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AUTH.NAME AUTHOR AFFILIATION
TUCKMAN,M.S. Duke Power Co.
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SUBJECT: Forwards revised responses to NRC RAI re application for renewed operating licenses for Units 1,2 & 3.

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The staff provided the following questions on March 25, 1999. Responses to these questions were discussed with the staff in a telephone call on March 31,1999. During the call, Duke committed to submit the written responses to the NRC.

Question 3.2.1-1 The staff has reviewed Section 4.5 of the LRA as well as Duke letters to the NRC written in response to GL 88-05 dated May 23 and August 1, 1988. The staff remains unclear as to what the Boric Acid Wastage Surveillance Program consists of. Do you still rely on "operator surveillances?" What are operator surveillances? Are these simply walkdowns? Who at the plant performs them? What are their qualifications? Are all borated water systems within the scope of this program or just the Reactor Coolant System? When during the refueling outage do you perform the surveillance? Is it done all at once or is it performed in pieces? The staff suggests the applicant review the draft SER to BGE on their Boric Acid Corrosion Inspection program to get an idea of the level of detail we need to write a safety evaluation.

Response:

The Duke response to GL 88-05 credited operator observations for identifying instances of borated water leaks. These observations or surveillances are regular periodic walkdowns to look for leaks. These walkdowns look for leaks in every area containing borated water systems in the reactor and auxiliary building. As indicated in our August 1, 1988 response, a network of procedures encompasses the Oconee Boric Acid Surveillance Program.

The Oconee Boric Acid Surveillance Program consists of Nuclear Generation Department administrative and workplace procedures to discover and mitigate the consequences of leaks from systems containing borated water through the use of surveillances or walkdowns. All plant personnel are expected to report instances of leakage from borated water systems. This responsibility is dictated through plant access training. Most leaks are visually identified by operations, maintenance, and engineering personnel during regular walkdowns of the reactor and auxiliary buildings. The training these individuals receive concerning boric acid leakage varies according to their specific plant responsibilities.

The reactor building walkdowns are performed any time the reactor goes to cold shutdown but not to exceed specified intervals associated with refueling outages and ISI inspections. At a minimum, the walkdowns of the auxiliary building are performed each time the reactor building is inspected. An inspection is performed in its entirety, as a single event.

Question 3.2.1-2 In Section 3.4.5, the applicant does not take credit for the Boric Acid Wastage Surveillance Program. The staff believes boric acid wastage needs to be managed for the external carbon and low alloy steel surfaces of the reactor vessel. Provide your reasoning as to why the Boric Acid Wastage Surveillance Program is not credited for managing aging effects associated with the reactor vessel.

Response:
The Boric Acid Wastage Surveillance Program should have been listed in Section 3.4.5 of Exhibit A of the Application. Table 3.4-1 on page 3.4-34 of the Application lists the Boric Acid Wastage Surveillance Program for managing loss of material of the external surfaces of carbon steel and low alloy steel components of the Reactor Coolant System. The reactor vessel is included within this entry.

Question 3.2.1-3 The description in Section 4.5 appears to be limited to carbon and low alloy steels (see page 4.5-1 under "aging effects" for example). However, the applicant takes credit for this program for a wide variety of materials (see page 3.5-28 under 3.5.2.7.1.4). Confirm the program applies to all material types.

Response:
The Boric Acid Wastage Surveillance Program includes the external surfaces of components constructed of aluminum, brass, bronze, copper, and galvanized steel along with carbon steel and low alloy steel. The program scope and aging effects in Section 4.5 of Exhibit A of the Application should have included these materials.

Question 3.2.1-4 The applicant did not describe all corrective actions deemed necessary by the staff. Such actions include corrective actions to prevent recurrence (e.g., identify and correct the cause of the leak), mitigative actions to prevent corrosion (e.g., removal of concentrated boric acid residue) and confirmatory actions to verify adequate corrective actions (e.g., subsequent walkdown prior to plant startup to ensure effective actions). Confirm these actions are consistent with past practice and future intentions at Oconee.

Response:
The Boric Acid Wastage Surveillance Program consists of a network of existing procedures designed to evaluate and maintain the material condition of the plant equipment on a routine basis. Identification of a degraded condition involving leaking borated water requires specific activities to evaluate the component causing the leak, assess and repair any equipment affected by the leak, and document the circumstances surrounding the leak. Subsequent walkdowns verify that corrective actions are effective. Therefore, the potential corrosive effects of fluid leaking from a borated water system will be discovered and mitigated prior to the excessive volumetric material loss of the component pressure boundary and

associated equipment the would result in a loss of the component function. These actions are consistent with past practice and future intentions at Oconee.

Question 3.2.1-5 The applicant reported on page 4.5-3 that no structural damage of carbon and low alloy steel components has occurred as the result of loss of material due to boric acid corrosion. Can this conclusion be extended to all material types?

Response:
Based on plant operating experience, this conclusion can be extended to plant components constructed of aluminum, brass, bronze, copper, and galvanized steel located in close proximity to the borated water systems located in the reactor building and auxiliary building.

The staff provided the following question on March 31, 1999. The response to this question was discussed with the staff in a telephone call on April 1,1999. During the call, Duke committed to submit the written responses to the NRC.

The Standby Shutdown Facility (SSF) Heating, Ventilation, and Air Conditioning (HVAC) system maintains the SSF environment with a predetermined temperature range to support equipment operability.

The HVAC system contains three types of heat exchangers: (1) a water-cooled condenser: (2) air-cooled condensers and (3) air-cooling coils.

The air cooling coils provide both a heat transfer and pressure boundary function. The cooling coils transfer heat from the supply air in the SSF HVAC system to the refrigerant while the condensers reject the heat from the refrigerant to either the SSF auxiliary service water system (the water-cooled condenser) or to the atmosphere (the air-cooled condensers). The applicant stated that the air conditioning units that include air cooling coils and air-cooled condensers are not within the scope of license renewal. Only the units with air cooling coils and the water-cooled condenser are within the scope of license renewal.

Why are the air cooled condensers not within scope but the water cooled condensers are?

Response:
The SSF HVAC System is composed of the following two air conditioning subsystems: the SSF Air Conditioning Subsystem and the Central Alarm Station (CAS) HVAC Subsystem. The SSF Air Conditioning Subsystem, which contains the water-cooled condensers, is within the scope of license renewal. The CAS HVAC Subsystem, which contains the air-cooled condensers, is not within the scope of license renewal.

The SSF Air Conditioning Subsystem is a safety-related subsystem that provides conditioned air to the control room, computer room, response room and battery room in the Standby Shutdown Facility. The subsystem maintains temperatures within acceptable limits in these rooms for equipment and Standby Shutdown Facility operability. This subsystem performs a function that meets the scoping criteria of §54.4 and is included within the scope of license renewal. As a result, the water-cooled condensers are within the scope of license renewal.

The CAS HVAC Subsystem is a nonsafety-related subsystem installed to reduce the cooling load on the SSF Air Conditioning Subsystem. This CAS HVAC Subsystem provides cooling to only the Central Alarm Station of the Standby Shutdown Facility and is similar to a typical air conditioning system found in residential use. This subsystem provides conditioned air to the CAS to maintain acceptable temperatures for security equipment. However, temperatures that exceed these limits do not affect the operability of the SSF Air Conditioning Subsystem or the Standby Shutdown Facility. Additionally, although failure of the CAS HVAC Subsystem increases the load to the SSF Air Conditioning Subsystem, the failure does not prevent the SSF Air Conditioning Subsystem from successfully performing its function. As a result, the CAS HVAC Subsystem does not perform a function that meets the scoping criteria of §54.4 and is not within the scope of license renewal. Therefore, the air-cooled condensers are not within the scope of license renewal.

Attachment 1

Oconee Nuclear Station
Application for Renewed Operating Licenses
Revised Responses to NRC Requests for Additional Information

April 6, 1999

xc: (w/ attachment)
L. A. Reyes
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
Atlanta Federal Center
61 Forsyth Street, SW, Suite 23T85
Atlanta, GA 30303

C. I. Grimes
Director, License Renewal Project Directorate
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

M. A. Scott
Senior NRC Resident Inspector
Oconee Nuclear Station

D. E. La Barge
Senior Project Manager
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

J. M. Sebrosky
Project Manager
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

V. R. Autry
Director, Division of Radioactive Waste Management
Bureau of Land & Waste Management
S.C. Department of Health and Environmental Control
2600 Bull St.
Columbia, SC 29201

M. S. Tuckman, being duly sworn, states that he is Executive Vice President, Nuclear Generation Department, Duke Energy Corporation, that he is authorized on the part of said Company to sign and file with the U. S. Nuclear Regulatory Commission these responses to NRC requests for additional information concerning the Application to Renew the Facility Operating Licenses of Oconee Nuclear Station submitted by letter dated July 6, 1998; and that all statements and matters set forth herein are true and correct to the best of his knowledge and belief. To the extent that these statements are not based on his personal knowledge, they are based on information provided by Duke employees and/or consultants. Such information has been reviewed in accordance with Duke Energy Corporation practice and is believed to be reliable.

M. S. Tuckman

M. S. Tuckman, Executive Vice president
Duke Energy Corporation

Subscribed and sworn to before me this 6TH day of April, 1999.

Mary P. Nelms
Notary Public

My Commission Expires:

JAN 22, 2001

Duke Power
A Duke Energy Company

M. S. Tuckman
Executive Vice President
Nuclear Generation

Duke Power Company
A Duke Energy Company
EC07H
526 South Church Street
P.O. Box 1006
Charlotte, NC 28201-1006

(704) 382-2200 OFFICE
(704) 382-4360 FAX

April 6, 1999

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: License Renewal
Response to Requests for Additional Information
Oconee Nuclear Station
Docket Nos. 50-269, -270, -287

By letter dated July 6, 1998, Duke Energy Corporation submitted an Application for Renewed Operating Licenses for Oconee Nuclear Station, Units 1, 2, and 3 (Application). Exhibit A of the Application contains the technical information required by 10 CFR Part 54. The NRC staff is reviewing the information provided by Duke Energy in the Application and by several letters identified areas where additional information is needed to complete its review.

On March 25, 1999, the staff provided five questions concerning its review of Section 4.5 of the Application, the Boric Acid Wastage Surveillance Program. Responses to these questions were discussed with the staff in a telephone call on March 31,1999. During the call, Duke Energy committed to submit the responses to the NRC, which are hereby provided in Attachment 1 to this letter.

On March 31, 1999, the staff provided one question concerning its review of the Standby Shutdown Facility Heating, Ventilation, and Air Conditioning System. The response to this question was discussed with the staff in a telephone call on April 1,1999. During the call, Duke Energy committed to submit the response to the NRC, which is also provided in Attachment 1 to this letter.

If there are any questions, please contact Bob Gill at 704-382-3339.

Very truly yours,

M. S. Tuckman

M. S. Tuckman

A037