March 7, 2001

Mr. Mark Reddemann
Site Vice President
Kewaunee and Point Beach Nuclear Power Plants
Nuclear Management Company, LLC
6610 Nuclear Road
Two Rivers, WI 54241

SUBJECT: KEWAUNEE NUCLEAR POWER PLANT - CORRECTION TO AMENDMENT NO. 150 ISSUED ON JANUARY 23, 2001 (TAC NO. MA7278)

Dear Mr. Reddemann:

On January 23, 2001, the Nuclear Regulatory Commission (NRC) issued Amendment No. 150 to Facility Operating License No. DPR-43 for the Kewaunee Nuclear Power Plant (KNPP) in response to your request dated November 18, 1999, as supplemented on August 7, 2000. This amendment revised the KNPP Technical Specifications (TSs) to increase the allowable number of spent fuel assemblies stored in the spent fuel pools.

Typographical errors were inadvertently made on the revised TSs pages. Specifically, the outline numbering on page TS 5.4-1 does not match the outline numbering you requested in your submittal. Also, the font (arial) and the character size (11) of the revised TSs pages do not match the font (letter gothic) and the character size (12) you requested in your submittal. In addition, the footer containing "Amendment 150" on the revised TSs pages is not far enough in the bottom right hand corner of the pages. The revised TSs pages have been corrected to remove these typographical errors, and the revised TSs pages are enclosed.

We regret any inconvenience this may have caused. If you have any questions regarding this matter, please call me at (301) 415-1446.

Sincerely,

/RA/

John G. Lamb, Project Manager, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-305

Enclosures: As stated

cc w/encl: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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LIST OF FIGURES

Note:

[1] Although the curves were developed for 33 EFPY, they are limited to 28 EFPY (corresponding to the end of cycle 28) by WPSC Letter NRC-99-017.

3.8 REFUELING OPERATIONS

APPLICABILITY

Applies to operating limitations during REFUELING OPERATIONS.

OBJECTIVE

To ensure that no incident occurs during REFUELING OPERATIONS that would affect public health and safety.

SPECIFICATION

a. During REFUELING OPERATIONS:

1. Containment Closure

    a. The equipment hatch shall be closed and at least one door in each personnel air lock shall be capable of being closed[1] in 30 minutes or less. In addition, at least one door in each personnel air lock shall be closed when the reactor vessel head or upper internals are lifted.

    b. Each line that penetrates containment and which provides a direct air path from containment atmosphere to the outside atmosphere shall have a closed isolation valve or an operable automatic isolation valve.

2. Radiation levels in fuel handling areas, the containment and the spent fuel storage pool shall be monitored continuously.

3. The reactor will be subcritical for 148 hours prior to movement of its irradiated fuel assemblies. Core subcritical neutron flux shall be continuously monitored by at least TWO neutron monitors, each with continuous visual indication in the control room and ONE with audible indication in the containment whenever core geometry is being changed. When core geometry is not being changed at least ONE neutron flux monitor shall be in service. |

4. At least ONE residual heat removal pump shall be operable.

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[1] Administrative controls ensure that:

- Appropriate personnel are aware that both personnel air lock doors are open,
- A specified individual(s) is designated and available to close the air lock following a required evacuation of containment, and
- Any obstruction(s) (e.g., cables and hoses) that could prevent closure of an open air lock can be quickly removed.

BASIS

The equipment and general procedures to be utilized during REFUELING OPERATIONS are discussed in the USAR. Detailed instructions, the above specified precautions, and the design of the fuel handling equipment incorporating built-in interlocks and safety features, provide assurance that no incident occurs during the REFUELING OPERATIONS that would result in a hazard to public health and safety.[1] Whenever changes are not being made in core geometry, one flux monitor is sufficient. This permits maintenance of the instrumentation. Continuous monitoring of radiation levels (TS 3.8.a.2) and neutron flux provides immediate indication of an unsafe condition. The residual heat removal pump is used to maintain a uniform boron concentration.

A minimum shutdown margin of greater than or equal to 5% $\Delta k/k$ must be maintained in the core. A boron concentration of 2100 ppm, as required by TS 3.8.a.5, is sufficient to ensure an adequate margin of safety. The specification for REFUELING OPERATIONS shutdown margin is based on a dilution during refueling accident.[2] With an initial shutdown margin of 5% $\Delta k/k$, under the postulated accident conditions, it will take longer than 30 minutes for the reactor to go critical. This is ample time for the operator to recognize the audible high count rate signal, and isolate the reactor makeup water system. Periodic checks of refueling water boron concentration ensure that proper shutdown margin is maintained. Specification 3.8.a.6 allows the control room operator to inform the manipulator operator of any impending unsafe condition detected from the main control board indicators during fuel movement.

Interlocks are utilized during REFUELING OPERATIONS to ensure safe handling. Only one assembly at a time can be handled. The fuel handling hoist is dead weight tested prior to use to assure proper crane operation. It will not be possible to lift or carry heavy objects over the spent fuel pool when fuel is stored therein through interlocks and administrative procedures. Placement of additional spent fuel racks will be controlled by detailed procedures to prevent traverse directly above spent fuel.

The one hundred forty-eight hour decay time following plant shutdown is consistent with the spent fuel pool cooling analysis and also bounds the assumption used in the dose calculation for the fuel handling accident. The requirement for the spent fuel pool sweep system, including charcoal adsorbers, to be operating when spent fuel movement is being made provides added assurance that the off-site doses will be within acceptable limits in the event of a fuel handling accident. The spent fuel pool sweep system is designed to sweep the atmosphere above the refueling pool and release to the Auxiliary Building vent during fuel handling operations. Normally, the charcoal adsorbers are bypassed but for purification operation, the bypass dampers are closed routing the air flow through the charcoal adsorbers. If the dampers do not close tightly, bypass

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[1] USAR Section 9.5.2

[2] USAR Section 14.1

5.4 FUEL STORAGE

APPLICABILITY

Applies to the capacity and storage arrays of new and spent fuel.

OBJECTIVE

To define those aspects of fuel storage relating to prevention of criticality in fuel storage areas.

SPECIFICATION

a. Criticality

1. The spent fuel storage racks are designed and shall be maintained with:

   a. Fuel assemblies having a maximum enrichment of 56.067 grams Uranium-235 per axial centimeter;

   b. k_{eff} < 0.95 if fully flooded with unborated water, which includes an allowance for uncertainties.

2. The new fuel storage racks are designed and shall be maintained with:

   a. Fuel assemblies having a maximum enrichment of 56.067 grams Uranium-235 per axial centimeter;

   b. k_{eff} < 0.95 if fully flooded with unborated water, which includes an allowance for uncertainties;

   c. k_{eff} < 0.98 if moderated by aqueous foam, which includes an allowance for uncertainties.

3. The spent fuel pool is filled with borated water at a concentration to match that used in the reactor refueling cavity and refueling canal during REFUELING OPERATIONS or whenever there is fuel in the pool.

b. Capacity

The spent fuel storage pool is designed with a storage capacity of 1205 assemblies and shall be limited to no more than 1205 fuel assemblies.

c. Canal Rack Storage

Fuel assemblies stored in the canal racks shall meet the minimum required fuel assembly burnup as a function of nominal initial enrichment as shown in Figure TS 5.4-1. These assemblies shall also have been discharged prior to or during the 1984 refueling outage.

FIGURE TS 5.4-1

MINIMUM REQUIRED FUEL ASSEMBLY BURNUP AS A FUNCTION OF NOMINAL INITIAL ENRICHMENT TO PERMIT STORAGE IN THE TRANSFER CANAL