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SUBJECT: Submits summary of results of analysis to NRC to support further NRR review of PRVs TS amend re CR ventilation sys.

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February 4, 1998

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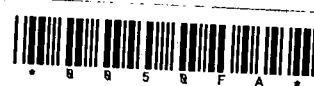
Subject: Oconee Nuclear Station  
Docket Nos. 50-269, -270, -287  
Proposed Revision to Technical Specifications  
for the Penetration Room Ventilation System (PRVS)  
Technical Specification Change # 95-04  
Supplemental Information Regarding Control Room  
Ventilation System (CRVS)

In a letter dated February 10, 1997, Duke submitted a proposed amendment to the Oconee Nuclear Station (ONS) Technical Specifications to remove certain PRVS requirements from the technical specifications and accordingly reduce the allowable reactor building leakage rate limit. As part of the proposed technical specification amendment, Duke performed an evaluation of the impacts of this change on the CRVS. This evaluation was described in the technical justification of the proposed PRVS Technical Specification amendment.

In a follow-up NRC/Duke conference call on July 31, 1997, ONS agreed to obtain and utilize the new ARCON-96 software to re-perform the control room dose analysis, which was previously performed using ARCON-95 software. In addition, ONS agreed to provide a summary of the results of this analysis to the NRC to support further NRR review of the PRVS Technical Specification amendment. Please find the requested information attached.

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Page 2

If there are any questions, please call David Nix at (864) 885-3634, or Ed Burchfield at (864) 885-3292.

Very truly yours,



W. R. McCollum, Jr.

Oconee Site Vice President

Attachments

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February 4, 1998

Page 3

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

Mr. M. A. Scott  
Senior Resident Inspector

Mr. D. E. Labarge  
ONRR, Project Manager

Mr. M. Batavia  
DHEC

**ATTACHMENT**  
**OCONEE NUCLEAR STATION**  
**CONTROL ROOM HABITABILITY CALCULATION SUMMARY**

The following is a summary of the input assumptions and results from the latest Oconee Nuclear Station (ONS) Control Room Habitability calculation (OSC-6600, Rev. 1). Some of these input assumptions depart from the Standard Review Plan assumptions since ONS was not licensed under the Standard Review Plan.

There are two different cases for which the control room operator dose is calculated. The first case (Case 1) utilizes input assumptions based on the current ONS Technical Specifications, which assume 0.25%/day containment leakage and 50% PRVS bypass. The second case (Case 2) calculates the control room operator dose from input assumptions based on the recent Penetration Room Ventilation System proposed Technical Specification amendment, which assumes 0.20%/day containment leakage and 100% PRVS bypass.

According to the ONS Updated Final Safety Analysis Report, Section 3.1.11, the original licensing basis for the control room design is based upon operator dose as limited by 10CFR20. As seen below, the calculated operator dose results are within the stated 10CFR20 annual limits.

Although ONS predates General Design Criterion (GDC) 19 requirements and is not currently committed to these limits, the results provided below are within GDC-19 limits.

**CONTROL ROOM HABITABILITY RESULTS SUMMARY TABLE:**

	Case 1: Calculated 30- day Operator Dose (Rem)	Case 2: Calculated 30- day Operator Dose (Rem)	10CFR20 Limit (Rem)
Thyroid	12.813	16.830	50
Skin	25.128	22.899	50
TEDE	1.319	1.364	5
TODE	13.75	17.69	50

# CONTROL ROOM HABITABILITY INPUT SUMMARY TABLE:

<u>Parameter:</u>	<u>Case 1:</u>	<u>Case 2:</u>
1. Containment Leakrate:		
First 24 Hours (0-1 days)	0.25%/day	0.20%/day
Next 3 Days (1-4 days)	0.125%/day	0.10%/day
Next 26 Days (4-30 days)	0.0625%/day	0.05%/day
2. RB Spray Lambdas:		
a. Injection Period (0-30 min.)		
Particulate	2.23 hr <sup>-1</sup>	2.23 hr <sup>-1</sup>
Elemental	0.4379 hr <sup>-1</sup>	0.4379 hr <sup>-1</sup>
b. Recirculation Period (0.5-2 hrs.)		
Particulate	1.357 hr <sup>-1</sup>	1.357 hr <sup>-1</sup>
Elemental	0.2996 hr <sup>-1</sup>	0.2996 hr <sup>-1</sup>
c. Recirculation Period (2-8 hrs.)		
Particulate	0.2497 hr <sup>-1</sup>	0.2497 hr <sup>-1</sup>
Elemental	0.0262 hr <sup>-1</sup>	0.0262 hr <sup>-1</sup>
d. Recirculation Period (8-720 hrs.)		
Particulate	0.1357 hr <sup>-1</sup>	0.1357 hr <sup>-1</sup>
Elemental	0.0 hr <sup>-1</sup>	0.0 hr <sup>-1</sup>
3. Iodine Species Fractions:		
Particulate	95%	95%
Elemental	4.84%	4.84%
Organic	0.16%	0.16%
4. Penetration Room Ventilation System:		
a. Bypass Fraction	50%	100%
b. Iodine Filter Efficiency		
Particulate	90%	0%
Elemental	90%	0%
Organic	70%	0%
5. Control Room Occupancy:		
0 - 24 Hours	75%	75%
1 - 4 Days	60%	60%
4 - 30 Days	30%	30%

**CONTROL ROOM HABITABILITY INPUT SUMMARY TABLE**  
**(Continued):**

<u>Parameter:</u>	<u>Case 1:</u>	<u>Case 2:</u>
6. Control Room Ventilation System:		
a. Iodine Filter Efficiency		
Particulate	99%	99%
Elemental	99%	99%
Organic	90%	90%
b. Booster Fan Flowrate	2430 cfm	2430 cfm
c. Control Room Free Volume	105,000 ft <sup>3</sup>	105,000 ft <sup>3</sup>
d. Unfiltered Inleakage	10 cfm	10 cfm
7. Atmospheric Dispersion Distance:	60 m	60 m
a. Ground Level X/Q Values (sec/m <sup>3</sup> )		
0-8 hrs	1.18E-3	1.18E-3
8-24 hrs	4.77E-4	4.77E-4
1-4 days	3.61E-4	3.61E-4
4-30 days	2.74E-4	2.74E-4
b. Elevated X/Q Values (sec/m <sup>3</sup> )		
0-8 hrs	1.07E-3	1.07E-3
8-24 hrs	3.10E-4	3.10E-4
1-4 days	2.81E-4	2.81E-4
4-30 days	2.18E-4	2.18E-4