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

Subject: Oconee Nuclear Station  
Docket Nos. 50-269, -270, -287  
10 CFR 21 Notification - Identification of Defect  
Problem Investigation Process No.: O-04-5550

Gentlemen:

Pursuant to 10 CFR 21.21(d)(3)(ii), Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC (Duke) is providing the required written notification of the identification of a defect. This information was initially reported to the NRC Operation Center on August 09, 2007. The NRC assigned event number 43558 and Part 21 2007-23-00 to this notification.

The attachment to this letter provides the information requested by 10CFR 21.21(d)(4). In addition, the attachment discusses the relevance of this issue to Duke's Oconee Nuclear Station. There are no commitments contained in this letter or its attachment.

Should you have any questions or require additional information, please contact R. P. Todd, in Oconee Regulatory Compliance, at (864) 885-3418.

This issue is considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

Bruce H. Hamilton, Vice President  
Oconee Nuclear Site

Attachment

IE19

Attachment

Notification per 10 CFR 21.21 (d)(3)(ii)

This notification follows the format of and addresses the considerations contained in 10 CFR 21.21(d)(4)(i) - (viii).

(i) Name and address of the individual or individuals informing the Commission.

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(ii) Identification of the facility, the activity, or the basic component supplied for such facility or such activity within the United States which fails to comply or contains a defect.

Facility:

Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC (Duke)  
Oconee Nuclear Station  
7800 Rochester Highway  
Seneca, Sc, 29672

Basic component which fails to comply or contains a defect:

Struthers-Dunn relay  
part number 219ABAP-115/125D  
Duke Purchase Order NE8856

(iii) Identification of the firm constructing the facility or supplying the basic component which fails to comply or contains a defect.

These relays were commercial grade items dedicated by  
Duke Power Company.

Manufactured by:  
Struthers-Dunn

(iv) Nature of the defect or failure to comply and the safety hazard which is created or could be created by such defect or failure to comply.

Nature of the defect:

Duke purchased 10 Struthers-Dunn relays, part number 219ABAP-115/125D, as commercial grade items under Duke Purchase Order NE8856 and dedicated them for service. The dedication process included testing of contact resistance by personnel in the Duke materials receiving section. Upon issue to craft personnel, two of the relays failed to pass a bench test per prior to installation. The contacts were not changing states properly even when the relays were exercised multiple times. Two additional relays were checked out and were bench tested with good results.

Subsequently, Duke tested the remaining relays from the order and confirmed proper operation. Duke also retested the rejected relays and confirmed that they had defective contacts. The closed contact resistance of the relays should be less than 50 milliohms. On one specimen the normally closed contact read infinity in the de-energized state. On the other specimen a normally open contact read infinity and the closed contact resistance of another contact fluctuated significantly in the energized state.

The defective relays were evaluated by Struthers-Dunn. The root cause was determined to be a manufacturing defect caused by the operator (sub-component vendor) not following relay assembly/adjustment procedures. The contact pressure was too high and the pressure on contacts was not adjusted properly. The vendor concluded that this was an isolated problem and stated that they took appropriate corrective action to prevent problem recurrence.

Safety hazard which could be created by such defect:

Since Part 21 does not allow credit for pre-installation bench testing or post-maintenance testing, the Part 21 reportability evaluation must assume that relays with improperly adjusted contacts could have been placed in service. This model of relay was used in various applications. Only two of the specific relays in this order were used in safety-related (QA) circuits, and those applications could not result in a significant safety hazard. However, it is postulated that these relays, having been approved for QA use, could have potentially been used in some other unspecified application, which Duke postulates could have resulted in a significant safety hazard.

As was demonstrated in this event, the existing testing was adequate to detect and correct the defect prior to installation. Therefore no actual safety hazard was created.

(v) The date on which the information of such defect or failure to comply was obtained.

The original problem report which identified this issue was written September 4, 2004. However, the initial evaluation of the event for reportability under Part 21 concluded the issue was not reportable due to a deficient administrative procedure which stated that Part 21 reportability did not apply to commercial grade components dedicated by the licensee utility itself.

During a subsequent review of the administrative procedure as part of evaluation of another potential problem report, this statement was questioned. No regulatory source was found to support the statement and a problem report was issued on March 29, 2007 to address the inaccurate procedure. In addition to initiating action to correct the administrative procedure, Duke initiated a review of problem reports to identify cases where this guidance had been used to terminate a Part 21 reportability review. The 2004 problem report on this issue was identified as potentially affected and the reportability evaluation reopened on April 2, 2007.

Documentation in the original problem report was somewhat ambiguous. On one hand the vendor had concluded that an assembly error had occurred. On the other hand, the defective relays had passed a receipt inspection test and an investigator concluded that there was no problem with the test process, indicating that the relays were acceptable upon receipt. This raised a question as to whether the failed bench test was the result of damage during storage/issue. Therefore it was not clear that a Deficiency (as defined by Part 21) existed. The reportability determination remained open while the personnel involved were contacted for clarification.

On July 26, 2007, the open reportability determination became an issue during an NRC team inspection. Duke elected to concede that the issue constituted a Deficiency and began the evaluation of the potential for a significant safety hazard. Duke evaluated the actual applications where the relays from this order had been installed and concluded that none of these applications could result in a significant safety hazard.

However, the Duke administrative procedure on Part 21 evaluations states that potential applications where the affected component might potentially be used as a suitable substitute in the future must be considered. Based

on the conclusion that this model relay could be postulated to replace a relay in a currently unspecified application which might result in a significant safety hazard, the issue was determined to be reportable on August 7, 2007.

(vi) In the case of a basic component which contains a defect or fails to comply, the number and location of all such components in use at, supplied for, or being supplied for one or more facilities or activities subject to the regulations in this part.

These specific relays were purchased as Commercial Grade Items and were dedicated by Duke for its own use. The two relays identified as defective were returned to the vendor for diagnosis of the problem. The remaining relays in this order were retested to verify proper operation prior to installation, and, as stated above, none were installed in applications which could potentially result in a significant safety hazard.

(vii) The corrective action which has been, is being, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete the action.

Corrective actions taken or planned:

1. As stated above, the defective relays were discovered prior to installation. They were not installed but were replaced with acceptable relays of the same model. Duke retested the relays to confirm the condition, then notified the commercial grade vendor/manufacturer. These actions were completed prior to November 4, 2004 as part of the initial problem report.

2. Struthers-Dunn performed a root cause determination and notified their sub-component vendor of the discrepancies for their review. The root cause and corrective action were documented in the Struthers-Dunn return goods data base. Based on the information supplied by Struthers-Dunn, this appears to be an isolated problem and appropriate corrective action has been taken to prevent problem recurrence. This action was also part of the initial problem report and was completed prior to November 18, 2004.

3. Duke, as dedicating entity, reviewed the test methods and the test equipment used by the Duke materials receiving group who had performed testing per the dedication process. Duke concluded that there was not a deficiency in the testing performed by the Duke materials receiving group. This action was completed prior to November 4, 2004 as part of the initial problem report.

Subsequent to this event, Duke has implemented a 100% source inspection which witnesses vendor testing on these relays. However, Duke does not consider this current practice to be a commitment to the NRC. Other commercial grade items may or may not be 100% tested depending on the item, receipt history and other considerations. Duke implements sampling plans based on industry practice.

4. The guidance in administrative procedure for Part 21 evaluations was confirmed to be in error and a problem report was issued on March 29, 2007. The administrative procedure guidance was revised, with the revision being issued on July 19, 2007.

All of these corrective actions are currently complete. This report contains no actions which are intended to be commitments to the NRC.

(viii) Any advice related to the defect or failure to comply about the facility, activity, or basic component that has been, is being, or will be given to purchasers or licensees.

NONE