

NRC-03-085

10 CFR 50, Appendix A

August 7, 2003

U S Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

KEWAUNEE NUCLEAR POWER PLANT
DOCKET 50-305
LICENSE No. DPR-43
GENERIC LETTER 2003-01: CONTROL ROOM HABITABILITY 60-DAY RESPONSE

The Nuclear Regulatory Commission (NRC) issued the subject generic letter (GL) on June 12, 2003. The GL contains a 180-day requested response for specific information. Addressees that cannot provide the information or cannot meet the requested completion date are requested to submit a written response within 60-days to address any proposed alternative course of action, including the basis for acceptability and the schedule for completion of the alternative course of action. Nuclear Management Company, LLC (NMC) is unable to meet the completion date for all the requested information for the Kewaunee Nuclear Power Plant (KNPP). Accordingly, NMC is providing the requested proposed alternative course of action in Attachment 1.

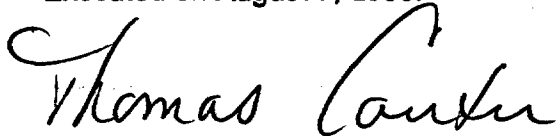
NMC makes the following new commitments:

1. NMC will provide the schedule to perform the ASTM E741 test and the requested response to GL 2003-01 item 1(a) for KNPP by December 5, 2003.
2. NMC will provide the schedule for verifying by testing that the most limiting in-leakage has been incorporated into the hazardous chemical assessments (GL 2003-01 item 1(b) part 1) for KNPP by December 5, 2003.
3. NMC will provide the schedule for the smoke assessment (GL 2003-01 item 1(b) part 2) for KNPP by December 5, 2003.
4. NMC will provide the schedule for the development of technical specification changes (and any associated plant modifications) to support requested information item 1(c) for KNPP by after the results of the ASTM E741 test are analyzed.

If you have any questions concerning this response please contact Mr. Ted Maloney at (920) 388-8863.

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I declare under penalty of perjury that the foregoing is true and correct.
Executed on August 7, 2003.

A handwritten signature in cursive script, reading "Thomas Coutu". The signature is written in black ink and is positioned above the printed name and title.

Thomas Coutu
Site Vice-President, Kewaunee Plant

TLM

cc US NRC, Region III
US NRC, Senior Resident Inspector
Electric Division, PSCW

Attachment

ATTACHMENT 1

**NUCLEAR MANAGEMENT COMPANY, LLC
KEWAUNEE NUCLEAR PLANT
DOCKET 50-305**

August 7, 2003

Letter from Thomas Coutu

To

Document Control Desk (NRC)

GENERIC LETTER 2003-01: CONTROL ROOM HABITABILITY 60-DAY RESPONSE

6 Pages Follow

GENERIC LETTER 2003-01: CONTROL ROOM HABITABILITY

KEWAUNEE NUCLEAR POWER PLANT 60-DAY RESPONSE

Requested Information

Addressees are requested to provide the following information within 180-days of the date of this letter.

If an addressee cannot provide the information or cannot meet the requested completion date, the addressee should submit a written response indicating this within 60-days of the date of this generic letter. The response should address any proposed alternative course of action the addressee proposes to take, including the basis for acceptability of the proposed alternative course of action and the schedule for completion of the alternative course of action.

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 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, test, and measurements for this confirmation.*

Response

System Design, Maintenance and Testing Considerations

The Control Room Air Conditioning System is designed to provide a reliable means of cooling and filtering air supplied to the Control and Relay Room under both normal and post-accident conditions.

The Control Room Air Conditioning System is normally in operation, providing cooled and filtered air to the Control Room and Relay Room. There is normally a 20% fresh air makeup to the Control Room from the Auxiliary Building air conditioning unit air intake. The air passes through roughing filters, cooling coils, and fans in one of the two 100% air conditioning units, and is then distributed to the Control and Relay Room. Heating coils, supplied from the Auxiliary Building hot water converter, provide for comfort heating. A humidifier is located in the common supply air duct. Service water can be aligned directly to the cooling coils in the air handler in the event that both chilled water units are not available.

Following a loss-of-coolant accident, the Control Room air conditioning will begin a 100% recirculation mode of operation. During this period, approximately 20% of the recirculation flow will pass through one of the two Control Room post-accident recirculation filters and fans. Each filter assembly consists of a pre-filter, HEPA filter, charcoal filter and deluge protection for the charcoal filters. The filters will assure that potential contaminants contained in the in-leakage, either prior to or following system actuation, will be removed, and allow the operators to continuously occupy the Control Room. If smoke is detected in the return duct, the Control Room Air Conditioning System will realign and operate entirely on fresh air makeup, exhausting the smoke to the turbine room.

The Control Room Air Conditioning System has a designed capacity of 600,000 Btu/hr to remove 537,400 Btu/hr from the areas served and to maintain the Control Room temperature at 75°F+10°F dry bulb under summertime design conditions (95°F ambient temperature), and 70°F+10°F dry bulb under wintertime design conditions. Relative humidity is maintained at about 30-40% for personnel comfort. Alternate cooling mode (service water aligned directly to the air-handling unit cooling coils) will maintain the control room/relay room environment for equipment operation. The maximum temperature when in alternate cooling mode is 100°F with 80°F service water and 95°F ambient air temperature. An evaluation was completed to assure necessary equipment would remain available at the higher room temperature.

Since the Control Room Air Conditioning System is normally operating at all times; the air conditioning unit availability can be readily verified by transferring from one redundant unit to the other under normal conditions. The availability of service water alternate cooling can be checked without the inadvertent introduction of service water to the chilled water loop by cycling valves in a test mode. Periodically, 100% recirculation mode of operation can be demonstrated without affecting normal operation. Charcoal and HEPA filters meet the design standards of AEC Health and Safety Bulletin 212-1965.

Licensing Considerations

Analysis provided to the NRC on February 28, 1989, (NRC-89-023) describes the basis for in-leakage assumptions used in the design basis radiological analyses contained in the Kewaunee Updated Safety Analysis Report (USAR). The in-leakage assumptions described in the "Updated Control Room Habitability Evaluation Report" (NRC-89-023) were included in the recently implemented Alternate Source Term (AST) license amendment number 166 for Kewaunee. The issuance of the Safety Evaluation (SE) for this license amendment dated March 17, 2003, shows the acceptance of the current methodology for determining the unfiltered in-leakage number and also that Kewaunee meets GDC-19 dose criteria as indicated by the following NRC statement.

"The NRC staff has determined that there is reasonable assurance that the KNPP control will be habitable with up to 200 cfm unfiltered air in-leakage during the postulated DBAs and this amendment may be approved before the resolution of control room generic issue. The NRC staff bases this determination on (1) the maximum allowable unfiltered air in-leakage rate of up to 200 cfm meeting the relevant dose acceptance criteria specified in 10 CFR 50.67 and GDC 19, (2) conservative assumptions and parameters used in the radiological consequence analyses, and (3) the low probability of the postulated accidents, occurring during this interim period until the NRC staff resolves this generic issue, that could result in radioactivity releases sufficient to challenge the ability of control room operators to protect the health and safety of the public."

The in-leakage assumed in these analyses are considered adequate to provide reasonable assurance that CRE integrity is being maintained. However, until additional testing can be performed, the most limiting in-leakage cannot be determined for all potential scenarios.

Additional information confirming the KNPP control room meets the 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 bases will be provided with the committed responses to items 1(a), (b), and (c).

Nuclear Management Company, LLC (NMC) has determined that the information requested cannot be provided until an acceptable test methodology, according to ASTM E741 and this generic letter (GL), can be performed for the Kewaunee Plant. NMC is evaluating vendors to perform ASTM E741 testing for all plants within the NMC fleet. The evaluation, along with the supporting activities to prepare for the testing (such as CRE walkdowns, pre-testing maintenance, and safety analysis reassessment to establish testing acceptance criteria), is planned for the fourth quarter of 2003. Upon completion of the evaluation and activities described, CRE in-leakage testing will be scheduled after the fall 2004 outage.

The schedule to perform the ASTM E741 test and provide the requested response to item 1(a) for Kewaunee will be provided by December 5, 2003.

(b) That the most limiting 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

NMC has determined that the information cannot be provided until additional assessments and the testing described in item 1(a) is completed. The current Kewaunee hazardous chemical assessment can be found in the docketed correspondence "Updated Control Room Habitability Evaluation Report" dated February 1989 (NRC-89-023). This letter addresses the analyzed chemical releases and their effect on the control room. The NRC has accepted this document as noted by the recently implemented Alternate Source Term License Amendment number 166 for Kewaunee, which used the "Updated Control Room Habitability Evaluation Report" as a source document. The issuance of the SE for this LAR dated March 17, 2003, shows the acceptance of the assumptions and the conclusion.

The rural location of the KNPP does not provide other significant sources of fixed storage of hazardous chemicals.

The ability of the control room to stay habitable with reasonable assurance is described in the Kewaunee USAR sections 1.8, criterion 11.

"The control room contains all controls and instrumentation necessary for operation of the reactor, turbine generator, auxiliary and emergency systems under normal or accident conditions.

The control room is designed and equipped to minimize the possibility of events, which might preclude occupancy. In addition, provisions were made for bringing the plant to and maintaining a hot shutdown condition from an emergency shutdown panel located in the Auxiliary Feedwater area.

The employment of noncombustible and fire retardant materials in the construction of the control room and the equipment and furnishings, contained therein, minimizes the probability of a control room fire. The location of fire fighting equipment in the control room, and the continuous presence of an operator trained to work in smoke with air pack breathing apparatus, and trained in fire fighting techniques further reduces the probability that the control room will become uninhabitable. In addition, the control room ventilation system is designed to keep the control room at a positive pressure and can be operated in a re-circulating mode to prevent fire originating outside the control room from spreading to the control area."

In addition, USAR section 9.6.3 discusses how the AEC Health and Safety Bulletin 212 compliant HEPA filters are "capable of removing at least 99.97% of 0.3 micron diameter smoke particles". USAR section 9.6 also describes the elements of the control room ventilation which supports its habitability during a fire.

"Although the possibility of a fire in the Control Room is extremely remote, provisions have been made to prevent recirculation of smoke-filled air to the Control Room. As required, thermally actuated fire dampers have been installed where the ventilation system passes through firewalls. A smoke detector mounted in the return air duct will automatically close a damper in the return air duct, thereby causing all air to be exhausted into the Turbine Building and making the Control Room a 100% makeup system. Thus, in the unlikely event of a Control Room fire, continued occupancy by the operators is possible. In addition, breathing masks and fresh-air supply units are available for operator use in case of such an emergency."

Fire protection issues described in the Kewaunee USAR and current hazardous chemical assessments provide reasonable assurance that CRE integrity and reactor control capability will be maintained.

As indicated in the response to request 1(a), NMC is evaluating vendors and developing a schedule for performance of ASTM E741 testing to establish the measured in-leakage for the CRE. The schedule for verifying by testing that the most limiting in-leakage has been incorporated into the hazardous chemical assessments (GL 2003-01 item 1(b) part 1) will be provided by December 5, 2003.

NMC will provide the schedule for the smoke assessment (GL 2003-01 item 1(b) part 2) by December 5, 2003.

(c) That your technical specifications verify the integrity of the CRE, and the assumed in-leakage 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 100% recirculation (isolation) mode of operation is initiated by either a Safety Injection Signal or high radiation as detected by the radiation monitor at the outlet of the air conditioning unit. At this time, all outside air is stopped by closure of the dampers in the fresh air supply, and both post-accident recirculating fans are started. A portion of the total flow through the air conditioning unit equipment is filtered through the carbon filter assemblies. Kewaunee Custom Technical Specifications currently does not contain ΔP surveillance requirements to show control room envelope integrity. A ΔP surveillance would not be applicable to an isolation design control room because the barrier is not based on pressure but physical separation. It does have Ventilation Filtration operability and surveillance requirements in TS to assure the removal of radioactivity from our isolation type control room as noted in our radiological accident analyses found in the KNPP USAR chapter 14. These TS were evaluated by the NRC in SE dated July 5, 1985 and approved as being able to provide reasonable assurance the CRE integrity would be maintained. Current KNPP TS are adequate to protect the health and safety of the public.

The schedule for the development of appropriate TS changes (and any associated plant modifications) to support requested information item 1(c) will be provided after the results of the ASTM E741 test are analyzed.

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 compensatory measures are currently being used at KNPP.

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 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

Does not apply to Kewaunee.