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OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

November 2, 2001

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

Attention: Rulemaking and Adjudications Staff

Subject: Comments on NRC Proposed Changes to 10CFR 50.55a, Industry Codes and Standards (Fed. Register: August 3, 2001 (Vol. 66 No. 150)

The enclosed comments are hereby submitted on the proposed rule changes stated in the above subject on behalf of the ASME Board on Nuclear Codes and Standards(BNCS) and the committees reporting to the Board. This review is not to be construed as a position or opinion on the proposed rule changes by ASME; rather, the comments are submitted as a constructive public service, and represent the opinion of the Chairman on behalf of BNCS.

Sincerely,

John H Ferguson

John H. Ferguson
VP-Nuclear Codes and Standards

Enc.

Cc: BNCS Members

Template = SECY-067

SECY-02

ASME BOARD ON NUCLEAR CODES AND STANDARDS
COMMENTS ON PROPOSED RULEMAKING: 10CFR 50.55a
[Federal Register: August 3, 2001 Volume 66 Number 150]

2.2 Section XI

1. **2.2.1.4 Bolting Acceptance Standard [10 CFR 50.55a(b)(2)(ix)(H)]**

   The addition of IWC-3513 as new acceptance criteria is inappropriate for the visual examinations that are being required under Subsection IWE. The acceptance criteria in IWC-3513 are for indications found during volumetric or surface examinations not visual examinations. The proposed modification should be deleted from the rule.

2. **2.2.2 Examination of Containment Bolted Connections [10 CFR 50.55a(b)(2)(ix)(I)]**

   The basis for the modification as discussed in 2.2.2 is incorrect and incomplete and does not justify the imposed modification. The basis does not note that the Code requirements prior to the 1998 Edition which imposed VT-1 examinations of 100 percent of bolting was only required once per ten year inspection interval and could be performed on assembled joints, i.e., did not require disassembly of the joint. The basis notes that the 1998 Edition and subsequent addenda "relax" the earlier requirements and require 100 percent examination of bolted surfaces during each inspection "interval". The 1998 Edition requires 100 percent examination of bolted surfaces during each 40-month inspection period, i.e., three times more frequent than required by the Code requirements prior to the 1998 Edition. Although the torque testing of bolts has been deleted, the more frequent examination of bolted connections is more stringent and would identify evidence of degradation much sooner than a torque test once every 10 years. Therefore, it is not appropriate to categorize the change as a relaxation of the previous requirements! The basis concludes that the 1998 Edition and later addenda will not identify flaws or degradation in inaccessible areas. However, the concern over inaccessible areas has already been addressed by 10 CFR 50.55a(b)(2)(ix)(A) included in the 1999 Final Rule and does not warrant additional modifications. The basis also concludes that the acceptance criteria for general visual examinations does not provide sufficient guidance for the acceptance of flaws in bolted connections. However, the general visual examination assesses the general condition of bolted connections and requires a follow-up detailed visual examination to determine the magnitude and extent of deterioration and distress [IWE-2310(b) and (c)(2)]. Therefore, the acceptance criteria of IWE-2310(e) logically applies as acceptance criteria for the general visual examination, and no additional modification is needed.

   The following comments specifically address the four modifications proposed in 50.55a(b)(2)(ix)(I)(1) through (4).

   There is no need for modification (I)(1). The required examination by the 1998 Edition and later addenda is to examine pressure-retaining bolted connections, including bolts, studs, nuts, bushings, washers, and threads in base material and flange ligaments between fastener holes. It is obvious that if the connection were disassembled, all portions of the connection would be examined. However, if a connection is disassembled, maintenance personnel will also be assessing the adequacy of the connection. Inspection of the quality of bolting and threads is a typical maintenance activity that applies to all pressure boundary bolting, not just containment bolting. As noted in the comment on (I)(4) below, there is no need to address maintenance practices in the Proposed Rule.

There is no need for modification (I)(2). This is already a Code requirement, as contained in IWE-2310(c)(2).

There is no need for modification (I)(3). In accordance with IWE-2310(c)(2), IWE-2310(e), IWE-3510.3 and IWE-3122 in the 1998 Edition and later addenda, if the detailed visual examination on the damaged assembled connection determines that the bolting is indeterminate or unacceptable, then the bolted connection, or the portion of the connection exhibiting the damage, would have to be disassembled. Damaged bolted connections can only be accepted by repair/replacement activity or by engineering evaluation.

There is no need for modification (I)(4). Inspection of the quality of bolting is a typical maintenance activity that applies to all pressure boundary bolting, not just containment bolting. There is no need to spell out this maintenance activity. The Code is sufficient without this modification.

3. **2.2.3 Acceptance Standard for Surfaces Requiring Augmented Ultrasonic Examinations [10 CFR 50.55a(b)(2)(ix)(J)]**

The proposed modification is in conflict with the currently endorsed provisions of IWE-3122.3 in the 1996 Addenda. The 1995 Addenda revision along with the 1998 Edition and later addenda are acceptable for the following reasons. The nominal thickness of a concrete containment liner is based largely on constructability and on the thickness needed for the liner to act as a form during concrete pouring. It has little to do with the thickness needed during operation. The liner does not contribute to the structural integrity of the containment. Stresses in the liner are self-relieving by localized yielding and do not affect the ability of the liner to maintain a leak tight barrier. Therefore, degradation of 10% of the nominal thickness is likely insignificant to safety. Table IWE-2500-1, Category E-C requires UT examinations for augmented examination areas. Degradation would be evaluated in accordance with IWE-3122.3. IWE-3122.3 allows degradation that satisfies the requirements of the Design Specification but does require re-examination in the next period to monitor the degradation. These provisions assure acceptable functioning of the liner plate. Therefore, the proposed modification is inappropriate.

4. **2.2.4 Containment Penetration Piping [10 CFR 50.55a(b)(2)(xii)(A)]**

The proposed limitation has nothing to do with Licensee/Owner commitments associated with High Energy Line Break (HELB) considerations. The Code is stating in the exemptions in IWC-1223 that if piping welds are inaccessible by being encased in concrete, buried underground, or inside of a penetration then they are exempt from Class 2 volumetric and surface examination requirements. There is nothing in Section XI that deals with Owner HELB FSAR commitments or Branch Technical Positions under SRP 3.6.2. The reasoning for not exempting welds in a penetration located on high-energy fluid system piping is recognized under a HELB program, but not under Section XI. Use of NRC internal guidance that is not a commitment for all Owners is an inappropriate action to be included in the Proposed Rule without a backfit analysis. Therefore, the proposed limitation should be deleted.

5. **2.2.4 Containment Penetration Piping [10 CFR 50.55a(b)(2)(xii)(B)]**

The basis for the Code exemption was incorporation of Code Case N-522. The objective of Code Case N-522 was to reduce redundant testing. The basis for N-522 was that the subject piping is piping that

is classified as Class 2 piping only for the purposes of containment penetration and the piping on either side of the penetration boundary valves is non-safety. Thus, the piping's only safety-related function is that of containment integrity and the rules of 10 CFR 50 Appendix J should be used in lieu of Section XI for testing these penetrations. The 1997 Addenda and subsequent editions and addenda make the subject piping fully exempt per IWA 5110 (c). It is believed that this full exemption is justified to reduce redundancy of testing. Appendix J testing will identify leakage whether it is from the isolation valves or through-wall leakage. If the leakage rate is above specified limits, corrective action is required under Appendix J to correct the leakage. Any through-wall leakage would be identified by process of elimination to find the source of the leakage. Therefore, there is no need for Section XI testing of these penetrations and the proposed limitation should be deleted.

6. **2.2.5 Certification of Nondestructive Examination (NDE) Personnel [10 CFR 50.55a(b)(2)(xviii)(A)]**

This proposed modification should be deleted. The basis for the Code action to revise the re-certification interval from 3 years to 5 years and to approve implementing Code Case N-574 included the following points justifying the change:

> Section XI is one of the very few organizations in the US and the world that requires re-certification by re-examination every three years. Other countries recertify personnel every five to ten years. In response to ISO-9712, ASNT has published the ASNT Central Certification Program (ACCP) to provide a central certification program that will meet international requirements. ACCP, which was approved for use in Section XI in the 1999 Addenda as an alternative to CP-189, requires five-year re-certification by examination. ISO-9712 requires ten-year re-certification by examination and five year re-certification by satisfactory performance. One of the most important aspects of satisfactory performance is annual practice for the detection and sizing of flaws. There is a good correlation between practice and successful completion of the Appendix VIII performance demonstrations. An annual practice requirement has been incorporated into Section XI Appendix VII (VII-4240). This annual practice requirement has a much larger impact on satisfactory NDE performance than elapsed time between re-certification examinations.

These points are still valid today and provide justification for removing the proposed modification.

The Proposed Rule states that proficiency of examination personnel decreases over time. Other than for the ultrasonic method, industry does not have any data that substantiates this claim. For UT, the annual training requirements of Appendix VII, VII-4240 (as noted above), assure that proficiency is maintained.

7. **2.2.5 Certification of Nondestructive Examination (NDE) Personnel [10 CFR 50.55a(b)(2)(xviii)(B)]**

To require initial qualification and re-certification exams almost entirely defeats the purpose of the alternative requirements approved in IWA-2316 and Code Case N-546. The alternative requirements were put in place so that VT-2 examination personnel would not have to be qualified and certified in accordance with ANSI/ASNT CP-189, which would require initial certification and re-certification exams. However, unlike traditional NDE methods, VT-2 is not addressed by ANSI/ASNT CP-189 and to qualify and certify VT-2 personnel in a manner commensurate with the requirements of CP-189 is unnecessary. The Abstract of CP-189 states, "This standard applies to personnel whose specific tasks or jobs require appropriate knowledge of the technical principles underlying nondestructive testing

(NDT) methods for which they have responsibilities within the scope of their employment." Unlike the nondestructive testing methods addressed within CP-189, VT-2 examination does not require any special knowledge of technical principals underlying its performance. It is only the straightforward examination for leakage. No special skills or technical training are required in order to observe water dripping from a component or bubbles forming on a joint wetted with leak detection solution. As such, VT-2 examinations should not be considered nondestructive examinations requiring the attending qualification and certification burdens. The Code Case and its incorporation into IWA-2316 allows those personnel most familiar with the walkdown of plant systems, such as licensed and non-licensed operators, local leak rate personnel, system engineers, and inspection and examination personnel to perform VT-2 examinations without formal qualification and certification. The experience, training, and vision test requirements within IWA-2316 ensure that the personnel performing VT-2 examinations are qualified while removing barriers that have previously prevented many experienced plant personnel from performing leakage examination walkdowns. Therefore, this proposed modification should be deleted.

8. **2.2.5 Certification of Nondestructive Examination (NDE) Personnel [10 CFR 50.55a(b)(2)(xviii)(C)]**

For reasons similar to those provided in comment 7 above on the proposed modification in 10 CFR 50.55a(b)(2)(xviii)(B), the proposed modification in 10 CFR 50.55a(b)(2)(xviii)(C) should be deleted.

9. **2.2.6 Substitution of Alternative Methods [10 CFR 50.55a(b)(2)(xix)]**

IWA-2240 and IWA-4520(c) only allow alternative methods or techniques. These paragraphs do not change the examination coverage, examination volume, or flaw acceptance criteria specified in the construction code. Although qualification requirements would change, the qualification requirements would be required by Section XI to match the requirements applicable to the method being used. The NRC's proposed limitation appears to be based on a misunderstanding of the requirements of IWA-2240 and IWA-4520(c). With this correction regarding the clear requirements of these paragraphs, it is requested that the proposed limitation be deleted.

10. **2.2.7 System Leakage Tests [10 CFR 50.55a(b)(2)(xx)]**

The proposed limitation on the use of the 1997 addenda and later editions and addenda is contrary to the approved regulations included in the 1999 Final Rule. No limitation or modification was imposed on the use of IWA-5213(a) in the 1995 Addenda or 1996 Addenda approved in the 1999 Final Rule. This is inconsistent rulemaking. Since IWA-5213(a) was acceptable for the 1995 and 1996 Addenda, it should be acceptable for use with later editions and addenda also.

Many plants currently use Code Case N-498-1, which allows the substitution of system leakage tests (conducted at nominal operating pressure) in lieu of the elevated pressure tests (i.e., hydrostatic testing) at the end of each inspection interval. In revision 1 of the Code Case, hold times of 10 minutes for non-insulated systems and 4 hours for insulated systems are specified for the system leakage test, whereas, in N-498-2 no hold times are specified. N-498-1 is endorsed in Regulatory Guide 1.147 without any provisions. Under the 1989 Edition of Section XI, many plant's current Code of record, the routine pressure tests conducted during the inspection interval are system leakage tests for the Class 1 boundary, system functional tests for Class 2 or 3 systems that are not normally in operation, and system inservice tests for Class 2 or 3 systems that are normally in operation. The specified hold times for these tests are none for the system leakage tests, 10 minutes for the system functional tests, and

basically 4 hours for the system inservice tests. Thus, under current pressure testing programs, which are all based on Code Editions or Code Cases endorsed by the NRC and except for the end of inspection interval pressure tests, no hold times are required for Class 1 system pressure tests and only 10 minute hold times are required for Class 2 and 3 systems that are not normally in operation. Under the proposed limitation, hold times of 10 minutes for non-insulated systems and 4 hours for insulated systems would have to be used for these systems. In the case of the Class 1 systems, this would mean a 4-hour extension of the RPV Leak Test that is typically a critical path activity performed at the end of each refueling outage. In the NRC's regulatory analysis for the proposed amendment, the NRC failed to include the substantial costs of this critical path time in their estimation and evaluation of the values and impacts. In the case of the Class 2 or 3 systems that are not normally in operation, this would require 4-hour extensions of their maintenance/test-run windows. The first case would add considerable cost to a refueling outage and the second case would increase system-out-of-service times and may be counterproductive to Maintenance Rule guidelines. With the possible exception of the recent leakage identified in PWR head penetrations and a PWR hot leg nozzle, the previous Code requirements have proven themselves adequate for detecting safety-significant leakage. Even these noted events on some PWRs would not be helped by the proposed limitation, as they were due more to inadequate access than to inadequate hold times. In summary, the proposed limitations will provide for a significant increase in burden with no proven commensurate increase in safety. Therefore, the proposed limitations should be deleted.

11. 2.2.8 Table IWB-2500-1 Examination Requirements [10 CFR 50.55a(b)(2)(xxi)(A)]

The ASME maintains the position that the action taken by the approval of Code Case N-619 and the noted revisions to Table IWB-2500-1, Examination Category B-D in the 1999 Addenda is a safe alternative to the requirements existing prior to the 1999 Addenda. This change in requirements does not impact the safety of the public or those personnel who work at the commercial nuclear power plants. The original examination requirements were included in ASME Section XI as a result of a cracking event in a non-nuclear vessel that occurred near the time when the ASME Section XI requirements were being established in the early 1970's. At that time there was only limited experience with commercial nuclear power plants. Caution required that the inner radius regions be monitored. Today, after 25 years of operation (over 1000 reactor years), the absence of cracking in the inner radius regions of the pressurizers and steam generators, supports the elimination of these examination requirements. If such experience had existed in the early 1970's, the inner radius regions would not have required examination. It is true that ASME, in attempts to gain NRC approval of these revised requirements, agreed to consider reinstating some alternate examination requirements. However, ASME does not agree that a need exists for any alternate examination requirements and requests that the staff re-evaluate the information provided to date and approve the examination position presented in the 1999 Addenda as part of this rulemaking. A summary of that information follows (most of this information was provided in a basis paper included with the Code action to revise Table IWB-2500-1 and Code Case N-619):

a) There are extensive examinations of the inner radius regions as part of the manufacturing process, including multiple surface and volumetric examinations to satisfy the requirements of both ASME Sections III and XI. This precludes significant flaws being placed into initial service.

b) Fracture mechanics work demonstrated that a very large flaw would be required before the inner radius area would fail. This flaw is so large it would have a through wall extent easily detectable before reaching critical size.

c) Deterministic fatigue crack growth evaluations show a very small amount of growth during the operating life of the inner radius region.

d) In over 25 years (over 1000 years of reactor operation), no cracking incidents of any kind in these nozzles radius regions have been found.
e) Probability of failure assessments indicates that the probability of failure is very small.
f) Early NDE inspection techniques, especially prior to NRGREG 0619, may not have been as proficient in the detection of flaws as desired. However, because the critical flaw size is so large, it is felt that even these techniques could have detected a flaw before it became critical. Recent demonstrations on PWR pressurizer nozzles have shown good coverage and detectability of some techniques being used today. To our knowledge, examinations performed with these improved techniques have failed to detect any significant cracking or a degradation mechanism.
g) ASME concluded 1) that it is highly unlikely that the inner radius regions of the pressurizers and steam generators will fail under any anticipate service conditions, and 2) that cracking and degradation is not concern for this region of the vessel. Because inservice inspections can hardly benefit plant safety for something that is very unlikely to happen, ASME deleted the volumetric examinations of the inner radius region.

Based on this information, the proposed limitation should be deleted.

12. **2.2.8 Table IWB-2500-1 Examination Requirements [10 CFR 50.55a(b)(2)(xxi)(B)]**

Item B7.80 in the 1995 Edition and earlier editions and addenda required VT-1 examination of CRD housing bolting when disassembled. This was eliminated in the 1995 Addenda as part of the same Code action that approved Code Case N-547. This Code action justified elimination of the CRD bolting examinations, as there was no history of CRD bolting failures. Also, since CRD mechanisms are typically contaminated and in high radiation areas, elimination of the bolting exams would reduce radiation exposure. The ASME committee responsible for initiating this change conducted a study of industry experience and radiation exposure. The paper documenting this study was included as the ASME basis for eliminating the visual examination. This basis was satisfactory to the NRC personnel on the Code committees and should be reviewed by the NRC personnel responsible for the proposed rulemaking. The proposed limitation would have licensees go back to an Edition where Item B7.80 still existed. Part of the basis for the proposed limitation states that the examination is appropriate prior to reinstallation because bending and galling of threads, and other damage to bolting, can occur when performing maintenance activities that require removal and reinstallation of bolting. Skill of the craft and maintenance practices would preclude re-installation of damaged bolting. Furthermore, Item B7.80 never required examination of the bolting prior to installation. Note 1 of Table IWB-2500-1, Examination Category B-G-2, states that bolting may be examined in place under tension, when the connection is disassembled, or when the bolting is removed. As used under the Extent and Frequency of Examination Column for Item B7.80, "when removed" simply establishes the scope of the CRD bolting exams. In order to avoid contamination and radiation exposure, VT-1 examination personnel typically examine the bolting when it is removed and remotely located from the CRD mechanism. It is still the skill of the craft and good maintenance practices that ensure that the bolting is not damaged upon installation. Thus, not only is the proposed limitation considered unwarranted, it also fails to accomplish its stated purpose. Therefore, the proposed limitation should be deleted.

13. **2.2.8 Table IWB-2500-1 Examination Requirements [10 CFR 50.55a(b)(2)(xxi)(C)]**

The 1997 Addenda incorporated Code Case N-323-1, which would allow single-side surface examination of reactor pressure vessel (RPV) support skirt attachment welds. Access to the outside

surface of RPV skirt welds is typically not that difficult, but access to the inside surface involves entering a confined space under the RPV bottom head that is also a high radiation area. Additionally, the inside surface geometry is such that surface exam preparation is difficult. For these reasons and because the service history for RPV skirt welds is unblemished, Code Case N-323-1 was approved and incorporated into the Code. The proposed limitation would have the licensee go back to an Edition where either surface examination from both sides or a volumetric examination would be performed. It is noteworthy that ultrasonic calibration blocks were typically not supplied for RPV skirt welds and the ultrasonic performance demonstration requirements of Appendix VIII do not address RPV support attachment welds. Thus, there is no established demonstration program like PDI in place. A licensee that would want to perform volumetric examination in lieu of dual-sided surface examinations would have to fabricate their own calibration blocks and sample specimens, develop their own procedures, and set up their own demonstration program. The basis for the proposed limitation states that single-side surface examination is not sufficient because it would not identify flaws that would be identified by a single-sided volumetric examination or a surface examination from both sides of the weld. It is true that a surface examination from only the outside surface would not detect flaws that originate from the inside surface, but the types of material involved are very flaw tolerant, with slow flaw propagation. Flaws originating on the inside surface would grow through-wall long before their length would threaten the structural integrity/function of the weld. RPV skirt welds are similar to BWR core shroud circumferential welds in that they are not pressure retaining and their load keeps them in compression. Safety analyses performed by the BWRVIP found that core shroud circumferential welds could have substantial cracking and still perform their function. Considering this comparison and the excellent service history of RPV skirt welds, the extra radiation exposure and burden necessary to examine the inside surface of the weld is not warranted.

The basis for the proposed limitation also states that provisions of Code Case N-323-1 do not provide a level of quality and safety equivalent to that provided in the 1995 Addenda. This is not appropriate criteria for the NRC to be using in evaluating Code changes. Evaluation of a change to the Code is similar to proposing an alternative to the Code as provided for in 10 CFR 50.55a(a)(3). It doesn't need to provide equivalent quality and safety as the current accepted Code, but should "provide an acceptable level of quality and safety", as stated in 10 CFR 50.55a(a)(3). The ASME consensus process assures that an acceptable level of quality and safety is provided.

Therefore, based on these comments, the proposed limitation should be deleted.

14. **2.2.9 Supplemental Annual Training Requirements for Ultrasonic Examiners [10 CFR 50.55a(B)(2)(xxii)]**

The proposed limitation would have the Licensee use requirements that the NRC determined were inadequate in the previous revision of 10 CFR 50.55a (reference September 22, 1999, 64 FR 51370, paragraph 2.4.1.1.1), with the primary reason being that the VII-4240 requirements at that time (1996 Addenda) did not include any examination of flawed specimens. Because the NRC determined these requirements to be inadequate, paragraph (b)(2)(xiv), which is not being modified or deleted by the current proposed rule, was added to 10 CFR 50.55a. It requires that personnel qualified for performing ultrasonic examinations in accordance with Appendix VIII shall receive 8 hours of annual hands-on training with specimens that contain cracks and that the training must be completed no earlier that 6 months prior to performing ultrasonic examinations at a Licensees facility. Many licensees have requested and been granted relief from the VII-4240 requirements in the 1996 Addenda and earlier editions and addenda on the basis of substituting the (b)(2)(xiv) requirements. In fact, Code Case N-583 and the subsequent revision of VII-4240 to which the NRC is now objecting, were written in

response to the NRC's previous concerns and, with the exception of frequency, to bring VII-4240 in line with (b)(2)(xiv). The basis for the currently proposed limitation states that N-583 (and thus the revised VII-4240) only provides training for techniques associated with data recording capabilities and does not provide for training using manual techniques. First of all, nowhere does N-583 or the revised VII-4240 address training for data recording. Secondly, N-583 and the revised VII-4240 do not preclude training using manual techniques. The real need, as previously expressed by the NRC and agreed upon by the Code Committee, is for ultrasonic examination personnel to get training/practice on examination of flawed specimens. It is not the ability to push a transducer that erodes with time, but rather it is the skill to be able to recognize and analyze flaw signals. The revised VII-4240 simply provides the option of practicing with flaw signals through live examination of flawed specimens or through analyzing prerecorded data from flawed specimens. Considering the above discussion, it is believed that the existing (b)(2)(xiv) should be deleted and there should be no limitations on the use of the revised VII-4240.

15. 2.2.10 Underwater Welding [10 CFR 50.55a(b)(2)(xxiii)]

The proposed modification in 10CFR50.55a(b)(2)(xxiii) would require that, when performing weld repairs to irradiated material, the "acceptability of the welding method must include demonstration on a mockup using a material with similar neutron fluence levels to verify that adequate crack prevention measures were used." While it would seem desirable to demonstrate the weldability of irradiated materials in a mockup of similar configuration and fluence, it is not feasible to do so. The lead-time required for fabricating and irradiating such a mock-up, together with the high cost and excessive time associated with the required hot-cell work, clearly make this not practicable. The suitability of underwater welding techniques on high neutron irradiated steel materials should be able to be determined by evaluation of industry and laboratory testing and application of appropriate welding controls. Therefore, the proposed modification should be deleted.

16. 10 CFR 50.55a(b)(2)(vi) in the current approved Regulations [No discussion in the Supplementary Information section of the proposed rulemaking]

10 CFR 50.55a(b)(2)(vi) should be revised to include references to the 1998 Edition through the 2000 Addenda. Both 10 CFR 50.55a(b)(2)(viii) and (ix) make references to Articles IWE and IWL in the 2000 Addenda. 10 CFR 50.55a(b)(2)(vi) has no proposed changes in the proposed rulemaking and should be included.

2.4 ASME OM Code

17. Comments regarding Paragraph (b)(3)(ii) and (b)(3)(iii)

The intent of Paragraph (b)(3)(ii) is to establish a program for periodic MOV design basis verification. Reference to the ASME Code section for stroke time testing of an MOV is redundant and confusing since it is already required to perform stroke time testing to meet ASME Code requirements. Paragraph (b)(3)(iii) allows the use of ASME Code Case OMN-1 to satisfy periodic MOV design basis verification. Code Case OMN-1 identifies on the title page that it replaces all of the requirements for ISTC MOV testing with the exception of leak testing. Paragraph (b)(3)(iii) also states that all provisions of ASME Code Case OMN-1 shall apply.

The current wording suggests that only ASME Code stroke time testing and design basis verification is

required for MOV testing and other provisions such as position indication testing and leak testing do not apply if a user chooses not to implement ASME Code Case OMN-1.

Given the current wording in Paragraph (b)(3)(ii), Paragraph (b)(3)(iii) is somewhat contradictory. In effect, Paragraph (b)(3)(iii) gives the licensee permission to use Code Case OMN-1 in lieu of stroke time testing referenced in Paragraph (b)(3)(ii). ASME Code Case OMN-1 states that it is to be used instead of the requirements in ISTC for testing an MOV except for leak testing. The current wording of the two paragraphs suggests that position indication testing must still be implemented when using ASME Code Case OMN-1, although it is contradictorily not required by ASME Code Case OMN-1 for which Paragraph (b)(3)(iii) states all provisions shall apply. Suggest changing the wording in Paragraph (b)(3)(ii) to "Licensees shall comply with the requirements of ASME OM ISTC Code for MOV testing and establish a program to ensure that motor-operated valves continue to be capable of performing their design basis safety functions."

18. **Comments regarding Paragraph (b)(3)(vi)**

Contained within the September 1995, ASME OM ISTC Subgroup minutes, is task V95-01. This was the addition of manual valves into the ASME OM Code. ASME addressed this issue because Code wording appears to require testing of manual valves, when in fact the ASME OM meeting minutes that are the basis of the Code requirements indicate that manual valves were never intended to be exercised.

The Code change to incorporate manual valve exercising includes a white paper that describes the basis of the five-year interval. Research of industry databases and corrective action history for manual valves was performed. The failure modes for a manual valve were also evaluated as evidenced in various meeting minutes. Under normal conditions, a manual valve does not fail after five years and due in part to an extremely low wear rate.

The precedent was set for up to 10 years in other places such as ASME OM Part 1 for safety and relief valves and 10 years for explosively actuated valves which are much more complicated devices and experience the same service conditions as manual valves. Where some confusion may exist on manual valves is with remove indication where the Code requires 2 years for observation of proper indication.

This item was voted upon and approved by the ASME OM Main Committee with no objection from the NRC. The NRC even noted this as an improvement in that a reduction of relief request submittals would result. It is outside of the spirit and intent of DSI-13 to place limitations on a consensus standard without at least communicating to the consensus body why the NRC has a concern. All relevant technical data that is being relied upon to limit the exercise interval to two years should be identified in the justification for modification. This data will allow the cognizant ASME Committee to revisit the appropriateness of the five-year interval.

The document referenced as the basis for the NRC's decision to limit the exercise interval to 2 years is Information Notice 86-61 (July 1986). This document was considered during the research phase for the Code change. However, this reference is over 15 years old and does not consider a significant amount of industry records, maintenance rule actions, or the corrective actions industry has undertaken to lower component failure rates.

The research performed by ASME on the failure modes of manual valves identified that harsh service conditions are overwhelmingly the leading cause of manual valve hardware failure. A footnote was added to remind the Code user to consider harsh service conditions and determine if more frequent

exercising could mitigate a failure mechanism. This guidance is adequate considering the quality assurance and maintenance rule obligations licensees are required to meet. The guidance provided to the user is more than is provided for other valve types with the exception of relief valves, which requires an evaluation for more frequent testing, but only after a failure occurs.

Other Issues

19. **3. Section-by Section Analysis of Substantive Changes**

The exceptions NRC has proposed could be understood if the technical areas being contested were new or were areas where evolving immature technology created a need for added conservatism. This is not the case. In almost all cases, the changes are a result of 30-plus years of plant operation and experience being reflected in updated requirements and standards. In other cases the changes reflect years of research into better ways to inspect components or evaluate the results of inspection results. The changes sometimes are a direct result of risk insights, which is the same criteria that NRC is using on an ever-increasing frequency. Regardless the reason, the Code revisions and Code Cases were developed through a consensus process that involves members representing a broad cross section of interested parties from the nuclear industry.

20. **3. Section-by Section Analysis of Substantive Changes**

A review of the rulemaking package leads to the conclusion that the process of NRC participating in a consensus standard development and the subsequent endorsement of that standard in 10CFR50 has broken down. NRC taking exception to several portions of the Code could be better understood if the NRC had been excluded from the process of developing and approving Code Cases or Code revisions. This is not the case. NRC is intimately involved in the Code development process at the Working Group, Subgroup, and Subcommittee levels of Section XI. NRC also has a member on the Main Committee of the Boiler and Pressure Vessel Code as well as two members on the Board on Nuclear Codes and Standards. There are multiple opportunities for the NRC to voice concerns, propose options and cast votes that would allow all members to consider the concerns NRC offers from both a technical and a regulatory nature. This has worked well in the past and often NRC's participation has swayed a technical committee to impose a different requirement. However, the latest rulemaking package does not reflect the results of such a process. This is a grave concern when the voting record on these issues is considered. Specifically, of all the items for which exceptions are noted, only one received a negative vote from the NRC member at the Main Committee level, which is the formal consensus committee for Section XI actions. This would indicate that for all other items the NRC's concerns, if there were any, were voiced by NRC's representatives and then satisfactorily resolved through the consensus standard process. Therefore, why are there so many exceptions noted in the proposed rule? Does the rulemaking process derive benefit from the agency's technical experts participating in the ASME consensus process?

21. **4. Withdrawal of a Proposed Rule To Eliminate 120 Month Update**

ASME supports the NRC decision to withdraw the proposed rule to delete the 120-month update. Periodic updates to later editions and addenda of Section XI are necessary to keep inservice inspection, repair/replacement activities, NDE, and evaluations provisions up to date with current technology, and are often of benefit to Owners in reduction of unnecessary burden and reduction of personnel exposure.

22. **8. Voluntary Consensus Standards**

The last paragraph states: "In accordance with the National Technology Transfer and Advancement Act of 1995 and Office of Management and Budget (OMB) Circular A-119, the NRC is requesting public comment regarding whether other national or international consensus standards could be endorsed as an alternative to the ASME BPV Code and the ASME OM Code." Under the current U.S. voluntary consensus standards system, these are the only American National Standards that address construction, inservice testing and inservice inspection of nuclear power plants. Regarding the pressure equipment sector in the international arena, U.S. based organizations have been unsuccessful in obtaining consensus positions that are supportive of the U.S. industry. We are interested to know the reason for considering adoption of alternatives to ASME Codes currently referenced in the Code of Federal Regulations.

23. **13. Backfit Analysis**

The NRC is ignoring the ASME national consensus process by unilaterally imposing limitations and modifications not considered necessary by the consensus process. When imposing limitations and modifications beyond the provisions of the ASME consensus process, the NRC should perform a backfit analysis.