

WOLF CREEK

NUCLEAR OPERATING CORPORATION

Britt T. McKinney
Site Vice President

AUG 08 2003

WO 03-0048

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

Subject: Docket 50-482: Wolf Creek Nuclear Operating Corporation response to
Generic Letter 2003-01: Control Room Habitability

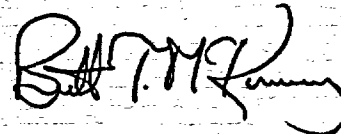
Gentlemen:

This letter is a response to the Nuclear Regulatory Commission's (NRC) request for information pursuant to Generic Letter 2003-01, Control Room Habitability. As permitted by the Generic Letter this 60-day response is submitted because Wolf Creek Nuclear Operating Corporation (WCNOC) will not be able to provide all of the requested information within 180 days of the date of the generic letter. Specifically, Generic Letter 2003-01 requests that licensee's confirm the most limiting inleakage into the control room envelope by testing. The Generic Letter recommended integrated testing method would not provide valid results for the Wolf Creek Control Room Envelope (CRE) design. WCNOC is currently pursuing an alternate integrated inleakage testing method for WCNOC's Control Room/Control Building design.

Attachment 1 to this letter provides WCNOC's 60 day response to NRC Generic Letter 2003-01. Attachment 2 contains commitments for making a final response to this generic letter.

If you have any questions concerning this matter, please contact me at (620) 364-4112, or Mr. Kevin Moles at (620) 364-4126.

Sincerely,



Britt T. McKinney

BTM/rlg

Attachments: I Response to NRC Generic Letter 2003-01
II List of Commitments

cc: J. N. Donohew (NRC), w/a
D. N. Graves (NRC), w/a
T. P. Gwynn (NRC), w/a
Senior Resident Inspector (NRC), w/a

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Preliminary Response to the Requested Information of NRC Generic Letter 2003-01

Below is WCNOC's response to NRC Generic Letter 2003-01, Control Room Habitability, dated June 12, 2003. The Generic Letter's "Requested Information" is shown in bold followed by WCNOC's response.

Requested Information

- 1. Confirm that your facility's Control Room meets its applicable habitability regulatory requirements (e.g., GDC 1, 3, 4, 5, and 19) and that the CRHSs are designed, constructed, configured, operated, and maintained in accordance with the facility's design and licensing basis.**

WCNOC Response:

WCNOC is committed to the General Design Criteria of Appendix A of 10CFR50 as documented in its Updated Final Safety Analysis Report.

However, WCNOC, assisted by peers from the Strategic Teaming and Resource Sharing (STARS¹) alliance, performed a control room habitability assessment between May 1 and May 5, 2000. In the absence of confirmation testing for control room inleakage, the assessment concluded that the control room habitability systems were designed, constructed, configured, operated, and maintained consistent with the control room habitability design and licensing bases. Issues regarding control room design identified during the assessment did not prevent meeting the General Design Criteria and have been resolved for Wolf Creek. These issues were summarized in a report to the NRC on March 5, 2001, *Submittal of the Strategic Teaming and Resource Sharing (STARS) Engineering Report on Control Room In-leakage (ULNRC-04402)*.

WCNOC has not yet performed a test to confirm that the most limiting unfiltered inleakage into the control room envelope is no more than the value assumed in its design basis radiological analyses for control room habitability. See response to item 1(a) below for a discussion of future testing plans.

WCNOC has established administrative controls that ensure continued compliance with the control room habitability design and licensing bases. These controls include:

Barrier Breach Control

Barriers important to maintaining control room habitability are controlled in procedure AP 10-104, Breach Authorization. The procedure contains provisions for obtaining authorization to affect the operability of plant barriers required for fire, security, pressure boundary, train operability, flooding, harsh environment, radiation, and missile protection. The procedure provides the mechanism to assure that the proper compensatory measures are in place prior to the breach being performed.

¹ STARS consists of six plants operated by TXU Generation Company LP, AmerenUE, Wolf Creek Nuclear Operating Corporation, Pacific Gas and Electric Company, STP Nuclear Operating Company and Arizona Public Service Company.

Procedure Control

The preparation, revision, review and approval of procedures is controlled by AP 15C-004, Preparation, Review and Approval of Procedures, Instructions and Forms. Interdisciplinary reviews are required, as appropriate, which prompts the control room HVAC System Engineer to review related procedure changes.

Design Change Control

The Design Change Control Program at WCNOG is established by procedure AP 05-005, Design, Implementation and Configuration Control of Modifications. The procedure describes the program for the design and implementation of permanent changes to controlled Structures, Systems and/or Components (SSC's) documentation and hardware, which may or may not change Design Basis information. Procedure AP 05-002, Dispositions and Change Packages, requires the completion of the Engineering Screening form, APF 05-002-01. The screening form results cause additional programmatic or interdisciplinary reviews or evaluations to be performed when required. Questions specific to Control Room Habitability considerations are asked on the screening form. Additionally, independent verification is performed by an independent and qualified engineer for all safety related plant modifications in accordance with procedure AP 05F-001, Design Verification.

Temporary Modifications to the plant are controlled by procedure AP 21I-001, Temporary Modifications. Temporary modifications are evaluated for applicable hazards analysis affects including impact on Control Room Habitability by Engineers qualified to perform these activities.

Safety Analysis Control

The design change process, AP 05-002, Dispositions and Change Packages, ensures that related safety analysis calculations are reviewed as part of the design change. Safety analysis calculations revised for purposes other than design change are independently verified in accordance with procedure AP 05F-001, Design Verifications and the 50.59 process. This verification and screening will ensure that the appropriate considerations for control room habitability are included if applicable.

Maintenance Control

All work activities performed on plant systems, structures, or components, by WCNOG maintenance personnel, are controlled by the work controls process AP 16C-006, MPAC Work Controls. Preventive Maintenance (PM) activities are administered in accordance with AI 16B-002, Updating the PM Activity Module, and AP 16B-003, Planning and Scheduling Preventive Maintenance. In addition, the May 2000 assessment reviewed representative PM's and found them to be adequate to maintain the control room boundary integrity.

The May 2000 assessment concluded that these programs adequately protected the integrity of the control room boundary. In addition to the above controls, WCNOG plans to incorporate Control Room Habitability into the Chemical Control Program and will report the status in the final response to this Generic Letter. WCNOG also plans to continue to work in alliance with STARS to build upon the synergy of the combined effort thus far to ensure that control room habitability is maintained in the long-term.

- 1(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.**

WCNOC Response:

WCNOC design basis radiological analysis for control room habitability is described in USAR Appendix 15A for a postulated large break loss of coolant accident. This analysis was last performed in 2000 using the methods described in Regulatory Guide 1.4 and Standard Review Plan Section 6.4. The most limiting unfiltered inleakage from the outside environment into the control room envelope was assumed to be zero standard cubic feet per minute (scfm). However, an unfiltered inleakage rate of 300 scfm was assumed to account for some unfiltered air that may leak into the control building wherein the control room envelope is located. In addition, an infiltration rate of 10 scfm was assumed for opening and closing of doors associated with activities required by the plant emergency plans and procedures. The results of this analysis are presented in USAR Table 15.6-8.

WCNOC has not yet performed a test to confirm the accident analysis inleakage assumption. Assessments performed in May 2000 determined that WCNOC and each of the other STARS facilities control room envelopes had minimal vulnerability to unfiltered inleakage. Integrated testing, ASTM E741 Tracer Gas Testing, and component testing, as described in NRC Regulatory Guide 1.197, were performed at Comanche Peak and Palo Verde. The test results validated the assessment findings for these facilities.

WCNOC evaluated conducting an integrated test and component test for control room inleakage to be responsive to the intent of Generic Letter 2003-01 and NRC Regulatory Guide 1.197. This evaluation determined that ASTM E741 testing methods would not provide valid results for the Wolf Creek Control Room Envelope (CRE) design.

The Wolf Creek / SNUPPS CRE design is unique. The control building by and large surrounds the CRE. The CRE is required by Technical Specifications to be at a positive pressure with respect to its surrounding environment. The control building is also designed to be at a positive pressure with respect to its surrounding environment although not positive with respect to the CRE. In the emergency pressurization and filtration mode, the control room air volume receives air through a filtration system that takes a suction on the control building. The control building in turn receives filtered air from the outside environment.

The Generic Letter proposed ASTM E741 test methodology is designed for testing a single zone and assumes that all air can be categorized as either unfiltered outside air or filtered inside air. As described above, the SNUPPS plant design has two separate control zones, the Control Building and the CRE. It is invalid to treat them as merely different volumes within a common zone. Based on the SNUPPS plant design the CRE dose model has three categories of air; unfiltered outside air, single filtered control building air, and double filtered control room air.

The Control Building has multiple common boundaries with the CRE. With the CRE pressurized, a substantial fraction of the out leakage from the CRE will go into the Control Building. This air could then be drawn back into the filtered pressurization system and put back into the control room. The current ASTM E741 tracer gas test does not account for re-

introduction of tracer gas back into the test volume, potentially leading to erroneous and non-conservative in leakage test results.

Based on the evaluation, WCNOG is proposing to perform an integrated inleakage test using an alternate test technique. Two test methods developed by Dr. Russell Dietz of Brookhaven National Laboratory (BNL) entitled Atmospheric Tracer Depletion (ATD) testing and Air Infiltration Measurement System (AIMS) are possible candidates for consideration. WCNOG is currently discussing these test methods with Dr. Dietz and will select the most appropriate for implementation.

WCNOG will develop a test plan and perform the proposed alternate test by September 30, 2004. A report containing the results will be provided within 90 days of the test completion as our final response to the generic letter.

- 1(b) That the most limiting unfiltered inleakage into your CRE is incorporated into your hazardous chemical assessment. 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.**

WCNOG Response:

WCNOG's current hazardous chemical assessment illustrates that there are no offsite storage or transportation of chemicals that present a hazard to control room habitability. In addition, there are no onsite chemicals in quantities that would pose a credible hazard to control room habitability. Engineered controls for the control room are not required to ensure habitability against a hazardous chemical threat. Therefore, the amount of unfiltered inleakage is not incorporated into WCNOG's hazardous chemical assessment.

WCNOG plans to update the offsite and onsite hazardous chemical assessment to validate its current content and will report the results in the final response to this Generic Letter.

The May 2000 assessments did not evaluate the reactor control capability in the event of smoke since this issue was not fully developed at that time. WCNOG plans to complete an evaluation of reactor control capability in the event of smoke consistent with NEI 99-03, Rev 1, Appendix A (as recommended by Regulatory Position 2.6 of Regulatory Guide 1.196, Control Room Habitability at Light-Water Nuclear Power Reactors, May 2003) and report the results in the final response to this Generic Letter.

- 1(c) That your technical specifications verify the integrity of your CRE and the assumed inleakage rates of potentially contaminated air. If you currently have a ΔP surveillance requirement to demonstrate CRE integrity, provide the basis for your conclusion that it remains adequate to demonstrate CRE integrity in light of the ASTM E741 testing results. If you conclude that your ΔP surveillance requirement is no longer adequate, provide a schedule for: 1) revising the surveillance requirement in your technical specification to reference an acceptable surveillance methodology (e.g., ASTM E-741), and 2) making any necessary modifications to your CRE so that compliance with your new surveillance requirement can be demonstrated.**

If your facility does not currently have a technical specification surveillance requirement for your CRE, explain how and on what frequency you confirm your CRE integrity and why this is adequate to demonstrate CRE integrity.

WCNOC Response:

WCNOC's Technical Specifications require, on an 18 month staggered basis, that a surveillance be performed to verify that one Control Room Emergency Ventilation System (CREVS) train can maintain a positive pressure of ≥ 0.25 inches water gauge, relative to the outside during the pressurization mode of operation. The WCNOC Technical Specification Bases states that this surveillance requirement verifies the integrity of the control room enclosure, and the assumed leakage rates of potentially contaminated air.

Positive pressure surveillance testing does verify the operability of the CREVS train and provides an indication of control room boundary integrity. However, this testing does not confirm control room integrity using leakage values. WCNOC acknowledges that some form of leakage testing appears to be the optimal method for confirming boundary integrity.

Following completion of leakage testing WCNOC will submit a Technical Specification change to incorporate a Control Room Integrity Program that will include periodic verification of control room integrity using the leakage values assumed in the design basis as the acceptance criteria.

WCNOC does not anticipate that any plant modifications will be required to incorporate a Control Room Integrity Program into the Technical Specifications as described above.

- 2. If you currently use compensatory measures to demonstrate CRE habitability, describe the compensatory measures at your facility and the corrective actions needed to retire these compensatory measures.**

WCNOC Response:

WCNOC does not use compensatory measures to demonstrate control room envelope habitability.

- 3. If you believe that your facility is not required to meet either the GDC, the draft GDC, or the "Principle Design Criteria" regarding control room habitability, in addition to responding to Items 1 and 2 above, provide the documentation (e.g., Preliminary Safety Analysis Report, Final Safety Analysis Report sections, or correspondence, etc.) of the basis for this conclusion and identify your actual requirements.**

WCNOC Response:

WCNOC is committed to the General Design Criteria of Appendix A of 10CFR50 as documented in the Updated Safety Analysis Report.

LIST OF COMMITMENTS

The following table identifies those actions committed to by Wolf Creek Nuclear Operating Corporation in Attachment I to this letter. Other statements in Attachment I to this letter are not considered to be regulatory commitments. Please direct questions regarding these commitments to Mr. Kevin Moles, Manager Regulatory Affairs at Wolf Creek Generating Station, (620) 364-4126.

Commitment	Due Date
WCNOC will develop a test plan and perform the proposed alternate test by September 30, 2004.	No later than September 30, 2004.
Submit a final response to Generic Letter 2003-01. This response will provide <ol style="list-style-type: none">1) A summary report of control room inleakage test results to confirm the most limiting inleakage.2) Complete an evaluation of reactor control capability in the event of smoke consistent with NEI 99-03, rev 1, Appendix A (as recommended by Regulatory Position 2.6 of Regulatory Guide 1.196, Control Room Habitability at Light Water Nuclear Power Reactors, May 2003) and report the results in the final response to this Generic Letter.3) A schedule for submittal of a Technical Specification change to use the inleakage values assumed in the design basis as the acceptance criteria.4) Incorporate Control Room Habitability into the chemical control program.5) An update to the offsite and onsite hazardous chemical assessment to validate its current content and report the results in the final response to this Generic Letter.	A report containing the results will be provided within 90 days of the test completion as our final response to the generic letter.
Submit a Technical Specification change to incorporate a Control Room Integrity program that will include periodic verification of control room integrity using the inleakage values assumed in the design basis as the acceptance criteria.	In accordance with the schedule established in the final response.