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May 16, 2016

Secretary
U.S. Nuclear Regulatory Commission
ATTN: Rulemakings and Adjudications Staff
Washington, DC 20555–0001

Subject: Comments Concerning Proposed Rule 10 CFR 50, *"Approval of American Society of Mechanical Engineers' Code Cases"* (81FR10780, dated March 2, 2016, Docket ID NRC-2012-0059)

This letter is being submitted in response to the U.S. Nuclear Regulatory Commission (NRC) request for comments concerning Proposed Rule 10 CFR 50, *"Approval of American Society of Mechanical Engineers' Code Cases,"* published in the *Federal Register* on March 2, 2016 (i.e., 81FR10780).

The NRC is proposing to amend its regulations to incorporate by reference proposed revisions of three Regulatory Guides (RGs) which would approve new, revised, and reaffirmed Code Cases published by the American Society of Mechanical Engineers (ASME). This Proposed Rule would allow nuclear power plant licensees, and applicants for construction permits, operating licenses, combined licenses, standard design certifications, standard design approvals and manufacturing licenses, to use the Code Cases listed in these draft RGs as alternatives to engineering standards for the construction, Inservice Inspection (ISI), and Inservice Testing (IST) of nuclear power plant components. These standards are set forth in ASME Boiler and Pressure Vessel (B&PV) and Operations and Maintenance (O&M) Codes, which are currently incorporated by reference into the NRC's regulations. The NRC is requesting comments on this Proposed Rule and on the draft versions of the three RGs proposed to be incorporated by reference. The NRC is also making available a related draft RG that lists Code Cases that the NRC has not approved for use. This draft RG will not be incorporated by reference into the NRC's regulations.

Exelon Generation Company, LLC (Exelon) appreciates the opportunity to comment on this proposed rule and offers the attached comments for consideration by the NRC.

If you have any questions or require additional information, please contact Richard Gropp at (610) 765-5557.

Respectfully,

D. P. Helker

David P. Helker
Manager, Licensing and Regulatory Affairs
Exelon Generation Company, LLC

Attachment

# Attachment

Comments Concerning Proposed Rule 10 CFR 50,
*"Approval of American Society of Mechanical Engineers' Code Cases"*

Docket ID NRC-2012-0059

**Comments on Draft Revision 18 to Regulatory Guide 1.147 (DG-1296)**

| Proposed Changes to Table 2, Conditionally Acceptable Section XI Code Cases | | | | |
|---|---|---|---|---|
| **Code Case Number** | **Date or Supplement/ Edition** | **Case Title** | **Proposed Condition** | **Comments on Proposed Changes** |
| N-789 | 6/10E | *Alternative Requirements for Pad Reinforcement of Class 2 and 3 Moderate-Energy Carbon Steel Piping, Section XI, Division 1.* | 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.<br><br>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. | Code Case N-789-2 has been approved and published by ASME and answers these conditions. Exelon recommends that the NRC consider accepting Code Case N-789-2 with no conditions. |

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| N-795 | 3/10E | *Alternative Requirements for BWR Class 1 System Leakage Test Pressure Following Repair/Replacement Activities, Section XI, Division 1.* | 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).<br><br>a. This condition also applies to pressure testing of reactor coolant pressure boundary components repaired or replaced in accordance with Section XI, IWA-4000.<br><br>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. | Exelon believes that the conditions proposed by the NRC are counter to the technical benefits associated with this Code change and the Code Case should be approved without conditions in order to realize the reduced plant risk associated with use of the Code Case. Large scope repair/replacement activities will be performed during a refueling outage. 10 CFR 50, Appendix G prohibits any reactor vessel Section XI pressure testing using nuclear energy sources; therefore, large-scope repair pressure tests requiring extensive walk downs will be completed with the normal end of outage pressure test and the Code Case will not be applied. In other words, the Code Case will normally only be applied to emergent post maintenance pressure tests which will be limited in scope to a small targeted segment of the Reactor Coolant System (RCS). Personnel performing these examinations will not need to be in challenging work environments for long periods of time that was noted as a basis for performing the test using non-nuclear heat. They will simply proceed to the repaired location only to perform an adequate leak test.<br><br>The technical discussion for the Code Case noted that Shutdown Cooling (SDC) will normally be isolated to perform a non-nuclear pressure test with pressure provided by the Control Rod Drive (CRD) pumps and letdown through Reactor Water Cleanup (RWCU). This is not a normal path for shutdown conditions and challenges operators to maintain the RCS within Pressure-Temperature curves and yet maintain RCS cooling. The end-of-outage non-nuclear pressure test normally has owners assigned well before a refueling outage and is often trained/drilled just prior to performance in order to maintain high control. The use of non-nuclear energy for emergent pressure tests unduly exposes the plant and its Operators to avoidable risks which provide little safety benefit.<br><br>The end-of-outage non-nuclear pressure test is performed with a "cool core" meaning that there is a low RCS heat-up rate as opposed to a heat-up rate in the order of 0.5 degrees Fahrenheit with SDC isolated. The hurried activities required to maintain pressure and core cooling present risks that should be considered more appropriate to avoid than the risks cited by the NRC for performing the pressure testing with non-nuclear energy sources for limited repair locations. Non-Destructive Examination (NDE) provides a basis for assuring structural integrity is provided prior to pressure testing; therefore, the pressure test is providing evidence of leakage integrity only.<br><br>Exelon believes that there is an insufficient technical basis for the second condition to maintain a one-hour hold time for non-insulated components. The expected flow for the lower pressure in the Code Case is 7% less flow due to the 13% reduction in pressure. The Code Case increases hold time by 50% while the NRC proposed hold time is one-hour which is considered a substantial increase from Section XI requirements. The NRC provides a justification that they do not consider that 15 minutes is adequate without a technical explanation as to why one-hour is the appropriate hold time. |

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| N-799 | 4/10E | *Dissimilar Metal Welds Joining Vessel Nozzles to Components, Section XI, Division 1.* | 1) The gap between the ultrasonic probe and component surface shall not exceed 1/32 inches. If the gap exceeds 1/32 inches, the weld shall be considered to be unexamined unless the examination technique is successfully demonstrated on representative mockups.<br>2) The following requirements must be implemented when applying this Code Case to ensure that welds are adequately inspected:<br>a. Examination requirements of Section XI, Mandatory Appendix I, paragraph I-3200(c) must be applied.<br>b. The examination of the dissimilar metal welds joining vessel nozzles to components must be full volume, including the cast austenitic stainless steel component of the weld.<br>c. Ultrasonic depth and sizing qualifications for cast austenitic stainless steel components must follow Appendix VIII, Supplement 10, using representative cast austenitic stainless steel mockups containing representative cracks and be independent of other Supplement 10 qualifications.<br>d. For components with wall thicknesses beyond the crack detection and sizing capabilities of a through-wall ultrasonic performance-based qualification, the examination's acceptability shall be based on an ultrasonic examination of the qualified examination volume and a flaw evaluation of the largest hypothetical crack that could exist in the volume and not be qualified for ultrasonic examination.<br>e. Cracks detected and not depth sized to Appendix VIII type performance-based procedures, equipment, and personnel qualifications shall be repaired or removed. | This is a Code Case to define the examination volume/area where older Section XI codes (up through 2010 Edition) do not recognize the defined configuration. The conditions proposed in the Code Case are not included in the proposed rule to accept the 2013 Edition of Section XI and the Code Case configuration is defined in the 2013 Code Edition. Exelon believes that this results in inconsistent requirements for plants using older Code versions versus newer Code versions. The examination conditions proposed for this Code Case use are not appropriate for a volume of interest Code Case. If the NRC considers the conditions appropriate, Exelon believes that they should be included in a revision to 10 CFR 50.55a to assure consistent application regardless of Code year and Addenda being applied. |

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| N-666-1 | 9/10E | *Weld Overlay of Class 1, 2, and 3 Socket Welded Connections, Section XI, Division 1.* | (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.<br><br>(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.<br><br>(Note: Code Case N-666 was unconditionally approved in Revision 17 of RG 1.147.) | Table 2 provides the following note under the conditional approval of N-666-1: (Note: Code Case N-666 was unconditionally approved in Revision 17, RG 1.147.) However, Table 5 notes a new condition for N-666. Exelon recommends that any reference to this condition be removed. |