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

# SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION OF REVISED EMERGENCY ACTION LEVELS FOR NIAGARA MOHAWK'S NINE MILE POINT NUCLEAR STATION UNIT NO. 1 DOCKET NO. 50-220

## 1.0 INTRODUCTION

By letter dated July 11, 1994, as supplemented by letters dated March 20, 1995, and April 18, 1995, Niagara Mohawk Power Corporation (the licensee) proposed changes to the Nine Mile Point Nuclear Station's emergency action levels (EALs) for Unit No. 1. Specifically, the licensee provided a Plant-Specific EAL Guideline, a Fission Product Barrier Evaluation, and a technical basis document that describe how the proposed EALs incorporated the guidance in NUMARC/NESP-007, "Methodology for Development of Emergency Action Levels," Revision 2, January 1992. The NRC has endorsed NUMARC/NESP-007 as an acceptable method by which licensees may develop site-specific emergency classification schemes.

## 2.0 BACKGROUND

The EAL changes proposed for Nine Mile Point Unit No. 1, were reviewed against the requirements in 10 CFR 50.47(b)(4) and Appendix E to 10 CFR Part 50.

10 CFR 50.47(b)(4) specifies that onsite emergency plans must meet the following standard: "A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee .... "

Appendix E, Subsection IV.C, specifies that "emergency action levels (based not only on onsite and offsite radiation monitoring information but also on readings from a number of sensors that indicate a potential emergency, such as pressure in containment and response of the Emergency Core Cooling System) for notification of offsite agencies shall be described.... The emergency classes defined shall include (1) notification of unusual events, (2) alert, (3) site area emergency, and (4) general emergency."

In Revision 3 to Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors," the NRC endorsed NUMARC/NESP-007, Revision 2, (NESP-007), "Methodology for Development of Emergency Action Levels," as an acceptable method for licensees to meet the requirements of 10 CFR 50.47(b)(4) and Appendix E to 10 CFR Part 50. The NRC staff relied upon the guidance in NUMARC/NESP-007 as the basis for its review of the Nine Mile Point Unit No. 1 EAL changes.

## 3.0 EVALUATION

The licensee has divided eighty-one site-specific EALs into nine subcategories: (1) CSFST Status, (2) Reactor Fuel, (3) Reactor Coolant System, (4) Containment, (5) Radioactivity Release, (6) Electrical Failures, (7) Equipment Failures, (8) Hazards, and (9) Other. Each EAL is identified by a unique number sequence designation. The initiating conditions associated with each EAL, that relate the EAL to its respective emergency classification, are defined in the licensee's EAL Technical Bases Document (TBD). Each of the EALs proposed by the licensee that address fission product barrier degradation explicitly reference the barriers which are affected by the described condition. A majority of the proposed EALs conform closely to the guidance; however, several of the licensee's proposed changes depart from the example EALs in NUMARC/NESP-007. Review of the licensee's justification for these variations, as discussed below, found the variations to be acceptable.

1. NUMARC example EALs AA2-3 and AA2-4 state:

   *3. Water level less than (site-specific) feet for the Reactor Refueling Cavity that will result in Irradiated Fuel Uncovering.*

   *4. Water level less than (site-specific) feet for the Spent Fuel Pool and Fuel Transfer Canal that will result in Irradiated Fuel Uncovering.*

   Due to lack of instrumentation to measure water level in the spent fuel pool, fuel transfer canal, or refueling cavity, the licensee does not include site-specific EALs to address these examples. The licensee does include an example EAL for visual observation of water level to address irradiated fuel uncovery.

2. NUMARC example EAL AU2-4 states:

   *4. Valid Direct Area Radiation Monitor readings increase by a factor of 1000 over normal levels.*

   The licensee has related its site-specific threshold for this example EAL to Area Radiation Monitor (ARM) alarm setpoints as these are more readily identifiable. Since ARM alarm setpoints are nominally set by the licensee at one decade over normal levels, 100 times the alarm setpoint was chosen as an appropriate threshold.

3. The licensee has included the following site-specific indicators and thresholds for declaration of an Unusual Event or Alert, based upon lake or forebay water level:

   *8.4.3 Unusual Event*

   *Lake water level > 248 ft*
   *OR*

*Forebay water level < 238.8 ft*

AND

*8.4.4 Alert*

*Lake water level > 254 ft*
*OR*
*Forebay water level < 236 ft*

The Unusual Event and Alert thresholds for these site-specific indicators are consistent with the definitions of the associated emergency classes and are, therefore, acceptable.

4. NUMARC example EAL HA1-6 states:

*6. Turbine failure generated missiles result in any visible structural damage to or penetration of any of the following plant areas: (site-specific list)*

Based upon site-specific design considerations, damage from main turbine failures would be limited to the turbine building which does not contain any safety related equipment. Therefore, this example EAL is not applicable to the Nine Mile Point, Unit 1 plant and is not included in the licensee's classification scheme.

5. NUMARC example EALs AU1-3 and AU1-4 state:

*3. Valid reading on perimeter radiation monitoring system greater than 0.10 mR/hr above normal background for 60 minutes [for sites having telemetered perimeter monitors].*

*4. Valid indication on automatic real-time dose assessment capability greater than (site-specific value) for 60 minutes or longer [for sites having such capability].*

The licensee states that it does not currently possess a telemetered radiation monitoring system or real-time dose assessment capability and, therefore, does not include site-specific EALs for these examples. This comment is also applicable to NUMARC example EALs AA1-3, AA1-4, AS1-2, and AG1-2.

## 4.0 CONCLUSION

The proposed EAL changes for Nine Mile Point, Unit 1, are consistent with the guidance in NUMARC/NESP-007, with variations as identified and accepted in this review, and, therefore, meet the requirements of 10 CFR 50.47(b)(4) and Appendix E to 10 CFR Part 50.

Principal Contributor: S. Boynton

Date: June 15, 1995