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10 CFR 50.90
10 CFR 50, Appendix E

NMP1L3221

May 10, 2018

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Calvert Cliffs Nuclear Power Plant, Units 1 and 2
Renewed Facility Operating License Nos. DPR-53 and DPR-69
NRC Docket Nos. 50-317 and 50-318

Calvert Cliffs Independent Spent Fuel Storage Installation
Materials License No. SNM-2505
NRC Docket No. 72-8

Nine Mile Point Nuclear Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-63 and NPF-69
NRC Docket Nos. 50-220, 50-410, and 72-1036

R. E. Ginna Nuclear Power Plant
Renewed Facility Operating License No. DPR-18
NRC Docket Nos. 50-244 and 72-67

Subject: Response to Request for Additional Information
License Amendment Request to Adopt Emergency Action Level Schemes
Pursuant to NEI 99-01, Revision 6, *"Development of Emergency Action Levels for Non-Passive Reactors"*

References:

1) Letter from David T. Gudger (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission) - License Amendment Request to Adopt Emergency Action Level Schemes Pursuant to NEI 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors," dated May 31, 2017 (ML17164A149)

2) Electronic Mail Request from Blake Purnell (U.S. Nuclear Regulatory Commission) to Richard Gropp, et al. (Exelon Generation Company, LLC) – Calvert Cliffs, Ginna, and Nine Mile Point - Draft Request for Additional Information for EAL Scheme Change Amendments, dated November 27, 2017

3) Letter from Blake Purnell (U.S. Nuclear Regulatory Commission) to Bryan C. Hanson (Exelon Generation Company, LLC) – Calvert Cliffs Nuclear Power Plant, Units 1 and 2; Calvert Cliffs Independent Spent Fuel Storage Installation; Nine Mile Point Nuclear Station, Units 1 and 2; and R. E. Ginna Nuclear Power Plant - Request for Additional Information Regarding License Amendment Request to Revise Emergency Action Level Schemes, dated December 12, 2017 (ML17331B134)

4) Letter from David T. Gudger (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission) - Response to Request for Additional Information - License Amendment Request to Adopt Emergency Action Level Schemes Pursuant to NEI 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors," dated January 31, 2018 (ML18037A653)

5) Electronic Mail Request from Blake Purnell (U.S. Nuclear Regulatory Commission) to Richard Gropp, et al. (Exelon Generation Company, LLC) – Calvert Cliffs, Ginna, and Nine Mile Point - Draft Request for Additional Information for EAL Scheme Change Amendments, dated April 6, 2018

6) Electronic Mail Request from Blake Purnell (U.S. Nuclear Regulatory Commission) to Richard Gropp, et al. (Exelon Generation Company, LLC) – Calvert Cliffs, Ginna, and Nine Mile Point - Request for Additional Information Regarding License Amendment Request to Revise Emergency Action Level Schemes, dated April 12, 2018 (ML18102A237)

By letter dated May 31, 2017 (Reference 1), Exelon Generation Company, LLC (Exelon) submitted a License Amendment Request (LAR) to support changes to the Emergency Plans for the cited facilities. Specifically, the proposed changes involve revising the Emergency Plans for the affected facilities to adopt the Nuclear Energy Institute's (NEI's) revised Emergency Action Level (EAL) schemes described in NEI 99-01, Revision 6, *"Development of Emergency Action Levels for Non-Passive Reactors,"* which have been endorsed by the NRC as documented in an NRC letter dated March 28, 2013 (ML2346A463).

Appendix E, Section IV.B.2, of 10 CFR 50 stipulates that a licensee desiring to change its entire EAL scheme shall submit an application for an amendment to its license and receive NRC approval before implementing the change. The currently approved Emergency Plan EAL schemes for the cited facilities are based on the guidance established in NEI 99-01, Revision 5, *"Methodology for Development of Emergency Action Levels."* Exelon is proposing to adopt the EAL schemes based on the latest NRC-endorsed guidance, which is described in NEI 99-01, Revision 6.

In a letter dated January 31, 2018 (Reference 4), Exelon responded to a U.S. Nuclear Regulatory Commission (NRC) Request for Additional Information (RAI) issued via electronic mail (Reference 3). Prior to the issuance of the Reference 3 RAI, the NRC issued a draft RAI (Reference 2), which was the subject of further discussions during a December 6, 2017, teleconference between Exelon and NRC representatives.

In an electronic mail message dated April 6, 2018 (Reference 5), the NRC issued a draft RAI indicating that it had reviewed the information submitted in the Reference 4 letter and noted that additional clarifying information is needed to support its continued review. The details of this draft RAI were further discussed during an April 10, 2018, teleconference between Exelon and NRC representatives. Subsequently, in an electronic mail message dated April 12, 2018 (Reference 6), the NRC formally issued its RAI and requested a response within 30 days of the date of the request.

Accordingly, Attachment 1 provides Exelon's response to the RAI contained in Reference 6. Attachment 2 contains enclosures that include revised information for the affected EAL Basis and Comparison Matrix documents for the plants listed.

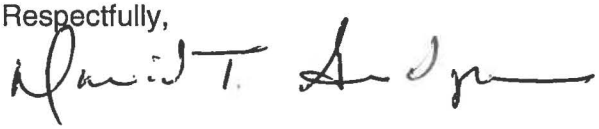
Exelon has reviewed the information supporting a finding of No Significant Hazards Consideration and the Environmental Consideration provided to the NRC in the Reference 1 submittal. The additional information provided in this submittal does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration. Furthermore, the additional information provided in this submittal does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in connection with the proposed amendment.

There are no regulatory commitments contained in this submittal.

If you have any questions concerning this submittal, please contact Richard Gropp at (610) 765-5557.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 10th day of May 2018.

Respectfully,



David T. Gudger
Manager, Licensing and Regulatory Affairs
Exelon Generation Company, LLC

Attachments:

Attachment 1 - Response to the Request for Additional Information - License Amendment Request to Adopt Emergency Action Level Schemes Pursuant to NEI 99-01, Revision 6, *"Development of Emergency Action Levels for Non-Passive Reactors"*

Attachment 2 - Revised EAL Basis and Comparison Matrix Information
- Enclosure 1 - Calvert Cliffs Revised EAL Basis and Comparison Matrix Information
- Enclosure 2 - Nine Mile Point Revised EAL Basis and Comparison Matrix Information
- Enclosure 3 - R.E. Ginna Revised EAL Basis and Comparison Matrix Information

cc: w/ Attachments (including Enclosures)
Regional Administrator – NRC Region I
NRC Senior Resident Inspector – Calvert Cliffs Nuclear Power Station
NRC Senior Resident Inspector – Nine Mile Point Nuclear Station
NRC Senior Resident Inspector – R.E. Ginna Nuclear Power Station
NRC Project Manager, NRR – Exelon Fleet
NRC Project Manager, NRR – Calvert Cliffs Nuclear Power Station
NRC Project Manager, NRR – Nine Mile Point Nuclear Station
NRC Project Manager, NRR – R.E. Ginna Nuclear Power Station
S. Gray, State of Maryland
A. L. Peterson, NYSERDA

ATTACHMENT 1

Response to the Request for Additional Information

License Amendment Request to Adopt Emergency Action Level Schemes Pursuant to NEI 99-01, Revision 6, *"Development of Emergency Action Levels for Non-Passive Reactors"*

Response to Request for Additional Information
License Amendment Request to
Adopt Emergency Action Level Schemes Pursuant to NEI 99-01, Revision 6,
"Development of Emergency Action Levels for Non-Passive Reactors"

By letter dated May 31, 2017 (Reference 1), Exelon Generation Company, LLC (Exelon) submitted a License Amendment Request (LAR) to support changes to the Emergency Plans for Calvert Cliffs Nuclear Power Plant (CCNPP), Nine Mile Point Nuclear Station (NMP), and R. E. Ginna Nuclear Power Plant (Ginna). Specifically, the proposed changes involve revising the Emergency Plans for the affected facilities to adopt the Nuclear Energy Institute's (NEI's) revised Emergency Action Level (EAL) schemes described in NEI 99-01, Revision 6, *"Development of Emergency Action Levels for Non-Passive Reactors,"* which have been endorsed by the NRC as documented in an NRC letter dated March 28, 2013 (ML2346A463).

Appendix E, Section IV.B.2, of 10 CFR 50 stipulates that a licensee desiring to change its entire EAL scheme shall submit an application for an amendment to its license and receive NRC approval before implementing the change. The currently approved Emergency Plan EAL schemes for the cited facilities are based on the guidance established in NEI 99-01, Revision 5, *"Methodology for Development of Emergency Action Levels."* Exelon is proposing to adopt the EAL schemes based on the latest NRC-endorsed guidance, as incorporated in NEI 99-01, Revision 6.

In a letter dated January 31, 2018 (Reference 4), Exelon responded to a U.S. Nuclear Regulatory Commission (NRC) Request for Additional Information (RAI) issued via electronic mail (Reference 3). Prior to the issuance of the Reference 3 RAI, the NRC issued a draft RAI (Reference 2), which was the subject of further discussions during a December 6, 2017, teleconference between Exelon and NRC representatives.

In an electronic mail message dated April 6, 2018 (Reference 5), the NRC issued a draft RAI indicating that it had reviewed the information submitted in the Reference 4 letter and noted that additional clarifying information is needed to support its continued review. The details of this draft RAI were further discussed during an April 10, 2018, teleconference between Exelon and NRC representatives. Subsequently, in an electronic mail message dated April 12, 2018 (Reference 6), the NRC formally issued its RAI and requested a response within 30 days of the date of the request.

The questions in the Reference 6 electronic mail message are identified below followed by Exelon's response. The numbering sequence for the questions is continued from the Reference 3 RAI.

Response to NRC Questions

RAI-28 (NMP-1)

In the January 31, 2018, letter Exelon provided a revised fission product barrier threshold CT5 for the drywell radiation monitor reading in NMP-1. The proposed potential loss threshold is "Drywell radiation reading > 1.1 E+04 R/hr (1100 R/hr)." [1] The two numerical expressions are not equivalent. Provide the correct value for the NMP-1 CT5 threshold.

[1] *The units are roentgen per hour (R/hr).*

Response

The parenthetical value (i.e., 1100 R/hr) as noted in the question above has been revised to 11,000 R/hr and the two numerical expressions are now equivalent. The proposed potential loss threshold now reads:

Drywell radiation reading > 1.1 E+04 R/hr (11,000 R/hr)

Attachment 2, Enclosure 2 includes the updated information for EAL CT5 that reflects the change for NMP, Unit 1.

RAI-29 (CCNPP, Ginna, NMP-1, and NMP-2)

For each facility, Exelon's proposed EALs MA5 and CA2 establish the alert threshold for a hazardous event affecting safety systems needed for the current operating mode. In its January 31, 2018, response to RAI-27, the licensee stated it revised EALs MA5 and CA2 for each facility based on the NRC staff's response to emergency plan frequently asked question (EPFAQ) 2016-002 (ADAMS Accession No. ML17195A299). For example, Exelon EAL MA5 is based on EPFAQ 2016-02 EAL SA9. The licensee states: "The wording has been modified from the NRC recommended language contained in EPFAQ 2016-002 to better clarify the intent of EPFAQ 2016-002, and these would be considered as deviations from NEI 99-01, Revision 6 as discussed in EPFAQ 2016-002."

EPFAQ 2016-02 EALs SA9 and CA6

EPFAQ 2016-02 EAL SA9 and CA6 have similar wording, but apply to different operating modes. SA9 states, in part:

Notes:

- *If the affected SAFETY SYSTEM train was already inoperable or out of service before the hazardous event occurred, then this emergency classification is not warranted.*
- *If the hazardous event only resulted in VISIBLE DAMAGE, with no indications of degraded performance to at least one train of a SAFETY SYSTEM, then this emergency classification is not warranted.*

(1) a. The occurrence of ANY of the following hazardous events:
[bulleted list of hazardous events]

AND

b. 1. Event damage has caused indications of degraded performance on one train of a SAFETY SYSTEM needed for the current operating mode.

AND

2. EITHER of the following:
- *Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM needed for the current operating mode, or*
- *Event damage has resulted in VISIBLE DAMAGE to the second train of a SAFETY SYSTEM needed for the current operating mode.*

<u>Exelon Proposed EALs MA5 and CA2</u>

Exelon's proposed EALs MA5 and CA2 have similar wording, but apply to different operating modes. Exelon proposed EAL MA5 states, in part (emphasis added):

Notes:
- *If the only affected SAFETY SYSTEM train was already inoperable or out of service before the hazardous event occurred, then this emergency classification is not warranted.*
- *For SAFETY SYSTEMS with multiple trains **if the hazardous event only resulted in VISIBLE DAMAGE or degraded performance to the one train**, then this emergency classification is not warranted.*
- *If it is determined that the conditions of MA5 are not met then assess the event via HU3, HU4, or HU6.*

1. The occurrence of ANY of the following hazardous events:
[bulleted list of hazardous events]

AND

*2. a. Event damage has caused indications of degraded performance **or VISIBLE DAMAGE** to one train of a SAFETY SYSTEM **required by Technical Specifications** for the current operating mode.*

AND

b. ANY of the following for SAFETY SYSTEMS with multiple trains:

- *Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM* ***required by Technical Specifications*** *for the current operating mode.*
  OR
- *Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM* ***required by Technical Specifications*** *for the current operating mode.*
  OR
- ***An additional train of the SAFETY SYSTEM is inoperable or out of service.***

Discussion

Rather than clarify the intent of EPFAQ 2016-002, Exelon EALs MA5 and CA2 appear to be inconsistent with EPFAQ 2016-002. The text in bold above for Exelon EAL MA5 is significantly different than EPFAQ 2016-002 EAL SA9. This also appears to be the case for Exelon EAL CA2. The EPFAQ EALs result in an alert only when event damage has caused: (1) indications of degraded performance in one train needed for the current operating mode and (2) indications of degraded performance or visible damage to a second train needed for the current operating mode. Exelon's proposed EALs MA5 and CA2 appear to require an alert for other conditions.

EXAMPLE 1: A hazardous event causes only visible damage to two trains of a safety system needed for the current mode of operation. The EPFAQ EAL would not require an event declaration but Exelon's EAL MA5 or CA2 would result in an alert declaration.

EXAMPLE 2: A hazardous event caused indications of degraded performance in only one train while a second train was out of service. The EPFAQ EAL would not require an event declaration. The second note for Exelon EAL MA5 or CA2 suggests no event declaration is needed. However, the logic for Exelon's EALs (criteria 2.a and 3rd bullet of Item 2.b) suggests an alert should be declared.

Request

For Exelon EALs MA5 and CA2, provide justification to support the deviation from the guidance in NEI 99-01, Revision 6. Describe the difference between "SAFETY SYSTEM required by Technical Specifications for the current operating mode" and "SAFETY SYSTEM needed for the current operating mode." Explain how emergency directors will be able to accurately and consistently apply EALs MA5 and CA2.

Response

EALs MA5 and CA2 have been revised as described below to clarify their applicability to SAFETY SYSTEMS with two (2) or more trains, where at least one train exhibits degraded performance and the other train has either visible damage or degraded performance. The following terminology changes were made to be consistent with terminology used by Operators and to minimize confusion. The word "needed" was changed to "required" in the Initiating

Condition (IC) and to "required by Technical Specification" in the EAL, and the reference to the phrase "out of service" was removed. The changes are consistent with the NRC-endorsed NEI 99-01, Revision 6, guidance as clarified by the NRC's response described in Emergency Preparedness Program Frequently Asked Question (EPFAQ) 2016-002 and further discussed during an April 10, 2018, teleconference between Exelon and NRC representatives. Therefore, there should be no longer any potential ambiguity in applying these EALs.

Revised Wording for EALs MA5 and CA2

Note:

- This EAL is only applicable to SAFETY SYSTEMs having two (2) or more trains.
- If the affected SAFETY SYSTEM train was already inoperable before the hazardous event occurred, then this emergency classification is not warranted.
- If the hazardous event only resulted in VISIBLE DAMAGE, with no indications of degraded performance to at least one train of a SAFETY SYSTEM, then this emergency classification is not warranted.
- If a hazardous event occurs and it is determined that the conditions of MA5 [CA2] are not met, then assess the event via HU3, HU4, or HU6.

1. a. The occurrence of **ANY** of the following hazardous events:
    - Seismic event (earthquake)
    - Internal or external flooding event
    - High winds or tornado strike
    - FIRE
    - EXPLOSION
    - Other events with similar hazard characteristics as determined by the Shift Manager

    AND

    b. Event damage has caused indications of degraded performance to one train of a SAFETY SYSTEM required by Technical Specifications for the current operating mode.

    AND

    c. **EITHER** of the following:
    - Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.

    OR

- Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.

Attachment 2 contains enclosures (Enclosures 1 through 3) that include the updated information reflecting the changes for EALs MA5 and CA2 for CCNPP, NMP, and Ginna.

References

1. Letter from David T. Gudger (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission) - License Amendment Request to Adopt Emergency Action Level Schemes Pursuant to NEI 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors," dated May 31, 2017 (ML17164A149)

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ATTACHMENT 2

REVISED EAL BASIS AND COMPARISON MATRIX INFORMATION

Enclosure 1 - Calvert Cliffs Revised EAL Basis and Comparison Matrix Information
Enclosure 2 - Nine Mile Point Revised EAL Basis and Comparison Matrix Information
Enclosure 3 - R.E. Ginna Revised EAL Basis and Comparison Matrix Information

ENCLOSURE 1

REVISED RADIOLOGICAL EMERGENCY PLAN ANNEX INFORMATION

FOR

CALVERT CLIFFS NUCLEAR POWER STATION

EP-AA-1011

2A – Revised EAL Comparison Matrix Document Pages
2C – Revised EAL Basis Document Pages

Calvert Cliffs

2A - Revised EAL Comparison Matrix Document Pages

NEI 99-01 Rev 6	Proposed EAL	Justification
SA9 **Initiating Condition: ALERT** **Hazardous event affecting a SAFETY SYSTEM needed for the current operating mode.** **Operating Mode Applicability:** **Power Operation, Startup, Hot Standby, Hot Shutdown** **Example Emergency Action Levels:** **1. a. The occurrence of ANY of the following hazardous events:** • **Seismic event (earthquake)** • **Internal or external flooding event** • **High winds or tornado strike** • **FIRE** • **EXPLOSION** • **(site-specific hazards)** • **Other events with similar hazard characteristics as determined by the Shift Manager** **AND** **b. EITHER of the following:** **1. Event damage has caused indications of degraded performance in at least one train of a SAFETY SYSTEM needed for the current operating mode.** **OR** **2. The event has caused VISIBLE DAMAGE to a SAFETY SYSTEM component or structure needed for the current operating mode.**	**MA5** **Initiating Condition: ALERT** Hazardous event affecting a SAFETY SYSTEM required for the current operating mode. **Operating Mode Applicability**: 1, 2, 3, 4 **Emergency Action Level (EAL):** **Note:** • This EAL is only applicable to SAFETY SYSTEMs having two (2) or more trains. • If the affected SAFETY SYSTEM train was already inoperable before the hazardous event occurred, then this emergency classification is not warranted. • If the hazardous event only resulted in VISIBLE DAMAGE, with no indications of degraded performance to at least one train of a SAFETY SYSTEM, then this emergency classification is not warranted. • If a hazardous event occurs and it is determined that the conditions of MA5 are not met then assess the event via HU3, HU4, or HU6. 1. a. The occurrence of **ANY** of the following hazardous events: • Seismic event (earthquake) • Internal or external flooding event • High winds or tornado strike • FIRE • EXPLOSION • Other events with similar hazard characteristics as determined by the Shift Manager **AND** b. Event damage has caused indications of degraded performance to one train of a SAFETY SYSTEM required by Technical Specifications for the current operating mode. **AND** c. **EITHER** of the following: • Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode. **OR** • Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.	☐ No Change ☐ Difference ☒ Deviation 1) No additional site specific hazard noted 2) Changed the word "needed" to "required" in the IC and to "required by Technical Specification" in the EAL to be consistent with terminology used by operators and minimize confusion, and removed reference to “out of service” to minimize confusion with SAFETY SYSTEMs that are in standby but not running to be consistent with terminology used by operators and minimize confusion. 3) Added note to easily direct the operator to potential lesser ICs. 4) Revised to reflect applicability to SAFETY SYSTEMs having two (2) or more trains, where at least one train displays degraded performance and other train has either visible damage or degraded performance.

NEI 99-01 Rev 6	Proposed EAL	Justification
CA6 **Initiating Condition – ALERT** Hazardous event affecting SAFETY SYSTEM needed for the current operating mode. **Operating Mode Applicability**: Cold Shutdown, Refueling **Example Emergency Action Levels**: 1. a. The occurrence of **ANY** of the following hazardous events: ● Seismic event (earthquake) ● Internal or external flooding event ● High winds or tornado strike ● FIRE ● EXPLOSION ● (site-specific hazards) ● Other events with similar hazard characteristics as determined by the Shift Manager **AND** b. **EITHER** of the following: 1. Event damage has caused indications of degraded performance in at least one train of a SAFETY SYSTEM needed for the current operating mode. **OR** 2. The event has caused VISIBLE DAMAGE to a SAFETY SYSTEM component or structure needed for the current operating mode.	**CA2** **Initiating Condition:** Hazardous event affecting SAFETY SYSTEM required for the current operating mode. **Operating Mode Applicability:** 5, 6 **Emergency Action Level (EAL):** **Note:** • This EAL is only applicable to SAFETY SYSTEMs having two (2) or more trains. • If the affected SAFETY SYSTEM train was already inoperable before the hazardous event occurred, then this emergency classification is not warranted. • If the hazardous event only resulted in VISIBLE DAMAGE, with no indications of degraded performance to at least one train of a SAFETY SYSTEM, then this emergency classification is not warranted. • If a hazardous event occurs and it is determined that the conditions of CA2 are not met then assess the event via HU3, HU4, or HU6. 1. a. The occurrence of **ANY** of the following hazardous events: • Seismic event (earthquake) • Internal or external flooding event • High winds or tornado strike • FIRE • EXPLOSION • Other events with similar hazard characteristics as determined by the Shift Manager **AND** b. Event damage has caused indications of degraded performance to one train of a SAFETY SYSTEM required by Technical Specifications for the current operating mode. **AND** c. **EITHER** of the following: • Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode. **OR** • Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.	[ ] No Change [ ] Difference [X] Deviation 1) No additional site specific hazards noted 2) Changed the word "needed" to "required" in the IC and "required by Technical Specification" in the EAL to be consistent with terminology used by operators and minimize confusion, and removed reference to “out of service” to minimize confusion with SAFETY SYSTEMs that are in standby but not running to be consistent with terminology used by operators and minimize confusion. 3) Added note to easily direct the operator to potential lesser ICs. 4) Revised to reflect applicability to SAFETY SYSTEMs having two (2) or more trains, where at least one train displays degraded performance and other train has either visible damage or degraded performance.

Calvert Cliffs

2C - Revised EAL Basis Document Pages

RECOGNITION CATEGORY
SYSTEM MALFUNCTIONS

MA5

Initiating Condition:

Hazardous event affecting a SAFETY SYSTEM required for the current operating mode.

Operating Mode Applicability:

1, 2, 3, 4

Emergency Action Level (EAL):

Note:

- This EAL is only applicable to SAFETY SYSTEMs having two (2) or more trains.
- If the affected SAFETY SYSTEM train was already inoperable before the hazardous event occurred, then this emergency classification is not warranted.
- If the hazardous event only resulted in VISIBLE DAMAGE, with no indications of degraded performance to at least one train of a SAFETY SYSTEM, then this emergency classification is not warranted.
- If a hazardous event occurs and it is determined that the conditions of MA5 are not met then assess the event via HU3, HU4, or HU6.

1. a. The occurrence of **ANY** of the following hazardous events:
    - Seismic event (earthquake)
    - Internal or external flooding event
    - High winds or tornado strike
    - FIRE
    - EXPLOSION
    - Other events with similar hazard characteristics as determined by the Shift Manager

   AND

   b. Event damage has caused indications of degraded performance to one train of a SAFETY SYSTEM required by Technical Specifications for the current operating mode.

   AND

   c. **EITHER** of the following:
    - Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.

      OR

    - Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.

RECOGNITION CATEGORY
SYSTEM MALFUNCTIONS

MA5 (cont)

Basis:

FIRE: Combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute FIRES. Observation of flame is preferred but is NOT required if large quantities of smoke and heat are observed.

EXPLOSION: A rapid, violent and catastrophic failure of a piece of equipment due to combustion, chemical reaction or overpressurization. A release of steam (from high energy lines or components) or an electrical component failure (caused by short circuits, grounding, arcing, etc.) should not automatically be considered an explosion. Such events may require a post-event inspection to determine if the attributes of an explosion are present.

SAFETY SYSTEM: A system required for safe plant operation, cooling down the plant and/or placing it in the cold shutdown condition, including the ECCS. These are typically systems classified as safety-related.

VISIBLE DAMAGE: Damage to a SAFETY SYSTEM train that is readily observable without measurements, testing, or analysis. The visual impact of the damage is sufficient to cause concern regarding the operability or reliability of the affected SAFETY SYSTEM train.

This IC addresses a hazardous event that causes damage to SAFETY SYSTEMS required for the current operating mode, "required", i.e. required to be operable by Technical Specifications for the current operating mode. In order to provide the appropriate context for consideration of an Alert classification, the hazardous event must have caused indications of degraded SAFETY SYSTEM performance in one train, and there must be either indications of performance issues with the second SAFETY SYSTEM train or VISIBLE DAMAGE to the second train such that the potential exists for this second SAFETY SYSTEM train to have performance issues. In other words, in order for this EAL to be classified, the hazardous event must occur, at least one SAFETY SYSTEM train must have indications of degraded performance, and the second SAFETY SYSTEM train must have indications of degraded performance or VISIBLE DAMAGE such that the potential exists for performance issues. Note that this second SAFETY SYSTEM train is from the same SAFETY SYSTEM that has degraded performance for criteria 1.b of this EAL; commercial nuclear power plants are designed to be able to support single system issues without compromising public health and safety from radiological events.

Indications of degraded performance address damage to a SAFETY SYSTEM train that is in operation since indications for it will be readily available. The indications of degraded performance should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.

Operators will make a determination of VISIBLE DAMAGE based on the totality of available event and damage report information. This is intended to be a brief assessment not requiring lengthy analysis or quantification of the damage. This VISIBLE DAMAGE should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.

RECOGNITION CATEGORY
SYSTEM MALFUNCTIONS

MA5 (cont)

Basis (cont):

Escalation of the emergency classification level would be via IC FS1 or RS1.

If a hazardous event occurs and the EAL conditions of MA5 are not met then assess the event via HU3, HU4, or HU6.

Basis Reference(s):

1. NEI 99-01, Rev 6 SA9

RECOGNITION CATEGORY
COLD SHUTDOWN / REFUELING SYSTEM MALFUNCTIONS

CA2

Initiating Condition:

Hazardous event affecting SAFETY SYSTEM required for the current operating mode.

Operating Mode Applicability:

5, 6

Emergency Action Level (EAL):

Note:

- This EAL is only applicable to SAFETY SYSTEMs having two (2) or more trains.
- If the affected SAFETY SYSTEM train was already inoperable before the hazardous event occurred, then this emergency classification is not warranted.
- If the hazardous event only resulted in VISIBLE DAMAGE, with no indications of degraded performance to at least one train of a SAFETY SYSTEM, then this emergency classification is not warranted.
- If a hazardous event occurs and it is determined that the conditions of CA2 are not met then assess the event via HU3, HU4, or HU6.

1. a. The occurrence of **ANY** of the following hazardous events:
    - Seismic event (earthquake)
    - Internal or external flooding event
    - High winds or tornado strike
    - FIRE
    - EXPLOSION
    - Other events with similar hazard characteristics as determined by the Shift Manager

    AND

    b. Event damage has caused indications of degraded performance to one train of a SAFETY SYSTEM required by Technical Specifications for the current operating mode.

    AND

    c. **EITHER** of the following:

    - Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.

      OR
    - Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.

RECOGNITION CATEGORY
COLD SHUTDOWN / REFUELING SYSTEM MALFUNCTIONS

CA2 (cont)

Basis:

FIRE: Combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute FIRES. Observation of flame is preferred but is NOT required if large quantities of smoke and heat are observed.

EXPLOSION: A rapid, violent and catastrophic failure of a piece of equipment due to combustion, chemical reaction or overpressurization. A release of steam (from high energy lines or components) or an electrical component failure (caused by short circuits, grounding, arcing, etc.) should not automatically be considered an explosion. Such events may require a post-event inspection to determine if the attributes of an explosion are present.

SAFETY SYSTEM: A system required for safe plant operation, cooling down the plant and/or placing it in the cold shutdown condition, including the ECCS. These are typically systems classified as safety-related.

VISIBLE DAMAGE: Damage to a SAFETY SYSTEM train that is readily observable without measurements, testing, or analysis. The visual impact of the damage is sufficient to cause concern regarding the operability or reliability of the affected SAFETY SYSTEM train.

This IC addresses a hazardous event that causes damage to SAFETY SYSTEMS required for the current operating mode, "required", i.e. required to be operable by Technical Specifications for the current operating mode. In order to provide the appropriate context for consideration of an Alert classification, the hazardous event must have caused indications of degraded SAFETY SYSTEM performance in one train, and there must be either indications of performance issues with the second SAFETY SYSTEM train or VISIBLE DAMAGE to the second train such that the potential exists for this second SAFETY SYSTEM train to have performance issues. In other words, in order for this EAL to be classified, the hazardous event must occur, at least one SAFETY SYSTEM train must have indications of degraded performance, and the second SAFETY SYSTEM train must have indications of degraded performance or VISIBLE DAMAGE such that the potential exists for performance issues. Note that this second SAFETY SYSTEM train is from the same SAFETY SYSTEM that has degraded performance for criteria 1.b of this EAL; commercial nuclear power plants are designed to be able to support single system issues without compromising public health and safety from radiological events.

Indications of degraded performance address damage to a SAFETY SYSTEM train that is in operation since indications for it will be readily available. The indications of degraded performance should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.

Operators will make a determination of VISIBLE DAMAGE based on the totality of available event and damage report information. This is intended to be a brief assessment not requiring lengthy analysis or quantification of the damage. This

RECOGNITION CATEGORY
COLD SHUTDOWN / REFUELING SYSTEM MALFUNCTIONS

CA2 (cont)

Basis (cont):

VISIBLE DAMAGE should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.

Escalation of the emergency classification level would be via IC CS6 or RS1.

If the EAL conditions of CA2 are not met then assess the event via HU3, HU4, or HU6.

Basis Reference(s):

1. NEI 99-01 Rev 6, CA6

ENCLOSURE 2

REVISED RADIOLOGICAL EMERGENCY PLAN ANNEX INFORMATION

FOR

NINE MILE POINT NUCLEAR STATION

EP-AA-1013

Unit 1

4A – Revised EAL Comparison Matrix Document Pages
4C – Revised EAL Basis Document Pages

Unit 2

5A – Revised EAL Comparison Matrix Document Pages
5C – Revised EAL Basis Document Pages

Nine Mile Point
Unit 1

4A – Revised EAL Comparison Matrix Document Pages

NEI 99-01 Rev 6	Proposed EAL	Justification
CT4 **Category: Containment Barrier** Primary Containment Radiation **Operating Mode Applicability:** Power Operation, Startup, Hot Standby, Hot Shutdown **Fission Product Barrier Threshold:** Potential Loss A. Primary Containment Radiation Monitor reading greater than (site-specific value).	**CT5** **Category: Containment Barrier** Primary Containment Radiation **Operating Mode Applicability:** 1, 2 **Fission Product Barrier (FPB) Threshold:** <u>Potential Loss</u> Drywell radiation reading **> 1.1 E+04 R/hr (11,000 R/hr).**	[X] No Change [ ] Difference [ ] Deviation 1) Listed site-specific monitor and threshold value to ensure timely classification.

NEI 99-01 Rev 6	Proposed EAL	Justification
SA9 **Initiating Condition: ALERT** **Hazardous event affecting a SAFETY SYSTEM needed for the current operating mode.** **Operating Mode Applicability:** **Power Operation, Startup, Hot Standby, Hot Shutdown** **Example Emergency Action Levels:** **1. a. The occurrence of ANY of the following hazardous events:** • **Seismic event (earthquake)** • **Internal or external flooding event** • **High winds or tornado strike** • **FIRE** • **EXPLOSION** • **(site-specific hazards)** • **Other events with similar hazard characteristics as determined by the Shift Manager** **AND** **b. EITHER of the following:** **1. Event damage has caused indications of degraded performance in at least one train of a SAFETY SYSTEM needed for the current operating mode.** **OR** **2. The event has caused VISIBLE DAMAGE to a SAFETY SYSTEM component or structure needed for the current operating mode.**	**MA5** **Initiating Condition: ALERT** Hazardous event affecting a SAFETY SYSTEM required for the current operating mode. **Operating Mode Applicability**: 1, 2, 3, 4 **Emergency Action Level (EAL):** **Note:** • This EAL is only applicable to SAFETY SYSTEMs having two (2) or more trains. • If the affected SAFETY SYSTEM train was already inoperable before the hazardous event occurred, then this emergency classification is not warranted. • If the hazardous event only resulted in VISIBLE DAMAGE, with no indications of degraded performance to at least one train of a SAFETY SYSTEM, then this emergency classification is not warranted. • If a hazardous event occurs and it is determined that the conditions of MA5 are not met then assess the event via HU3, HU4, or HU6. 1. a. The occurrence of **ANY** of the following hazardous events: • Seismic event (earthquake) • Internal or external flooding event • High winds or tornado strike • FIRE • EXPLOSION • Other events with similar hazard characteristics as determined by the Shift Manager **AND** b. Event damage has caused indications of degraded performance to one train of a SAFETY SYSTEM required by Technical Specifications for the current operating mode. **AND** c. **EITHER** of the following: • Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode. **OR** • Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.	☐ No Change ☐ Difference ☒ Deviation 1) No additional site specific hazard noted 2) Changed the word "needed" to "required" in the IC and to "required by Technical Specification" in the EAL, to be consistent with terminology used by operators and minimize confusion, and removed reference to “out of service” to minimize confusion with SAFETY SYSTEMs that are in standby but not running to be consistent with terminology used by operators and minimize confusion. 3) Added note to easily direct the operator to potential lesser ICs. 4) Revised to reflect applicability to SAFETY SYSTEMs having two (2) or more trains, where at least one train displays degraded performance and other train has either visible damage or degraded performance.

NEI 99-01 Rev 6	Proposed EAL	Justification
CA6 **Initiating Condition – ALERT** Hazardous event affecting SAFETY SYSTEM needed for the current operating mode. **Operating Mode Applicability**: Cold Shutdown, Refueling **Example Emergency Action Levels**: 1. a. The occurrence of **ANY** of the following hazardous events: ● Seismic event (earthquake) ● Internal or external flooding event ● High winds or tornado strike ● FIRE ● EXPLOSION ● (site-specific hazards) ● Other events with similar hazard characteristics as determined by the Shift Manager **AND** b. **EITHER** of the following: 1. Event damage has caused indications of degraded performance in at least one train of a SAFETY SYSTEM needed for the current operating mode. **OR** 2. The event has caused VISIBLE DAMAGE to a SAFETY SYSTEM component or structure needed for the current operating mode.	**CA2** **Initiating Condition:** Hazardous event affecting SAFETY SYSTEM required for the current operating mode. **Operating Mode Applicability:** 5, 6 **Emergency Action Level (EAL):** **Note:** • This EAL is only applicable to SAFETY SYSTEMs having two (2) or more trains. • If the affected SAFETY SYSTEM train was already inoperable before the hazardous event occurred, then this emergency classification is not warranted. • If the hazardous event only resulted in VISIBLE DAMAGE, with no indications of degraded performance to at least one train of a SAFETY SYSTEM, then this emergency classification is not warranted. • If a hazardous event occurs and it is determined that the conditions of CA2 are not met then assess the event via HU3, HU4, or HU6. 1. a. The occurrence of **ANY** of the following hazardous events: • Seismic event (earthquake) • Internal or external flooding event • High winds or tornado strike • FIRE • EXPLOSION • Other events with similar hazard characteristics as determined by the Shift Manager **AND** b. Event damage has caused indications of degraded performance to one train of a SAFETY SYSTEM required by Technical Specifications for the current operating mode. **AND** c. **EITHER** of the following: • Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode. **OR** • Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.	[ ] No Change [ ] Difference [X] Deviation 1) No additional site specific hazards noted 2) Changed the word "needed" to "required" in the IC and "required by Technical Specification" in the EAL to be consistent with terminology used by operators and minimize confusion, and removed reference to “out of service” to minimize confusion with SAFETY SYSTEMs that are in standby but not running to be consistent with terminology used by operators and minimize confusion. 3) Added note to easily direct the operator to potential lesser ICs. 4) Revised to reflect applicability to SAFETY SYSTEMs having two (2) or more trains, where at least one train displays degraded performance and other train has either visible damage or degraded performance.

Nine Mile Point
Unit 1

4C – Revised EAL Basis Document Pages

RECOGNITION CATEGORY
FISSION PRODUCT BARRIER DEGRADATION

CT5

Initiating Condition:

Primary Containment Radiation

Operating Mode Applicability:

1, 2

Fission Product Barrier (FPB) Threshold:

POTENTIAL LOSS

Drywell radiation reading **> 1.1 E+04 R/hr (11,000 R/hr).**

Basis:

There is no Loss threshold associated with Primary Containment Radiation.

The radiation monitor reading corresponds to an instantaneous release of all reactor coolant mass into the primary containment, assuming that 20% of the fuel cladding has failed. This level of fuel clad failure is well above that used to determine the analogous Fuel Clad Barrier Loss and RCS Barrier Loss thresholds.

NUREG-1228, *Source Estimations During Incident Response to Severe Nuclear Power Plant Accidents*, indicates the fuel clad failure must be greater than approximately 20% in order for there to be a major release of radioactivity requiring offsite protective actions. For this condition to exist there must already have been a loss of the RCS Barrier and the Fuel Clad Barrier. It is therefore prudent to treat this condition as a potential loss of containment which would then escalate the emergency classification level to a General Emergency.

Basis Reference(s):

1. EP-EAL-0713, Criteria for Choosing Containment Radiation Values Indicating a Loss of Fuel Clad and a Potential Loss of Containment for Nine Mile Point Station Unit 1
2. NEI 99-01 Rev 6, Table 9-F-2

RECOGNITION CATEGORY
SYSTEM MALFUNCTIONS

MA5

Initiating Condition:

Hazardous event affecting a SAFETY SYSTEM required for the current operating mode.

Operating Mode Applicability:

1, 2, 3, 4

Emergency Action Level (EAL):

Note:

- This EAL is only applicable to SAFETY SYSTEMs having two (2) or more trains.
- If the affected SAFETY SYSTEM train was already inoperable before the hazardous event occurred, then this emergency classification is not warranted.
- If the hazardous event only resulted in VISIBLE DAMAGE, with no indications of degraded performance to at least one train of a SAFETY SYSTEM, then this emergency classification is not warranted.
- If a hazardous event occurs and it is determined that the conditions of MA5 are not met then assess the event via HU3, HU4, or HU6.

1. a. The occurrence of **ANY** of the following hazardous events:
    - Seismic event (earthquake)
    - Internal or external flooding event
    - High winds or tornado strike
    - FIRE
    - EXPLOSION
    - Other events with similar hazard characteristics as determined by the Shift Manager

   AND

   b. Event damage has caused indications of degraded performance to one train of a SAFETY SYSTEM required by Technical Specifications for the current operating mode.

   AND

   c. **EITHER** of the following:
    - Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.

      OR

    - Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.

RECOGNITION CATEGORY
SYSTEM MALFUNCTIONS

MA5 (cont)

Basis:

FIRE: Combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute FIRES. Observation of flame is preferred but is NOT required if large quantities of smoke and heat are observed.

EXPLOSION: A rapid, violent and catastrophic failure of a piece of equipment due to combustion, chemical reaction or overpressurization. A release of steam (from high energy lines or components) or an electrical component failure (caused by short circuits, grounding, arcing, etc.) should not automatically be considered an explosion. Such events may require a post-event inspection to determine if the attributes of an explosion are present.

SAFETY SYSTEM: A system required for safe plant operation, cooling down the plant and/or placing it in the cold shutdown condition, including the ECCS. These are typically systems classified as safety-related.

VISIBLE DAMAGE: Damage to a SAFETY SYSTEM train that is readily observable without measurements, testing, or analysis. The visual impact of the damage is sufficient to cause concern regarding the operability or reliability of the affected SAFETY SYSTEM train.

This IC addresses a hazardous event that causes damage to SAFETY SYSTEMS required for the current operating mode, "required", i.e. required to be operable by Technical Specifications for the current operating mode. In order to provide the appropriate context for consideration of an Alert classification, the hazardous event must have caused indications of degraded SAFETY SYSTEM performance in one train, and there must be either indications of performance issues with the second SAFETY SYSTEM train or VISIBLE DAMAGE to the second train such that the potential exists for this second SAFETY SYSTEM train to have performance issues. In other words, in order for this EAL to be classified, the hazardous event must occur, at least one SAFETY SYSTEM train must have indications of degraded performance, and the second SAFETY SYSTEM train must have indications of degraded performance or VISIBLE DAMAGE such that the potential exists for performance issues. Note that this second SAFETY SYSTEM train is from the same SAFETY SYSTEM that has degraded performance for criteria 1.b of this EAL; commercial nuclear power plants are designed to be able to support single system issues without compromising public health and safety from radiological events.

Indications of degraded performance address damage to a SAFETY SYSTEM train that is in operation since indications for it will be readily available. The indications of degraded performance should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.

Operators will make a determination of VISIBLE DAMAGE based on the totality of available event and damage report information. This is intended to be a brief assessment not requiring lengthy analysis or quantification of the damage. This VISIBLE DAMAGE should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.

RECOGNITION CATEGORY
SYSTEM MALFUNCTIONS

MA5 (cont)

Basis (cont):

Escalation of the emergency classification level would be via IC FS1 or RS1.

If a hazardous event occurs and the EAL conditions of MA5 are not met then assess the event via HU3, HU4, or HU6.

Basis Reference(s):

1. NEI 99-01, Rev 6 SA9

RECOGNITION CATEGORY
COLD SHUTDOWN / REFUELING SYSTEM MALFUNCTIONS

CA2

Initiating Condition:

Hazardous event affecting SAFETY SYSTEM required for the current operating mode.

Operating Mode Applicability:

5, 6

Emergency Action Level (EAL):

Note:

- This EAL is only applicable to SAFETY SYSTEMs having two (2) or more trains.
- If the affected SAFETY SYSTEM train was already inoperable before the hazardous event occurred, then this emergency classification is not warranted.
- If the hazardous event only resulted in VISIBLE DAMAGE, with no indications of degraded performance to at least one train of a SAFETY SYSTEM, then this emergency classification is not warranted.
- If a hazardous event occurs and it is determined that the conditions of CA2 are not met then assess the event via HU3, HU4, or HU6.

1. a. The occurrence of **ANY** of the following hazardous events:
    - Seismic event (earthquake)
    - Internal or external flooding event
    - High winds or tornado strike
    - FIRE
    - EXPLOSION
    - Other events with similar hazard characteristics as determined by the Shift Manager

    AND

    b. Event damage has caused indications of degraded performance to one train of a SAFETY SYSTEM required by Technical Specifications for the current operating mode.

    AND

    c. **EITHER** of the following:

    - Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.

      OR
    - Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.

RECOGNITION CATEGORY
COLD SHUTDOWN / REFUELING SYSTEM MALFUNCTIONS

CA2 (cont)

Basis:

FIRE: Combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute FIRES. Observation of flame is preferred but is NOT required if large quantities of smoke and heat are observed.

EXPLOSION: A rapid, violent and catastrophic failure of a piece of equipment due to combustion, chemical reaction or overpressurization. A release of steam (from high energy lines or components) or an electrical component failure (caused by short circuits, grounding, arcing, etc.) should not automatically be considered an explosion. Such events may require a post-event inspection to determine if the attributes of an explosion are present.

SAFETY SYSTEM: A system required for safe plant operation, cooling down the plant and/or placing it in the cold shutdown condition, including the ECCS. These are typically systems classified as safety-related.

VISIBLE DAMAGE: Damage to a SAFETY SYSTEM train that is readily observable without measurements, testing, or analysis. The visual impact of the damage is sufficient to cause concern regarding the operability or reliability of the affected SAFETY SYSTEM train.

This IC addresses a hazardous event that causes damage to SAFETY SYSTEMS required for the current operating mode, "required", i.e. required to be operable by Technical Specifications for the current operating mode. In order to provide the appropriate context for consideration of an Alert classification, the hazardous event must have caused indications of degraded SAFETY SYSTEM performance in one train, and there must be either indications of performance issues with the second SAFETY SYSTEM train or VISIBLE DAMAGE to the second train such that the potential exists for this second SAFETY SYSTEM train to have performance issues. In other words, in order for this EAL to be classified, the hazardous event must occur, at least one SAFETY SYSTEM train must have indications of degraded performance, and the second SAFETY SYSTEM train must have indications of degraded performance or VISIBLE DAMAGE such that the potential exists for performance issues. Note that this second SAFETY SYSTEM train is from the same SAFETY SYSTEM that has degraded performance for criteria 1.b of this EAL; commercial nuclear power plants are designed to be able to support single system issues without compromising public health and safety from radiological events.

Indications of degraded performance address damage to a SAFETY SYSTEM train that is in operation since indications for it will be readily available. The indications of degraded performance should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.

Operators will make a determination of VISIBLE DAMAGE based on the totality of available event and damage report information. This is intended to be a brief assessment not requiring lengthy analysis or quantification of the damage. This

RECOGNITION CATEGORY
COLD SHUTDOWN / REFUELING SYSTEM MALFUNCTIONS

CA2 (cont)

Basis (cont):

VISIBLE DAMAGE should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.

Escalation of the emergency classification level would be via IC CS6 or RS1.

If the EAL conditions of CA2 are not met then assess the event via HU3, HU4, or HU6.

Basis Reference(s):

1. NEI 99-01 Rev 6, CA6

Nine Mile Point
Unit 2

5A – Revised EAL Comparison Matrix Document Pages

NEI 99-01 Rev 6	Proposed EAL	Justification
SA9 **Initiating Condition: ALERT** **Hazardous event affecting a SAFETY SYSTEM needed for the current operating mode.** **Operating Mode Applicability:** **Power Operation, Startup, Hot Standby, Hot Shutdown** **Example Emergency Action Levels:** **1. a. The occurrence of ANY of the following hazardous events:** • **Seismic event (earthquake)** • **Internal or external flooding event** • **High winds or tornado strike** • **FIRE** • **EXPLOSION** • **(site-specific hazards)** • **Other events with similar hazard characteristics as determined by the Shift Manager** **AND** **b. EITHER of the following:** **1. Event damage has caused indications of degraded performance in at least one train of a SAFETY SYSTEM needed for the current operating mode.** **OR** **2. The event has caused VISIBLE DAMAGE to a SAFETY SYSTEM component or structure needed for the current operating mode.**	**MA5** **Initiating Condition: ALERT** Hazardous event affecting a SAFETY SYSTEM required for the current operating mode. **Operating Mode Applicability**: 1, 2, 3, 4 **Emergency Action Level (EAL):** **Note:** • This EAL is only applicable to SAFETY SYSTEMs having two (2) or more trains. • If the affected SAFETY SYSTEM train was already inoperable before the hazardous event occurred, then this emergency classification is not warranted. • If the hazardous event only resulted in VISIBLE DAMAGE, with no indications of degraded performance to at least one train of a SAFETY SYSTEM, then this emergency classification is not warranted. • If a hazardous event occurs and it is determined that the conditions of MA5 are not met then assess the event via HU3, HU4, or HU6. 1. a. The occurrence of **ANY** of the following hazardous events: • Seismic event (earthquake) • Internal or external flooding event • High winds or tornado strike • FIRE • EXPLOSION • Other events with similar hazard characteristics as determined by the Shift Manager **AND** b. Event damage has caused indications of degraded performance to one train of a SAFETY SYSTEM required by Technical Specifications for the current operating mode. **AND** c. **EITHER** of the following: • Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode. **OR** • Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.	☐ No Change ☐ Difference ☒ Deviation 1) No additional site specific hazard noted 2) Changed the word "needed" to "required" in the IC and to "required by Technical Specification" in the EAL, to be consistent with terminology used by operators and minimize confusion, and removed reference to “out of service” to minimize confusion with SAFETY SYSTEMs that are in standby but not running to be consistent with terminology used by operators and minimize confusion. 3) Added note to easily direct the operator to potential lesser ICs. 4) Revised to reflect applicability to SAFETY SYSTEMs having two (2) or more trains, where at least one train displays degraded performance and other train has either visible damage or degraded performance.

NEI 99-01 Rev 6	Proposed EAL	Justification
CA6 **Initiating Condition – ALERT** Hazardous event affecting SAFETY SYSTEM needed for the current operating mode. **Operating Mode Applicability**: Cold Shutdown, Refueling **Example Emergency Action Levels**: 1. a. The occurrence of **ANY** of the following hazardous events: ● Seismic event (earthquake) ● Internal or external flooding event ● High winds or tornado strike ● FIRE ● EXPLOSION ● (site-specific hazards) ● Other events with similar hazard characteristics as determined by the Shift Manager **AND** b. **EITHER** of the following: 1. Event damage has caused indications of degraded performance in at least one train of a SAFETY SYSTEM needed for the current operating mode. **OR** 2. The event has caused VISIBLE DAMAGE to a SAFETY SYSTEM component or structure needed for the current operating mode.	**CA2** **Initiating Condition:** Hazardous event affecting SAFETY SYSTEM required for the current operating mode. **Operating Mode Applicability:** 5, 6 **Emergency Action Level (EAL):** **Note:** • This EAL is only applicable to SAFETY SYSTEMs having two (2) or more trains. • If the affected SAFETY SYSTEM train was already inoperable before the hazardous event occurred, then this emergency classification is not warranted. • If the hazardous event only resulted in VISIBLE DAMAGE, with no indications of degraded performance to at least one train of a SAFETY SYSTEM, then this emergency classification is not warranted. • If a hazardous event occurs and it is determined that the conditions of MA5 are not met then assess the event via HU3, HU4, or HU6. 1. a. The occurrence of **ANY** of the following hazardous events: • Seismic event (earthquake) • Internal or external flooding event • High winds or tornado strike • FIRE • EXPLOSION • Other events with similar hazard characteristics as determined by the Shift Manager **AND** b. Event damage has caused indications of degraded performance to one train of a SAFETY SYSTEM required by Technical Specifications for the current operating mode. **AND** c. **EITHER** of the following: • Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode. **OR** • Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.	[ ] No Change [ ] Difference [X] Deviation 1) No additional site specific hazards noted 2) Changed the word "needed" to "required" in the IC and "required by Technical Specification" in the EAL to be consistent with terminology used by operators and minimize confusion, and removed reference to “out of service” to minimize confusion with SAFETY SYSTEMs that are in standby but not running to be consistent with terminology used by operators and minimize confusion. 3) Added note to easily direct the operator to potential lesser ICs. 4) Revised to reflect applicability to SAFETY SYSTEMs having two (2) or more trains, where at least one train displays degraded performance and other train has either visible damage or degraded performance.

Nine Mile Point
Unit 2

5C – Revised EAL Basis Document Pages

RECOGNITION CATEGORY
SYSTEM MALFUNCTIONS

MA5

Initiating Condition:

Hazardous event affecting a SAFETY SYSTEM required for the current operating mode.

Operating Mode Applicability:

1, 2, 3, 4

Emergency Action Level (EAL):

Note:

- This EAL is only applicable to SAFETY SYSTEMs having two (2) or more trains.
- If the affected SAFETY SYSTEM train was already inoperable before the hazardous event occurred, then this emergency classification is not warranted.
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1. a. The occurrence of **ANY** of the following hazardous events:
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    - Other events with similar hazard characteristics as determined by the Shift Manager

    AND

    b. Event damage has caused indications of degraded performance to one train of a SAFETY SYSTEM required by Technical Specifications for the current operating mode.

    AND

    c. **EITHER** of the following:
        - Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.

          OR

        - Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.

RECOGNITION CATEGORY
SYSTEM MALFUNCTIONS

MA5 (cont)

Basis:

FIRE: Combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute FIRES. Observation of flame is preferred but is NOT required if large quantities of smoke and heat are observed.

EXPLOSION: A rapid, violent and catastrophic failure of a piece of equipment due to combustion, chemical reaction or overpressurization. A release of steam (from high energy lines or components) or an electrical component failure (caused by short circuits, grounding, arcing, etc.) should not automatically be considered an explosion. Such events may require a post-event inspection to determine if the attributes of an explosion are present.

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This IC addresses a hazardous event that causes damage to SAFETY SYSTEMS required for the current operating mode, "required", i.e. required to be operable by Technical Specifications for the current operating mode. In order to provide the appropriate context for consideration of an Alert classification, the hazardous event must have caused indications of degraded SAFETY SYSTEM performance in one train, and there must be either indications of performance issues with the second SAFETY SYSTEM train or VISIBLE DAMAGE to the second train such that the potential exists for this second SAFETY SYSTEM train to have performance issues. In other words, in order for this EAL to be classified, the hazardous event must occur, at least one SAFETY SYSTEM train must have indications of degraded performance, and the second SAFETY SYSTEM train must have indications of degraded performance or VISIBLE DAMAGE such that the potential exists for performance issues. Note that this second SAFETY SYSTEM train is from the same SAFETY SYSTEM that has degraded performance for criteria 1.b of this EAL; commercial nuclear power plants are designed to be able to support single system issues without compromising public health and safety from radiological events.

Indications of degraded performance address damage to a SAFETY SYSTEM train that is in operation since indications for it will be readily available. The indications of degraded performance should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.

Operators will make a determination of VISIBLE DAMAGE based on the totality of available event and damage report information. This is intended to be a brief assessment not requiring lengthy analysis or quantification of the damage. This VISIBLE DAMAGE should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.

RECOGNITION CATEGORY
SYSTEM MALFUNCTIONS

MA5 (cont)

Basis (cont):

Escalation of the emergency classification level would be via IC FS1 or RS1.

If a hazardous event occurs and the EAL conditions of MA5 are not met then assess the event via HU3, HU4, or HU6.

Basis Reference(s):

1. NEI 99-01, Rev 6 SA9

RECOGNITION CATEGORY
COLD SHUTDOWN / REFUELING SYSTEM MALFUNCTIONS

CA2

Initiating Condition:

Hazardous event affecting SAFETY SYSTEM required for the current operating mode.

Operating Mode Applicability:

5, 6

Emergency Action Level (EAL):

Note:

- This EAL is only applicable to SAFETY SYSTEMs having two (2) or more trains.
- If the affected SAFETY SYSTEM train was already inoperable before the hazardous event occurred, then this emergency classification is not warranted.
- If the hazardous event only resulted in VISIBLE DAMAGE, with no indications of degraded performance to at least one train of a SAFETY SYSTEM, then this emergency classification is not warranted.
- If a hazardous event occurs and it is determined that the conditions of CA2 are not met then assess the event via HU3, HU4, or HU6.

1. a. The occurrence of **ANY** of the following hazardous events:
    - Seismic event (earthquake)
    - Internal or external flooding event
    - High winds or tornado strike
    - FIRE
    - EXPLOSION
    - Other events with similar hazard characteristics as determined by the Shift Manager

    AND

    b. Event damage has caused indications of degraded performance to one train of a SAFETY SYSTEM required by Technical Specifications for the current operating mode.

    AND

    c. **EITHER** of the following:

    - Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.

      OR
    - Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.

RECOGNITION CATEGORY
COLD SHUTDOWN / REFUELING SYSTEM MALFUNCTIONS

CA2 (cont)

Basis:

FIRE: Combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute FIRES. Observation of flame is preferred but is NOT required if large quantities of smoke and heat are observed.

EXPLOSION: A rapid, violent and catastrophic failure of a piece of equipment due to combustion, chemical reaction or overpressurization. A release of steam (from high energy lines or components) or an electrical component failure (caused by short circuits, grounding, arcing, etc.) should not automatically be considered an explosion. Such events may require a post-event inspection to determine if the attributes of an explosion are present.

SAFETY SYSTEM: A system required for safe plant operation, cooling down the plant and/or placing it in the cold shutdown condition, including the ECCS. These are typically systems classified as safety-related.

VISIBLE DAMAGE: Damage to a SAFETY SYSTEM train that is readily observable without measurements, testing, or analysis. The visual impact of the damage is sufficient to cause concern regarding the operability or reliability of the affected SAFETY SYSTEM train.

This IC addresses a hazardous event that causes damage to SAFETY SYSTEMS required for the current operating mode, "required", i.e. required to be operable by Technical Specifications for the current operating mode. In order to provide the appropriate context for consideration of an Alert classification, the hazardous event must have caused indications of degraded SAFETY SYSTEM performance in one train, and there must be either indications of performance issues with the second SAFETY SYSTEM train or VISIBLE DAMAGE to the second train such that the potential exists for this second SAFETY SYSTEM train to have performance issues. In other words, in order for this EAL to be classified, the hazardous event must occur, at least one SAFETY SYSTEM train must have indications of degraded performance, and the second SAFETY SYSTEM train must have indications of degraded performance or VISIBLE DAMAGE such that the potential exists for performance issues. Note that this second SAFETY SYSTEM train is from the same SAFETY SYSTEM that has degraded performance for criteria 1.b of this EAL; commercial nuclear power plants are designed to be able to support single system issues without compromising public health and safety from radiological events.

Indications of degraded performance address damage to a SAFETY SYSTEM train that is in operation since indications for it will be readily available. The indications of degraded performance should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.

Operators will make a determination of VISIBLE DAMAGE based on the totality of available event and damage report information. This is intended to be a brief assessment not requiring lengthy analysis or quantification of the damage. This

RECOGNITION CATEGORY
COLD SHUTDOWN / REFUELING SYSTEM MALFUNCTIONS

CA2 (cont)

Basis (cont):

VISIBLE DAMAGE should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.

Escalation of the emergency classification level would be via IC CS6 or RS1.

If the EAL conditions of CA2 are not met then assess the event via HU3, HU4, or HU6.

Basis Reference(s):

1. NEI 99-01 Rev 6, CA6

ENCLOSURE 3

REVISED RADIOLOGICAL EMERGENCY PLAN ANNEX INFORMATION

FOR

R.E. GINNA NUCLEAR POWER PLANT

EP-AA-1012

3A – Revised EAL Comparison Matrix Document Pages
3C – Revised EAL Basis Document Pages

Ginna

3A – Revised EAL Comparison Matrix Document Pages

NEI 99-01 Rev 6	Proposed EAL	Justification
SA9 **Initiating Condition: ALERT** **Hazardous event affecting a SAFETY SYSTEM needed for the current operating mode.** **Operating Mode Applicability:** **Power Operation, Startup, Hot Standby, Hot Shutdown** **Example Emergency Action Levels:** **1. a. The occurrence of ANY of the following hazardous events:** • **Seismic event (earthquake)** • **Internal or external flooding event** • **High winds or tornado strike** • **FIRE** • **EXPLOSION** • **(site-specific hazards)** • **Other events with similar hazard characteristics as determined by the Shift Manager** **AND** **b. EITHER of the following:** **1. Event damage has caused indications of degraded performance in at least one train of a SAFETY SYSTEM needed for the current operating mode.** **OR** **2. The event has caused VISIBLE DAMAGE to a SAFETY SYSTEM component or structure needed for the current operating mode.**	**MA5** **Initiating Condition: ALERT** Hazardous event affecting a SAFETY SYSTEM required for the current operating mode. **Operating Mode Applicability**: 1, 2, 3, 4 **Emergency Action Level (EAL):** **Note:** • This EAL is only applicable to SAFETY SYSTEMs having two (2) or more trains. • If the affected SAFETY SYSTEM train was already inoperable before the hazardous event occurred, then this emergency classification is not warranted. • If the hazardous event only resulted in VISIBLE DAMAGE, with no indications of degraded performance to at least one train of a SAFETY SYSTEM, then this emergency classification is not warranted. • If a hazardous event occurs and it is determined that the conditions of MA5 are not met then assess the event via HU3, HU4, or HU6. 1. a. The occurrence of **ANY** of the following hazardous events: • Seismic event (earthquake) • Internal or external flooding event • High winds or tornado strike • FIRE • EXPLOSION • Other events with similar hazard characteristics as determined by the Shift Manager **AND** b. Event damage has caused indications of degraded performance to one train of a SAFETY SYSTEM required by Technical Specifications for the current operating mode. **AND** c. **EITHER** of the following: • Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode. **OR** • Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.	☐ No Change ☐ Difference ☒ Deviation 1) No additional site specific hazard noted 2) Changed the word "needed" to "required" in the IC and to "required by Technical Specification" in the EAL, to be consistent with terminology used by operators and minimize confusion, and removed reference to “out of service” to minimize confusion with SAFETY SYSTEMs that are in standby but not running to be consistent with terminology used by operators and minimize confusion. 3) Added note to easily direct the operator to potential lesser ICs. 4) Revised to reflect applicability to SAFETY SYSTEMs having two (2) or more trains, where at least one train displays degraded performance and other train has either visible damage or degraded performance.

NEI 99-01 Rev 6	Proposed EAL	Justification
CA6 **Initiating Condition – ALERT** Hazardous event affecting SAFETY SYSTEM needed for the current operating mode. **Operating Mode Applicability**: Cold Shutdown, Refueling **Example Emergency Action Levels**: 1. a. The occurrence of **ANY** of the following hazardous events: ● Seismic event (earthquake) ● Internal or external flooding event ● High winds or tornado strike ● FIRE ● EXPLOSION ● (site-specific hazards) ● Other events with similar hazard characteristics as determined by the Shift Manager **AND** b. **EITHER** of the following: 1. Event damage has caused indications of degraded performance in at least one train of a SAFETY SYSTEM needed for the current operating mode. **OR** 2. The event has caused VISIBLE DAMAGE to a SAFETY SYSTEM component or structure needed for the current operating mode.	**CA2** **Initiating Condition:** Hazardous event affecting SAFETY SYSTEM required for the current operating mode. **Operating Mode Applicability:** 5, 6 **Emergency Action Level (EAL):** **Note:** • This EAL is only applicable to SAFETY SYSTEMs having two (2) or more trains. • If the affected SAFETY SYSTEM train was already inoperable before the hazardous event occurred, then this emergency classification is not warranted. • If the hazardous event only resulted in VISIBLE DAMAGE, with no indications of degraded performance to at least one train of a SAFETY SYSTEM, then this emergency classification is not warranted. • If a hazardous event occurs and it is determined that the conditions of CA2 are not met then assess the event via HU3, HU4, or HU6. 1. a. The occurrence of **ANY** of the following hazardous events: • Seismic event (earthquake) • Internal or external flooding event • High winds or tornado strike • FIRE • EXPLOSION • Other events with similar hazard characteristics as determined by the Shift Manager **AND** b. Event damage has caused indications of degraded performance to one train of a SAFETY SYSTEM required by Technical Specifications for the current operating mode. **AND** c. **EITHER** of the following: • Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode. **OR** • Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.	[ ] No Change [ ] Difference [X] Deviation 1) No additional site specific hazards noted 2) Changed the word "needed" to "required" in the IC and "required by Technical Specification" in the EAL to be consistent with terminology used by operators and minimize confusion, and removed reference to “out of service” to minimize confusion with SAFETY SYSTEMs that are in standby but not running to be consistent with terminology used by operators and minimize confusion. 3) Added note to easily direct the operator to potential lesser ICs. 4) Revised to reflect applicability to SAFETY SYSTEMs having two (2) or more trains, where at least one train displays degraded performance and other train has either visible damage or degraded performance.

Ginna

3C – Revised EAL Basis Document Pages

RECOGNITION CATEGORY
SYSTEM MALFUNCTIONS

MA5

Initiating Condition:

Hazardous event affecting a SAFETY SYSTEM required for the current operating mode.

Operating Mode Applicability:

1, 2, 3, 4

Emergency Action Level (EAL):

Note:

- This EAL is only applicable to SAFETY SYSTEMs having two (2) or more trains.
- If the affected SAFETY SYSTEM train was already inoperable before the hazardous event occurred, then this emergency classification is not warranted.
- If the hazardous event only resulted in VISIBLE DAMAGE, with no indications of degraded performance to at least one train of a SAFETY SYSTEM, then this emergency classification is not warranted.
- If a hazardous event occurs and it is determined that the conditions of MA5 are not met then assess the event via HU3, HU4, or HU6.

1. a. The occurrence of **ANY** of the following hazardous events:
    - Seismic event (earthquake)
    - Internal or external flooding event
    - High winds or tornado strike
    - FIRE
    - EXPLOSION
    - Other events with similar hazard characteristics as determined by the Shift Manager

   AND

   b. Event damage has caused indications of degraded performance to one train of a SAFETY SYSTEM required by Technical Specifications for the current operating mode.

   AND

   c. **EITHER** of the following:
    - Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.

      OR

    - Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.

RECOGNITION CATEGORY
SYSTEM MALFUNCTIONS

MA5 (cont)

Basis:

FIRE: Combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute FIRES. Observation of flame is preferred but is NOT required if large quantities of smoke and heat are observed.

EXPLOSION: A rapid, violent and catastrophic failure of a piece of equipment due to combustion, chemical reaction or overpressurization. A release of steam (from high energy lines or components) or an electrical component failure (caused by short circuits, grounding, arcing, etc.) should not automatically be considered an explosion. Such events may require a post-event inspection to determine if the attributes of an explosion are present.

SAFETY SYSTEM: A system required for safe plant operation, cooling down the plant and/or placing it in the cold shutdown condition, including the ECCS. These are typically systems classified as safety-related.

VISIBLE DAMAGE: Damage to a SAFETY SYSTEM train that is readily observable without measurements, testing, or analysis. The visual impact of the damage is sufficient to cause concern regarding the operability or reliability of the affected SAFETY SYSTEM train.

This IC addresses a hazardous event that causes damage to SAFETY SYSTEMS required for the current operating mode, "required", i.e. required to be operable by Technical Specifications for the current operating mode. In order to provide the appropriate context for consideration of an Alert classification, the hazardous event must have caused indications of degraded SAFETY SYSTEM performance in one train, and there must be either indications of performance issues with the second SAFETY SYSTEM train or VISIBLE DAMAGE to the second train such that the potential exists for this second SAFETY SYSTEM train to have performance issues. In other words, in order for this EAL to be classified, the hazardous event must occur, at least one SAFETY SYSTEM train must have indications of degraded performance, and the second SAFETY SYSTEM train must have indications of degraded performance or VISIBLE DAMAGE such that the potential exists for performance issues. Note that this second SAFETY SYSTEM train is from the same SAFETY SYSTEM that has degraded performance for criteria 1.b of this EAL; commercial nuclear power plants are designed to be able to support single system issues without compromising public health and safety from radiological events.

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RECOGNITION CATEGORY
SYSTEM MALFUNCTIONS

MA5 (cont)

Basis (cont):

Escalation of the emergency classification level would be via IC FS1 or RS1.

If a hazardous event occurs and the EAL conditions of MA5 are not met then assess the event via HU3, HU4, or HU6.

Basis Reference(s):

1. NEI 99-01, Rev 6 SA9

RECOGNITION CATEGORY
COLD SHUTDOWN / REFUELING SYSTEM MALFUNCTIONS

CA2

Initiating Condition:

Hazardous event affecting SAFETY SYSTEM required for the current operating mode.

Operating Mode Applicability:

5, 6

Emergency Action Level (EAL):

Note:

- This EAL is only applicable to SAFETY SYSTEMs having two (2) or more trains.
- If the affected SAFETY SYSTEM train was already inoperable before the hazardous event occurred, then this emergency classification is not warranted.
- If the hazardous event only resulted in VISIBLE DAMAGE, with no indications of degraded performance to at least one train of a SAFETY SYSTEM, then this emergency classification is not warranted.
- If a hazardous event occurs and it is determined that the conditions of CA2 are not met then assess the event via HU3, HU4, or HU6.

1. a. The occurrence of **ANY** of the following hazardous events:
    - Seismic event (earthquake)
    - Internal or external flooding event
    - High winds or tornado strike
    - FIRE
    - EXPLOSION
    - Other events with similar hazard characteristics as determined by the Shift Manager

    AND

    b. Event damage has caused indications of degraded performance to one train of a SAFETY SYSTEM required by Technical Specifications for the current operating mode.

    AND

    c. **EITHER** of the following:

    - Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.

      OR
    - Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode.

RECOGNITION CATEGORY
COLD SHUTDOWN / REFUELING SYSTEM MALFUNCTIONS

CA2 (cont)

Basis:

FIRE: Combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute FIRES. Observation of flame is preferred but is NOT required if large quantities of smoke and heat are observed.

EXPLOSION: A rapid, violent and catastrophic failure of a piece of equipment due to combustion, chemical reaction or overpressurization. A release of steam (from high energy lines or components) or an electrical component failure (caused by short circuits, grounding, arcing, etc.) should not automatically be considered an explosion. Such events may require a post-event inspection to determine if the attributes of an explosion are present.

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RECOGNITION CATEGORY
COLD SHUTDOWN / REFUELING SYSTEM MALFUNCTIONS

CA2 (cont)

Basis (cont):

VISIBLE DAMAGE should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.

Escalation of the emergency classification level would be via IC CS6 or RS1.

If the EAL conditions of CA2 are not met then assess the event via HU3, HU4, or HU6.

Basis Reference(s):

1. NEI 99-01 Rev 6, CA6