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SUBJECT: Forwards responds to NRC Confirmation of Action ltr dated 960318 for ONS, unit 3.

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DUKE POWER

March 25, 1996

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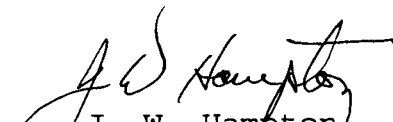
Subject: Oconee Nuclear Station, Unit 3
Docket No. 50-287
Response to Oconee Unit 3 Confirmation of Action
Letter

A reactor trip of Oconee Unit 3 occurred on March 16, 1996, during a special switchyard isolation test. The switchyard isolation test was performed as part of the post-modification testing associated with a recent modification to the Oconee emergency power system.

On March 18, 1996, Oconee Nuclear Station and the NRC held a conference call to discuss licensee actions as a result of the reactor trip. By letter dated March 18, 1996, the NRC issued a Confirmation of Action letter that delineates certain actions required to be taken by the licensee prior to startup of Oconee Unit 3.

The March 18, 1996, NRC letter requests that the licensee respond in writing when the actions in the Confirmation of Action letter are completed. Please find attached our response that confirms that the requested NRC actions are completed.

Very truly yours,


J. W. Hampton

Attachment

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March 25, 1996

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xc: Mr. S. D. Ebnetter, Regional Administrator
U.S. Nuclear Regulatory Commission, Region II

Mr. L. A. Wiens, Project Manager
Office of Nuclear Reactor Regulation

Mr. P. E. Harmon
Senior Resident Inspector
Oconee Nuclear Site

Attachment 1
Response to Confirmation of Action Letter

The March 18, 1996, NRC Confirmation of Action letter delineates five actions that will be taken prior to the restart of Oconee Unit 3. Each of these five actions are restated and addressed below:

- 1) Conduct a comprehensive investigation to evaluate equipment and personnel response to the March 16, 1996, Unit 3 reactor trip including a detailed evaluation of the root cause of the event.

Oconee has completed a post-trip review of the March 16, 1996, Unit 3 reactor trip. The post-trip review and Significant Event Investigation Team (SEIT) analysis of the event included a review of equipment and personnel performance. Based on the post-trip review, a detailed restart list has been developed. Every item on this restart list has been completed. In addition, prestart recommendations from the SEIT have been reviewed. All SEIT prestart recommendations have been implemented.

A rigorous root cause analysis using the Failure Investigation Process was performed to determine the root cause of the event. The Unit 3 reactor trip was caused by a condensate system transient resulting from a spurious load shed of 4KV bus 3TE. The root cause of the event is a defective relay (3RLS1X). This relay is part of the Emergency Power Switching Logic load shed circuitry and is unrelated to the modifications recently implemented at Keowee. The root cause analysis included in situ testing of the suspect relay to confirm the failure mode. The methods used to determine the root cause of the test were described in detail during a March 22, 1996, onsite meeting with the NRC.

The Failure Investigation Process was also used to determine the reason why Powdex resin was released into the condensate system during the event. The condensate transient led to a pressure pulse at the time of reactor trip that failed gaskets on certain secondary side components. Backflow through the system resulted in the release of the resin. Efforts have been successfully implemented to remove the

resin from the condensate system. Duke's analysis of the secondary side transient was described in detail to the NRC at the March 22, 1996, onsite meeting.

In summary, Duke Power Company has completed the analyses necessary to confirm the cause of the Unit 3 reactor trip. Thorough equipment and personnel response evaluations have been completed. Comprehensive restart items have been identified and implemented.

- 2) Complete the investigation by the Significant Event Investigation Team. Evaluate the findings and recommendations of your staff including the Significant Event Investigation Team and implement appropriate corrective actions.

Shortly after the Unit 3 reactor trip, Oconee management requested a SEIT. The SEIT held an entrance on March 17, 1996, and exited with site management on March 21, 1996. The SEIT was led by the McGuire Nuclear Station site vice president. Prestart recommendations from the SEIT were reviewed by site management. All SEIT prestart recommendations have been implemented. These actions, along with the restart items identified by the Oconee staff, provide a high level of assurance that Oconee Unit 3 can be safely restarted. The restart items for Oconee Unit 3 were discussed with the NRC during a March 22, 1996, onsite meeting.

In addition, preliminary longer-term SEIT recommendations were reviewed with the NRC during the March 22, 1996, meeting. These longer-term recommendations may change somewhat as the SEIT completes its offsite analysis of the event. The longer-term recommendations do not have an impact on the safe restart of Oconee Unit 3. A final report from the SEIT is expected by April 8, 1996. Oconee management will review and act, as appropriate, on each of the final longer-term recommendations.

- 3) Conduct a walkdown of Keowee systems, verifying that the present alignment is appropriate to supply emergency power to all three Oconee units. Notify the NRC first before using Keowee in a manner that will decrease the reliable supply of emergency power to Oconee. This

includes operating with both Keowee hydro units to the grid.

The proper alignment of the Keowee systems was confirmed by the Keowee operability tests performed on March 16, 1996, and by the Keowee operators' normal duty station responsibilities. No use has been made of Keowee in a manner that could potentially decrease the reliable supply of emergency power to Oconee. With NRC concurrence, troubleshooting procedures have been executed to confirm the root cause of the trip. The testing that was performed to confirm the root cause of the event was described during the March 22, 1996, onsite meeting with the NRC.

- 4) Verify the Lee Station is available to provide electric power to Oconee on short notice and notify the NRC of any subsequent change in its availability.

As a normal operating practice, the status of the Lee Steam Station combustion turbines is verified on a daily basis. The Lee Steam Station has three combustion turbines, any one of which can supply the emergency loads at Oconee. Oconee requested immediate notification from the Lee Steam Station if fewer than two of the three combustion turbines were available. During the time the Confirmation of Action letter has been in effect, Lee has been fully capable of supplying electric power to Oconee on short notice. If this had not been the case, the NRC would have been immediately notified.

- 5) Meet with the NRC to discuss the results of 1 through 4 above; including a briefing of future Keowee testing plans. Obtain concurrence from the Regional Administrator prior to entering Mode 2.

Duke management met with the NRC at Oconee Nuclear Station on March 22, 1996. During this meeting, Oconee management reviewed all the information requested in the March 18, 1996, Confirmation of Action letter from the NRC, including future Keowee testing plans.

In summary, Oconee confirms that all the actions required by the March 18, 1996, NRC Confirmation of Action letter have been completed. Duke Power has aggressively reviewed the Unit 3 event and believes that the restart corrective

actions are comprehensive. Based on these actions, Unit 3 can be safely restarted without undue risk to the health and safety of the public.