

## **NRR-PMDAPEm Resource**

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**Sent:** Friday, May 15, 2015 4:24 PM  
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**Cc:** Alley, David; Collins, Jay; Tsao, John; Cumblidge, Stephen; Schneider, Max; Gepford, Heather; Miller, Geoffrey; Hagar, Bob; Anchondo, Isaac; Baquera, Mica; Markley, Michael; Wilson, George; Lund, Louise; Ross-Lee, MaryJane; Lubinski, John  
**Subject:** FCS: RAI Number 2 for RR-14, RVH Leakage/ASME Code Case N-729-1 (TAC No. MF6206)

REQUEST FOR ADDITIONAL INFORMATION  
OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN STATION, UNIT NO. 1  
DOCKET NO. 50-285

By letter dated May 9, and supplemented May 13, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML15129A004 and ML15135A387, respectively), Omaha Public Power District submitted RR-14 for Fort Calhoun Station, Unit 1.

The NRC staff has reviewed the information provided in your application and determined that the additional information below is required in order to complete its formal review.

1. Please provide the photographs and descriptions of all nozzles for which foreign material was identified. Please ensure that the photos cover 360 degrees for each nozzle.
2. Please provide the calculations supporting the time to nozzle ejection included in previous submissions.
3. For each nozzle which exhibited foreign material near the annulus, including staining, please identify the source of the material and provide a justification for the leakage being from that source (e.g., a chemical and/or isotopic analysis of the material at the annulus showing the material to be inconsistent with RCS chemistry; evidence that the material is non-adherent, or evidence that a leakage path exists from a point above each nozzle under consideration to a point below the nozzle such that it is reasonable to conclude that fluid would have entered the annulus of the nozzle under consideration).
4. The EPRI publication "Materials Reliability Program: Reactor Vessel Closure Head Penetration Safety Assessment for U.S. Pressurized Water Reactor (PWR) Plants (MRP-110) Evaluations Supporting the MRP Inspection Plan" identifies the leakage required to cause wastage of the carbon steel to be caused by a leak rate of 0.1 gpm. Please include the following as compensatory measures in the proposed alternative, or provide a technical basis as to why the following compensatory measures would not be required to assure that less than 0.1 gallon per minute (gpm) is leaking through any control rod drive or ICI nozzles:
  - a. The use of administrative controls such that the plant would shut down on an unidentified leak rate greater than 0.1 gpm above a stable baseline, or the use of radiation monitoring equipment near the head and administrative controls over the equipment to shut down the plant at detected radiation levels equivalent to a leak rate of 0.1 gpm above a stable baseline.
  - b. Perform a bare-metal visual inspection on the upper head on the first outage of greater than 72 hours which occurs after at least 4 months of operation in accordance with the criteria contained in ASME code case N-729-1.
  - c. At the next refueling outage, conduct UT/surface examinations of all nozzles.

5. Please provide the radiation dose estimate for completing supplemental UT/surface examinations, including the justification for the estimate. Also, please provide the dose estimate for the supplemental examinations as a percentage of the total outage dose estimate.

**Hearing Identifier:** NRR\_PMDA  
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**Subject:** FCS: RAI Number 2 for RR-14, RVH Leakage/ASME Code Case N-729-1 (TAC No. MF6206)  
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**Received Date:** 5/15/2015 4:23:00 PM  
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**Created By:** Fred.Lyon@nrc.gov

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MESSAGE

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