addenda 2004 Edition	Y / Revision 0 Y / Revision 1 Y / Revision 1	Table 3 Table 3 Table 3
OMN-12	New Reaffirmed Reaffirmed Reaffirmed Reaffirmed Reaffirmed	2001 Edition 2004 Edition 2009 Edition 2012 Edition 2015 Edition 2017 Edition	Y / Revision 0 Y / Revision 1 N Y / Revision 2 N Y / Revision 3	Table 3 Table 3 Table 3 Table 3 Table 3 Table 2
OMN-13	New Reaffirmed Reaffirmed Reaffirmed Reaffirmed	2001 Edition 2001 Edition 2004 Edition 2009 Edition 2012 Edition	Y/ Revision 0 N Y / Revision 1 N N	All versions of OMN-13 are listed in Table 3
OMN-13, Revision 1	New Reaffirmed	2009 Edition 2012 Edition	N N	All versions of OMN-13, Revision 1, are listed in Table 3
OMN-13, Revision 2	New Reaffirmed Reaffirmed Reaffirmed	2009 Edition 2012 Edition 2015 Edition 2017 Edition	N Y / Revision 2 N Y / Revision 3	Table 3 Table 3 Table 3 Table 2

OM Code Case	ASME Action Regarding Code Case	Year OM Code Case Was Developed/Revised	OM Code Case Was Approved in RG 1.192 (Y/N) / Which Revision of RG 1.192	Table Where OM Code Case Is Listed in Revision 3 of RG 1.192
OMN-14	New Reaffirmed Reaffirmed Reaffirmed Annulled	2003 Addenda 2004 Edition 2009 Edition 2012 Edition 2017 Edition	N Y / Revision 1 N Y / Revision 2 N	Table 3 Table 3 Table 3 Table 3 Table 4
OMN-15	New Revised Reaffirmed Reaffirmed	2004 Edition 2006 Addenda 2009 Edition 2012 Edition	N N N N	Code Case OMN-15 has not been approved for use and is listed in RG 1.193
OMN-15, Revision 2 <sup>8</sup>	New Reaffirmed Reaffirmed Reaffirmed	2011 Addenda 2012 Edition 2015 Edition 2017 Edition	N Y / Revision 2 N Y / Revision 3	Table 3 Table 3 Table 3 Table 1
OMN-16	New Reaffirmed Reaffirmed	2006 Addenda 2009 Edition 2012 Edition	Y / Revision 1 N N	Table 3 Table 3 Table 3
OMN-16, Revision 1	New Reaffirmed	2012 Edition 2015 Edition	Y / Revision 2 N	Table 3 Table 3
OMN-16, Revision 2	New	2017 Edition	Y / Revision 3	Table 1
OMN-17	New Reaffirmed Reaffirmed Reaffirmed	2009 Edition 2012 Edition 2015 Edition 2017 Edition	N Y / Revision 2 N Y / Revision 3	Table 3 Table 3 Table 3 Table 1
OMN-18	New Reaffirmed Reaffirmed Reaffirmed	2009 Edition 2012 Edition 2015 Edition 2017 Edition	N Y / Revision 2 N Y / Revision 3	Table 3 Table 3 Table 3 Table 2
OMN-19	New Reaffirmed Reaffirmed Reaffirmed	2011 Addenda 2012 Edition 2015 Edition 2017 Edition	N Y / Revision 2 N Y / Revision 3	Table 3 Table 3 Table 3 Table 2
OMN-20	New Reaffirmed Reaffirmed	2012 Edition 2015 Edition 2017 Edition	Y / Revision 2 N Y / Revision 3	Table 3 Table 3 Table 2
OMN-21	New Reaffirmed	2015 Edition 2017 Edition	N Y / Revision 3	Table 3 Table 1