



UNITED STATES  
**NUCLEAR REGULATORY COMMISSION**  
REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
61 FORSYTH STREET SW SUITE 23T85  
ATLANTA, GEORGIA 30303-8931

+February 7, 2003

EA-02-243

Duke Energy Corporation  
ATTN: Mr. R. A. Jones  
Site Vice President  
Oconee Nuclear Station  
7800 Rochester Highway  
Seneca, SC 29672

SUBJECT: FINAL SIGNIFICANCE DETERMINATION FOR A WHITE FINDING AND  
NOTICE OF VIOLATION (NRC INSPECTION REPORT NO. 50-269/03-07,  
50-270/03-07, 50-287/03-07, OCONEE NUCLEAR STATION)

Dear Mr. Jones:

The purpose of this letter is to provide you with the Nuclear Regulatory Commission's (NRC) final significance determination for a finding involving the inadequate installation of the "red" and "black" connectors on the pre-staged Unit 3 high pressure injection (HPI) pump emergency power supply cable from the auxiliary service water (ASW) switchgear. The finding was documented in NRC Inspection Report No. 50-269,270,287/02-15, dated November 21, 2002, and was assessed under the significance determination process as a preliminary White issue (i.e., an issue of low to moderate safety significance, which may require additional NRC inspection). The cover letter to the inspection report informed Duke Energy Corporation (DEC) of the NRC's preliminary conclusion, provided DEC an opportunity to request a regulatory conference on this matter, and forwarded the details of the NRC's preliminary estimate of the change in core damage frequency (CDF) for this finding.

In lieu of a regulatory conference, DEC submitted a written response dated January 10, 2003, which conveyed the results of their own root cause investigation. In summary, the response indicated that DEC did not identify a specific performance deficiency which led to the event, and that the associated NRC Inspection Report No. 50-269,270,287/02-15 provided information which differed with DEC's conclusions. The differing points included DEC's conclusions that the "red" connector was partially threaded on and would not have failed; the ground detection relays would protect the HPI pump motor from damage due to overheating caused by an electrical phase imbalance; and the other HPI pump would be available to provide flow to the reactor coolant system. DEC's response also documented corrective actions that have been taken and/or planned to preclude recurrence.

After considering the information developed during the inspection and the information DEC provided in its response, the NRC has concluded that the final inspection finding is appropriately characterized as White for Unit 3, in the mitigating systems cornerstone.

NRC Inspection Report No. 50-269,270,287/02-15 documented the performance deficiency as improper installation of the connectors (i.e., two parts of the connector not being screwed together). Although DEC could not identify a specific activity that resulted in the as-found

condition of the connectors, the NRC concluded that the improper installation of the connectors was reasonably within the licensee's ability to foresee and correct and, as such, should have been prevented. By not ensuring proper cable connector installation, DEC failed to provide reasonable assurance that the pre-staged emergency power supply cable from the auxiliary service water switchgear to an HPI pump would be available for postulated events that involve High Energy Line Break and/or tornado event recovery.

At the time of the inspection, the NRC interviewed the DEC technician who originally identified the issue. Based on this discussion, the NRC concluded that the "red" connector was not connected properly, and as such, the NRC did not have reasonable assurance that the connector would perform as designed. The information provided in DEC's response of January 10, 2003, did not provide sufficient information to cause the NRC to modify this conclusion.

Regarding DEC's conclusions that the ground detection relays would protect the HPI pump motor from damage due to overheating caused by an electrical phase imbalance, and the other HPI pump would be available to provide flow to the reactor coolant system, the NRC concluded that these factors were previously considered in its risk analysis (under "Recovery Considerations" attached to NRC Inspection Report No. 50-269, 270, 287/02-15). The information you provided does not alter the NRC's conclusion that, although there would be ample time, recovery actions would consist of complex, diagnostic actions of a troubleshooting nature without a clearly defined procedure and under high stress conditions. Accordingly, based on information developed during the inspection and in light of the above discussion, we conclude that the final risk significance of the inspection finding is appropriately characterized as White.

You have ten business days from the date of this letter to appeal the staff's determination of significance for the identified White finding. Such appeals will be considered to have merit only if they meet the criteria given in NRC Inspection Manual Chapter 0609, Supplement 2.

The NRC also determined that a violation occurred involving the requirements of Technical Specification 5.4.1, in that DEC failed to properly implement the vendor's written instructions for attaching the electrical connectors on the pre-staged Unit 3 HPI pump emergency power supply cable from the ASW switchgear. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG-1600, the Notice is considered escalated enforcement action because it is associated with a White finding. The NRC also notes that, as documented in Inspection Report No. 50-269,270,287/02-15, and confirmed in DEC's letter of January 10, 2003, corrective actions have been taken to preclude recurrence of a similar problem on either of the Oconee units' pre-staged HPI emergency power supply cables from the ASW switchgear. Additionally, it is understood that DEC is planning to inspect the normal cable connectors on all three units' HPI pump motors for tightness and apply tape to cables and elbows to prevent loosening.

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence, and the date when full compliance was achieved is adequately addressed on the docket in NRC Inspection Report No. 50-269,270,287/02-15, and in DEC's letter of January 10, 2003. Therefore, you are not required to respond to this letter unless the description therein does not accurately reflect your

corrective actions or your position. In that case, or if you choose to provide additional information, you should follow the instructions specified in the enclosed Notice.

Because plant performance for this issue has been determined to be in the increased regulatory response band, we will use the NRC Action Matrix to determine the most appropriate NRC response for this finding. We will notify you, by separate correspondence, of that determination.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure, and your response (should you choose to provide one), will be available electronically for public inspection in the NRC Public Document Room (PDR) or from the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room). To the extent possible, any response should not include any personal privacy, proprietary, or safeguards information so that it can be placed in the PDR and PARS without redaction.

For administrative purposes, this letter is issued as a separate NRC Inspection Report, No. 50-269,270,287/03-07, and the above violation is identified as VIO 50-287/03-07-01: Inadequate Installation of Connectors on the Unit 3 HPI Pump Emergency Power Supply Cable from the ASW Switchgear. Accordingly, the associated apparent violation AV 50-287/02-15-01 is closed.

Should you have any questions regarding this letter, please contact Robert Haag, Chief, Reactor Projects Branch 1, at 404-562-4550.

Sincerely,

**/RA by Bruce Mallett for/**

Luis A. Reyes  
Regional Administrator

Docket Nos: 50-269, 50-270, 50-287  
License Nos: DPR-38, DPR-47, DPR-55

Enclosure: Notice of Violation  
cc w/encl: (see page 4)

DEC

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cc w/ encl:

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NAME	WROGERS	LPLISCO	CEVANS		LDUDES	FCONGEL
DATE	01/30/03	02/03/03	01/30/03		02/04/03	02/04/03

## NOTICE OF VIOLATION

Duke Energy Corporation  
Oconee Nuclear Station  
Unit 3

Docket Nos.: 50-287  
License Nos.: DPR-55  
EA-02-243

During an NRC inspection completed on November 21, 2002, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," (Enforcement Policy), the violation is listed below:

Technical Specification 5.4.1 requires that written procedures shall be established implemented and maintained as recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Regulatory Guide 1.33, Section 9, Procedures for Performing Maintenance, requires that maintenance which can affect the performance of safety-related equipment should be properly preplanned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances.

Contrary to the above, prior to May 30, 2002, the licensee failed to adequately implement the vendor's written instructions for attaching the "Elastimold" electrical connectors on the "Black" and "Red" phases of the Unit 3 high pressure injection (HPI) pump emergency power supply cable from the auxiliary service water switchgear. Consequently, the "Elastimold" connectors on these two phases were found to be improperly installed (i.e., not screwed on), resulting in the possible loss of HPI pump function during a postulated high energy line break/tornado event recovery.

This violation is associated with a White SDP finding for Unit 3 only.

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence and the date when full compliance was achieved is already adequately addressed on the docket in NRC Inspection Report No. 50-269,270,287/02-15 and in DEC's letter of January 10, 2003. However, you are required to submit a written statement or explanation pursuant to 10 CFR 2.201 if the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation," and send it to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555 with a copy to the Regional Administrator, Region RII, within 30 days of the date of the letter transmitting this Notice of Violation (Notice).

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

If you choose to respond, your response will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room). Therefore, to the extent possible, the response should not include any personal privacy,

Enclosure 1

proprietary, or safeguards information so that it can be made available to the Public without redaction.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated this 7<sup>th</sup> day of February 2003