

WOLF CREEK

NUCLEAR OPERATING CORPORATION

Otto L. Maynard
President and Chief Executive Officer

March 21, 1997

WM 97-0027

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Station P1-137
Washington, D. C. 20555

- Reference: 1) Letter ET 95-0097, dated September 19, 1995, from Robert. C. Hagan, WCNOG, to the USNRC
2) NRC Letter dated January 30, 1997, from James C. Stone, USNRC, to Otto L. Maynard, WCNOG

Subject: Docket No. 50-482: Response to Request for Additional Information Concerning Exemption Request for Criticality Accident Monitors

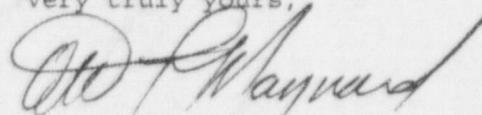
Gentlemen:

In Reference 1 the Wolf Creek Nuclear Operating Corporation (WCNOG) submitted an exemption request to the requirements of 10 CFR 70.24, pursuant to the provisions of 10 CFR 50.12 and 10 CFR 70.24(d). This proposed exemption request applies in whole to 10 CFR 70.24 which requires a monitoring system that will energize clearly audible alarms if accidental criticality occurs in each area in which special nuclear material is handled, used or stored. The proposed exemption would be similar to one previously granted within Wolf Creek Generating Station's (WCGS) Special Nuclear Material License No. SMN-1929, which expired with the issuance of the operating License for WCGS.

In Reference 2 the NRC requested additional information to support the review of WCNOG's request. The requested information is provided in the attachment.

If you have any questions concerning this matter, please contact me at (316) 364-8831, extension 4000, or Mr. Richard D. Flannigan, at extension 4500.

Very truly yours,



Otto L. Maynard

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P PDR

OLM/jad

cc: V. L. Cooper (KDHE)
J. E. Dyer (NRC)
W. D. Johnson (NRC)
J. F. Ringwald (NRC)
J. C. Stone (NRC)



STATE OF KANSAS)
) SS
COUNTY OF COFFEY)

Otto L. Maynard, of lawful age, being first duly sworn upon oath says that he is President and Chief Executive Officer of Wolf Creek Nuclear Operating Corporation; that he has read the foregoing document and knows the content thereof; that he has executed that same for and on behalf of said Corporation with full power and authority to do so; and that the facts therein stated are true and correct to the best of his knowledge, information and belief.

By *Otto L. Maynard*
Otto L. Maynard
President and
Chief Executive Officer

SUBSCRIBED and sworn to before me this 21 day of March, 1997.

Linda M. Ohmie
Notary Public



Expiration Date 8-31-98

**Response to Request For Additional Information
Exemption Request to 10 CFR 70.24, Criticality Accident Monitors**

NRC Letter dated January 30, 1997, from James C. Stone, USNRC, to Otto L. Maynard, WCNOG, requested additional information concerning the subject exemption request. Listed below are the specific questions asked and WCNOG's responses to those questions.

Question 1: What are the possible sources of water during new fuel handling operations? How are these sources controlled during the handling of new fuel?

RESPONSE: There are four possible sources of water that the fuel assembly could be subjected to during new fuel handling operations: borated spent fuel pool water, fire protection system water, demineralized water, and plant heating water. The new fuel assembly is normally subjected only to the borated water in the Spent Fuel Pool because it is normally unloaded from the shipping container and placed into the Spent Fuel Pool immediately following receipt inspection, per the New Fuel Receipt procedure. The only time new fuel is stored for extensive times in the New Fuel Storage Facility is during fuel receipt right before an outage, or when equipment malfunctions preclude movement to the Spent Fuel Pool. During these periods the assemblies are stored in the new fuel storage area, with packing materials removed to allow water drainage in the unlikely event the area would be flooded.

There is fire protection water piping located near the new fuel inspection area. The new fuel assembly could be subjected to fire protection water if the sprinkler system should be actuated during new fuel receipt, or if the fire protection piping were to fail. Actuation of the sprinkler system during new fuel inspection is considered highly unlikely because combustible material in the fuel building is strictly controlled by combustible material permits and ignition source permits. Failure of the fire protection system during new fuel receipt is also considered highly unlikely. However, in this event the automatic fire pump would start with no fire alarm signal present, which would alert the control room to the condition and operators would be dispatched to check buildings for the source of leakage. Once discovered, the failed piping would be isolated, thus limiting the flooding.

Demineralized water is provided to the 2047' el. of the fuel building (where new fuel receipt inspection is conducted) by a hose from an isolation and throttle valve on the 2026 el. of the fuel building. This water is provided to rinse off items removed from the spent fuel pool, cask loading pit, or fuel transfer canal, if needed. The isolation valve is normally closed, and is administratively controlled by the fuel receipt personnel.

Plant heating water is provided to the 2047' el. of the fuel building to provide a suitable working environment temperature control in the fuel building. This heat source is normally a closed system (using a hot water tank for the heat source) and would only impact new fuel in the event of a pipe leak or heat exchanger tube rupture in the system. An alarm is provided

in the control room for the level on the tank to notify the operator to visually check tank level and isolate the water pumps, if a leak is discovered. The hot water lines are located above the 2047 el. in the fuel building, which would preclude siphoning of other water lines through a break. In addition, a leak or tube rupture affecting new fuel without prior warning is considered to be very unlikely. Therefore, impact of plant heating water on new fuel is considered highly unlikely.

During the movement of new fuel assemblies (after removal from the shipping container), there is no wrapper or restraining device applied to the assembly which would prevent any water entering the assembly from exiting the assembly through the bottom or sides. Therefore, the current criticality analysis for new fuel bounds the case of unborated water from any source entering the fuel assembly.

Question 2: Discuss why the exemption would remain valid for possible future fuel enrichment increases above 4.5 weight percent U-235.

RESPONSE: Wolf Creek Generating Station (WCGS) design and accident analyses currently allow for a maximum fuel enrichment of 4.5 weight percent U-235. Thus, this exemption request would be valid only up to the current maximum enrichment. To increase this maximum enrichment above 4.5 weight percent U-235 will require design and analyses changes that will need to be submitted to and approved by the NRC prior to implementation. In the event that the Wolf Creek Nuclear Operating Corporation (WCNOC) would decide to pursue a future increase in the maximum fuel enrichment, this exemption to 10 CFR 70.24 would be reevaluated. Depending on the results of that evaluation, WCNOC would include in our request at that time either justification to continue our exemption to 10 CFR 70.24 or a commitment to reestablish compliance with 10 CFR 70.24.

Question 3: Verify that, with the requested exemption, radiation monitoring remains available to meet the requirements of 10 CFR 50, Appendix A, General Design Criteria 63 for fuel storage areas. Also include a discussion of the training provided personnel in responding to area radiation monitor alarms.

RESPONSE: As described in Updated Safety Analysis Report (USAR) Section 12.3.4, area radiation monitors are located near the spent fuel pool, new fuel storage vault, and cask handling area. These monitors are provided in accordance with GDC-63 and 10 CFR 70.24 to serve as criticality alarm monitors, and they conform to the requirements of 10 CFR 70, Regulatory Guides 8.5 and 8.12, and Standards ANSI/ANS-8.3-1979 and USAS N2.3-1967. These monitors will provide a distinct audible and visual alarm to alert personnel in the vicinity of the need to evacuate. The monitors provide a hi-hi radiation alarm at 15 mR/hr which will give prompt warning of high radiation if accidental criticality were to occur. Criticality is precluded from occurring, however, by design and proper operation of the fuel handling system, as described in USAR Section 9.1.4.

The purpose of this request is to seek exemption from the criticality monitoring requirements of 10 CFR 70.24, such that the monitors will not have to be maintained as criticality monitors and specific criticality accident emergency evacuation drills will no longer be required. However, the radiation monitoring requirements of GDC-63 will still apply. To continue meeting these requirements, WCNOG will leave the area radiation monitors, discussed above, in place. The monitors will then be treated as any other area radiation monitors and will continue to function as they currently do, including providing prompt warning of high radiation in the unlikely event that an accidental criticality were to occur.

Workers qualified to work in radiologically-controlled areas are trained, as part of Plant Access Training, to immediately evacuate an area in which an area radiation monitor is alarming and to notify the control room following evacuation. Personnel currently qualified to respond to potential fuel handling accidents receive additional training in WCGS Off-Normal Procedure OFN KE-018, Fuel Handling Accident. This procedure directs the operator to identify the affected area, place fuel in a safe location, evacuate the affected area, and to minimize the potential spread of airborne radiation by isolating the affected area and checking pool levels to maintain adequate cooling and shielding. Training on this procedure is given to appropriate personnel during license requalification training.