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SUBJECT: Forwards requested changes to 980706 telcon request for enforcement discretion submitted to avoid operational risks associated w/unnecessary shutdown of Oconee,Units 1,2 & 3.

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July 7, 1998

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

Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287
Supplement to Notice of Enforcement Discretion Request
for Penetration Room Ventilation System Surveillance
Inspection Report 50-269, -270, -287
Response to Notice of Violation 98-03-02
TAC Numbers: A2205, A2206, A2207

During the Safety System Engineering Inspection at Oconee for the Control Room Ventilation System (CRVS) and Penetration Room Ventilation System (PRVS), the NRC identified a violation which indicated that the PRVS fans were not tested in accordance with the Technical Specifications and ANSI N510-1975. Technical Specification 4.5.4.1.b.1 requires that the Penetration Room Ventilation System fans shall be demonstrated to operate at design flow (+/- 10%) when tested in accordance with ANSI N510-1975. The NRC notified Duke Energy Corporation (Duke) of the violation in a letter dated May 4, 1998.

In a letter dated June 4, 1998, Duke denied the violation based on the fact that the use of orifice plates to measure flow from the PRVS fans meets the requirements of the plant Technical Specifications and ANSI N510-1975. Following a review of the information which was provided by Duke, the NRC indicated, in a letter dated July 6, 1998, that the denial of the violation was not acceptable and the violation would not be rescinded.

Based on a review of the information provided in the NRC letter dated July 6, 1998, Duke acted on the staff's position that the PRVS fan testing was not performed in accordance with the Technical Specifications. As a result, Duke determined that Technical Specification surveillance requirement 4.5.4.1.b.1 was not literally satisfied and both trains of PRVS on all three Oconee units were declared technically inoperable. Technical Specification 3.0 was entered at 1330 hours on July 6, 1998 and a request for enforcement discretion was submitted to the NRC.

During a conference call with the staff at 1530 hours on July 6, 1998, Duke presented its request for enforcement discretion. The NRC provided verbal approval of the enforcement discretion request at 1735 hours on July 6, 1998, based on changes that were requested by the staff during the conference call. Attachment 1 contains the requested changes to the July 6, 1998, request for enforcement discretion that was submitted to avoid the operational risks that are associated with an unnecessary shutdown of Oconee Units 1, 2, and 3.

Oconee requests that enforcement discretion applies to Oconee Units 1, 2, and 3 until a license amendment can be submitted and approved by the staff. Oconee will be working diligently and expeditiously to prepare a license amendment to resolve this issue and will submit a proposed Technical Specifications change to the staff by July 8, 1998. Attachment 2 contains a draft of the proposed Technical Specification change.

Please address any questions to Michael E. Bailey at (864) 885-4390.

Very Truly Yours,

W. R. McCollum, Jr.
Site Vice President

Attachments (2)

xc: Mr. L. A. Reyes
Regional Administrator, Region II

Mr. M. A. Scott
Senior Resident Inspector

Mr. D. E. LaBarge
ONRR, Project Manager

Attachment 1
Notice of Enforcement Discretion (NOED) Request

Oconee has used Administrative Letter 95-05 to develop this request for enforcement discretion. Relevant information supporting this request for enforcement discretion is provided below.

1. Technical Specification that will be violated:

The Technical Specification that is being violated is Technical Specification 4.5.4.1.b.1. Specification 4.5.4.1.b.1 states, the following:

> "Every 18 months, it shall be demonstrated that 1) the Penetration Room Ventilation System fans operate at design flow (+/- 10%) when tested in accordance with ANSI N510-1975... ."

ANSI N510-1975 requires that a pitot-tube velocity-traverse be used in accordance with Section 9 of the American Conference of Government Industrial Hygienists (ACGIH) Industrial Ventilation. The traverse should be made at a point in the duct where velocity is 1000 fpm or more, and if possible, where velocity measurements can be made at least 7.5 duct diameters downstream of any airflow disturbance.

Specifically, on July 6, 1998, at 1330 hours, it was determined that the Penetration Room Ventilation System (PRVS) fans were not tested as required by Specification 4.5.4.1.b.1. The PRVS fans are tested by the use of orifice plates. The determination that the PRVS fans were tested inappropriately resulted from the review of the information that was contained in the letter from the NRC to Duke dated July 6, 1998. In the NRC letter dated July 6, 1998, the NRC informed Duke that the denial of the PRVS flow testing violation, which was proposed in a Notice of Violation dated May 4, 1998, was not acceptable to the NRC and the violation would not be rescinded.

2. Circumstances surrounding the situation:

Based on the information provided in the NRC letter dated July 6, 1998, Duke immediately acted on the staff's position with respect to the operability of the PRVS for Oconee Units 1, 2, and 3. The Operations Shift Manager (OSM) was briefed on July 6, 1998, regarding the fact that surveillance requirements for the PRVS flow were not literally satisfied for Oconee Units 1, 2 and 3. The OSM declared both trains of PRVS inoperable at 1330 hours on July 6, 1998 and Technical Specification 3.0 was entered. A

request for enforcement discretion was submitted to the NRC on July 6, 1998. During a conference call on July 6, 1998, the NRC and Duke discussed the content in the enforcement discretion request..

3. The safety basis for the request, including an evaluation of the safety significance:

This evaluation is for continued operation of Oconee Units 1, 2, and 3 absent compliance with Technical Specification 4.5.4.1.b.1 surveillance requirements.

The PRVS is QA condition 1 and is required to filter reactor building leakage which enters the East and West Penetration Rooms. The PRVS performs this function by taking suction on the penetration rooms and filtering the air by the use of PAC filters. System flow requirements are maintained to assure that proper vacuum can be maintained within the penetration rooms, and proper residence time exists within the carbon filters. The system design flow rate is 1000 cfm (+/- 10%).

During the Safety System Engineering Inspection at Oconee of the Control Room Ventilation System and Penetration Room Ventilation System, the NRC identified a potential violation which indicated that the PRVS fans were not tested in accordance with the Technical Specifications and ANSI N510-1975. The PRVS fans are currently tested utilizing originally installed orifice plates and a permanently mounted gauge. ANSI N510-1975 indicates that flow measurements should be determined by using a pitot-tube velocity-traverse. In response to this issue, Duke initiated a Problem Investigation Process (PIP) report (PIP 0-098-1184) on March 11, 1998. As part of the PIP, an operability evaluation was performed to determine if the use of orifice plates to measure air flow impacted the PRVS. The operability evaluation concluded that the orifice plates accurately measured the PRVS flow and ensured that the system design flow rate requirements were satisfied. In addition, Duke concluded that the use of the orifice plates was allowed by ANSI N510-1975 and met the Technical Specifications.

Duke's initial basis for concluding that the use of the orifice plates met ANSI N510-1975 and the Technical Specifications is in the following two paragraphs. The PRVS air flow path is constructed of 12" Standard Schedule pipe with an internal cross sectional area of 0.7854 square feet. Assuming the minimum acceptable flow for the system of 900 cfm (1000 cfm - 10%), the

average velocity of the system would only be 1150 fpm. Due to the current piping arrangement in the system, there is not an ideal location for taking a pitot-tube velocity-traverse. The individual trains have numerous transitions and flow disturbances preventing a uniform velocity profile from developing. Because of this, several of the 10 velocity points required to be taken with the pitot-tube would have very low velocities (much less than 1000 fpm). The ACGIH Industrial Ventilation indicates that the potential error in calculating the final flow results using a pitot-tube velocity-traverse with less than 1000 fpm could contain potential errors which were in excess of 4%. When this error rate was factored into each data location, the pitot-tube velocity-traverse flow test would not assure that flow was within the 1000 cfm +/- 10% requirement of the Oconee Technical Specifications. Even if the flow was perfectly uniform, the potential error in measuring the flow with a pitot-tube velocity-traverse would approach 4%.

ANSI N510-1975 recognizes the concern of using pitot-tube velocity-traverses and states that the traverse should be made at a point in the duct where airflow velocity is 1000 fpm or more and if there is no place where the airflow is greater than 1000 fpm, then use of one of the other methods as described in Section 9 of the ACGIH Industrial Ventilation is acceptable. Section 9 of the ACGIH Industrial Ventilation describes the use of a sharp-edge orifice as a flow measuring device. This method takes a dP measurement across orifice plates and converts it directly into a flow rate. The originally installed instrument assures a much more accurate flow reading for Oconee's testing scenario, and since the orifice plate is left in the same location from one test to the next it is very good for trending flows. Therefore, the use of the orifice plates to measure the PRVS flow ensures that the PRVS system design flow requirements are met.

In a letter dated June 4, 1998, Duke denied the Notice of Violation for the PRVS flow testing and indicated that a conservative plan was being put in place to measure the PRVS airflow with a pitot-tube array to compare the flows indicated by the orifice plates. This additional testing was completed in June 1998 and documented in PIP 0-098-1184, which was written for the PRVS testing issue. The following information summarizes the test results.

On June 8th, 9th, and 10th, testing was conducted on the PRVS to perform a qualitative check of the installed orifice flow meter measurements using a pitot-tube array. The purpose of this test

was to collect data to support the flow orifice measurements. In a data collection test, specific test acceptance criteria are not included other than to collect the applicable data. A pitot-tube array was chosen for the test because of the ease of use of an array compared to performing a pitot-tube velocity-traverse. In addition, the array could be temporarily attached to the inlet to the PRVS without performing piping modifications to the system.

A 12 point pitot-tube array (12 inch diameter) with a flow straightener was purchased from Air Monitor Corporation. A test rig was made consisting of the array, flow straightener and a short section of duct work. The short section of ductwork (approximately 2 feet) was added to the array to allow for additional flow straightening. Scaffolding was erected in each of the Penetration Rooms under the inlets to the PRVS (6 total). Each Unit has two trains of PRVS and the two inlets are located in the ceiling of the Penetration Rooms on each of the Units.

The first tests were conducted on Oconee Units 1 and 2 on June 8th and Oconee Unit 3 was tested on June 9th. The test results were:

	Pitot array (in. wg)	FPM	Pitot array (CFM)	Orifice Plate (CFM)	Lower than pitot by (%)
PRVS 1A	0.12	1387	1096	1000	8.7
PRVS 1B	0.14	1499	1184	1025	13.4
PRVS 2A	0.15	1551	1225	1090	11.0
PRVS 2B	0.16	1602	1266	1060	16.3
PRVS 3A	0.12	1387	1096	995	9.2
PRVS 3B	0.125	1416	1119	1030	8.0

Difficulties were encountered during the data collection that brought into question the quality of the measurements. Aligning the pitot-tube array with the system opening was difficult due to the location of the opening (approximately 30 feet off the floor of the Penetration Room) and due to obstructions near the PRVS opening. Also, the readings that were obtained from the pitot-tube array were not stable.

After a review of the data and the difficulties, the flow test was repeated on the Oconee Unit 2 PRVS on June 10th with the purpose to determine if repeatable data could be obtained. The test fixture was modified to add alignment clips to the fixture to provide a means to ensure that the fixture was centered in the

inlet opening of the PRVS. The previous testing had been performed with a digital manometer. For this testing, the same digital manometer would be used but measurements would also be taken with an 0-0.25" wg inclined manometer. Below is the data obtained for this retest:

	Pitot array (in. wg)	FPM	Pitot array (CFM)	Orifice Plate (CFM)	Lower than pitot by (%)
PRVS 2A	0.17	1651	1304	1090	16.4
PRVS 2B	0.16	1602	1266	1060	16.3

While the 2B train yielded the same results as the previous test, the 2A train difference was 16.4% compared to the 11.0% which was achieved two days earlier. The PRVS flow control valves are set at a travel stop such that the control valve position between the test on June 8th and June 10th was identical. As such, the same flow rate is expected to be achieved through the system which was the case for the orifice flow reading. The pitot-tube array for the 2B train achieved repeatable results; however, the pitot-tube array in the 2A train did not provide repeatable results. The data did show general agreement with the orifice flow rate which is considered accurate and repeatable for this flow measurement. With the non-repeatability of the data, the pitot-tube array data was considered to be invalid and data from the orifice plates was still considered valid.

As a conservative measure, consideration was given to the potential effects on the carbon filters in the PRVS if the increased flow rates measured with the pitot-tube array were considered actual. NCS Corporation was contacted regarding the effects of higher flow rates through carbon filters. NCS Corporation, who performs Oconee's carbon filter testing, stated that a 20% increase in flow would not degrade the above results by more than one or two percent. Therefore, there was no operability concern regarding the carbon filter efficiency even if the pitot-tube array data was used.

In conversations with NCS personnel, it was determined that the carbon testing standard, ASTM D3803-1989, included a calculation to determine the effects of higher gas velocities on carbon. Of the six PRVS trains at ONS, currently the maximum tested filter penetration is 0.41%. Utilizing the equation from ASTM D3803-1989, a flow increase from 1000 cfm to 1300 cfm would yield penetration of 1.46%. This predicted penetration is equal to a

filter efficiency of 100% minus 1.46% or 98.54%. Technical Specification 4.5.4.1.e requires a minimum filter efficiency of 90%.

As demonstrated by the information in the above section, the orifice plates provide an accurate and reliable source of information to verify that the PRVS is meeting the system design requirements. Therefore, literal non-compliance with the Technical Specifications and ANSI N510-1975 is not a safety significant issue.

4. The basis for the licensee's conclusion that the noncompliance will not be of potential detriment to the public health and safety and that neither an unreviewed safety question nor a significant hazard consideration is involved.

Unreviewed Safety Question and No Significant Hazards Review:

1) Increase the probability of an accident evaluated in the SAR?

No. This evaluation addresses the potential effects of a missed surveillance for the Penetration Room Ventilation System. As described in the safety evaluation, the use of orifice plates which are currently used in Oconee Units 1, 2, and 3 to measure the flow from the PRVS fans does not increase the probability of an accident evaluated in the SAR because this condition is not an accident initiator. There is no physical change to any plant structure, systems, or components (SSCs) or operating procedures. Neither electrical power systems, nor important to safety mechanical SSCs will be adversely affected. The PRVS has been evaluated as operable for normal and accident conditions. There are no shutdown margin, reactivity management, or fuel integrity concerns. There is no increase in accident initiation likelihood, therefore analyzed accident scenarios are not impacted.

2) Increase the probability of a malfunction of equipment important to safety evaluated in the SAR?

No. As described in the safety evaluation, the use of orifice plates which are currently used in Oconee Units 1, 2, and 3 to measure the flow from the PRVS fans does not increase the probability of a malfunction of equipment important to safety. This activity is not a test procedure and does not physically change or modify any plant system, structure, or component. The PRVS is QA condition 1 and is required to filter reactor building leakage which enters the East and West Penetration Rooms. Nothing

is being done to inhibit the integrity or function of the PRVS. No valve manipulations, electrical alignments, or system configurations are required.

3) Increase the consequences of an accident evaluated in the SAR?

No. This activity will not adversely affect the ability to mitigate any SAR described accidents. The PRVS flow is within the system design limits as measured by the orifice plates. In addition, if the flow rates from the temporary test using a pitot-tube array are considered, the carbon filter efficiency is still within the Technical Specification limits at the higher flow rates. Therefore, Oconee Units 1, 2, and 3 meet system design requirements for the PRVS with no compensatory actions required. There is no adverse impact on containment integrity, radiological release pathways, fuel design, filtration systems, main steam relief valve setpoints, or radwaste systems.

4) Increase the consequences of a malfunction of equipment important to safety evaluated in the SAR?

No. No safety related or important to safety equipment necessary to place or maintain the plant in safe shutdown condition will be impacted by continued operation, absent the surveillance. As described in the safety evaluation, the use of orifice plates which are currently used in Oconee Units 1, 2, and 3 to measure the flow from the PRVS fans does not increase the consequences of a malfunction of equipment important to safety. The PRVS flow is within the system design limits as measured by the orifice plates. In addition, if the flow rates from the temporary test using a pitot-tube array are considered, the carbon filter efficiency is still within the Technical Specification limits at the higher flow rates. Therefore, Oconee Units 1, 2, and 3 meet system design requirements for the PRVS with no compensatory actions required. There is no adverse impact on containment integrity, radiological release pathways, fuel design, filtration systems, main steam relief valve setpoints, or radwaste systems.

5) Create the possibility for an accident of a different type than any evaluated in the SAR?

No. There is no increased risk of unit trip, or challenge to the RPS or other safety systems. There is no physical effect on the plant, i.e. none on RCS temperature, boron concentration, control rod manipulations, core configuration changes, and no impact on nuclear instrumentation. There is no increased risk of a

reactivity excursion. No new failure modes or credible accident scenarios are postulated from this activity.

6) Create the possibility for a malfunction of a different type than any evaluated in the SAR?

No. There is no physical change to the plant SSCs or operating procedures. This change does not involve any plant changes, electrical lineups, or valve manipulations. No QA conditions or code requirements are degraded. No new equipment or components were installed. No credible new failures are postulated.

7) Reduce the margin of safety as defined in the bases to any Technical Specification?

No. No function of any important to safety SSC will be adversely affected or degraded as a result of continued operation. No safety parameters, setpoints, or design limits are changed. There is no adverse impact to the nuclear fuel, cladding, RCS, or required containment systems. Therefore, the margins of safety as defined in the bases to any Technical Specifications are not reduced as a result of this change.

CONCLUSION

Based on the preceding evaluation, the noncompliance will not be of potential detriment to the public health and safety and neither an unreviewed safety question nor a significant hazard consideration is involved.

5. The basis for the licensee's conclusion that the compliance will not involve adverse consequences to the environment.

No environmental impact analysis is necessary since this request does not involve a significant hazards consideration, a significant change in the types/amounts of effluents that may be released offsite, or a significant increase in the individual/cumulative occupational radiation exposure.

6. Any proposed compensatory measure(s).

As described in the safety evaluation, the orifice plates which are currently used in Oconee Units 1, 2, and 3 to measure the flow from the PRVS fans indicate that the PRVS flow is within the system design limits with no compensatory measures. However, the following activities related to this issue are being taken:

- The Operations Shift Manager was briefed on this issue and it is being carried as a "plant concern" on the operations turnover sheets. A training package will be provided to heighten the sensitivity of the operators regarding the PRVS flow issue on Oconee Units 1, 2, and 3.

- Measurement of the flow through the PRVS fans by a pitot-tube velocity-traverse is being pursued. This will include the necessary plant modifications to install the pitot-tube velocity-traverse test locations. This will bring Oconee into compliance with the current Technical Specifications.

7. The justification for the duration of the noncompliance.

Oconee requests enforcement discretion to apply to Oconee Units 1, 2, and 3 until a license amendment can be submitted and approved by the staff. The license amendment will allow the noncompliance to exist until August 30, 1998. By August 30, 1998, the necessary plant modifications to conduct pitot-tube traverse measurements will be completes and the PRVS will be tested in accordance with Technical Specification 4.5.4.1.b.1. Attachment 2 contains the proposed preliminary Technical Specification revised page. This revised page is in draft form and is subject to some minor revisions. It is Duke's intent to submit this license amendment by July 8, 1998.

8. A statement that the request has been approved by the Plant Operations Review Committee.

The Plant Operations Review Committee reviewed and approved the request for enforcement discretion.

9. The request must specifically address how one of the NOED criteria for appropriate plant conditions is satisfied.

Duke believes that this request satisfies the NOED criteria (Criterion B1) in that this request for enforcement discretion is necessary to avoid an undesirable plant evolution as a result of complying with the license condition and minimize the potential safety consequences and operational risks. Compliance with Technical Specification 4.5.4.1.b.1 will require Oconee Units 1, 2, and 3 to shut down and modify the plant to satisfy the surveillance requirements. As previously described, there is no safety significance associated with this compliance issue and

requiring an unnecessary shutdown of three units does not minimize potential safety consequences or operational risk.

It should be noted that the orifice plates were originally installed during plant construction and have been used to measure the PRVS flow to meet the Technical Specification requirements since the original construction of Oconee. The PRVS testing issue was identified in March 1998 during the Safety System Engineering Inspection (SSEI) at Oconee for the Control Room Ventilation System and Penetration Room Ventilation System. If Duke had accepted the staff's position in March 1998, enforcement discretion would have been required since modifications are necessary to install the pitot-tube velocity-traverse in the PRVS piping. There was no prior indication that flow testing did not conform with the ANSI N510-1975 requirements. Thus, the recently identified PRVS testing interpretation created a situation where Duke could not avoid the need for enforcement discretion. After the SSEI, Duke conservatively began efforts to perform testing in accordance with ANSI N510-1975 by using a pitot-tube array. These testing efforts did not provide repeatable results which could be considered valid. Efforts are currently underway to perform the PRVS flow testing with a pitot-tube velocity-traverse in accordance with the current Technical Specifications. Thus, it is Duke's position that this issue fully conforms to the NOED criteria that have been issued by the staff.

10. If a follow-up license amendment is required, the NOED request must include marked-up Technical Specification pages showing the proposed Technical Specification changes. The actual license amendment request must follow within 48 hours.

A follow-up license amendment will be required to permit operation while Oconee in not in compliance with Technical Specification 4.5.4.1.b.1. Attachment 2 contains the proposed preliminary Technical Specification revised page. This revised page is in draft form and is subject to some minor revisions. It is Duke's intent to submit this license amendment by July 8, 1998.

11. A statement that prior adoption of approved line-item improvements to the TS or the ITS would not have obviated the need for the NOED request.

Oconee has custom Technical Specifications and is in the process of converting to Improved Technical Specifications (ITS). The

ITS submittal was made on October 28, 1997, satisfying a commitment from Duke to make the submittal by October 31, 1997. Thus, Oconee has taken the initiative to improve its specifications and take advantage of the industry operating experience associated with ITS. Line-item improvements in Technical Specifications would not have avoided this specific case since the standard surveillance requirement contains a reference to the ANSI N510-XXXX standard with the applicable year of the standard being based on the licensing basis of the plant. In Oconee's situation, the applicable standard would be ANSI N510-1975 and would not be satisfied by the orifice plate testing.

Attachment 2

Preliminary Proposed Technical Specification Change
Marked-Up Pages

4.5.4 Penetration Room Ventilation System

Applicability

Applies to testing of the Penetration Room Ventilation System

Objective

To verify that the Penetration Room Ventilation System is operable.

Specification

4.5.4.1 Operational and Performance Testing

a. Monthly, each train of the Penetration Room Ventilation System shall be operated for at least 15 minutes at design flow ±10%.

b. Every 18 months, it shall be demonstrated that:

1. The Penetration Room Ventilation System fans operate at design flow (± 10%) when tested in accordance with ANSI N510-1975; *

2. The pressure drop across the combined HEPA filters and charcoal adsorber banks is less than six inches of water at the system design flow rate (± 10%).

3. Each branch of the Penetration Room Ventilation System is capable of automatic initiation.

4. The bypass valve for filter cooling is manually operable.

c. Leak tests using DOP or halogenated hydrocarbon, as appropriate shall be performed on the Penetration Room purge filters:

1. Every 18 months;

2. After each complete or partial replacement of a HEPA filter bank or charcoal adsorber bank;

3. After any structural maintenance on the system housing;

4. After painting, fire, or chemical release in any ventilation zone communicating with the system.

d. The results of the DOP and halogenated hydrocarbon tests on HEPA filters and charcoal adsorber banks shall show ≥99% DOP removal and ≥99% halogenated hydrocarbon removal, respectively, when tested in accordance ~~with ANSI N510-1975~~.

* A one-time non compliance with this surveillance requirement is allowed until August 30, 1998 to complete flow testing in accordance with ANSI N510-1975.