April 17, 2003

LICENSEE: Omaha Public Power District

FACILITY: Fort Calhoun Station, Unit 1

SUBJECT: SUMMARY OF TELECOMMUNICATION WITH OMAHA PUBLIC POWER DISTRICT (OPPD) TO DISCUSS DRAFT REQUESTS FOR ADDITIONAL INFORMATION (RAIs) FOR THE RENEWAL OF THE OPERATING LICENSE FOR FORT CALHOUN STATION, UNIT 1 (FCS)

On September 16 and 17, 2002, the NRC staff (the staff) and representatives from OPPD held a telecommunication (telecon) to discuss draft RAIs resulting from the staff's review of license renewal application (LRA) Sections 2.5, 3.6, and B.3.4. A list of telecon participants are enclosed. OPPD has had an opportunity to review and comment on this summary.

2.5 Electrical

2.5-D1 The screening results in LRA Section 2.5 do not include any offsite power systems, structures, or components. Title 10 of the *Code of Federal Regulations* (CFR) Section 54.4(a)(3), requires that "All systems, structures, and components relied on in safety analyses or plant evaluations to perform a function that demonstrates compliance with the Commission's regulations for . . . station blackout (Title 10 CFR 50.63)," be included within the scope of license renewal. Title 10 CFR 50.63(a)(1), requires that each light-water-cooled power plant licensed to operate be able to withstand and recover from a station blackout (SBO) of a specified duration (the coping duration) that is based upon factors that include "(i) The redundancy of the onsite emergency ac power sources; (ii) The reliability of the onsite emergency ac power sources; (iii) The expected frequency of loss of offsite power; and (iv) The probable time needed to restore offsite power." Licensees' plant evaluations followed the guidance specified in NRC Regulatory Guide (RG) 1.155, "Station Blackout," and NUMARC 87-00, "Guidelines and Technical Bases for NUMARC Initiatives Addressing Station Blackout at Light Water Reactors" (1991), to determine their required plant-specific coping duration. The criteria specified in RG 1.155 to calculate a plant-specific coping duration were based upon the expected frequency of loss of offsite power and the probable time needed to restore offsite power, as well as the other two factors (onsite emergency ac power source redundancy and reliability) specified in 10 CFR 50.63(a)(1). In requiring that a plant's coping duration be based on the probable time needed to restore offsite power, 10 CFR 50.63(a)(1) specifies that the offsite power system be an assumed method of recovering from an SBO. Disregarding the offsite power system as a means of recovering from an SBO would not meet the requirements of 10 CFR 0.63(a)(1) and would result in a longer required coping duration. The function of the offsite power system within the SBO rule is, therefore, to provide a means of recover from the SBO. This meets the criteria within 10 CFR 54.4(a)(3) as a system that performs a function that demonstrates

compliance with the Commission's regulations regarding SBO. Based on this information, the staff requires that applicable offsite power systems, structures, and components be included within the scope of license renewal and subject to an aging management review (AMR), or additional justification for their exclusion be provided.

The staff guidance on the scoping of equipment relied on to meet the requirements of the SBO rule are documented in the staff letter from NRC (Matthews) to NEI (Nelson) and UCS (Lochbaum), dated April 1, 2002 (ADAMS Accession No. ML020920464).

**Telecon Discussion:**

OPPD had no questions pertaining to this RAI.

3.6 Electrical and Instrumentation and Controls

3.6-D1 For inaccessible medium-voltage (2 kV to 15 kV) cables (e.g., installed in conduit or direct buried) not subject to 10 CFR 50.49 Environmental Qualification (EQ) requirements, LRA Table 3.6-1, row 3.6.1.04, states that modifications were made to the duct banks to preclude moisture intrusion; therefore, there is no aging effect requiring management. However, it is not clear to the staff what actions will be taken to assure that the modifications made to prevent inaccessible non-EQ medium-voltage cables from being exposed to significant moisture will be maintained intact during the period of extended operation. Therefore, for these non-EQ cables that are within the scope of license renewal, provide a description of the program that will assure that the modifications are maintained intact to prevent intrusion of water into the duct banks. In addition, provide a description of the aging management program (AMP) that will be relied upon for accessible and inaccessible medium-voltage cables installed in conduits, cable trenches, cable troughs, underground vaults, or direct-buried installations.

**Telecon Discussion:**

OPPD had no questions pertaining to this RAI.

B.3.4 Non-EQ Cable Aging Management Program

B.3.4-D1 LRA Section B.3.4 provides the AMP for electrical cables and connectors not subject to 10 CFR 50.49 and for the electrical cables used in instrumentation circuits not subject to 10 CFR 50.49. The LRA states that the non-EQ cables were purchased to the requirements and specifications as those included in the EQ program and installed and qualified under the applicant's 10 CFR 50.49 EQ program. Therefore, additional temperature and environmental data utilized to extend the qualified life of the EQ program equipment and cables will be utilized to analyze and establish a service life for the non-EQ cables. The FCS non-EQ cable program is not consistent with the GALL Report, in that the program does

not credit the inspections delineated within GALL program XI.E1 of the GALL Report. Therefore, for non-EQ cables and connections within the scope of license renewal and subject to an AMR, provide a description of the following:

a. An AMP for accessible and inaccessible electrical cables and connections exposed to an adverse localized environment caused by radiation, temperature, or moisture (GALL program XI.E1).

b. An AMP for accessible and inaccessible electrical cables used in instrumentation and control circuits that are sensitive to reduction in conductor insulation resistance exposed to an adverse localized environment caused by radiation, temperature, or moisture (GALL program XI.E2).

c. A description of the modifications made to the duct banks to preclude moisture intrusion, including operating history, for inaccessible medium voltage cables (GALL program XI.E3).

**Telecon Discussion:**

The staff noted that the LRA states that the AMP does not credit the inspections delineated in GALL program XI.E1. Therefore, the staff needs to understand how OPPD will manage aging in accessible and inaccessible cables and connections that are within scope and subject to an AMR, but not subject to 10 CFR 50.49. OPPD asked the staff to revise the RAI to clarify what information is being requested by the staff. The revision is provided below:

LRA Section B.3.4 provides the aging management program (AMP) for electrical cables and connectors not subject to 10 CFR 50.49 and for the electrical cables used in instrumentation circuits not subject to 10 CFR 50.49. The LRA states that the non-EQ cables were purchased to the same requirements and specifications as those included in the EQ program and installed and qualified under the applicant's 10 CFR 50.49 EQ program. Therefore, additional temperature and environmental data utilized to extend the qualified life of the EQ program equipment and cables will be utilized to analyze and establish a service life for the non-EQ cables. Program element 3, "Parameters Monitored or Inspected," of LRA Section B.3.4 notes that the FCS non-EQ cable program is not consistent with the GALL Report, in that the program does not credit the inspections delineated within GALL program XI.E1.

On the basis of its review of LRA Section B.3.4, the staff is unclear how the proposed AMP will manage aging of electrical cables and connections that are within the scope of license renewal and subject to an AMR, but that are not subject to 10 CFR 50.49 environmental qualification requirements (including those used in instrumentation circuits as well as inaccessible medium voltage cables). Specifically:

(a) How will the Non-EQ aging management program manage aging in accessible and inaccessible electrical cables and connections that are within the scope of license renewal and subject to an AMR, but that are not subject to the environmental qualification requirements of 10 CFR 50.49 and that are exposed to adverse localized conditions caused by heat, radiation, or moisture, such that the cables and connectors will perform their intended functions in accordance with the current licensing basis through the period of extended operation?

(b) How will the Non-EQ aging management program manage aging in accessible and inaccessible electrical cables that are within the scope of license renewal and subject to an AMR and that are exposed to adverse localized conditions caused by heat, radiation, or moisture, and that are used in circuits with sensitive, low-level signals, but that are not subject to the environmental qualification requirements of 10 CFR 50.49, such that the cables will perform their intended functions in accordance with the current licensing basis through the period of extended operation?

(c) How will the Non-EQ aging management program manage aging in inaccessible medium-voltage electrical cables that are within the scope of license renewal and subject to an AMR and that are exposed to adverse localized environments caused by moisture while energized, but that are not subject to the environmental qualification requirements of 10 CFR 50.49, such that the cables will perform their intended functions in accordance with the current licensing basis through the period of extended operation?

/***RA***/

William F. Burton, Project Manager
License Renewal Section
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket No.: 50-285

Enclosure: As stated

cc w/enclosure: See next page

(a) How will the Non-EQ aging management program manage aging in accessible and inaccessible electrical cables and connections that are within the scope of license renewal and subject to an AMR, but that are not subject to the environmental qualification requirements of 10 CFR 50.49 and that are exposed to adverse localized conditions caused by heat, radiation, or moisture, such that the cables and connectors will perform their intended functions in accordance with the current licensing basis through the period of extended operation?

(b) How will the Non-EQ aging management program manage aging in accessible and inaccessible electrical cables that are within the scope of license renewal and subject to an AMR and that are exposed to adverse localized conditions caused by heat, radiation, or moisture, and that are used in circuits with sensitive, low-level signals, but that are not subject to the environmental qualification requirements of 10 CFR 50.49, such that the cables will perform their intended functions in accordance with the current licensing basis through the period of extended operation?

(c) How will the Non-EQ aging management program manage aging in inaccessible medium-voltage electrical cables that are within the scope of license renewal and subject to an AMR and that are exposed to adverse localized environments caused by moisture while energized, but that are not subject to the environmental qualification requirements of 10 CFR 50.49, such that the cables will perform their intended functions in accordance with the current licensing basis through the period of extended operation?

(c) How will the Non-EQ aging management program manage aging in inaccessible medium-voltage electrical cables that are within the scope of license renewal and subject to an AMR and that are exposed to adverse localized environments caused by moisture while energized, but that are not subject to the environmental qualification requirements of 10 CFR 50.49, such that the cables will perform their intended functions in accordance with the current licensing basis through the period of extended operation?

/***RA***/
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Docket No.: 50-285
Enclosure: As stated
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DISTRIBUTION: Teleconference with Fort Calhoun, Dated: April 17, 2003

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FORT CALHOUN STATION, UNIT 1

SEPTEMBER 16 AND 17, 2002

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