



Serial: HNP 04-109

U. S. Nuclear Regulatory Commission
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SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400 / LICENSE NO. NPF-63

**RESPONSE TO GENERIC LETTER 2003-01, "CONTROL ROOM HABITABILITY"
REQUESTED INFORMATION 1(A) AND 1(B)**

- Reference:
1. Letter from James Scarola to the United States Nuclear Regulatory Commission (Serial: HNP 03-089) "Generic Letter 2003-01, 'Control Room Habitability' Sixty-Day Response" dated August 11, 2003
 2. Letter from Terry C. Morton to United States Nuclear Regulatory Commission (Serial: HNP 03-139) "180-Day Response to Generic Letter 2003-01, 'Control Room Habitability'" dated December 09, 2003

Ladies and Gentlemen:

On June 12, 2003, the NRC issued Generic Letter 2003-01, "Control Room Habitability" which requested licensees to submit information demonstrating that control rooms comply with the current licensing and design bases, and applicable regulatory requirements. In addition, information was requested to ensure that suitable design, maintenance and testing control measures are in place for maintaining this compliance. The generic letter requested that this information be provided within 180-days or, if unable to meet this schedule, notification be made within 60-days.

Carolina Power and Light Company (doing business as Progress Energy Carolinas, Inc.) provided a 60-day and a 180-day response to Generic Letter 2003-01 in the referenced letters for the Harris Nuclear Plant (HNP). In both letters, HNP committed to perform inleakage testing in accordance with ASTM E741 in order to quantify the most limiting inleakage into the control room envelope. Enclosure 1 provides the inleakage confirmations called for in the Generic Letter Requested Information items 1(a) and 1(b).

Please refer any questions regarding this submittal to Mr. John R. Caves, Supervisor – Licensing/Regulatory Programs, at (919) 362-3137.

Sincerely,

Terry C. Morton
Manager, Support Services

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Enclosures:

1: Response to Generic Letter 2003-01 Requested Information 1(a) and 1(b)

c: Mr. R. A. Musser (NRC Senior Resident Inspector)
Mr. C. P. Patel (NRR Project Manager, NRC)
Dr. W. D. Travers (NRC Regional Administrator, Region II)

Response to Generic Letter 2003-01 Requested Information 1(a) and 1(b)

NRC Requested Information 1(a) & 1(b)

Provide confirmation that your facility's control room meets the applicable habitability regulatory requirements (e.g., GDC 1, 3, 4, 5, and 19) and that the control room habitability systems are designed, constructed, configured, operated, and maintained in accordance with the facility's design and licensing bases. Emphasis should be placed on confirming:

- (a) That the most limiting unfiltered inleakage into your CRE (and the filtered inleakage if applicable) is no more than the value assumed in your design basis radiological analyses for control room habitability. Describe how and when you performed the analyses, tests, and measurements for this confirmation.
- (b) That the most limiting unfiltered inleakage into your CRE is incorporated into your hazardous chemical assessments. This inleakage may differ from the value assumed in your design basis radiological analyses. Also, confirm that the reactor control capability is maintained from either the control room or the alternate shutdown panel in the event of smoke.

Response to Item 1(a)

In order to confirm that the most limiting unfiltered inleakage into the Control Room Envelope (CRE) is no more than the value assumed in the HNP design basis radiological analysis, HNP performed tracer gas air inleakage testing during March 2004. NCS Corporation (NCS) and Lagus Applied Technology, Inc (LAT) performed the testing.

Air inleakage into the CRE was measured with the Control Room Emergency Ventilation System (CREVS) operating in the modes of operation listed in Table 1. The CREVS isolation dampers and the adjacent ventilation systems were aligned in manner that would maximize the air inleakage into the CRE. Air inleakage rates were measured using NCS/LAT procedures, which are based on the methodology described in ASTM Standard E741-00 "Standard Test Method for Determining Air Change Rate in a Single Zone By Means of a Tracer Gas Dilution".

The test results summarized in Table 1 are documented in NCS/LAT Final Report "Control Room Envelope Inleakage Testing at Harris Nuclear Plant", dated 5/31/04.

Response to Generic Letter 2003-01 Requested Information 1(a) and 1(b)

Table 1

Test Configuration	Tracer Gas Test Result	Acceptance Criteria*
Test 1: B Train Pressurization Mode Inleakage	53 +/- 18 CFM	290 CFM
Test 2: B Train Isolation Mode Inleakage	138 +/- 7 CFM	290 CFM
Test 3: A Train Pressurization Mode Inleakage	26 +/- 16 CFM	290 CFM
Test 4: A Train Isolation Mode Inleakage	89 +/- 5 CFM	290 CFM
Test 5: A&B Train Isolation Mode Inleakage	128 +/- 7 CFM	290 CFM

* The HNP design basis inleakage rate for the CRE is 300 CFM. The Acceptance Criteria includes 10 CFM penalty for Control Room door ingress/egress per NEI 99-03, Revision 1, "Control Room Habitability Guidance."

Based on the tracer gas test results, the amount of air inleakage into the CRE is confirmed to be less than the value assumed in the radiological analysis for HNP.

Response to Item 1(b)

As discussed in the response to Item 1(a), HNP performed tracer gas air inleakage testing in accordance with ASTM E741 during March of 2004, in order to assess the amount of air inleakage into the CRE. As previously stated in Reference 2, the HNP FSAR documents that there is no toxic gas threat. Therefore, HNP does not have acceptance criteria for air inleakage into the CRE for hazardous chemicals. In addition, HNP has not identified any new significant sources of stationary or mobile hazardous chemicals.

Also, as previously stated in Reference 2, HNP has performed an evaluation in accordance with Appendix A of NEI 99-03, Revision 1, to demonstrate the capability to maintain reactor control from either the control room or the Auxiliary Control Panel Room in the event of smoke originating inside or outside the control room envelope.