

## NRR-PMDAPEm Resource

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**From:** Chawla, Mahesh  
**Sent:** Monday, March 10, 2014 12:21 PM  
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**Cc:** Collins, Jay; Lupold, Timothy; Carlson, Robert; Cumblidge, Stephen; Duncan, Eric; Scarbeary, April; Garmoe, Alex; Shah, Swetha  
**Subject:** Fourth Request for Additional Information - Palisades - Relief Request RR 4-19 - MF3508  
**Attachments:** Palisades N-770-1 MF3508 4th RAI Rev-1.docx

By letter dated February 25, 2014 Entergy Nuclear Operations, Inc. (the licensee), proposed an alternative to 10 CFR 50.55a(g)(6)(ii)(F)(3) for Palisades Nuclear Plant (Palisades). This regulation defines the inspection requirement for branch connection butt welds at Palisades in accordance with American Society of Mechanical Engineer's Boiler and Pressure Vessel Code Case N-770-1, "Alternative Examination Requirements and Acceptance Standards for Class 1 PWR Piping and Vessel Nozzle Butt Welds Fabricated With UNS N06082 or UNS W86182 Weld Filler Material With or Without Application of Listed Mitigation Activities," with NRC conditions. The licensee is requesting an extension of the required inspection for one cycle of operation.

The NRC staff has identified the need for additional information. Attached is the fourth request for additional information related to this submittal.

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**From:** Chawla, Mahesh

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**Post Office:**

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REQUEST FOR ADDITIONAL INFORMATION  
REQUEST FOR RELIEF FROM 10 CFR 50.55a(g)(6)(ii)(F)(3) REQUIREMENTS FOR  
EXAMINATION OF BRANCH CONNECTION BUTT WELDS  
ENTERGY NUCLEAR OPERATIONS INC.  
PALISADES NUCLEAR PLANT  
DOCKET NO. 50-255

By letter dated February 25, 2014 Entergy Nuclear Operations, Inc. (the licensee), proposed an alternative to 10 CFR 50.55a(g)(6)(ii)(F)(3) for Palisades Nuclear Plant (Palisades). This regulation defines the inspection requirement for branch connection butt welds at Palisades in accordance with American Society of Mechanical Engineer's Boiler and Pressure Vessel Code Case N-770-1, "Alternative Examination Requirements and Acceptance Standards for Class 1 PWR Piping and Vessel Nozzle Butt Welds Fabricated With UNS N06082 or UNS W86182 Weld Filler Material With or Without Application of Listed Mitigation Activities," with NRC conditions. The licensee is requesting an extension of the required inspection for one cycle of operation.

The NRC staff is very concerned basing the deferral of any examinations on the structural evaluation of the weld. Weld residual stress calculations are not exact and can have a large uncertainty and may be very sensitive to small changes in assumptions used to develop the flaw evaluations. The NRC staff evaluated the licensee's flaw evaluations and performed a series of independent flaw evaluations. The NRC staff finds there is a possibility of a leak from a hypothetical axial flaw could occur over the next operating cycle, because volumetric examination of these 9 subject welds has not been performed at Palisades. The NRC staff finds that any hypothetical axial flaw in these welds would not challenge the structural integrity of the piping system or branch connection. The NRC staff's only concern would then be a leak and its potential effects. Therefore, the staff needs to know that if leakage were to occur, the licensee would be able to identify a leak from this area in a timely manner and take appropriate actions. If no leakage is detected before the next scheduled refueling outage, a qualified volumetric examination of the 9 subject welds will be performed in accordance with the requirements specified in 10 CFR 50.55a(g)(6)(ii)(F).

The NRC staff recognizes that the licensee has implemented the enhanced leakage monitoring guidelines for reactor coolant pressure boundary leakage identification of WCAP-16465NP. Therefore, the NRC staff requests that the enhanced leakage monitoring guidelines be included as a condition of relief for this proposed alternative. Additional conditions of relief are proposed to address that this location is a known potential leak source for the reactor coolant pressure boundary based on the NRC flaw evaluation and lack of volumetric examination. The NRC staff is particularly concerned with the weld in the hot leg, as temperature is a major factor for crack propagation in primary water stress corrosion cracking.

The NRC staff has reviewed and evaluated the information provided by the licensee and has determined that the following additional information is needed in order to complete its review of the relief request.

### 3.0 Proposed Alternative

RAI-3.3 The NRC requests the licensee change the proposed alternative to include the following items.

- A. A volumetric examination, using ASME Code, Section XI, Appendix VIII, Supplement 10 qualified procedure, equipment and personnel, will be performed on each of the 9 subject welds of this alternative during the next scheduled refueling outage.
- B. If the Tier Two Action Levels of WCAP-16465NP are reached, the Response Guidelines for Tier Two and Tier Three Action Level will be performed.
- C. If the Tier Two or Tier Three Action Levels of WCAP-16465NP are reached, and the source of leakage is not identified in 72 hours, the licensee will take action to be in Mode 3 within 6 hours, Mode 5 within 36 hours, and perform bare metal visual examinations of the 9 subject welds of this alternative.