RulemakingComments Resource

From: Allyson B. Byk <BykA@asme.org>
Sent: Tuesday, May 17, 2016 4:39 PM
To: RulemakingComments Resource
Subject: [External_Sender] ASME Comments on Draft Regulatory Guides and Proposed Rule; Docket ID NRC–2012–0059
Attachments: ASME Letter to NRC on 10CFR5055a and Comments on R G Rule (002).pdf

Importance: High

Hi,

Please find attached ASME Comments on Draft Regulatory Guides DG-1295, DG -1296, DG-1297, DG-1298, and the Proposed Rule Incorporating the Final Revisions of Regulatory Guides 1.84, 1.147, and 1.192 into 10 CFR 50.55a, Docket ID NRC–2012–0059.

Thank you.

Allyson

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May 12, 2016

Secretary, U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
Attn: Rulemaking and Adjudications Staff

Rules, Announcements, and Directives Branch (RADB)
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: ASME Comments on Draft Regulatory Guides DG-1295, DG -1296, DG-1297, DG-1298, and the Proposed Rule Incorporating the Final Revisions of Regulatory Guides 1.84, 1.147, and 1.192 into 10 CFR 50.55a, Docket ID NRC–2012–0059

References:

1. Draft Regulatory Guide DG-1295, (Proposed Revision 37 of Regulatory Guide 1.84, dated March 2016), Design, Fabrication, and Materials Code Case Acceptability, ASME Section III, March 2016 (ADAMS Accession No. ML15027A003)
2. Draft Regulatory Guide DG-1296, (Proposed Revision 18 of Regulatory Guide 1.147, dated March 2016), Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1, March 2016 (ADAMS Accession No. ML15027A202)
3. Draft Regulatory Guide DG-1297, (Proposed Revision 2 to Regulatory Guide 1.192, dated March 2016), Operation and Maintenance [OM] Code Case Acceptability, ASME OM Code, March 2016 (ADAMS Accession No. ML15027A330)
4. Draft Regulatory Guide DG-1298, (Proposed Revision 5 of Regulatory Guide 1.193, dated March 2016), ASME Code Cases Not Approved For Use, March 2016, (ADAMS Accession No. ML15028A003)
5. Proposed Rule, Federal Register, Vol. 81, No. 41, pp. 10780-10798, Wednesday, March 2, 2016, 10 CFR 50, RIN 3150-AJ13 [NRC-2012-0059], Approval of American Society of Mechanical Engineers' Code Cases

Dear Sir or Madam:

ASME is pleased to have the opportunity to provide comments and suggestions on its Nuclear Code Cases listed in Draft Regulatory Guides DG-1295, DG-1296, DG-1297, and DG-1298, contained in References 1 through 4, and the Proposed Rule to incorporate by reference Regulatory Guides 1.84, 1.147, and 1.192 into 10 CFR 50.55a.

Specifically, ASME supports NRC's endorsement of its Nuclear Code Cases and the NRC's continued effort in this area to complete these updates and rulemakings on a regular basis. However, ASME believes that not all of the conditions placed on the use of some of these Code Cases, along with the unacceptability status of others, is completely warranted and should be reconsidered based on the information provided in this letter.

ASME's comments on draft regulatory guides DG-1296, DG-1298, and the proposed 10 CFR 50.55a rule are provided in Enclosures 1 through 3. ASME has no comments on DG-1295 or DG-1297.

If you have any questions, please contact me or direct them to Mr. Christian Sanna, ASME Director, Nuclear Codes and Standards by telephone at (212) 591-8513 or by e-mail (sannac@asme.org) and thank you for consideration of our comments.

Very Truly Yours,

Ralph Hill III, Chair
Board on Nuclear Codes and Standards
hillr@asme.org

Enclosures:
1. ASME Comments on Draft Regulatory Guide DG-1296
2. ASME Comments on Draft Regulatory Guide DG-1298
3. ASME Comments on Proposed 10 CFR 50.55a Rule

cc: Anthony Cinson, USNRC (Anthony.cinson@nrc.gov)
ASME Board on Nuclear Codes and Standards Members
ASME Standards Committee on Nuclear Inservice Inspection
ASME Standards Committee on Construction of Nuclear Facility Components
ASME Standards Committee on Operation and Maintenance of Nuclear Power Plants

Enclosure 1

ASME Comments on Draft Regulatory Guide DG-1296
(Proposed Revision 18 of Regulatory Guide 1.147, Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1)

1. DG-1296, Section B contains the following requirement:

   "A Code Case may be revised, for example, to incorporate user experience. The older or superseded version of the Code Case cannot be applied by the licensee or applicant 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 (in the case of an applicant, updates its application) or until the licensee's 120-month ISI/IST update interval expires, after which the continued use of the Code Case is prohibited unless NRC approval is granted under 10 CFR Part 50.55a(z). If a Code Case is incorporated by reference into 10 CFR Part 50.55a and later a revised version is issued by the ASME because experience has shown that the design analysis, construction method, examination method, or testing method is inadequate; the NRC will amend 10 CFR Part 50.55a and the relevant RG to remove the approval of the superseded Code Case. Applicants and licensees should not begin to implement such superseded Code Cases in advance of the rulemaking."

   ASME Comments:

   1. ASME believes that it is not clear whether the word "superseded" applies to those Code Cases that are superseded by ASME or those Code Cases that are listed as superseded in Table 5 of Regulatory Guide 1.147.

      ASME recommends revising the second sentence of this paragraph to clarify that "The older or superseded version of the Code Case, if listed in Table 5, cannot be applied by the licensee or applicant for the first time."

2. ASME has no comments on proposed changes to Regulatory Guide 1.147, Revision 18, Table 1.

3. ASME offers the following comments on proposed changes to Regulatory Guide 1.147, Revision 18, Table 2:

   3.1. <u>Code Case N-552-1 "Alternative Methods – Qualification for Nozzle Inside Radius Section From the Outside Surface"</u>:

   The proposed conditions are as follows:

   > To achieve consistency with the 10 CFR 50.55a rule change published September 22, 1999 (64 FR 51370), incorporating Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems," to Section XI, add the following to the specimen requirements:
   >
   > "At least 50 percent of the flaws in the demonstration test set must be cracks and the maximum misorientation must be demonstrated with cracks. Flaws in nozzles with bore diameters equal to or less than 4 inches may be notches."
   >
   > Add to detection criteria, "The number of false calls must not exceed three."

ASME Comments:

1. Note: The above conditions are identical to those imposed on Code Case N-552, Rev. 16, RG 1.147.

2. The proposed conditions were incorporated into the ASME Code, Section XI, 2005 Addenda when Code Case N-552 was incorporated into the code. However, these conditions have never been incorporated into the code case itself. ASME does not object to these conditions.

3.2. Code Case N-576-2 "Repair of Classes 1 and 2 SB-163, UNS N06600 Steam Generator Tubing":

The proposed conditions are as follows:

NOTES: Steam generator tube repair methods require prior NRC approval through the Technical Specifications. This Code Case does not address certain aspects of this repair, e.g., the qualification of the inspection and plugging criteria necessary for staff approval of the repair method. In addition, if the user plans to "reconcile," as described in Footnote 2, the reconciliation is to be performed in accordance with IWA-4200 in the 1995 Edition, 1996 Addenda of ASME Section XI.

(Note: this condition is identical to condition on the use of Code Case N-576-1, RG 1.147, Rev. 17)

ASME Comments:

1. Code Case N-576-2 was revised (ASME Record #10-1840) to revise Footnote 1 to reference the new table in the front of the Code Case Book and to update the paragraph reference to the 2010 Edition with the 2011 Addenda.

   Because the NRC has adopted the 2008 Addenda with no conditions on IWA-4200, ASME recommends that the proposed condition be revised to state "…is to be performed in accordance with IWA-4200 of the code of record for the current ISI Program."

3.3. Code Case N-638-6 "Similar and Dissimilar Metal Welding Using Ambient Temperature Machine GTAW Temper Bead Technique":

The proposed conditions are as follows:

(1) Demonstration for ultrasonic examination of the repaired volume is required using representative samples which contain construction type flaws.

(Note: the above conditions is identical to the condition on the use of Code Case N-638-4, RG 1.147, Rev. 17)

(2) Section 1(b)(1) for through-wall circumferential welds is unacceptable.

ASME Comments:

1. Condition 1 was incorporated into IWA-4673(a)(2) of the 2013 Edition when N-638-6 was incorporated into the Code. This condition has also been incorporated into N-638-8, which has been published in the 2015 Code Case Book.

2. Condition 2 was incorporated into IWA-4671(b)(1) of the 2013 Edition when N-638-6 was incorporated into the Code.

Because there were no conditions imposed on the use of IWA-4673(a)(2) or IWA-4671(b)(1) in the draft rule to incorporate by reference the 2013 Edition of the ASME Code, Section XI, ASME recommends that both of the proposed conditions be removed and Code Case N-638-6 be moved to Table 1 of R.G. 1.147, Revision 18.

3.4. Code Case N-666-1 "Weld Overlay of Class 1 ,2, and 3 Socket Welded Connections":

The proposed conditions are as follows:

(1) A surface examination (magnetic particle or liquid penetrant) must be performed after installation of the weld overlay and seal weld on Class 1 and 2 piping socket welds. Fabrication defects, if detected, must be dispositioned using the surface examination acceptance criteria of the Construction Code identified in the Repair/Replacement Plan.

(2) When the construction code does not require a surface or volumetric examination of the completed weld overlay a VT-1 visual examination is required to be performed after completion of the weld overlay and seal weld for Class 3 piping.

(Note: Code Case N-666 was unconditionally approved in Rev. 17, RG 1.147.)

ASME Comments:

1. Condition 1 – The construction code may not always require a surface examination (depending on the construction code) on socket welds. This condition is appropriate. However, the words "and seal weld" in the first sentence should be removed from the condition because it is inappropriate to require surface examination of non-structural seal welds whose only function is to seal a leak.

   ASME recommends revising this condition to remove the words "and seal weld" in the first sentence.

2. Condition 2 – This condition should be removed as 5(a)(1) already required a Visual VT-1 examination of completed weld overlays irrespective of the class of the joint. This condition is redundant and only causes confusion.

   ASME recommends removing this proposed condition.

3.5. Code Case N-749 "Alternative Acceptance Criteria for Flaws in Ferritic Steel Components Operating in the Upper Shelf Temperature Range":

The proposed condition is as follows:

> In lieu of the upper shelf transition temperature, T_c, as defined in the Code Case, the following shall be used:
>
> T_c = 170.4 °F + 0.814 x RT_{NDT} (in U.S. Customary Units), and T_c = 73.6 °C + 0.814 x RT_{NDT} (in SI Units). Alternatively, the licensee may use a different T_c value if it can be justified by plant-specific Charpy Curves.

ASME Comments:

1. The NRC proposes to place this condition on the use of Code Case N-749 for Alternative Acceptance Criteria for Flaws in Ferritic Components Operating in the Upper Shelf Temperature Range. The Code Case is intended to allow an alternative analysis in order to determine structural margin using Elastic-Plastic Fracture Mechanics (EPFM) techniques, in lieu of the Linear-Elastic Fracture Mechanics (LEFM) methods currently in IWB-3610 and Appendix A of Section XI. As an overview, the NRC condition requires a higher upper shelf transition temperature than is currently included in the Code Case.
2. In evaluating flaws in vessels, the use of LEFM is normally employed to evaluate flaws that exceed the criteria in IWB-3500 of Section XI, as shown in paragraphs IWB-3610 and IWB-3620. At higher temperatures and for materials on the upper shelf, Nonmandatory Appendix K may be used to consider materials with low upper shelf energy. The EPFM analyses in N-749 take into account some ductile tearing before the component reaches the ultimate load carrying capability. Thus, flaws in a ductile material exhibit more resistance to failure, and hence more margin.
3. The NRC proposal states that instead of the upper shelf transition temperature, T_c, as defined in Code Case N-749, the following shall be used:

   T_c = 154.6°F + 0.82 x RT_{NDT} (U.S. customary units)

   Where T_c is the temperature above which the EPFM method must be applied, according to the proposed condition.
4. The implementing words shown above imply that these are the only methods that shall and must be used. Since this is a Nonmandatory Code Case, it would be better not to require these enforcement actions in the enabling wording. Another way to restate this would be:

   "The upper shelf transition temperature, T_c, is the temperature above which the EPFM method in the Code Case may be applied." (i.e., a permissive, rather than a prescriptive condition)
5. If the main concern for use of the Code Case is the margin on the upper shelf at the higher operating temperatures, then that calculated margin would not be affected by this proposed change, and the definition of T_c could be incorporated

in a revision to the Code Case, if ASME considers that the NRC justification for this is appropriate. On the other hand, if the intent is not to allow EPFM to be used for calculating vessel integrity margins for materials operating at temperatures slightly in the (ductile-to-brittle) transition region, then these conditions may place undue restrictions on the users to prove that the materials are always behaving on the upper shelf.

6. In addition, analyses of flaws in ferritic materials have generally been performed using LEFM methods since about 1971. In the toughness transition region, such methods are directly applicable, and at high temperatures, well onto the upper shelf, use of LEFM is very conservative for most reactor pressure vessel materials. Although conservative, use of LEFM methods have historically still allowed effective evaluation and acceptance of the vast majority of observed flaws in reactor pressure vessels. Therefore, the very conservative use of LEFM on the upper shelf should still be permitted as an option, which is the case if EPFM is considered as an alternative, per the Code Case.
7. It is also worth noting that Working Group Flaw Evaluation has ongoing work to consider methods of presenting toughness versus temperature curves. Such work will likely feed into appropriate consideration of toughness in Appendix A in the future.

ASME recommends that the NRC review the ASME comments and consider revising the proposed conditions.

3.6. Code Case N-754 "Optimized Structural Dissimilar Metal Weld Overlay for Mitigation of PWR Class 1 Items":

The proposed conditions are as follows:

1) The conditions imposed on the optimized weld overlay design in the NRC safety evaluation for MRP-169, Revision 1-A (Agencywide Document Access and Management System No. ML101620010 and ML101660468) must be satisfied.

2) The preservice and inservice inspections of the overlaid weld must satisfy 10 CFR 50.55a(g)(6)(ii)(F).

3) The first layer of weld metal deposited shall not be credited toward the required optimized weld overlay thickness unless the chromium content of the first layer is at least 24 per cent. The presence of the first layer shall be considered in the design analysis requirements of paragraph 2(b) of Code Case N-754 regardless of the chromium content.

ASME Comments:

1. The first sentence of Condition 3 is unnecessary as this is simply paraphrasing what is already stated in the second sentence of Paragraph 1.2(f)(2) in the case. ASME considers the wording in 1.2(f)(2) to impose the

same restriction as that specified in the first sentence of Condition 3.

ASME recommends removing the first sentence from Condition 3.

3.7. Code Case N-789 "Alternative Requirements for Pad Reinforcement of Class 2 and 3 Moderate-Energy Carbon Steel Piping for Raw Water Service":

The proposed conditions are as follows:

1) Areas containing pressure pads shall be visually observed at least once per month to monitor for evidence of leakage. If the areas containing pressure pads are not accessible for direct observation, then monitoring will be accomplished by visual assessment of surrounding areas or ground surface areas above pressure pads on buried piping, or monitoring of leakage collection systems, if available.

2) For the pressure pad design, the higher of the 2 times the actual measured corrosion rate and 4 times the estimated maximum corrosion rate for the system must be used. If the actual measured corrosion rate in the degraded location is unavailable, the estimated maximum corrosion rate for the system assumed in the design must be calculated based on the same degradation mechanism as the degraded location.

ASME Comments:

1. The NRC condition does not allow the user to apply the actual corrosion rate for the pressure pad design. This reflects the staff position that the factors of 2 and 4 do not provide reasonable assurance that actual corrosion rate is bounded. However, the compensatory measures of inservice monitoring and the short acceptance period of one operating cycle verify and provide assurance that both structural and leak integrity will be maintained during the temporary acceptance period. For this reason, ASME's position is that the margin term of 2 is appropriate for the actual corrosion rate while the margin term of 4 is appropriate for the estimated maximum corrosion rate.

   ASME recommends that the first sentence of Condition 2 be revised to read "For the pressure pad design, 2 times the actual measured corrosion rate or 4 times the estimated maximum corrosion rate for the system must be used."

3.8. Code Case N-795 "Alternative Requirements for BWR Class 1 System Leakage Test Pressure Following Repair/Replacement Activities":

The proposed conditions are as follows:

1) The use of nuclear heat to conduct the BWR Class 1 system leakage test is prohibited (i.e., the reactor must be in a non-critical state).

a. This condition also applies to pressure testing of reactor coolant pressure boundary components repaired or replaced in accordance with Section XI, IWA-4000.

2) The test condition holding time, after pressurization to test conditions, and before the visual examinations commence, shall be 1 hour for non-insulated components.

ASME Comments:

1. Condition 1 - There have been several requests for alternatives that have been approved using nuclear heat to obtain the pressure required by Code Case N-795. It appears that the basis for the NRC condition is Appendix G, which is for the reactor pressure vessel only and not for the associated recirculation piping. The code case is NOT allowed if the periodic (every refueling outage) Class 1 pressure test has not already been completed. This test is completed with the vessel solid (nearly solid) and without nuclear heat. The code case pressure test would only be performed on those components that required a repair/replacement activity after completion of the Class 1 pressure test required by Category B-P.

   An example where this code case would be used is when a unit is starting up and one of the Main Steam Relief Valves is found to be leaking by, as indicated by high tailpipe temperatures. The unit is then shut down and entry into the containment is made and the pilot valve is replaced (mechanical joint), and then the code case would be implemented on this one mechanical joint only.

   The NRC letter dated February 2, 1990 to Mr. Nicholas S. Reynolds and Mr. Daniel F. Stenger from James M. Taylor “Backfitting Appeal Regarding System Hydrostatic and Leakage Testing” (Accession # ML14273A002) was referenced in the proposed rule as another basis for the NRC condition. It appears this letter was concerned about the environment created by using nuclear heat and how it would affect the VT-2 examination personnel and how they would conduct the examinations. Because the code case doesn’t allow its use for a replacement of the Category B-P pressure test and only focuses on single components that required a pressure test due to a repair/replacement activity after completion of the Category B-P pressure test, there should not be a concern with VT-2 examination personnel performing the appropriate examination.

   This NRC position references IN 98-13, which describes an application that used nuclear heat to perform a pressure test of the reactor vessel before core criticality. Again this code case would not allow this as it specifically states “This alternative test pressure may not be used to satisfy pressure test requirements following repair/replacement activities on the reactor vessel.”

   If a unit was required to re-perform the Class 1 Pressure test to obtain the test pressure corresponding to 100% rated power and still allow access for the examination, a large majority of BWRs must perform a pressure test which requires the primary system to be isolated (except for Control Rod Drive (CRD)

and Reactor Water Cleanup (RWCU) systems). This includes isolating Shutdown Cooling (SDC) from the vessel. During this test the vessel is filled essentially solid and pressure is controlled by throttling CRD input and RWCU letdown. Note that the reactor pressure corresponding to 100% rated power cannot be obtained at a large majority of BWR units during normal startup operations at low power levels. The pressure control system does not allow the set-point to approach the 100% pressure value and the core reload analysis does not cover the elevated pressure at low power levels conducive to personnel entry into the containment. Performance of the standard refueling outage primary system pressure test (Category B-P) at least once per cycle at a BWR places the unit in a position of significantly reduced margin; approaching the fracture toughness limits defined in the Tech Spec P-T Curves. To violate these curves would place the vessel in a cold over pressure condition. This is an acceptable risk for verifying the leakage status/integrity of the primary system, but to perform this evolution more frequently would increase the overall risks for that unit.

ASME recommends that condition 1 be removed.

2. Condition 2 – the code case increases the hold time for non-insulated components to 15 minutes. This is a 50% increase in the standard 10 minute hold time. The NRC indicates that they do not believe that this is enough time to identify leakage because of the lower flow.

ASME Comments:

The ASME often develops technical bases for code cases. The technical basis for the increased hold time of 50% longer when this code case is used states: *"Indication of leakage identified through visual VT-2 examinations during a test at either the 100% power pressure or at 87% of that value will not be significantly different between the two tests. Higher pressure under the otherwise same conditions will produce a higher flow rate but the difference is not significant. A pressure test at 87% of the 100% rated power pressure would produce a flow rate approximately 7% below the full test pressure. This alternate differential pressure (>/=900 psi) is still adequate to provide evidence of leakage should a through-wall flaw exist. Since the reduced pressure would generate an approximate 7% reduction in flow rate, then, a 7% increase in the required hold time should allow for the equivalent amount of total leakage from any existing leak location. This Code Case requires a 50% increase in the hold times which will allow for more leakage than is currently generated and therefore a better indication of the leak."*

ASME recommends that this condition be removed, unless the NRC can provide a basis for the 1 hour hold time.

Enclosure 2

ASME Comments on Draft Regulatory Guide DG-1298
(Proposed Revision 5 of Regulatory Guide 1.193, ASME Code Cases Not Approved For Use)

1. ASME offers the following comments on Code Cases proposed changes to Regulatory Guide 1.193, Revision 5, Table 2, Unacceptable Section XI Code Cases:

   1.1. Code Case N-711 "Alternative Examination Coverage Requirements for Examination Category B-F, B-J, C-F-1, C-F-2, and R-A Piping Welds":

   Summary of NRC Concerns With this Case:

   The Code Case would permit each licensee to independently determine when achievement of a coverage requirement is impractical, and when Code-required coverage is satisfied. As a result, application of the Code Case for similar configurations at different plants could result in potentially significant quantitative variations. Furthermore, application of the Code Case is inconsistent with NRC's responsibility for determining whether examinations are impractical, and eliminates the NRC's ability to take exception to a licensee's proposed action and impose additional measures where warranted in accordance with 10 CFR 50.55a(g)(6)(i).

   ASME Comments:

   1. The BPV XI Standards Committee Task Group on Optimization of Ultrasonic Examination Requirements has been working with the NRC to identify any technical concerns with the use of this case. The Task Group determined that there are very few technical issues to be resolved, and ASME is developing a revision to this case to address these issues. Rather than delay the endorsement of Code Case N-711-1 in R.G. 1.147, ASME believes that it would be of significant benefit to both the industry and the NRC to endorse N-711 in Table 2 of R.G. 1.147 and remove this case from R.G. 1.193, Table 2. The industry continues to seek relief from component configurations and materials that inhibit full compliance with nondestructive examination coverage requirements of the Code. Endorsement of N-711 would provide an alternative to requiring licensees to continue seeking relief for limited NDE coverage, while providing reasonable assurance that adequate NDE has been performed. Although the endorsement of N-711 will not completely eliminate the need for licensees to request relief for limited NDE examination coverage, allowing its use could significantly reduce the number of relief requests required to be submitted by licensees, resulting in savings for both the industry and the NRC.

      ASME recommends that this case be removed from R.G 1.193, Table 2 and added to Table 2 of R.G. 1.147 with appropriate conditions to address NRC technical concerns with the use of this case.

   1.2. Code Case N-722-2 "Visual Examinations for PWR Pressure Retaining Welds in Class 1 Components Fabricated With Alloy 600/82/182 Materials":

   Summary of NRC Concerns With this Case:

   Code Case N-722 has been superseded by Revisions 1 and 2 to the Code Case. N-722-1 is conditionally approved directly in 10 CFR 50.55a and not through

Regulatory Guide 1.147. Code Case N-722-2 has been dispositioned as Unacceptable.

ASME Comments:

1. Is the reason for Code Case N-722-2 being dispositioned as "unacceptable" due to technical issues or because N-722-1 is conditionally approved in 10 CFR 50.55a? It would be helpful if there are technical concerns to have them listed here so that they can be addressed.

ASME requests that the NRC identify any technical concerns with N-722-2 and list these concerns in R.G. 1.193, Table 2.

1.3. Code Case N-784 "Experience Credit for Ultrasonic Examiner Certification":

Summary of NRC Concerns With this Case:

Code Case N-784 reduces the requirements for training and experience regarding examination personnel. Examination personnel would receive less training and experience with respect to the detection of representative flaws in materials and configurations found in nuclear power plants. In addition, the Code Case would allow personnel without nuclear ultrasonic examination experience to qualify without exposure to the variety of defects, components, examination conditions, and regulations to be encountered. The impact of reduced training and experience has not been evaluated.

ASME Comments:

This Code Case enables personnel to receive credit for experience hours for laboratory practice beyond the required number of hours of laboratory training. For Level II certification, the total experience hours may be reduced from 800 to 400 if the experience consists of a combination of 80 hours of field experience and 320 hours laboratory practice by scanning specimens containing flaws in materials representative of those in actual power plant components. The field experience will likely be in nuclear plants but there is no requirement for UT examiners to obtain their experience in a nuclear plant. While the experience credited would be on samples and mockups, those samples would be required to contain actual flaws whereas over many hours of field experience, fewer flaws may be encountered. Further, to ensure the effectiveness of the laboratory practice, the Level II experience time would be credited only after the individual passed an Appendix VIII, Supplement 2 performance demonstration for length and depth sizing. Since other performance demonstrations are required for certification for vessels, ferritic piping and bolting, for example, it is considered reasonable to only require the Supplement 2 performance demonstration as a threshold for crediting the laboratory practice hours. EPRI will provide reports (Nondestructive Evaluation: Fast-Track NDE Work Force Enhancement, Volume 1; 1019119 and Nondestructive Evaluation: Fast-Track NDE Work Force Enhancement, Volume 2, 1021150) to the USNRC to support this code case and address the impact of the reduced experience. This case does not reduce the training hours.

ASME recommends that this case be removed from Table 2 of R.G. 1.193 and moved to Table 1 or 2 of RG 1.147.

1.4. Code Case N-806 "Evaluation of Metal Loss in Class 2 and 3 Metallic Piping Buried in a Back-Filled Trench":

Summary of NRC Concerns With this Case:

NRC staff advised ASME during consideration of Code Case N-806 that the NRC had concerns and intended to review and approve the Code Case on a case-by-case basis. Following are the NRC's concerns:

(1) The rules applicable to determining corrosion rates which lead to the definition of the evaluation period and re-examination schedules are currently under development. Accordingly, the Code Case does not define the method of determining the wall loss rates, the time period for length of the evaluation, and the reexamination period/frequency.

(2) The ASME Section XI appendices used to calculate some of the important values are nonmandatory.

Licensees intending to use Code Case N-806 must submit a plant-specific request to the NRC staff for review and approval prior to implementation.

ASME Comment:

1. ASME has taken action to address some of these concerns and has published Code Case N-806-1, providing additional requirements for determining wall thickness loss rates.

ASME recommends that the NRC consider developing conditions on the use of this case that would enable the endorsement of the case in Table 2 of R.G. 1.147.

1.5. Code Case N-813 "Alternative Requirements for Preservice Volumetric and Surface Examination":

Summary of NRC Concerns With this Case:

Code Case N-813 is an alternative to the provisions of the 2010 Edition of the ASME Code, Section XI, paragraph IWB-3112. IWB-3112 does not allow the acceptance of flaws detected in the preservice examination by analytical evaluation. Code Case N-813 would allow the acceptance of these flaws through analytical evaluation. Per paragraph IWB-3112, any preservice flaw that exceeds the acceptance standards of Table IWB-3410-1 must be removed. While it is recognized that operating experience has shown that large through wall flaws and leakages have developed in previously repaired welds as a result of weld residual stresses, the NRC has the following concerns regarding the proposed alternative in Code Case N-813:

(1) The requirements of paragraph IWB-3112 were developed to ensure that defective welds were not placed in service. A preservice flaw detected in a weld that exceeds the acceptance standards of Table IWB-3410-1 demonstrates poor workmanship and/or inadequate welding practice and procedures. The unacceptable preservice flaw needs to be removed and the weld needs to be repaired before it is placed in service.

(2) Under Code Case N-813, large flaws would be allowed to remain in service because paragraph IWB-3132.3, via paragraph IWB-3643, allows a flaw up to 75 percent through wall to remain in service. Larger flaws could grow to an unacceptable size between inspections reducing structural margin and potentially challenging the structural integrity of safety-related Class 1 and Class 2 piping.

Paragraph C-3112(a)(3) of Code Case N-813 provides the same alternatives for Class 2 piping as that of Paragraph B-3122(a)(3). The staff has the same concerns for Class 2 piping as for Class 1 piping.

ASME Comments:

1. The requirements of the Case N-813 are identical to changes made in the 2013 Edition of Section XI which is being considered under a separate draft 10 CFR 50.55a rule (expected to be published as a final rule in late 2016). The NRC has not proposed any conditions on these requirements in the 2013 Edition. It is inappropriate for the NRC impose conditions on the same requirements in Case N-813 as the requirements in the 2013 Edition.
2. This Case permits acceptance of subsurface flaws detected during preservice examination using the same criteria applicable to flaws detected during inservice examination. There is no greater likelihood of subsurface flaws detected during preservice examination to grow unacceptably than there is for the same flaws to grow during inservice examination. Operating experience has shown that the propensity for failure is increased by repairing such flaws, whereas leaving them in place has never been shown to be a precursor to failure. Without weld repair, there is no mechanism expected to produce unacceptable flaw growth, whereas repair welding itself has been repeatedly shown to cause flaws to grow to the point of failure. The provisions of this Case, and the identical provisions in the 2013 Edition, improve safety. Rejecting this Case is not consistent with the NRC's mandate to protect the health and safety of the public.
3. The Technical Basis for this code case and accompanying code revision states that the action is being sought to prevent the unnecessary excavation and weld repair of subsurface indications which can be analytically shown to be benign over the expected service lifetime of a component. Based on operating experience, it is known that weld repairs and their associated stress fields often serve as points of initiation for inservice degradation mechanisms (e.g., intergranular stress corrosion cracking, primary water stress corrosion cracking, etc.). Hence, it is in the best interest of the long term safe operation of components being placed into service to eliminate the need for weld repairs where they are not necessary to correct fabrication problems which will not challenge the operability of the component over its service lifetime. This can be achieved by permitting licensees to effectively utilize the flaw evaluation rules of IWB-3600 and IWC-3600, which are already accepted for the analysis of indications due to inservice degradation.
4. It is important to note that any preservice flaw that has been evaluated as acceptable is required to receive successive examinations under IWB-2420(b) or IWC-2420(c) so if the flaw does grow, it will be detected during these examinations.

ASME recommends that this case be removed from Table 2 of R.G. 1.193 and added to Table 1 of R.G. 1.147 for the reasons identified above.

Enclosure 3

ASME Comments on Proposed 10 CFR 50.55a Rule

ASME offers the following comments pertaining to proposed changes to 10 CFR 50.55a:

1. In Section IV, "Section-by-Section Analysis" of the Proposed Rule dated March 2, 2016 (Federal Register Vol. 81, No. 41), ASME believes that it is not clear whether the word "superseded" applies to those Code Cases that are superseded by ASME or those Code Cases that are listed as superseded in Table 5 of Regulatory Guide 1.147.

   ASME provides the following recommendations:

   i. ***ASME recommends that the NRC clarify the above concern in the final rule.***

   ii. ***ASME recommends that the NRC review requirements for superseded ASME Section III and OM Code Cases in R.G. 1.84 and R.G. 1.192 for similar clarification.***