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To: [Tom Loomis](#)
Subject: Preliminary Request for Additional Information Regarding Proposed Alternative to Utilize ASME Code Case N-789 - ME7303 - ME7319
Date: Thursday, January 05, 2012 9:12:00 AM

The purpose of providing a preliminary request for information is to ensure the request is clear and, when applicable, to identify any information that may be considered proprietary. If you need a conference call to clarify the questions, contact me by e-mail or phone (301-415-6606).

By letter dated October 7, 2011 (Agencywide Document Access Management System (ADAMS) Accession No. ML112800669), with a supplement dated November 10, 2011 (ADAMS Accession No. ML113180232), Exelon Generating Company submitted for the Nuclear Regulatory Commission review and approval a proposed alternative to use American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Case N-789 (N-789), "Alternative Requirements for Pad Reinforcement of Class 2 and 3 Moderate-Energy Carbon Steel Piping for Raw Water Service, Section XI, Division 1," at Braidwood Units 1 and 2, Byron Units 1 and 2, Clinton Unit 1, Dresden Units 2 and 3, LaSalle Units 1 and 2, Limerick Units 1 and 2, Oyster Creek, Peach Bottom Units 2 and 3, Quad Cities Units 1 and 2, and Three Mile Island Unit 1. To complete its review, the staff requests for additional information as follows. The following questions are related to the submittal dated November 10, 2011 which contains the latest version of the proposed alternative.

1. Paragraphs 1(e) and 8(d) of N-789 state that reinforcing pads, including those installed during a refueling outage, shall not remain in service beyond the end of the next refueling outage.
 - a. Confirm that both the pressure pad and structural pad as discussed in Section 3 of N-789 are part of the reinforcing pads.
 - b. Confirm that both the pressure and structural pads will not remain in service beyond the end of the next refueling outage.
 - c. If the repair is performed in mid-cycle (e.g., one month before the scheduled refueling outage), discuss when is the 'next refueling outage'.
 - d. There are piping systems that are required to be functional and thus cannot be repaired during refueling outages. The repair for these pipes can only be performed when the plant (the unit) is operating. The maximum service life to the next refueling outage would not be applicable or appropriate for these piping systems. Provide the service life of the reinforcing pads for these piping systems.
 - e. Section 2 of the proposed alternative lists the end date of the 10-year inservice inspection (ISI) interval for each unit. Confirm that the end date of the 10-year ISI interval coincides with the scheduled refueling outages for each unit. If it is not, discuss how the repair would be dispositioned when the end date of the 10-year ISI interval is reached during the mid-cycle because the duration of the proposed alternative is requested to be limited to the end of 10-year ISI interval.

2. Section 3.1(1) of N-789 states that "...[t]he pressure pads are designed to retain...full structural integrity... assuming a corrosion rate of either 2 times the actual measurement corrosion rate in that location or 4 times the estimated

maximum corrosion rate for the system..."

- a. Discuss how the actual measurement corrosion rate will be derived (e.g., what is the period of time between two measurements taken? Would the measured corrosion rate be based on the average of several measurements or only one measurement).
 - b. Discuss whether the maximum (worst) corrosion rate determined from both approaches in N-789 (i.e., the greater of the 2 times the actual measurement corrosion rate or 4 times the estimated maximum corrosion rate) will be used in the pressure pads design. If not, provide justification why the worst corrosion rate is not used in the reinforcing pad design.
 - c. Discuss how the corrosion rate is used to design the reinforcing pad (e.g., how the thickness and size of the pad and weld size are designed based on the corrosion rate?).
 - d. Discuss what the acceptance criteria are for the 'full structural integrity' of piping (provide reference specific ASME Code paragraphs that define the full structural integrity).
3. The design requirements in Section 3.2 and examination requirements in Section 6 of N-789 stipulate the use of the Construction Code or ASME Code Section III.
- a. Clarify the edition and addenda of the ASME Code, Section III that will be used if it is used in lieu of the Construction Code.
 - b. N-789 also stipulates the use of various IWA paragraphs of the ASME Code, Section XI. Confirm that the edition and addenda of the ASME Code, Section XI, will be based on the Code of Record for the specific 10-year inservice inspection interval at each nuclear unit covered under the proposed alternative.
4. Section 4 of N-789 discusses requirements for installing the reinforcing pad on water-backed piping. Discuss whether N-789 permits a reinforcing pad be installed on a leaking area of the pipe. If yes, discuss how welding will be conducted on a leaking pipe to minimize fabrication defects (e.g., porosity and hydrogen cracking) in the weld.
5. Section 8 of N-789 stipulates inservice monitoring requirements for the structural pad, but not the pressure pad. In section 5 of the Proposed Alternative, the licensee stated that for the pressure pads, inservice monitoring will not be required because the design of pressure pads conservatively assumes 2 times the actual measured corrosion rate or 4 times if using an estimated rate.
- a. Justify that either 2 times the actual measured corrosion rate or 4 times the estimated maximum corrosion rate for the system is adequate to ensure conservatism that the pressure pad will not leak or lose structural integrity prior to its removal.
 - b. Even if a conservative corrosion rate is used in the pad design, justify why the pressure pad does not need inservice inspections.
6. Discuss whether the proposed alternative will be applied to buried piping. If yes, discuss how the required examinations will be performed if the pipe is buried after the reinforcing pad is installed.