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Subject: Sixty Day Response to Generic Letter 2003-01: "Control Room Habitability"

Ladies and Gentlemen:

This letter provides information in response to Generic Letter 2003-01: "Control Room Habitability", dated June 12, 2003. This generic letter requests information concerning compliance with the Control Room habitability licensing and design bases. A schedule for completion of actions being taken in response to this request at the Davis-Besse Nuclear Power Station Unit Number 1 is provided in the attachment to this letter.

If you have questions or require additional information, please contact Mr. Kevin L. Ostrowski, Manager - Regulatory Affairs, at (419) 321-8450.

Very truly yours,

Lew W Myers

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Attachment
Enclosure

cc: Regional Administrator, NRC Region III
J. B. Hopkins, NRC/NRR Senior Project Manager
C. S. Thomas, NRC Region III, DB-1 Senior Resident Inspector
Utility Radiological Safety Board

A102

Sixty Day Response to Generic Letter 2003-01: "Control Room Habitability"

Generic Letter (GL) 2003-01 requested that information on Control Room Habitability issues be provided within 180 days, or, if all the requested information could not be provided within 180 days, the GL requested a response within 60 days. This attachment provides the 60-day response for the Davis-Besse Nuclear Power Station Unit Number 1 (DBNPS). It includes descriptions of the ongoing activities, and also includes the basis for the acceptability of the actions and the schedule for completing these actions. A 60-day response is being submitted because the performance and completion of the control room analysis and testing involves obtaining qualified vendors and, therefore, the completion of this work is dependent on the completion of the bid process in 2003 and the availability of qualified vendors for these efforts in 2004. As a result, the information requested by GL 2003-01 will be provided later than 180 days.

The following provides the GL 2003-01 questions and the current DBNPS plans:

1. 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 CRHSs [Control Room Habitability Systems] are designed, constructed, configured, operated, and maintained in accordance with the facility's design and licensing bases.

Response: The DBNPS Control Room is a positive-pressure design. Engineering reviews, walkdowns, analyses, and tests are planned to be performed during the remainder of 2003 and into 2004, to provide additional insight into conformance with the applicable habitability regulatory requirements and the DBNPS design and licensing basis. The requested confirmation that the Control Room meets the applicable regulatory requirements and the DBNPS design and licensing basis will be provided in a final response to this Generic Letter. This final response will be submitted within three months after completion of the above reviews, walkdowns, analyses and tests. Further details are provided below based on currently available information.

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.

Response: For the DBNPS, the unfiltered Control Room Envelope (CRE) inleakage assumed in the Loss of Coolant Accident (LOCA) analysis is 10 cfm when the Control Room Emergency Ventilation System (CREVS) is in the pressurization mode. In order to provide further confirmation of the acceptability of the CRE, additional radiological analyses and tests are planned. The DBNPS is in the process of

evaluating the options to use in revising the control room habitability radiological analyses calculations in light of recent regulatory guidance, such as alternate source term. When those calculations are complete, they will be used to confirm the unfiltered allowable inleakage for the most limiting Design Basis Accident (DBA), and to confirm that the resultant operator doses remain below the General Design Criterion (GDC) 19 limit for design basis events.

In the interim period until the additional confirmatory analyses and tests are completed, the DBNPS believes this alternative course of action is acceptable because:

1. The Control Room Normal Ventilation System and the Control Room Emergency Ventilation System (CREVS) were designed to minimize unfiltered inleakage. The majority of equipment in the Control Room Normal Ventilation System and the CREVS is located outside the CRE. However, the normal ventilation system is isolated from the CRE by redundant low leakage isolation dampers, and the CREVS ducting is welded, longitudinal seam ducting. An informal walkdown using a smoke stick was recently performed by Plant Engineering to identify any gross inleakage at the CREVS gasketed joints in the ducting and the fan shaft seals. No gross leakage was identified.

2. The DBNPS Control Room is not traversed by pressurized ventilation systems serving other areas of the plant that would contribute to the potential radiological or hazardous chemical exposure of the operators.

3. Testing of the CRE continues to be performed each refueling interval to confirm the ability to pressurize the CRE.

4. The existing LOCA dose calculations conservatively assumed a filter efficiency of 95% for the charcoal filter serving the Station Emergency Ventilation System, which is designed to provide a negative pressure within the annular space between the shield building and the containment and in the penetration rooms. However, this filter unit contains two 2" charcoal beds in series. Both the charcoal beds are being tested to the same standards. Therefore the assigned efficiency could be increased to 99% under Table 2, "Laboratory Test for Activated Carbon," of Regulatory Guide 1.52, Revision 2. If the additional filter bed is credited in the evaluations, the containment releases would be reduced. Also these dose calculations conservatively used dose conversion factors based on International Commission on Radiological Protection (ICRP) Publication 2, "Report of ICRP Committee II on Permissible Dose for Internal Radiation (1959), with Bibliography for Biological Mathematical and Physical Data". The NRC has generically approved the use of dose conversion factors based on ICRP Publication 30, "Limits for Intakes of Radionuclides by Workers." Use of

ICRP Publication 30 dose conversion factors would further reduce the estimated doses.

A confirmatory ASTM E 741, "Standard Test Method for Determining Air Change in a Single Zone by Means of a Tracer Gas Dilution," test to the design basis will be the final step in completing the confirmations for this portion of the generic letter. This confirmatory test should show a measured inleakage value below the most limiting inleakage value determined by the revised control room radiological analyses calculations. This will then provide the basis for confirming the most limiting unfiltered inleakage into the DBNPS CRE is no more than the value assumed in the DBNPS design basis radiological analyses for control room habitability, as requested by this item. The current schedule for completion of this testing and acceptance of the results is the second half of 2004.

(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: The conclusions of the confirmatory reviews for this item will be provided along with the overall final response to the generic letter. In the interim period until the confirmatory reviews for this item are completed, this is considered to be acceptable because of the following:

- Hazardous Chemicals: The control room habitability analyses for hazardous chemicals stored nearby offsite and onsite, or transported near the DBNPS site do not rely on isolating the Control Room Normal Ventilation System. The DBNPS Emergency Plan Off Normal Occurrence Procedure regarding hazardous chemical and oil spills, however, does direct that the operations shift manager be notified of hazardous chemical spills onsite and that the control room ventilation air supply be isolated if unusual vapors or fumes are present in the control room. Administrative procedures are in place to control the amount of hazardous chemicals onsite.

- Smoke: Self-contained breathing apparatus (SCBA) is provided for the emergency crew to provide assurance of control room habitability in the event of occurrences such as smoke hazards. The Control Room Normal Ventilation System is operated in the 100% outside air mode by procedure in the event of smoke originating in the control room. The normal and emergency ventilation systems for the Control Room are separate from the ventilation systems that serve the rest of the plant, including the alternate shutdown panel area. Therefore, it is concluded the reactor control capability would be successful

from either the Control Room or the alternate shutdown areas in the event of smoke.

(c) That your technical specifications verify the integrity of the 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 E741), 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 integrity, explain how and at what frequency you confirm your CRE integrity and why this is adequate to demonstrate CRE integrity.

Response: The DBNPS does not have a technical specification surveillance requirement for CRE integrity. However, procedures are in place to periodically test the leak tightness of the control room boundary to verify that the control room can be pressurized to +1/8 inch water gauge using outside air makeup of 300 cubic feet per minute ± 10%. This test has been successfully performed at the prescribed refueling interval. The current plan is to perform an ASTM E 741 tracer gas test of the CRE in 2004, as discussed above. A review of dose calculations for DBAs will also be conducted during 2004. The need for surveillance requirement changes will be evaluated by December 31, 2004, after the completion of analyses and testing. At present, no modifications to the CRE boundary are anticipated.

Controls for the CRE boundary will be addressed in plant procedures, as directed by a Control Room Integrity Program. This administrative program is expected to provide guidance consistent with that currently being finalized by the industry, over issues such as:

- maintaining configuration control,
- managing planned breaches of the CRE,
- correcting and, if necessary, reporting to the NRC any unplanned breaches of the CRE that exceed the analyzed inleakage values, and
- performance of ongoing preventive maintenance for doors, walls, floor penetrations, dampers and drains that are part of the CRE.

A Control Room Integrity Program will be in place at the DBNPS by December 31, 2004.

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

Response: No such compensatory measures are currently in place at the DBNPS. Therefore, this item is not applicable to the DBNPS.

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

Response: This item is not applicable to the DBNPS.

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COMMITMENT LIST

The following list identifies those actions committed to by the Davis-Besse Nuclear Power Station (DBNPS) in this document. Any other actions discussed in the submittal represent intended or planned actions by the DBNPS. They are described only for information and are not regulatory commitments. Please notify the Manager – Regulatory Affairs (419-321-8450) at the DBNPS of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	DUE DATE
The requested confirmation that the Control Room meets the applicable regulatory requirements and the DBNPS design and licensing basis will be provided in a final response to this Generic Letter.	Within three months after the above reviews, walkdowns, analyses and tests are completed. (No later than March 31, 2005)
The conclusions of the confirmatory reviews for this item will be provided along with the overall final response to the generic letter.	Within three months after the above reviews, walkdowns, analyses and tests are completed. (No later than March 31, 2005)
A review of dose calculations for DBAs will be conducted.	December 31, 2004
The need for surveillance requirement changes will be evaluated after the completion of analyses and testing.	December 31, 2004
Controls for the Control Room boundary will be addressed in plant procedures, as directed by a Control Room Integrity Program	December 31, 2004
A Control Room Integrity Program will be in place.	December 31, 2004