

# CATEGORY 1

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SUBJECT: Responds to violations noted in insp repts 50-269/98-03,  
           50-270/98-03 & 50-287/98-03, respectively. Corrective actions:  
           declared both PRVS trains on all three Oconee units  
           technically inoperable & requested enforcement discretion

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W. R. McCollum, Jr.  
Vice President

August 5, 1998

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

Subject: Oconee Nuclear Site  
Docket Nos. 50-269, -270, -287  
Inspection Report 50-269, -270, -287/98-03  
Reply to Notice of Violation

Gentlemen:

By letter dated July 6, 1998, the NRC rejected Duke Energy Corporation's June 4, 1998 denial of Violation 98-03-02. The same letter also requested a supplement to Duke's response to Violation 98-03-07. These violations are described in NRC Inspection Report No. 50-269/98-03, 50-270/98-03, and 50-287/98-03 dated May 4, 1998.

Duke Energy Corporation (Duke) hereby accepts Violation 98-03-02. Also, as requested in the July 6<sup>th</sup> letter, Duke is providing supplementary information to Violation 98-03-07. Pursuant to the provisions of 10 CFR 2.201, the attachments to this letter provide: (1) a written response to violation 98-03-02, and (2) a supplement to the initial Duke response to violation 98-03-07. These violations were identified in the subject Inspection Report.

Corrective actions in Attachment 1, Section 3, and in Attachment 2 are the only regulatory commitments in this submittal.

Very truly yours,

*W. R. McCollum, Jr. for WRM*

W. R. McCollum, Jr.  
Site Vice President  
Oconee Nuclear Site

*IED 1/1*

Attachment

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NRC Document Control Desk  
August 5, 1998  
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cc: Mr. L. A. Reyes, Regional Administrator  
U. S. Nuclear Regulatory Commission, Region II

Mr. D. E. LaBarge, Project Manager  
Office of Nuclear Reactor Regulation

Mr. M. A. Scott  
Senior Resident Inspector  
Oconee Nuclear Site

Attachment 1  
Reply to Notice of Violation (Reply)  
Violation 98-03-02

Restatement of the Violation 98-03-02

Technical Specification (TS) 4.5.4.1.b.1 states that during each refueling outage, it shall be demonstrated that the Penetration Room Ventilation System (PRVS) fans operate at design flow (+/- 10 percent) when tested in accordance with ANSI N510-1975. The ANSI N510-1975 specified test method for air flow capacity testing is with a pitot traverse tube which measures air-flow-velocity pressure and converts this to flow rate.

Contrary to the above, testing performed since initial plant construction and operation, to demonstrate design PRVS flow during the refueling outages, was not in accordance with ANSI N510-1975. The licensee's surveillance procedure which was used to perform this TS requirement, PT/1,2,3/A/0170/005, Penetration Room Ventilation System Monthly Test, Revision 7, used an installed orifice and differential pressure (dp) measurement method, which is not in accordance with ANSI N510-1975.

Reply to the Notice of Violation:

Duke Power acknowledges the violation.

**1) The reason for the violation:**

TS 4.5.4.1.b.1 requires the PRVS to be flow tested every 18 months in accordance with ANSI N510-1975. During a Safety System Engineering Inspection at Oconee Nuclear Station, the NRC concluded that Technical Specifications required use of a pitot tube traverse to measure Penetration Room Ventilation System (PRVS) fan flow rates. The Duke procedure utilized installed orifice meters.

The root cause of this event is Deficient Written Documentation, specifically inadequate wording of the licensing submittal that incorporated ANSI N510. It did not clearly delineate which section of the standard applied to

Attachment 1  
Reply to Notice of Violation (Reply)  
Violation 98-03-02

the flow measurement surveillance. This led to a different interpretation of the standard than was intended by the NRC.

It is apparent that accountable Duke personnel over a number of years did not interpret ANSI N510 to require use of pitot tube traverses on those systems where installed instruments existed. The use of a similar orifice during training laboratory sessions indicates that the interpretation that installed flow instruments could be used was not just one individual's error.

The engineer and his contemporaries who reviewed the 1976 TS change made assumptions and interpretations as to which sections applied. They did not adequately recognize that their interpretations were not documented in the TS submittal, and, therefore, were not officially approved (or rejected) by the NRC. They did not see a need to request official clarification or interpretation. A more questioning attitude with respect to the meaning of the TS reference to N510 could have led to a more timely identification and resolution of this issue. A contributing factor is a misunderstanding among some personnel related to the need for regulatory approval of technically acceptable alternatives which deviate from exact compliance to requirements.

**2) The corrective steps that have been taken and the results achieved:**

Upon receipt of the NRC rejection of the Duke denial, Duke immediately concluded that the PRVS Technical Specification (TS) surveillance had not been satisfied and declared both PRVS trains on all three Oconee units technically inoperable. TS 3.0 was entered at 1330 hours, with all three Oconee units at 100% power. Duke requested a Notice of Enforcement Discretion which was verbally granted by NRC at 1735 hours.

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Reply to Notice of Violation (Reply)  
Violation 98-03-02

Subsequent corrective actions:

- a. Duke submitted a license amendment to permit continued operation without compliance with TS 4.5.4.1.b.1 pending completion of modifications to allow use of pitot tubes to measure flow.
- b. Duke designed and implemented a modification to add test ports to allow flow measurements by pitot traverses.
- c. Duke prepared an extensive test procedure and obtained an expert vendor service to conduct the initial pitot traverse flow measurements.

**3) The corrective steps that will be taken to avoid further violations:**

- a. Duke is in the process of completing the initial pitot traverse flow measurements on all three units (six PRVS trains). The data will be analyzed and appropriate action will be taken to come into complete compliance with TS 4.5.4 by August 30, 1998.
- b. Prepare a training package on the relationship between operability and surveillance requirements and provide training to appropriate personnel.
- c. Following completion of item 2 above, perform a review of TS for references to industry ventilation and filtration standards, then review the programs and procedures that implement those standards to assure that all requirements are met and any compliance issues with surveillance items are identified and resolved. The Oconee Improved TS (ITS) have been submitted and conversion from the current TS to ITS is expected to occur by the first quarter of 1999. Therefore, this review will be performed against ITS.

Planned Corrective Actions a, b, and c under item 3 above are the only NRC commitments.

4) **The date when full compliance will be achieved:**

Duke Energy will be in full compliance by August 30, 1998.

Attachment 2  
Supplemental Response to Notice of Violation  
Violation 98-03-07

The subject NRC letter dated July 6, 1998 requested Duke to supplement the response to Violation 98-03-07 to address the review of other calculations that may also have "incorrect and nonconservative assumptions". The following corrective actions resulted:

1) Immediate

Once it was identified that air leaks in the CRVS ducts exceeded values assumed in the OSC-6600 control room dose calculation, PIP 098-1083 was generated and operability evaluations commenced.

2) Subsequent

As part of the past and present operability evaluation process, ALL known ONS control room (CR) dose calculations were reviewed to ascertain the potential impacts. CR dose analyses in calculations OSC-6810 (steam generator tube rupture), OSC-6811 (rod ejection), and OSC-6922 (main steam line break) were found to incorporate the same "incorrect and nonconservative" assumptions utilized in OSC-6600 (MHA). During the course of the operability evaluations, it was determined that the OSC-6600 analysis would remain the bounding ONS CR dose analysis, once the new backleakage and booster fan start time data were incorporated.

3) Planned

Calculations OSC-6810, OSC-6811, and OSC-6922 are presently in the process of being revised to document these new assumptions. PIP 098-1083 CA #11 requires that these calcs be updated.

Prior to the NRC audit, PIP 098-0745 CA #1 was written to ensure that CR dose analyses were performed for the other UFSAR Chapter 15 analyses that lead to less bounding dose results (e.g. fuel handling accident). This work is currently in progress. These analyses will, of course, contain appropriate backleakage and system actuation time assumptions.

This problem involved the same incorrect assumptions being implemented in four dose calculations. The broader issue of assuring correct and conservative assumptions in engineering calculations is assessed via ongoing self assessment efforts (SITAs, SSEIs, etc.). Although problems are periodically identified, these assessments indicate that the conclusions of engineering calculations are appropriate.