Secretary, U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attention: Rulemakings and Adjudications Staff

Subject: **Comments on Incorporation by Reference of American Society of Mechanical Engineers Codes and Code Cases, 10 CFR Part 50, RIN 3150-AI97**

Reference: 1. Federal Register / Vol. 80, No. 181, pp. 56820-56864 / Friday, September 18, 2015 / Proposed Rules

Attachments:

1. Overview Diagram of how the Scope of the OM Code Standards compared to the scope of the ASME 1986 Edition of Section XI, First NRC/ASME Symposium, 1989, Tom Hoyle, then Chair of the OM Part 6 and 10 Working Group.
2. ISTOG Scoping Discussion with excerpt references, ISTOG Comments and ISTOG Conclusions.
3. ISTOG Supplemental Indications Discussion with excerpt references, ISTOG Comments and ISTOG Conclusions.

Dear Secretary:

The Inservice Test Owners Group (ISTOG) is providing the following comments on the referenced proposed rules.

As stated in our initial response submitted to the NRC on November 30, 2015, we had requested an extension of the public comment period to January 29, 2016 to allow our members to discuss the related inservice testing issues at our annual meeting, which was held December 7, and 8, 2015 in Clearwater Beach, FL.

In your response to our request, which you added to ADAMS under accession number ML15338A109, you indicated you could not extend the comment period due to the importance of maintaining a predictable schedule for this rulemaking and the relationship between this and other ongoing rulemakings for 10CFR 50.55a. However, as noted in the proposed rule, the NRC will consider comments received after the deadline if it is practical to do so, and as such, ISTOG was encouraged to submit comments as soon as they are available.

Our annual meeting was held on December 7 and 8, 2015. Our meeting was open to some NRC and ASME representatives, and we had several contractors/vendors who are active in the inservice testing support functions also in attendance. ISTOG had extensive discussion on the following topics:

1.) Scoping;
2.) Supplemental Indications; and,
3.) Power Operated Valve Design Bases Verification.

The conclusions for our comments are summarized below. The ISTOG Steering Committee voted to approve these comments on January 12, 2016 and the final comments were

incorporated on January 13, 2016. We also have included Attachments to this letter so each topic can be viewed in more detail with specific references either to the rule or the supporting material, ASME OM Code paragraphs, or other pertinent industry references.

Scoping Conclusions - Summary

See Attachments 1 1989 ASME OM Code Scope summary diagram and Attachment 2 for a complete discussion of Scoping issues.

The proposed rulemaking along with the SRP 3.9.6 should not be used for a NRC re-license of operating plant IST Programs.

ISTOG believes that the current version of SRP 3.9.6 is an inappropriate reference because it may not be included in the current licensing basis of some older operating plants. It is noted that the SRP is not actually discussed in the Rule, however it is appears that the NRC intends [per RIN 3150-AI97] to use the SRP 3.9.6 when evaluating the pumps, valves, and dynamic restraints in the Owner's IST Program scope.

From the very First NRC/ASME Pump and Valve Symposium in 1989, Tom Hoyle, then Chair of the OM Part 6 and 10 Working Group during the multi-year ASME Section XI and ASME OM Balloting process, gave a summary presentation on the OM Changes and in particular the changes with the Scope. Included is a diagram he used that explains the differences between the old ASME Section XI IWP and IWV and the then OM Parts 1 (relief Valves), 6 (Pumps) and 10 (Valves). Not all of the ASME Code Class components are to be included. See the diagram that was included in that presentation as Attachment 1.

While the SRP does include the "certain" and the "safe shutdown" wording from Subsection ISTA-1100 Scope, the SRP Acceptance Criteria requirements expands the scope to include all ASME Code Class 1, 2, or 3 components or components thought to be safety related. The SRP is expanding the IST Scope even beyond components used to take the plant from the safe shutdown condition to a cold shutdown condition.

Another subsequent change to the ASME OM Code addressed skid mounted equipment. This change allows some equipment, such as Diesel Fuel Oil Transfer Pumps to be excluded from the IST Scope provided they are adequately tested under other programs.

During our ISTOG December 2015 Meeting an informal poll identified that several plants have removed, or never included their Spent Fuel Pumps for the IST Program as these pumps are not credited for safe shutdown of the reactor. The safe shutdown mode for many plants is hot standby. The Spent Fuel Pumps are credited for safe shut down due to their heat removal function of the spent fuel pool system.

Owners that have a healthy IST Program are plants that have the following documentation:

- A program document that discusses what is tested and what is not tested and why or why not
- Provides the safe shutdown condition for their plant

- Have a well-defined Active List (e.g., either in the UFSAR or in a controlled document) for their pumps and valves
- Have a well-defined component list used for safe shutdown for pumps and valves
- Have an adequately defined test program for components that are excluded (e.g., skid mounted) or are not included in the IST Program (e.g., spent fuel).
- Have a living program that is frequently updated
- Use other site programs such as the Maintenance Rule including the associated preventative maintenance activities, Corrective Action, Operating Experience and Technical Specification Programs to augment the IST Program requirements.

If ISTOG has misinterpreted the proposed rulemaking by inappropriately concluding that the proposed rulemaking is mandating an significant expansion to the IST Program Scope, then a simple inclusion of the following 10CFR50.55a (f) wording: "No expansion of IST Program scope is intended by this clarification." in the Paragraph 50.55a (f)(4) section would help clarify/resolve this matter for ISTOG.

Supplemental Indications Conclusion - Summary

See Attachment 3 for a complete discussion of Supplemental Indications issues.

The NRC is providing additional requirements based on the intent of the ASME OM Code to address apparent aging issues associated with valves that have been inservice for an extended time. There are other programs and techniques better suited to address these aging concerns than to rely on the inservice testing programs.

The ASME OM Code is the recognized authority for stating the intent of the ASME OM Code. If an ASME OM Code inquiry is judged to be an intent inquiry, then the ASME OM Code is required to be changed before the inquiry can be issued. The proposed rulemaking goes against the recognized authority of the OM Code interpretation and change process.

The NRC proposed rulemaking condition to ISTC-3700 differs from previous precedence that the NRC used for a similar "exercising" issue with Check Valves.

The NRC recognized that these bi-directional check valve testing requirements were new requirements not required by the earlier ASME Code versions, and that the impact on Owners to incorporate these new requirements was substantial. Thus, the changes were not mandated for immediate implementation but as part of the next 10 Year Update Process.

To correct the ISTC-3520 Exercising requirements for Category A and Category B Valves would require the addition of new requirements just like that done for Check Valve in ISTC-3522 (a).

Extensive procedure and process changes to account for the normal plant process demonstrations of bi-directional testing, or to add in the specialty testing requirements will be required. Then the new procedures have to be properly sequenced in the on line or outage schedules. Past efforts also found that the associated post maintenance testing requirements

associated with the new testing requirements also impacted when maintenance could be performed due to the new surveillance activity schedule limitations.

Prevention, Detection, and Correction

Testing determines that the component has not failed. The use of system parameters would not provide early warning of impending failure. From the age in service insight that the ISTOG Task Group found that a significant expenditure of resources would have to be performed to verify the component has not yet failed (e.g., doing a two year test to track a 20 year aging failure). Although the additional testing does determine the component has not failed, this additional effort does improve the future performance capability of the component and thus is not the best or efficient means of addressing the original issue. Doing more targeted activities on a less frequent bases, such as a disassembly and inspect on vulnerable valves on a group bases over a multi-year time frame would provide the direct feedback and increase our assurance of the future performance of these components.

The prevention efforts should focus on the vulnerable valves based on vendor or operating experience, and a review or maintenance records to see if corrective action has already been done.

The detection efforts should focus on determining if there is a problem at the site by using targeted preventative maintenance activities.

Correction activities should follow the detection activities or be based on a failure, which the site corrective action and maintenance rule programs would require.

Conclusion (Supplemental Indications)

ISTOG disagrees with using ISTC-3700 as the vehicle to reconcile the obturator/stem separation issue.

ISTOG disagrees with proposed rulemaking and the rulemaking statement that "*changing the "should" to a "shall" in ISTC 3700 is not a new requirement but a clarification of the intent of the existing ASME OM Code*". The proposed rulemaking goes against the recognized authority of the OM Code interpretation and change processes. See the ASME OM Interpretation 12-01 which is included in Attachment 3.

ISTOG agrees that the ASME OM Code needs be revised to detect that the obturator has not been separated from the stem, and that the ASME OM Code consensus process needs to be used to clarify and revise the ASME OM Code requirements.

Many existing NRC endorsed programs already recognize longer performance based intervals to assess operational readiness. Changing to a prescriptive only approach to address this supplemental indication issue seems to indicate that the NRC does not support these other performance based programs such as the Appendix J Option B which can extend leakage rate testing of some containment isolation valves out to 72 months. These programs are self-correcting in that if a failure is detected, the interval is reduced to perform more frequent testing

until the performance is re-established. Once component performance has been satisfactorily demonstrated the extended interval can once again be used.

ISTOG recommends that ASME OM Code Committee should focus on changes to the ISTC-3520 Exercising section for the prescriptive requirements and have the MOV and AOV Subgroups identify the performance based techniques that can be more efficiently used to detect obturator/stem failures. The Subgroups can identify those failures that have occurred and to optimize the associated activities needed to demonstrate component function using appropriate prevention, detection and correction measures. Using the targeted resources in an efficient manner to identify and prevent the adverse conditions is better than the brute force go/no-go method (imposed on a two year frequency) being proposed.

ISTOG will assist in making these changes.

ISTOG is notifying the NRC that the publication of the proposed rulemaking "as is" would place all of the Owner Inservice Testing Programs in immediate noncompliance that is not readily resolved within the 30 day timeframe. Using a level of effort of in-house staff, it is estimated that it would take upwards of 12 months per unit to incorporate these changes, with an additional 6 to 12 months to validate the added testing activities (many of the test activities will be performed during a refueling outage). It is expected that plants will also require relief from this testing. This multi-person group would include procedure writers, operations, engineering, work management, outage planning, licensing and schedulers to "credit" those valves that can be bi-directionally tested, and to then develop activities for those valves that require new means for one or both directions.

ISTA-1100 of the ASME OM Code states that "Section IST establishes the requirements for preservice and inservice testing and examination of certain components to assess their operational readiness....." IST requirements do not verify operability but provide a measure of reasonable assurance of the ability of the component to perform its intended function. It appears as though the proposed rulemaking approach is using a provision of the code for another purpose without recognizing other more efficient and targeted techniques.

Normal plant processes may provide some means of verifying that the obturator is attached to the valve stem for a portion of the population of power operated valves. Using these processes as a new part of the IST program requirement to create a new program element extends the purpose of IST beyond what was intended. The new feature, especially when this new program feature has to be extended to the valves that are not currently subject to this verification process, is a burden to plants.

This magnitude of a supplemental indications change as outlined in the proposed rulemaking should be coordinated with the plant's 10 Year Program Update as opposed to implementation within 30 days of the publication of the final rule.

Power Operated Valve Design Bases Verification Conclusion – Summary

Upon further review of the proposed rule, ISTOG determined that the "Power Operated Valve Design Bases Verification" topic pertained only to New Reactors. Based on this understanding, ISTOG does not have any comments on Power Operated Valve Design Bases Verification.

We appreciate this opportunity to provide our comments. We have tried to provide as much detail as possible to explain our issues with the proposed rulemaking.

ISTOG remains available to the NRC to further discuss these issues.

If you have any questions in regards to the contents of this letter, please direct them to Mr. Robert Parry, ISTOG Chair at (603) 773-7550 or by e-mail (*Robert_Parry@fpl.com*).

Very Truly Yours,

R Parry

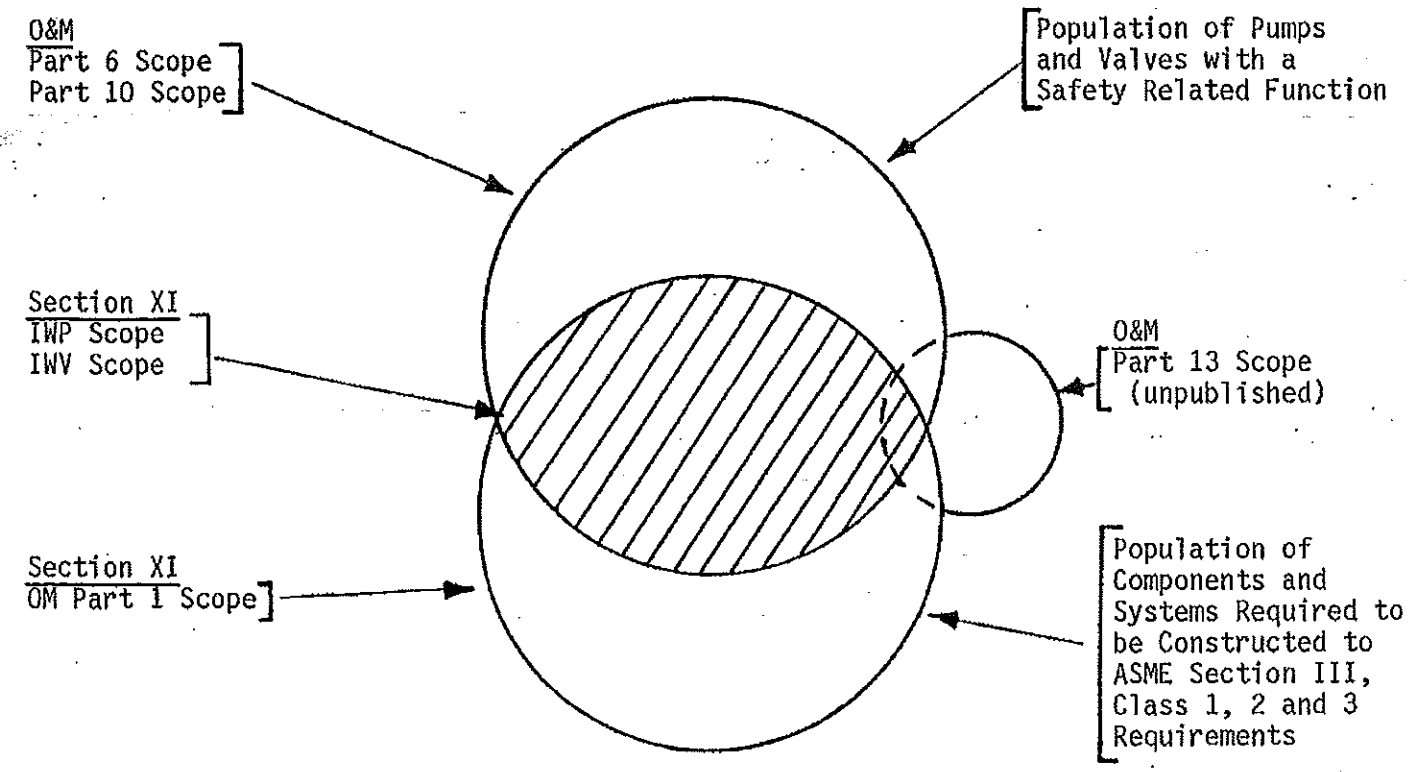
Robert Parry
ISTOG Chair
On behalf of the ISTOG Steering Committee

cc: Members, ISTOG Steering Committee
NRC ASME OM Code Committee representatives

Attachment 1

See attached pdf diagram.

From the very First NRC/ASME Pump and Valve Symposium in 1989, Tom Hoyle, then Chair of the OM Part 6 and 10 Working Groups during the multi-year ASME Section XI and ASME OM Balloting process, gave a summary presentation on the OM Changes and in particular the changes with the Scope. Included is a diagram he used that explains the differences between the old ASME Section XI IWP and IWV and the then OM Parts 1 (Relief Valves), 6 (Pumps) and 10 (Valves). Not all of the ASME Code Class components are to be included.



Section XI

IWP - Pumps
IWV - Valves

O&M

Part 1 - Relief Valves
Part 6 - Pumps
Part 10 - Valves
Part 13 - Power Operated Relief Valves

AN OVERVIEW OF HOW THE SCOPE OF THE NEW O&M PUMP AND VALVE STANDARDS RELATE TO THE SCOPE OF PUMP AND VALVE SUBSECTIONS OF 1986 EDITION THROUGH THE 1987 ADDENDUM OF SECTION XI

Attachment 2

Scope

Excerpts from some key documents are as shown below.

[NRC-2011-0088] RIN 3150-A197 Incorporation by Reference of American Society of Mechanical Engineers Codes and Code Cases, September 18, 2015.

Paragraph 50.55a (f) Inservice testing requirements:

Paragraph 50.55a (f)(3)(iii) and (f)(3)(iv) use ASME Code Class 1 pumps and valves and ASME Code Class 2 and 3 pumps and valves. These paragraphs state that the components classified as ASME Code Class 1 and ASME Code Class 2 and 3 that are within the scope of the ASME OM Code....."must be designed and be provided with access to enable the performance of inservice testing of the pumps and valves for assessing the operational readiness".....

Paragraph 50.55a (f)(4) states that ....."pumps and valves that are within the scope of the ASME OM Code must meet the inservice test requirements set forth in the ASME OM Code and addenda".....

In the regulatory summary discussion, ISTA-1100, "Scope", in Subsection ISTA, General Requirements of the ASME OM Code is listed. The summary then states that "This revision will align the scope of the pumps and valves for inservice testing with the scope defined in the ASME OM Code and in SRP Section 3.9.6, Functional Design, Qualification and Inservice Testing Programs for Pumps, Valves and Dynamic Restraints."

It is noted that the SRP is not actually discussed in the Rule, however it is appears that the NRC intends to use the SRP 3.9.6 when evaluating the pumps, valves, and dynamic restraints in the Owner's IST Program scope.

Although not in these particular sections, there is a statement in the regulatory summary discussion for 10CFR50.55a (f): Inservice testing requirements, that an introductory text for paragraph 50.55a (f) to indicate that "systems and components must meet the requirements for "preservice and inservice testing" in the applicable ASME Codes and that both activities are referred to as "inservice testing" in the remainder of paragraph (f). The proposed change clarifies that the ASME OM Code includes provisions for preservice testing of components as part of its overall provisions for IST programs. No expansion of IST Program scope is intended by this clarification."

SRP 3.9.6, Section 1 states "This standard review plan (SRP) section addresses the areas of the applicant's safety analysis report (SAR) that cover the functional design and qualification provisions and inservice testing (IST) programs for certain safety-related pumps, valves, and dynamic restraints (snubbers) designated as Class 1, 2, and 3 under Section III of the American Society of Mechanical Engineers (ASME) Boiler & Pressure Vessel Code (Code). The review should include any other pumps and valves and dynamic restraints not categorized as ASME Code Class 1, 2 o4 3 that are safety related."

Under the SRP Acceptance Criteria section, items 2 and 3 state for:

Pumps: "The scope of the applicant's test program is acceptable if it includes all of the ASME Code Class 1, 2, and 3 pumps described in 10CFR50.55a(f) and Subsection ISTA-1100 of the OM Code and in addition, includes pumps not categorized as ASME Code Class 1, 2, or 3 but which the staff considers to be safety related."

Valves: "To be acceptable, the SAR list must contain all safety related ASME Code Class 1, 2, 3 and 3 valves required by 10CDFR50a(f) and the OM Code, except those nonsafety-related valves excepted by Subsection-1200 of the OM Code. It should also include valves not categorized as ASME Code Class 1,2, or 3 but which are safety-related."

Audit Report

Audit of NRC's Oversight of Active Component Aging

OIG-14-A-02 – October 28, 2013

Regulations used for Citing Licensees for Age-Related Degradation

"Inspectors can use various NRC regulations to cite licensees for age-related degradation of active components that are not specific to aging. These regulations do not establish limits on the age of active components in commercial power plants, or prohibit degradation of active components by aging. Instead NRC has regulations that establish equipment performance requirements that may not be met by components that have degraded due to aging. Inspectors said that they use the following regulations for inspections to meet the challenge of identifying aging active components and citing licensees for age-related violations:

- 10CFR50.65 Requirements for monitoring the effectiveness of maintenance at nuclear power plants (Maintenance Rule)
- 10CFR50. Appendix B, Quality Assurance Criteria for Nuclear Power Plants
- 10CFR50.36 Technical Specifications.

ISTOG Comments:

The SRP 3.9.6 is deficient.

The SRP does not recognize the use of "certain" which was intentionally done to describe a subset of the active components that are included in the IST Program Scope.

From the very First NRC/ASME Pump and Valve Symposium in 1989, Tom Hoyle, then Chair of the OM Part 6 and 10 Working Group during the multi-year ASME Section XI and ASME OM Balloting process, gave a summary presentation on the OM Changes and in particular the changes with the Scope. Included is a diagram he used that explains the differences between the old ASME Section XI IWP and IWV and the then OM Parts 1 (relief Valves), 6 (Pumps) and 10 (Valves). Not all of the ASME Code Class components are to be included. See the diagram that was included in that presentation as an attachment to this discussion.

Subsequent changes made to the different sections also need to be considered, such as the change from cold shutdown to safe shutdown and the skid mounted exemption in ISTB.

While the SRP does include the "certain" and the "safe shutdown" wording from Subsection ISTA-1100 Scope, the SRP Acceptance Criteria requirements expands the scope to include all ASME Code Class 1, 2, or 3 components or components thought to be safety related. The SRP is expanding the IST Scope even beyond components used to take the plant from the safe shutdown condition to a cold shutdown condition.

Per application of the ISTA-1100 requirements, ASME 1, 2, and 3 components not used for safe shutdown are outside the scope of the IST Program. Owners may elect to include some or all of these components in their IST program but that becomes an optional consideration not a regulatory requirement. Aging issues cannot always be solely addressed by testing means – some preventative measures such as disassembly, non-destructive examination, following vendor recommendations are needed. Owners rely on other programs such as Maintenance Rule, Corrective Action, and the Preventative Maintenance process to provide adequate assurance of the component's ability to perform its intended function.

Another subsequent change to the ASME OM Code addressed skid mounted equipment. This change allows some equipment, such as Diesel Fuel Oil Transfer Pumps to be excluded from the IST Scope provided they are adequately tested under other programs.

During our ISTOG December 2015 Meeting an informal poll identified that several plants have removed, or never included their Spent Fuel Pumps for the IST Program as these pumps are not credited for safe shutdown of the reactor. The safe shutdown mode for many plants is hot standby. The Spent Fuel Pumps are credited for safe shut down due to their heat removal function of the spent fuel pool system. Although not part of the poll, these pumps would have to be adequately tested under other programs, or at the option of the Owner included in the IST Program.

Each plant had a licensing review by the regulatory authority and there was an NRC Safety Evaluation (SER) issued to document that review. Changes made to the plant and to the ASME OM Code would require update and revision to the IST Programs scope and the subsequent testing. The proposed rulemaking should not relicense the plants beyond the scope of the ASME OM Code to mandate the inclusion of all ASME 1, 2 or 3 components or those non code components that are thought to be safety related.

Each Owner's IST program document should state their safe shutdown condition (e.g., hot standby), their application of the active as used by the design authority and as used by the testing authority. The use of active components for some designs may be misleading and cause confusion. Use of active for failure modes and effects analysis, or line break analysis may need to be clarified. A list of credited active components should be included in the UFSAR – these components should have been subjected to the seismic qualification review and the pump & valve operability review teams that were an integral part of the original plant licensing. Each plant had a licensing review by the regulatory authority and there was an NRC Safety Evaluation (SER) issued to document that review.

In response to a specific NRC issue, ASME revised the IST pump testing requirements to include a non-IST test requirement, called the Pump Periodic Verification Test Program (See Appendix V in the 2015 publication). As part of V-3000, the pumps included for this testing are a subset of pumps that are included in "the Owner's credited safety analysis (e.g., technical specifications, technical requirements program, or updated safety analysis report)...." Thus, the accident as discussed in the ISTA-1100 is now clearly defined in the ASME OM Code.

Conclusion (Scope):

The proposed rulemaking along with the SRP 3.9.6 should not be used for a NRC re-license of operating plant IST Programs.

ISTOG believes that the current version of SRP 3.9.6 is an inappropriate reference because it may not be included in the current licensing basis of some older operating plants. ISTOG also believes the proposed rule and the intent of the SRP 3.9.6 application seems to be replacing some ASME OM Code terminology with "safety-related".

While the SRP does include the "certain" and the "safe shutdown" wording from Subsection ISTA-1100 Scope, the SRP Acceptance Criteria requirements expands the scope to include all ASME Code Class 1, 2, or 3 components or components thought to be safety related. The SRP is expanding the IST Scope even beyond components used to take the plant from the safe shutdown condition to a cold shutdown condition.

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Owners that have a healthy IST Program are plants that have the following documentation:

- A program document that discusses what is tested and what is not tested and why or why not
- Provides the safe shutdown condition for their plant
- Have a well-defined Active List (e.g., either in the UFSAR or in a controlled document) for their pumps and valves
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- Have an adequately defined test program for components that are excluded (e.g., skid mounted) or are not included in the IST Program (e.g., spent fuel).
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- Use other site programs such as the Maintenance Rule including the associated preventative maintenance activities, Corrective Action, Operating Experience and Technical Specification Programs to augment the IST Program requirements.

If ISTOG has misinterpreted the proposed rulemaking by inappropriately concluding that the proposed rulemaking is mandating an significant expansion to the IST Program Scope, then a simple inclusion of the following 10CFR50.55a (f) wording: "No expansion of IST Program scope is intended by this clarification." in the Paragraph 50.55a (f)(4) section would help clarify/resolve this matter for ISTOG.

Attachment 3

Supplemental Indications

Excerpts from some key documents are as shown below.

NRC-2011-0088] RIN 3150-A197 Incorporation by Reference of American Society of Mechanical Engineers Codes and Code Cases, September 18, 2015.

Valve Position Indication

The NRC proposes to add a new paragraph 50.55a(b)(3)(xi), containing a new condition that would specify that when implementing ASME OM Code, Subsection ISTC-3700, "Position Verification Testing", licensees shall supplement the ASME OM Code provisions as necessary to verify that valve operation is accurately indicated. Subsection ISTC-3700 of the ASME OM Code requires that valves with remote position indicators shall be observed locally at least once every 2 years to verify the valve operation is accurately indicated. Subsection ISTC-3700 states that where practical, this local observation should be supplemented by other indications such as the use of flow meters or other suitable instrumentation to verify obturator position. Subsection ISTC-3700 also states that where local observation is not possible, other indications shall be used for verification of valve operation. Nuclear power plant operating experience has revealed that reliance on indicating lights and stem travel are not sufficient to satisfy the requirement in ISTC-3700 to verify that valve operation is accurately indicated. Appendix A, General Design Criteria for Nuclear Power Plants, to 10CFR Part 50 requires that where generally recognized codes and standards are used; they shall be identified and evaluated to determine their applicability, adequacy, and sufficiency, and shall be supplemented or modified as necessary to assure a quality product in keeping with the required safety function. The new condition specifies that when implementing ASME OM Code, Subsection ISTC-3700, licensees shall develop and implement a method to verify that valve operation is accurately indicated by supplementing valve position lights with other indications, such as flow meters or other suitable instrumentation, to provide assurance of proper obturator position. This is not a new requirement but a clarification of the intent of the existing ASME OM Code. The ASME OM Code specifies obturator movement verification in order to detect certain internal valve failure modes consistent with the definition of "exercising" found in ISTA-2000 (i.e., demonstration that the moving parts of a component function). Verification of the ability of an obturator to change or maintain position is an essential element of valve operational readiness determination which is a fundamental aspect of the ASME OM Code. The NRC's position is further elaborated in NUREG-1482, Revision 2, paragraph 4.2.7.

50.55a (b)(3)(xi) OM Condition: Valve Position Indication. When implementing ASME OM Code, Subsection ISTCV-3700, "Positon Verification Testing", licensees shall develop and implement a method to verify that valve operation is accurately indicated by supplementing valve position indicating lights with other indications, such as flow meters or other suitable instrumentation, to provide assurance of proper obturator position.

ISTOG Comments

Supplemental Indications

The NRC is providing additional requirements based on the intent of the ASME OM Code to address apparent aging issues associated with valves that have been inservice for an extended time. There are other programs and techniques better suited to address these aging concerns than to rely on the inservice testing programs.

The ASME OM Code is the recognized authority for stating the intent of the ASME OM Code. If an ASME OM Code inquiry is judged to be an intent inquiry, then the ASME OM Code is required to be changed before the inquiry can be issued. The proposed rulemaking goes against the recognized authority of the OM Code interpretation and change process.

The NRC proposed rulemaking condition to ISTC-3700 differs from previous precedence that the NRC used for a similar "exercising" issue with Check Valves.

Exercising Precedence

ISTOG believes that the Browns Ferry's event that started this review involves exercising as the main issue, and not valve position indication.

The original ASME OM Code requirements for check valve testing did not require bi-directional testing before exercising credit was obtained even though this definition of exercising has remained the same over the years. This bi-directional testing was required even if one of the directions was considered to be not a safety function (e.g., the valve only had to open to perform its intended function). The incorporation of the needed ISTC changes to require bidirectional testing was substantial. It was realized as part of that change that there were significant changes to plant program plans, plant procedures, and outage activity scheduling and test intervals (credit only taken when both directions were achieved resulting in many interval (e.g., quarterly to cold shutdown, or quarterly to refueling outage) changes. Also, techniques to verify the other method had to be developed including the use of specialty test equipment such as radiography, non-intrusive testing techniques, leakage rate testing, differential pressure testing. In some cases the use of vendors was required by some Owners to meet the new requirements. Generally, plants had to focus on about 30 to 40% of their check valve population as normal plant operation or processes did not provide a means to verify and demonstrate the bi-directional feature. Even for the 60 to 70% of the check valve population where the normal plant processes did provide the bi-directional demonstrations, procedures had to be revised to credit these new ASME OM Code requirements. The ASME Code recognized the need to demonstrate the safety function; however, they also realized that the prescriptive need to validate this feature every 2 years was excessive so they provided an option through the use of Appendix II, Check Valve Condition Monitoring (CVCM) Program. Appendix II provided a methodology to extend the testing interval from the prescriptive 2 years based on performance and the application of the CVCM requirements.

The NRC recognized that these bi-directional check valve testing requirements were new requirements not required by the earlier ASME Code versions, and that the impact on Owners

to incorporate these new requirements was substantial. Thus, the changes were not mandated for immediate implementation but as part of the next 10 Year Update Process.

To correct the ISTC-3520 Exercising requirements for Category A and Category B Valves would require the addition of new requirements just like that done for Check Valve in ISTC-3522 (a).

Extensive procedure and process changes to account for the normal plant process demonstrations of bi-directional testing, or to add in the specialty testing requirements will be required. Then the new procedures have to properly coordinated in the on line or outage schedules. Past efforts also found that the associated post maintenance testing requirements associated with the new testing requirements also impacted when maintenance could be performed due to the new surveillance activity schedule limitations.

ISTOG believes that the current wording of the proposed rule would require implementation of these requirements within 30 days of the final publication. This is not enough time to incorporate all of the required changes and to implement the changes in both the online and outage schedules.

Harsh Service vs Aging Considerations

ISTOG agrees that the performance of an inservice test needs to demonstrate that the component has not failed at the time of the test.

The use of ISTC-3700 to verify open or close capability does not provide any trending parameters – it becomes a "go/no-go" activity. Should the industry be satisfied with adding requirements (in either ISTC-3520 or in ISTC-3700) to identify if aging issues *have not already caused a failure* as opposed to properly addressing the aging contributors and taking action before the failure occurs is not warranted? Shouldn't the industry used other programs such as Maintenance Rule, Corrective Actions, Operating Experience, and the Preventative Maintenance that are better suited *to prevent, detect and if necessary correct these aging mechanisms*?

As the ASME Committee identified in their comments to the NRC, the MOV Sub Group did an extensive study on MOV Failure data over the last 30 years. This study concluded the disc/stem separation events are rare and occur approximately only once per year throughout the industry. Of these failures, 80-90% of them were identified at or near the time of failure under normal plant processes and procedures. ISTOG agrees that imposing this IST-3700 "shall" requirement on MOVs does not seem justifiable.

ISTOG started a Supplemental Indications Operating Experience Task Group at our December 2015 Annual Meeting. While the Task Group is just underway, what is insightful is a review of their collected operating experience "Age of the component at failure". From 1985, 48 events of disc to stem separation were identified, involving MOVs, AOVs, and manual valves. This study did not include the recent Main Steam Isolation Valve failures. Inline solenoid valves also did not appear in the initial sorting.

<u>Number of Valves</u> <u>Age of Service</u>

4	< 1 day
2	< 5 years
3	<10 years
7	<15 years
6	<20 years
4	< 25 years
5	< 30 years
4	< 35 years

The point that ISTOG wants to make is that while these events can happen, the service life is in years based on the system conditions, such as harsh environments, on manufacturer's design provisions, or with site maintenance practices. Thus the detection or prevention of an aging condition issue is better addressed by the application of other site programs such as the Maintenance Rule (preventative maintenance activities, and performance criteria), the Corrective Action program using operating experience (extent of condition, or investigative replacement and analysis), or the component program (operating experience reviews, disassembly and inspection, vendor bulletins, etc.).

Prevention, Detection, and Correction

Testing determines that the component has not failed. The use of system parameters would not provide early warning of impending failure. From the age in service insight, the ISTOG Task Group found that a significant expenditure of resources would have to be performed to verify the component has not yet failed (e.g., doing a two year test to track a 20 year aging failure). Although the additional testing does determine the component has not failed, this additional effort does not improve the future performance capability of the component and, thus, is not the best or efficient means of addressing the original issue. Doing more targeted activities on a less frequent bases, such as a disassembly and inspect on vulnerable valves on a group bases over a multi-year time frame would provide the direct feedback and increase our assurance of the future performance of these components.

The prevention efforts should focus on the vulnerable valves based on vendor or operating experience, and a review or maintenance records to see if corrective action has already been done.

The detection efforts should focus on determining if there is a problem at the site by using targeted preventative maintenance activities.

Correction activities should follow the detection activities or be based on a failure, which the site corrective action and maintenance rule programs would require.

Conclusion (Supplemental Indications)

ISTOG disagrees with using ISTC-3700 as the vehicle to reconcile the obturator/stem separation issue.

ISTOG disagrees with proposed rulemaking and the rulemaking statement that "*changing the "should" to a "shall" in ISTC 3700 is not a new requirement but a clarification of the intent of the existing ASME OM Code*". The proposed rulemaking goes against the recognized authority of the OM Code interpretation and change processes. See the ASME OM Interpretation 12-01 (included below).

ASME OM INTERPRETATIONS

Interpretation: 12-01

Subject: ISTC-4.1 (ISTC-3700) and ISTC-4.2.3 (ISTC-3530), Obtrurator Position

Date Issued: June 7, 2011

File: OMI 11-913

Question (1): If it is practicable, is it a requirement of ISTC-4.1 (ISTC-3700) that local observation of valve operation be supplemented by other indications to verify obturator position?

Reply (1): No.

Question (2): If remote indicating lights provide confirmation of changes in obturator position, is it a requirement of ISTC-4.2.3 (ISTC-3530) to also observe other evidence, such as changes in system pressure, flow rate, level, or temperature, that reflects change of obturator position?

Reply (2): No.

ISTOG agrees that the ASME OM Code needs be revised to detect that the obturator has not been separated from the stem, and that the ASME OM Code consensus process needs to be used to clarify and revise the ASME OM Code requirements.

Many existing NRC endorsed programs already recognize longer performance based intervals to assess operational readiness. Changing to a prescriptive only approach to address this supplemental indication issue seems to indicate that the NRC does not support these other performance based programs such as the Appendix J Option B which can extend leakage rate testing of some containment isolation valves out to 72 months. These programs are self-correcting in that if a failure is detected, the interval is reduced to perform more frequent testing until the performance is re-established. Once component performance has been satisfactorily demonstrated the extended interval can once again be used.

ISTOG recommends that ASME OM Code Committee should focus on changes to the ISTC-3520 Exercising section for the prescriptive requirements and have the MOV and AOV Subgroups identify the performance based techniques that can be more efficiently used to detect obturator/stem failures. The Subgroups can identify those failures that have occurred and to optimize the associated activities needed to demonstrate component function using

appropriate prevention, detection and correction measures. Using the targeted resources in an efficient manner to identify and prevent the adverse conditions is better than the brute force go/no-go method (imposed on a two year frequency) being proposed.

ISTOG will assist in making these changes.

ISTOG is notifying the NRC that the publication of the proposed rulemaking "as is" would place all of the Owner Inservice Testing Programs in immediate noncompliance that is not readily resolved within the 30 day timeframe. Using a level of effort of in-house staff, it is estimated that it would take upwards of 12 months per unit to incorporate these changes, with an additional 6 to 12 months to validate the added testing activities (many of the test activities will be performed during a refueling outage). It is expected that plants will also require relief from this testing. This multi-person group would include procedure writers, operations, engineering, work management, outage planning, licensing and schedulers to "credit" those valves that can be bi-directionally tested, and to then develop activities for those valves that require new means for one or both directions.

ISTA-1100 of the ASME OM Code states that "Section IST establishes the requirements for preservice and inservice testing and examination of certain components to assess their operational readiness....." IST requirements do not verify operability but provide a measure of reasonable assurance of the ability of the component to perform its intended function. It appears as though the proposed rulemaking approach is using a provision of the code for another purpose without recognizing other more efficient and targeted techniques.

Normal plant processes may provide some means of verifying that the obturator is attached to the valve stem for a portion of the population of power operated valves. Using these processes as a new part of the IST program requirement to create a new program element extends the purpose of IST beyond what was intended. The new feature, especially when this new program feature has to be extended to the valves that are not currently subject to this verification process, is a burden to plants.

This magnitude of a supplemental indications change as outlined in the proposed rulemaking should be coordinated with the plant's 10 Year Program Update as opposed to implementation within 30 days of the publication of the final rule.