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Omaha NE 68102-2247

March 17, 2006  
LIC-06-0029

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555-0001

- References:
1. Docket Nos. 50-285 and 72-054
  2. USNRC Regulatory Issue Summary 2005-05, "Regulatory Issues Regarding Criticality Analyses for Spent Fuel Pools and Independent Spent Fuel Storage Installations," March, 23, 2005
  3. Letter from OPPD (R. T. Ridenoure) to NRC (Document Control Desk), "Fort Calhoun Station Unit No. 1 License Amendment Request (LAR) 05-013, "Criticality Control During Spent Fuel Cask Loading in the Spent Fuel Pool," November 8, 2005 (LIC-05-0119)
  4. Telecon between OPPD and NRC, Request for Additional Information for Fort Calhoun Station Unit No. 1 License Amendment Request, "Criticality Control During Spent Fuel Cask Loading in the Spent Fuel Pool," March 3, 2006
  5. Letter from NRC (R. Wharton) to OPPD (Sudesh Gambhir), "Issuance of Exemption from the Requirements of 10 CFR 70.24 -Fort Calhoun Station, Unit No. 1" (TAC No. M99544) (NRC-98-026)

**SUBJECT: Commitment to Fuel Storage Area Radiation Monitoring for 10 CFR 50.68(b)**

In accordance with Reference 2, the Omaha Public Power District (OPPD) previously submitted a License Amendment Request (Reference 3) to address criticality control during spent fuel cask loading in the spent fuel pool. During subsequent discussions with the staff concerning compliance with Reference 2, the broader issue of compliance with 10 CFR 50.68(b) was discussed. Based on the discussion held on March 3, 2006 (Reference 4) the staff requested: (1) OPPD commitment to full compliance with 50.68 at Fort Calhoun Station, and (2) submittal of an evaluation of OPPD's current status of compliance with 50.68.

The Fort Calhoun Station (FCS) 50.68 Compliance Evaluation is attached to this letter. The evaluation concludes that FCS complies with all but two 50.68(b) criteria: Criterion (6), criticality monitoring of fuel storage areas, and Criterion (8), FSAR updating after compliance with 50.68 has been achieved.

To comply with 10 CFR 50.68(b)(6), OPPD will establish the capabilities: (1) to detect excessive radiation levels in fuel storage and associated fuel handling areas when fuel is present, and (2) to initiate appropriate safety actions for those areas. These capabilities will be implemented and the FCS Updated Safety Analysis Report will be updated placing FCS in compliance with all 50.68(b) criteria within six months after the completion of the 2006 outage. The 2006 outage is scheduled to end December 7, 2006.

One commitment to the NRC is made in this letter, i.e., to be in full compliance with all 50.68(b) criteria within six months after the completion of the 2006 outage. I declare under penalty of perjury that the foregoing is true and correct. (Executed March 17, 2006)

If you have any questions or require additional information, please contact Mr. Thomas C. Matthews at 402-533-6938.

Sincerely,



D. J. Bannister  
Manager – Fort Calhoun Station

RLJ/rlj

Attachment: OPPD Fort Calhoun Station (FCS) Evaluation of Current Compliance with 10 CFR 50.68(b)

cc: Director of Consumer Health Services, Department of Regulation and Licensure,  
Nebraska Health and Human Services, State of Nebraska

**Fort Calhoun Station (FCS)**  
**Evaluation of Current Compliance with 10 CFR 50.68(b)**

*10 CFR 50.68(b) Each licensee shall comply with the following requirements in lieu of maintaining a monitoring system capable of detecting a criticality as described in 10 CFR 70.24:*

*(1) Plant procedures shall prohibit the handling and storage at any one time of more fuel assemblies than have been determined to be safely subcritical under the most adverse moderation conditions feasible by unborated water.*

OPPD complies with this criterion. FCS procedures are based on the design basis numbers of fuel assemblies assumed in analyses for the new fuel and spent fuel storage racks.

*(2) The estimated ratio of neutron production to neutron absorption and leakage ( $k$ -effective) of the fresh fuel in the fresh fuel storage racks shall be calculated assuming the racks are loaded with fuel of the maximum fuel assembly reactivity and flooded with unborated water and must not exceed 0.95, at a 95 percent probability, 95 percent confidence level. This evaluation need not be performed if administrative controls and/or design features prevent such flooding or if fresh fuel storage racks are not used.*

OPPD complies with this criterion for fresh fuel stored in the fresh fuel storage racks. (This criterion is not applicable for fresh fuel subsequently stored in the spent fuel storage racks.)

*(3) If optimum moderation of fresh fuel in the fresh fuel storage racks occurs when the racks are assumed to be loaded with fuel of the maximum fuel assembly reactivity and filled with low-density hydrogenous fluid, the  $k$ -effective corresponding to this optimum moderation must not exceed 0.98, at a 95 percent probability, 95 percent confidence level. This evaluation need not be performed if administrative controls and/or design features prevent such moderation or if fresh fuel storage racks are not used.*

OPPD complies with this criterion for fresh fuel stored in the fresh fuel storage racks. (This criterion is not applicable for fresh fuel subsequently stored in the spent fuel storage racks.)

*(4) If no credit for soluble boron is taken, the  $k$ -effective of the spent fuel storage racks loaded with fuel of the maximum fuel assembly reactivity must not exceed 0.95, at a 95 percent probability, 95 percent confidence level, if flooded with unborated water. If credit is taken for soluble boron, the  $k$ -effective of the spent fuel storage racks loaded with fuel of the maximum fuel assembly reactivity must not exceed 0.95, at a 95 percent probability, 95 percent confidence level, if flooded with borated water, and the  $k$ -effective must remain below 1.0 (subcritical), at a 95 percent probability, 95 percent confidence level, if flooded with unborated water.*

OPPD complies with the applicable criterion if credit is taken for soluble boron.

*(5) The quantity of SNM, other than nuclear fuel stored onsite, is less than the quantity necessary for a critical mass.*

OPPD complies with this criterion based on the SNM, other than nuclear fuel, currently stored at FCS.

*(6) Radiation monitors are provided in storage and associated handling areas when fuel is present to detect excessive radiation levels and to initiate appropriate safety actions.*

OPPD does not fully comply with this criterion at FCS. Radiation monitors are provided near the new fuel receipt area and adjacent to the spent fuel pool. However, there is no provision for a radiation monitor in the new fuel storage rack area. OPPD will need to perform evaluations and modifications necessary to fully comply with this criterion. Fuel storage and handling operations until that time are acceptable because of the bases for the exemption to 10 CFR 70.24 requirements granted by the NRC for Fort Calhoun Station in a letter dated February 6, 1998. These bases include compliance with FCS Technical Specifications, the geometric spacing of fuel assemblies in the new fuel storage racks and spent fuel pool, and administrative controls imposed on fuel handling procedures. Also, the lack of sprinklers and permanently stored combustible materials in the new fuel receipt/storage room means that moderation due to fire suppression water is unlikely. Even if fire suppression water is introduced, sufficient drainage exists to preclude potential moderation of new fuel assemblies. There have been no changes to the licensing or design bases of FCS that negate the bases for the exemption.

*(7) The maximum nominal U-235 enrichment of the fresh fuel assemblies is limited to five (5.0) percent by weight.*

OPPD complies with this criterion. The FCS Technical Specifications contain this limit for fresh fuel in the new fuel storage racks, and contain a limit of 4.5 percent by weight for fuel stored in the spent fuel pool.

*(8) The FSAR is amended no later than the next update which § 50.71(e) of this part requires, indicating that the licensee has chosen to comply with § 50.68(b).*

OPPD does not comply with this criterion because FCS is not yet in full compliance with all the other criteria of 50.68(b).