

August 22, 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 - REVIEW FOR KEWAUNEE
PROPOSED EMERGENCY ACTION LEVEL CHANGES (TAC NO. MB1860)

Dear Mr. Reddemann:

By letter dated May 2, 2001, as supplemented July 18, 2001, Nuclear Management Company (NMC), LLC (the licensee) submitted proposed changes to the Kewaunee Nuclear Power Plant Emergency Plan emergency action level (EAL) system. The licensee stated that the EAL changes were submitted for Nuclear Regulatory Commission (NRC) staff review and approval prior to implementation.

The NRC staff has reviewed the proposed EAL changes and supporting documentation. The NRC staff concludes the revised EAL system meets the planning standards of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.47(b) and the requirements of Appendix E to 10 CFR Part 50. The basis for the NRC staff conclusions is contained in the enclosed safety evaluation. The licensee indicated these changes have been concurred with by the State and local governments. Therefore, the licensee may implement the proposed changes.

If you have any questions regarding this matter, please contact 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

cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

PROPOSED CHANGES FOR EMERGENCY ACTION LEVEL

FOR KEWAUNEE NUCLEAR POWER PLANT

DOCKET NO. 50-305

NUCLEAR MANAGEMENT COMPANY, LLC.

1.0 INTRODUCTION

This safety evaluation addresses proposed changes to the Kewaunee Nuclear Power Plant (KNPP) Emergency Plan (EP) emergency action level (EAL) scheme submitted by Nuclear Management Company, LLC (the licensee) in a letter dated May 2, 2001, supplemented July 18, 2001.

2.0 APPLICABLE REGULATIONS AND GUIDANCE

Title 10 of the *Code of Federal Regulations* (10 CFR) 50.54(q) states, in part: "A licensee authorized to possess and operate a nuclear power reactor shall follow and maintain in effect emergency plans which meet the standards in Section 50.47(b) and the requirements in Appendix E to this part..."

10 CFR 50.47(b)(4) states, in part: "A standard emergency classification and emergency action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided..."

Section IV.B of Appendix E to 10 CFR Part 50 states, in part: "The means ...for determining ...and for continually assessing ... the release of radioactive material[s] shall be described, including emergency action levels that are to be used as criteria for determining the need for notification and participation of local and State agencies, the Commission and other Federal agencies, and the emergency action levels that are to be used for determining when and what type of protective measures should be considered within and outside the site boundary to protect health and safety. The emergency action levels shall be based on the plant conditions and instrumentation in addition to onsite and offsite monitoring. These emergency action levels shall be discussed and agreed on by the applicant and State and local governmental authorities and approved by [Nuclear Regulatory Commission] NRC."

Regulatory Guide 1.101, Revision 2, "Emergency Planning and Preparedness for Nuclear Power Reactors," states, in part: "The criteria and recommendations contained in Revision 1 of NUREG-0654/FEMA-REP-1 are considered by the NRC staff to be acceptable methods for complying with the standards in 10 CFR 50.47 that must be met in on-site and off-site emergency response plans."

Section II.D, "Emergency Classification System," of NUREG-0654/FEMA-REP-1, Rev 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," includes the following evaluation criteria:

1. An emergency classification and emergency action level scheme as set forth in Appendix 1 must be established by the licensee...
2. The initiating conditions shall include the example conditions found in Appendix 1 [of NUREG-0654] ...

Regulatory Guide 1.101, Revision 3, endorsed NUMARC/NESP-007, "Methodology for Development of Emergency Action Levels," as an acceptable alternative to NUREG-0654 for developing EAL schemes.

Emergency Preparedness Position No. 1, "Emergency Preparedness Position (EPPOS) on Acceptable Deviations from Appendix 1 of NUREG-0654 Based upon the Staff's Regulatory Analysis of NUMARC/NESP-007, 'Methodology for Development of Emergency Action Levels'," dated June 6, 1995, states that licensees could utilize the technical bases under the example EALs in NUMARC/NESP-007 to enhance and clarify some of their site-specific EALs developed from NUREG-0654. (The chosen classification scheme, whether based on Appendix 1 to NUREG-0654 or NUMARC/NESP-007, must remain internally consistent.)

3.0 BACKGROUND

By letter dated May 2, 2001, as supplemented July 18, 2001, the licensee submitted changes to the KNPP EP EALs for NRC staff review and approval prior to implementation. The licensee indicated that the emergency classification system changes are described in Attachment 1, "Description of Changes." Attachment 2 provides the revised pages to the Emergency Plan "EPIP-AD-02, Chart 0, New Revision, Flood, Low Water or Seiche."

4.0 EVALUATION

The NRC staff reviewed the proposed EAL changes using NUREG-0654 and NUMARC/NESP-007. The proposed changes are to allow a lower lake level setpoint for declaration of a Notification of Unusual Event (NOUE) as well as for an ALERT.

NUREG-0654 lists as an example of low water level as a "50 year flood or low water level, tsunami, hurricane surge, seiche." Under this example, the setpoint for an NOUE at Kewaunee was set at a lake level of 575 feet 4 inches. The KNPP is designed to operate with lake level as low as 567 feet 8 inches when the circulating pumps are secured. With the level in Lake Michigan decreasing, it is possible that the present EAL setpoint for a NOUE could be reached, putting the plant into a constant NOUE condition. KNPP proposes to change the NOUE Setpoint to 569.5 feet, which is 1 foot above the EAL setpoint that is proposed for ALERT declaration (discussed below). In establishing the proposed NOUE setpoint, the licensee used the datum posted by the United States Army Corps of Engineers (USACE) to determine the maximum monthly change in Lake Michigan from 1988 to 1999. The maximum level change was determined to be 0.56 feet per month, which occurred between April and May of 1996, when Lake Michigan level increased from 578.96 feet to 579.52 feet. The maximum monthly decrease in Lake Michigan level during this period was 0.427 feet. For conservatism, the

licensee used a maximum Lake Michigan level change of 1.0 foot, and the licensee proposed a setpoint of 569.5 feet (proposed ALERT setpoint of 568.5 feet + 1.0 foot) for the NOUE. The safety of the KNPP would not be put at risk with the NOUE setpoint decreased to 569.5 feet. A NOUE setpoint of 569.5 feet would allow sufficient time to place the plant in a safe condition if required. Therefore, this change is acceptable.

The present setpoint for an ALERT declaration is 573 feet lake level. The proposed setpoint for the ALERT declaration is 568.5 feet. NUREG-0654 states that an ALERT due to low water level to be "flood, low water, tsunami, hurricane surge, seiche near design levels." As discussed above, the plant is designed to safely operate with lake level as low as 567 feet 8 inches when the circulating pumps are secured. The ALERT declaration setpoint is determined by adding 0.66 feet for instrument uncertainties, and the value is rounded to 568.5 feet. The basis for an ALERT declaration from NUMARC/NESP-007 is "Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant." This proposed EAL meets the intent of the declaration of an ALERT and therefore, this proposed change is acceptable.

The licensee does not have instrumentation for taking a direct reading of lake level, and the intake forebay level is monitored for this purpose. When no circulating water pumps are operating, the intake forebay level is equivalent to lake level. However, when the circulating water pumps are operating, forebay level is reduced compared to actual lake level due to the hydraulic resistance of the plant intake. The licensee has correlated the intake forebay level with actual lake level when either one or both circulating water pumps are operating, and has adjusted the EAL setpoints accordingly. For most situations that involve operation of the circulating water pumps, as indicated by Note 5 in the proposed EAL table, the circulating water pumps must be tripped before the low lake level NOUE and ALERT setpoints are reached in order to maintain operability of the service water system. The licensee's correlation of the EAL setpoints and use of Note 5 in the proposed EAL table is appropriate and acceptable.

For the NOUE and the ALERT, the licensee proposed that the classification would be declared if the setpoint was exceeded for greater than 15 minutes. Exceeding the declaration setpoint for greater than 15 minutes would allow for short duration dynamic effects associated with the KNPP forebay. Fifteen minutes will avoid unnecessary event declaration due to shifting of circulating water pumps and other dynamic effects in the forebay, thus, reducing regulatory burden. The bases for the time criteria are from the licensee's past operating experience. This proposed EAL meets the intent of the declaration of a NOUE and ALERT and therefore, this proposed change is acceptable.

5.0 STATE AND LOCAL GOVERNMENTS AGREEMENT

Appendix E to 10 CFR Part 50 states, in part, that EALs are to be discussed and agreed on by State and local government authorities. The licensee stated in its May 2, and July 18, 2001, letters, that these proposed revisions were discussed with State and local governments and these authorities agreed to these proposed changes.

6.0 CONCLUSION

The proposed revised EALs are consistent with guidance provided in NUREG-0654 as well as NUMARC/NESP-007. The NRC staff concludes that the proposed revised EAL scheme meets the requirements of 10 CFR 50.47(b)(4) and Appendix E to 10 CFR Part 50. Therefore, the licensee can implement the proposed revision.

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Date: August 22, 2001

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