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May 14, 2010

U. S. Nuclear Regulatory Commission  
Washington, DC 20555 - 0001

**ATTENTION:** Document Control Desk

**SUBJECT:** **R.E. Ginna Nuclear Power Plant**  
Docket No. 50-244

**Reply to Request for Additional Information RE: Proposed Changes to the  
Emergency Plan**

- REFERENCES:**
- (a) Letter from Mr. J. T. Carlin (Ginna LLC) to Document Control Desk (NRC) dated November 30, 2009, License Amendment Request: Proposed Changes to the Emergency Plan
  - (b) Letter from Mr. D. V. Pickett (NRC) to Mr. J. T. Carlin (Ginna LLC) dated March 9, 2010, Request for Additional Information RE: Proposed Changes to the Emergency Plan (TAC NO. ME2916)

On November 30, 2009, R.E. Ginna Nuclear Power Plant, LLC (Ginna LLC) submitted a License Amendment Request (LAR) seeking to revise the Ginna Emergency Plan.

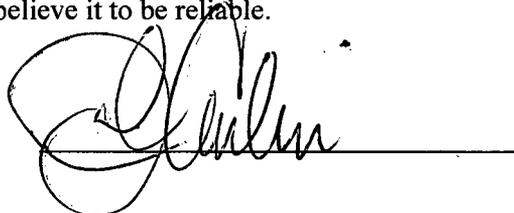
Subsequent to the submittal, the NRC issued a Request for Additional Information (Reference (b)). Enclosure 1 contains our response to this request. As the result of further site review of the non-annunciator related Emergency Action Levels (EALs) we are formally withdrawing our request for those specific EALs. We will address those other EALs in our planned EAL conversion which we are currently initiating efforts on. Enclosure 2 and its attachments have been modified from the original submittal (Reference (a)) to include our revised evaluation of the proposed changes and revised supporting material. No new commitments are being made in this submittal. Should you have questions regarding the information in this submittal, please contact Mr. Thomas Harding at (585) 771-5219 or via email at [Thomas.HardingJr@cengllc.com](mailto:Thomas.HardingJr@cengllc.com).

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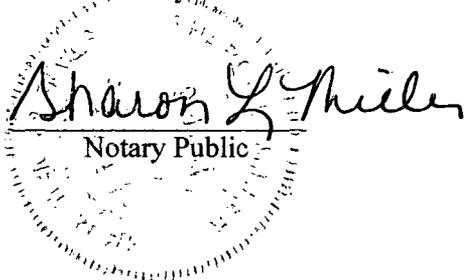
STATE OF NEW YORK :  
: TO WIT:  
COUNTY OF WAYNE :

I, John Carlin, being duly sworn, state that I am Site Vice President, R.E. Ginna Nuclear Power Plant, LLC (Ginna LLC), and that I am duly authorized to execute and file this request on behalf of Ginna LLC. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other Ginna LLC employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.



Subscribed and sworn before me, a Notary Public in and for the State of New York and County of MONROE, this 14 day of MAY, 2010.

WITNESS my Hand and Notarial Seal:



SHARON L. MILLER  
Notary Public, State of New York  
Registration No. 01M6017755  
Monroe County  
Commission Expires December 21, 2010

Enclosure 1: Response to Request for Additional Information Regarding Proposed Changes to the Emergency Plan

Enclosure 2: Revised Evaluation of Proposed Changes

cc: S. J. Collins, NRC  
D. V. Pickett, NRC  
Ginna Resident Inspector, NRC

P. D. Eddy, NYSDPS  
A. L. Peterson, NYSERDA  
G. Bastedo, Wayne County Emergency Management  
M. Meisenzahl, Monroe County Office of Emergency Management

**ENCLOSURE 1**

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**Response to Request for Additional Information  
Regarding Proposed Changes to the Emergency Plan**

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**Request for Additional Information Question #1:**

*EAL Scheme*

*The current emergency action levels (EALs) scheme in use at Ginna is based on NUMARC/NESP-007, January 1992, "Methodology for Development of Emergency Action Levels." The proposed changes involve upgrading selected Ginna EALs based on Nuclear Energy Institute (NEI) 99-01, Revision 5, "Methodology for Development of Emergency Action Levels," using the guidance of NRC Regulatory Issue Summary 2003-18, Supplement 2, "Use of Nuclear Energy Institute (NEI) 99-01, Methodology for Development of Emergency Action Levels."*

*Does Ginna have future plans to upgrade the overall EAL scheme to NEI 99-01, Revision 5?*

Yes, Ginna has commenced a project to upgrade from the NUMARC/NESP-007 EAL scheme to NEI 99-01, Revision 5 EALs.

**Request for Additional Information Question #2:**

*Section 2.0, "Detailed Description," contains the following errors/discrepancies, please correct them or provide justification to support their inclusion:*

*You state "... the following selected hazard-based EALs..." when it is actually hazard and system based EALs.*

*You state "... Nuclear Energy Institute (NEI) 99-01, Revision 5,... January 2003, as endorsed by the Nuclear Regulatory Commission (NRC) in Regulatory Guide (RG) 1.101..." when in fact the version of NEI 99-01, Revision 5, endorsed by the NRC is dated February 2008, and it was endorsed by letter [ADAMS Accession No. ML080430535] not by RG 1.101.*

Attached Enclosure 2, Section 2.0, has been revised. The hazard based EALs have been removed from the list of requested EAL changes and the reference to the NRC endorsement of NEI 99-01 has been revised to incorporate the above comment.

**Request for Additional Information Question #3:**

*Section 6.0, "References"*

*Please put in the ADAMS Accession Nos. of the stated documents*

Attached Enclosure 2, Section 6.0, has been revised to incorporate ADAMS accession numbers for the referenced documents.

**Request for Additional Information Question #4:**

*EAL 7.3.1*

*The "note" from NEI 99-01, Revision 5, is intended to be within the body of the EAL, not in the Basis information. Please align with staff expectations for the development of this EAL or justify why it is inappropriate for Ginna.*

The Note was moved into the body of the EAL. The note was given a number to allow the text of the note to be placed at the bottom of the implementing procedure and wallboard. This allows for easier implementation of the EALs by the Emergency Coordinator.

**Request for Additional Information Question #5:**

**EAL 7.3.3**

*The "note" from NEI 99-01, Revision 5, is intended to be within the body of the EAL, not in the Basis information. Please align with staff expectations for the development of this EAL or justify why it is inappropriate for Ginna.*

The Note was moved into the body of the EAL. The note was given a number to allow the text of the note to be placed at the bottom of the implementing procedure and wallboard. This allows for easier implementation of the EALs by the Emergency Coordinator.

**Request for Additional Information Question #6:**

**EAL 7.3.4**

*The "note" from NEI 99-01, Revision 5, is intended to be within the body of the EAL, not in the Basis information. Please align with staff expectations for the development of this EAL or justify why it is inappropriate for Ginna.*

*There is a probable logic issue with how Ginna developed this EAL. There are three separate EAL thresholds logically "and-ed" together, however, the first threshold as two thresholds logically "or-ed." The EAL as submitted does not appear to satisfy the intent of the endorsed development guide. Please align with staff expectations for the development of this EAL or justify why it is inappropriate for Ginna.*

The Note was moved into the body of the EAL. The note was given a number to allow the text of the note to be placed at the bottom of the implementing procedure and wallboard. This allows for easier implementation of the EALs by the Emergency Coordinator.

The potential EAL logic issue was addressed through aligning the OR and AND logical connectors as shown in the development guide. The layout of the EAL is now similar to other existing Ginna EALs such as 4.1.6, Containment Integrity Status.

**Request for Additional Information Question #7:**

**EAL 8.2.1**

*The "note" from NEI 99-01, Revision 5, is intended to be within the body of the EAL. Please align with staff expectations for the development of this EAL or justify why it is inappropriate for Ginna.*

EAL 8.2.1 has been withdrawn.

**Request for Additional Information Question #8:**

*Please explain why there is a different table for EAL 8.2.1 and EAL 8.2.2. The staff's expectation is that these tables be the same. The difference between the Alert and the Unusual Event is evidence of visible damage or degraded performance.*

EAL 8.2.1 and EAL 8.2.2 have been withdrawn.

**Request for Additional Information Question #9:**

*EAL 8.3.5*

*The "note" from NEI 99-01, Revision 5, is intended to be within the body of the EAL. Please align with staff expectations for the development of this EAL or justify why it is inappropriate for Ginna.*

EAL 8.3.5 has been withdrawn.

**Request for Additional Information Question #10:**

*Attachment 4*

*Please explain the implementation method for Ginna.*

*If this is the primary tool used for EAL declaration, then please explain why the Initiating Condition (IC) and applicable "notes" are not included. The staff considers the IC-EAL, Thresholds-Operating Modes-Notes," all to be of importance in declaring the EAL in a timely manner. The applicable Basis information is intended to be available to support understanding of the EAL and to aid in ensuring the consistency of training.*

*Please explain the implementation method used by Ginna, i.e., do you use EAL Wallboards or do you use your Emergency Plan and Emergency Plan Implementing Procedures directly?*

Ginna uses an implementing procedure and EAL wallboard to implement the EALs. The implementing procedure is a smaller version of the EAL wallboard containing the entry conditions for each EAL. The EAL technical basis document is available to the Emergency Coordinator but is not required for classification of an event. The notes found in Revision 5 EALs and mentioned in this Request for Additional Information will be added to the implementing procedure and EAL wallboard. The entry conditions will have a note reference such as "Note 1" with a corresponding entry at the bottom of the table or wallboard with the text of the note.

**Additional Changes to the EAL Submittal Package**

As the result of the Ginna internal review of the EAL submittal package during the incorporation of the RAI responses, a number of additional minor changes/corrections were identified that were also addressed at this time. These changes are listed below and have been determined to either be grammatical corrections or are differences that maintain the meaning and intent of the EAL or basis wording.

**EAL 7.3.1**

1. Changed “6 or more annunciators” to “6 or more annunciator panels”. This better defines the EAL. The EAL describes the loss of 6 annunciator panels, not the loss of 6 individual annunciators.
2. Grammar correction: changed “75% of lost annunciators is defined as...” to “A 75% loss of annunciators is defined as...”
3. Grammar correction: changed “safety system annunciators or indicators are lost” to “safety system annunciators or indications are lost”

**EAL 7.3.3**

1. Changed “6 or more annunciators” to “6 or more annunciator panels”. This better defines the EAL. The EAL describes the loss of 6 annunciator panels, not the loss of 6 individual annunciators.
2. Changed “Emergency Director” to “Emergency Coordinator” to align with Ginna site specific reference.
3. Grammar correction: changed “75% of lost annunciators is defined as...” to “A 75% loss of annunciators is defined as...”
4. Grammar correction: changed “safety system annunciators or indicators are lost” to “safety system annunciators or indications are lost”

**EAL 7.3.4**

1. Changed “6 or more annunciators” to “6 or more annunciator panels”. This better defines the EAL. The EAL describes the loss of 6 annunciator panels, not the loss of 6 individual annunciators.
2. Changed “Emergency Director” to “Emergency Coordinator” to align with Ginna site specific reference.
3. Changed “This EAL recognizes the inability of...” to “This EAL recognizes the threat to plant safety associated with the complete loss of capability of...” to align with the wording in NEI 99-01.
4. Grammar correction: changed “75% of lost annunciators is defined as...” to “A 75% loss of annunciators is defined as...”
5. Grammar correction: changed “safety system annunciators or indicators are lost” to “safety system annunciators or indications are lost”
6. Changed “...monitor safety functions needed for protection of the public.” to “...monitor safety functions needed for protection of the public while a significant transient is in progress.” to align with the wording in NEI 99-01.

7. Changed “(e.g. rad monitors, etc)” to “(e.g. area, process and/or rad monitors, etc)” to align with wording in NEI 99-01.
8. Changed “The specific indications should be those used to determine such functions as the ability to shut down the reactor, maintain the core cooled and in a coolable geometry, to remove heat from the core, to maintain the reactor coolant system intact, and to maintain containment intact.” to “The specific indications should be those used to determine such functions as the ability to shut down the reactor, maintain the core cooled, to maintain the reactor coolant system intact, maintain the spent fuel cooled, and to maintain containment intact.” This aligns with the wording in NEI 99-01 which removes the criteria of maintaining a coolable geometry and adds the criteria of maintaining the spent fuel cooled.

**ENCLOSURE 2**

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**Revised Evaluation of Proposed Changes**

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  - 4.2 Significant Hazards Consideration
  - 4.3 Conclusions
- 5.0 ENVIRONMENTAL CONSIDERATION
- 6.0 REFERENCES

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**ATTACHMENTS**

- 1. Red-line of the Current Ginna EAL Technical Basis Document
- 2. Clean Copy of the Proposed Ginna EAL Technical Basis Document
- 3. Red-line of NEI 99-01 Revision 5
- 4. Clean Copy of Proposed Ginna EALs
- 5. Plant-Specific EAL Guideline Cross Reference
- 6. EAL Differences and Deviations

## 1.0 SUMMARY DESCRIPTION

In accordance with the provision of 10 CFR 50.90, R.E. Ginna Nuclear Power Plant, LLC (Ginna LLC) is submitting a license amendment request to change the R.E. Ginna Nuclear Power Plant (Ginna) Emergency Plan.

The proposed changes involve upgrading selected Ginna Emergency Action Levels (EALs) based on NEI 99-01, Revision 5, "Methodology for Development of Emergency Action Levels," using the guidance of NRC Regulatory Issue Summary 2003-18, Supplement 2, "Use of Nuclear Energy Institute (NEI) 99-01, Methodology for Development of Emergency Action Levels." The current EAL scheme in use at Ginna is based on NUMARC/NESP-007, "Methodology for development of Emergency Action Levels." The plan, as changed, would continue to meet the standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR 50. Ginna LLC has reviewed the proposed changes in accordance with 10 CFR 50.54(q), and has determined these changes are considered a decrease in effectiveness of the approved emergency plan.

## 2.0 DETAILED DESCRIPTION

The Ginna Emergency Plan currently uses the NUMARC/NESP-007 EAL scheme. Ginna LLC is proposing to change the existing scheme for Ginna for the following selected system based EALs to that described in NEI 99-01, Revision 5, "Methodology for Development of Emergency Action Levels," February 2008, as endorsed by the Nuclear Regulatory Commission (NRC) by letter dated February 22, 2008:

<u>EAL Number</u>	<u>Classification Level</u>	<u>Summary Description</u>
7.3.1	Unusual Event	Loss of Annunciators
7.3.3	Alert	Loss of Annunciators
7.3.4	Site Area Emergency	Loss of Annunciators

The current Ginna NUMARC/NESP-007 based EALs were developed in 1994. At that time, it was decided that the loss of any one safety system annunciator panel, versus the "approximately 75%" recommended by the NUMARC document, was an accurate description of the conditions that met the Initiating Condition as detailed in NUMARC/NESP-007. Ginna has eight safety system annunciator panels in the Main Control Room. 75% of those would equal six panels. The NUMARC document states "This EAL recognizes the difficulty associated with monitoring changing plant conditions without the use of a major portion of the annunciation or indication equipment." During EAL development, it was concluded that the indications available in the Main Control Room at that time were such that the loss of any one of the safety system annunciator panels created sufficient challenges to the operating crews to result in a potential decrease in the level of safety of the plant. Hence, the EAL developers considered the loss of one safety system annunciator panel to meet the definition of a Notification of Unusual Event. That concept was carried to the related emergency classifications at the Alert and Site Area Emergency levels. The loss of annunciator emergency action levels were endorsed by the NRC in a Safety Evaluation Report dated 2/15/1995 as part of the overall approval of the new EAL scheme for Ginna.

Subsequent to the approval of the NUMARC-based EALs for Ginna, improvements in Main Control Room indications took place. The EAL bases were not revisited after completion of the upgrades. Once the Main Control Room upgrades were complete, the conservatism of the annunciator loss EAL's had increased, given the additional indications that were now available to monitor plant conditions without the use of annunciators. At this point, loss of a single safety system annunciator panel no longer constituted a

potential decrease in the level of safety of the plant. However, this was not recognized as an opportunity to improve the EALs.

Ginna LLC has experienced two loss of annunciator panel events, each of which resulted in the declaration of a Notification of Unusual Event. The 7/4/2007 event resulted in a loss of all annunciators in the Main Control Room. The event on 2/5/2009 involved the loss of three safety system annunciator panels. During the later event, the experience of the operating crews caused them to question the validity of the basis that the loss of a single safety system annunciator panel constituted a Notification of Unusual Event. Investigation into the 2009 event revealed the conservatism in the current EALs and caused Ginna LLC to investigate the re-alignment of the EALs with NRC-endorsed guidance.

NRC Regulatory Issue Summary (RIS) 2005-02, Clarifying the Process for Making Emergency Plan Changes defines a decrease in effectiveness as a change in an emergency preparedness (EP) requirement that results in the degradation or loss of the capability to perform a function or perform a function in a timely manner, as contained in the emergency plan. RIS 2005-02 clarifies a change in an EP requirement based on capability, means the emergency plan as changed, would result in the loss or degradation of the capability to meet the regulatory requirements of an emergency plan. Consequently, the capability to perform a function(s) as previously stated in the emergency plan no longer exists or is degraded. RIS 2005-02 defines an EP requirement, in part, as a statement made in the emergency plan which addresses how a particular regulatory requirement will be met and emphasizes all EP requirements are subject to the 10 CFR 50.54(q) change process.

Ginna LLC has reviewed these changes in accordance with 10 CFR 50.54(q), and has determined that the proposed changes are considered a decrease in effectiveness of the approved emergency plan and require prior approval before implementation. The proposed changes would result in a minor degradation of the function as defined in the current Ginna LLC emergency plan, but still meet NUMARC/NESP-007 requirements. This degradation does not result in a degrading of the level of public safety.

### **3.0 TECHNICAL EVALUATION**

These changes affect the Ginna Emergency Plan and do not alter requirements of the Operating License or the Technical Specifications. These changes do not alter any of the assumptions used in the safety analyses, nor do they cause any safety system parameters to exceed their acceptance limit. Therefore, the proposed changes have no adverse effect on plant safety. Additionally, these changes can be made without adverse impact to plant operations or to the health and safety of the public.

### **4.0 REGULATORY EVALUATION**

#### **4.1 Applicable Regulatory Requirements/Criteria**

10 CFR 50.47(b)(4) states "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, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures."

10 CFR 50 Appendix E, section IV. Content of Emergency Plans, item B. Organization states "The means to be used for determining the magnitude of, and for continually assessing the impact of, the release of radioactive materials shall be described, including emergency action levels that are to be used as criteria for determining the need for notification and participation of local and State agencies, the Commission, and other Federal agencies, and the emergency action levels that are to be used for determining when and what type of protective measures should be considered within and outside the site boundary to protect health and safety. The emergency action levels shall be based on in-plant conditions and instrumentation in addition to onsite and offsite monitoring. These initial emergency action levels shall be discussed and agreed on by the applicant or licensee and state and local governmental authorities, and approved by the NRC. Thereafter, emergency action levels shall be reviewed with the State and local governmental authorities on an annual basis. A revision to an emergency action level must be approved by the NRC before implementation if:

- (1) The licensee is changing from one emergency action level scheme to another emergency action level scheme (e.g., a change from an emergency action level scheme based on NUREG-0654 to a scheme based upon NUMARC/NESP-007 or NEI-99-01);
- (2) The licensee is proposing an alternate method for complying with the regulations; or
- (3) The emergency action level revision decreases the effectiveness of the emergency plan.

A licensee shall submit each request for NRC approval of the proposed emergency action level change as specified in § 50.4. If a licensee makes a change to an EAL that does not require NRC approval, the licensee shall submit, as specified in § 50.4, a report of each change made within 30 days after the change is made."

Regulatory Guide 1.101 Revision 4, Section C. Regulatory Position states "The guidance in NUMARC/NESP-007 (Revision 2, January 1992), "Methodology for Development of Emergency Action Levels," is acceptable to the NRC staff as an alternative method to that described in Appendix 1 to NUREG-0654/FEMA-REP-1 for developing EALs required in Section IV.B of Appendix E to 10 CFR Part 50 and 10 CFR 50.47(b)(4). In addition, the guidance contained in NEI 99-01 (Revision 4, January 2003), "Methodology for Development of Emergency Action Levels," is acceptable to the NRC staff as an alternative method to that described in Appendix 1 to NUREG-0654/FEMA-REP-1 and NUMARC/NESP-007 for developing EALs required in Section IV of Appendix E to 10 CFR Part 50 and 10 CFR 50.47(b)(4)."

10 CFR 50.54(q) requires, "Proposed changes that decrease the effectiveness of the approved emergency plans may not be implemented without application to and approval by the Commission. The licensee shall submit, as specified in 10 CFR 50.4, a report of each proposed change for approval."

#### **4.2 Significant Hazards Consideration**

GINNA LLC has evaluated whether or not a significant hazards consideration (SHC) is warranted with the proposed changes by addressing the three criterion set forth in 10 CFR 50.92(c) as discussed below.

##### **Criterion 1:**

*Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?*

Response: No.

These changes affect the R.E. Ginna Nuclear Power Plant Emergency Plan and do not alter any of the requirements of the Operating License or the Technical Specifications. The proposed changes do not modify any plant equipment and do not impact any failure modes that could lead to an accident. Additionally, the proposed changes have no effect on the consequence of any analyzed accident since the changes do not affect any equipment related to accident mitigation. Based on this discussion, the proposed amendment does not increase the probability or consequences of an accident previously evaluated.

**Criterion 2:**

*Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?*

Response: No.

These changes affect the R.E. Ginna Nuclear Power Plant Emergency Plan and do not alter any of the requirements of the Operating License or the Technical Specifications. They do not modify any plant equipment and there is no impact on the capability of the existing equipment to perform their intended functions. No system setpoints are being modified and no changes are being made to the method in which plant operations are conducted. No new failure modes are introduced by the proposed changes. The proposed amendment does not introduce accident initiator or malfunctions that would cause a new or different kind of accident. Therefore, the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

**Criterion 3:**

*Does the proposed amendment involve a significant reduction in a margin of safety?*

Response: No.

These changes affect the R.E. Ginna Nuclear Power Plant Emergency Plan and do not alter any of the requirements of the Operating License or the Technical Specifications. The proposed changes do not affect any of the assumptions used in the accident analysis, nor do they affect any operability requirements for equipment important to plant safety. Therefore, the proposed changes will not result in a significant reduction in the margin of safety as defined in the bases for technical specifications covered in this license amendment request.

In summary, Ginna LLC concludes that the proposed amendment does not represent a significant hazards consideration under the standards set forth in 10 CFR 50.92(c).

**4.4 Conclusions**

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

## 5.0 ENVIRONMENTAL CONSIDERATION

Ginna LLC has determined that the proposed amendment would not change requirements with respect to use of a facility component located within the restricted area, as defined by 10 CFR 20, nor would it change inspection or surveillance requirements. Ginna LLC has evaluated the proposed change and has determined that the change does not involve:

- I. A Significant Hazards Consideration
- II. A significant change in the types or significant increase in the amounts of any effluent that may be released off site, or
- III. A significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9) and (10)(ii). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

## 6.0 REFERENCES

- (1) NUMARC/NESP-007, Revision 2, "Methodology for development of Emergency Action Levels," January 1992 (ADAMS Accession No. ML041120174)
- (2) NEI 99-01, Revision 5, "Methodology for Development of Emergency Action Levels," February 2008 (ADAMS Accession No. ML080450149).
- (3) Appendix 1 to NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980 (ADAMS Accession No. ML040420012)
- (4) Regulatory Guide 1.101, Revision 4, "Emergency Planning and Preparedness for Nuclear Power Reactors," July 2003 (ADAMS Accession No. ML032020276)
- (5) NRC Regulatory Issue Summary 2003-18, "Use of NEI 99-01, 'Methodology for Development of Emergency Action Levels,' Revision 4, Dated January 2003," October 8, 2003; Supplement 1, July 13, 2004, and Supplement 2, December 12, 2005. (ADAMS Accession Nos. ML032580518, ML041550395, and ML051450482)
- (6) NRC Regulatory Issue Summary 2005-02, "Clarifying the Process for Making Emergency Plan Changes," February 2005 (ADAMS Accession No. ML042580404)
- (7) Letter from Christopher Miller, NRC to Alan Nelson, NEI, "US Nuclear Regulatory Commission Review and Endorsement of NEI 99-01, Revision 5, Dated February 2008," dated February 22, 2008 (ADAMS Accession No. ML080430535).

**ATTACHMENT (1)**

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**Red-line of the Current Ginna EAL Technical Basis Document**

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**ATTACHMENT (1)**  
**Red-line of the Current Ginna Technical Basis Document**

Additions to the current document are highlighted text. Deletions to the current document are strikethrough text.

**7.0 Equipment Failures**

**7.3 Loss of Indications /Alarms /  
Communication Capability**

**7.3.1 Unusual Event**

Unplanned loss of annunciators or indications on any Control Room Panels, Table 7.3 for >15 min.

—AND

Increased surveillance is required for safe plant operation

Table 7.3 Vital Control Room Panels							
A	AA	B	C	D	E	F	G

Unplanned loss of the following for 15 minutes or longer:

6 or more Control Room Annunciator Panels listed in Table 7.3

OR

An approximate 75% reduction in Control Room safety system indications

Table 7.3 Control Room Annunciator Panels							
A	AA	B	C	D	E	F	G

Note 1: The Emergency Coordinator should not wait until the applicable time has elapsed, but should likely declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.

**NUMARC IC:**

Unplanned loss of most or all safety system annunciation or indication in the control room for greater than 15 minutes with reactor coolant temperature >200F.

**NEI 99-01 Rev. 5 IC:**

Unplanned loss of safety system annunciation or indication in the control room for 15 minutes or longer.

**FPB loss/potential loss:**

N/A

**Mode Applicability:**

1-Power operations, 2-startup, 3-hot shutdown, 4-hot standby

**Basis:**

This EAL recognizes the difficulty associated with monitoring changing plant conditions without the use of a major portion of the annunciation or indication equipment. Recognition of the availability of computer based indication equipment is considered (PPCS and SAS).

“UnPlanned” loss of annunciators or indicators ~~excludes~~ includes scheduled maintenance and testing activities.

Quantification is arbitrary, however, it is estimated that if approximately 75% of the safety system annunciators or indications are lost, there is an increased risk that a degraded plant condition could go undetected.

It is not intended that plant personnel perform a detailed count of the instrumentation lost but the use of judgment by the Shift Manager as the threshold for determining the severity of the plant conditions. ~~This judgment is supported by the specific opinion of the Shift Manager that additional operating personnel will be required to provide increased monitoring of system operation to safely operate the plant.~~

A 75% loss of annunciators is defined as loss of 6 of the 8 annunciator panels listed on Table 7.3. Loss of 75% of Control Room safety indications is loss of 75% of the indications on the center and left sections of the main control board indications.

It is further recognized that most plant designs provide redundant safety system indication powered from separate uninterruptible power supplies. While failure of a large portion of annunciators is more likely than a failure of a large portion of indications, the concern is included in this EAL due to difficulty associated with assessment of plant conditions. The loss of specific, or several, safety system indicators should remain a function of that specific system or component operability status. This will be addressed by the specific Technical Specification. The initiation of a Technical Specification imposed plant shutdown related to the instrument loss will be reported via 10CFR50.72. If the shutdown is not in compliance with the Technical Specification action, the Unusual Event is based on EAL 7.1.1, Inability to Reach Required Shutdown Within Technical Specification Limits.

Annunciators or indicators for this EAL must include those identified in the Abnormal Operating procedures, in the Emergency Operating Procedures, and in other EALs (e.g., area, process, and/or effluent rad monitors, etc.).

Fifteen minutes was selected as a threshold to exclude transient or momentary power losses. Due to the limited number of safety systems in operation during cold shutdown, refueling, and defueled modes, this EAL is not applicable during these modes of operation.

~~This Unusual Event will be escalated to an Alert if a transient is in progress during the loss of annunciation or indication.~~

This Unusual Event will be escalated to an Alert based on a concurrent loss of compensatory indications or if a SIGNIFICANT TRANSIENT is in progress during the loss of annunciation or indication.

#### **PEG Reference**

NEI 99-01 Revision 5: SU3.1

#### **Basis Reference(s):**

None

## 7.0 Equipment Failures

## 7.3 Loss of Indications /Alarms / Communication Capability

### 7.3.3 Alert

Unplanned loss of annunciators or indications on any Control Room Panels, Table 7.3 for > 15 min.

—AND

Increased surveillance is required for safe plant operation

—AND either:

A plant transient in progress

—OR

PPCS is unavailable

Table 7.3 Vital Control Room Panels							
A	AA	B	C	D	E	F	G

Unplanned loss of the following for 15 minutes or longer:

6 or more Control Room Annunciator Panels listed in Table 7.3

OR

An approximate 75% reduction in Control Room safety system indications

#### AND EITHER

A SIGNIFICANT TRANSIENT is in progress

OR

Compensatory indications are unavailable

Table 7.3 Control Room Annunciator Panels							
A	AA	B	C	D	E	F	G

**Note 1:** The Emergency Coordinator should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.

#### NUMARC IC:

Unplanned loss of most or all safety system annunciation or indication in control room with either (1) a significant transient in progress, or (2) compensatory non-alarming indicators are unavailable with reactor coolant > 200 °F.

#### NEI 99-01 Rev. 5 IC:

Unplanned loss of safety system annunciation or indication in the control room with either (1) a SIGNIFICANT TRANSIENT in progress, or (2) compensatory indications unavailable.

#### FPB loss/potential loss:

N/A

#### Mode Applicability:

1-Power operations, 2-startup, 3-hot shutdown, 4-hot standby

**Basis:**

This EAL recognizes the difficulty associated with monitoring changing plant conditions without the use of a major portion of the annunciation or indication equipment during a ~~transient~~ **SIGNIFICANT TRANSIENT**. Recognition of the availability of computer based indication equipment is considered (PPCS, SAS, etc.).

"UnPlanned" loss of annunciators or indicators ~~does not include~~ **includes** scheduled maintenance and testing activities.

~~It is not intended that plant personnel perform a detailed count of the instrumentation lost but the use of judgment by the Shift Manager as the threshold for determining the severity of the plant conditions. This judgment is supported by the specific opinion of the Shift Manager that additional operating personnel will be required to provide increased monitoring of system operation to safely operate the plant.~~

**Quantification is arbitrary; however, it is estimated that if approximately 75% of the safety system annunciators or indications are lost, there is an increased risk that a degraded plant condition could go undetected. It is not intended that plant personnel perform a detailed count of the instrumentation lost but use the value as a judgment threshold for determining the severity of the plant conditions. It is also not intended that the Shift Manager be tasked with making a judgment decision as to whether additional personnel are required to provide increased monitoring of system operation. A 75% loss of annunciators is defined as loss of 6 of the 8 annunciator panels listed on Table 7.3. Loss of 75% of Control Room safety indications is loss of 75% of the indications on the center and left sections of the main control board indications.**

It is further recognized that most plant designs provide redundant safety system indication powered from separate uninterruptable power supplies. While failure of a large portion of annunciators is more likely than a failure of a large portion of indications, the concern is included in this EAL due to difficulty associated with assessment of plant conditions. The loss of specific, or several, safety system indicators should remain a function of that specific system or component operability status. This will be addressed by the specific Technical Specification. The initiation of a Technical Specification imposed plant shutdown related to the instrument loss will be reported via 10CFR50.72. **If the shutdown is not in compliance with the Technical Specification action, the Unusual Event is based on EAL 7.1.1 "Plant is not brought to required operating mode within Technical Specification LCO Required Action Completion Time."**

Annunciators or indicators for this EAL ~~includes~~ **should be limited to** those identified in the Abnormal Operating Procedures, in the Emergency Operating Procedures, and in other EALs (e. g., area, process, and/or effluent rad monitors, etc.).

**"Compensatory indications" in this context includes computer based information such as PPCS and SAS. If both a major portion of the annunciation system and all computer monitoring are unavailable, the Alert is required.**

~~"Significant transient" includes response to automatic or manually initiated functions such as trips, runbacks involving greater than 25% thermal power change, ECCS injections, or thermal power oscillations of 10% or greater.~~

**SIGNIFICANT TRANSIENT:** An UNPLANNED event involving one or more of the following: (1) automatic turbine runback greater than 25% thermal reactor power, (2) electrical load rejection greater than 25% full electrical load, (3) Reactor Trip, (4) Safety Injection Activation, or (5) thermal power oscillations greater than 10% of rated thermal power.

~~If both a major portion of the annunciation system and all computer monitoring are unavailable to the extent that the additional operating personnel are required to monitor indications, the Alert is required.~~

Due to the limited number of safety systems in operation during cold shutdown, refueling and defueled modes, no EAL is indicated during these modes of operation.

Fifteen minutes was selected as a threshold to exclude transient or momentary power losses.

~~This Alert will be escalated to a Site Area Emergency if the operating crew cannot monitor the transient in progress.~~

This Alert will be escalated to a Site Area Emergency if the operating crew cannot monitor the transient in progress due to a concurrent loss of compensatory indications with a SIGNIFICANT TRANSIENT in progress during the loss of annunciation or indication.

**PEG Reference:**

NEI 99-01 Revision 5: SA4.1

**Basis Reference(s):**

None

**7.0 Equipment Failures**

**7.3 Loss of Indications /Alarms /  
Communication Capability**

**7.3.4 Site Area Emergency**

~~Loss of annunciators or indications on any Control Room Panels, Table 7.3~~

~~—AND~~

~~Complete loss of ability to monitor all critical safety function status~~

~~—AND~~

~~A plant transient in progress~~

Table 7.3— Vital Control Room Panels							
A	AA	B	C	D	E	F	G

Loss of the following for 15 minutes or longer:

6 or more Control Room Annunciator Panels listed in Table 7.3

OR

An approximate 75% reduction in Control Room safety indications

AND

A SIGNIFICANT TRANSIENT is in progress

AND

Compensatory indications are unavailable

Table 7.3 Control Room Annunciator Panels							
A	AA	B	C	D	E	F	G

**Note 1:** The Emergency Coordinator should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.

**NUMARC IC:**

~~Inability to monitor a significant transient in progress with reactor coolant > 200 °F.~~

**NEI 99-01 Rev. 5 IC:**

Inability to monitor a SIGNIFICANT TRANSIENT in progress.

**FPB loss/potential loss:**

N/A

**Mode Applicability:**

1-Power operations, 2-startup, 3-hot shutdown, 4-hot standby

**Basis:**

This EAL recognizes the inability threat to plant safety associated with the complete loss of capability of the Control Room staff to monitor the plant response to a transient SIGNIFICANT TRANSIENT.

"Planned" and "UNPLANNED" actions are not differentiated since the loss of instrumentation of this magnitude is of such significance during a transient that the cause of the loss is not an ameliorating factor.

Quantification is arbitrary; however, it is estimated that if approximately 75% of the safety system annunciators or indicators are lost, there is an increased risk that a degraded plant condition could go undetected. It is not intended that plant personnel perform a detailed count of the instrumentation lost but use the value as a judgment threshold for determining the severity of the plant conditions. It is also not intended that the Shift Manager be tasked with making a judgment decision as to whether additional personnel are required to provide increased monitoring of system operation. A 75% loss of annunciators is defined as loss of 6 of the 8 annunciator panels listed on Table 7.3. Loss of 75% of Control Room safety indications is loss of 75% of the indications on the center and left sections of the main control board indications. It is further recognized that most plant designs provide redundant safety system indication powered from separate uninterruptible power supplies. While failure of a large portion of annunciators is more likely than a failure of a large portion of indications, the concern is included in this EAL due to difficulty associated with assessment of plant conditions. The loss of specific, or several, safety system indicators should remain a function of that specific system or component operability status. This will be addressed by the specific Technical Specification. The initiation of a Technical Specification imposed plant shutdown related to the instrument loss will be reported via 10 CFR 50.72. If the shutdown is not in compliance with the Technical Specification action, the UE is based on EAL 7.1.1 "Plant is not brought to required operating mode within Technical Specification LCO Required Action Completion Time."

A Site Area Emergency is considered to exist if the Control Room staff cannot monitor safety functions needed for protection of the public while a significant transient is in progress.

Annunciators for this EAL should be limited to include those identified in the Abnormal Operating Procedures, in the CSFST's and Emergency Operating Procedures, and in other EALs (e. g., area, process, and/or effluent rad monitors, etc.).

~~"Significant transient" includes response to automatic or manually initiated functions such as scrams, runbacks involving greater than 25% thermal power change, ECCS injections, or thermal power oscillations of 10% or greater.~~

**SIGNIFICANT TRANSIENT:** An UNPLANNED event involving one or more of the following: (1) automatic turbine runback greater than 25% thermal reactor power, (2) electrical load rejection

greater than 25% full electrical load, (3) Reactor Trip, (4) Safety Injection Activation, or (5) thermal power oscillations greater than 10% of rated thermal power.

Indications needed to monitor critical safety functions necessary for protection of the public must include Control Room indications, computer generated indications and dedicated annunciation capability. The specific indications should be those used to determine such functions as the ability to shut down the reactor, maintain the core cooled and in a coolable geometry, to remove heat from the core, to maintain the reactor coolant system intact, maintain the spent fuel cooled, and to maintain containment intact.

~~“Planned” actions are excluded from the EAL since the loss of instrumentation of this magnitude is of such significance during a transient that the cause of the loss is not an ameliorating factor.~~

"Compensatory indications" in this context includes computer based information such as PPCS and SAS.

Fifteen minutes was selected as a threshold to exclude transient or momentary power losses. Due to the limited number of safety systems in operation during cold shutdown, refueling and defueled modes, no EAL is indicated during these modes of operation.

**PEG Reference:**

NEI 99-01 Revision 5: SS6.1

**Basis Reference(s):**

None

**ATTACHMENT (2)**

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**Clean Copy of the Proposed Ginna EAL Technical Basis Document**

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**7.0 Equipment Failures**

**7.3 Loss of Indications /Alarms /  
Communication Capability**

**7.3.1 Unusual Event**

Unplanned loss of the following for 15 minutes or longer:

6 or more Control Room Annunciator Panels listed in Table 7.3

OR

An approximate 75% reduction in Control Room safety system indications

Table 7.3 Control Room Annunciator Panels							
A	AA	B	C	D	E	F	G

**NOTE 1:** The Emergency Coordinator should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.

**NEI 99-01 Rev. 5 IC:**

Unplanned loss of safety system annunciation or indication in the control room for 15 minutes or longer.

**FPB loss/potential loss:**

N/A

**Mode Applicability:**

1-Power operations, 2-startup, 3-hot shutdown, 4-hot standby

**Basis:**

This EAL recognizes the difficulty associated with monitoring changing plant conditions without the use of a major portion of the annunciation or indication equipment. Recognition of the availability of computer based indication equipment is considered (PPCS and SAS).

“Planned” loss of annunciators or indicators includes scheduled maintenance and testing activities.

Quantification is arbitrary, however, it is estimated that if approximately 75% of the safety system annunciators or indications are lost, there is an increased risk that a degraded plant condition could go undetected.

It is not intended that plant personnel perform a detailed count of the instrumentation lost but the use of judgment by the Shift Manager as the threshold for determining the severity of the plant conditions.

A 75% loss of annunciators is defined as loss of 6 of the 8 annunciator panels listed on Table 7.3. Loss of 75% of Control Room safety indications is loss of 75% of the indications on the center and left sections of the main control board indications.

It is further recognized that most plant designs provide redundant safety system indication powered from separate uninterruptable power supplies. While failure of a large portion of annunciators is more likely than a failure of a large portion of indications, the concern is included in this EAL due to difficulty associated with assessment of plant conditions. The loss of specific, or several, safety system indicators should remain a function of that specific system or component operability status. This will be addressed by the specific Technical Specification. The initiation of a Technical Specification imposed plant shutdown related to the instrument loss will be reported via 10 CFR 50.72. If the shutdown is not in compliance with the Technical Specification action, the Unusual Event is based on EAL 7.1.1, Inability to Reach Required Shutdown Within Technical Specification Limits.

Annunciators or indicators for this EAL must include those identified in the Abnormal Operating procedures, in the Emergency Operating Procedures, and in other EALs (e.g., area, process, and/or effluent rad monitors, etc.).

Fifteen minutes was selected as a threshold to exclude transient or momentary power losses. Due to the limited number of safety systems in operation during cold shutdown, refueling, and defueled modes, this EAL is not applicable during these modes of operation.

This Unusual Event will be escalated to an Alert based on a concurrent loss of compensatory indications or if a SIGNIFICANT TRANSIENT is in progress during the loss of annunciation or indication.

**PEG Reference**

NEI 99-01 Revision 5: SU3.1

**Basis Reference(s):**

None

**7.0 Equipment Failures**

**7.3 Loss of Indications /Alarms /  
Communication Capability**

**7.3.3 Alert**

Unplanned loss of the following for 15 minutes or longer:

6 or more Control Room Annunciator Panels listed in Table 7.3

OR

An approximate 75% reduction in Control Room safety system indications

**AND EITHER**

A SIGNIFICANT TRANSIENT is in progress

OR

Compensatory indications are unavailable

Table 7.3 Control Room Annunciator Panels							
A	AA	B	C	D	E	F	G

**NOTE 1:** The Emergency Coordinator should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.

**NEI 99-01 Rev. 5 IC:**

Unplanned loss of safety system annunciation or indication in the control room with either (1) a SIGNIFICANT TRANSIENT in progress, or (2) compensatory indicators unavailable.

**FPB loss/potential loss:**

N/A

**Mode Applicability:**

1-Power operations, 2-startup, 3-hot shutdown, 4-hot standby

**Basis:**

This EAL recognizes the difficulty associated with monitoring changing plant conditions without the use of a major portion of the annunciation or indication equipment during a SIGNIFICANT TRANSIENT. Recognition of the availability of computer based indication equipment is considered (PPCS, SAS, etc.).

“Planned” loss of annunciators or indicators includes scheduled maintenance and testing activities.

Quantification is arbitrary, however, it is estimated that if approximately 75% of the safety system annunciators or indicators are lost, there is an increased risk that a degraded plant condition could go undetected. It is not intended that plant personnel perform a detailed count of the instrumentation lost but use the value as a judgment threshold for determining the severity of the plant conditions. It is also not intended that the Shift Manager be tasked with making a judgment decision as to whether additional personnel are required to provide increased monitoring of system operation. A 75% loss of annunciators is defined as loss of 6 of the 8

annunciator panels listed on Table 7.3. Loss of 75% of Control Room safety indications is loss of 75% of the indications on the center and left sections of the main control board indications. It is further recognized that most plant designs provide redundant safety system indication powered from separate uninterruptable power supplies. While failure of a large portion of annunciators is more likely than a failure of a large portion of indications, the concern is included in this EAL due to difficulty associated with assessment of plant conditions. The loss of specific, or several, safety system indicators should remain a function of that specific system or component operability status. This will be addressed by the specific Technical Specification. The initiation of a Technical Specification imposed plant shutdown related to the instrument loss will be reported via 10CFR50.72. If the shutdown is not in compliance with the Technical Specification action, the Unusual Event is based on EAL 7.1.1 "Plant is not brought to required operating mode within Technical Specification LCO Required Action Completion Time."

Annunciators or indicators for this EAL should be limited to those identified in the Abnormal Operating Procedures, in the Emergency Operating Procedures, and in other EALs (e. g., area, process, and/or effluent rad monitors, etc.).

"Compensatory indications" in this context includes computer based information such as PPCS and SAS. If both a major portion of the annunciation system and all computer monitoring are unavailable, the Alert is required.

**SIGNIFICANT TRANSIENT:** An UNPLANNED event involving one or more of the following: (1) automatic turbine runback greater than 25% thermal reactor power, (2) electrical load rejection greater than 25% full electrical load, (3) Reactor Trip, (4) Safety Injection Activation, or (5) thermal power oscillations greater than 10% of rated thermal power.

Due to the limited number of safety systems in operation during cold shutdown, refueling and defueled modes, no EAL is indicated during these modes of operation.

Fifteen minutes was selected as a threshold to exclude transient or momentary power losses.

This Alert will be escalated to a Site Area Emergency if the operating crew cannot monitor the transient in progress due to a concurrent loss of compensatory indications with a SIGNIFICANT TRANSIENT in progress during the loss of annunciation or indication.

**PEG Reference:**

NEI 99-01 Revision 5: SA4.1

**Basis Reference(s):**

None

**7.0 Equipment Failures**

**7.3 Loss of Indications /Alarms /  
Communication Capability**

**7.3.4 Site Area Emergency**

Loss of the following for 15 minutes or longer:

6 or more Control Room Annunciator Panels listed in Table 7.3

OR

An approximate 75% reduction in Control Room safety indications

AND

A SIGNIFICANT TRANSIENT is in progress

AND

Compensatory indications are unavailable

Table 7.3 Control Room Annunciator Panels							
A	AA	B	C	D	E	F	G

**NOTE 1:** The Emergency Coordinator should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.

**NEI 99-01 Rev. 5 IC:**

Inability to monitor a SIGNIFICANT TRANSIENT in progress.

**FPB loss/potential loss:**

N/A

**Mode Applicability:**

1-Power operations, 2-startup, 3-hot shutdown, 4-hot standby

**Basis:**

This EAL recognizes the threat to plant safety associated with the complete loss of capability of the Control Room staff to monitor the plant response to a SIGNIFICANT TRANSIENT.

"Planned" and "UNPLANNED" actions are not differentiated since the loss of instrumentation of this magnitude is of such significance during a transient that the cause of the loss is not an ameliorating factor.

Quantification is arbitrary.; however, it is estimated that if approximately 75% of the safety system annunciators or indicators are lost, there is an increased risk that a degraded plant condition could go undetected. It is not intended that plant personnel perform a detailed count of the instrumentation lost but use the value as a judgment threshold for determining the severity of the plant conditions. It is also not intended that the Shift Manager be tasked with making a judgment decision as to whether additional personnel are required to provide increased monitoring of system operation. A 75% loss of annunciators is defined as loss of 6 of the 8 annunciator panels listed on Table 7.3. Loss of 75% of Control Room safety indications is loss of 75% of the indications on the center and left sections of the main control board indications.

It is further recognized that most plant designs provide redundant safety system indication powered from separate uninterruptible power supplies. While failure of a large portion of annunciators is more likely than a failure of a large portion of indications, the concern is included in this EAL due to difficulty associated with assessment of plant conditions. The loss of specific, or several, safety system indicators should remain a function of that specific system or component operability status. This will be addressed by the specific Technical Specification. The initiation of a Technical Specification imposed plant shutdown related to the instrument loss will be reported via 10 CFR 50.72. If the shutdown is not in compliance with the Technical Specification action, the UE is based on EAL 7.1.1 "Plant is not brought to required operating mode within Technical Specification LCO Required Action Completion Time."

A Site Area Emergency is considered to exist if the Control Room staff cannot monitor safety functions needed for protection of the public while a significant transient is in progress.

Annunciators for this EAL should be limited to include those identified in the Abnormal Operating Procedures, in the CSFST's and Emergency Operating Procedures, and in other EALs (e. g., area, process, and/or effluent rad monitors, etc.).

**SIGNIFICANT TRANSIENT:** An UNPLANNED event involving one or more of the following: (1) automatic turbine runback greater than 25% thermal reactor power, (2) electrical load rejection greater than 25% full electrical load, (3) Reactor Trip, (4) Safety Injection Activation, or (5) thermal power oscillations greater than 10% of rated thermal power.

Indications needed to monitor critical safety functions necessary for protection of the public must include Control Room indications, computer generated indications and dedicated annunciation capability. The specific indications should be those used to determine such functions as the ability to shut down the reactor, maintain the core cooled, to maintain the reactor coolant system intact, maintain the spent fuel cooled, and to maintain containment intact.

"Compensatory indications" in this context includes computer based information such as PPCS and SAS.

Fifteen minutes was selected as a threshold to exclude transient or momentary power losses. Due to the limited number of safety systems in operation during cold shutdown, refueling and defueled modes, no EAL is indicated during these modes of operation.

**PEG Reference:**

NEI 99-01 Revision 5: SS6.1

**Basis Reference(s):**

None

**ATTACHMENT (3)**

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**Red-line of NEI 99-01 Revision 5**

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**Initiating Condition -- NOTIFICATION OF UNUSUAL EVENT**

**7.0 Equipment Failures**

**7.3 Loss of Indications / Alarms / Communications Capability**

**7.3.1 UNUSUAL EVENT**

NEI 99-01 Rev. 5 IC:

SU3 - UNPLANNED loss of safety system annunciation or indication in the control room for 15 minutes or longer.

**Operating Mode Applicability:** 1 - Power Operation, 2 - Startup, 4 - Hot Standby, 3 - Hot Shutdown

**FPB loss/potential loss:**

N/A

**Example Emergency Action Level:**

**Note:** The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.

1. UNPLANNED Loss of greater than approximately 75% of the following for 15 minutes or longer:

a. (Site specific control room safety system annunciation)

6 or more Control Room Annunciator Panels listed in Table 7.3

OR

b. (Site specific control room safety system indication)

An approximate 75% reduction in Control Room safety system indications

Table 7.3 Control Room Annunciator Panels
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A	AA	B	C	D	E	F	G
---	----	---	---	---	---	---	---

**NOTE 1:** The Emergency Coordinator should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.

**Basis:**

This IC and its associated EAL are intended to recognize the difficulty associated with monitoring changing plant conditions without the use of a major portion of the annunciation or indication equipment.

Recognition of the availability of computer based indication equipment is considered ~~{e.g., SPDS, plant computer, etc.}~~ (PPCS and SAS).

"Planned" loss of annunciators or indicators includes scheduled maintenance and testing activities.

Quantification is arbitrary, however, it is estimated that if approximately 75% of the safety system annunciators or indicators are lost, there is an increased risk that a degraded plant condition could go undetected. It is not intended that plant personnel perform a detailed count of the instrumentation lost but use the value as a judgment threshold for determining the severity of the plant conditions.

A 75% loss of annunciators is defined as loss of 6 of the 8 annunciator panels listed on Table 7.3. Loss of 75% of Control Room safety indications is loss of 75% of the indicators on the center and left sections of the main control board indications.

It is further recognized that most plant designs provide redundant safety system indication powered from separate uninterruptible power supplies. While failure of a large portion of annunciators is more likely than a failure of a large portion of indications, the concern is included in this EAL due to difficulty associated with assessment of plant conditions. The loss of specific, or several, safety system indicators should remain a function of that specific system or component operability status. This will be addressed by the specific Technical Specification. The initiation of a Technical Specification imposed plant shutdown related to the instrument loss will be reported via 10CFR50.72. If the shutdown is not in compliance with the Technical Specification action, the ~~NOTE~~ Unusual Event is based on ~~SU2~~ EAL 7.1.1 "Inability to Reach Required Shutdown Within Technical Specification Limits."

~~{Site specific a~~ Annunciators or indicators for this EAL must include those identified in the Abnormal Operating Procedures, in the Emergency Operating Procedures, and in other EALs (e.g., area, process, and/or effluent rad monitors, etc.)~~}~~

Fifteen minutes was selected as a threshold to exclude transient or momentary power losses.

~~{Due to the limited number of safety systems in operation during cold shutdown, refueling, and defueled modes, no IC is indicated~~ this EAL is not applicable during these modes of operation.~~}~~

This ~~NOUE~~ Unusual Event will be escalated to an Alert based on a concurrent loss of compensatory indications or if a SIGNIFICANT TRANSIENT is in progress during the loss of annunciation or indication.

**PEG Reference:**

NEI 99-01 Revision 5: SU3.1

**Basis Reference(s):**

None

**Initiating Condition – ALERT**

**7.0 Equipment Failures**

**7.3 Loss of Indications / Alarms / Communications Capability**

**7.3.3 ALERT**

NEI 99-01 Rev. 5 IC:

SA4 - UNPLANNED Loss of safety system annunciation or indication in the control room with EITHER (1) a SIGNIFICANT TRANSIENT in progress, or (2) compensatory indicators unavailable.

**Operating Mode Applicability:** 1 - Power Operation, 2 - Startup, 4 - Hot Standby, 3 - Hot Shutdown

**FPB loss/potential loss:**

N/A

**Example Emergency Action Level:**

**Note:** The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.

1. a. UNPLANNED loss of greater than approximately 75% of the following for 15 minutes or longer:

- (Site specific control room safety system annunciation)
- (Site specific control room safety system indication)
- 6 or more Control Room Annunciator Panels listed in Table 7.3

OR

- An approximate 75% reduction in Control Room safety system indications

b. **AND EITHER** of the following:

- A SIGNIFICANT TRANSIENT is in progress.

OR

- Compensatory indications are unavailable.

Table 7.3 Control Room Annunciator Panels							
A	AA	B	C	D	E	F	G

**NOTE 1:** The Emergency Coordinator should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.

**Basis:**

This IC is intended to EAL recognizes the difficulty associated with monitoring changing plant conditions without the use of a major portion of the annunciation or indication equipment during a SIGNIFICANT TRANSIENT.

{Recognition of the availability of computer based indication equipment is considered (e.g., SPDS, plant computer, etc.)} (PPCS, SAS, etc)

"Planned" loss of annunciators or indicators includes scheduled maintenance and testing activities.

Quantification is arbitrary; however, it is estimated that if approximately 75% of the safety system annunciators or indicators are lost, there is an increased risk that a degraded plant condition could go undetected. It is not intended that plant personnel perform a detailed count of the instrumentation lost but use the value as a judgment threshold for determining the severity of the plant conditions. It is also not intended that the Shift Supervisor Manager be tasked with making a judgment decision as to whether additional personnel are required to provide increased monitoring of system operation.

A 75% loss of annunciators is defined as loss of 6 of the 8 annunciator panels listed on Table 7.3. Loss of 75% of Control Room safety indications is loss of 75% of the indications on the center and left sections of the main control board indications.

It is further recognized that most plant designs provide redundant safety system indication powered from separate uninterruptible power supplies. While failure of a large portion of annunciators is more likely than a failure of a large portion of indications, the concern is included in this EAL due to difficulty associated with assessment of plant conditions. The loss of specific, or several, safety system indicators should remain a function of that specific system or component operability status. This will be addressed by the specific Technical Specification. The initiation of a Technical Specification imposed plant shutdown related to the instrument loss will be reported via 10 CFR 50.72. If the shutdown is not in compliance with the Technical Specification action, the NOUE Unusual Event is based on SU2 "Inability

to Reach EAL 7.1.1 "Plant is not brought to Required Shutdown Operating Mode Within Technical Specification Limits LCO LCO Required Action Completion Time."

*{Site-specific Annunciators or indicators for this EAL should be limited those identified in the Abnormal Operating Procedures, in the Emergency Operating Procedures, and in other EALs (e.g., area, process, and/or effluent rad monitors, etc.).}*

"Compensatory indications" in this context includes computer based information such as SPDS PPCS and SAS. *{This should include all computer systems available for this use depending on specific plant design and subsequent retrofits.}* If both a major portion of the annunciation system and all computer monitoring are unavailable, the Alert is required.

**SIGNIFICANT TRANSIENT:** An UNPLANNED event involving one or more of the following: (1) automatic turbine runback greater than 25% thermal reactor power, (2) electrical load rejection greater than 25% full electrical load, (3) Reactor Trip, (4) Safety Injection Activation, or (5) thermal power oscillations greater than 10% of rated thermal power.

*{Due to the limited number of safety systems in operation during cold shutdown, refueling and defueled modes, no EAL is indicated during these modes of operation.}*

Fifteen minutes was selected as a threshold to exclude transient or momentary power losses.

This Alert will be escalated to a Site Area Emergency if the operating crew cannot monitor the transient in progress due to a concurrent loss of compensatory indications with a SIGNIFICANT TRANSIENT in progress during the loss of annunciation or indication.

**PEG Reference:**

NEI 99-01 Revision 5: SA4.1

**Basis Reference(s):**

None

**Initiating Condition -- SITE AREA EMERGENCY**

**7.0 Equipment Failures**

**7.3 Loss of Indications / Alarms / Communication Capability**

**7.3.4 SITE AREA EMERGENCY**

NEI 99-01 Rev. 5 IC:

SS6 - Inability to monitor a SIGNIFICANT TRANSIENT in progress.

**Operating-Mode Applicability:** 1 - Power Operation, 2 - Startup, 4 - Hot Standby, 3 - Hot Shutdown

**FPB loss/potential loss:**

N/A

**Example Emergency Action Level:**

~~Note: The Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.~~

1. ~~a.~~ Loss of ~~greater than approximately 75% of~~ the following for 15 minutes or longer:

- ~~• (Site specific control room safety system annunciation)~~

**OR**

- ~~• (Site specific control room safety system indication)~~

**6 or more Control Room Annunciator Panels listed in Table 7.3**

**OR**

**An approximate 75% reduction in Control Room safety indications**

**AND**

~~b.~~ A SIGNIFICANT TRANSIENT is in progress

**AND**

← Compensatory indications are unavailable.

Table 7.3 Control Room Annunciator Panels							
A	AA	B	C	D	E	F	G

**NOTE 1:** The Emergency Coordinator should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.

**Basis:**

This IC is intended to EAL recognizes the threat to plant safety associated with the complete loss of capability of the Control Room staff to monitor plant response to a SIGNIFICANT TRANSIENT.

"Planned" and "UNPLANNED" actions are not differentiated since the loss of instrumentation of this magnitude is of such significance during a transient that the cause of the loss is not an ameliorating factor.

Quantification is arbitrary, however, it is estimated that if approximately 75% of the safety system annunciators or indicators are lost, there is an increased risk that a degraded plant condition could go undetected. It is not intended that plant personnel perform a detailed count of the instrumentation lost but use the value as a judgment threshold for determining the severity of the plant conditions. It is also not intended that the Shift Supervisor Manager be tasked with making a judgment decision as to whether additional personnel are required to provide increased monitoring of system operation.

A 75% loss of annunciators is defined as loss of 6 of the 8 annunciator panels listed on Table 7.3. Loss of 75% of Control Room safety indications is loss of 75% of the indications on the center and left sections of the main control board indications.

It is further recognized that most plant designs provide redundant safety system indication powered from separate uninterruptible power supplies. While failure of a large portion of annunciators is more likely than a failure of a large portion of indications, the concern is included in this EAL due to difficulty associated with assessment of plant conditions. The loss of specific, or several, safety system indicators should remain a function of that specific system or component operability status. This will be addressed by the specific Technical Specification. The initiation of a Technical Specification imposed plant shutdown related to the instrument loss will be reported via 10 CFR 50.72. If the shutdown is not in compliance with the Technical Specification action, the **NOTE Unusual Event** is based on **SU2 "Inability to Reach EAL 7.1.1 "Plant is not brought to Required Shutdown Within Technical Specification Limits LCO Required Action Completion Time."**

A Site Area Emergency is considered to exist if the control room staff cannot monitor safety functions needed for protection of the public while a significant transient is in progress.

~~{Site-specific} Annunciators for this EAL should be limited to include those identified in the Abnormal Operating Procedures, in the CSFT's and in the Emergency Operating Procedures, and in other EALs (.g., area, process, and/or effluent rad monitors, etc.)}~~

**SIGNIFICANT TRANSIENT:** An UNPLANNED event involving one or more of the following: (1) automatic turbine runback greater than 25% thermal reactor power, (2) electrical load rejection greater than 25% full electrical load, (3) Reactor Trip, (4) Safety Injection Activation, or (5) thermal power oscillations greater than 10% of rated thermal power.

~~Site-specific~~ indications needed to monitor safety functions necessary for protection of the public must include control room indications, computer generated indications and dedicated annunciation capability.

*{The specific indications should be those used to determine such functions as the ability to shut down the reactor, maintain the core cooled, to maintain the reactor coolant system intact, maintain the spent fuel cooled, and to maintain containment intact.}*

"Compensatory indications" in this context includes computer based information such as SPDS PPCS and SAS . This should include all computer systems available for this use depending on specific plant design and subsequent retrofits.

Fifteen minutes was selected as a threshold to exclude transient or momentary power losses.

*{Due to the limited number of safety systems in operation during cold shutdown, refueling and defueled modes, no EAL is indicated during these modes of operation.}*

**PEG Reference:**

NEI 99-01 Revision 5: SS6.1

**Basis Reference(s):**

None

**ATTACHMENT (4)**

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**Clean Copy of Proposed Ginna EALs**

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**7.3 Loss of Indications/Alarm/Communication Capability**

GENERAL EMERGENCY PROCEED TO EPIP-1-4	SITE AREA EMERGENCY PROCEED TO EPIP-1-3	ALERT PROCEED TO EPIP-1-2	UNUSUAL EVENT PROCEED TO EPIP-1-1
	<p>7.3.4</p> <p>Loss of the following for 15 minutes or longer: 6 or more of the following Control Room Annunciator Panels</p> <ul style="list-style-type: none"> <li>- A</li> <li>- AA</li> <li>- B</li> <li>- C</li> <li>- D</li> <li>- E</li> <li>- F</li> <li>- G</li> </ul> <p align="center"><u>OR</u></p> <p>An approximate 75% reduction in Control Room safety system indications</p> <p><u>AND</u></p> <p>A significant transient in progress</p> <p><u>AND</u></p> <p>Compensatory indications are unavailable]</p> <p>(See Note 1)</p> <p><u>Mode Applicability:</u></p> <ul style="list-style-type: none"> <li>- (1) Power Operations</li> <li>- (2) Startup</li> <li>- (3) Hot Shutdown</li> <li>- (4) Hot Standby</li> </ul>	<p>7.3.3</p> <p>Unplanned loss of the following for 15 minutes or longer: 6 or more of the following Control Room Annunciator Panels</p> <ul style="list-style-type: none"> <li>- A</li> <li>- AA</li> <li>- B</li> <li>- C</li> <li>- D</li> <li>- E</li> <li>- F</li> <li>- G</li> </ul> <p align="center"><u>OR</u></p> <p>An approximate 75% reduction in Control Room safety system indications</p> <p><u>AND EITHER</u></p> <p>A significant transient in progress</p> <p align="center"><u>OR</u></p> <p>Compensatory indications are unavailable</p> <p>(See Note 1)</p> <p><u>Mode Applicability:</u></p> <ul style="list-style-type: none"> <li>- (1) Power Operations</li> <li>- (2) Startup</li> <li>- (3) Hot Shutdown</li> <li>- (4) Hot Standby</li> </ul>	<p>7.3.1</p> <p>Unplanned loss of the following for 15 minutes or longer: 6 or more of the following Control Room Annunciator Panels</p> <ul style="list-style-type: none"> <li>- A</li> <li>- AA</li> <li>- B</li> <li>- C</li> <li>- D</li> <li>- E</li> <li>- F</li> <li>- G</li> </ul> <p align="center"><u>OR</u></p> <p>An approximate 75% reduction in Control Room safety system indications</p> <p>(See Note 1)</p> <p><u>Mode Applicability:</u></p> <ul style="list-style-type: none"> <li>- (1) Power Operations</li> <li>- (2) Startup</li> <li>- (3) Hot Shutdown</li> <li>- (4) Hot Standby</li> </ul>

**NOTE 1:** The Emergency Coordinator should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.

**ATTACHMENT (5)**

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**Plant-Specific EAL Guideline Cross Reference**

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**ATTACHMENT (5)**  
**Plant-Specific EAL Guideline Cross Reference**

This Attachment compares the Plant-Specific EAL Guideline (PEG) references between NUMARC/NESP-007 and NEI 99-01 Revision 5

Ginna EAL	NUMARC/NESP-007 PEG	NEI 99-01 Revision 5 PEG
7.3.1	SU3.1	SU3.1
7.3.3	SA4.1	SA4.1
7.3.4	SS6.1	SS6.1

**ATTACHMENT (6)**

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**EAL Differences and Deviations**

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## ATTACHMENT (6) EAL Differences and Deviations

This Attachment lists the differences and deviations for each EAL. NRC Regulatory Issue Summary (RIS) 2003-18 Supplement 2 defines Difference and Deviation for EAL changes.

### **Difference and Deviation**

A *difference* is an EAL change where the basis scheme guidance differs in wording but agrees in meaning and intent, such that classification of an event would be the same, whether using the basis scheme guidance or the site-specific proposed EAL. Examples of *differences* include the use of site-specific terminology or administrative reformatting of site-specific EALs.

A *deviation* is an EAL change where the basis scheme guidance differs in wording and is altered in meaning or intent, such that classification of the event could be different between the basis scheme guidance and the site-specific proposed EAL. Examples of *deviations* include the use of altered mode applicability, altering key words or time limits, or changing words of physical reference (protected area, safety-related equipment, etc.).

Current Ginna EAL	NEI EAL	Revised Ginna EAL
<p>7.3.1 Unplanned loss of annunciators or indications on any of the following Control Room Panels for greater than 15 minutes A,AA,B,C,D,E,F,G <u>AND</u> increased surveillance is required for safe plant operation</p>	<p>SU3.1 UNPLANNED Loss of greater than approximately 75% of the following for 15 minutes or longer: (Site specific control room safety system annunciation) <b>OR</b> (Site specific control room safety system indication)</p>	<p>7.3.1 Unplanned loss of the following for 15 minutes or longer: 6 or more of the following Control Room Annunciator panels A,AA,B,C,D,E,F,G <u>OR</u> An approximate 75% reduction in Control Room safety system indications</p>
Site Specific	<ul style="list-style-type: none"> <li>• Added site specific annunciators that have safety system annunciation.</li> <li>• Defined safety system indications as the center and left sections of the main control board.</li> </ul>	
Difference	None	
Deviation	None	

Current Ginna EAL	NEI EAL	Revised Ginna EAL
<p>7.3.3 Unplanned loss of annunciators or indications on any of the following Control Room Panels for greater than 15 minutes A,AA,B,C,D,E,F,G <u>AND</u> increased surveillance is required for safe plant operation <u>AND EITHER</u> A plant transient in progress <u>OR</u> PPCS is unavailable</p>	<p>SA4.1 UNPLANNED loss of greater than approximately 75% of the following for 15 minutes or longer: (Site specific control room safety system annunciation) (Site specific control room safety system indication) <b>EITHER</b> of the following:  <ul style="list-style-type: none"> <li>• A SIGNIFICANT TRANSIENT is in progress.</li> <li>• Compensatory indications are unavailable.</li> </ul> </p>	<p>7.3.3 Unplanned loss of the following for 15 minutes or longer: 6 or more of the following Control Room Annunciator panels A,AA,B,C,D,E,F,G <u>OR</u> An approximate 75% reduction in Control Room safety system indications <u>AND EITHER</u> A significant transient in progress <u>OR</u> Compensatory indications are unavailable</p>
Site Specific	<ul style="list-style-type: none"> <li>• Added site specific annunciators that have safety system annunciation.</li> <li>• Defined safety system indications as the center and left sections of the main control board.</li> </ul>	
Difference	None	
Deviation	None	

Current Ginna EAL	NEI EAL	Revised Ginna EAL
<p>7.3.4 Loss of annunciators or indications on any of the following Control Room Panels A,AA,B,C,D,E,F,G <u>AND</u> Complete loss of ability to monitor any critical safety function status <u>AND</u> A plant transient in progress</p>	<p>SS6.1 Loss of greater than approximately 75% of the following for 15 minutes or longer: (Site specific control room safety system annunciation) <b>OR</b> (Site specific control room safety system indication) <b>AND</b> A SIGNIFICANT TRANSIENT is in progress. <b>AND</b> Compensatory indications are unavailable.</p>	<p>7.3.4 Loss of the following for 15 minutes or longer: 6 or more of the following Control Room Annunciator panels A,AA,B,C,D,E,F,G <u>OR</u> An approximate 75% reduction in Control Room safety system indications <u>AND</u> A significant transient in progress <u>AND</u> Compensatory indications are unavailable</p>
Site Specific	<ul style="list-style-type: none"> <li>• Added site specific annunciators that have safety system annunciation.</li> <li>• Defined safety system indications as the center and left sections of the main control board.</li> </ul>	
Difference	None	
Deviation	None	