January 12, 1995

Mr. B. Ralph Sylvia
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Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station
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SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION (RAIs) REGARDING PROPOSED EAL REVISION TO NUMARC/NESP-007 METHODOLOGY FOR NINE MILE POINT NUCLEAR STATION UNIT NOS. 1 (NMP-1)(TAC NO. M89881) AND 2 (NMP-2) (TAC NO. M89880)

Dear Mr. Sylvia:

By letters dated July 11, 1994 (two letters, one for NMP-1 and one for NMP-2), Niagara Mohawk Power Corporation (NMPC), submitted for review and approval revised Emergency Action Levels (EALs) for NMP-1 and NMP-2. The July 11, 1994, letters stated that the EALs have been revised consistent with the NUMARC NESP-007 methodology, and were developed as part of a joint project with all nuclear utilities within New York State.

The NRC staff has begun its review of NMPC's July 11, 1994, submittals. However, we have determined that additional information, as identified in Attachment 1 (applicable to NMP-1) and Attachment 2 (applicable to NMP-2), is required to complete our review of the submittals. NMPC is requested to respond to these RAIs within 60 days of receipt of this letter in order for us to complete our review in a timely manner.

This requirement affects one respondent and, therefore, is not subject to Office of Management and Budget review under P.L. 96-511.

Sincerely,

Original signed by

Donald S. Brinkman, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-220
and 50-410

Attachments:
1. RAI regarding NMP-1 EAL Revision
2. RAI regarding NMP-2 EAL Revision

cc w/atts: See next page

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

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Attachments:
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2. RAI regarding NMP-2 EAL Revision

cc w/atts: See next page

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ATTACHMENT 1

# REQUEST FOR ADDITIONAL INFORMATION

# REGARDING NINE MILE POINT UNIT 1

# EAL REVISION TO NUMARC/NESP-007 METHODOLOGY

The NRC has completed its initial review of the proposed emergency action levels (EALs) in the July 11, 1994 Nine Mile Point Unit 1 NUMARC EAL submittal. The submittal included NMP 1 Emergency Action Levels, dated 6/20/94, EPMP-EPP-001, UNIT 1 EMERGENCY CLASSIFICATION TECHNICAL BASES, REVISION 00, FISSION PRODUCT BARRIER EVALUATION, REVISION 0, PLANT SPECIFIC EAL GUIDELINE, dated 6/10/94, EMERGENCY ACTION LEVEL VERIFICATION & VALIDATION REPORT, REVISION 0, and miscellaneous other supporting documentation. The proposed EALs were reviewed against the guidance in NUMARC/NESP-007, "Methodology for Development of Emergency Action Levels", Revision 2. NUMARC/NESP-007 has been endorsed by the NRC in Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors", Revision 3, as an alternative means by which licensees can meet the requirements in 10 CFR 50.47(b)(4) and Appendix E to 10 CFR Part 50.

Since the staff has previously endorsed the guidance in NUMARC/NESP-007, the review focused on those EALs that deviated from the guidance and those EALs that required the development of site-specific thresholds. As a result of the initial review, a number of EALs were identified which required additional information in order to determine whether the EALs conform with NUMARC/NESP-007. Please provide this additional information as discussed below.

## GENERAL

1. The Nine Mile Point 1 EAL tables (both Categories and Sub-Categories) omitted the full text of the NUMARC Initiating Conditions. For example, the NUMARC criteria for Initiating Condition AG1 states:

> "Boundary Dose Resulting from an Actual or Imminent Release of Gaseous Radioactivity that Exceeds 1000 mR Whole Body or 5000mR Child Thyroid for the Actual or Projected Duration of the Release Using Actual Meteorology."

The equivalent Nine Mile Point 1 Initiating Condition (IC) states in part:

"5.0 Radioactivity Release/Area Radiation"

and

"5.2 Dose Projections/Environmental Measurements/Release Rates"

In accordance with NUMARC/NESP-007, ICs are: "one of a predetermined subset of nuclear power plant conditions where either the potential exists for a radiological emergency, or such an emergency has occurred." EALs are: "a pre-determined, site-specific, observable threshold for a plant IC that places the plant in a given emergency class." The use of ICs is advantageous from a human factors perspective. Grouping EALs under ICs will indicate to those who must use the EALs how an EAL (or several diverse EALs) is related to the plant condition of concern. This will assist the emergency director in the use of judgement in making the correct event classification. The lack of ICs for loss of fission product barriers is of particular concern to the staff. It is important that personnel who perform event classification, and those who communicate the classification to offsite authorities, clearly understand the condition of each fission product barrier as reflected in the EAL. This association between barriers and EALs is not readily apparent in the Nine Mile Point 1 methodology.

The lack of ICs in the licensee's classification scheme represents a significant departure from the NUMARC guidance and is unacceptable. The licensee should include ICs with their EALs to demonstrate the relationship between the EALs and their associated classification.

2. Absent from the Nine Mile Point 1 ICs and the supporting EALs were the NUMARC criteria of "Actual or Imminent" and "Using Actual Meteorology." The basis document included the criteria regarding meteorology, but would have to be referred to by a classifier in addition to a classification implementing procedure. The licensee should assure that cross referencing requirements are minimized by including all necessary attributes of ICs and EALs in one location.

**NUMARC Recognition Category A - Abnormal Rad Levels/Radiological Effluent**

1. The NUMARC criteria for Initiating Condition (IC) AU1 and EAL AU1-1 state:

*AU1 Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds two times the radiological Technical Specifications for 60 minutes or longer.*

*1. A valid reading on one or more of the following monitors that exceeds the "value shown" (site-specific monitors) indicates that the release may have exceeded the above criterion and indicates the need to assess the release with (site-specific procedure):*

*(site-specific list)*

*Note: If the monitor reading(s) is sustained for longer than 60 minutes and the required assessments cannot be completed within this period, then the declaration must be made based on the valid reading.*

The Nine Mile Point 1 equivalent states:

*5.1.1 Unusual Event*

*A valid reading on any monitors Table 5.1 column "NUE" for > 60 min.*

A. The NUMARC criteria requires assessment of the release using a site specific procedure. No procedure for assessment is referenced or included in the NMP 1 criteria. The NUMARC note addressing completion of the assessment within 60 minutes is not included in the EAL. The licensee Technical Bases (TB) discusses declaration if the reading is expected to be sustained longer than 60 minutes. The classifier is forced to use the TB document in addition to the EAL classification scheme to determine the appropriateness of classification in less than the 60 minute limit. The classification matrix omits the NUMARC criteria that the release is unplanned.

B. The table identification for "Table 5.1" is missing at the top of the table on page 5-3 of the EAL classification matrix.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

2. The NUMARC criteria for EAL AU1-2 states:

> *2. Confirmed sample analysis for gaseous or liquid releases indicates concentrations or release rates with a release duration of 60 minutes or longer in excess of (2 X site-specific technical specifications).*

The Nine Mile Point 1 equivalent states:

> *5.2.1 Unusual Event*
>
> *Confirmed sample analyses for gaseous or liquid release rates > 2 x technical specifications limits for >60 min.*

A. The NUMARC criteria requires the inclusion of site specific TS values as part of this EAL. No values are included in the NMP 1 EAL or in the technical bases.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

3. The NUMARC criteria for EAL AU1-3 and AU1-4 state:

> *3. A 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 reports in the PEG that NMP 1 does not use telemetered monitors or automatic real time dose assessment. The NMP 1 TB does not address these criteria and there is no documentation that other methods have been researched that might meet the NUMARC criteria. The licensee should determine if other sources of information for evaluating these NUMARC EALs is available.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

4. The NUMARC criteria for Initiating Condition (IC) AU2 and EAL AU2-1 and AU2-2 state:

> *AU2 Unexpected increase in plant radiation or airborne concentration.*

1. *(Site-specific) indication of uncontrolled water level decrease in the reactor refueling cavity with all irradiated assembles remaining covered.*

2. *Uncontrolled water level decrease in the spent fuel pool and fuel transfer canal with all irradiated fuel assemblies covered by water.*

The Nine Mile Point 1 equivalent EAL states:

*1.5.1 Unusual Event*

*Spent fuel pool/reactor cavity water level cannot be restored and maintained above the spent fuel pool low water level alarm.*

The NUMARC criteria specifies that the fuel is covered by water. The NMP 1 EAL implies that some unspecific level cannot be restored. The TB document addresses the criteria that level restoration efforts can be continued as long as the level remains above the top of irradiated fuel. The classifier is forced to use the TB document in addition to the EAL classification matrix to determine the appropriateness of classification. The NUMARC criteria is specific in the use of the term "uncontrolled." The NMP 1 EAL does not convey the character of an uncontrolled decrease. The NUMARC criteria provides for uncontrolled water level decrease in the spent fuel pool and the fuel transfer canal. The NMP 1 EAL does not specifically include the transfer canal. The TB document includes the transfer canal as being applicable. Again the classifier is forced to use the TB to ascertain all conditions required for classification.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

5. The NUMARC criteria for Initiating Condition (IC) AA1 and EAL AA1-1 state:

*AA1 Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds 200 times the radiological Technical Specifications for 15 minutes or longer.*

1. *A valid reading on one or more of the following monitors that exceeds the "value shown" (site-specific monitors) indicates that the release may have exceeded the above criterion and indicates the need to assess the release with (site-specific procedure):*

*(site-specific list)*

*Note: If the monitor reading(s) is sustained for longer than 15 minutes and the required assessments cannot be completed within this period, then the declaration must be made based on the valid reading.*

The Nine Mile Point 1 equivalent states:

*5.1.2 Alert*

*A valid reading on any monitors Table 5.1 column "Alert" for > 15 min.*

The NUMARC criteria requires assessment of the release using a site specific procedure. No procedure for assessment is referenced or included in the NMP 1 EAL or TB document. The NUMARC note addressing completion of the assessment within 15 minutes is not included in the EAL. The licensee Technical Bases (TB) does not discuss declaration if the assessment cannot be completed within 15 minutes. The classification matrix omits the NUMARC criteria that the release is unplanned.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

6. The NUMARC criteria for EAL AU2-2 states:

*2. Confirmed sample analysis for gaseous or liquid releases indicates concentrations or release rates with a release duration of 15 minutes or longer in excess of (200 X site-specific technical specifications).*

The Nine Mile Point 1 equivalent states:

*5.2.2 Alert*

*Confirmed sample analyses for gaseous or liquid release rates > 200 x technical specifications limits for > 15 min.*

The NUMARC criteria requires the inclusion of site specific TS values as part of this EAL. No values are included in the NMP 1 EAL or in the technical bases.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

7. The NUMARC criteria for EAL AA2-3 and AA2-4 state:

*3. A valid reading on perimeter radiation monitoring system greater than 10.0 mr/hr sustained for 15 minutes. [for sites having telemetered perimeter monitors]*

*4. Valid indication on automatic real-time dose assessment capability greater than (site-specific technical specifications value) for 15 minutes or longer. [for sites having such capability]*

The licensee reports in the PEG that NMP 1 does not use telemetered monitors or automatic real time dose assessment. The NMP 1 TB does not address these criteria and there is no documentation that other methods have been researched that might meet the NUMARC criteria. The licensee should determine if other sources of information for evaluating these NUMARC EALs is available.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

8. The NUMARC criteria for IC AS1 and EAL AS1-1 and AS1-2 state:

*AS1 Boundary dose resulting from actual or imminent release of gaseous radioactivity exceeds 100 mr Whole Body or 500 mr Child Thyroid for actual or projected duration of the release.*

*1. A valid reading on one or more of the following monitors that exceeds or is expected to exceed the value shown indicates that the release may have exceeded the above criterion and indicates the need to assess the release with (site-specific procedure):*

*(site-specific list)*

*Note: If the monitor reading(s) is sustained for longer than 15 minutes and the required assessments cannot be completed within this period, then the declaration must be made based on the valid reading.*

*2. A valid reading sustained for 15 minutes or longer on perimeter radiation monitoring system greater than 100 mR/hr. [for sites having telemetered perimeter monitors]*

The Nine Mile Point 1 equivalent states:

*5.1.3 Site Area Emergency*

*A valid reading on any monitors Table 5.1 column "SAE" for > 15 min.*

A. The NUMARC criteria requires assessment of the release using a site specific procedure. No procedure for assessment is referenced or included in the NMP 1 EAL or TB document. The NUMARC note addressing completion of the assessment within 15 minutes is not included in the EAL. The licensee Technical Bases (TB) does not discuss declaration if the assessment cannot be completed within 15 minutes. The NUMARC criteria specifically contains the term "imminent" release. The NPM 1 EAL omits this term. But, does use "imminent" in the TB document. This forces the classifier to refer to the TB for a full appreciation of the EAL. The NUMARC criteria AS1-1 states that the declaration should be based on the release "expected" to exceed the stated values. The NMP 1 EAL or the TB document do not address the condition in which the release is expected to exceed the SAE limits.

The terminology and units utilized in Table 5.2 are inconsistent with 10 CFR Part 20:

- Total Effective Dose Equivalent and Committed Dose Equivalent to the Thyroid are both quantified in rem, not rad as suggested by Table 5.2.

- The use of TEDE rate and CDE Thyroid rate are inconsistent with 10 CFR Part 20 and are not defined as protective action guides in accordance with EPA-400.

B. The licensee reports in the PEG that NMP 1 does not use telemetered monitors. The NMP 1 TB does not address this criteria and there is no documentation that other methods have been researched that might meet the NUMARC criteria. The licensee should determine if other sources of information for evaluating this NUMARC EAL are available.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

9. The NUMARC criteria for IC AG1 and EAL AG1-1 and AG1-2 state:

*AG1 Boundary dose resulting from actual or imminent release of gaseous radioactivity exceeds 1000 mr Whole Body or 5000 mr Child Thyroid for actual or projected duration of the release using actual meteorology.*

1. *A valid reading on one or more of the following monitors that exceeds or is expected to exceed the value shown indicates that the release may have exceeded the above criterion and indicates the need to assess the release with (site-specific procedure):*

*(site-specific list)*

*Note: If the monitor reading(s) is sustained for longer than 15 minutes and the required assessments cannot be completed within this period, then the declaration must be made based on the valid reading.*

There is no equivalent licensee EAL. The licensee PEG reports: "Since the calculated values for this IC are beyond the normal indication range of the monitors in the control room, no value is specified for this IC." It is not clear that other monitors are not available.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

10. The NUMARC criteria for EAL AG1-2 states:

2. *A valid reading sustained for 15 minutes or longer on perimeter radiation monitoring system greater than 1000 mR/hr. [for sites having telemetered perimeter monitors]*

The licensee reports in the PEG that NMP 1 does not use telemetered monitors. The NMP 1 TB does not address this criteria and there is no documentation that other methods have been researched that might meet the NUMARC criteria. The licensee should determine if other sources of information for evaluating this NUMARC EAL are available.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

**NUMARC Recognition Category F - Fission Product Barrier Degradation**

11. The NUMARC criteria for the Containment Barrier Example EAL #1 states:

*LOSS*

*1. Drywell Pressure*

*Rapid unexplained decrease following initial increase*
*OR*
*Drywell pressure response not consistent with LOCA conditions*

The licensee did not include this example in their site-specific classification scheme. The PEG states that for "BWR pressure suppression type containments, the numerous variables which can affect containment pressure under accident conditions makes it impossible to evaluate [containment] integrity based upon containment pressure response alone."

The staff agrees that drywell pressure response to a LOCA may not be a viable indicator of the integrity of the containment, thus it is acceptable to eliminate the first example above. However, a rapid unexplained decrease in drywell/containment pressure is a valid indicator of a containment breach. The licensee should incorporate this example EAL into their classification scheme or provide additional justification for its exclusion.

12. The NUMARC criteria for the RCS Barrier Example EAL #1 states:

*1. LOSS*

*(site-specific) indication of Main Steamline Break*

An equivalent NMP 1 EAL was not provided. The PEG described indications of a main steamline break as:

> *Inside drywell: Drywell pressure cannot be maintained < 2.0 PSIG OR Outside drywell: Valid high main steam flow or high steam tunnel temperature isolation signal (Group 1)*

The symptoms described in the PEG do not appear in the licensee's classification matrix or TB document.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

13. The NUMARC criteria for the RCS Barrier Example EAL # 1 states:

*1. POTENTIAL LOSS*

*RCS leakage GREATER THAN 50 GPM inside the drywell*

An equivalent NMP 1 EAL was not provided. The PEG described indication of RCS leak rate as:

*RCS leakage greater than 50 gpm inside the drywell*

The symptoms described in the PEG do not appear in the licensee's classification matrix or TB document.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

14. The NUMARC criteria for the FC Barrier Example EAL # 2 states:

*1. LOSS*

*Level LESS THAN (site-specific) Value*

The Nine Mile Point 1 equivalent states:

*2.1.2 Site Area Emergency*

*RPV water level cannot be restored and maintained > -84 in. (TAF)*

The NUMARC criteria establishes a level below which the declaration should be made. The NMP 1 criteria implies that the level can be exceeded and restoration of level can be attempted. No justification for level restoration is provided in the TB document.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

15. The Nine Mile Point 1 EAL 1.2.2 for alert states:

*1.2.2 Alert*

*Valid offgas radiation ≥ 10 x hi-hi alarm*

The licensee TB document does not address this EAL.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

16. NUMARC/NESP-007 Table 3, "BWR Emergency Action Level Fission Product Barrier Reference Table Thresholds for Loss or Potential Loss of Barriers," states that a Site Area Emergency should be declared when there is a:

> *Potential Loss of EITHER Fuel Clad OR RCS, and LOSS of ANY Additional Barrier.*

Included as example thresholds for loss/potential loss of the RCS and Fuel Clad barriers are:

> *FUEL CLAD BARRIER EXAMPLE EALS*
>
> *LOSS*
>
> *1. Primary Coolant Activity Level*
>
> *Coolant activity GREATER THAN (site-specific) value*
>
> and
>
> *RCS BARRIER EXAMPLE EALS*
>
> *POTENTIAL LOSS*
>
> *1. RCS Leak Rate*
>
> *RCS leakage GREATER THAN 50 GPM inside the drywell*

This specific combination of indicators was not included in the NMP 1 classification scheme based upon the condition being bounded by the drywell radiation monitor threshold (Comment #19 of Fission Product Barrier Evaluation).

When separate, unique indications are available for evaluating an initiating condition, each indication should be utilized to classify the event. Elimination of redundant indicators is unacceptable. The licensee should include a specific EAL to address the above conditions.

17. NUMARC/NESP-007 Table 3, "BWR Emergency Action Level Fission Product Barrier Reference Table Thresholds for Loss or Potential Loss of Barriers," states that a General Emergency should be declared when there is a:

*Loss of ANY Two Barriers*

*AND*

*Potential Loss of Third Barrier*

Table 3 includes thresholds for loss of the RCS and loss/potential loss of the Fuel Clad based upon reactor pressure vessel (RPV) water level. Table 3 also includes several indicators for loss of the Primary Containment. These indicators, in conjunction with the site-specific threshold of RPV water level, should escalate an event to a General Emergency. The licensee has not included any of these combinations and has not adequately justified their omission.

The licensee should include all appropriate combinations of RPV level and loss of containment indicators for classifying a General Emergency or provide additional justification for eliminating them from their site-specific scheme.

**NUMARC Recognition Category H - Hazards and Other Conditions Affecting Plant Safety**

18. The NUMARC example HU1.1 states:

*1. (Site-Specific) method indicates felt earthquake.*

In the NUMARC Basis Document for IC HU1.1 the definition of a "felt earthquake" states:

*An earthquake of sufficient intensity such that: (a) the vibratory ground motion is felt at the nuclear plant site and recognized as an earthquake based on a consensus of control room operators on duty at the time.....*

The equivalent licensee EAL for Hazards, Unusual Event 8.4.1 states:

*Earthquake felt by any plant operator*
*AND either:*
*NMP-1 seismic instrumentation actuated*
*OR*

*Confirmation of earthquake received on NMP-2 or JAFNPP seismic instrumentation*

A. The NUMARC criterion in the Basis Document indicates specifically that a *"consensus of Control Room operators on duty at the time"* and this same information is contained in the bases document for this EAL. However, the EAL wording of *"felt by any plant operator"* contradicts this guidance.

Provide justification for this deviation from NUMARC/NESP-007 guidance.

B. Satisfying either argument of the proposed EAL should be sufficient to meet the intent of the associated initiating condition and make a declaration. However, the application of the boolean AND statement results in requiring both conditions to be met prior to classification. This is inconsistent with the NUMARC guidance and is not justified in the technical bases.

Provide additional information to justify the deviation.

19. The NUMARC criteria for IC HU1 and EAL HU1-3 state:

*HU1 Natural and destructive phenomena affecting the protected area*

*3. Assessment by the control room that an event has occurred.*

The Nine Mile Point 1 equivalent EAL states:

*8.4.3 Unusual Event*

*Assessment by Control Room personnel that a natural event has occurred precluding access to a plant vital area, Table 8.3*

*Table 8.3 Plant Vital Areas*
*Control Room Building*
*Auxiliary Control Building*
*Cable Spreading Room*
*Reactor Bldg.*
*Turbine Bldg.*
*Diesel Generator Area*
*Screen and Pump House*
*Off gas Bldg*

The NUMARC criteria addresses unusual events to the protected area. In this EAL the licensee uses access to the plant vital area as the criteria. The licensee's EAL appears far more restrictive than suggested by the NUMARC guidance. The

licensee's EAL describes the vital plant areas in table 8.3. The TB document lists the table as 8.4. There is no table 8.4 in the classification matrix.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

20. The NUMARC example HU4-1 and -2 states:

1. *Bomb device discovered within plant Protected Area and outside the plant Vital Area.*

2. *Other security events as determined from (site-specific) Safeguards Contingency Plan.*

The licensee equivalent EAL for Hazards, Unusual Event, 8.1.1 states:

*Bomb device or other indication of attempted sabotage discovered within plant Protected Area.*

The NUMARC criteria suggest that other security events which may potentially impact plant safety should be the subject of a declaration, however the additional EAL is omitted from the licensee's EAL category. The PEG includes the EAL in the form:

*Other security events as determined from ~~(site-specific)~~ Nine Mile Point Nuclear Station Security and Safeguards Contingency Plan*

However, this EAL is not carried over to the Technical Basis document.

The Technical Bases document states, *This EAL is based on the Nine Mile Point Nuclear Station Physical Security and Safeguards Contingency Plans. Security events which do not represent at least a potential degradation in the level of safety of the plant are reported under 10 CFR 73.71 or in some cases under 10 CFR 50.72.* As written, the EAL does not permit an emergency declaration for *other security events* that may represent a potential degradation of safety which is inconsistent with the NUMARC criteria. This discussion is also applicable to the Alert and SAE EALs but will not be repeated.

Provide adequate justification for the deviation from the NUMARC/NESP-007 guidance.

21. The NUMARC criteria for IC HA1 and EAL HA1-3 state:

*HA1 Natural and destructive phenomena affecting the plant vital area.*

*3. Report of any visible structural damage on any of the following plant structures:*

*Reactor Building*
*Intake Building*
*Ultimate Heat Sink*
*Refueling Water Storage Tank*
*Diesel Generator Building*
*Turbine Building*
*Condensate Storage Tank*
*Control Room*
*Other (site-specific) Structures.*

The Nine Mile Point 1 equivalent EAL states:

*8.4.7 Alert*

*Assessment by the control room personnel that a natural event has resulted in damage to equipment needed for safe plant operation, Table 8.3*

*Table 8.3 Plant Vital Areas*
*Control Room Building*
*Auxiliary Control Building*
*Cable Spreading Room*
*Reactor Bldg.*
*Turbine Bldg.*
*Diesel Generator Area*
*Screen and Pump House*
*Off gas Bldg*

The NUMARC criteria is specific regarding visible structural damage. The licensee's EAL addresses only damage to equipment needed for safe plant operation. The TB document conveys the NUMARC criteria by stating "This EAL addresses events that may have resulted in a plant vital area being subjected to forces beyond design limits, and thus damage may be assumed to have occurred to plant safety systems." The classifier is forced to use to TB document in addition to the EAL classification matrix to accurately classify this event.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

22. The NUMARC examples HA3-1 and 2 state:

1. *Report or detection of toxic gases within a Facility Structure in concentrations that will be life threatening to plant personnel.*

2. *Report or detection of flammable gases within a Facility Structure in concentrations that will affect the safe operation of the plant.*

The licensee equivalent EAL for Hazards, Alert, 8.3.5 states:

*Report or detection of toxic or flammable gases within a plant area, Table 8.3, in concentrations that will be life threatening to plant personnel or preclude access to equipment needed for safe plant operation.*

The licensee did not provide or reference measurable criteria to the emergency director for establishing concentrations that affect safe operation of the plant. Without such information readily available, classification could be difficult.

Provide justification for not having criteria available to the classifier to determine when life threatening and flammable concentration thresholds have been exceeded.

23. The NUMARC criteria for IC HA5 and EAL HA5-1 states:

*HA5 Control Room Evacuation Has Been Initiated.*

1. *Entry into (site-specific) procedure for control room evacuation.*

The Nine Mile Point 1 equivalent EAL states:

*7.2.2 Control Room Evacuation*

The NUMARC criteria is specific about the classification being declared on entry into the control room evacuation procedure. The licensee's EAL is mute as to the timing of the classification. The TB document does not justify the deviation.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

24. The NUMARC criteria for HS2-1 states:

*HS2 Control Room Evacuation Has Been Initiated and Plant Control Cannot Be Established.*

*1. The following conditions exist:*

*a. Control room evacuation has been initiated.*

*AND*

*b. Control of the plant cannot be established per (site-specific) procedure within (site-specific) minutes.*

The Nine Mile Point 1 equivalent EAL states:

*7.2.4 Site Area Emergency*

*Control Room evacuation*
*AND*
*Control of core cooling systems cannot be established in ≤ 15 min.*

The NUMARC criteria requires a site specific procedure that provides determination of plant control. No procedure is provided in the licensee's EAL.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

25. The NUMARC criteria for IC HG1 and EAL HG1-1 and HG1-2 state:

*HG1 Security Event Resulting in Loss of Ability to Reach and Maintain Cold Shutdown.*

*1. Loss of physical control of the control room due to a security event.*

*2. Loss of physical control of the remote shutdown capability due to a security event.*

The Nine Mile Point 1 equivalent EAL states:

*8.1.4 General Emergency*

*Security event which results in:*
*Loss of control from the Control Room*
*AND*
*Loss of remote shutdown capability*

The NUMARC criteria regards loss of control room control and loss of remote shutdown capability as independent events (1 or 2). The licensee has combined the events (1 and 2). The PEG states that "the concern here is the loss of ability to shutdown the reactor and maintain core cooling. Therefore this EAL has been modified to reflect a loss of plant control from both the control room and remote shutdown panels." The TB document does not mention the modification.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

**NUMARC Recognition Category S - System Malfunction**

26. The NUMARC criteria for IC SU6 and EAL SU6-1 state:

*SU6 Unplanned Loss of All Onsite or Offsite Communications Capabilities.*

*1. Either of the following conditions exist:*

*a. Loss of all (site-specific list) onsite communications capability affecting the ability to perform routine operations.*

*OR*

*b. Loss of all (site-specific list) offsite communications capability.*

The Nine Mile Point 1 equivalent EALs state:

*7.3.2 Unusual Event*

*Loss of all communications capability affecting the ability to either:*
*Perform routine onsite operations*
*OR*
*Notify offsite agencies or personnel*

The NUMARC criteria specifies the loss of communications are unplanned and requires a site specific list of the communications capabilities that are of concern.

The specific list is included in the TB document which forces the classifier to refer to the TB for a complete understanding of this EAL. No reference to the loss of communications as an unplanned event is in the EAL or the TB document.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

27. The NUMARC criteria for IC SU7 and EAL SU1-1 state:

*SU7 Unplanned Loss of Required DC Power During Cold Shutdown or Refueling Mode for Greater Than 15 Minutes.*

*1. Either of the following conditions exist:*

*a. Unplanned loss of vital DC power to required DC busses based on (site-specific) bus voltage indications.*

*OR*

*b. Failure to restore power to at least one required DC bus within 15 minutes from the time of loss.*

The Nine Mile Point 1 equivalent EAL states:

*6.2.1 Unusual Event*

*< 106 VDC on battery board 11 and 12 for > 15 min.*

The NUMARC criteria is specific that the event is unplanned. The licensee has not included the term unplanned in the EAL and does not address it in the TB document.

28. The NUMARC criteria for IC SA1 and EAL SA1-1 state:

*SA1 Loss of All Offsite Power and Loss of All Onsite AC Power to Essential Busses During Cold Shutdown or Refueling Mode.*

*1. The following conditions exist:*

*a. Loss of power to (site-specific) transformers*

*AND*

b. *Failure of (site-specific) emergency generators to supply power to emergency busses.*

*AND*

c. *Failure to restore power to at least one emergency bus within 15 minutes from the time of loss offsite and onsite power.*

The Nine Mile Point 1 equivalent EAL states:

*6.1.2 Alert*

*Loss of all emergency bus AC power for > 15 min.*

The NUMARC criteria requires site specific criteria that identifies the transformers and the diesel generators. The licensee omitted the criteria from the EAL. The site specific criteria is included in the TB document. The licensee includes the site specific criteria of power requirements in some, 6.1.1 and 6.1.3, of the EALs but not in others. The EALs should be presented in a consistent form throughout the classification matrix.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

29. The NUMARC criteria for IC SA2 and EAL SA2-1 state:

*SA2 Failure of Reactor Protection System Instrumentation to Complete or Initiate an Automatic Reactor Scram Once a Reactor Protection System Setpoint Has Been Exceeded and Manual Scram Was Successful.*

*1. (Site-specific) indication(s) exist that indicate that reactor protection system setpoint was exceeded and automatic scram did not occur, and a successful manual scram occurred.*

The Nine Mile Point 1 equivalent EAL states:

*2.2.1 Alert*

*All immediate manual scrams fail to shutdown the reactor*

The NUMARC criteria is specific to failure of the automatic protection system with a successful manual scram. The licensee EAL permits a manual scram attempt before requiring classification. The NUMARC concern is failure of automatic protection system and that design limits of the fuel may have been exceeded.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

30. The NUMARC criteria for IC SA3 and EAL SA3-1 state:

*SA3 Inability to Maintain Plant in Cold Shutdown.*

*1. The following conditions exist:*

*a. Loss of (site-specific) Technical Specification required functions to maintain cold shutdown*

*AND*

*b. Temperature increase that either:*

- *Exceeds Technical Specification cold shutdown temperature limit*

*OR*

- *Results in uncontrolled temperature rise approaching cold shutdown technical specification limit.*

The Nine Mile Point 1 equivalent EAL states:

*7.2.3 Alert*

*Reactor coolant temperature cannot be maintained < 212 °F*

The NUMARC criteria requires site specific identification of the functions necessary to maintain cold shutdown and provides an anticipatory concern with, uncontrolled temperature rise. The licensee does not provide the site specific identification or address the anticipatory concern.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

31. The NUMARC criteria for IC SS1 and EAL SS1-1 state:

*SS1 Loss of All Offsite Power and Loss of All Onsite AC Power to Essential Busses.*

*1. Loss of all offsite and onsite AC power as indicated by:*

*a. Loss of power to (site-specific) transformers*

*AND*

*b. Failure of (site-specific) emergency generators to supply power to emergency busses.*

*AND*

*c. Failure to restore power to at least one emergency bus within 15 minutes from the time of loss offsite and onsite power.*

The Nine Mile Point 1 equivalent EAL states:

*6.1.4 Site Area Emergency*

*Loss of all emergency bus AC power for > 15 min.*

The NUMARC criteria requires site specific criteria that details the transformers and the diesel generators. The licensee omitted the criteria from the EAL. The site specific transformers and diesel generators criteria is included in the TB document. The licensee includes the site specific criteria of power requirements in some, 6.1.1 and 6.1.3, of the EALs but, not in others. The EALs should be presented in a consistent form throughout the classification matrix.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

32. The NUMARC criteria for IC SS2 and Eal SS2-1 state:

*SS2 Failure of Reactor Protection System Instrumentation to Complete or Initiate an Automatic Reactor Scram Once a Reactor Protection System Setpoint Has Been Exceeded and Manual Scram Was NOT Successful.*

*1. (Site-specific) indication exist that automatic and manual scram were not successful.*

The Nine Mile Point 1 equivalent EAL states:

*2.2.2 Site Area Emergency*

*All immediate manual scrams fail to shutdown the reactor*
*AND*
*Boron injection is required*

A. The NUMARC criteria is specific to failure of the automatic protection system with unsuccessful manual scram. The licensee EAL addresses only immediate manual scram. The TB document discusses that this condition indicates failure of the automatic and/or manual protection system. This forces the classifier to refer to the TB document for the full understanding of the EAL.

B. The licensee's inclusion of the criterion that boron injection is required is inconsistent with the intent of the NUMARC guidance which requires the declaration of a Site Area Emergency immediately when there is a failure of both automatic and manual scrams.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

33. The NUMARC criteria for IC SG1 and EAL SG1-1 state:

*SG1 Prolonged Loss of All Offsite Power and Prolonged Loss of All Onsite AC Power.*

*1. Prolonged loss of all offsite and onsite AC power as indicated by:*

*a. Loss of power to (site-specific) transformers.*

*AND*

*b. Failure of (site-specific) emergency diesel generators to supply power to emergency busses.*

*AND*

*c. At least one of the following conditions exist:*

- *Restoration of at least one emergency bus within (site-specific) hours is NOT likely*
  *OR*
- *(Site-specific) Indication of continuing degradation of core cooling based on Fission Product Barrier monitoring.*

The Nine Mile Point 1 equivalent EAL states:

*6.1.5 General Emergency*

*Loss of all emergency bus AC power*
*AND*
*Power cannot be restored to any emergency bus on ≤ 4 hrs.*
*OR*
*RPV water level cannot be restored and maintained > -84 in. (TAF)*

A. The NUMARC criteria requires site specific criteria that details the transformers and the diesel generators. The licensee omitted the criteria from the EAL. The site specific transformer and diesel generator criteria is not included in the TB document. For other electrical classification the site specific criteria is included in the TB document. The licensee includes the site specific criteria of power requirements in some, 6.1.1 and 6.1.3, of the EALs but, not in others. The EALs should be presented in a consistent form throughout the classification matrix.

B. NUMARC employs the wording that *Restoration... ...is NOT likely.* The licensee uses the wording *Power cannot be restored... .* The NUMARC "not likely" implies that as soon as it is known that power will not be restored the threshold has been exceeded, whereas the licensee "cannot" implies that power restoration must be a "known" quantity before a licensee declaration. The NUMARC intent is that the condition is met as soon as it is known that power restoration is not likely within the specific time limit.

C. The licensee does not adequately justify the use of the single indicator (RPV water level) for determining the challenge to core cooling and/or heat removal.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

34. The NUMARC criteria for IC SG2 and EALS SG2-1 and SG2-2 state:

*SG2 Failure of the Reactor Protection System Instrumentation to Complete an Automatic Reactor Scram and Manual Scram Was NOT Successful and there is Indication of an Extreme Challenge to the Ability to Cool the Core.*

*1. (Site-specific) indications exist that automatic and manual scram were not successful.*

*AND*

2. *Either of the following:*

   a. *(Site-specific) indications exist that the core cooling is extremely challenged.*

      ***OR***

   b. *(Site-specific) indication exists that heat removal is extremely challenged.*

The Nine Mile Point 1 equivalent EALs state:

*2.2.3 General Emergency*

*All immediate manual scrams fail to shutdown the reactor*
*AND*
*RPV water level cannot be restored and maintained > -108 in.*

and

*2.2.4 General Emergency*

*All immediate manual scrams fail to shutdown the reactor*
*AND*
*Torus temperature and RPV pressure cannot be maintained < HCTL*

The NUMARC criteria is specific to failure of the automatic protection system with unsuccessful manual scram. The licensee EAL addresses only immediate manual scram. The TB document is mute regarding failure of the automatic scram. The licensee uses two EALs for conditions described in NUMARC SG2-2a and SG2-2b. The licensee's PEG shows only one EAL. While the separation of EAL criteria is allowed within the NUMARC guidance in this case it appears unnecessary and does not add clarity.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

ATTACHMENT 2

# REQUEST FOR ADDITIONAL INFORMATION

# REGARDING NINE MILE POINT UNIT 2

# EAL REVISION TO NUMARC/NESP-007 METHODOLOGY

The NRC has completed its initial review of the proposed emergency action levels (EALs) in the July 11, 1994 Nine Mile Point Unit 2 NUMARC EAL submittal. The submittal included NMP 2 Emergency Action Levels, dated 6/20/94, EPMP-EPP-001, Unit 2 EMERGENCY CLASSIFICATION TECHNICAL BASES, REVISION 00, FISSION PRODUCT BARRIER EVALUATION, REVISION 0, PLANT SPECIFIC EAL GUIDELINE, dated 6/10/94, EMERGENCY ACTION LEVEL VERIFICATION & VALIDATION REPORT, REVISION 0, and miscellaneous other supporting documentation. The proposed EALs were reviewed against the guidance in NUMARC/NESP-007, "Methodology for Development of Emergency Action Levels", Revision 2. NUMARC/NESP-007 has been endorsed by the NRC in Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors", Revision 3, as an alternative means by which licensees can meet the requirements in 10 CFR 50.47(b)(4) and Appendix E to 10 CFR Part 50.

Since the staff has previously endorsed the guidance in NUMARC/NESP-007, the review focused on those EALs that deviated from the guidance and those EALs that required the development of site-specific thresholds. As a result of the initial review, a number of EALs were identified which required additional information in order to determine whether the EALs conform with NUMARC/NESP-007. Please provide this additional information as discussed below.

## GENERAL

1. The Nine Mile Point 2 EAL tables (both Categories and Sub-Categories) omitted the full text of the NUMARC Initiating Conditions. For example, the NUMARC criteria for Initiating Condition AG1 states:

> "Boundary Dose Resulting from an Actual or Imminent Release of Gaseous Radioactivity that Exceeds 1000 mR Whole Body or 5000mR Child Thyroid for the Actual or Projected Duration of the Release Using Actual Meteorology."

The equivalent Nine Mile Point 2 Initiating Condition (IC) states in part:

"5.0 Radioactivity Release/Area Radiation"

and

"5.2 Dose Projections/Environmental Measurements/Release Rates"

In accordance with NUMARC/NESP-007, ICs are: "one of a predetermined subset of nuclear power plant conditions where either the potential exists for a radiological emergency, or such an emergency has occurred." EALs are: "a pre-determined, site-specific, observable threshold for a plant IC that places the plant in a given emergency class." The use of ICs is advantageous from a human factors perspective. Grouping EALs under ICs will indicate to those who must use the EALs how an EAL (or several diverse EALs) is related to the plant condition of concern. This will assist the emergency director in the use of judgement in making the correct event classification. The lack of ICs for loss of fission product barriers is of particular concern to the staff. It is important that personnel who perform event classification, and those who communicate the classification to offsite authorities, clearly understand the condition of each fission product barrier as reflected in the EAL. This association between barriers and EALs is not readily apparent in the Nine Mile Point 2 methodology.

The lack of ICs in the licensee's classification scheme represents a significant departure from the NUMARC guidance and is unacceptable. The licensee should include ICs with their EALs to demonstrate the relationship between the EALs and their associated classification.

2. Absent from the Nine Mile Point 2 ICs and the supporting EALs were the NUMARC criteria of "Actual or Imminent" and "Using Actual Meteorology." The basis document included the criteria regarding meteorology, but would have to be referred to by a classifier in addition to a classification implementing procedure. The licensee should assure that cross referencing requirements are minimized by including all necessary attributes of ICs and EALs in one location.

**NUMARC Recognition Category A - Abnormal Rad Levels/Radiological Effluent**

1. The NUMARC criteria for Initiating Condition (IC) AU1 and EAL AU1-1 state:

*AU1 Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds two times the radiological Technical Specifications for 60 minutes or longer.*

*1. A valid reading on one or more of the following monitors that exceeds the "value shown" (site-specific monitors) indicates that the release may have exceeded the above criterion and indicates the need to assess the release with (site-specific procedure):*

*(site-specific list)*

*Note: If the monitor reading(s) is sustained for longer than 60 minutes and the required assessments cannot be completed within this period, then the declaration must be made based on the valid reading.*

The Nine Mile Point 2 equivalent states:

*5.1.1 Unusual Event*

*A valid reading on any monitors Table 5.1 column "NUE" for > 60 min.*

A. The NUMARC criteria requires assessment of the release using a site specific procedure. No procedure for assessment is referenced or included in the NMP 2 criteria. The NUMARC note addressing completion of the assessment within 60 minutes is not included in the EAL. The licensee Technical Bases (TB) discusses declaration if the reading is expected to be sustained longer than 60 minutes. The classifier is forced to use the TB document in addition to the EAL classification scheme to determine the appropriateness of classification in less than the 60 minute limit. The classification matrix omits the NUMARC criteria that the release is unplanned.

B. The table identification for "Table 5.1" is missing at the top of the table on page 5-3 of the EAL classification matrix.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

2. The NUMARC criteria for EAL AU1-2 states:

*2. Confirmed sample analysis for gaseous or liquid releases indicates concentrations or release rates with a release duration of 60 minutes or longer in excess of (2 X site-specific technical specifications).*

The Nine Mile Point 2 equivalent states:

*5.2.1 Unusual Event*

*Confirmed sample analyses for gaseous or liquid release rates > 2 x technical specifications limits for >60 min.*

The NUMARC criteria requires the inclusion of site specific TS values as part of this EAL. No values are included in the NMP 2 EAL or in the technical bases.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

3. The NUMARC criteria for EAL AU1-3 and AU1-4 state:

*3. A 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 reports in the PEG that NMP 2 does not use telemetered monitors or automatic real time dose assessment. The NMP 2 TB does not address these criteria and there is no documentation that other methods have been researched that might meet the NUMARC criteria. The licensee should determine if other sources of information for evaluating these NUMARC EALs is available.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

4. The NUMARC criteria for Initiating Condition (IC) AU2 and EAL AU2-1 and AU2-2 state:

*AU2 Unexpected increase in plant radiation or airborne concentration.*

1. *(Site-specific) indication of uncontrolled water level decrease in the reactor refueling cavity with all irradiated assembles remaining covered.*

2. *Uncontrolled water level decrease in the spent fuel pool and fuel transfer canal with all irradiated fuel assemblies covered by water.*

The Nine Mile Point 2 equivalent EALs states:

*1.5.1 Unusual Event*

*Spent fuel pool/reactor cavity water level cannot be restored and maintained above the spent fuel pool low water level alarm.*

The NUMARC criteria specifies that the fuel is covered by water. The NMP 2 EAL implies that some unspecific level cannot be restored. The TB document addresses the criteria that level restoration efforts can be continued as long as the level remains above the top of irradiated fuel. The classifier is forced to use the TB document in addition to the EAL classification matrix to determine the appropriateness of classification. The NUMARC criteria is specific in the use of the term "uncontrolled." The NMP 2 EAL does not convey the character of an uncontrolled decrease. The NUMARC criteria provides for uncontrolled water level decrease in the spent fuel pool and the fuel transfer canal. The NMP 2 EAL does not specifically include the transfer canal. The TB document includes the transfer canal as being applicable. Again the classifier is forced to use the TB to ascertain all conditions required for classification.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

5. The NUMARC criteria for Initiating Condition (IC) AA1 and EAL AA1-1 state:

*AA1 Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds 200 times the radiological Technical Specifications for 15 minutes or longer.*

1. *A valid reading on one or more of the following monitors that exceeds the "value shown" (site-specific monitors) indicates that the release may have exceeded the above criterion and indicates the need to assess the release with (site-specific procedure):*

*(site-specific list)*

*Note: If the monitor reading(s) is sustained for longer than 15 minutes and the required assessments cannot be completed within this period, then the declaration must be made based on the valid reading.*

The Nine Mile Point 2 equivalent states:

*5.1.2 Alert*

*A valid reading on any monitors Table 5.1 column "Alert" for > 15 min.*

The NUMARC criteria requires assessment of the release using a site specific procedure. No procedure for assessment is referenced or included in the NMP 2 EAL or TB document. The NUMARC note addressing completion of the assessment within 15 minutes is not included in the EAL. The licensee Technical Bases (TB) does not discuss declaration if assessment cannot be completed within 15 minutes. The classification matrix omits the NUMARC criteria that the release is unplanned.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

6. The NUMARC criteria for EAL AU2-2 states:

*2. Confirmed sample analysis for gaseous or liquid releases indicates concentrations or release rates with a release duration of 15 minutes or longer in excess of (200 X site-specific technical specifications).*

The Nine Mile Point 2 equivalent states:

*5.2.2 Alert*

*Confirmed sample analyses for gaseous or liquid release rates > 200 x technical specifications limits for > 15 min.*

The NUMARC criteria requires the inclusion of site specific TS values as part of this EAL. No values are included in the NMP 2 EAL or in the technical bases.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

7. The licensee EAL 1.4.2 reads:

*1.4.2 Alert*

*Valid reading on Rx Bldg. above Refueling Floor Radiation Monitors 2HVR*RE14A or B, Gaseous Radiation Monitors (Channel 1) isolation*
*OR*
*Any sustained refuel floor rad monitor > 8 R/hr, Table 1.1*

The licensee technical bases document for 1.4.2 reads:

*Valid Rx Bldg. above Refueling Floor Radiation Monitors 2HVR*RE14A or B, Gaseous Radiation Monitors (Channel 1) isolation*
*OR*
*Any sustained refuel floor rad monitor > 8 R/hr, Table 1.1*

The licensee has added the words "reading on" to the EAL or removed the words from the TB document. The EAL and the TB document do not agree.

8. The NUMARC criteria for EAL AA2-3 and AA2-4 state:

3. *A valid reading on perimeter radiation monitoring system greater than 10.0 mr/hr sustained for 15 minutes. [for sites having telemetered perimeter monitors]*

4. *Valid indication on automatic real-time dose assessment capability greater than (site-specific technical specifications value) for 15 minutes or longer. [for sites having such capability]*

The licensee reports in the PEG that NMP 2 does not use telemetered monitors or automatic real time dose assessment. The NMP 2 TB does not address these criteria and there is no documentation that other methods have been researched that might meet the NUMARC criteria. The licensee should determine if other sources of information for evaluating these NUMARC EALs is available.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

9. The NUMARC criteria for IC AS1 and EAL AS1-1 and AS1-2 state:

*AS1 Boundary dose resulting from actual or imminent release of gaseous radioactivity exceeds 100 mr Whole Body or 500 mr Child Thyroid for actual or projected duration of the release.*

1. *A valid reading on one or more of the following monitors that exceeds or is expected to exceed the value shown indicates that the release may have exceeded the above criterion and indicates the need to assess the release with (site-specific procedure):*

*(site-specific list)*

*Note: If the monitor reading(s) is sustained for longer than 15 minutes and the required assessments cannot be completed within this period, then the declaration must be made based on the valid reading.*

2. *A valid reading sustained for 15 minutes or longer on perimeter radiation monitoring system greater than 100 mR/hr. [for sites having telemetered perimeter monitors]*

The Nine Mile Point 2 equivalent states:

*5.1.3 Site Area Emergency*

*A valid reading on any monitors Table 5.1 column "SAE" for > 15 min.*

A. The NUMARC criteria requires assessment of the release using a site specific procedure. No procedure for assessment is referenced or included in the NMP 2 EAL or TB document. The NUMARC note addressing completion of the assessment within 15 minutes is not included in the EAL. The licensee Technical Bases (TB) does not discuss declaration if the assessment cannot be completed within 15 minutes. The NUMARC criteria specifically contains the term "imminent" release. The NPM 1 EAL omits this term. But, does use "imminent" in the TB document. This forces the classifier to refer to the TB for a full appreciation of the EAL. The NUMARC criteria AS1-1 states that the declaration should be based on the release "expected" to exceed the stated values. The NMP 2 EAL or the TB document do not address the condition in which the release is expected to exceed the SAE limits.

The terminology and units utilized in Table 5.2 are inconsistent with 10 CFR Part 20:

- Total Effective Dose Equivalent and Committed Dose Equivalent to the Thyroid are both quantified in rem, not rad as suggested by Table 5.2.

- The use of TEDE rate and CDE Thyroid rate quantities is inconsistent with 10 CFR Part 20 and they are not defined as protective action guides in accordance with EPA-400.

B. The licensee reports in the PEG that NMP 2 does not use telemetered monitors. The NMP 2 TB does not address this criteria and there is no documentation that other methods have been researched that might meet the NUMARC criteria. The licensee should determine if other sources of information for evaluating this NUMARC EAL are available.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

10. The NUMARC criteria for IC AG1 and EAL AG1-1 state:

*AG1 Boundary dose resulting from actual or imminent release of gaseous radioactivity exceeds 1000 mr Whole Body or 5000 mr Child Thyroid for actual or projected duration of the release using actual meteorology.*

*1. A valid reading on one or more of the following monitors that exceeds or is expected to exceed the value shown indicates that the release may have exceeded the above criterion and indicates the need to assess the release with (site-specific procedure):*

*(site-specific list)*

*Note: If the monitor reading(s) is sustained for longer than 15 minutes and the required assessments cannot be completed within this period, then the declaration must be made based on the valid reading.*

There is no equivalent licensee EAL. The licensee PEG reports, "the values calculated for these monitors are not readily available to be read in the control room since they are beyond the range of the normal indications." The PEG does indicate that SPDS monitors provide a suitable range for radwaste/reactor building and main stack effluent. It is not clear why the SPDS monitors cannot be used for this EAL.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

11. The NUMARC criteria for EAL AG1-2 states:

*2. A valid reading sustained for 15 minutes or longer on perimeter radiation monitoring system greater than 1000 mR/hr. [for sites having telemetered perimeter monitors]*

The licensee reports in the PEG that NMP 2 does not use telemetered monitors. The NMP 2 TB does not address this criteria and there is no documentation that

other methods have been researched that might meet the NUMARC criteria. The licensee should determine if other sources of information for evaluating this NUMARC EAL are available.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

**NUMARC Recognition Category F - Fission Product Barrier Degradation**

12. The NUMARC criteria for the Containment Barrier Example EAL #1 states:

*LOSS*

*1. Drywell Pressure*

*Rapid unexplained decrease*
*following initial increase*
*OR*
*Drywell pressure response not*
*consistent with LOCA conditions*

The licensee did not include this example in their site-specific classification scheme. The PEG states that for "BWR pressure suppression type containments, the numerous variables which can affect containment pressure under accident conditions makes it impossible to evaluate [containment] integrity based upon containment pressure response alone."

The staff agrees that drywell pressure response to a LOCA may not be a viable indicator of the integrity of the containment, thus it is acceptable to eliminate the first example above. However, a rapid unexplained decrease in drywell/containment pressure is a valid indicator of a containment breach. The licensee should incorporate this example EAL into their classification scheme or provide additional justification for its exclusion.

13. The NUMARC criteria for the RCS Barrier Example EAL # 1 states:

*1. LOSS*

*(site-specific) indication of Main Steamline Break*

An equivalent NMP 2 EAL was not provided. The PEG described indications of a main steamline break as:

*Inside drywell: Primary containment pressure cannot be maintained < 1.68 PSIG OR Outside drywell: Valid high main steam flow or high steam tunnel temperature isolation signal (Group 1)*

The symptoms described in the PEG do not appear in the licensee's classification matrix or TB document.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

14. The NUMARC criteria for the RCS Barrier Example EAL # 1 states:

*1. POTENTIAL LOSS*

*RCS leakage GREATER THAN 50 GPM inside the drywell*

An equivalent NMP 2 EAL was not provided. The PEG described indication of RCS leak rate as:

*RCS leakage greater than 50 gpm inside the drywell*

The symptoms described in the PEG do not appear in the licensee's classification matrix or TB document.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

15. The NUMARC criteria for the FC Barrier Example EAL # 2 states:

*1. LOSS*

*Level LESS THAN (site-specific) Value*

The Nine Mile Point 2 equivalent states:

*2.1.2 Site Area Emergency*

*RPV water level cannot be restored and maintained > -14 in. (TAF)*

The NUMARC criteria establishes a level below which the declaration should be made. The NMP 2 criteria implies that the level can be exceeded and restoration of level can be attempted. No justification for level restoration is provided in the TB document.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

16. NUMARC/NESP-007 Table 3, "BWR Emergency Action Level Fission Product Barrier Reference Table Thresholds for Loss or Potential Loss of Barriers," states that a Site Area Emergency should be declared when there is a:

> *Potential Loss of EITHER Fuel Clad OR RCS, and LOSS of ANY Additional Barrier.*

Included as example thresholds for loss/potential loss of the RCS and Fuel Clad barriers are:

> *FUEL CLAD BARRIER EXAMPLE EALS*
>
> *LOSS*
>
> *1. Primary Coolant Activity Level*
>
> *Coolant activity GREATER THAN (site-specific) value*
>
> and
>
> *RCS BARRIER EXAMPLE EALS*
>
> *POTENTIAL LOSS*
>
> *1. RCS Leak Rate*
>
> *RCS leakage GREATER THAN 50 GPM inside the drywell*

This specific combination of indicators was not included in the NMP 2 classification scheme based upon the condition being bounded by the drywell radiation monitor threshold (Comment #19 of Fission Product Barrier Evaluation).

When separate, unique indications are available for evaluating an initiating condition, each indication should be utilized to classify the event. Elimination of redundant indicators is unacceptable. The licensee should include a specific EAL to address the above conditions.

17. NUMARC/NESP-007 Table 3, "BWR Emergency Action Level Fission Product Barrier Reference Table Thresholds for Loss or Potential Loss of Barriers," states that a General Emergency should be declared when there is a:

*Loss of ANY Two Barriers*

*AND*

*Potential Loss of Third Barrier*

Table 3 includes thresholds for loss of the RCS and loss/potential loss of the Fuel Clad based upon reactor pressure vessel (RPV) water level. Table 3 also includes several indicators for loss of the Primary Containment. These indicators, in conjunction with the site-specific threshold of RPV water level, should escalate an event to a General Emergency. The licensee has not included any of these combinations and has not adequately justified their omission.

The licensee should include all appropriate combinations of RPV level and loss of containment indicators for classifying a General Emergency or provide additional justification for eliminating them from their site-specific scheme.

**NUMARC Recognition Category H - Hazards and Other Conditions Affecting Plant Safety**

18. The NUMARC example HU1.1 states:

*1. (Site-Specific) method indicates felt earthquake.*

In the NUMARC Basis Document for IC HU1.1 the definition of a "felt earthquake" states:

*An earthquake of sufficient intensity such that: (a) the vibratory ground motion is felt at the nuclear plant site and recognized as an earthquake based on a consensus of control room operators on duty at the time.....*

The equivalent licensee EAL for Hazards, Unusual Event 8.4.1 states:

*Earthquake felt by any plant operator*
*AND either:*
*NMP-2 seismic instrumentation actuated*
*OR*

*Confirmation of earthquake received on NMP-1 or JAFNPP seismic instrumentation*

A. The NUMARC criterion in the Basis Document indicates specifically that a *"consensus of Control Room operators on duty at the time"* and this same information is contained in the bases document for this EAL. However, the EAL wording of *"felt by any plant operator"* contradicts this guidance.

Provide justification for this deviation from NUMARC/NESP-007 guidance.

B. Satisfying either argument of the proposed EAL should be sufficient to meet the intent of the associated initiating condition and make a declaration. However, the application of the boolean AND statement results in requiring both conditions to be met prior to classification. This is inconsistent with the NUMARC guidance and is not justified in the technical bases.

Provide additional information to justify the deviation.

19. The NUMARC criteria for IC HU1 and EAL HU1-3 state:

*HU1 Natural and destructive phenomena affecting the protected area*

*3. Assessment by the control room that an event has occurred.*

The Nine Mile Point 2 equivalent EAL states:

*8.4.3 Unusual Event*

*Assessment by Control Room personnel that a natural event has occurred precluding access to a plant vital area, Table 8.3*

*Table 8.3 Plant Vital Areas*
*South Aux. Bay*
*North Aux. Bay*
*RadWaste Building*
*Reactor Building*
*Turbine Building*
*Diesel Generator Building*
*Screenwell Building/Service Water Pump Bays*
*Condensate Storage Tanks Building*
*Standby Gas Treatment Building*
*Control Building*
*Unit 2 Security Building*

The NUMARC criteria addresses unusual events to the protected area. In this EAL the licensee uses access to the plant vital area as the criteria. The licensee's EAL appears far more restrictive than the NUMARC guidance suggests. The licensee's EAL describes the vital plant areas in table 8.3. The TB document lists the table as 8.4. There is no table 8.4 in the classification matrix.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

20. The NUMARC example HU4-1 and -2 states:

1. *Bomb device discovered within plant Protected Area and outside the plant Vital Area.*

2. *Other security events as determined from (site-specific) Safeguards Contingency Plan.*

The licensee equivalent EAL for Hazards, Unusual Event, 8.1.1 states:

*Bomb device or other indication of attempted sabotage discovered within plant Protected Area.*

The NUMARC criteria suggest that other security events which may potentially impact plant safety should be the subject of a declaration, however the additional EAL is omitted from the licensee's EAL category. The PEG includes the EAL in the form:

*Other security events as determined from ~~(site-specific)~~ Nine Mile Point Nuclear Station Security and Safeguards Contingency Plan*

However, this EAL is not carried over to the Technical Basis document.

The Technical Bases document states, *This EAL is based on the Nine Mile Point Nuclear Station Physical Security and Safeguards Contingency Plans. Security events which do not represent at least a potential degradation in the level of safety of the plant are reported under 10 CFR 73.71 or in some cases under 10 CFR 50.72.* As written, the EAL does not permit an emergency declaration for *other security events* that may represent a potential degradation of safety which is inconsistent with the NUMARC criteria. This discussion is also applicable to the Alert and SAE EALs but will not be repeated.

Provide adequate justification for the deviation from the NUMARC/NESP-007 guidance.

21. The NUMARC criteria for IC HA1 and EAL HA1-3 state:

*HA1 Natural and destructive phenomena affecting the plant vital area.*

*3. Report of any visible structural damage on any of the following plant structures:*

*Reactor Building*
*Intake Building*
*Ultimate Heat Sink*
*Refueling Water Storage Tank*
*Diesel Generator Building*
*Turbine Building*
*Condensate Storage Tank*
*Control Room*
*Other (site-specific) Structures.*

The Nine Mile Point 2 equivalent EAL states:

*8.4.7 Alert*

*Assessment by the control room personnel that a natural event has resulted in damage to equipment needed for safe plant operation, Table 8.3*

*Table 8.3 Plant Vital Areas*
*South Aux. Bay*
*North Aux. Bay*
*RadWaste Building*
*Reactor Building*
*Turbine Building*
*Diesel Generator Building*
*Screenwell Building/Service Water Pump Bays*
*Condensate Storage Tanks Building*
*Standby Gas Treatment Building*
*Control Building*
*Unit 2 Security Building*

The NUMARC criteria is specific regarding visible structural damage. The licensee's EAL addresses only damage to equipment needed for safe plant operation. The TB document conveys the NUMARC criteria by stating "This EAL addresses events that may have resulted in a plant vital area being subjected to forces beyond design limits, and thus damage may be assumed to have occurred

to plant safety systems." The classifier is forced to use to TB document in addition to the EAL classification matrix to accurately classify this event.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

22. The NUMARC examples HA3-1 and 2 state:

1. *Report or detection of toxic gases within a Facility Structure in concentrations that will be life threatening to plant personnel.*

2. *Report or detection of flammable gases within a Facility Structure in concentrations that will affect the safe operation of the plant.*

The licensee equivalent EAL for Hazards, Alert, 8.3.5 states:

*Report or detection of toxic or flammable gases within a plant area, Table 8.3, in concentrations that will be life threatening to plant personnel or preclude access to equipment needed for safe plant operation.*

The licensee did not provide or reference measurable criteria to the emergency director for establishing concentrations that affect safe operation of the plant. Without such information readily available, classification could be difficult.

Provide justification for not having criteria available to the classifier to determine when life threatening and flammable concentration thresholds have been exceeded.

23. The NUMARC criteria for IC HA5 and EAL HA5-1 states:

*HA5 Control Room Evacuation Has Been Initiated.*

1. *Entry into (site-specific) procedure for control room evacuation.*

The Nine Mile Point 2 equivalent EAL states:

*7.2.2 Control Room Evacuation*

The NUMARC criteria is specific about the classification being declared on entry into the control room evacuation procedure. The licensee's EAL is mute as to the timing of the classification. The TB document does not justify the deviation.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

24. The NUMARC criteria for HS2-1 states:

*HS2 Control Room Evacuation Has Been Initiated and Plant Control Cannot Be Established.*

*1. The following conditions exist:*

*a. Control room evacuation has been initiated.*

*AND*

*b. Control of the plant cannot be established per (site-specific) procedure within (site-specific) minutes.*

The Nine Mile Point 2 equivalent EAL states:

*7.2.4 Site Area Emergency*

*Control Room evacuation*
*AND*
*Control of core cooling systems cannot be established in ≤ 15 min.*

The NUMARC criteria requires a site specific procedure that provides determination of plant control. No procedure is provided in the licensee's EAL.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

25. The NUMARC criteria for IC HG1 and EAL HG1-1 and HG1-2 state:

*HG1 Security Event Resulting in Loss of Ability to Reach and Maintain Cold Shutdown.*

*1. Loss of physical control of the control room due to a security event.*

*2. Loss of physical control of the remote shutdown capability due to a security event.*

The Nine Mile Point 2 equivalent EAL states:

*8.1.4 General Emergency*

*Security event which results in:*
*Loss of plant control from the Control Room*

*AND*
*Loss of remote shutdown capability*

The NUMARC criteria regards loss of control room control and loss of remote shutdown capability as independent events (1 or 2). The licensee has combined the events (1 and 2). The PEG states that "the concern here is the loss of ability to shutdown the reactor and maintain core cooling. Therefore this EAL has been modified to reflect a loss of plant control from both the control room and remote shutdown panels." The TB document does not mention the modification.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

**NUMARC Recognition Category S - System Malfunction**

26. The NUMARC criteria for IC SU6 and EAL SU6-1 state:

*SU6 Unplanned Loss of All Onsite or Offsite Communications Capabilities.*

*1. Either of the following conditions exist:*

*a. Loss of all (site-specific list) onsite communications capability affecting the ability to perform routine operations.*

*OR*

*b. Loss of all (site-specific list) offsite communications capability.*

The Nine Mile Point 2 equivalent EALs state:

*7.3.2 Unusual Event*

*Loss of all communications capability affecting the ability to either:*
*Perform routine onsite operations*
*OR*
*Notify offsite agencies or personnel*

The NUMARC criteria specifies the loss of communications are unplanned and requires a site specific list of the communications capabilities that are of concern. The specific list is included in the TB document which forces the classifier to refer to the TB for a complete understanding of this EAL. No reference to the loss of communications as an unplanned event is in the EAL or the TB document.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

27. The NUMARC criteria for IC SU7 and EAL SU1-1 state:

*SU7 Unplanned Loss of Required DC Power During Cold Shutdown or Refueling Mode for Greater Than 15 Minutes.*

*1. Either of the following conditions exist:*

*a. Unplanned loss of vital DC power to required DC busses based on (site-specific) bus voltage indications.*

*OR*

*b. Failure to restore power to at least one required DC bus within 15 minutes from the time of loss.*

The Nine Mile Point 2 equivalent EAL states:

*6.2.1 Unusual Event*

*< 105 VDC on 2BYS*BAT2A or B for > 15 min.*

The NUMARC criteria is specific that the event is unplanned. The licensee has not included the term, unplanned, in the EAL and does not address it in the TB document.

28. The NUMARC criteria for IC SA1 and EAL SA1-1 state:

*SA1 Loss of All Offsite Power and Loss of All Onsite AC Power to Essential Busses During Cold Shutdown or Refueling Mode.*

*1. The following conditions exist:*

*a. Loss of power to (site-specific) transformers*

*AND*

*b. Failure of (site-specific) emergency generators to supply power to emergency busses.*

*AND*

*c. Failure to restore power to at least one emergency bus within 15 minutes from the time of loss offsite and onsite power.*

The Nine Mile Point 2 equivalent EAL states:

*6.1.2 Alert*

*Loss of all emergency bus AC power for > 15 min.*

The NUMARC criteria requires site specific criteria that identifies the transformers and the diesel generators. The licensee omitted the criteria from the EAL. The site specific criteria is included in the TB document. This forces the classifier to refer to the TB document for the full understanding of the EAL. The licensee includes the site specific criteria of power requirements in some, 6.1.1 and 6.1.3, of the EAL but not in others. The EALs should be presented in a consistent form throughout the classification matrix. The NUMARC criteria is applicable to cold shutdown, refuel, and defueled. The licensee includes "defuel" in the TB document but, not in the EAL matrix.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

29. The NUMARC criteria for IC SA2 and EAL SA2-1 state:

*SA2 Failure of Reactor Protection System Instrumentation to Complete or Initiate an Automatic Reactor Scram Once a Reactor Protection System Setpoint Has Been Exceeded and Manual Scram Was Successful.*

*1. (Site-specific) indication(s) exist that indicate that reactor protection system setpoint was exceeded and automatic scram did not occur, and a successful manual scram occurred.*

The Nine Mile Point 2 equivalent EAL states:

*2.2.1 Alert*

*All immediate manual scrams fail to shut down the reactor*

The NUMARC criteria is specific to failure of the automatic protection system with a successful manual scram. The licensee EAL permits a manual scram attempt before requiring classification. The NUMARC concern is failure of automatic protection system and that design limits of the fuel may have been exceeded.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

30. The NUMARC criteria for IC SA3 and EAL SA3-1 state:

*SA3 Inability to Maintain Plant in Cold Shutdown.*

*1. The following conditions exist:*

*a. Loss of (site-specific) Technical Specification required functions to maintain cold shutdown*

*AND*

*b. Temperature increase that either:*

- *Exceeds Technical Specification cold shutdown temperature limit*

*OR*

- *Results in uncontrolled temperature rise approaching cold shutdown technical specification limit.*

The Nine Mile Point 2 equivalent EAL states:

*7.2.3 Alert*

*Reactor coolant temperature cannot be maintained < 200 °F*

The NUMARC criteria requires site specific identification of the functions necessary to maintain cold shutdown and provides an anticipatory concern with, uncontrolled temperature rise. The licensee does not provide the site specific identification or address the anticipatory concern.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

31. The NUMARC criteria for IC SS1 and EAL SS1-1 state:

*SS1 Loss of All Offsite Power and Loss of All Onsite AC Power to Essential Busses.*

*1. Loss of all offsite and onsite AC power as indicated by:*

*a. Loss of power to (site-specific) transformers*

*AND*

*b. Failure of (site-specific) emergency generators to supply power to emergency busses.*

*AND*

*c. Failure to restore power to at least one emergency bus within 15 minutes from the time of loss offsite and onsite power.*

The Nine Mile Point 2 equivalent EAL states:

*6.1.4 Site Area Emergency*

*Loss of all emergency bus AC power for > 15 min.*

The NUMARC criteria requires site specific criteria that details the transformers and the diesel generators. The licensee omitted the criteria from the EAL. The site specific transformers and diesel generators criteria is included in the TB document. This forces the classifier to refer to the TB document for the full understanding of the EAL. The licensee includes the site specific criteria of power requirements in some, 6.1.1 and 6.1.3, of the EAL but, not in others. The EALs should be presented in a consistent form throughout the classification matrix.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

32. The NUMARC criteria for IC SS2 and Eal SS2-1 state:

*SS2 Failure of Reactor Protection System Instrumentation to Complete or Initiate an Automatic Reactor Scram Once a Reactor Protection System Setpoint Has Been Exceeded and Manual Scram Was NOT Successful.*

1. *(Site-specific) indication exist that automatic and manual scram were not successful.*

The Nine Mile Point 2 equivalent EAL states:

*2.2.2 Site Area Emergency*

*All immediate manual scrams fail to shutdown the reactor*
*AND*
*Boron injection is required*

A. The NUMARC criteria is specific to failure of the automatic protection system with unsuccessful manual scram. The licensee EAL addresses only immediate manual scram. The TB document discusses that this condition indicates failure of the automatic and/or manual protection system. This forces the classifier to refer to the TB document for the full understanding of the EAL.

B. The licensee's inclusion of the criterion that boron injection is required is inconsistent with the intent of the NUMARC guidance which requires the declaration of a Site Area Emergency immediately when there is a failure of both automatic and manual scrams.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.

33. The NUMARC criteria for IC SG1 and EAL SG1-1 state:

*SG1 Prolonged Loss of All Offsite Power and Prolonged Loss of All Onsite AC Power.*

1. *Prolonged loss of all offsite and onsite AC power as indicated by:*

   a. *Loss of power to (site-specific) transformers.*

      *AND*

   b. *Failure of (site-specific) emergency diesel generators to supply power to emergency busses.*

      *AND*

   c. *At least one of the following conditions exist:*

      - *Restoration of at least one emergency bus within (site-specific) hours is NOT likely*

*OR*

- *(Site-specific) Indication of continuing degradation of core cooling based on Fission Product Barrier monitoring.*

The Nine Mile Point 2 equivalent EAL state:

*6.1.5 General Emergency*

*Loss of all emergency bus AC power*
*AND*
*Power cannot be restored to any emergency bus in ≤ 2 hrs.*
*OR*
*RPV water level cannot be restored and maintained > -14 in. (TAF)*

A. The NUMARC criteria requires site specific criteria that details the transformers and the diesel generators. The licensee omitted the criteria from the EAL. The site specific transformer and diesel generator criteria is not included in the TB document. For other electrical classification the site specific criteria is included in the TB document. The licensee includes the site specific criteria of power requirements in some, 6.1.1 and 6.1.3, of the EALs but, not in others. The EALs should be presented in a consistent form throughout the classification matrix.

B. NUMARC employs the wording that *Restoration... ...is NOT likely.* The licensee uses the wording *Power cannot be restored... .* The NUMARC "not likely" implies that as soon as it is known that power will not be restored the threshold has been exceeded, whereas the licensee "cannot" implies that power restoration must be a "known" quantity before a licensee declaration. The NUMARC intent is that the condition is met as soon as it is known that power restoration is not likely within the specific time limit.

C. The licensee does not adequately justify the use of the single indicator (RPV level) for determining the challenge to core cooling and/or heat removal. Provide justification for these deviations from the NUMARC/NESP-007 guidance.

34. The NUMARC criteria for IC SG2 and EALS SG2-1 and SG2-2 state:

*SG2 Failure of the Reactor Protection System Instrumentation to Complete an Automatic Reactor Scram and Manual Scram Was NOT Successful and there is Indication of an Extreme Challenge to the Ability to Cool the Core.*

*1. (Site-specific) indications exist that automatic and manual scram were not successful.*

*AND*

*2. Either of the following:*

*a. (Site-specific) indications exist that the core cooling is extremely challenged.*

*OR*

*b. (Site-specific) indication exists that heat removal is extremely challenged.*

The Nine Mile Point 2 equivalent EALs state:

*2.2.3 General Emergency*

*All immediate manual scrams fail to shutdown the reactor*
*AND*
*RPV water level cannot be restored and maintained > -39 in.*

and

*2.2.4 General Emergency*

*All immediate manual scrams fail to shutdown the reactor*
*AND*
*Suppression pool temperature and RPV pressure cannot be maintained < HCTL*

The NUMARC criteria is specific to failure of the automatic protection system with unsuccessful manual scram. The licensee EAL addresses only immediate manual scram. The TB document is mute regarding failure of the automatic scram. The licensee uses two EALs for conditions described in NUMARC SG2-2a and SG2-2b. The licensee's PEG shows only one EAL. While the separation of EAL criteria is

allowed within the NUMARC guidance in this case it appears unnecessary and does not add clarity.

Provide justification for these deviations from the NUMARC/NESP-007 guidance.