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SUBJECT: Forwards "Emergency Action Level Verification & Validation Rept."

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PRIORITY 1 DOCUMENT

Stephen B. Bram
Vice President

Consolidated Edison Company of New York, Inc.
Indian Point Station
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July 6, 1994

Re: Indian Point Unit No. 2
Docket No. 50-247

Document Control Desk
US Nuclear Regulatory Commission
Mail Station P1-137
Washington, DC 20555

SUBJECT: NUMARC/NESP-007 Based Emergency Action Levels

Transmitted herewith are upgraded Emergency Action Levels (EALs) for Indian Point Unit No. 2. Consolidated Edison Company of New York, Inc., (Con Ed) and the other New York State utilities have developed EALs which are based on the guidance provided in NUMARC NESP-007, "Methodology for Development of Emergency Action Levels" and are similar for each site.

In accordance with 10 CFR 50, Appendix E Section IV.B, these EALs are hereby submitted for NRC review and approval. This submittal consists of the enclosed EAL Generation Package which includes the Plant Specific EAL Guideline, the Fission Product Barrier Evaluation, the EAL Binning Document, the EAL Technical Bases Document, and the actual proposed EALs in tabular format. The associated Verification and Validation Report is also included to assist your review.

Should you have any questions regarding this matter, please contact Mr. Charles W. Jackson, Manager, Nuclear Safety and Licensing.

Very truly yours,

Enclosure

200039

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1/1

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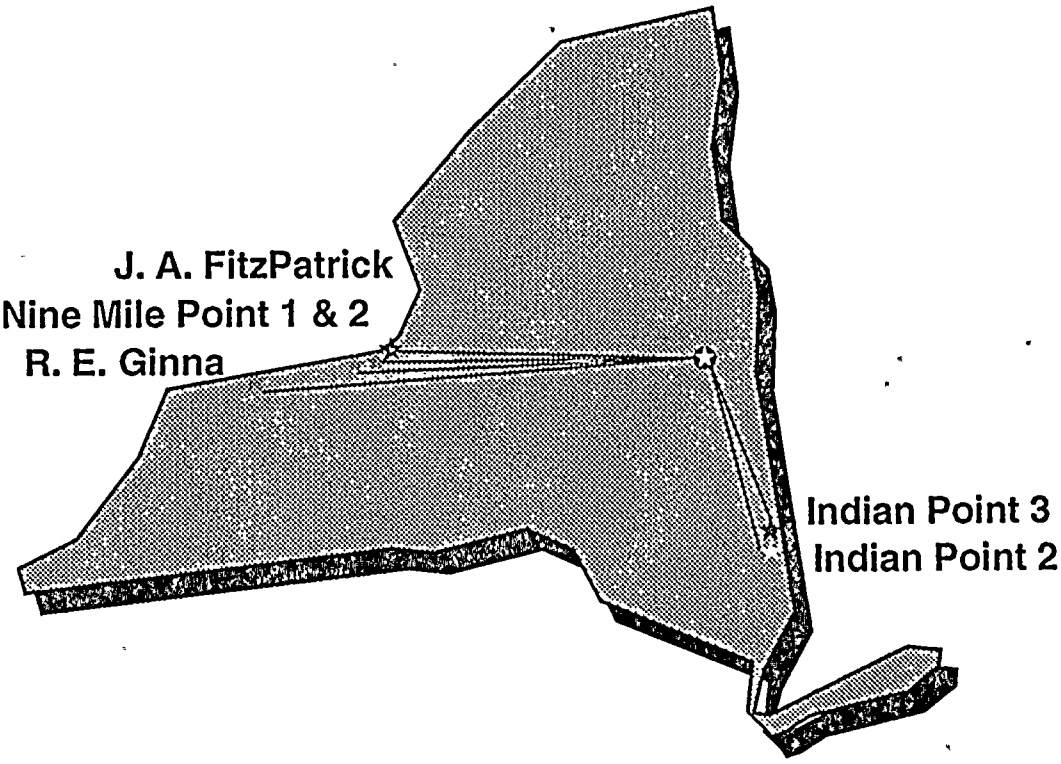
New York State Emergency Action Level Upgrade Project



Consolidated Edison Company

Indian Point Station Unit 2

EAL Generation Package

OSSI
Operations Support Services, Inc.
233 Water Street 2nd Floor Plymouth, MA 02360

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Indian Point Unit 2 EAL Upgrade Project Introduction

When the NRC accepted NUMARC/NESP-007, entitled "Methodology for Development of Emergency Action Levels," as an acceptable alternative to the NUREG 0654 EAL guidance, the four nuclear utilities in New York State decided to jointly implement the new methodology. This upgrade project involved the following plants:

- Nine Mile Point Unit 1 (NMPC)
- Nine Mile Point Unit 2 (NMPC)
- James A. Fitzpatrick Nuclear Power Plant (NYPA)
- Indian Point Unit 2 (Con Ed)
- Indian Point Unit 3 (NYPA)
- R.E. Ginna Nuclear Power Station (RG&E)

Although the upgraded EALs are site specific, one of the upgrade project's objectives was to enhance maximum conformity and consistency between the sites.

The following site specific EAL developmental documents supporting the EAL review process are enclosed:

- Indian Point Unit 2 Plant-Specific EAL Guideline (PEG) (Section 2)

  The PEG is the Indian Point Unit 2 interpretation of the NUMARC methodology for developing EALs. The PEG distinguishes from the NUMARC methodology by striking out words and phrases that do not apply to Indian Point Unit 2. Additions are identified by underlining new words and phrases. The source of documents for PEG changes from the NUMARC methodology are listed in the references section of the PEG.

- Indian Point Unit 2 Fission Product Barrier Evaluation (FPBE) (Section 3)

  NESP-007 prescribes example EALs for each of the three fission product barriers. An EAL is defined by one or more plant conditions. Each EAL may consist of one or more conditions representing either a loss of barrier or a potential loss of the barrier. Some EALs may have only loss conditions, others only potential loss conditions, and some may have both loss and potential loss conditions.

  Based on the number of example EALs and the number of loss and potential loss conditions, the set of conditions that can yield a given emergency classification can be determined. An evaluation of each condition or set of conditions was made to determine if it properly defines the appropriate threshold of the classification. If a condition or set of conditions was appropriate, a comment reflecting this conclusion was recorded in this document. If a condition or set of conditions was determined to be inappropriate, it was lined out, and the reason for this conclusion was similarly recorded. The result of this evaluation is a discrete set of quantifiable EALs representing the NUMARC fission product barrier loss matrices.

- Indian Point Unit 2 EAL Binning Document (Section 4)

  Because the format presented in NUMARC/NESP-007 is inadequate for implementation, the EALs defined by the PEG and FPBE must be binned into categories and subcategories which support ease of use. The binning document identifies where, within the presentation scheme, each PEG/FPBE initiating condition is addressed.

- Indian Point Unit 2 EAL Technical Bases Document (Section 5)

  The EAL Technical Bases Document provides an explanation and rationale for each of the EALs included in the EAL Upgrade Program. It is also intended to facilitate the review process of the Indian Point Unit 2 EALs and provide historical documentation for future reference. This document is also intended to be used as a technical reference and aid in EAL interpretation by those individuals responsible for implementation of the event classification procedure.

- Indian Point Unit 2 Verification & Validation Report (Section 6)

  The Indian Point Unit 2 Verification & Validation Report documents the process conducted to verify and to validate the Indian Point Unit 2 EALs and supporting documentation. This document also included the comments received during validation along with comment resolutions.

  The verification process was performed to ensure that the Indian Point Unit 2 EALs and classification procedures are technically correct. The Indian Point Unit 2 EAL verification was conducted prior to the EAL validation exercises. The technical accuracy of the upgraded EALs was verified through tabletop reviews which addressed the following EAL attributes:

<u>Format and Writing</u>

- Human engineering factors of the EAL Writer's Guide
- Format, appearance and terminology consistent, to the extent possible, among BWR and PWR plants involved in the EAL Upgrade Project
- EAL structure
- Clear and well defined EAL terminology

<u>Technical Accuracy</u>

- Technical completeness and appropriateness for each classification level
- Potential for classification upgrade only when there is an increased threat to public health and safety
- Logical progression in classification for combinations of multiple events

The validation process ensures that the Indian Point Unit 2 EALs and classification procedures are usable and correct. It also ensures that emergency response personnel are able to consistently interpret EALs under similar conditions. The EALs were validated through observation of emergency response organization personnel responding to simulated emergency events. The group of EALs selected for validation was sufficiently representative of all the EALs. The following attributes were tested:

Usability

- User friendliness
- Ease of place-finding
- Ease of place-keeping
- Ease of upgrading and declassifying

Operational Correctness

- Potential for classification upgrade only when there is a significant increase in the potential for a threat to public health and safety
- Technical completeness and appropriateness for each classification level
- Logical progression in classification for combinations of multiple events

EAL Upgrade Project

Plant Specific EAL Guideline (PEG)

Indian Point Unit 2

6/20/94

OSSI

Operations Support Services, Inc.
233 Water Street 2nd.Floor Plymouth, MA 02360

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

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

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

AU1.1

A valid reading on one or more of the following monitors that exceeds the "value shown" ~~(site-specific-monitors)~~ which indicates that the release may have exceeded the above criterion and indicates the need to assess the release with ~~(site-specific-procedure)~~ "IP-1007, Determining the Magnitude of Release and Exposure Rate."

Monitors	"Value Shown"
R-27, Plant Vent Wide Range Monitor	2.3E-3 µCi/cc
R-44, Plant Vent Gas Activity Monitor	2.3E-3 µCi/cc
R-54, Waste Disposal Activity Monitor	2.5E-3 µCi/cc
R-49, SG Blowdown Activity Monitor	2.7E-4 µCi/cc

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

AU1.2

Confirmed sample analyses for gaseous or liquid releases indicates concentrations or release rates with a release duration of 60 minutes or longer in excess of ~~two times (site-specific-technical-specifications)~~.

Liquid Releases:
Two times 10CFR20, Appendix B, Table II, Column 2, or
4E-4 µCi/ml for dissolved or entrained noble gases

Gaseous Releases:
1000 mrem/yr whole body and 6000 mrem/yr skin dose from noble gases
3000 mrem/yr any organ from I-131, I-133, tritium and particulates with ≥8 day half lives

Dose due to noble gases in gaseous effluents:
10/qtr mrad gamma / 20/qtr mrad beta
or
20 mrad/yr gamma / 40 mrad/yr beta
These are determined via methods in IP1007

~~AU1.3~~

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

~~AU1.4~~

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

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

Bases

The term "Unplanned", as used in this context, includes any release for which a radioactive discharge permit was not prepared, or a release that exceeds the conditions (e. g., minimum dilution flow, maximum discharge flow, alarm setpoints, etc.) on the applicable permit.
Valid means that a radiation monitor reading has been confirmed by the operators to be correct.
Unplanned releases in excess of two times the site technical specifications that continue for 60 minutes or longer represent an uncontrolled situation and hence, a potential degradation in the level of safety. The final integrated dose (which is very low in the Unusual Event emergency class) is not the primary concern here; it is the degradation in plant control implied by the fact that the release was not isolated within 60 minutes. Therefore, it is not intended that the release be averaged over 60 minutes. For example, a release of 4 times T/S for 30 minutes does not exceed this initiating condition. Further, the Emergency Director should not wait until 60 minutes has elapsed, but should declare the event as soon as it is determined that the release duration has or will likely exceed 60 minutes.
~~For sites that have eliminated effluent technical specifications as provided in NRC Generic Letter 89-01, the corresponding maximum limit from the site's Offsite Dose Calculation Manual should be used as the numeric basis of EAL.~~
~~10CFR50.72 requires a non-emergency four hour report for release that exceeds 2 times maximum permissible concentration (MPC) in unrestricted areas averaged over a period of one hour. There is generally more than one applicable technical specification (e. g., air dose rate, organ dose rate, organ doses, release rate, etc.). Often, effluent monitor alarms are based on instantaneous release rate. Depending on the source term, other technical specifications may be more applicable specifications.~~
Monitor indications are ~~should be~~ calculated on the basis of the methodology of ~~the site Offsite Dose Calculation Manual (ODCM), or other site procedures that are used~~ IP1007, Determination of the Magnitude of Release and Exposure, to demonstrate compliance with 10CFR20 and~~/or~~ 10CFR50 Appendix I requirements. Annual average meteorology ~~should be~~ is used ~~where allowed~~.
~~In EAL 3, the 0.10 mR/hr value is based on a proration of two times the 500 mR/yr basis of the 10CFR20 non-occupational MPC limits, rounded down to 0.10 mR/hr. If other site-specific values are applicable, these should be used.~~
~~Some sites may find it advantageous to address gaseous and liquid releases with separate initiating conditions and EALs.~~
The alarm setpoints for the listed monitors are conservatively set to ensure Technical Specification radioactivity release limits are not exceeded. The "value shown" for each monitor is two times the alarm setpoint.

The values assigned to EAL AU1-2 are based on two times the Technical Specification values given in: Facility Operating License No. DPR-26 Appendix . Technical Specifications, Section 3.9

IP2 design does not utilize telemetered perimeter monitors.

IP2 design does not utilize automatic real-time dose assessment.

References:

1. System Description No. 12, Rev. 3, RADIATION MONITORING AND PROTECTIONS SYSTEM, 7/85
2. IP1007, Determination of the Magnitude of Release and Exposure
3. Tech Specs Section 3.9
4. Letter from D. Smith to R. Burns

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: AU2 **Unexpected Increase in plant radiation or airborne concentration.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

AU2.1

~~(Site-specific)~~ Spent fuel pool (reactor cavity during refueling) water level cannot be restored and maintained above Tech. Spec. minimum level ~~indication of uncontrolled water level decrease in the reactor refueling cavity with all irradiated fuel assemblies remaining covered by water.~~

AU2.2

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

~~AU2.3~~

~~(Site-specific) radiation reading for irradiated spent fuel in dry storage.~~

AU2.4

~~Valid~~ Any sustained direct area radiation monitor readings ≥ 100 times the alarm setpoint or offscale high resulting from an uncontrolled process ~~increase by a factor of 1000 over normal* levels.~~

~~* Normal levels can be considered as the highest reading in the past twenty-four hours excluding the current peak value.~~

Bases

Valid means that a radiation monitor reading has been confirmed by the operators to be correct.

All of the above events tend to have long lead times relative to potential for radiological release outside the site boundary, thus impact to public health and safety is very low.

In light of Reactor Cavity Seal failure, incidents at two different PWRs and loss of water in the Spent Fuel Pit/Fuel Transfer Canal at a BWR all occurring since 1984, explicit coverage of these types of events via EALs #1 and #2 is appropriate given their potential for increased doses to plant staff. Classification as an Unusual Event is warranted as a precursor to a more serious event.

For EAL AU2.2, the spent fuel pool minimum Tech. Spec. water level is used. The low level alarm setpoint is actuated by a level switch approximately 1" above this level. The operator may observe the low water level condition, if possible, and attempt water level restoration as long as water level remains above the top of irradiated fuel. The words "with all irradiated fuel assemblies remaining covered by water" were deleted as it is unecessary. AA2.2 requires declaration of an Alert if the fuel becomes uncovered.

~~For the BWR Mark I/II containment designs, the fuel transfer canal is directly connected to the spent fuel pool and reactor cavity when there could exist the possibility of uncovering irradiated fuel in the fuel transfer canal. Therefore, EAL AU2.1 addresses the conditions for which this EAL is applicable.~~

EAL ~~#3~~ AU2.3 applies to plants with licensed dry storage of older irradiated spent fuel to address degradation of this spent fuel. ~~One utility uses values of 2 R/hr at the face of any dry storage module or 1 R/hr one foot away from a damaged module.~~ IP-2 design does not utilize dry storage for spent fuel.

EAL ~~#4~~ AU2.4 addresses unplanned increases in in-plant radiation levels that represent a degradation in the control of radioactive material, and represent a potential degradation in the level of safety of the plant. Indication of area radiation levels increasing to ≥ 100 times the alarm setpoint or offscale hi has been selected because these values are more readily identifiable than a multiple of "normal" levels. Since ARM setpoints are nominally set one decade over normal levels, 100 times the alarm setpoint or offscale hi provides an equivelent threshold. This EAL escalates to an Alert per IC AA3, if the increases impair the level of safe operation. Only prolonged ARM readings are considered in this EAL to avoid unnecessary emergency declaration due to momentary and temporary radiation levels that briefly exceed 100 times the alarm setpoint.

Reference:

1. AOI-17-0.3
2. ARP-SGF
3. Tech. Spec. 3.8.C.2

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

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

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

AA1.1

A valid reading on one or more of the following monitors that exceeds the "value shown" ~~(site-specific monitors)~~ which indicates that the release may have exceeded the above criterion and indicates the need to assess the release with ~~(site-specific procedure)~~ IP1007

Monitors	"Value Shown"
R-27, Plant Vent Wide Range Monitor	5.3E-1 µCi/cc
R-44, Plant Vent Gas Activity Monitor	5.3E-1 µCi/cc
R-54, Waste Disposal Activity Monitor	2.5E-1 µCi/cc
R-49, SG Blowdown Activity Monitor	2.7E-2 µCi/cc

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

AA1.2

Confirmed sample analyses for gaseous or liquid releases indicates concentrations or release rates with a release duration of 15 minutes or longer in excess of ~~(200 x site-specific technical specifications) for 15 minutes or longer~~:

Liquid Releases:
200 times 10CFR20, Appendix B, Table II, Column 2
4x10 E-2 µCi/ml for dissolved or entrained noble gases

Gaseous Releases:
100 rem/yr whole body and 600 rem/yr skin dose from noble gases
300 rem/yr any organ from I-131, I-133, tritium and particulates with ≤ 8 day half lives

Air Dose, Noble Gases:
1000/qtr mrad gamma
2000/qtr mrad beta
or
2000 mrad/yr gamma
4000 mrad/yr beta
These are determined via methods in IP1007

AA1.3

~~Valid reading on perimeter radiation monitoring system greater than 10.0 mR/hr sustained for 15 minutes or longer. [for sites having telemetered perimeter monitors]~~

AA1.4

~~Valid indication on automatic real-time dose assessment capability greater than (200 x site-specific technical specifications) for 15 minutes or longer. [for sites having such capability]~~

Bases

Valid means that a radiation monitor reading has been confirmed by the operators to be correct.

This event escalates from the Unusual Event by escalating the magnitude of the release by a factor of 100. Prorating the 500 mR/yr criterion for both time (8766 hr/yr and the 200 multiplier, the associated site boundary dose rate would be 10 mR/hr. The required release duration was reduced to 15 minutes in recognition of the increased severity.

~~For sites that have eliminated effluent technical specifications as provided in NRC Generic Letter 89-021, the corresponding maximum limit from the site's Offsite Dose Calculation Manual, multiplied by 200, should be used as the numeric basis for this EAL.~~

Monitor indications ~~should be~~ are calculated on the basis of the methodology of ~~the site Offsite Dose Calculation Manual (ODCM), or other site procedures that are used to demonstrate compliance with 10CFR20 and/or 10CFR50 Appendix I requirements -- adjusted upwards by a factor of 200.~~ IP-1007, "Determination of the magnitude of Release and Exposure Rate. Annual average meteorology ~~should be~~ is used ~~where allowed~~.

~~In EAL #3, the 10 mR/hr value is based on a proration of 200 times the 500 mR/yr basis of the 10CFR20 non-occupational MPC limits, rounded down to 10 mR/hr. If other site-specific values are applicable, these should be used.~~ The values for the gaseous effluent radiation monitors are based upon not exceeding 10 mR/hr at the site boundary as a result of the release.

The alarm setpoints for the listed monitors are conservatively set to ensure Technical Specification radioactivity release limits are not exceeded.

IP-2 design does not utilize telemetered perimeter monitors.

IP-2 design does not utilize automatic real-time dose assessment.

References:

1. System Description No. 12, Rev. 3, RADIATION MONITORING AND PROTECTIONS SYSTEM, 7/85
2. IP1007, Determination of the Magnitude of Release and Exposure
3. Facility Operating License No. DPR-26 Appendix, Technical Specifications Section 3.9
4. Letter from D. Smith to R. Burns

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: AA2 **Major damage to irradiated fuel or loss of water level that has or will result in the uncovering of irradiated fuel outside the reactor vessel.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

AA2.1

~~A (site-specific setpoint)~~ Confirmed sustained alarm on one or more of the following radiation monitors resulting from fuel damage caused by an uncontrolled fuel handling process: ~~(site-specific monitors)~~

R-2/R-7, Vapor Containment Area Monitors

R-5, Fuel Storage Building Area Monitor

R-25/26, Vapor Containment High Radiation Area Monitors:

AA2.2

Report of visual observation of irradiated fuel uncovered.

AA2.3

~~Water level less than (site-specific) feet for the reactor refueling cavity that will result in irradiated fuel uncovering.~~

AA2.4

~~Water level less than (site-specific) feet for the spent fuel pool and fuel transfer canal that will result in irradiated fuel uncovering.~~

Bases

This IC applies to spent fuel requiring water coverage and is not intended to address spent fuel which is licensed for dry storage, which is discussed in NUMARC IC AU2, "Unexpected Increase in Plant Radiation or Airborne Concentration."
NUREG-0818, "Emergency Action Levels for Light Water Reactors," forms the basis for these EALs. ~~Each site should also define its~~ The above EALs are defined by the specific area where irradiated fuel is located such as reactor cavity, reactor vessel, or spent fuel pool.

The radiation monitor alarm associated with this EAL must be confirmed to avoid unnecessary declaration of an emergency due to a spurious alarm signal.

An "uncontrolled fuel handling process" is defined as any event or activity related to the movement of irradiated fuel which results in unexpected or uncontrolled conditions. This terminology has been specifically added to exclude anticipated increases in area radiation levels as a result of actions performed in accordance with approved procedures during refueling operations.

There is time available to take corrective actions, and there is little potential for substantial fuel damage. In addition, NUREG/CR-4982, "Severe Accident in Spent Fuel Pools in Support of Generic Safety Issue 82," July 1987, indicates that even if corrective actions are not taken, no prompt fatalities are predicted, and that risk of injury is low. In addition, NRC Information Notice No. 90-08, "KR-85 Hazards from Decayed Fuel" presents the following it its discussion:

"In the event of a serious accident involving decayed spent fuel, protective actions would be needed for personnel on site, while offsite doses (assuming an exclusion area radius of one mile from the plant site) would be well below the Environmental Protection Agency's Protective Action Guides. Accordingly, it is important to be able to properly survey and monitor for Kr-85 in the event of an accident with decayed spent fuel.

There is no indication that water level in the spent fuel pool or refueling cavity has dropped to the level of the fuel other than by visual observation. Since AA2.2 addresses visual observation of fuel uncovery, EAL AA2.3 is unnecessary. Since there is no level indicating system in the fuel transfer canal, visual observation of loss of water level would also be required, EAL AA2.4 is unnecessary.

~~Licensees may wish to reevaluate whether Emergency Action Levels specified in the emergency plan and procedures governing decayed fuel handling activities appropriately focus on concern for onsite workers and Kr-85 releases in areas where decayed spent fuel accidents could occur, for example, the spent fuel pool working floor. Furthermore, licensees may wish to determine if emergency plans and corresponding implementing procedures address the means for limiting radiological exposures of onsite personnel who are in other areas of the plant. Among other things, moving onsite personnel away from the plume and shutting of building air intakes downwind from the source may be appropriate."~~

Thus, an Alert Classification for this event is appropriate. Escalation, if appropriate, would occur via Abnormal Rad level/Radiological Effluent or Emergency Director judgement.

Reference:

1. System Description No. 12, Rev. 3, RADIATION MONITORING AND PROTECTION SYSTEM, July 1985
2. System Description No. 17, Rev. 4, Fuel and Core Component Handling System, 4/91

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: AA3 **Release of radioactive material or increases in radiation levels within the facility that impedes operation of systems required to maintain safe operations or to establish or maintain cold shutdown.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

AA3.1

~~Valid~~ Sustained area radiation monitor reading greater than 15 mR/hr in ~~areas requiring continuous occupancy to maintain plant safety functions:~~
~~(Site-specific) list.~~
The Control Room, R-1 is the permanently installed monitor
OR
Central Alarm Station (CAS) and Secondary Alarm Station (SAS)

AA3.2

One or more sustained abnormal ~~valid (site-specific)~~ radiation monitor readings greater than ~~(site-specific)~~ 8 R/hr ~~values~~ in areas requiring infrequent access to maintain plant safety functions.

~~(Site-specific) list.~~

- Condensate Storage Tank
- RWST
- Service Water Intake Structure
- Service Water Valve Pit East
- Fuel Storage Building
- Primary Auxiliary Building/Fan House
- Vapor Containment Building
- 480 Volt Switchgear Room (Control Building)
- Cable Spreading Room and Electrical Tunnel
- Diesel Generator Building and Fuel Tank Area
- Auxiliary Feedwater Pump Building
- Battery Room (Control Building 33' 0" ele.)

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

Bases

Valid means that a radiation monitor reading has been confirmed by the operators to be correct. Only prolonged ARM readings are considered in this EAL to avoid unnecessary emergency declaration due to momentary and temporary radiation levels that briefly 8 R/hr.

This IC addresses increased radiation levels that impede necessary access to operating stations, or other areas containing equipment that must be operated manually, in order to maintain safe operation or perform a safe shutdown. It is this impaired ability to operate the plant that results in the actual or potential substantial degradation of the level of safety of the plant. The cause and/or magnitude of the increase in radiation levels is not a concern of this IC. The Emergency Director must consider the source or cause of the increased radiation levels and determine if any other IC may be involved. For example, a dose rate of 15 mR/hr in the control room may be a problem in itself. However, the increase may also be indicative of high dose rates in the containment due to a LOCA. In this latter case, an SAE or GE may be indicated by the fission product barrier matrix ICs.

~~At multiple-unit sites,~~ These EALs could result in declaration of an Alert at IP-2 due to a radioactivity release or radiation shine resulting from a major accident at ~~the other unit~~ IP-3. This is appropriate if the increase impairs operations at the operating unit.

This IC is not meant to apply to increases in the containment dome radiation monitors as these are events which are addressed in the fission product barrier matrix ICs. Nor is it intended to apply to anticipated temporary increases due to planned events (e. g., incore detector movement, radwaste container movement, deplete resin transfers, etc.)

~~Emergency planners developing the (site-specific) lists~~ may refer to ~~the site's~~ IP-2's Abnormal Operating Instructions, emergency operating procedures, the 10CFR50 Appendix R analysis, and/~~or,~~ the analyses performed in response to Section 2.1.6b or NUREG-0578, "TMI--2 Lessons Learned Task Force Status Report and Short-term Recommendations" were considered when identifying areas containing safe shutdown equipment. ~~With regard to the NUREG-0578 analyses, do not use the dose rates postulated therein as a basis for the radiation monitor reading for this IC, as the NUREG-0578 analyses address general emergency conditions.~~

Areas requiring continuous occupancy at IP-2 include the control room and~~, as appropriate to the site, any other control stations that are manned continuously, such as a radwaste control room or a~~ Central Alarm Station (CAS), and Secondary Alarm Station (SAS). The value of 15 mR/hr is derived from the GDC 19 value of 5 rem in 30 days with adjustment for expected occupancy times. Although Section III.D.3 of NUREG-0737, "Clarification of TMI Action Plan Requirements", provides that the 15 mR/hr value can be averaged over the 30 days, the value is used here without averaging, as a 30 day duration implies an event potentially more significant than an Alert.

For other areas ~~requiring infrequent access~~, the radiation level is ~~(site-specific) value(s) should be~~ based on abnormal radiation levels which result in exposure control measures intended to maintain doses within normal occupational exposure guidelines and limits (i. e., 10CFR20), and in doing so, will impede necessary access. ~~For many areas, it may be possible to establish a single generic EAL that represents a multiple of the normal radiation levels (e. g., 1000 times normal). However, areas that have normally high dose rates may require a lower multiple (e. g., 10 times normal).~~

Area radiation levels at or above 8 R/hr are indicative of radiation fields which may limit personnel access or adversely affect equipment whose operation may be needed to assure adequate core cooling or shutdown the reactor. This basis of the 8 R/hr is described in a Niagara Mohawk Power Corp. memo dated 3/18/93 File Code NMP31027 "Exposure Guidelines For Unusual/Accident Conditions, Rev 1." The areas selected are consistent with those listed in HA3.1 and represent those structures which house systems and equipment necessary for the safe operation and shutdown of the plant.

Reference:

1. System Description No. 12, Rev. 3, RADIATION MONITORING, 7/85.
2. Niagara Mohawk Power Corporation memo File Code NMP31027 "Exposure Guidelines For Unusual/Accident Conditions", Revision 1, 3/18/93

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

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

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

AS1.1

A valid reading on one or more of the following monitors that ~~exceeds or is expected to exceed the value shown~~ indicates that the release may have exceeded the above criterion and indicates the need to assess the release with ~~(site-specific procedure)~~ IP-1007, "Determination of the Magnitude of Release and Exposure Rate."

Monitors:

R-44, Plant Vent Gas Activity Monitor	5.3 µCi/cc
R-27, Plant Vent Wide Range Monitor	5.3 µCi/cc

Any of these could be used in conjunction with instructions in IP-1007 and the appropriate Xu/Q to assess dose at the site boundary.

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

AS1.2

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

AS1.3

Valid dose assessment capability indicates dose consequences greater than 100 mR TEDE ~~whole body~~ or 500 mR ~~child~~ CDE thyroid.

AS1.4

Field survey results indicate site boundary dose rates exceeding 100 mR/hr TEDE expected to continue for more than one hour; or analyses of field survey samples indicate ~~child~~ CDE thyroid dose commitment of 500 mR for one hour of inhalation.

Bases

Valid means that a radiation monitor reading has been confirmed by the operators to be correct.

The 100 mR TEDE integrated dose in this initiating condition is based on the proposed 10CFR20 annual average population exposure. This value also provides a desirable gradient (one order of magnitude) between the Alert, Site Area Emergency, and General Emergency classes. It is deemed that exposures less than this limit are not consistent with the Site Area Emergency class description. The 500 mR integrated ~~child thyroid~~ CDE thyroid dose was established in consideration of the 1:5 ratio of the EPA Protective Action Guidelines for TEDE ~~whole body~~ and CDE thyroid.

~~Integrated doses are generally not monitored in real-time.~~ In establishing the emergency action levels, ~~it is suggested that~~ a duration of one hour ~~be~~ is assumed, ~~and that the EALs be~~ based on a site boundary dose of 100 mR/hour ~~whole body~~ TEDE or 500 mR/hour CDE Thyroid ~~child thyroid~~, whichever is more limiting (depends on source term assumptions). ~~If individual site analyses indicate a longer or shorter duration for the period in which the substantial portion of the activity is released, these dose rates should be adjusted.~~
The FSAR source terms applicable to each monitored pathway should be used in conjunction with annual average meteorology in determining indications for the monitors on that pathway.

IP-2 does not use telemetered perimeter monitors.

References:

1. System Description No. 12. Rev. 3. Radiation Monitoring System. 8/85
2. IP-1007. Rev. 6. "Determination of the Magnitude of Release and Exposure Rate." effective 6/20/91
3. Tech Specs. Section 3.9
4. Letter from D. Smith to R. Burns

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

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

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

AG1.1

A valid reading on one or more of the following monitors that ~~exceeds or is expected to exceed the value shown~~ indicates that the release may have exceeded the above criterion and indicates the need to assess the release with ~~(site-specific procedure)~~ IP-1007, "Determination of the Magnitude of Release and Exposure Rate."

Monitors:

R-44, Plant Vent Gas Activity Monitor	53 µCi/cc
R-27, Plant Vent Wide Range Monitor	53 µCi/cc

Any of these could be used in conjunction with instructions in IP-1007 and the appropriate Xu/Q to assess dose at the site boundary.

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

AG1.2

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

AG1.3

Valid dose assessment capability indicates dose consequences greater than 1000 mR TEDE ~~whole body~~ or 5000 mR CDE ~~child~~ thyroid.

AG1.4

Field survey results indicate site boundary dose rates exceeding 1000 mR/hr TEDE expected to continue for more than one hour; or analyses of field survey samples indicate ~~child~~ CDE thyroid dose commitment of 5000 mR for one hour of inhalation.

Bases

Valid means that a radiation monitor reading has been confirmed by the operators to be correct.

The 1000 mR TEDE ~~whole body~~ and the 5000 mR CDE ~~child~~ thyroid integrated dose are based on the EPA protective action guidance which indicates that public protective actions are indicated if the dose exceeds 1 rem TEDE ~~whole body~~ or 5 rem CDE ~~child~~ thyroid. This is consistent with the emergency class description for a General Emergency. This level constitutes the upper level of the desirable gradient for the Site Area Emergency. Actual meteorology is specifically identified in the initiating condition since it gives the most accurate dose assessment. Actual meteorology (including forecasts) should be used whenever possible.

~~Integrated doses are generally not monitored in real-time.~~ In establishing the dose rate emergency action levels, ~~it is suggested that~~ a duration of one hour ~~be~~ is assumed~~, and that the EALs be~~ based on site boundary doses for either ~~whole body~~ TEDE or ~~child thyroid~~ CDE thyroid, whichever is more limiting (depends on source term assumptions(s). ~~If individual site analyses indicate a longer or shorter duration for the period in which the substantial portion of the activity is released, these dose rates should be adjusted.~~

The FSAR source terms applicable to each monitored pathway should be used in conjunction with annual average meteorology in determining indications for the monitors on that pathway.

IP-2 does not use telemetered perimeter monitors.

References:

1. System Description No. 12, Rev. 3, Radiation Monitoring System, 8/85
2. IP-1007, Rev. 6, "Determination of the Magnitude of Release and Exposure Rate," effective 6/20/91
3. Tech Specs, Section 3.9
4. Letter from D. Smith to R. Burns

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: HU1 **Natural and destructive phenomena affecting the protected area.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

HU1.1

~~(Site-specific) method indicates felt earthquake.~~
Earthquake felt inplant by one or more plant operations personnel
AND
Notification received from Unit 3 that an earthquake has been detected on their instrumentation.

HU1.2

Report by plant personnel of tornado ~~striking~~ within plant protected area boundary.

HU1.3

Assessment by the control room that an natural event which impacts plant safety related structures or systems within protected area boundary has occurred.

(See HA1.3 for list of plant areas.)

HU1.4

Vehicle crash into, or projectile which impacts, plant structures or systems within protected area boundary.

HU1.5

Report by plant personnel of an unanticipated explosion within protected area boundary resulting in visible damage to non-vital permanent structure or equipment.

HU1.6

Report of turbine failure requiring turbine trip resulting in casing penetration or damage to turbine or generator seals resulting in release of lubricating oil or hydrogen.

HU1.7

~~(Site-specific) occurrences.~~ River level equal to or greater than 14.5' (0MSL) at site. Service water bay level less than -4.5' (0MSL) at site.

Bases

The protected area boundary is ~~typically~~ that part within the security isolation zone and is defined in the site security plan. The IP-2 protected area boundary is described in the site security plan.

~~Multi-unit stations with shared safety functions should further consider how this IC may affect more than one unit and how this may be factor in escalating the emergency class.~~ IP-2 and IP-3 share no common safety systems. Therefore it is expected that turbine failure on one site would have minimal effect on the other site.

For EAL #HU1.1 ~~should be developed on site-specific basis~~. Damage may be caused to some portions of the site, but should not affect ability of safety functions to operate. Method of detection can be based on instrumentation, validated by a reliable source, or operator assessment. As defined in the EPRI-sponsored "Guidelines for Nuclear Plant Response to an Earthquake", dated October 1989, a "felt earthquake" is:

"An earthquake of sufficient intensity such that : (a) the inventory ground motion is felt at the nuclear plant site and recognized as an earthquake based on a consensus of control room operators on duty at the time, and (b) for plants with operable seismic instrumentation, the seismic monitors of the plant are activated. For most plants with seismic instrumentation, the seismic monitors are set at an acceleration of about 0.01 g."

IP2 does not have seismic instrumentation and is dependent on U3 instrumentation to confirm an earthquake event.

EAL #HU1.2 is based on the assumption that a tornado striking (touching down) within the protected boundary may have potentially damaged plant structures containing functions or systems required for safe shutdown of the plant. If such damage is confirmed visually or by other in-plant indications, the event may be escalated to Alert.

EAL #HU1.3 allows for ~~the~~ control room personnel to determine that an event has occurred and take appropriate action based on personal assessment as opposed to verification (i. e., an earthquake is felt but does not register on any plant-specific instrumentation, etc.).

EAL #HU1.4 is intended to address such items as plane or helicopter crash, ~~or on some sites, train crash, or barge~~ watercraft crash, or other projectile impact that may potentially damage plant structures containing functions and systems required for safe shutdown of the plant. If the crash is confirmed to affect a plant vital area, the event may be escalated to Alert.

For EAL #HU1.5, only those explosions of sufficient force to damage permanent structures or equipment within the protected area should be considered. As used here, an explosion is a rapid, violent, unconfined combustion, or a catastrophic failure of pressurized equipment, that potentially imparts significant energy to nearby structures and materials. No attempt is made in this EAL to assess the actual magnitude of the damage. The occurrence of the explosion with reports of evidence of damage (e. g., deformation, scorching) is sufficient for declaration. The Emergency Director also needs to consider any security aspects of the explosion, if applicable.

EAL #HU1.6 is intended to address main turbine rotating component failures of sufficient magnitude to cause observable damage to the turbine casing or to the seals of the turbine generator. Of major concern is the potential for leakage of combustible fluids (lubricating oils) and gases (hydrogen cooling) to the plant environs. Actual fires and flammable gas build up are appropriately classified via HU2 and HU3. This EAL is consistent with the definition of an Unusual Event while maintaining the anticipatory nature desired and recognizing the risk to non-safety related equipment. Escalation of the emergency classification is based on potential damage done by missiles generated by the failure or by the radiological releases ~~for a BWR, or in conjunction with a steam generator tube rupture, for a PWR~~. These latter events would be classified by the radiological ICs or fission product barrier ICs. For EAL #HU1.6, operating mode applicability is limited to Power Operations only since other modes of operation require that the turbine generator be secured or isolated from the vessel. Minor operational leakage would not trigger this action level.

EAL #HU1.7 covers high and low ~~lake~~ river water level conditions that could ~~other (site-specific phenomena such as hurricane, flood, or seiche). These EALs can also~~ be precursors of more serious events. ~~In particular, sites subject to severe weather as defined in the NUMARC station blackout initiatives, should include an EAL based on activation of the severe weather mitigation procedures (e. g., precautionary shutdowns, diesel testing, staff call-outs, etc.).~~ The high water level (14.5') corresponds to the maximum wave runup as specified in the FSAR. The low level (-4.5') corresponds to the design minimum service water bay level for design service water flow.

Reference:

1. Abnormal Operating Instruction 28.0.8, rev. 5, effective date 6/17/91 Earthquake Emergency
2. FSAR Section 2.5
3. Service Water Design Basis Document Section 1.4.1.1.2

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: HU2 **Fire within protected area boundary not extinguished within 15 minutes of detection.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

HU2.1

Confirmed fire in buildings or areas contiguous to any of the following ~~(site-specific)~~ areas not extinguished within 15 minutes of control room notification ~~or verification of a control room alarm~~:

~~• (Site-specific) list~~

- Condensate Storage Tank
- RWST
- Service Water Intake Structure
- Service Water Valve Pit East
- Fuel Storage Building
- Primary Auxiliary Building/Fan House
- Vapor Containment Building
- 480 Volt Switchgear Room
- Cable Spreading Room/Electrical Tunnel
- Central Control Room
- Diesel Generator Building/Fuel Tank Area
- Auxiliary Feedwater Pump Building
- Battery Room
- Central Alarm Station

Bases

The purpose of this IC is to address the magnitude and extent of fires that may be potentially significant precursors to damage to safety systems. This excludes such items as fires within administration buildings, waste-basket fires, and other small fires of no safety consequence. This IC applies to buildings and areas that are not contiguous or immediately adjacent to plant vital areas. Verification of the alarm in this context means those actions taken in the control room to determine that the control room alarm is not spurious.

Escalation to a higher emergency class is by IC HA2, "Fire Affecting the Operability of Plant Safety Systems Required for the Current Operating Mode".

~~Multi-unit stations with shared safety functions should further consider how this IC may affect more than one unit and how this may be a factor in escalating the emergency class.~~ IP-3 and IP-2 share no common safety systems, but their protected area boundaries border on each other in some places. Therefore a fire on one unit could affect the other unit.

Reference:

Table 3.1, "Vital Areas By Type And Category."

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: HU3 **Release of toxic or flammable gases deemed detrimental to safe operation of the plant.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

HU3.1	HU3.2
Report or detection of toxic or flammable gases that could enter or have entered within the ~~site~~ protected area boundary in amounts that ~~can affect normal~~ could affect the health of plant personnel or safe operation of the plant.	Report by local, county or state officials, or Unit 3, for potential evacuation of site personnel based on offsite event.

Bases

This IC is based on releases in concentrations within the ~~site~~ protected area boundary that will affect the health of plant personnel or affecting the safe operation of the plant with the plant being within the evacuation area of an offsite event (i. e., tanker truck accident releasing toxic gases, etc.). The evacuation area is as determined from the DOT Evacuation Tables for Selected Hazardous Materials, in the DOT Emergency Response Guide for Hazardous Materials.

~~Multi-unit stations with shared safety functions should further consider how this IC may affect more than one unit and how this may be a factor in escalating the emergency class.~~ IP-2 and IP-3 share no common safety systems, but their respective protected area boundaries share common borders in some places. Therefore it is possible that a toxic or flammable gas incident happening on one site could affect the other site.

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: HU4 **Confirmed security event which indicates a potential degradation in the level of safety of the plant.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

HU4.1

Bomb device discovered within plant protected area ~~and~~ but outside the following plant vital areas:

Condensate Storage Tank, RWST, Service Water Intake Structure, Heater Bay/Service Water Valve Pit East, Fuel Storage Building, Primary Auxiliary Building/Fan House, Vapor Containment Building, 480 Volt Switchgear Room (Control Building), Cable Spreading Room and Electrical Tunnel, Central Control Room, Diesel Generator Building and Fuel Tank Area, Auxiliary Feedwater Pump Building Main Steam Enclosure, Battery Room (Control Building 33' 0" elevation), Central Alarm Station, Security Emergency Diesel.

HU4.2

Other security events as determined from ~~(site-specific) Security~~ Safeguards Contingency Plan.

Bases

This EAL is based on ~~(site-specific) Site Security Plan~~ the Indian Point Unit 2 Security Contingency Plan. Security events which do not represent at least a potential degradation in the level of safety of the plant, are reported under 10CFR73.71 or in some cases under 10CFR50.72. The plant protected area boundary is ~~typically~~ that part within the security isolation zone and is defined in the ~~(site-specific) security plan~~ Indian Point Unit 2 Security Contingency Plan. Plant vital areas are also defined within the Indian Point Unit 2 Security Contingency Plan. Bomb devices discovered within the plant vital area would result in EAL escalation.

Reference:

1. Indian Point Unit 2 Safeguards Contingency Plan
2. Table 3.1, "Vital Areas By Type And Category."

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: HU5 **Other conditions existing which in the judgement of the Emergency Director warrant declaration of an Unusual Event.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

HU5.1

Other conditions exist which in the judgement of the ~~Emergency Director~~ Senior Watch Supervisor or POM indicate a potential degradation of the level of safety of the plant.

Bases

This EAL is intended to address unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the ~~Emergency Director~~ Senior Watch Supervisor or POM to fall under the Unusual Event emergency class.

From a broad perspective, one area that may warrant ~~Emergency Director~~ Senior Watch Supervisor or POM judgement is related to likely or actual breakdown or site specific event mitigating actions. Examples to consider include inadequate emergency response procedures, transient response either unexpected or not understood, failure of unavailability of emergency systems during an accident in excess of that assumed in accident analysis, or insufficient availability of equipment and/or support personnel.

Specific example of actual events that may require ~~Emergency Director~~ Senior Watch Supervisor or POM judgement for Unusual Event declaration are listed here for consideration. However, this list is by no means all inclusive and is not intended to limit the discretion of the site to provide further examples:

~~• Aircraft crash onsite~~ (Aircraft crash onsite is addressed in EAL HU1.5.)

~~• Train derailment onsite~~ There are no train tracks on the IP-3 site.

~~• Near-site explosion which may adversely affect normal site activities~~ (Explosions are addressed in EAL HU4.1)

~~• Near-site release of toxic or flammable gas which may adversely affect normal site activities~~ (Toxic or flammable gas release is addressed in EAL HU3.1 and EAL HU3.2.)

~~• Uncontrolled RCS cooldown due to secondary depressurization~~

It is also intended that the ~~Emergency Director's~~ Senior Watch Supervisor's judgement not be limited by any list of events as defined here or as augmented by the site. This list is provided solely as examples for consideration and it is recognized that actual events may not always follow a pre-conceived description.

NOTE: Since this is a NUE EAL, the position of Emergency Director would not be manned, so the Senior Watch Supervisor would made the declaration.

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

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

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

HA1.1

~~(Site-specific) method~~

~~Operating Basis Earthquake (OBE).~~
Earthquake is felt at plant by one or more operators
AND
Notification from IP-3 that an earthquake has occurred of magnitude ≥ 0.10 g horizontal OR 0.05 g vertical

HA1.2

~~Tornado or high winds striking plant vital areas: Tornado or high winds greater than (site-specific) mph strike within the protected area boundary.~~

Sustained winds greater than 100 mph onsite
OR
Tornado strikes a plant vital area

(see HA1.3 for list of plant vital areas.)

HA1.3

EAL #HA1.3 should specify ~~(site-specific)~~ structures containing systems and functions required for safe plant operation ~~safe shutdown of the plant.~~
~~• Reactor building • Intake building • Ultimate heat sink • Refueling water storage tank • Diesel generator building • Turbine building • Condensate storage tank • Control room, Other (site-specific) structures~~
Condensate Storage Tank, RWST, Service Water Intake Structure, Service Water Valve Pit East, Fuel Storage Building, Primary Auxiliary Building/Fan House, Vapor Containment Building, 480 Volt Switchgear Room (Control Building), Cable Spreading Room and Electrical Tunnel, Central Control Room, Diesel Generator Building and Fuel Tank Area, Auxiliary Feedwater Pump Building, Battery Room (Control Building 33' 0" elevation), CAS, SAS, Security

HA1.4

~~(Site-specific) indications~~

HA1.5

Vehicle crash or projectile impact ~~affecting~~ which causes or could cause any required safety related system or structure to become inoperable ~~plant vital areas.~~ (See HA3.1 for list of vital areas.)

HA1.6

Turbine failure generated missiles ~~result in any visible structural damage to or penetration of any of the following plant areas~~ which causes or potentially causes any required safety related system or structure to become inoperable

HA1.7

~~Site-specific) occurrences.~~ River level equal to or greater than 15' (0MSL) at site. OR Intake structure level less than that resulting in a loss of Service Water flow

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

Bases

Each of these EALs is intended to address events that may have resulted in a plant vital area being subjected to forces beyond design limits, and thus damage may be assumed to have occurred to plant safety systems. The initial "report" should not be interpreted as mandating a lengthy damage assessment prior to classification. No attempt is made in this EAL to assess the actual magnitude of the damage. Escalation to a higher emergency class, if appropriate, will be based on System Malfunction, Fission Product Barrier Degradation, Abnormal Rad Releases/Radiological Effluent, or Emergency Director Judgement ICs.

~~Multi-unit stations with shared safety functions should further consider how this IC may affect more than one unit and how this may be a factor in escalating the emergency class.~~

EAL #HA1.1 ~~should be~~ is based on ~~(site-specific)~~ FSAR design basis of 0.15g horizontal and 0.10g vertical. Seismic events of this magnitude can cause damage to safety functions.

EAL #HA1.2 ~~should be~~ is based on ~~(site-specific)~~ FSAR design basis of 100 mph. Wind loads of this magnitude can cause damage to safety functions.

EAL #HA1.3 should specify ~~(site-specific)~~ structures containing systems and functions required for safe plant operation ~~safe shutdown of the plant.~~

~~EAL #HA1.4 should specify specifies the types of instrumentation or indications including judgements which are to be used to assess occurrence.~~ The methods by which natural and destructive phenomena are indicated in the control room are adequately given by the means in which EAL HA1.1, 1.2 and 1.3 are determined. Therefore there is no need for this EAL.

EAL #HA1.5 is intended to address such items as plane or helicopter crash, ~~or on some sites~~, train crash, or ~~barge~~ watercraft crash, or impact of projectiles, into a plant vital area.

EAL #HA1.6 ~~is intended to address~~es the threat to safety related equipment imposed by missiles generated by main turbine rotating component failures. The ~~is (site-specific) list of~~ areas (Service Water System, Condensate Storage Tank and piping, Refueling Water Storage Tank and piping, Shield wall area, P, A, B,, Electrical penetration area, Diesel Generators, and Central Control Room,)should include all areas containing safety-related equipment, their controls, and their power supplies. This EAL is, therefore, consistent with the definition of an ALERT in that if missiles have damaged or penetrated areas containing safety-related equipment the potential exists for substantial degradation of the level of safety of the plant.

EAL #HA1.7 covers ~~other (site-specific phenomena such as hurricane, flood, or seiche). These EALs can also be a precursors of more serious events. In particular, sites subject to severe weather as defined in the NUMARC station blackout initiatives, should include an EAL based on activation of the severe weather mitigation procedures (e. g., precautionary shutdowns, diesel testing, staff call-outs, etc.). covers~~ high and low lake water level conditions that could ~~other (site-specific) phenomena such as flood.~~ result in loss of vital plant equipment. River levels ≥ 15 ft. corresponds to flood levels threatening vital equipment. Intake structure level ≤ that causing a loss of Service water flow threatens operability of plant vital equipment.

References:

1. Abnormal Operating Instruction 28.0.8, rev. 5, effective date 6/17/91 (Earthquake)
2. NRC Safety Evaluation Report, 11/26/70, (wind speed)
3. Table 3.1, "Vital Areas By Type And Category," (Vital Areas)
5. Updated FSAR Volume 10, Appendix 14A Turbine overspeed analysis, page 14A-23
6. AOI 26.4.2, Rev. 2, TURBINE MISSILE GENERATION, 12/18/90,
7. Tech Specs, Section 3.14 (Hurricane Alert)
8. Updated FSAR section 2.5

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: HA2 **Fire or explosion affecting the operability of plant safety systems required to establish or maintain safe shutdown.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

HA2.1

The following conditions exist:

a. Fire or explosion in any of the following ~~(site-specific)~~ areas:
Condensate Storage Tank, RWST, Service Water Intake Structure, Service Water Valve Pit East, Fuel Storage Building, Primary Auxiliary Building/Fan House, Vapor Containment Building, 480 Volt Switchgear Room (Control Building), Cable Spreading Room and Electrical Tunnel, Central Control Room, Diesel Generator Building and Fuel Tank Area, Auxiliary Feedwater Pump Building, Battery Room (Control Building 33' 0" elevation), Central Alarm Station,

AND

b. ~~Affected system parameter indications show degraded performance or plant personnel report visible damage to permanent structures or equipment within the specified area.~~
Causes or potentially causes any required safety related system or structure to become inoperable

Bases

~~(Site-specific)~~ The listed areas containing functions and systems required for the safe shutdown of the plant ~~should be specified~~. ~~(Site-specific)~~ IP-2 safe shutdown analysis should be consulted for equipment and plant areas required for the applicable mode. This will make it easier to determine if the fire or explosion is potentially affecting one or more redundant trains of safety systems. Escalation to a higher emergency class, if appropriate, will be based on System Malfunction, Fission Product Barrier Degradation, Abnormal Rad Releases/Radiological Effluent, or Emergency Director Judgement ICs.

~~Multi-unit stations with shared safety functions should further consider how this IC may affect more than one unit and how this may be a factor in escalating the emergency class.~~ IP-2 and IP-3 have no shared safety systems and the protected area boundaries are separated by several hundred feet, so it is unlikely that a fire or explosion at one unit would affect the other.

With regard to explosions, only those explosions of sufficient force to damage permanent structures or equipment required for safe operation within the identified plant areas should be considered. As used here, an explosion is a rapid, violent, unconfined combustion, or a catastrophic failure of pressurized equipment, that potentially imparts significant energy to nearby structures and materials. The inclusion of a "report of visible damage" should not be interpreted as mandating a lengthy damage assessment prior to classification. No attempt is made in this EAL to assess the actual magnitude of the damage. The occurrence of the explosion with reports of evidence of declaration of an Alert and the activation of the TSC will provide the Emergency Director with the resources needed to perform these damage assessments. The Emergency Director also needs to consider any security aspects of the explosions, if applicable.

Reference:Table 3.1, "Vital Areas By Type And Category."

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: HA3 **Release of toxic or flammable gases within a facility structure which jeopardizes operation of systems required to maintain safe operations or to establish or maintain cold shutdown.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

HA3.1

Report or detection of toxic gases within a the following facility structures in concentrations that will be life threatening to plant personnel:

Condensate Storage Tank, RWST, Service Water Intake Structure, Service Water Valve Pit East, Fuel Storage Building, Primary Auxiliary Building/Fan House, Vapor Containment Building, 480 Volt Switchgear Room (Control Building), Cable Spreading Room and Electrical Tunnel, Central Control Room, Diesel Generator Building and Fuel Tank Area, Auxiliary Feedwater Pump Building, Battery Room (Control Building 33' 0" elevation), Central Alarm Station.

HA3.2

Report or detection of flammable gases within a the following structures in concentrations that will ~~affect~~ preclude access to equipment (even when using personal protective equipment) necessary for the safe operation of the plant:

Condensate Storage Tank, RWST, Service Water Intake Structure, /Service Water Valve Pit East, Fuel Storage Building, Primary Auxiliary Building/Fan House, Vapor Containment Building, 480 Volt Switchgear Room (Control Building), Cable Spreading Room and Electrical Tunnel, Central Control Room, Diesel Generator Building and Fuel Tank Area, Auxiliary Feedwater Pump Building, Battery Room (Control Building 33' 0" elevation), Central Alarm Station.

Bases

This IC is based on gases that have entered a plant structure ~~affecting~~ precluding access to equipment neccessary for the safe operation of the plant. This IC applies to buildings and areas contiguous to plant vital areas or other significant buildings or areas (i. e., Service Water Pump house). The intent of this IC is not to include buildings (i. e., warehouses) or other areas that are not contiguous or immediately adjacent to plant vital areas. It is appropriate that increased monitoring be done to ascertain whether consequential damage has occurred. Escalation to a higher emergency class, if appropriate, will be based on System Malfunction, Fission Product Barrier Degradation, Abnormal Rad Releases/Radiological Effluent, or Emergency Director Judgement ICs.

~~Multi-unit stations with shared safety functions should further consider how this IC may affect more than one unit and how this may be a factor in escalating the emergency class.~~

Reference: Table 3.1, "Vital Areas By Type And Category."

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: HA4 **Security event in a plant protected area.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

HA4.1	HA4.2
Intrusion into plant protected area by ~~a hostile force~~ an adversary.	Other security events as determined from ~~(site-specific)~~ IP-2 ~~Safeguards~~ Security Contingency Plan.

Bases

This class of security events represents an escalated threat to plant safety above that contained in the Unusual Event. For the purposes of this IC, ~~a civil disturbance which penetrates the protected area boundary can be considered a hostile force~~ intrusion by an adversary inside the Protected Area boundary can be considered a significant security threat. Intrusion into a vital area by a hostile force will escalate this event to a Site Area Emergency.

~~Multi-unit stations with shared safety functions should further consider how this IC may affect more than one unit and how this may be a factor in escalating the emergency class.~~ IP-3 and IP-2 protected areas share a common boundary in some places, and it is possible that a security event in one unit could affect the other.

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: HA5 **Control room evacuation has been initiated.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

HA5.1

Entry into ~~(site-specific) procedure~~ AOI 27.1.9, Rev. 14, CONTROL ROOM INACCESSIBILITY/SAFE SHUTDOWN CONTROL, 12/16/92, for control room evacuation.

Bases

With the control room evacuated, additional support, monitoring and direction through the Technical Support Center and/or other Emergency ~~Operations Center~~ facilities is necessary. Inability to establish plant control from outside the control room will escalate this event to a Site Area Emergency.

~~Multi-unit stations with shared safety functions should further consider how this IC may affect more than one unit and how this may be a factor in escalating the emergency class.~~

Reference:

AOI 27.1.9, Rev. 14, CONTROL ROOM INACCESSIBILITY/SAFE SHUTDOWN CONTROL, 12/16/92

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: HA6 **Other conditions existing which in the judgement of the Emergency Director warrant declaration of an Alert.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

HA6.1

Other conditions existing which in the judgement of the Emergency Director indicate that plant safety systems may be degraded and that increased monitoring of plant functions is warranted.

Bases

This EAL is intended to address unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the Emergency Director to fall under the Alert emergency class.

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: HS1 **Security event in a plant vital area.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

HS1.1

Intrusion into the following plant security vital areas by ~~a hostile force~~ an adversary:

Condensate Storage Tank, RWST, Service Water Intake Structure, Heater Bay/Service Water Valve Pit East, Fuel Storage Building, Primary Auxiliary Building/Fan House, Vapor Containment Building, 480 Volt Switchgear Room (Control Building), Cable Spreading Room and Electrical Tunnel, Central Control Room, Diesel Generator Building and Fuel Tank Area, Auxiliary Feedwater Pump Building Main Steam Enclosure, Battery Room (Control Building 33' 0" elevation), Central Alarm Station, Security Emergency Diesel.

HS1.2

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

Bases

This class of security events represents an escalated threat to plant safety above that contained in the Alert IC in that ~~a hostile force~~ an adversary has progressed from the protected area to the vital area.

~~Multi-unit stations with shared safety functions should further consider how this IC may affect more than one unit and how this may be a factor in escalating the emergency class.~~

The IP-2 protected area boundary is illustrated on the site plot plan

Reference:

Table 3.1, "Vital Areas By Type And Category."

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: HS2 **Control room evacuation has been initiated and ~~plant~~ control of core cooling cannot be established.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

HS2.1

The following conditions exist:

a. Control room evacuation has been initiated.

AND

b. Control of ~~the plant~~ core cooling cannot be established per ~~(site-specific) procedure~~ AOI 27.1.9, Rev. 14, CONTROL ROOM INACCESSIBILITY/SAFE SHUTDOWN CONTROL, 12/16/93 within ~~(site-specific)~~ 15 minutes.

Bases

Expeditious transfer of safety systems has not occurred but fission product barrier damage may not yet be indicated. ~~(Site-specific)~~ The time for transfer is based on analysis or assessments as to how quickly control must be reestablished without core uncovering and/or core damage. This time should not exceed 15 minutes. In cold shutdown and refueling modes, operator concern is directed toward maintaining core cooling such as is discussed in Generic Letter 88-17, "Loss of Decay Heat Removal." In power operation , hot standby, and hot shutdown modes, operator concern is primarily directed toward maintaining critical safety functions and thereby assuring fission product barrier integrity. Escalation of this event, if appropriate, would be by Fission Product Barrier Degradation, Abnormal Rad Releases/Radiological Effluent, or Emergency Director Judgement ICs.

With respect to protection of the public and safe plant operations, "plant control" must focus primarily on the ability to maintain the reactor in a cooled condition. Therefore, it is appropriate to change the IC and EAL so that it emphasizes the need for core cooling when controlling the plant from outside the Control Room.

~~Multi-unit stations with shared safety functions should further consider how this IC may affect more than one unit and how this may be a factor in escalating the emergency class.~~

Reference:

AOI 27.1.9, Rev. 14, CONTROL ROOM INACCESSIBILITY/SAFE SHUTDOWN CONTROL, 12/16/93

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: HS3 **Other conditions which in the judgement of the Emergency Director warrant declaration of Site Area Emergency.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

HS3.1

Other conditions which in the judgement of the Emergency Director warrant declaration of Site Area Emergency.

Bases

This EAL is intended to address unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the Emergency Director to fall under the emergency class description for Site Area Emergency.

Multi-unit stations with shared safety functions should further consider how this IC may affect more than one unit and how this may be a factor in escalating the emergency class.

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: HG1 **Security event resulting in loss of ability to reach and maintain cold shutdown.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

HG1.1	HG1.2
Loss of plant ~~physical~~ control ~~of~~ from the control room due to security event. AND Loss of physical control of the remote shutdown capability due to security event.	~~Loss of physical control of the remote shutdown capability due to security event.~~

Bases

This IC encompasses conditions under which a hostile force has taken physical control of vital area required to reach and maintain safe shutdown. The concern here is the loss of ability to shutdown the reactor and maintain core cooling. Therefore this EAL has been modified to relect a loss of plant control from both the control room and remote shutdown panels.

~~Multi-unit stations with shared safety functions should further consider how this IC may affect more than one unit and how this may be a factor in how rapidly a General Emergency is declared.~~

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: HG2 **Other conditions existing which in the judgement of the Emergency Director warrant declaration of General Emergency.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

HG2.1

Other conditions existing which in the judgement of the Emergency Director indicate: (1) actual or imminent substantial core degradation with potential for loss of containment, or (2) potential for uncontrolled radionuclide releases. These releases can reasonably be expected to exceed EPA PAG plume exposure levels outside the site boundary.

Bases

This EAL is intended to address unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the Emergency Director to fall under the General Emergency class.

~~Multi-unit stations with shared safety functions should further consider how this IC may affect more than one unit and how this may be a factor in how rapidly a General Emergency is declared.~~

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SU1 **Loss of all offsite power to essential busses for greater than 15 minutes.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

SU1.1

The following conditions exist:

a. Loss of power to ~~(site-specific)~~ :
Station Service Transformers 2/3, 5 and 6 feeding 480V buses 2A,3A, 5A and 6A respectively from the Unit and Station Aux transformers and from the 13.8 KV gas turbine bus

for greater than 15 minutes.

AND

b. At least ~~(site-specific)~~ one emergency diesel generator is capable of supplying power to its 480V bus ~~emergency generators are supplying power to emergency buses.~~

Bases

Prolonged loss of offsite AC power sources reduces required redundancy and potentially degrades the level of safety of the plant by rendering the plant more vulnerable to a complete loss of AC power (station blackout). Fifteen minutes was selected as a threshold to exclude transient or momentary power losses.

~~Multi-unit stations with shared safety functions should further consider how this IC may affect more than one unit and how this may be a factor in escalating the emergency class.~~

Reference:

1. Design Basis Document (DBD) for 480 V system, Rev. 0, 10/15/91.
2. Oneline Diagram of IP-2 electrical distribution

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SU2 **Inability to reach required shutdown within Technical Specification Limits.**

Op. Mode Applicability ■ 1 (Pwr Ops) ■ 2 (HSB) ■ 3 (HSD) □ 4 (CSD) □ 5 (Refuel) □ 6 (Defuel) □ All

SU2.1

Plant is not brought to required operating mode ~~(site-specific)~~ within the Technical Specifications LCO Action Statement Time.

Bases

Limiting Conditions of Operation (LCOs) require the plant to be brought to a required shutdown mode when the Technical Specification required configuration cannot be restored. Depending on the circumstances, this may or may not be an emergency or precursor to a more severe condition. In any case, the initiation of plant shutdown required by the site Technical Specification requires a one hour report under 10CFR50.72 (b) non-emergency events. The plant is within its safety envelope when being shut down within the allowable action statement time in the Technical Specifications. An immediate Notification of an Unusual Event is required when the plant is not brought to the required operating mode within the allowable action statement time in the Technical Specifications. Declaration of an Unusual Event is based on the time at which the LCO-specified action statement time period elapses under the site Technical Specifications and is not related to how long a condition may have existed. Other required Technical Specification shutdowns that involve precursors to more serious events are addressed by other System malfunction Hazards, or Fission Product Barrier Degradation ICs.

Reference:

Tech Specs. paragraph 3.0.1. page 3.1.A-1.

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SU3 **Unplanned loss of most or all safety system annunciation or indication in the control room for greater than 15 minutes.**

Op. Mode Applicability ■ 1 (Pwr Ops) ■ 2 (HSB) ■ 3 (HSD) □ 4 (CSD) □ 5 (Refuel) □ 6 (Defuel) □ All

SU3.1

The following conditions exist:

a. Loss of most (approx. 75%) ~~or all (site-specific)~~ annunciators or indicators on ~~any~~ Control Room Panels ~~associated with safety systems~~ for greater than 15 minutes.

AND

b. ~~Compensatory non-alarming indications are is available.~~

AND

c. In the opinion of the Shift Supervisor, the loss of the annunciators or indicators requires increased surveillance to safely operate the unit~~(s)~~.

AND

d. Annunciator or indicator loss does not result from planned action.

Bases

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 ~~(SPDS, plant computer, etc.~~ (PROTEUS, SAS).

"Unplanned" loss of annunciators or indicator excludes scheduled maintenance and testing activities.

"Compensatory non-alarming indications: in this context includes computer based information such as SPDS . This should include all computer systems available for this use depending on specific plant design and subsequent retrofits. The words ~~"Compensatory non-alarming indications are is available."~~ have been deleted because they are unecessary. SA4.1 requires declaration of an Alert based on thier loss.

Quantification of "Most" 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 instrumentation lost but the use of ~~the value as a~~ judgement by the Shift Supervisor as the threshold for determining the severity of the plant conditions. This judgement is supported by the specific opinion of the Shift Supervisor that additional operating personnel will be required to provide increased monitoring of system operation to safely operate the unit(s).

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 their 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 SU2, Inability to Reach Required Shutdown Within Technical Specification Limits."
~~(Site-specific)~~ 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 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.

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SU4 **Fuel clad degradation.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

SU4.1

~~(Site-specific) radiation monitor readings indicating fuel clad degradation greater than Technical Specification allowable limits.~~ There is no predictable, reliable radiation monitor reading that could be used to predict this degree of fuel clad degradation. R-4 (Area radiation monitor in the Charging Pump area) would be expected to increase.

SU4.2

~~(Site-specific) coolant sample activity value indicating fuel clad degradation greater than Technical Specification allowable limits.~~ 60/(E bar) µCi/cc. (E bar is the weighted average of the beta and gamma energies per disintegration in Mev.)

Bases

This IC is included as an Unusual Event because it is considered to be a potential degradation in the level of safety of the plant and a potential precursor of more serious problems.

EAL #SU4.1 addresses (site-specific) radiation monitor readings such as BWR air ejector monitors, PWR failed fuel monitors, etc., that provide indication of fuel clad integrity.

EAL #SU4.2 addresses coolant samples exceeding coolant technical specifications ~~for iodine spike~~. Escalation of this IC to the Alert level is via the fission product barrier degradation monitoring ICs.

Reference:

Tech Specs para. 3.1.D.1.

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SU5 **RCS leakage.**

Op. Mode Applicability ■ 1 (Pwr Ops) ■ 2 (HSB) ■ 3 (HSD) □ 4 (CSD) □ 5 (Refuel) □ 6 (Defuel) □ All

SU5.1

Either of the following conditions exist:

a. Unidentified or pressure boundary leakage greater than 10 gpm

OR

b. Identified leakage greater than 25 gpm.

Bases

This IC is included as an Unusual Event because it may be a precursor of more serious conditions and, as a result, is considered to be a potential degradation of the level of safety of the plant. The 10 gpm value for the unidentified and pressure boundary leakage was selected as it is observable with normal control room indications. Lesser values must generally be determined through time-consuming surveillance test (e. g., mass balances). The EAL for identified leakage is set at a higher value due to the lesser significance of identified leakage in comparison to unidentified or pressure boundary leakage. In either case, escalation of this IC to the Alert level is via Fission Product Barrier Degradation ICs or IC SA3, "Inability to Maintain Plant in Cold Shutdown."

Only operating modes in which there is fuel in the reactor coolant system and the system is pressurized are specified.

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SU6 **Unplanned loss of all onsite or offsite communications capabilities.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ■ All

SU6.1

Either of the following conditions exist:

a. Loss of all ~~(site-specific list)~~ of the following onsite communications capability affecting the ability to perform routine operations:
Plant telephone system, Gaitronics page system, radiotelephones, portable radios.

OR

b. Loss of all ~~(site-specific list)~~ of the following offsite communications capability:
Emergency Notification System (ENS) for NRC, 4-party phones for communication with other Consolidated Edison emergency facilities, Radiological Emergency Communications system (RECS), Local Government Radio System, direct lines to Peekskill Police Department and State Police.

Bases

The purpose of this IC and its associated EALs is to recognize a loss of communications capability that either defeats the plant operations staff ability to perform routine tasks necessary for plant operations or the ability to communicate problems with offsite authorities. The loss of offsite communications ability is expected to be significantly more comprehensive than the condition addressed by 10CFR50.72.

~~(Site-specific list)~~ The onsite communications loss must encompass the loss of all means of routine communications (i. e., phones, sound powered phone systems, page party system and radios/walkie talkies).

~~(Site-specific list)~~ The offsite communications loss must encompass the loss of all means of communications with offsite authorities. This should include ENS, Bell lines, FAX transmissions, and dedicated EPP phone systems. This EAL is intended to be used only when extraordinary means are being utilized to make communications possible (relaying of information from radio transmissions, individuals being sent to offsite locations, etc.).

Reference:
Discussions with SRO Rich Burns

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SU7 **Unplanned loss of required DC power during cold shutdown or refueling mode for greater than 15 minutes.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ■ 4 (CSD) ■ 5 (Refuel) ☐ 6 (Defuel) ☐ All

SU7.1

~~Either~~ Both of the following conditions exist:

a. ~~Unplanned loss of vital DC power to required all DC busses based on (site-specific)~~ Total or partial loss of voltage indication on the switchable voltmeter for 125 VDC Power Panels 21, 22, 23 and 24.

AND

b. Failure to restore power to all ~~required~~ DC buses within 15 minutes from the time of loss.

Bases

The purpose of this IC and its associated EALs is to recognize a loss of DC power compromising the ability to monitor and control the removal of decay heat during cold shutdown or refueling operations. This EAL is intended to be anticipatory in as much as the operating crew may not have necessary indication and control of equipment needed to respond to the loss.

"Unplanned" is included in this IC and EAL to preclude the declaration of an emergency as a result of planned maintenance activities. Routinely plants will perform maintenance on a train related basis during shutdown periods. It is intended that the loss of the operating (operable) train is to be considered. If this loss results in the inability to maintain cold shutdown, the escalation to an Alert will be per SA3 "Inability to Maintain Plant in Cold Shutdown."

~~(Site-specific)~~ The bus voltage ~~should be~~ is based on the minimum bus voltage necessary for the operation of safety related equipment. This voltage value should incorporate a margin of at least 15 minutes of operation before the onset of inability to operate those loads. This voltage is usually near the minimum voltage selected when battery sizing is performed. Typically the value for the entire battery set is approximately 105 volts per cell. For a 56 string battery set the minimum voltage is typically 1.81 volts per cell.

Reference:

Design Basis Document (DBD) for 125 VDC System, Rev. 0, 11/15/91.

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SA1 **Loss of all offsite power and loss of all onsite AC power to essential busses during cold shutdown or refueling mode.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ■ 4 (CSD) ■ 5 (Refuel) ☐ 6 (Defuel) ☐ All

SA1.1

a. Loss of power to ~~(site-specific)~~ :

Station Service Transformers 5, 2, 3 and 6 feeding 480V vital buses 5A, 2A/3A and 6A respectively

AND

b. Failure of ~~(site-specific)~~ 480 V Diesel Generators 21, 22, 23 to supply power to any vital bus (2A/3A, 5A and 6A) ~~emergency generators are supplying power to emergency buses.~~

AND

c. Failure to restore power to bus 2A/3A, 6A or 5A ~~at least one emergency bus~~ within 15 minutes from the time of loss of both offsite and onsite AC power.

AND

Inability to power required core cooling systems with alternate power sources for ≥ 15 min.

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

Bases

Loss of all AC power compromises all plant safety systems requiring electric power including RHR, ECCS, containment heat removal, Spent Fuel Heat Removal and the Ultimate Heat
When in cold shutdown, refueling, or defueled mode the event can be classified as an Alert, because of the significantly reduced decay heat, lower temperature and pressure, increa
time to restore one of the emergency busses, relative to that specified for the Site Area Emergency EAL. Escalating to the Site Area Emergency, if appropriate, is by Abnormal Rad
Levels/Radiological Effluent, or Emergency Director Judgement ICs. Fifteen minutes was selected as a threshold to exclude transient or momentary power losses.

The words "AND Inability to power required core cooling systems with alternate power sources" have been added to take into account the unique capability at IP-2 to quickly supply power directly to ECCS and other safety related equipment from theAlternat Safe Shutdown Equipment power supplies bypassing the emergency busses.

Note that Defuel mode is not applicable to this IC because the IC is specifically written for cold shutdown and refuel modes.

Reference:

1. Design Basis Document (DBD) for 480V system. Rev. 0. 10/15/91.
2. ECA-0.0. Rev. 16. LOSS OF ALL AC POWER

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SA2 **Failure of Reactor Protection system Instrumentation to complete or initiate an automatic reactor ~~scram~~ trip once a Reactor Protection system setpoint has been exceeded and/or manual ~~scram~~ trip was not successful, and there is no power generation.**

Op. Mode Applicability ■ 1 (Pwr Ops) ■ 2 (HSB) □ 3 (HSD) □ 4 (CSD) □ 5 (Refuel) □ 6 (Defuel) □ All

SA2.1

~~(Site-specific) indication(s) exist that indicate that Reactor Protection system setpoint was exceeded and automatic scram did not occur, and a successful manual scram occurred.~~
ORANGE or RED path in F-0.1 Subcriticality
and
Emergency Boration is required.

Bases

This EAL addresses any manual trip or automatic trip signal followed by a manual trip which fails to shut down the reactor to an extent requiring emergency boration.
This condition indicates failure of the automatic and/or manual protection system to trip ~~scram~~ the reactor to the extent which precludes the reactor being made sub-critical. This condition is more than a potential degradation of a safety system in that a front line automatic protection system did not function in response to a plant transient and thus the plant safety has been compromised, and design limits of the fuel may have been exceeded. An Alert is indicated because conditions exist that lead to potential loss of fuel clad or RCS. ~~Reactor Protection system setpoint being exceeded (rather than limiting safety system setpoint being exceeded) is specified here because failure of the automatic protection system is the issue.~~ A manual trip ~~scram~~ is any set of actions by the reactor operator(s) at the reactor control console which causes control rods to be rapidly inserted into the core and brings the reactor subcritical (e. g., reactor trip button). ~~Failure of manual scram would escalate the event to a Site Area Emergency.~~

This IC and resulting EAL have been specifically modified to more acurately define the condition described by the generic bases as applied to pressurized water reactors. The failure of automatic initiation of a reactor trip followed by successful manual initiation actions which can be rapidly taken at the reactor control console does not pose a potential loss of either fuel clad or RCS boundaries. It is the continued criticality under conditions requiring a reactor scram which poses the potential threat to RSC or fuel clad integrity. If an ORANGE path exists on F-0.1, CRITICALITY, there has been a failure to shut down the reactor, but without substantial heat generation. These conditions represent a potential loss of the fuel clad boundary, and thus warrant a declaration of ALERT. CSFST Subcriticality - ORANGE path is entered based on failure of the intermediate range startup rate monitors to indicate negative or zero following reactor trip. A manual trip is any set of actions by the reactor operator(s) at the reactor control console which causes control rods to be rapidly inserted into the core and brings the reactor subcritical (e. g., reactor trip button). It is also important to note that the failure of the reactor protection system to initiate an automatic trip does not infer actual or potential failures of other systems nor is it, in and of itself, a precursor to fission product barrier degradation. The RPS serves no other safety function but to initaite reactor trips. Therefore, once the reactor has been sucessully tripped, failures in the RPS system can have no plant safety impact. If immediate manual actions to trip the reactor are sucessful following recognition of an automatic trip failure, there is no threat to either plant safety or fission product integrity related to the automatic trip failure. This deviation is consistent with the philosiphy of making accurate vs. conservative classifications.

Reference:

1. FR-S.1, Rev. 16, RESPONSE TO NUCLEAR GENERATION/ATWS
2. F-0.1, SUBCRITICALITY, Rev. 2

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SA3 **Inability to maintain plant in cold shutdown.**

Op. Mode Applicability ☐ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ■ 4 (CSD) ■ 5 (Refuel) ☐ 6 (Defuel) ☐ All

SA3.1

The following conditions exist:

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

~~AND~~

b. Reactor coolant temperature increase that either:

- Exceeds 200 °F ~~cold shutdown temperature limit Technical Specification~~

  OR

- Results in uncontrolled temperature rise approaching 200 °F ~~cold shutdown temperature limit technical specification~~.

Bases

This EAL addresses complete loss of functions required for core cooling during refueling and cold shutdown modes. Escalation to Site Area Emergency or General Emergency would be via Abnormal Rad Levels/Radiological Effluent or Emergency Director Judgement ICs.

~~For PWRs, this IC and its associated EAL are based on concerns raised by Generic Letter 88-17, "Loss of Decay Heat Removal." A number of phenomena such as pressurization, vortexing, steam generator U-tube draining, RCS level differences when operating at a mid-loop condition, decay heat removal system design, and level instrumentation problems can lead to conditions where decay heat removal is lost and core uncovery can occur. NRC analyses show that sequences that can cause core uncovery in 15 to 20 minutes and severe core damage within an hour after decay heat removal is lost. Under these conditions, RCS integrity is lost and fuel clad integrity is lost or potentially lost, which is consistent with a Site Area Emergency. (Site-specific) indicators for these EALs are those methods used by the plant in response to Generic Letter 88-17 which include core exit temperature monitoring and RCS water level monitoring. In addition, radiation monitor readings may also be appropriate as an indicator of this condition.~~

A reactor coolant temperature increase that approaches or exceeds the cold shutdown technical specification limit warrants declaration of an Alert irrespective of the availability of technical specification required functions to maintain cold shutdown. The concern of this IC is the loss of ability to maintain the plant in cold shutdown which is defined by reactor coolant temperature and not the operability of equipment which supports removal of heat from the reactor.

"Uncontrolled" means that system temperature increase is not the result of planned actions by the plant staff.

The EAL guidance related to uncontrolled temperature rise is necessary to preserve the anticipatory philosophy of NUREG-0654 for events starting from temperatures much lower than the cold shutdown temperature limit.

Escalation to the Site Area Emergency is by IC SS5, "Loss of Water Level in the Reactor Vessel that has or will Uncover Fuel in the Reactor Vessel," or by Abnormal Rad Levels/Radiological Effluent ICs.

~~Multi-unit stations with shared safety functions should further consider how this IC may affect more than one unit and how this may be a factor in escalating the emergency class.~~

Reference:

1. Tech Specs Amendment 152, Table 3.1.A.1, page 3 of 4.
2. Tech Specs Figure 3.10-1

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SA4 **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.**

Op. Mode Applicability ■ 1 (Pwr Ops) ■ 2 (HSB) ■ 3 (HSD) □ 4 (CSD) □ 5 (Refuel) □ 6 (Defuel) □ All

SA4.1

The following conditions exist:

a. Loss of most (approx. 75%) of ~~or all (site-specific)~~ annunciators or indicators on ~~any~~ Control Room Panels ~~associated with safety systems~~ for greater than 15 minutes.

AND

b. In the opinion of the Shift Supervisor, the loss of the annunciators or indicators requires increased surveillance to safely operate the unit~~(s)~~.

AND

c. Annunciator or indicator loss does not result from planned action.

AND

d. Either of the following:
- A significant plant transient is in progress
  OR
- ~~Compensatory non-alarming indications~~ PROTEUS, SAS are ~~is~~ unavailable.

Bases

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 during a transient. Recognition of the availability of computer based indication equipment is considered (SPDS, plant computer, etc.).

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

Quantification of "Most" 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 instrumentation lost but the use of ~~the value as a~~ judgement by the Shift Supervisor as the threshold for determining the severity of the plant conditions. This judgement is supported by the specific opinion of the Shift Supervisor that additional operating personnel will be required to provide increased monitoring of system operation to safely operate the unit(s).

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 SU2 "Inability to Reach Required Shutdown Within Technical Specification Limits."

~~(Site-specific)~~ 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.).

"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.

"Compensatory non-alarming indications" in this context includes computer based information such as SPDS. 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 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 IC is indicated during these modes of operation.
This Alert will be escalated to a Site Area Emergency if the operating crew cannot monitor the transient in progress.

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SA5 **AC power capability to essential busses reduced to a single power source for greater than 15 minutes such that any additional single failure would result in station blackout.**

Op. Mode Applicability ■ 1 (Pwr Ops) ■ 2 (HSB) ■ 3 (HSD) □ 4 (CSD) □ 5 (Refuel) □ 6 (Defuel) □ All

SA5.1

~~The following conditions exist:~~

a. ~~Loss of power to (site-specific)~~ Available emergency bus AC power reduced to only one of the following sources for > 15 min.:

~~for greater than 15 minutes.~~

~~—AND~~

~~b. Onsite power capability has been degraded to one (train of) emergency bus(ses) powered from a single onsite power source due to the loss of:~~
~~(site-specific list):~~

- 480V EDG 21
- 480V EDG 22
- 480V EDG 23
- Unit Auxiliary transformer
- Station Auxiliary transformer
- 13.8 KV gas turbine

Bases

This IC and the associated EALs are intended to provide an escalation from IC SU1 "Loss of All Offsite Power to Essential Busses for Greater than 15 Minutes." The condition indicated by this IC is the degradation of the offsite power with a concurrent failure of one emergency generator to supply power to its emergency busses. Another related condition could be the loss of all offsite power and loss of onsite emergency diesels with only one train of emergency busses being ~~backfed~~ from the unit main generator, or the loss of onsite emergency diesels with only one train of emergency busses being backfed from offsite power. The subsequent loss of this single power source would escalate the event to a Site Area Emergency in accordance with IC SS1 "Loss of All Offsite and Loss of All Onsite AC Power to Essential Busses."

Example EAL #SA5.1b should be expanded to identify the control room indication of the status of offsite-specific power sources and distribution busses that, if unavailable, establish a single failure vulnerability.

~~At multi-unit stations, the EALs should allow credit for operation of installed design features, such as cross-ties or swing diesels, provided that abnormal or emergency operating procedures address their use. However, these stations must also consider the impact of this condition on other shared safety functions in developing the site-specific EAL.~~

Reference:

1. Design Basis Document (DBD) for 480 V system, Rev. 0, 10/15/91
2. Oneline Diagram of IP-2 electrical distribution
3. ECA-0.0, Loss Of All AC Power

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SS1 **Loss of all offsite power and loss of all onsite AC power to essential busses.**

Op. Mode Applicability ■ 1 (Pwr Ops) ■ 2 (HSB) ■ 3 (HSD) □ 4 (CSD) □ 5 (Refuel) □ 6 (Defuel) □ All

SS1.1

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

a. Loss of power to ~~(site-specific)~~ :
Station Service Transformers SS2, SS3, SS5 and SS6 feeding 480 V buses 2A/ 3A, 5A and 6A respectively,

AND

b. Failure of ~~(site-specific)~~ all emergency diesel generators and Gas Turbines 1 & 3 to supply power to any vital bus (2A/3A, 5A or 6A) ~~emergency generators are supplying power to emergency buses.~~

AND

c. Failure to restore power to any of buses 2A/3A, 5A or 6A ~~at least one emergency bus~~ within 15 minutes from the time of loss of both offsite and onsite AC power.

AND

Inability to power required core cooling systems with alternate power sources for ≥ 15 min.

Bases

Loss of all AC power compromises all plant safety systems requiring electric power ~~including RHR, ECCS, Containment Heat Removal and the Ultimate Heat Sink~~. Prolonged loss of all AC power will cause core uncovering and loss of containment integrity, thus this event can escalate to a General Emergency. The ~~(site-specific)~~ time duration should be selected to exclude transient or momentary power losses, but should not exceed 15 minutes.

The words "AND Inability to power required core cooling systems with alternate power sources" have been added to take into account the unique capability at IP-2 to quickly supply alternate power directly to ECCS and other safety related equipment from theAlternat Safe Shutdown Equipment power supplies bypassing the emergency busses.

Reference:

1. Design Basis Document (DBD) for 480V system, Rev. 0, 10/15/91
2. Oneline Diagram of IP-2 electrical distribution
3. ECA-0.0, Rev. 16, LOSS OF ALL AC POWER

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SS2 **Failure of Reactor Protection system instrumentation to complete or initiate an automatic reactor ~~scram~~ trip once a Reactor Protection system setpoint has been exceeded and/or manual ~~scram~~ trip was not successful, and there is power generation.**

Op. Mode Applicability ■ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ☐ All

SS2.1

~~(Site-specific) indication(s) exist that indicate that Reactor Protection system setpoint was exceeded and automatic scram did not occur, and manual scram was not successful.~~
RED path in F-0.1 SUBCRITICALITY
AND either:
Emergency boration is inoperative
OR
Power range not ≤ 5% within 15 min. of initiation of emergency boration

Bases

This condition addresses:
Any manual trip or automatic trip signal followed by a manual trip which fails to shut down the reactor.
AND
Reactor power ≥ 5%

Automatic and manual scram are not considered successful if action away from the reactor control console was required to scram the reactor.

CSFST Subcriticality - RED path is entered based on failure of power range indication to decrease below 5% following a reactor trip. This portion of the EAL addresses any manual trip or automatic trip signal followed by a manual trip which fails to shut down the reactor to an extent that the reactor is producing more heat load for which the safety systems were designed. This condition indicates failure of both the automatic and manual protection systems to trip the reactor in conjunction with a failure of alternate boration systems to reduce reactor power below decay heat levels. The combination of failure of both front line and backup protection systems to function in response to a plant transient, along with the continued production of heat poses a direct threat to fuel clad and RCS integrity and thus warrants declaration of a Site Area Emergency.

15 minutes is specified to allow time for emergency boration to be effective and provides a discriminator between SA2.1 and SS2.1. The classification should be made as soon as it is apparent that emergency boration is not or will not be effective in reducing reactor power below 5%.

~~Under these conditions, the reactor is producing more heat than the maximum decay heat load for which the safety systems are designed. A Site Area Emergency is indicated because conditions exist that lead to imminent loss or potential loss of both fuel clad and RCS.~~ Although this IC may be viewed as redundant to the Fission Product Barrier Degradation IC, its inclusion is necessary to better assure timely recognition and emergency response. Escalation of this event to a General Emergency would be via Fission Product Barrier Degradation or Emergency Director Judgement ICs.

Reference:

1. CSFST F-0.1, Subcriticality
2. FR-S.1, Rev. 16, RESPONSE TO NUCLEAR POWER GENERATION/ATWS

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SS3 **Loss of all vital DC power.**

Op. Mode Applicability ■ 1 (Pwr Ops) ■ 2 (HSB) ■ 3 (HSD) □ 4 (CSD) □ 5 (Refuel) □ 6 (Defuel) □ All

SS3.1

~~Loss of any all vital DC power based on (site specific)~~ Total or partial loss of voltage indication on the switchable voltmeter for 125 VDC Power Panels 21, 22, 23 and 24 for greater than 15 minutes

Bases

Loss of all DC power compromises ability to monitor and control plant safety functions. Prolonged loss of all DC power will cause core uncovering and loss of containment integrity when there is significant decay heat and sensible heat in the reactor system. Escalation to a General Emergency would occur by Abnormal Rad Levels/Radiological Effluent, Fission Product Barrier Degradation, or Emergency Director Judgement ICs. Fifteen minutes was selected as a threshold to exclude transient or momentary power losses.

~~Multi-unit stations with shared safety functions should further consider how this IC may affect more than one unit and how this may be a factor in escalating the emergency class.~~

Reference:

Reference:

1. Design Basis Document (DBD) for 125 VDC System. Rev. 0. 11/15/91.
2. AOI 27.1.11. Rev. 2. LOSS OF 125VDC POWER

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SS4 **Complete loss of function needed to achieve or maintain hot shutdown.**

Op. Mode Applicability ■ 1 (Pwr Ops) ■ 2 (HSB) ■ 3 (HSD) □ 4 (CSD) □ 5 (Refuel) □ 6 (Defuel) □ All

SS4.1

Complete loss of any ~~(site-specific)~~ function required for hot shutdown as indicated by RED path on F-0.3, HEAT SINK

Bases

This EAL addresses complete loss of functions, including ultimate heat sink and reactivity control, required for hot shutdown with the reactor at pressure and temperature. Under these conditions, there is an actual major failure of a system intended for protection of the public. Thus, declaration of a Site Area Emergency is warranted. Escalation to a General Emergency would occur by Abnormal Rad Levels/Radiological Effluent, Fission Product Barrier Degradation, or Emergency Director Judgement ICs.

Loss of subcriticality is covered at the Site Area Emergency level by EAL SS2. Loss of system functions required to maintain hot shutdown would result in a RED path on the HEAT SINK CSFST

~~Multi-unit stations with shared safety functions should further consider how this IC may affect more than one unit and how this may be a factor in escalating the emergency class.~~

Reference:

Tech Specs Amendment no. 152, para 1.2.2 and 3.10 for definition of Hot Shutdown, Table 3.1.A-1, pages 1 and 2, for operability requirements.

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SS5 **Loss of RPV water level ~~in the reactor vessel~~ that has or will uncover fuel in the RPV ~~reactor vessel~~.**

Op. Mode Applicability ■ 1 (Pwr Ops) ■ 2 (HSB) ■ 3 (HSD) ■ 4 (CSD) ■ 5 (Refuel) □ 6 (Defuel) □ All

SS5.1

Loss of Reactor Vessel water level as indicated by:

a. ~~Loss of all decay heat removal cooling as determined by (site-specific) procedure~~

~~b. (Site-specific) indicators that the core is or will be uncovered.~~ With the RCS intact, RVLIS inidication cannot be maintained above (full range) 39%

OR:

With the Reactor Vessel head removed, it is reported that water level in the Reactor Vessel is dropping in an uncontrolled manner and core uncovery is likely.

Bases

Under the conditions specified by this IC, severe core damage can occur and reactor coolant system pressure boundary integrity may not be assured. ~~For BWRs, it is intended to address concerns raised by NRC Office for Analysis and Evaluation of Operational Data (AEOD) Report AEOD/EG09, "BWR Operating Experience Involving Inadvertent Draining of the Reactor Vessel," dated August 8, 1986. This report states:~~

~~In broadest terms, the dominant causes of inadvertent reactor vessel draining are related to the operational and design problems associated with the residual heat removal system when it is entering into or exiting from the shutdown cooling mode. During this transitional period, water is drawn from the reactor vessel, cooled by the residual heat removal system heat exchangers (from the cooling provided by the service waster system), and returned to the reactor vessel. First, there are piping and valves in the residual heat removal system which are common to both the shutdown cooling mode and other modes of cooling. These valves, when improperly positioned, provide a drain path for reactor coolant to flow from the reactor vessel to the suppression pool or the radwaste system. Second, establishing or making such evolutions vulnerable to personnel and procedural errors, the residual heat removal system valves that could be activated during shutdown cooling. Collectively, these factors have contributed to the inadvertent draining of the reactor vessel.~~

For PWRs, this IC covers sequences such as prolonged boiling following loss of decay heat removal.

Thus, declaration of a Site Area Emergency is warranted under the conditions specified by the IC. Escalation to a General Emergency is via radiological effluence IC AG1.

Uncovery of the fuel irrespective of the event that causes such fuel uncovery is justification alone for declaring a SAE. Since other events could lead to fuel uncovery in cold shutdown or refuel modes other than a loss of decay heat removal capability, it is inappropriate to base the EAL on this one event. For other operating modes, fuel uncovery is a loss of the RCS and fuel clad barriers which requires declaration of a SAE.

RVLIS dynamic range indications are not utilized in this EAL since the RCPs would not be running under conditions where vessel level is approaching TAF.

Defuel mode has been deleted since this EAL addresses water level in the vessel. Under defueled condition no fuel would be present

Reference:

1. Abnormal Operating Instruction 4.2.1, Rev. 10, LOSS OF RESIDUAL HEAT REMOVAL SYSTEM, 2/11/92.

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SS6 **Inability to monitor a significant transient in progress.**

Op. Mode Applicability ■ 1 (Pwr Ops) ■ 2 (HSB) ■ 3 (HSD) □ 4 (CSD) □ 5 (Refuel) □ 6 (Defuel) □ All

SS6.1

All of the following conditions exist:

a. Loss of most ~~(approx. 75%) of (site-specific)~~ annunciators or indicators on ~~any~~ Control Room Panels ~~associated with safety systems~~.

AND

b. ~~Compensatory non-alarming indications~~ PROTEUS and SAS are ~~is~~ unavailable.

AND

c. Indications needed to monitor ~~(site-specific)~~ any of the following plant parameters ~~safety functions~~ are unavailable:

Reactor Power, Intermediate range SUR, Source Range counts, Source Range SUR, Core Exit TCs, indication of RCPs running, RVLIS Full Range and Dynamic Range, RCS Pressure, RCS Hot/Cold Leg Temperature, SG Narrow Range level, FW Flow, SG Pressure, Containment Pressure, Containment Level, Containment Radiation, PZR Level

AND

d. Transient in progress.

Bases

This IC and its associate EAL are intended to recognize the inability of the control room staff to monitor the plant response to a transient. A Site Area Emergency is considered to exist if the control room staff cannot monitor safety functions needed for protection of the public.

~~(Site-specific)~~ Annunciators for and indicators this EAL should be limited to include those identified in the Abnormal Operating Procedures, in the Emergency Operating Procedures, and in other EALs (e. g., rad monitors, etc.).

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

"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.

~~(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 and in a coolable geometry, to remove heat from the core, to maintain the reactor coolant system intact, and to maintain containment intact.

"Planned" actions are excluded from this 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.

Reference:

1. F-0.1, Rev. 2, SUBCRITICALITY
2. F-0.2, Rev. 3, CORE COOLING
3. F-0.3, Rev. 3, HEAT SINK
4. F-0.4, Rev. 1, INTEGRITY
5. F-0.5, Rev. 2, CONTAINMENT
6. F-0.6, Rev. 2, INVENTORY

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SG1 **Prolonged loss of all offsite power and prolonged loss of all onsite AC power.**

Op. Mode Applicability ■ 1 (Pwr Ops) ■ 2 (HSB) ■ 3 (HSD) □ 4 (CSD) □ 5 (Refuel) □ 6 (Defuel) □ All

SG1.1

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

a. Loss of power to ~~(site-specific)~~ :
Station Service Transformers SS2, SS3, SS5 and SS6 feeding 480 V buses 2A/3A, 5A and 6A respectively,

AND

b. Failure of ~~(site-specific)~~ 480V EDGs 21, 22, and 23 ~~emergency generators supplying~~ to supply power to emergency buses.

AND

c. At least one of the following conditions exist:
- Restoration of power to required core cooling systems within ~~(site-specific)~~ 1 hour is NOT likely

OR

- ~~(Site-specific) indication of continuing degradation of core cooling based on Fission Product Barrier monitoring~~ ORANGE or RED path exists on F-0.2, "CORE COOLING."

Bases

Loss of all AC power compromises all plant safety systems requiring electric power including RHR, ECCS, Containment Heat Removal and the Ultimate Heat Sink. Prolonged loss of all AC power will lead to loss of fuel clad, RCS, and containment. The ~~(site-specific)~~ 1 hour~~s~~ to restore AC power ~~can be~~ is based on site blackout coping analysis performed in conformance with 10CFR50.63 and Regulatory Guide 1.155, "Station Blackout", as available, with appropriate allowance for offsite emergency response. Although this IC may be viewed as redundant to the Fission Product Barrier Degradation IC, its inclusion is necessary to better assure timely recognition and emergency response.

This IC is specified to assure that in the unlikely event of prolonged station blackout, timely recognition of the seriousness of the event occurs and that declaration of a General Emergency occurs as early as is appropriate, based on a reasonable assessment of the event trajectory.

The likelihood of restoring required core cooling systems ~~at least one emergency bus~~ should be based on a realistic appraisal of the situation since a delay in an upgrade decision based on only a chance of mitigating the event could result in a loss of valuable time in preparing and implementing public protective actions.

In addition, under these conditions, fission product barrier monitoring capability may be degraded. Although it may be difficult to predict when power can be restored, it is necessary to give the Emergency Director a reasonable idea of how quickly (s)he may need to declare a General Emergency based on two major considerations:

1. Are there any present indications that core cooling is already degraded to the point that Loss or Potential Loss of fission product barriers is imminent? ~~(Refer to Tables 3 and 4 for more information.)~~
2. If there are no present indications of such core cooling degradation, how likely is it that power can be restored in time to assure that a loss of two barriers with a potential loss of the third barrier can be prevented?

Thus, indication of continuing core cooling degradation must be based on fission product barrier monitoring with particular emphasis on Emergency Director judgement as it relates to imminent loss or potential loss of fission product barriers and degraded ability to monitor fission product barriers.

~~Multi-unit stations with shared safety functions should further consider how this IC may affect more than one unit and how this may be a factor in escalating the emergency class.~~

Reference:

1. F-0.2, "CORE COOLING." Rev. 3
2. Letter IPN-92-0 Letter of 4/14/89 to NRC Mail Station PI-137, re Station Blackout Rule 10 CFR 50.63
3. Oneline Diagram of IP-2 electrical distribution
4. Reference: Design Basis Document (DBD) for 480V system, Rev. 0, 10/15/91.
5. ECA-0.0, REV. 16, LOSS OF ALL AC POWER, 7/01/92

Plant Specific EAL Guideline (A,H,S)

Indian Point Unit 2

IC#: SG2 **Failure of the Reactor Protection System to complete an automatic ~~scram~~ trip and manual ~~scram~~ trip was not successful and there is indication of an extreme challenge to the ability to cool the core.**

Op. Mode Applicability ■ 1 (Pwr Ops) ☐ 2 (HSB) ☐ 3 (HSD) ☐ 4 (CSD) ☐ 5 (Refuel) ☐ 6 (Defuel) ☐ All

SG2.1

1. RED path in F-0.1 SUBCRITICALITY ~~(Site-specific) indications exist that automatic and manual scram were not successful.~~

AND

2. Either of the following:

a. ~~(Site-specific) indications exist that the core cooling is extremely challenged.~~
RED path on the CSFST F-0.2, "CORE COOLING"

OR

b. ~~(Site-specific) indication exists that heat removal is extremely challenged.~~
RED path on the CSFST of F-0.3, HEAT SINK.

Bases

Automatic and manual scram are not considered successful if action away from the reactor control console is required to scram the reactor.

Under the conditions of this IC and its associated EALs, the efforts to bring the reactor subcritical have been unsuccessful and, as a result, the reactor is producing more heat than the maximum decay heat load for which the safety systems were designed. Although there are capabilities away from the reactor control console, such as emergency boration in PWRs, ~~or Standby Liquid Control in BWRs,~~ the continuing temperature rise indicates that these capabilities are not effective. This sequence could be a precursor for a core melt sequence. CSFST Subcriticality - RED path is entered based on failure of power range indication to decrease below 5% following a reactor trip. This portion of the EAL addresses any manual trip or automatic trip signal followed by a manual trip which fails to shut down the reactor to an extent that the reactor is producing more heat load for which the safety systems were designed. This condition indicates failure of both the automatic and manual protection systems to trip the reactor in conjunction with a failure of alternate boration systems to reduce reactor power below decay heat levels.

For PWRs, the extreme challenge to the ability to cool the core is intended to mean that the core exit temperatures are at or approaching 1200°F or that the reactor vessel water level is below the top of active fuel. For plants using CSFSTs, this EAL equates to a Core Cooling RED condition. ~~For BWRs, the extreme challenge to the ability to cool the core is intended to mean that the reactor vessel water level is below 2/3 coverage of active fuel.~~

Another consideration is the inability to initially remove heat during the early stages of this sequence. For PWRs, if emergency feedwater flow is insufficient to remove the amount of heat required by design from at least one steam generator, an extreme challenge should be considered to exist. For plants using CSFSTs, this EAL equates to a Heat Sink RED condition. ~~For BWRs, (site-specific) considerations include inability to remove heat via the main condenser, or via the suppression pool or torus (e.g., due to high pool water temperature.)~~

In the event either of these challenges exist at a time that the reactor has not been brought below the power associated with the safety system design (typically 3 to 5% power) a core melt sequence exits. In this situation, core degradation can occur rapidly. For this reason, the General Emergency declaration is intended to be anticipatory of the fission product barrier matrix declaration to permit maximum offsite intervention time.

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: FC1 **Barrier:** Fuel Cladding **Type:** Potential Loss

Description: Critical Safety Function Status

FC1.2 ~~Core cooling -~~ ORANGE or RED path in F-0.2, CORE COOLING

FC1.3 ~~Heat Sink~~ - RED path in F-0.3, HEAT SINK and heat sink is required

Bases:

Core Cooling - ORANGE indicates subcooling has been lost and that some clad damage may occur. Heat Sink - RED indicates the ultimate heat sink function is under extreme challenge and thus these two items indicate potential loss of the fuel clad barrier.

Reference:

1. F-0.2, Rev. 2, CORE COOLING
2. F-0.3, Rev.2, HEAT SINK

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: FC2 **Barrier:** Fuel Cladding **Type:** Loss

Description: Primary Coolant Activity Level

FC2.1 Coolant activity greater than ~~(site-specific) value~~ 300 µCi/cc of I-131

Bases:

This ~~(site-specific)~~ value corresponds to 300 µCi/cc I-131 equivalent. Assessment by the NUMARC EAL Task Force indicates that this amount of coolant activity ~~is well above that expected for iodine spikes and~~ corresponds to about 2% to 5% fuel clad damage. This amount of clad damage indicates significant clad heating and thus the fuel clad barrier is considered lost. At IP-2, I-131 is directly analyzed.

A site specific evaluation of coolant activity associated with 5% clad failures was performed. The calculation was based upon WOG core damage assessment source terms and made the conservative assumption that the I-131 equivelent activity is 2 x I-131 source term (2 x 2.4E5 Ci). Based on a 90,000 gal. RCS volume @ 579 °F, the resulting coolant concentration was calculated as 102.3 µCi/cc. Since the assumptions and source of the NUMARC number is unknown, there is no way to know how these two numbers compare. It has been decided to use the value provided by NUMARC.

There is no equivalent "Potential Loss" EAL for this item.

Reference:

Letter from D. Gaynor to R. Burns 7/27/93 "EAL Technical Basis 2.1.2"

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: FC3 **Barrier:** Fuel Cladding **Type:** Loss

Description: Core Exit Thermocouple Readings

FC3.1 Greater than ~~(site-specific)~~ 1200 °F

Bases:

The "Loss" EAL ~~(site-specific)~~ reading should correspond to significant superheating of the coolant. This value typically corresponds to the temperature reading that indicates core cooling - RED in fuel clad barrier EAL #1 which is usually about 1200 °F.

Reference: F-0.2, CORE COOLING, Rev. 2

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: FC3 **Barrier:** Fuel Cladding **Type:** Potential Loss

Description: Core Exit Thermocouple Readings

FC3.2 Greater than ~~(site-specific)~~ 700 °F

Bases:

The "Potential Loss" EAL ~~(site-specific)~~ reading should correspond to loss of subcooling. This value typically corresponds to the temperature reading that indicates core cooling - ORANGE in fuel clad barrier EAL #1 which is usually about 700 to 900 °F. Note: This condition is a subset of CSFST F-0.2 CORE COOLING

Reference:

F-0.2, Rev. 2, CORE COOLING

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: FC4 **Barrier:** Fuel Cladding **Type:** Potential Loss

Description: Reactor Vessel Water Level

FC4.1 RVLIS Natural Circulation Range less than 39% with no RCPs running

Bases:

There is no "Loss" EAL corresponding to this item because it is better covered by the other fuel clad barrier "Loss" EALs.

The ~~(site-specific)~~ value for the "Potential Loss" EAL corresponds to the top of the active fuel. For sites using CSFSTs, the "Potential Loss" EAL is defined by the Core Cooling - ORANGE path. The ~~(site-specific)~~ value in this EAL should be consistent with the CSFST value.

Note: This condition is a subset of CSFST F-0.2 CORE COOLING

Reference:

F-0.2, Rev. 2, CORE COOLING

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: FC5 **Barrier:** Fuel Cladding **Type:** Loss

Description: Containment Radiation Monitor Reading

FC5.1 Containment rad monitor reading greater than ~~(site-specific)~~ 17 R/hr as indicated on R-25 or R-26

Bases:

The ~~(site-specific)~~ reading is a value which indicates the release of reactor coolant, with elevated activity indicative of fuel damage, into the containment. The reading should be calculated assuming the instantaneous release and dispersal of the reactor coolant noble gas and iodine inventory associated with a concentration of 300 µCi/gm dose equivalent I-131 into the containment atmosphere. Reactor coolant concentrations of this magnitude are several times larger than the maximum concentrations ~~(including iodine spiking)~~ allowed within technical specifications and are therefore indicative of fuel damage (approximately 2-5 % clad failure depending on core inventory and RCS volume). This value is higher than that specified for RCS barrier loss EAL #4. Thus, this EAL indicates a loss of both the fuel clad barrier and a loss of RCS barrier.

The value of 17 R/hr is based on taking the more conservative of the calculated values between IP2 (21 R/hr) and IP3 (17 R.hr) using the MICROSHEILD code. The monitor response is based upon 5% of the WOG gap source terms and the assumption of having a steam/air mixture in containment with iodines included. It is further assumed that no decay has occurred and the release of coolant to the containment atmosphere is instantaneous with no removal.

There is no "Potential Loss" EAL associated with this item.

Reference:

1. Calculation described in letter from DA Smith to R. Burns 8/6/93

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: FC6 **Barrier:** Fuel Cladding **Type:** Loss

Description: Other (site specific) indications

FC6.1 ~~(Site-specific) as applicable~~ None.

Bases:

This EAL is to cover other ~~(site-specific)~~ indications that may indicate loss or potential loss of the fuel clad barrier, including indications from containment air monitors or any other ~~(site-specific)~~ instrumentation.

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: FC6 **Barrier:** Fuel Cladding **Type:** Potential Loss

Description: Other (site-specific) Indications

FC6.2 ~~(Site-specific) as applicable.~~ None.

Bases:

This EAL is to cover other ~~(site-specific)~~ indications that may indicate loss or potential loss of the fuel clad barrier, including indications from containment air monitors or any other ~~(site-specific)~~ instrumentation.

Reference: Onsite discussions with Emergency Planning Engineers Bill Kessler and Tony Ferraro

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: FC7 **Barrier:** Fuel Cladding **Type:** Loss/Pot. Loss

Description: Emergency Director Judgement

FC7.1 Any condition in the opinion of the Emergency Director that indicates loss or potential loss of the fuel clad barrier

Bases:

This EAL addresses any other factors that are to be used by the Emergency Director in determining whether the fuel clad barrier is lost or potentially lost. In addition, the inability to monitor the barrier should also be incorporated in this EAL as a factor in Emergency Director judgement that the barrier may be considered lost or potentially lost. (See also IC SG1, "Prolonged Loss of All Offsite Power and Prolonged Loss of All Onsite AC Power", for additional information.)

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: RCS1 **Barrier:** RCS **Type:** Potential Loss

Description: Critical Safety Function Status

RCS1.1 ~~RCS integrity~~ - Red path on F-0.4, INTEGRITY

RCS1.2 ~~Heat Sink~~ - Red path on F-0.3, HEAT SINK and heat sink is required

Bases:

This EAL is for PWRs using Critical Safety Function Status Tree (CSFST) monitoring and functional recovery procedures. ~~For more information, please refer to Section 3.9 of this report.~~ RED path indicates an extreme challenge to the safety function derived from appropriate instrument readings, and these CSFs indicate a potential loss of RCS barrier.

There is no "Loss" EAL associated with this item.

Reference:
1. F-0.3, Rev. 2, HEAT SINK
2. F-0.4, Rev. 3, INTEGRITY

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: RCS2 **Barrier:** RCS **Type:** Loss

Description: RCS Leak Rate

RCS2.1 Greater than available makeup capacity as indicated by ~~a loss of RCS subcooling~~ exceeding the subcooling criterion for actuation of SI per EOP E-0:

RCS PRESSURE (PSIG):	RCS SUBCOOLING °F (ADV. CONTMT)
0-200	66 (192)
201-600	35 (260)
601-1000	18 (165)
1001-2500	15 (94)

Bases:

The "Loss" EAL addresses conditions where leakage from the RCS is greater than available inventory control capacity such that a loss of subcooling has occurred. The loss of subcooling is the fundamental indication that the inventory control systems are inadequate in maintaining RCS pressure and inventory against the mass loss through the leak.

Reference:

E-0, Rev. 16, REACTOR TRIP OR SAFETY INJECTION

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: RCS2 **Barrier:** RCS **Type:** Potential Loss

Description: RCS Leak Rate

RCS2.2 ~~Unisolable~~ RCS leak exceeding the capacity of one charging pump in the normal charging mode (approx. 75 GPM.)

Bases:

The "Potential Loss" EAL is based on the inability to maintain normal liquid inventory within the Reactor Coolant System (RCS) ~~by normal operation of the Chemical and Volume Control System which is considered as one centrifugal charging pump discharging to the charging header~~ when RCS leakage exceeds the capacity of one charging pump.. In conjunction with the SG Tube Rupture "Potential Loss" EAL this assures that any event that results in significant RCS inventory shrinkage or loss (e. g., events leading to reactor scram and ECCS actuation) will result in no lower than an "Alert" emergency classification.

Minimum charging pump operability flow rate is 75 gpm

Reference:

Drawing no. 198OM 1085.
PT-Q33

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: RCS3 **Barrier:** RCS **Type:** Loss

Description: SG Tube Rupture

RCS3.1 ~~(site-specific) indication that a SG is ruptured and has an unisolable secondary line break~~ Unisolated faulted (outside VC) ruptured steam generator

Bases:

This EAL is intended to address the full spectrum of Steam Generator (SG) tube rupture events in conjunction with containment barrier "Loss" EAL #4 and fuel clad barrier EALs. The "Loss" EAL addresses ruptured SG(s) with an unisolable secondary line break corresponding to the loss of 2 o3 fission product barriers (RCS barrier and containment barrier - this EAL will always result in containment barrier "Loss" EAL #4). This allows the direct release of radioactive fission and activation products to the environment. Resultant offsite dose rates are a function of many variables. Examples include: coolant activity, actual leak rate, SG carry over, iodine partitioning, and meteorology. Therefore, dose assessment in accordance with IC AG1, "Site Boundary Dose Resulting from an Actual or Imminent Release of Gaseous Radioactivity that Exceeds 1000 mR Whole Body or 5000 mR Child Thyroid for the Actual or Projected Duration of the Release Using Actual Meteorology", is required when there is indication that the fuel matrix/clad is potentially lost.

~~(Site-specific)~~ indication should be consistent with the diagnostic activities of the emergency operating procedures (EOPs)~~, if available~~. This should include indication of reduction in primary coolant inventory, increased secondary radiation levels, and an uncontrolled or complete depressurization of the ruptured SG. Secondary radiation increases should be observed via radiation monitoring of condenser air ejector discharge, SG blowdown, mains steam, and/or SG sampling system. Determination of the "uncontrolled" depressurization of the ruptured SG should be based on indication that the pressure decrease in the ruptured steam generator is not a function of operator action. This should prevent declaration based on a depressurization that results from an EOP induced cooldown of the RCS that does not involve the prolonged release of contaminated secondary coolant from the affected SG to the environment. This EAL should encompass steam breaks, feed breaks, and stuck open safety or relief valves.

References:

1. AOI 1.2, Rev. 10, STEAM GENERATOR TUBE LEAK, 12/11/92
2. E-0, REV. 10, REACTOR TRIP OR SAFETY INJECTION, 12/11/92.
3. E-3 "Steam Generator Tube Rupture"

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: RCS3 **Barrier:** RCS **Type:** Potential Loss

Description: SG Tube Rupture

RCS3.2 ~~(site-specific) indication that a SG is ruptured and the primary-to-secondary leak rate exceeds the capacity of one charging pump in the normal charging mode.~~ SG tube rupture as identified in E-3 "Steam Generator Tube Rupture" AND RCS leakage exceeds the capacity (>75 GPM) of a single charging pump.

Bases:

The "Potential Loss" EAL is based on the inability to maintain normal liquid inventory within the Reactor Coolant System (RCS) by normal operation of the Chemical and Volume Control system which is considered as one ~~centrifugal~~ charging pump discharging to the charging header. In conjunction with the RCS leak rate "Potential Loss" EAL this assures that any event that results in significant RCS inventory shrinkage or loss (e. g., events leading to reactor scram and ECCS actuation) will result in no lower than an "Alert" emergency classification.

References:

1. AOI 1.2, Rev. 10, STEAM GENERATOR TUBE LEAK, 12/11/92
2. E-0, REV. 10, REACTOR TRIP OR SAFETY INJECTION, 12/11/92.
3. E-3 "Steam Generator Tube Rupture"

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: RCS4 **Barrier:** RCS **Type:** Loss

Description: Containment Radiation Monitoring

RCS4.1 ~~Containment radiation monitor reading greater than (site-specific) R/hr~~ Rapid rise on R-41 or R-42 with coolant sample activity ≥ 60/(E bar) µCi/cc and increasing RCS leakage

Bases:

The ~~(site-specific)~~ reading is a value which indicates the release of reactor coolant to the containment. The reading should be calculated assuming the instantaneous release and dispersal of the reactor coolant noble gas and iodine inventory associated with normal operating concentrations (i. e., within T/S) into the containment atmosphere. This reading will be less than that specified for fuel clad barrier EAL #5. Thus, this EAL would be indicative of a RCS leak only. If the radiation monitor reading increased to that specified by fuel clad barrier EAL #3, fuel damage would also be indicated.

However, if the site-specific physical location of the containment radiation monitor is such that radiation from a cloud of released RCS gases could not be distinguished from radiation from nearby piping and components containing elevated reactor coolant activity, this EAL should be omitted and other site-specific indications of RCS leakage substituted.

There is no "Potential Loss" EAL associated with this item.

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: RCS5 **Barrier:** RCS **Type:** Loss

Description: Other (Site-specific) indications

RCS5.1 ~~(Site-specific) as available~~ None.

Bases:

This EAL is to cover other ~~(site-specific)~~ indications that may indicate loss or potential loss of the RCS barrier, including indications from containment air monitors or any other ~~(site-specific)~~ instrumentation.

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: RCS5 **Barrier:** RCS **Type:** Potential Loss

Description: Other (site-specific) Indications

RCS5.2 ~~(site-specific) as applicable.~~ None.

Bases:

This EAL is to cover other (site-specific) indications that may indicate loss or potential loss of the RCS barrier, including indications from containment air monitors or any other (site-specific) instrumentation.

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: RCS6 **Barrier:** RCS **Type:** Loss/Pot. Loss

Description: Emergency Director

RCS6.1 Any condition in the judgment of the Emergency Director that indicates loss or potential loss of the RCS barrier.

Bases:

This EAL addresses any other factors that are to be used by the Emergency Director in determining whether the RCS barrier is lost or potentially lost. In addition, the inability to monitor the barrier should also be incorporated in this EAL as a factor in Emergency Director judgement that the barrier may be considered lost or potentially lost. (See also IC SG1, "Prolonged Loss of All Offsite Power and Prolonged Loss of All Onsite AC Power", for additional information.)

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: PC1 **Barrier:** Primary Containment **Type:** Potential Loss

Description: Critical Safety Function Status

PC1.1 ~~Containment -~~ Red path on F-0.5, CONTAINMENT resulting from loss of coolant

Bases:

This EAL is for PWRs using Critical Safety Function Status Tree (CSFST) monitoring and functional recovery procedures. ~~For more information, please refer to Section 3.9 of this report.~~ RED path indicates an extreme challenge to the safety function derived from appropriate instrument readings and/or sampling results, and thus represents a potential loss of containment. Conditions leading to a containment RED path result from RCS barrier and/or fuel clad barrier loss. The words "resulting from a loss of coolant" was added to clarify the the red path is a result of loss of RCS. Thus, this EAL is primarily a discriminator between Site Area Emergency and General Emergency representing a potential loss of the third barrier.

There is no "Loss" EAL associated with this item.

Reference:

F-0.5, Rev. 2, CONTAINMENT

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: PC2 **Barrier:** Primary Containment **Type:** Loss

Description: Containment Pressure

PC2.1 Rapid ~~unexplained~~ uncontrolled decrease in Containment Pressure following initial increase

PC2.2 Loss of primary coolant inside containment with containment pressure or sump level response not consistent with LOCA conditions, i.e. unexpected changes occur in these parameters that are not explainable due to operator actions or automatic system actions.

Bases:

Rapid unexplained loss of pressure (i. e., not attributable to containment spray or Fan Cooling Units or condensation effects) following an initial pressure increase indicates a loss of containment integrity. Containment pressure and sump levels should increase as a result of the mass and energy release into containment from a LOCA. Thus, sump level or pressure not increasing indicates containment bypass (V-sequence) and a loss of containment integrity.

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: PC2 **Barrier:** Primary Containment **Type:** Potential Loss

Description: Containment Pressure

PC2.3 ~~(site-specific)~~ 47 psig and increasing

PC2.4 ~~Explosive mixture exists~~ ≥4 % hydrogen concentration in containment

PC2.5 ~~Containment pressure greater than containment depressurization system setpointdepressurization equipment operating~~ Confirmed Phase B isolation signal with less than the minimum containment cooling safeguards equipment operating

Bases:

The ~~(site-specific)~~ 47 psig for potential loss of containment is based on the containment design pressure. Existence of an explosive mixture (4% hydrogen) means a hydrogen and oxygen concentration of at least the lower deflagration limit curve exists. The indications of potential loss under this EAL corresponds to some of those leading to the RED path in EAL #1 above and may be declared by those sites using CSFSTs. As described above, this EAL is primarily a discriminator between Site Area Emergency and General Emergency representing a potential loss of the third barrier.

The second potential loss EAL represents a potential loss of containment in that the containment heat removal/depressurization system (~~e.g.,~~ containment sprays, Fan Cooler Units, ~~ice condenser fans, etc.~~, but not including containment venting strategies) are either lost or performing in a degraded manner, as indicated by containment pressure greater than the setpoint at which the equipment was supposed to have actuated.

Reference:

1. Station Operating Procedure (SOP) 10.9.1, "Hydrogen Recombiners," page 1, para. 1.1 states that explosive mixture is 4.1%. However, for uniformity with other plants' EALs 4% will be used.
2. Updated FSAR, Chapter 5, page 5.1-16/17, para. 3.
3. CCF Design Basis Document (DBD), Rev. 0, 10/1/91.
4. Design Basis Document, "CONTAINMENT SPRAY SYSTEM
5. EOP E-0, Reactor Trip or Safety Injection, for Phase "A" and "B"

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: PC3 **Barrier:** Primary Containment **Type:** Loss

Description: Containment Isolation Valve Status After Containment Isolation

PC3.1

Either:
One or more Phase "A" or Phase "B" or CVI Valve(s) not closed when required following confirmed LOCA
OR
Inability to isolate any primary system discharging outside containment
AND
~~downstream~~ radiological release ~~pathway~~ to the environment exists as a result

Bases:

This EAL is intended to address incomplete containment isolation that allows direct release to the environment. It represents a loss of the containment barrier.

The phrase "OR Inability to isolate any primary system discharging outside containment" has been added to capture unisolatable leaks from those primary systems which extend beyond the containment boundary but which either do not have automatic isolation functions or provide a direct release path for reactor coolant outside the containment.

There is no "Potential Loss" EAL associated with this item.

Reference:

Tech Spec 3.6.A.1.A and 3.6.A.1.B

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: PC4 **Barrier:** Primary Containment **Type:** Loss

Description: SG Secondary Side Release with Primary to Secondary Leakage

PC4.1 Unisolable release of secondary side to atmosphere from the effected steam generator(s) with primary to secondary leakage greater than tech spec allowable of 0.3 GPM in any steam generator

Bases:

This EAL addresses SG tube ruptures. ~~Secondary side releases to atmosphere include those from the condenser air ejector, atmospheric dump valves, and mainsteam safety valves.~~ Unisolable secondary side releases to atmosphere include feed line or steam line breaks as well as stuck open safety or atmospheric relief valves that cannot be isolated once isolation has been directed by the EOPs. A steam generator which is required to be used for plant cooldown would also be covered under this EAL. For smaller breaks, not exceeding the normal charging capacity threshold in RCS barrier "Potential Loss" EAL #2 (RCS leak rate) or EAL #3 (SG tube rupture), this EAL results in an Unusual Event. For larger breaks, RCS barrier "Loss" or "Potential Loss" EAL #2 would result in an Alert. For SG tube ruptures which may involve multiple steam generators or unisolable secondary line breaks, this EAL would exist in conjunction with RCS barrier "Loss" EAL #3 and would result in a Site Area Emergency. Escalation to General Emergency would be based on "Potential Loss" of the fuel clad barrier.

Reference:

1. IP-2 Tech Specs, Amendment No. 152, paragraph 3.1.F, page 3.1.F-3
2. E-3 "Steam Generator Tube Rupture"
3. Response #3 to PWR FPB Q&A's to NUMARC/NESP-007 dated June 1993

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: PC5 **Barrier:** Primary Containment **Type:** Potential Loss

Description: Significant Radioactive Inventory in Containment

PC5.1 Containment radiation monitor reading greater than ~~(site-specific)~~ 68 R/hr as indicated on R-25 or R-26

Bases:

The ~~(site-specific)~~ reading is a value which indicates significant fuel damage well in excess of the EALs associated with both loss of fuel clad and loss of RCS barriers. As stated in Section 3.8, a major release of radioactivity requiring offsite protective actions from core damage is not possible unless a major failure of fuel cladding allows radioactive material t be released from the core into the reactor coolant. Regardless of whether containment is challenged, this amount of activity in containment, if released, could have such severe consequences that it is prudent to treat this as a potential loss of containment, such that a General Emergency declaration is warranted. NUREG-1228 "Source Estimations During Incident Response to Severe Nuclear Power Plant Accidents," indicates that such conditions do not exist when the amount of clad damage is less than 20%. Unless there is a (site-specific) analysis justifying a higher value, it is recommended that a radiation monitor reading corresponding to 20% fuel clad damage be specified here.

The value of 68 R/hr is based on taking the more conservative of the calculated values between IP2 (84 R/hr) and IP3 (68 R.hr) using the MICROSHEILD code. The monitor response is based upon 20% of the WOG gap source terms and the assumption of having a steam/air mixture in containment with iodines included. It is further assumed that no decay has occurred and the release of coolant to the containment atmosphere is instantaneous with no removal.

There is no "Potential Loss" EAL associated with this item.

1. Calculation described in letter from DA Smith to R. Burns 8/6/93

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: PC6 **Barrier:** Primary Containment **Type:** Potential Loss

Description:

PC6.1 Core exit thermocouples in excess of 1200 °F and restoration procedures (FR-C.1, RESPONSE TO INADEQUATE CORE COOLING, FR-C.2, RESPONSE TO DEGRADED CORE COOLING, FR-C.3, RESPONSE TO SATURATED CORE COOLING" not effective within 15 minutes

PC6.2 Core exit thermocouples in excess of 700 °F with ~~reactor vessel level~~ RVLIS Natural Circulation Range less than 39% with no RCPs running, or RVLIS RCP Running range less than 44% with 4 RCPs running, or 30% with 3 RCPs running, or 20% with 2 RCPs running, or13% with 1 RCP running and restoration procedures (FR-C.1, RESPONSE TO INADEQUATE CORE COOLING, FR-C.2, RESPONSE TO DEGRADED CORE COOLING, FR-C.3, RESPONSE TO SATURATED CORE COOLING) not effective within 15 minutes

Bases:

In this EAL, the function restoration procedures are those emergency operating procedures that address the recovery of the core cooling critical safety functions. The procedure is considered effective if the temperature is decreasing or if the vessel water level is increasing.

The conditions in this potential loss EAL represent imminent melt sequence which, if not corrected, could lead to vessel failure and an increased potential for containment failure. In conjunction with the core exit thermocouple EALs in the fuel and RCS barrier columns, this EAL would result in the declaration of a General Emergency -- loss of two barriers and the potential loss of a third. If the function restoration procedures are ineffective, there is not "success" path.

Severe accident analyses (e. g., NUREG-1150) have concluded that function restoration procedures can arrest core degradation within the reactor vessel in a significant fraction of the core damage scenarios, and that the likelihood of containment failure is very small in these events. Given this, it is appropriate to provide a reasonable period to allow function restoration procedures to arrest the core melt sequence. Whether or not procedures will be effective should be apparent within 15 minutes. The Emergency Director should make the declaration as soon as it is determined that the procedures have been, or will be effective. The reactor vessel level chosen should be consistent with the emergency response guides applicable to the facility.

There is no "Loss" EAL associated with this item.

Reference: F-0.2, Rev. 3, ORANGE path

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: PC7 **Barrier:** Primary Containment **Type:** Loss

Description: Other (site-specific) indications

PC7.1 ~~(Site-specific) as applicable~~ Both doors open on a VC airlock for ≥ 4 hrs.
OR
Inability to close containment pressure relief or purge valves which results in a radiological release pathway to the environment for ≥ 4 hrs.

Bases:

This EAL should cover other ~~(site-specific)~~ indications that may unambiguously indicate loss or potential loss of the containment barrier~~, including indications from area or ventilation monitors in containment annulus or other contiguous buildings. If site emergency operating procedures provide for venting of the containment during an emergency as a means of preventing catastrophic failure, a loss EAL should be included for the containment barrier. This EAL should be declared as soon as such venting is imminent. Containment venting as part of recovery actions is classified in accordance with the radiological effluent ICs.~~

Reference:
1. AOI 10.6.2, Rev. 2, LOSS OF CONTAINMENT INTEGRITY, 10/23/89
2. Tech Spec 3.6.A.1.D and 3.6.A.3"

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: PC7 **Barrier:** Primary Containment **Type:** Potential Loss

Description: Other (site-specific) indications

PC7.2 ~~(Site-specific) as applicable.~~ None.

Bases:

This EAL should cover other (site-specific) indications that may unambiguously indicate loss or potential loss of the containment barrier, including indications from area or ventilation monitors in containment annulus or other contiguous buildings. ~~If site emergency operating procedures provide for venting of the containment during an emergency as a means of preventing catastrophic failure, a loss EAL should be included for the containment barrier. This EAL should be declared as soon as such venting is imminent. Containment venting as part of recovery actions is classified in accordance with the radiological effluent ICs.~~

Plant Specific EAL Guideline (FPB)

Indian Point Unit 2

PWR FPB IC#: PC8 **Barrier:** Primary Containment **Type:** Loss/Pot. Loss

Description: Emergency Director Judgement

PC8.1 Any condition in the judgment of the Emergency Director that indicates loss or potential loss of the containment barrier

Bases:

This EAL addresses any other factors that are to be used by the Emergency Director in determining whether the containment barrier is lost or potentially lost. In addition, the inability to monitor the barrier should also be incorporated in this EAL as a factor in Emergency Director judgement that the barrier may be considered lost or potentially lost. (See also IC SG1, "Prolonged Loss of All Offsite Power and Prolonged Loss of All Onsite AC Power", for additional information.)

Plant Specific EAL Guideline (FPB)

Indian Point Unit 3

PWR FPB IC#: FC1 **Barrier:** Fuel Cladding **Type:** Loss

Description: Critical Safety Function Status

FC1.1 ~~Core Cooling~~ - RED path in F-0.2, CORE COOLING

Bases:

Core Cooling - RED indicates significant superheating and core uncovery and is considered to indicate loss of the Fuel Clad Barrier.

Reference:

1. CSFST F-0.2, Core Cooling, Revision 3

Fission Product Barrier

Evaluation

Revision 0

Consolidated Edison Co.

Indian Point Station Unit 2

5/17/94

OSSI

Operations Support Services, Inc.
233 Water Street 2nd Floor Plymouth, MA 02360

Evaluation of

IP-2 Fission Product Barrier

Emergency Action Levels

The Fission Product Barrier (FPB) degradation category for a PWR plant is illustrated in the following table which is designated "Table 4" in NESP-007, Revision 2.

The Initiating Condition (IC) for each of the four emergency classifications (Unusual Event, Alert, Site Area Emergency, and General Emergency) are designated FU1, FA1, FS1, and FG1, respectively.

Each IC is defined by one or more EALs or combination of EALs which are indicative of a loss or potential loss of one or more of the three fission product barriers. The three fission product barriers are:

- Fuel Clad (FC)
- Reactor Coolant System (RCS)
- Primary Containment (PC)

NESP-007, Revision 2, prescribes example EALs for each of the three fission product barriers. An EAL is defined by one or more plant conditions. For example, there are seven FC barrier example EALs, eight RCS barrier example EALs, and eleven PC example EALs. Each EAL may consist of one or more conditions representing a loss of the barrier and a potential loss of the barrier. Some EALs may have only loss conditions, others only potential loss conditions, some have both loss and potential loss conditions. Each EAL is given a sequential number in Table 4. In the following list, NESP-007 EALs with a defined condition (i. e., labeled as needing "site-specific" input in Table 4) are identified with a "yes", and those without a defined condition (i. e. labeled "not applicable" in Table 4) are identified with a "no":

		NUMARC		IP2	
Barrier	EAL #	Loss	Pot. Loss	Loss	Pot. Loss
FC	1a	Yes	Yes	Yes(FC1.1)	Yes(FC1.2)
	1b	No	Yes	No	Yes(FC1.3)
	2	Yes	No	Yes(FC2.1)	No
	3	Yes	Yes	Yes(FC3.1)	Yes(FC3.2)
	4	No	Yes	No	Yes(FC4.1)
	5	Yes	No	Yes(FC5.1)	No
	6	Yes	Yes	No	No
	7	Yes	Yes	Yes(FC7.1)	Yes(FC7.1)
RCS	1a	No	Yes	No	Yes(RCS1.1)
	1b	No	Yes	No	Yes(RCS1.2)
	2	Yes	Yes	Yes(RCS2.1)	Yes(RCS2.2)
	3a	Yes	Yes	Yes(RCS3.1)	No
	3b	Yes	No	No	Yes(RCS3.2)
	4	Yes	No	Yes(RCS4.1)	No
	5	Yes	Yes	No	No
	6	Yes	Yes	Yes(RCS6.1)	Yes(RCS6.1)
PC	1	No	Yes	No	Yes(PC1.1)
	2a	Yes	Yes	Yes(PC2.1)	Yes(PC2.3)
	2b	Yes	Yes	Yes(PC2.2)	Yes(PC2.4)
	2c	No	Yes	No	Yes(PC2.5)
	3	Yes	No	Yes(PC3.1)	No
	4	Yes	No	Yes(PC4.1)	No
	5	No	Yes	No	Yes(PC5.1)
	6a	No	Yes	No	Yes(PC6.1)
	6b	No	Yes	No	Yes(PC6.2)
	7	Yes	Yes	Yes(PC7.1)	No
	8	Yes	Yes	Yes(PC8.1)	Yes(PC8.1)

Based on the classification key given at the beginning of Table 4, the number of example EALs, and the number of loss and potential loss conditions, the set of conditions that can yield a given emergency classification can be computed.

The maximum, theoretically possible set of conditions that can yield an Unusual Event classification is given in column 1 of Table A. These consist of the PC loss and PC potential loss conditions.

The maximum, theoretically possible set of conditions that can yield an Alert classification is given in column 1 of Table B. These consist of FC loss and potential loss conditions, and RCS loss and potential loss conditions.

The maximum, theoretically possible set of conditions that can yield a Site Area Emergency classification is given in column 1 of Table C. These consist of any of the following conditions:

- Loss of FC and RCS, or
- Potential loss of FC and RCS, or
- Potential loss of FC or RCS
  and
  Loss of another barrier

The third set of conditions listed above can be represented by the following conditions to eliminate reference to "loss of another barrier":

- Potential loss of FC and loss of RCS, or
- Potential loss of FC and loss of PC, or
- Potential loss of RCS and loss of FC, or
- Potential loss of RCS and loss of PC

While not explicitly stated within NUMARC/NESP-007, the following combinations are also appropriate for inclusion as Site Area Emergency classifications:

- Loss of FC and loss of PC
- Loss of RCS and loss of PC

The maximum, theoretically possible set of conditions that can yield a General Emergency classification is given in column 1 of Table D. These consist of the following conditions:

- Loss of any two barriers, and
- Potential loss of a third

These conditions can be represented by the following conditions to correlate barrier loss and potential loss to the three specific barriers:

- Loss of FC and loss of RCS and potential loss of PC, or
- Loss of RCS and loss of PC and potential loss of FC, or
- Loss of PC and loss of FC and potential loss of RCS

Note that the loss of all three barriers justifies a General Emergency classification as well.

Since the EAL conditions are listed numerically in Table 4, Tables A through D utilize a similar numbering system which is modified by letter abbreviations to define each set of conditions. For example, condition "FC2-loss" corresponds to a loss of the Fuel Clad barrier due to primary coolant activity level greater than (site-specific) value. Similarly, "RCS1b-pot. loss" corresponds to a potential loss of the Reactor Coolant System barrier due to a Critical Safety Function Status Heat Sink-RED condition, and so on.

An evaluation of each condition or set of conditions listed in Tables A through D is made to determine if it properly defines the appropriate threshold for the classification. If a condition or set of conditions is appropriate, a comment reflecting this conclusion is recorded in the "Remarks" column. If a condition or set of conditions is determined to be inappropriate, it is lined out and the reason for this conclusion is similarly recorded in the "Remarks" column. Where additional space is required to complete comments, the comments are recorded by number in Appendix 1 of this document. The numbers of the comments are recorded in the "Remarks" column with the associated condition or set of conditions to which they apply.

A summary of the results of the fission product barrier evaluation is presented in Appendix 2.

RECOGNITION CATEGORY F

FISSION PRODUCT BARRIER DEGRADATION

INITIATING CONDITION MATRIX TABLE 4 PWR

UNUSUAL EVENT		ALERT		SITE AREA EMERGENCY		GENERAL EMERGENCY	
FU1	Any loss or any potential loss of containment Op. Modes: Power operation Hot Shutdown	FA1	Any loss or any potential loss of either fuel clad or RCS. Op. Modes: Power operation Hot Shutdown	FS1	Loss of both fuel clad and RCS OR Potential loss of both fuel clad and RCS OR Potential loss of either fuel clad or RCS, and loss of any additional barrier. Op. Modes: Power operation Hot Shutdown	FG1	Loss of any two barriers AND Potential loss of third barrier. Op. Modes: Power operation Hot Shutdown

NOTES:

1. Although the logic used for these initiating conditions appears overly complex, it is necessary to reflect the following considerations:
   - The fuel clad barrier and the RCS barrier are weighted more heavily than the containment barrier (see Sections 3.4 and 3.8 for more information on this point). Unusual Event ICs associated with RCS and Fuel Clad barriers are addressed under System Malfunction ICs.
   - At the Site Area Emergency level, there must be some ability to dynamically assess how far present conditions are for General Emergency. For example, if Fuel Clad barrier and RCS barrier "Loss" EALs existed, this would indicate to the Emergency Director that, in additional to offsite dose assessments, continual assessments of radioactive inventory and containment integrity must be focused on. If, on the other hand, both Fuel Clad barrier and RCS barrier "Potential Loss" EALs existed, the Emergency Director would have more assurance that there was no immediate need to escalate to a General Emergency.
   - The ability to escalate to higher emergency classes as an event gets worse must be maintained. For example, RCS leakage steadily increasing would represent an increasing risk to public health and safety.
2. Fission Product Barrier ICs must be capable of addressing event dynamics. Thus, the EAL Reference Tables 3 and 4 state that IMMINENT (i. e., within 1 to 2 hours) loss or potential loss should result in a classification as if the affected threshold(s) are already exceeded, particularly for the higher emergency classes.

RECOGNITION CATEGORY F

INITIATING CONDITION MATRIX TABLE 4 PWR

Fuel Clad Barrier Example EALs

	Loss	Potential Loss
1.	Critical Safety Function Status	
	Core cooling - red	Core cooling - orange OR Heat sink - red
2.	Primary Coolant Activity	
	Coolant activity greater than (site-specific) value	Not applicable
3.	Core Exit Thermocouple Readings	
	Greater than (site-specific) °F	Greater than (site-specific) °F
4.	Reactor Vessel Water Level	
	Not applicable	Level less than (site-specific) value
5.	Containment Radiation Monitoring	
	Containment rad monitor reading greater than (site-specific) R/hr	Not applicable
6.	Other (site-specific) Indication	
	(site-specific) as applicable	(site-specific) as applicable
7.	Emergency Director Judgment	
	Any condition in the judgment of the Emergency Director that indicates loss or potential loss of the fuel clad barrier	

- Determine which combination of the three barriers are lost or have a potential loss and use the following key to classify the event. Also, an event for multiple events could occur which result in the conclusion that exceeding the loss or potential loss thresholds is imminent (i. e., within 1 to 2 hours). In this imminent loss situation, use judgment and classify as if the thresholds are exceeded.

RECOGNITION CATEGORY F

INITIATING CONDITION MATRIX TABLE 4 PWR

RCB Barrier Example EALs

	Loss	Potential Loss
1.	Critical Safety Function Status Not applicable	RCB integrity - red OR Heat sink - red
2.	RCB Leak Rate Greater than available makeup capacity as indicated by a loss of RCB subcooling	Unisolable leak exceeding the capacity of one charging pump in the normal charging mode
3.	SG Tube Rupture (site-specific) indication that a SG is ruptured AND has an non-isolable secondary line break OR (site-specific) indication that a SG is ruptured AND a prolonged release of contaminated secondary coolant is occurring from the affected SG to the environment	(site-specific) indication that a SG is ruptured AND the primary-to-secondary leak rate exceeds the capacity of one charging pump in the normal charging mode
4.	Containment Radiation Monitoring Containment radiation monitor reading greater than (site-specific) R/hr	Not applicable
5.	Other (site-specific) indications (site-specific) as applicable	(site-specific) as applicable
6.	Emergency Director Judgment Any condition in the judgment of the Emergency Director that indicates loss or potential loss of the RCS barrier	

RECOGNITION CATEGORY F

INITIATING CONDITION MATRIX TABLE 4 PWR

Containment Barrier Example EALs

	Loss	Potential Loss
1.	Critical Safety Function Status	
	Not applicable	Containment - red
2.	Containment Pressure	
	Rapid unexplained decrease following initial increase OR Containment pressure or sump level response not consistent with LOCA conditions	(site-specific) psig and increasing OR Explosive mixture exists OR Containment pressure greater than containment depressurization system setpoint with less than one full train of depressurization equipment operating
3.	Containment Isolation Valve Status after Containment Isolation	
	Valve(s) not closed AND downstream pathway to the environment exists	Not applicable
4.	SG Secondary Side Release with Primary-to-Secondary Leakage	
	Release of secondary side to atmosphere with primary to secondary leakage greater than tech spec allowable	Not applicable
5.	Significant Radioactive Inventory in Containment	
	Not applicable	Containment radiation monitor reading greater than (site-specific) R/hr

RECOGNITION CATEGORY F

INITIATING CONDITION MATRIX TABLE 4 PWR

Containment Barrier Example EALs

	Loss	Potential Loss
6. Core Exit Thermocouple Readings	Not applicable	Core exit thermocouples in excess of 1200°F AND restoration procedures not effective within 15 minutes OR Core exit thermocouples in excess of 700 °F with reactor vessel level below top of active fuel AND restoration procedures not effective within 15 minutes
7. Other (site-specific) indications	(site-specific) as applicable	(site-specific) as applicable
8. Emergency Director Judgment	Any condition in the judgment of the Emergency Director that indicates loss or potential loss of the containment barrier	

Table A – IP-2/3 Fission Product Barrier

Unusual Events

NESP-007	Remarks
Loss or pot. loss of PC	
~~PC1-loss~~	Condition not supported in PEG.
~~PC2a-loss~~	1
~~PC2b-loss~~	2
~~PC2c-loss~~	Condition not supported in PEG.
~~PC3-loss~~	3
~~PC4-loss~~	Secrel
~~PC5-loss~~	Condition not supported in PEG.
~~PC6a-loss~~	Condition not supported in PEG.
~~PC6b-loss~~	Condition not supported in PEG.
~~PC7-loss~~	Airlock
~~PC8-loss~~	Subsumed in "Judgment" EAL.
~~PC1-pot.-loss~~	4
~~PC2a-pot.-loss~~	5
~~PC2b-pot.-loss~~	6
~~PC2c-pot.-loss~~	7
~~PC3-pot.-loss~~	Condition not supported in PEG.
~~PC4-pot.-loss~~	Condition not supported in PEG.
~~PC5-pot.-loss~~	8
~~PC6a-pot.-loss~~	9
~~PC6b-pot.-loss~~	10
~~PC7-pot.-loss~~	Condition not supported in PEG.
~~PC8-pot.-loss~~	Subsumed in "Judgment" EAL.

Table B – IP-2/3 Fission Product Barrier

Alerts

NESP-007	Remarks
Loss or pot. loss of FC	
~~FC1a-loss~~	11
~~FC1b-loss~~	Condition not supported in PEG.
FC2-loss	Act5%
~~FC3-loss~~	9
~~FC4-loss~~	Condition not supported in PEG.
~~FC5-loss~~	18
~~FC6-loss~~	Condition not supported in PEG.
~~FC7-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-pot.-loss~~	12
~~FC1b-pot.-loss~~	13
~~FC2-pot.-loss~~	Condition not supported in PEG.
~~FC3-pot.-loss~~	14
~~FC4-pot.-loss~~	15
~~FC5-pot.-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss~~	Condition not supported in PEG.
~~FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
Loss or pot. loss of RCS	
~~RCS1a-loss~~	Condition not supported in PEG.
~~RCS1b-loss~~	Condition not supported in PEG.
RCS2-loss	Nosubcool
~~RCS3a-loss~~	17
~~RCS3b-loss~~	Condition not supported in PEG.
RCS4-loss	Radts
~~RCS5-loss~~	Condition not supported in PEG.
~~RCS6-loss~~	Subsumed in "Judgment" EAL.
RCS1a-pot. loss	Intred
~~RCS1b-pot.-loss~~	19
RCS2-pot. loss	Ichgplk
~~RCS3a-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-pot.-loss~~	20
~~RCS4-pot.-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss~~	Condition not supported in PEG.

Table B – IP-2/3 Fission Product Barrier

Alerts

NESP-007	Remarks
~~RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.

Table C – IP-2/3 Fission Product Barrier

Site Area Emergencies

NESP-007			Remarks
Loss of FC and RCS			
~~FC1a-loss~~	+	~~RCS1a-loss~~	Condition not supported in PEG.
~~FC1a-loss~~	+	~~RCS1b-loss~~	Condition not supported in PEG.
~~FC1a-loss~~	+	~~RCS2-loss~~	11
~~FC1a-loss~~	+	~~RCS3a-loss~~	11
~~FC1a-loss~~	+	~~RCS3b-loss~~	Condition not supported in PEG.
~~FC1a-loss~~	+	~~RCS4-loss~~	11
~~FC1a-loss~~	+	~~RCS5-loss~~	Condition not supported in PEG.
~~FC1a-loss~~	+	~~RCS6-loss~~	Subsumed in "Judgment" EAL.
~~FC1b-loss~~	+	~~RCS1a-loss~~	Condition not supported in PEG.
~~FC1b-loss~~	+	~~RCS1b-loss~~	Condition not supported in PEG.
~~FC1b-loss~~	+	~~RCS2-loss~~	Condition not supported in PEG.
~~FC1b-loss~~	+	~~RCS3a-loss~~	Condition not supported in PEG.
~~FC1b-loss~~	+	~~RCS3b-loss~~	Condition not supported in PEG.
~~FC1b-loss~~	+	~~RCS4-loss~~	Condition not supported in PEG.
~~FC1b-loss~~	+	~~RCS5-loss~~	Condition not supported in PEG.
~~FC1b-loss~~	+	~~RCS6-loss~~	Condition not supported in PEG.
~~FC2-loss~~	+	~~RCSa1a-loss~~	Condition not supported in PEG.
~~FC2-loss~~	+	~~RCS1b-loss~~	Condition not supported in PEG.
~~FC2-loss~~	+	~~RCS2-loss~~	22
~~FC2-loss~~	+	~~RCS3a-loss~~	17, SGTRrel
~~FC2-loss~~	+	~~RCS3b-loss~~	Condition not supported in PEG.
~~FC2-loss~~	+	~~RCS4-loss~~	22
~~FC2-loss~~	+	~~RCS5-loss~~	Condition not supported in PEG.
~~FC2-loss~~	+	~~RCS6-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss~~	+	~~RCSa1a-loss~~	Condition not supported in PEG.
~~FC3-loss~~	+	~~RCS1b-loss~~	Condition not supported in PEG.
~~FC3-loss~~	+	~~RCS2-loss~~	9
~~FC3-loss~~	+	~~RCS3a-loss~~	9
~~FC3-loss~~	+	~~RCS3b-loss~~	Condition not supported in PEG.
~~FC3-loss~~	+	~~RCS4-loss~~	9
~~FC3-loss~~	+	~~RCS5-loss~~	Condition not supported in PEG.
~~FC3-loss~~	+	~~RCS6-loss~~	Subsumed in "Judgment" EAL.
~~FC4-loss~~	+	~~RCS1a-loss~~	Condition not supported in PEG.

Table C – IP-2/3 Fission Product Barrier

Site Area Emergencies

NESP-007			Remarks
~~FC4-loss~~	+	~~RCS1b-loss~~	Condition not supported in PEG.
~~FC4-loss~~	+	~~RCS2-loss~~	Condition not supported in PEG.
~~FC4-loss~~	+	~~RCS3a-loss~~	Condition not supported in PEG.
~~FC4-loss~~	+	~~RCS3b-loss~~	Condition not supported in PEG.
~~FC4-loss~~	+	~~RCS4-loss~~	Condition not supported in PEG.
~~FC4-loss~~	+	~~RCS5-loss~~	Condition not supported in PEG.
~~FC4-loss~~	+	~~RCS6-loss~~	Condition not supported in PEG.
~~FC5-loss~~	+	~~RCS1a-loss~~	Condition not supported in PEG.
~~FC5-loss~~	+	~~RCS1b-loss~~	Condition not supported in PEG.
~~FC5-loss~~	+	~~RCS2-loss~~	21, Rad5%
~~FC5-loss~~	+	~~RCS3a-loss~~	17
~~FC5-loss~~	+	~~RCS3b-loss~~	Condition not supported in PEG.
~~FC5-loss~~	+	~~RCS4-loss~~	21
~~FC5-loss~~	+	~~RCS5-loss~~	Condition not supported in PEG.
~~FC5-loss~~	+	~~RCS6-loss~~	Subsumed in "Judgment" EAL.
~~FC6-loss~~	+	~~RCS1a-loss~~	Condition not supported in PEG.
~~FC6-loss~~	+	~~RCS1b-loss~~	Condition not supported in PEG.
~~FC6-loss~~	+	~~RCS2-loss~~	Condition not supported in PEG.
~~FC6-loss~~	+	~~RCS3a-loss~~	Condition not supported in PEG.
~~FC6-loss~~	+	~~RCS3b-loss~~	Condition not supported in PEG.
~~FC6-loss~~	+	~~RCS4-loss~~	Condition not supported in PEG.
~~FC6-loss~~	+	~~RCS5-loss~~	Condition not supported in PEG.
~~FC6-loss~~	+	~~RCS6-loss~~	Condition not supported in PEG.
~~FC7-loss~~	+	~~RCS1a-loss~~	Condition not supported in PEG.
~~FC7-loss~~	+	~~RCS1b-loss~~	Condition not supported in PEG.
~~FC7-loss~~	+	~~RCS2-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss~~	+	~~RCS3a-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss~~	+	~~RCS3b-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss~~	+	~~RCS4-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss~~	+	~~RCS5-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss~~	+	~~RCS6-loss~~	Subsumed in "Judgment" EAL.
Pot. loss of FC and RCS			
~~FC1a-pot.-loss~~	+	~~RCS1a-pot.-loss~~	11

Table C – IP-2/3 Fission Product Barrier

Site Area Emergencies

NESP-007			Remarks
~~FC1a-pot.-loss~~	~~+~~	~~RCS1b-pot.-loss~~	11
~~FC1a-pot.-loss~~	~~+~~	~~RCS2-pot.-loss~~	11
~~FC1a-pot.-loss~~	~~+~~	~~RC3a-pot.-loss~~	Condition not supported in PEG.
~~FC1a-pot.-loss~~	~~+~~	~~RCS3b-pot.-loss~~	11
~~FC1a-pot.-loss~~	~~+~~	~~RCS4-pot.-loss~~	Condition not supported in PEG.
~~FC1a-pot.-loss~~	~~+~~	~~RCS5-pot.-loss~~	Condition not supported in PEG.
~~FC1a-pot.-loss~~	~~+~~	~~RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC1b-pot.-loss~~	~~+~~	~~RCS1a-pot.-loss~~	13, HSred
~~FC1b-pot.-loss~~	~~+~~	~~RCS1b-pot.-loss~~	13
~~FC1b-pot.-loss~~	~~+~~	~~RCS2-pot.-loss~~	13
~~FC1b-pot.-loss~~	~~+~~	~~RC3a-pot.-loss~~	Condition not supported in PEG.
~~FC1b-pot.-loss~~	~~+~~	~~RCS3b-pot.-loss~~	13
~~FC1b-pot.-loss~~	~~+~~	~~RCS4-pot.-loss~~	Condition not supported in PEG.
~~FC1b-pot.-loss~~	~~+~~	~~RCS5-pot.-loss~~	Condition not supported in PEG.
~~FC1b-pot.-loss~~	~~+~~	~~RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC2-pot.-loss~~	~~+~~	~~RCS1a-pot.-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss~~	~~+~~	~~RCS1b-pot.-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss~~	~~+~~	~~RCS2-pot.-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss~~	~~+~~	~~RC3a-pot.-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss~~	~~+~~	~~RCS3b-pot.-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss~~	~~+~~	~~RCS4-pot.-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss~~	~~+~~	~~RCS5-pot.-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss~~	~~+~~	~~RCS6-pot.-loss~~	Condition not supported in PEG.
~~FC3-pot.-loss~~	~~+~~	~~RCS1a-pot.-loss~~	14, 25
~~FC3-pot.-loss~~	~~+~~	~~RCS1b-pot.-loss~~	14
~~FC3-pot.-loss~~	~~+~~	~~RCS2-pot.-loss~~	14
~~FC3-pot.-loss~~	~~+~~	~~RCS3a-pot.-loss~~	Condition not supported in PEG.
~~FC3-pot.-loss~~	~~+~~	~~RCS3b-pot.-loss~~	14
~~FC3-pot.-loss~~	~~+~~	~~RCS4-pot.-loss~~	Condition not supported in PEG.
~~FC3-pot.-loss~~	~~+~~	~~RCS5-pot.-loss~~	Condition not supported in PEG.
~~FC3-pot.-loss~~	~~+~~	~~RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC4-pot.-loss~~	~~+~~	~~RCS1a-pot.-loss~~	15, 24
~~FC4-pot.-loss~~	~~+~~	~~RCS1b-pot.-loss~~	15
~~FC4-pot.-loss~~	~~+~~	~~RCS2-pot.-loss~~	15

Table C – IP-2/3 Fission Product Barrier

Site Area Emergencies

NESP-007	Remarks
~~FC4-pot.-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~FC4-pot.-loss + RCS3b-pot.-loss~~	15
~~FC4-pot.-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~FC4-pot.-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~FC4-pot.-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC5-pot.-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~FC5-pot.-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~FC5-pot.-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~FC5-pot.-loss + RC3a-pot.-loss~~	Condition not supported in PEG.
~~FC5-pot.-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~FC5-pot.-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~FC5-pot.-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~FC5-pot.-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~FC7-pot.-loss + RCS1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-pot.-loss + RCS1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-pot.-loss + RCS2-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-pot.-loss + RCS3a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-pot.-loss + RCS3b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-pot.-loss + RCS4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-pot.-loss + RCS5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-pot.-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
Pot. loss of FC and loss of RCS	
~~FC1a-pot.-loss + RCS1a-loss~~	Condition not supported in PEG.
~~FC1a-pot.-loss + RCS1b-loss~~	Condition not supported in PEG.
~~FC1a-pot. loss + RCS2-loss~~	12, CCorange

Table C – IP-2/3 Fission Product Barrier

Site Area Emergencies

NESP-007	Remarks
~~FC1a-pot.-loss + RCS3a-loss~~	12
~~FC1a-pot.-loss + RCS3b-loss~~	Condition not supported in PEG.
~~FC1a-pot.-loss + RCS4-loss~~	12
~~FC1a-pot.-loss + RCS5-loss~~	Condition not supported in PEG.
~~FC1a-pot.-loss + RCS6-loss~~	Subsumed in "Judgment" EAL.
~~FC1b-pot.-loss + RCS1a-loss~~	Condition not supported in PEG.
~~FC1b-pot.-loss + RCS1b-loss~~	Condition not supported in PEG.
~~FC1b-pot.-loss + RCS2-loss~~	12
~~FC1b-pot.-loss + RCS3a-loss~~	12
~~FC1b-pot.-loss + RCS3b-loss~~	Condition not supported in PEG.
~~FC1b-pot.-loss + RCS4-loss~~	12
~~FC1b-pot.-loss + RCS5-loss~~	Condition not supported in PEG.
~~FC1b-pot.-loss + RCS6-loss~~	Subsumed in "Judgment" EAL.
~~FC2-pot.-loss + RCS1a-loss~~	Condition not supported in PEG.
~~FC12-pot.-loss + RCS1b-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss + RCS2-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss + RCS3a-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss + RCS3b-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss + RCS4-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss + RCS5-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss + RCS6-loss~~	Condition not supported in PEG.
~~FC3-pot.-loss + RCS1a-loss~~	Condition not supported in PEG.
~~FC3-pot.-loss + RCS1b-loss~~	Condition not supported in PEG.
~~FC3-pot.-loss + RCS2-loss~~	14
~~FC3-pot.-loss + RCS3a-loss~~	14
~~FC3-pot.-loss + RCS3b-loss~~	Condition not supported in PEG.
~~FC3-pot.-loss + RCS4-loss~~	14
~~FC3-pot.-loss + RCS5-loss~~	Condition not supported in PEG.
~~FC3-pot.-loss + RCS6-loss~~	Subsumed in "Judgment" EAL.
~~FC4-pot.-loss + RCS1a-loss~~	Condition not supported in PEG.
~~FC4-pot.-loss + RCS1b-loss~~	Condition not supported in PEG.
~~FC4-pot.-loss + RCS2-loss~~	15
~~FC4-pot.-loss + RCS3a-loss~~	15
~~FC4-pot.-loss + RCS3b-loss~~	Condition not supported in PEG.

Table C – IP-2/3 Fission Product Barrier

Site Area Emergencies

NESP-007			Remarks
~~FC4-pot.-loss~~	+	~~RCS4-loss~~	15
~~FC4-pot.-loss~~	+	~~RCS5-loss~~	Condition not supported in PEG.
~~FC4-pot.-loss~~	+	~~RCS6-loss~~	Subsumed in "Judgment" EAL.
~~FC6-pot.-loss~~	+	~~RCS1a-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss~~	+	~~RCS1b-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss~~	+	~~RCS2-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss~~	+	~~RCS3a-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss~~	+	~~RCS3b-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss~~	+	~~RCS4-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss~~	+	~~RCS5-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss~~	+	~~RCS6-loss~~	Condition not supported in PEG.
~~FC7-pot.-loss~~	+	~~RCS1a-loss~~	Condition not supported in PEG.
~~FC7-pot.-loss~~	+	~~RCS1b-loss~~	Condition not supported in PEG.
~~FC7-pot.-loss~~	+	~~RCS2-loss~~	Subsumed in "Judgment" EAL.
~~FC7-pot.-loss~~	+	~~RCS3a-loss~~	Subsumed in "Judgment" EAL.
~~FC7-pot.-loss~~	+	~~RCS3b-loss~~	Subsumed in "Judgment" EAL.
~~FC7-pot.-loss~~	+	~~RCS4-loss~~	Subsumed in "Judgment" EAL.
~~FC7-pot.-loss~~	+	~~RCS5-loss~~	Subsumed in "Judgment" EAL.
~~FC7-pot.-loss~~	+	~~RCS6-loss~~	Subsumed in "Judgment" EAL.
Pot. loss of FC and loss of PC			
~~FC1a-pot.-loss~~	+	~~PC1-loss~~	Condition not supported in PEG.
~~FC1a-pot.-loss~~	+	~~PC2a-loss~~	1, Cont press dec
~~FC1a-pot.-loss~~	+	~~PC2b-loss~~	2, inc loca resp
~~FC1a-pot.-loss~~	+	~~PC2c-loss~~	Condition not supported in PEG.
~~FC1a-pot.-loss~~	+	~~PC3-loss~~	3, Failisol
~~FC1a-pot.-loss~~	+	~~PC4-loss~~	12
~~FC1a-pot.-loss~~	+	~~PC5-loss~~	Condition not supported in PEG.
~~FC1a-pot.-loss~~	+	~~PC6a-loss~~	Condition not supported in PEG.
~~FC1a-pot.-loss~~	+	~~PC6b-loss~~	Condition not supported in PEG.
~~FC1a-pot.-loss~~	+	~~PC7-loss~~	12
~~FC1a-pot.-loss~~	+	~~PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC1b-pot.-loss~~	+	~~PC1-loss~~	Condition not supported in PEG.
~~FC1b-pot.-loss~~	+	~~PC2a-loss~~	1

Table C – IP-2/3 Fission Product Barrier

Site Area Emergencies

NESP-007	Remarks
~~FC1b-pot.-loss + PC2b-loss~~	2
~~FC1b-pot.-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC1b-pot.-loss + PC3-loss~~	3
~~FC1b-pot.-loss + PC4-loss~~	13
~~FC1b-pot.-loss + PC5-loss~~	Condition not supported in PEG.
~~FC1b-pot.-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC1b-pot.-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC1b-pot.-loss + PC7-loss~~	13
~~FC1b-pot.-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC2-pot.-loss + PC1-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss + PC3-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss + PC4-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss + PC5-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss + PC7-loss~~	Condition not supported in PEG.
~~FC2-pot.-loss + PC8-loss~~	Condition not supported in PEG.
~~FC3-pot.-loss + PC1-loss~~	Condition not supported in PEG.
~~FC3-pot.-loss + PC2a-loss~~	1
~~FC3-pot.-loss + PC2b-loss~~	2
~~FC3-pot.-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC3-pot.-loss + PC3-loss~~	3
~~FC3-pot.-loss + PC4-loss~~	14
~~FC3-pot.-loss + PC5-loss~~	Condition not supported in PEG.
~~FC3-pot.-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC3-pot.-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC3-pot.-loss + PC7-loss~~	14
~~FC3-pot.-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC4-pot.-loss + PC1-loss~~	Condition not supported in PEG.
~~FC4-pot.-loss + PC2a-loss~~	1

Table C – IP-2/3 Fission Product Barrier

Site Area Emergencies

NESP-007	Remarks
~~FC4-pot.-loss + PC2b-loss~~	2
~~FC4-pot.-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC4-pot.-loss + PC3-loss~~	3
~~FC4-pot.-loss + PC4-loss~~	15
~~FC4-pot.-loss + PC5-loss~~	Condition not supported in PEG.
~~FC4-pot.-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC4-pot.-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC4-pot.-loss + PC7-loss~~	14
~~FC4-pot.-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC5-pot.-loss + PC1-loss~~	Condition not supported in PEG.
~~FC5-pot.-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC5-pot.-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC5-pot.-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC5-pot.-loss + PC3-loss~~	Condition not supported in PEG.
~~FC5-pot.-loss + PC4-loss~~	Condition not supported in PEG.
~~FC5-pot.-loss + PC5-loss~~	Condition not supported in PEG.
~~FC5-pot.-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC5-pot.-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC5-pot.-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC5-pot.-loss + PC7-loss~~	Condition not supported in PEG.
~~FC5-pot.-loss + PC8-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss + PC1-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss + PC3-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss + PC4-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss + PC5-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss + PC7-loss~~	Condition not supported in PEG.
~~FC6-pot.-loss + PC8-loss~~	Condition not supported in PEG.
~~FC7-pot.-loss + PC1-loss~~	Condition not supported in PEG.
~~FC7-pot.-loss + PC2a-loss~~	Subsumed in "Judgment" EAL.

Table C – IP-2/3 Fission Product Barrier

Site Area Emergencies

NESP-007	Remarks
~~FC7-pot.-loss + PC2b-loss~~	Subsumed in "Judgment" EAL.
~~FC7-pot.-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC7-pot.-loss + PC3-loss~~	Subsumed in "Judgment" EAL.
~~FC7-pot.-loss + PC4-loss~~	Subsumed in "Judgment" EAL.
~~FC7-pot.-loss + PC5-loss~~	Condition not supported in PEG.
~~FC7-pot.-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC7-pot.-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC7-pot.-loss + PC7-loss~~	Subsumed in "Judgment" EAL.
~~FC7-pot.-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
Pot. loss of RCS and loss of FC	
~~RCS1a-pot.-loss + FC1a-loss~~	Condition not supported in PEG.
~~RCS1a-pot.-loss + FC1b-loss~~	11
~~RCS1a-pot.-loss + FC2-loss~~	22
~~RCS1a-pot.-loss + FC3-loss~~	9
~~RCS1a-pot.-loss + FC4-loss~~	Condition not supported in PEG.
~~RCS1a-pot.-loss + FC5-loss~~	21
~~RCS1a-pot.-loss + FC6-loss~~	Condition not supported in PEG.
~~RCS1a-pot.-loss + FC7-loss~~	Subsumed in "Judgment" EAL.
~~RCS1b-pot.-loss + FC1a-loss~~	11
~~RCS1b-pot.-loss + FC1b-loss~~	Condition not supported in PEG.
~~RCS1b-pot.-loss + FC2-loss~~	19
~~RCS1b-pot.-loss + FC3-loss~~	9
~~RCS1b-pot.-loss + FC4-loss~~	Condition not supported in PEG.
~~RCS1b-pot.-loss + FC5-loss~~	19
~~RCS1b-pot.-loss + FC6-loss~~	Condition not supported in PEG.
~~RCS1b-pot.-loss + FC7-loss~~	Subsumed in "Judgment" EAL.
~~RCS2-pot.-loss + FC1a-loss~~	11
~~RCS2-pot.-loss + FC1b-loss~~	Condition not supported in PEG.
~~RCS2-pot.-loss + FC2-loss~~	20
~~RCS2-pot.-loss + FC3-loss~~	9
~~RCS2-pot.-loss + FC4-loss~~	Condition not supported in PEG.
~~RCS2-pot.-loss + FC5-loss~~	20
~~RCS2-pot.-loss + FC6-loss~~	Condition not supported in PEG.

Table C – IP-2/3 Fission Product Barrier

Site Area Emergencies

NESP-007	Remarks
~~RCS2-pot.-loss + FC7-loss~~	Subsumed in "Judgment" EAL.
~~RCS3a-pot.-loss + FC1a-loss~~	Condition not supported in PEG.
~~RCS3a-pot.-loss + FC1b-loss~~	Condition not supported in PEG.
~~RCS3a-pot.-loss + FC2-loss~~	Condition not supported in PEG.
~~RCS3a-pot.-loss + FC3-loss~~	Condition not supported in PEG.
~~RCS3a-pot.-loss + FC4-loss~~	Condition not supported in PEG.
~~RCS3a-pot.-loss + FC5-loss~~	Condition not supported in PEG.
~~RCS3a-pot.-loss + FC6-loss~~	Condition not supported in PEG.
~~RCS3a-pot.-loss + FC7-loss~~	Condition not supported in PEG.
~~RCS3b-pot.-loss + FC1a-loss~~	11
~~RCS3b-pot.-loss + FC1b-loss~~	Condition not supported in PEG.
~~RCS3b-pot.-loss + FC2-loss~~	20
~~RCS3b-pot.-loss + FC3-loss~~	9
~~RCS3b-pot.-loss + FC4-loss~~	Condition not supported in PEG.
~~RCS3b-pot.-loss + FC5-loss~~	20
~~RCS3b-pot.-loss + FC6-loss~~	Condition not supported in PEG.
~~RCS3b-pot.-loss + FC7-loss~~	Subsumed in "Judgment" EAL.
~~RCS4-pot.-loss + FC1a-loss~~	Condition not supported in PEG.
~~RCS4-pot.-loss + FC1b-loss~~	Condition not supported in PEG.
~~RCS4-pot.-loss + FC2-loss~~	Condition not supported in PEG.
~~RCS4-pot.-loss + FC3-loss~~	Condition not supported in PEG.
~~RCS4-pot.-loss + FC4-loss~~	Condition not supported in PEG.
~~RCS4-pot.-loss + FC5-loss~~	Condition not supported in PEG.
~~RCS4-pot.-loss + FC6-loss~~	Condition not supported in PEG.
~~RCS4-pot.-loss + FC7-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss + FC1a-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss + FC1b-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss + FC2-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss + FC3-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss + FC4-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss + FC5-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss + FC6-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss + FC7-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-pot.-loss + FC1a-loss~~	Subsumed in "Judgment" EAL.

Table C – IP-2/3 Fission Product Barrier

Site Area Emergencies

NESP-007	Remarks
~~RCS6-pot.-loss + FC1b-loss~~	Condition not supported in PEG.
~~RCS6-pot.-loss + FC2-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-pot.-loss + FC3-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-pot.-loss + FC4-loss~~	Condition not supported in PEG.
~~RCS6-pot.-loss + FC5-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-pot.-loss + FC6-loss~~	Condition not supported in PEG.
~~RCS6-pot.-loss + FC7-loss~~	Subsumed in "Judgment" EAL.
Pot. loss of RCS and loss of PC	
~~RCS1a-pot.-loss + PC1-loss~~	Condition not supported in PEG.
~~RCS1a-pot.-loss + PC2a-loss~~	1
~~RCS1a-pot.-loss + PC2b-loss~~	2
~~RCS1a-pot.-loss + PC2c-loss~~	Condition not supported in PEG.
~~RCS1a-pot.-loss + PC3-loss~~	3
~~RCS1a-pot.-loss + PC4-loss~~	46
~~RCS1a-pot.-loss + PC5-loss~~	Condition not supported in PEG.
~~RCS1a-pot.-loss + PC6aloss~~	Condition not supported in PEG.
~~RCS1a-pot.-loss + PC6b-loss~~	Condition not supported in PEG.
~~RCS1a-pot.-loss + PC7-loss~~	40
~~RCS1a-pot.-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~RCS1b-pot.-loss + PC1-loss~~	Condition not supported in PEG.
~~RCS1b-pot.-loss + PC2a-loss~~	1
~~RCS1b-pot.-loss + PC2b-loss~~	2
~~RCS1b-pot.-loss + PC2c-loss~~	Condition not supported in PEG.
~~RCS1b-pot.-loss + PC3-loss~~	3
~~RCS1b-pot.-loss + PC4-loss~~	19
~~RCS1b-pot.-loss + PC5loss~~	Condition not supported in PEG.
~~RCS1b-pot.-loss + PC6aloss~~	Condition not supported in PEG.
~~RCS1b-pot.-loss + PC6b-loss~~	Condition not supported in PEG.
~~RCS1b-pot.-loss + PC7-loss~~	19
~~RCS1b-pot.-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~RCS2-pot.-loss + PC1-loss~~	Condition not supported in PEG.
~~RCS2-pot.-loss + PC2a-loss~~	1
~~RCS2-pot.-loss + PC2b-loss~~	2

Table C – IP-2/3 Fission Product Barrier

Site Area Emergencies

NESP-007	Remarks
~~RCS2-pot.loss + PC2c-loss~~	Condition not supported in PEG.
~~RCS2-pot.loss + PC3-loss~~	3
~~RCS2-pot.loss + PC4-loss~~	1chgplk + SecreI
~~RCS2-pot.loss + PC5-loss~~	Condition not supported in PEG.
~~RCS2-pot.loss + PC6a-loss~~	Condition not supported in PEG.
~~RCS2-pot.loss + PC6b-loss~~	Condition not supported in PEG.
~~RCS2-pot.loss + PC7-loss~~	40
~~RCS2-pot.loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~RCS3a-pot.loss + PC1-loss~~	Condition not supported in PEG.
~~RCS3a-pot.loss + PC2a-loss~~	Condition not supported in PEG.
~~RCS3a-pot.loss + PC2b-loss~~	Condition not supported in PEG.
~~RCS3a-pot.loss + PC2c-loss~~	Condition not supported in PEG.
~~RCS3a-pot.loss + PC3-loss~~	Condition not supported in PEG.
~~RCS3a-pot.loss + PC4-loss~~	Condition not supported in PEG.
~~RCS3a-pot.loss + PC5-loss~~	Condition not supported in PEG.
~~RCS3a-pot.loss + PC6a-loss~~	Condition not supported in PEG.
~~RCS3a-pot.loss + PC6b-loss~~	Condition not supported in PEG.
~~RCS3a-pot.loss + PC7-loss~~	Condition not supported in PEG.
~~RCS3a-pot.loss + PC8-loss~~	Condition not supported in PEG.
~~RCS3b-pot.loss + PC1-loss~~	Condition not supported in PEG.
~~RCS3b-pot.loss + PC2a-loss~~	1
~~RCS3b-pot.loss + PC2b-loss~~	2
~~RCS3b-pot.loss + PC2c-loss~~	Condition not supported in PEG.
~~RCS3b-pot.loss + PC3-loss~~	3
~~RCS3b-pot.loss + PC4-loss~~	20
~~RCS3b-pot.loss + PC5-loss~~	Condition not supported in PEG.
~~RCS3b-pot.loss + PC6a-loss~~	Condition not supported in PEG.
~~RCS3b-pot.loss + PC6b-loss~~	Condition not supported in PEG.
~~RCS3b-pot.loss + PC7-loss~~	20
~~RCS3b-pot.loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~RCS4-pot.loss + PC1-loss~~	Condition not supported in PEG.
~~RCS4-pot.loss + PC2a-loss~~	Condition not supported in PEG.
~~RCS4-pot.loss + PC2b-loss~~	Condition not supported in PEG.
~~RCS4-pot.loss + PC2c-loss~~	Condition not supported in PEG.

Table C – IP-2/3 Fission Product Barrier

Site Area Emergencies

NESP-007	Remarks
~~RCS4-pot.-loss + PC3-loss~~	Condition not supported in PEG.
~~RCS4-pot.-loss + PC4-loss~~	Condition not supported in PEG.
~~RCS4-pot.-loss + PC5-loss~~	Condition not supported in PEG.
~~RCS4-pot.-loss + PC6a-loss~~	Condition not supported in PEG.
~~RCS4-pot.-loss + PC6b-loss~~	Condition not supported in PEG.
~~RCS4-pot.-loss + PC7-loss~~	Condition not supported in PEG.
~~RCS4-pot.-loss + PC8-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss + PC1-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss + PC2a-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss + PC2b-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss + PC2c-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss + PC3-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss + PC4-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss + PC5-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss + PC6a-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss + PC6b-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss + PC7-loss~~	Condition not supported in PEG.
~~RCS5-pot.-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-pot.-loss + PC1-loss~~	Condition not supported in PEG.
~~RCS6-pot.-loss + PC2a-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-pot.-loss + PC2b-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-pot.-loss + PC2c-loss~~	Condition not supported in PEG.
~~RCS6-pot.-loss + PC3-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-pot.-loss + PC4-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-pot.-loss + PC5-loss~~	Condition not supported in PEG.
~~RCS6-pot.-loss + PC6a-loss~~	Condition not supported in PEG.
~~RCS6-pot.-loss + PC6b-loss~~	Condition not supported in PEG.
~~RCS6-pot.-loss + PC7-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-pot.-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
Loss of FC and PC	
~~FC1a-loss + PC1-loss~~	Condition not supported in PEG.
~~FC1a-loss + PC2a-loss~~	1
~~FC1a-loss + PC2b-loss~~	2

Table C – IP-2/3 Fission Product Barrier

Site Area Emergencies

NESP-007	Remarks
~~FC1a-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC1a-loss + PC3-loss~~	3
~~FC1a-loss + PC4-loss~~	12
~~FC1a-loss + PC5-loss~~	Condition not supported in PEG.
~~FC1a-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC1a-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC1a-loss + PC7-loss~~	12
~~FC1a-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC1b-loss + PC1-loss~~	Condition not supported in PEG.
~~FC1b-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC1b-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC1b-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC1b-loss + PC3-loss~~	Condition not supported in PEG.
~~FC1b-loss + PC4-loss~~	Condition not supported in PEG.
~~FC1b-loss + PC5-loss~~	Condition not supported in PEG.
~~FC1b-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC1b-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC1b-loss + PC7-loss~~	Condition not supported in PEG.
~~FC1b-loss + PC8-loss~~	Condition not supported in PEG.
~~FC2-loss + PC1-loss~~	Condition not supported in PEG.
~~FC2-loss + PC2a-loss~~	1
~~FC2-loss + PC2b-loss~~	2
~~FC2-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC2-loss + PC3-loss~~	3
~~FC2-loss + PC4-loss~~	Act5% + Secrel
~~FC2-loss + PC5-loss~~	Condition not supported in PEG.
~~FC2-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC2-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC2-loss + PC7-loss~~	40
~~FC2-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + PC1-loss~~	Condition not supported in PEG.
~~FC3-loss + PC2a-loss~~	1
~~FC3-loss + PC2b-loss~~	2
~~FC3-loss + PC2c-loss~~	Condition not supported in PEG.

Table C – IP-2/3 Fission Product Barrier

Site Area Emergencies

NESP-007			Remarks
~~FC3-loss~~	+	~~PC3-loss~~	3
~~FC3-loss~~	+	~~PC4-loss~~	9
~~FC3-loss~~	+	~~PC5-loss~~	Condition not supported in PEG.
~~FC3-loss~~	+	~~PC6a-loss~~	Condition not supported in PEG.
~~FC3-loss~~	+	~~PC6b-loss~~	Condition not supported in PEG.
~~FC3-loss~~	+	~~PC7-loss~~	9
~~FC3-loss~~	+	~~PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC4-loss~~	+	~~PC1-loss~~	Condition not supported in PEG.
~~FC4-loss~~	+	~~PC2a-loss~~	Condition not supported in PEG.
~~FC4-loss~~	+	~~PC2b-loss~~	Condition not supported in PEG.
~~FC4-loss~~	+	~~PC2c-loss~~	Condition not supported in PEG.
~~FC4-loss~~	+	~~PC3-loss~~	Condition not supported in PEG.
~~FC4-loss~~	+	~~PC4-loss~~	Condition not supported in PEG.
~~FC4-loss~~	+	~~PC5-loss~~	Condition not supported in PEG.
~~FC4-loss~~	+	~~PC6a-loss~~	Condition not supported in PEG.
~~FC4-loss~~	+	~~PC6b-loss~~	Condition not supported in PEG.
~~FC4-loss~~	+	~~PC7-loss~~	Condition not supported in PEG.
~~FC4-loss~~	+	~~PC8-loss~~	Condition not supported in PEG.
~~FC5-loss~~	+	~~PC1-loss~~	Condition not supported in PEG.
~~FC5-loss~~	+	~~PC2a-loss~~	21
~~FC5-loss~~	+	~~PC2b-loss~~	21
~~FC5-loss~~	+	~~PC2c-loss~~	Condition not supported in PEG.
~~FC5-loss~~	+	~~PC3-loss~~	21
~~FC5-loss~~	+	~~PC4-loss~~	21
~~FC5-loss~~	+	~~PC5-loss~~	Condition not supported in PEG.
~~FC5-loss~~	+	~~PC6a-loss~~	Condition not supported in PEG.
~~FC5-loss~~	+	~~PC6b-loss~~	Condition not supported in PEG.
~~FC5-loss~~	+	~~PC7-loss~~	21
~~FC5-loss~~	+	~~PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC6-loss~~	+	~~PC1-loss~~	Condition not supported in PEG.
~~FC6-loss~~	+	~~PC2a-loss~~	Condition not supported in PEG.
~~FC6-loss~~	+	~~PC2b-loss~~	Condition not supported in PEG.
~~FC6-loss~~	+	~~PC2c-loss~~	Condition not supported in PEG.
~~FC6-loss~~	+	~~PC3-loss~~	Condition not supported in PEG.

Table C – IP-2/3 Fission Product Barrier

Site Area Emergencies

NESP-007	Remarks
~~FC6-loss + PC4-loss~~	Condition not supported in PEG.
~~FC6-loss + PC5-loss~~	Condition not supported in PEG.
~~FC6-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC6-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC6-loss + PC7-loss~~	Condition not supported in PEG.
~~FC6-loss + PC8-loss~~	Condition not supported in PEG.
~~FC7-loss + PC1-loss~~	Condition not supported in PEG.
~~FC7-loss + PC2a-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + PC2b-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC7-loss + PC3-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + PC4-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + PC5-loss~~	Condition not supported in PEG.
~~FC7-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC7-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC7-loss + PC7-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
Loss of RCS and PC	
~~RCS1a-loss + PC1-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2a-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2b-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2c-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC3-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC4-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC5-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC6a-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC6b-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC7-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC8-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC1-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2a-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2b-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2c-loss~~	Condition not supported in PEG.

Table C – IP-2/3 Fission Product Barrier

Site Area Emergencies

NESP-007	Remarks
~~RCS1b-loss + PC3-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC4-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC5-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC6a-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC6b-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC7-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC8-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC1-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC2a-loss~~	1
~~RCS2-loss + PC2b-loss~~	2
~~RCS2-loss + PC2c-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC3-loss~~	3
~~RCS2-loss + PC4-loss~~	47
~~RCS2-loss + PC5-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC6a-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC6b-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC7-loss~~	40
~~RCS2-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~RCS3a-loss + PC1-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC2a-loss~~	17
~~RCS3a-loss + PC2b-lossv~~	17
~~RCS3a-loss + PC2c-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC3-loss~~	17
~~RCS3a-loss + PC4-loss~~	17
~~RCS3a-loss + PC5-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC6a-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC6b-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC7-loss~~	17
~~RCS3a-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~RCS3b-loss + PC1-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2a-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2b-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2c-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC3-loss~~	Condition not supported in PEG.

Table C – IP-2/3 Fission Product Barrier

Site Area Emergencies

NESP-007	Remarks
~~RCS3b-loss + PC4-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC5-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC6a-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC6b-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC7-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC8-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC1-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC2a-loss~~	1
~~RCS4-loss + PC2b-loss~~	2
~~RCS4-loss + PC2c-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC3-loss~~	3
~~RCS4-loss + PC4-loss~~	47
~~RCS4-loss + PC5-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC6a-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC6b-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC7-loss~~	40
~~RCS4-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~RCS5-loss + PC1-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2a-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2b-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2c-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC3-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC4-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC5-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC6a-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC6b-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC7-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC8-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC1-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC2a-loss~~	1
~~RCS6-loss + PC2b-loss~~	2
~~RCS6-loss + PC2c-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC3-loss~~	3
~~RCS6-loss + PC4-loss~~	Subsumed in "Judgment" EAL.

Table C – IP-2/3 Fission Product Barrier

Site Area Emergencies

NESP-007	Remarks
~~RCS6-loss + PC5-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC6a-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC6b-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC7-loss~~	40
~~RCS6-loss + PC8-loss~~	Subsumed in "Judgment" EAL.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
Loss of FC + loss of RCS + pot. loss of PC	
~~FC1a-loss + RCS1a-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1a-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1a-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1a-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1a-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1a-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1a-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1a-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1a-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1a-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1a-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS2-loss + PC1-pot. loss~~	4, Contred
~~FC1a-loss + RCS2-loss + PC2a-pot.-loss~~	11, 26, CCred
~~FC1a-loss + RCS2-loss + PC2b-pot. loss~~	6, H2
~~FC1a-loss + RCS2-loss + PC2c-pot.-loss~~	11, 27
~~FC1a-loss + RCS2-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS2-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS2-loss + PC6a-pot. loss~~	11, CCred
~~FC1a-loss + RCS2-loss + PC6b-pot. loss~~	11, 27, 28, CCred
~~FC1a-loss + RCS2-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS2-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS3a-loss + PC1-pot.-loss~~	4, 11

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC1a-loss + RCS3a-loss + PC2a-pot.-loss~~	11, 26
~~FC1a-loss + RCS3a-loss + PC2b-pot.-loss~~	11, 6
~~FC1a-loss + RCS3a-loss + PC2c-pot.-loss~~	11, 29
~~FC1a-loss + RCS3a-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3a-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3a-loss + PC5-pot.-loss~~	11
~~FC1a-loss + RCS3a-loss + PC6a-pot.-loss~~	11, 9
~~FC1a-loss + RCS3a-loss + PC6b-pot.-loss~~	11, 30
~~FC1a-loss + RCS3a-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3a-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS3b-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS4-loss + PC1-pot.-loss~~	11, 4
~~FC1a-loss + RCS4-loss + PC2a-pot.-loss~~	11, 26
~~FC1a-loss + RCS4-loss + PC2b-pot.-loss~~	11, 6
~~FC1a-loss + RCS4-loss + PC2c-pot.-loss~~	11, 29
~~FC1a-loss + RCS4-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS4-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS4-loss + PC5-pot.-loss~~	11, 8
~~FC1a-loss + RCS4-loss + PC6a-pot.-loss~~	11, 9
~~FC1a-loss + RCS4-loss + PC6b-pot.-loss~~	11, 30
~~FC1a-loss + RCS4-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS4-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS5-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS5-loss + PC2a-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC1a-loss + RCS5-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS5-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS5-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS5-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS5-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS5-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS5-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS5-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS5-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS6-loss + PC1-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS6-loss + PC2a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS6-loss + PC2b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS6-loss + PC2c-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS6-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS6-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS6-loss + PC5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS6-loss + PC6a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS6-loss + PC6b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS6-loss + PC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS6-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC1b-loss + RCS1a-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC2b-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC1b-loss + RCS1b-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC3-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC1b-loss + RCS3b-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC4-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC1b-loss + RCS6-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS2-loss + PC1-pot.-loss~~	4
~~FC2-loss + RCS2-loss + PC2a-pot.-loss~~	26
~~FC2-loss + RCS2-loss + PC2b-pot.-loss~~	6
~~FC2-loss + RCS2-loss + PC2c-pot.-loss~~	32, Act5% + Dep stpt pres
~~FC2-loss + RCS2-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS2-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS2-loss + PC5-pot.-loss~~	9

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC2-loss + RCS2-loss + PC6a-pot.-loss~~	9
~~FC2-loss + RCS2-loss + PC6b-pot.-loss~~	10
~~FC2-loss + RCS2-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS2-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS3a-loss + PC1-pot.-loss~~	4
~~FC2-loss + RCS3a-loss + PC2a-pot.-loss~~	26
~~FC2-loss + RCS3a-loss + PC2b-pot.-loss~~	6
~~FC2-loss + RCS3a-loss + PC2c-pot.-loss~~	33, Act5% + SGTRrel
~~FC2-loss + RCS3a-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3a-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3a-loss + PC5-pot.-loss~~	8
~~FC2-loss + RCS3a-loss + PC6a-pot.-loss~~	9
~~FC2-loss + RCS3a-loss + PC6b-pot.-loss~~	10
~~FC2-loss + RCS3a-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3a-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS3b-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS4-loss + PC1-pot.-loss~~	4
~~FC2-loss + RCS4-loss + PC2a-pot.-loss~~	26
~~FC2-loss + RCS4-loss + PC2b-pot.-loss~~	6
~~FC2-loss + RCS4-loss + PC2c-pot.-loss~~	35, Addressed inAct5%+Dep stpt pres, above.
~~FC2-loss + RCS4-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS4-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS4-loss + PC5-pot.-loss~~	8

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC2-loss + RCS4-loss + PC6a-pot.-loss~~	9
~~FC2-loss + RCS4-loss + PC6b-pot.-loss~~	10
~~FC2-loss + RCS4-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS4-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS5-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS5-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS5-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS5-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS5-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS5-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS5-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS5-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS5-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS5-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS5-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS6-loss + PC1-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS6-loss + PC2a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS6-loss + PC2b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS6-loss + PC2c-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS5-loss + PC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS5-loss + PC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS6-loss + PC5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS6-loss + PC6a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS6-loss + PC6b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS6-loss + PC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS6-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS1a-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1a-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1a-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1a-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1a-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1a-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1a-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1a-loss + PC6a-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC3-loss + RCS1a-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1a-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1a-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS2-loss + PC1-pot.-loss~~	9, 11
~~FC3-loss + RCS2-loss + PC2a-pot.-loss~~	9, 11
~~FC3-loss + RCS2-loss + PC2b-pot.-loss~~	9, 11
~~FC3-loss + RCS2-loss + PC2c-pot.-loss~~	9, 11
~~FC3-loss + RCS2-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS2-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS2-loss + PC5-pot.-loss~~	9, 11
~~FC3-loss + RCS2-loss + PC6a-pot.-loss~~	9, 11
~~FC3-loss + RCS2-loss + PC6b-pot.-loss~~	9, 11
~~FC3-loss + RCS2-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS2-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS3a-loss + PC1-pot.-loss~~	9, 11
~~FC3-loss + RCS3a-loss + PC2a-pot.-loss~~	9, 11
~~FC3-loss + RCS3a-loss + PC2b-pot.-loss~~	9, 11
~~FC3-loss + RCS3a-loss + PC2c-pot.-loss~~	9, 11
~~FC3-loss + RCS3a-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3a-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3a-loss + PC5-pot.-loss~~	9, 11
~~FC3-loss + RCS3a-loss + PC6a-pot.-loss~~	9, 11
~~FC3-loss + RCS3a-loss + PC6b-pot.-loss~~	9, 11

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC3-loss + RCS3a-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3a-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS3b-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3b-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3b-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3b-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3b-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3b-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3b-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3b-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3b-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3b-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3b-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS4-loss + PC1-pot.-loss~~	9, 11
~~FC3-loss + RCS4-loss + PC2a-pot.-loss~~	9, 11
~~FC3-loss + RCS4-loss + PC2b-pot.-loss~~	9, 11
~~FC3-loss + RCS4-loss + PC2c-pot.-loss~~	9, 11
~~FC3-loss + RCS4-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS4-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS4-loss + PC5-pot.-loss~~	9, 11
~~FC3-loss + RCS4-loss + PC6a-pot.-loss~~	9, 11
~~FC3-loss + RCS4-loss + PC6b-pot.-loss~~	9, 11
~~FC3-loss + RCS4-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS4-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS5-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS5-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS5-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS5-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS5-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS5-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS5-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS5-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS5-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS5-loss + PC7-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC3-loss + RCS5-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS6-loss + PC1-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS6-loss + PC2a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS6-loss + PC2b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS6-loss + PC2c-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS6-loss + PC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS6-loss + PC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS6-loss + PC5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS6-loss + PC6a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS6-loss + PC6b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS6-loss + PC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS6-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC4-loss + RCS1a-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC8-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC4-loss + RCS2-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS2-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS2-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS2-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS2-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS2-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS2-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS2-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS2-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS2-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC2a-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC4-loss + RCS4-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC2b-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC5-loss + RCS1a-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS2-loss + PC1-pot.-loss~~	4
~~FC5-loss + RCS2-loss + PC2a-pot.-loss~~	26
~~FC5-loss + RCS2-loss + PC2b-pot.-loss~~	6
~~FC5-loss + RCS2-loss + PC2c-pot.-loss~~	32, Rad5% + Dep stpt pres
~~FC5-loss + RCS2-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS2-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS2-loss + PC5-pot.-loss~~	8
~~FC5-loss + RCS2-loss + PC6a-pot.-loss~~	9, 11
~~FC5-loss + RCS2-loss + PC6b-pot.-loss~~	10
~~FC5-loss + RCS2-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS2-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS3a-loss + PC1-pot.-loss~~	4
~~FC5-loss + RCS3a-loss + PC2a-pot.-loss~~	26
~~FC5-loss + RCS3a-loss + PC2b-pot.-loss~~	6
~~FC5-loss + RCS3a-loss + PC2c-pot.-loss~~	33, Rad5% + SGTRrel

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC5-loss + RCS3a-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3a-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3a-loss + PC5-pot.-loss~~	8
~~FC5-loss + RCS3a-loss + PC6a-pot.-loss~~	9, 11
~~FC5-loss + RCS3a-loss + PC6b-pot.-loss~~	10
~~FC5-loss + RCS3a-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3a-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS3b-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3b-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3b-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3b-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3b-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3b-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3b-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3b-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3b-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3b-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3b-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS4-loss + PC1-pot.-loss~~	4
~~FC5-loss + RCS4-loss + PC2a-pot.-loss~~	26
~~FC5-loss + RCS4-loss + PC2b-pot.-loss~~	6
~~FC5-loss + RCS4-loss + PC2c-pot.-loss~~	34, Addressed in Rad5%+Dep stpt pres, above.
~~FC5-loss + RCS4-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS4-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS4-loss + PC5-pot.-loss~~	8
~~FC5-loss + RCS4-loss + PC6a-pot.-loss~~	9, 11
~~FC5-loss + RCS4-loss + PC6b-pot.-loss~~	10
~~FC5-loss + RCS4-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS4-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS5-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS5-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS5-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS5-loss + PC2c-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC5-loss + RCS5-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS5-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS5-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS5-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS5-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS5-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS5-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS6-loss + PC1-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS6-loss + PC2a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS6-loss + PC2b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS6-loss + PC2c-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS6-loss + PC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS6-loss + PC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS6-loss + PC5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS6-loss + PC6a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS6-loss + PC6b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS6-loss + PC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS6-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC6-loss + RCS1a-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC3-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC6-loss + RCS1b-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC4-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC6-loss + RCS3b-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC5-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC6-loss + RCS6-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC1-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC2a-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC2b-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC2c-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC3-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC4-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC5-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC6a-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC6b-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC7-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC8-pot.-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS2-loss + PC1-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS2-loss + PC2a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS2-loss + PC2b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS2-loss + PC2c-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS2-loss + PC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS2-loss + PC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS2-loss + PC5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS2-loss + PC6a-pot.-loss~~	Subsumed in "Judgment" EAL.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC7-loss + RCS2-loss + PC6b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS2-loss + PC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS2-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3a-loss + PC1-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3a-loss + PC2a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3a-loss + PC2b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3a-loss + PC2c-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3a-loss + PC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3a-loss + PC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3a-loss + PC5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3a-loss + PC6a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3a-loss + PC6b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3a-loss + PC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3a-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3b-loss + PC1-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3b-loss + PC2a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3b-loss + PC2b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3b-loss + PC2c-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3b-loss + PC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3b-loss + PC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3b-loss + PC5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3b-loss + PC6a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3b-loss + PC6b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3b-loss + PC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3b-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS4-loss + PC1-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS4-loss + PC2a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS4-loss + PC2b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS4-loss + PC2c-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS4-loss + PC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS4-loss + PC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS4-loss + PC5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS4-loss + PC6a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS4-loss + PC6b-pot.-loss~~	Subsumed in "Judgment" EAL.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC7-loss + RCS4-loss + PC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS4-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS5-loss + PC1-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS5-loss + PC2a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS5-loss + PC2b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS5-loss + PC2c-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS5-loss + PC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS5-loss + PC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS5-loss + PC5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS5-loss + PC6a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS5-loss + PC6b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS5-loss + PC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS5-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS6-loss + PC1-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS6-loss + PC2a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS6-loss + PC2b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS6-loss + PC2c-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS6-loss + PC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS6-loss + PC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS6-loss + PC5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS6-loss + PC6a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS6-loss + PC6b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS6-loss + PC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS6-loss + PC8-pot.-loss~~	Subsumed in "Judgment" EAL.
Loss of RCS + loss of PC + pot. loss of FC	
~~RCS1a-loss + PC1-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC1-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC1-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC1-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC1-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC1-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC1-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC1-loss + FC7-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS1a-loss + PC2a-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2a-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2a-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2a-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2a-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2a-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2a-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2a-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2b-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2b-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2b-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2b-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2b-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2b-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2b-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2b-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2c-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2c-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2c-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2c-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2c-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2c-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2c-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC2c-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC3-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC3-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC3-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC3-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC3-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC3-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC3-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC3-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC4-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC4-loss + FC1b-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS1a-loss + PC4-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC4-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC4-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC4-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC4-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC4-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS1a-loss + PC5-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC5-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC5-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC5-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC5-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC5-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC5-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC5-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC6a-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC6a-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC6a-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC6a-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC6a-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC6a-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC6a-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC6a-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC6b-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC6b-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC6b-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC6b-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC6b-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC6b-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC6b-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC6b-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC7-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC7-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC7-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC7-loss + FC3-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS1a-loss + PC7-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC7-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC7-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC7-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC8-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC8-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC8-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC8-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC8-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC8-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC8-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1a-loss + PC8-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC1-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC1-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC1-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC1-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC1-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC1-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC1-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC1-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2a-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2a-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2a-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2a-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2a-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2a-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2a-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2a-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2b-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2b-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2b-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2b-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2b-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2b-loss + FC5-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS1b-loss + PC2b-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2b-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2c-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2c-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2c-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2c-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2c-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2c-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2c-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC2c-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC3-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC3-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC3-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC3-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC3-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC3-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC3-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC3-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC4-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC4-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC4-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC4-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC4-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC4-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC4-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC4-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS1b-loss + PC5-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC5-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC5-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC5-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC5-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC5-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC5-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC5-loss + FC7-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS1b-loss + PC6a-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC6a-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC6a-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC6a-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC6a-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC6a-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC6a-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC6a-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC6b-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC6b-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC6b-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC6b-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC6b-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC6b-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC6b-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC6b-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC7-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC7-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC7-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC7-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC7-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC7-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC7-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC7-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC8-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC8-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC8-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC8-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC8-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC8-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC8-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS1b-loss + PC8-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC1-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC1-loss + FC1b-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS2-loss + PC1-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC1-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC1-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC1-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC1-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC1-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC2a-loss + FC1a-pot. loss~~	36, Cont press dec + CCorange
~~RCS2-loss + PC2a-loss + FC1b-pot. loss~~	38, Cont pres dec + HSred
~~RCS2-loss + PC2a-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC2a-loss + FC3-pot. loss~~	38, Cont press dec + CET700
~~RCS2-loss + PC2a-loss + FC4-pot. loss~~	38, Cont press dec + RVILStaf
~~RCS2-loss + PC2a-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC2a-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC2a-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS2-loss + PC2b-loss + FC1a-pot. loss~~	36, Inc loca resp + CCorange
~~RCS2-loss + PC2b-loss + FC1b-pot. loss~~	38, Inc loca resp + HSred
~~RCS2-loss + PC2b-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC2b-loss + FC3-pot. loss~~	38, Inc loca resp + CET700
~~RCS2-loss + PC2b-loss + FC4-pot. loss~~	38, Inc loca resp + RVILStaf
~~RCS2-loss + PC2b-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC2b-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC2b-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS2-loss + PC2c-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC2c-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC2c-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC2c-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC2c-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC2c-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC2c-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC2c-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC3-loss + FC1a-pot.-loss~~	36, Fallsol + CCorange
~~RCS2-loss + PC3-loss + FC1b-pot. loss~~	38, Fallsol + HSred
~~RCS2-loss + PC3-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC3-loss + FC3-pot. loss~~	38, Fallsol + CET700

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS2-loss + PC3-loss + FC4-pot. loss~~	~~38; FailIsol + RVILStaf~~
~~RCS2-loss + PC3-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC3-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC3-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS2-loss + PC4-loss + FC1a-pot.-loss~~	48
~~RCS2-loss + PC4-loss + FC1b-pot.-loss~~	48
~~RCS2-loss + PC4-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC4-loss + FC3-pot.-loss~~	48
~~RCS2-loss + PC4-loss + FC4-pot.-loss~~	48
~~RCS2-loss + PC4-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC4-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC4-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS2-loss + PC5-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC5-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC5-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC5-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC5-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC5-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC5-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC5-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC6a-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC6a-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC6a-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC6a-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC6a-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC6a-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC6a-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC6a-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC6b-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC6b-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC6b-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC6b-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC6b-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC6b-loss + FC5-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS2-loss + PC6b-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC6b-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC7-loss + FC1a-pot.-loss~~	40
~~RCS2-loss + PC7-loss + FC1b-pot.-loss~~	40
~~RCS2-loss + PC7-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC7-loss + FC3-pot.-loss~~	40
~~RCS2-loss + PC7-loss + FC4-pot.-loss~~	40
~~RCS2-loss + PC7-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC7-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC7-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS2-loss + PC8-loss + FC1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS2-loss + PC8-loss + FC1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS2-loss + PC8-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC8-loss + FC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS2-loss + PC8-loss + FC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS2-loss + PC8-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC8-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS2-loss + PC8-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS3a-loss + PC1-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC1-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC1-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC1-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC1-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC1-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC1-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC1-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC2a-loss + FC1a-pot. loss~~	~~37, SGTRrel + CCorange~~
~~RCS3a-loss + PC2a-loss + FC1b-pot. loss~~	~~37, Secrel + HSred~~
~~RCS3a-loss + PC2a-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC2a-loss + FC3-pot. loss~~	~~37, Secrel + CET700~~
~~RCS3a-loss + PC2a-loss + FC4-pot. loss~~	~~37, Secrel + RVILStaf~~
~~RCS3a-loss + PC2a-loss + FC5-pot.-loss~~	Condition not supported in PEG.
RCS3a-loss + PC2a-loss + FC6-pot.-loss	Condition not supported in PEG.
~~RCS3a-loss + PC2a-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS3a-loss + PC2b-loss + FC1a-pot.-loss~~	39
~~RCS3a-loss + PC2b-loss + FC1b-pot.-loss~~	39
~~RCS3a-loss + PC2b-loss + FC3-pot.-loss~~	39
~~RCS3a-loss + PC2b-loss + FC4-pot.-loss~~	39
~~RCS3a-loss + PC2b-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC2b-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS3a-loss + PC2c-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC2c-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC2c-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC2c-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC2c-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC2c-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC2c-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC2c-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC3-loss + FC1a-pot.-loss~~	39
~~RCS3a-loss + PC3-loss + FC1b-pot.-loss~~	39
~~RCS3a-loss + PC3-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC3-loss + FC3-pot.-loss~~	39
~~RCS3a-loss + PC3-loss + FC4-pot.-loss~~	39
~~RCS3a-loss + PC3-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC3-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC3-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS3a-loss + PC4-loss + FC1a-pot.-loss~~	39
~~RCS3a-loss + PC4-loss + FC1b-pot.-loss~~	39
~~RCS3a-loss + PC4-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC4-loss + FC3-pot.-loss~~	39
~~RCS3a-loss + PC4-loss + FC4-pot.-loss~~	39
~~RCS3a-loss + PC4-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC4-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC4-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS3a-loss + PC5-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC5-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC5-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC5-loss + FC3-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS3a-loss + PC5-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC5-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC5-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC5-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC6a-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC6a-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC6a-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC6a-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC6a-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC6a-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC6a-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC6a-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC6b-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC6b-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC6b-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC6b-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC6b-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC6b-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC6b-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC6b-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC7-loss + FC1a-pot.-loss~~	40
~~RCS3a-loss + PC7-loss + FC1b-pot.-loss~~	40
~~RCS3a-loss + PC7-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC7-loss + FC3-pot.-loss~~	40
~~RCS3a-loss + PC7-loss + FC4-pot.-loss~~	40
~~RCS3a-loss + PC7-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC7-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC7-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS3a-loss + PC8-loss + FC1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS3a-loss + PC8-loss + FC1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS3a-loss + PC8-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC8-loss + FC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS3a-loss + PC8-loss + FC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS3a-loss + PC8-loss + FC5-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS3a-loss + PC8-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3a-loss + PC8-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS3b-loss + PC1-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC1-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC1-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC1-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC1-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC1-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC1-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC1-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2a-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2a-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2a-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2a-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2a-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2a-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2a-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2a-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2b-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2b-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2b-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2b-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2b-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2b-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2b-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2b-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2c-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2c-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2c-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2c-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2c-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2c-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2c-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC2c-loss + FC7-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS3b-loss + PC3-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC3-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC3-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC3-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC3-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC3-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC3-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC3-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS3b-loss + PC4-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC4-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC4-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC4-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC4-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC4-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC4-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC4-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC5-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC5-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC5-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC5-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC5-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC5-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC5-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC5-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC6a-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC6a-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC6a-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC6a-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC6a-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC6a-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC6a-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC6a-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC6b-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC6b-loss + FC1b-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS3b-loss + PC6b-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC6b-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC6b-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC6b-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC6b-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC6b-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC7-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC7-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC7-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC7-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC7-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC7-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC7-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC7-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS3b-loss + PC8-loss + FC1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS3b-loss + PC8-loss + FC1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS3b-loss + PC8-loss + FC2-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS3b-loss + PC8-loss + FC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS3b-loss + PC8-loss + FC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS3b-loss + PC8-loss + FC5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS3b-loss + PC8-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS3b-loss + PC8-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS4-loss + PC1-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC1-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC1-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC1-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC1-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC1-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC1-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC1-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC2a-loss + FC1a-pot.-loss~~	37
~~RCS4-loss + PC2a-loss + FC1b-pot.-loss~~	39
~~RCS4-loss + PC2a-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC2a-loss + FC3-pot.-loss~~	39

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS4-loss + PC2a-loss + FC4-pot.-loss~~	39
~~RCS4-loss + PC2a-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC2a-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC2a-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS4-loss + PC2b-loss + FC1a-pot.-loss~~	39
~~RCS4-loss + PC2b-loss + FC1b-pot.-loss~~	39
~~RCS4-loss + PC2b-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC2b-loss + FC3-pot.-loss~~	39
~~RCS4-loss + PC2b-loss + FC4-pot.-loss~~	39
~~RCS4-loss + PC2b-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC2b-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC2b-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS4-loss + PC2c-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC2c-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC2c-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC2c-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC2c-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC2c-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC2c-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC2c-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC3-loss + FC1a-pot.-loss~~	39
~~RCS4-loss + PC3-loss + FC1b-pot.-loss~~	39
~~RCS4-loss + PC3-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC3-loss + FC3-pot.-loss~~	39
~~RCS4-loss + PC3-loss + FC4-pot.-loss~~	39
~~RCS4-loss + PC3-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC3-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC3-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS4-loss + PC4-loss + FC1a-pot.-loss~~	39
~~RCS4-loss + PC4-loss + FC1b-pot.-loss~~	39
~~RCS4-loss + PC4-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC4-loss + FC3-pot.-loss~~	39
~~RCS4-loss + PC4-loss + FC4-pot.-loss~~	39
~~RCS4-loss + PC4-loss + FC5-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS4-loss + PC4-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC4-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS4-loss + PC5-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC5-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC5-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC5-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC5-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC5-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC5-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC5-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC6a-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC6a-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC6a-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC6a-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC6a-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC6a-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC6a-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC6a-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC6b-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC6b-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC6b-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC6b-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC6b-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC6b-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC6b-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC6b-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC7-loss + FC1a-pot.-loss~~	40
~~RCS4-loss + PC7-loss + FC1b-pot.-loss~~	40
~~RCS4-loss + PC7-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC7-loss + FC3-pot.-loss~~	40
~~RCS4-loss + PC7-loss + FC4-pot.-loss~~	40
~~RCS4-loss + PC7-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC7-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC7-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS4-loss + PC8-loss + FC1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS4-loss + PC8-loss + FC1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS4-loss + PC8-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC8-loss + FC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS4-loss + PC8-loss + FC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS4-loss + PC8-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC8-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS4-loss + PC8-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS5-loss + PC1-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC1-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC1-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC1-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC1-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC1-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC1-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC1-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2a-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2a-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2a-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2a-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2a-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2a-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2a-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2a-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS5-loss + PC2b-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2b-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2b-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2b-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2b-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2b-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2b-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2b-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS5-loss + PC2c-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2c-loss + FC1b-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS5-loss + PC2c-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2c-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2c-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2c-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2c-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC2c-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC3-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC3-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC3-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC3-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC3-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC3-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC3-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC3-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS5-loss + PC4-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC4-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC4-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC4-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC4-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC4-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC4-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC4-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS5-loss + PC5-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC5-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC5-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC5-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC5-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC5-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC5-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC5-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC6a-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC6a-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC6a-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC6a-loss + FC3-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS5-loss + PC6a-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC6a-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC6a-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC6a-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC6b-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC6b-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC6b-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC6b-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC6b-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC6b-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC6b-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC6b-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC7-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC7-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC7-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC7-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC7-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC7-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC7-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC7-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS5-loss + PC8-loss + FC1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS5-loss + PC8-loss + FC1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS5-loss + PC8-loss + FC2-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS5-loss + PC8-loss + FC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS5-loss + PC8-loss + FC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS5-loss + PC8-loss + FC5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS5-loss + PC8-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS5-loss + PC8-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC1-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC1-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC1-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC1-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC1-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC1-loss + FC5-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS6-loss + PC1-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC1-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC2a-loss + FC1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC2a-loss + FC1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC2a-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC2a-loss + FC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC2a-loss + FC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC2a-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC2a-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC2a-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC2b-loss + FC1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC2b-loss + FC1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC2b-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC2b-loss + FC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC2b-loss + FC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC2b-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC2b-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC2b-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC2c-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC2c-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC2c-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC2c-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC2c-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC2c-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC2c-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC2c-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC3-loss + FC1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC3-loss + FC1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC3-loss + FC2-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC3-loss + FC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC3-loss + FC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC3-loss + FC5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC3-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC3-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS6-loss + PC4-loss + FC1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC4-loss + FC1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC4-loss + FC2-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC4-loss + FC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC4-loss + FC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC4-loss + FC5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC4-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC4-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC5-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC5-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC5-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC5-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC5-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC5-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC5-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC5-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC6a-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC6a-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC6a-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC6a-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC6a-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC6a-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC6a-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC6a-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC6b-loss + FC1a-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC6b-loss + FC1b-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC6b-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC6b-loss + FC3-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC6b-loss + FC4-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC6b-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC6b-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC6b-loss + FC7-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC7-loss + FC1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC7-loss + FC1b-pot.-loss~~	Subsumed in "Judgment" EAL.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~RCS6-loss + PC7-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC7-loss + FC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC7-loss + FC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC7-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC7-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC7-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC8-loss + FC1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC8-loss + FC1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC8-loss + FC2-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC8-loss + FC3-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC8-loss + FC4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~RCS6-loss + PC8-loss + FC5-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC8-loss + FC6-pot.-loss~~	Condition not supported in PEG.
~~RCS6-loss + PC8-loss + FC7-pot.-loss~~	Subsumed in "Judgment" EAL.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
Loss of PC + loss of FC + pot. loss of RCS	
~~PC1-loss + FC1a-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC1a-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC1a-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC1a-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC1a-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC1a-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC1a-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC1a-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC1b-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC1b-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC1b-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC1b-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC1b-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC1b-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC1b-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC1b-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC2-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC2-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC2-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC2-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC2-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC2-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC2-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC2-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC3-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC3-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC3-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC3-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC3-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC3-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC3-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC3-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC4-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC1-loss + FC4-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC4-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC4-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC4-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC4-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC4-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC4-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC5-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC5-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC5-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC5-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC5-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC5-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC5-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC5-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC6-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC6-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC6-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC6-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC6-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC6-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC6-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC6-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC7-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC7-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC7-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC7-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC7-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC7-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC7-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC1-loss + FC7-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC1a-loss + RCS1a-pot.-loss~~	11
~~PC2a-loss + FC1a-loss + RCS1b-pot.-loss~~	11
~~PC2a-loss + FC1a-loss + RCS2-pot.-loss~~	11

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC2a-loss + FC1a-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC1a-loss + RCS3b-pot.-loss~~	11
~~PC2a-loss + FC1a-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC1a-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC1a-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2a-loss + FC1b-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC1b-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC1b-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC1b-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC1b-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC1b-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC1b-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC1b-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC2-loss + RCS1a-pot.-loss~~	41, Cont press dec + Act5%
~~PC2a-loss + FC2-loss + RCS1b-pot.-loss~~	41
~~PC2a-loss + FC2-loss + RCS2-pot.-loss~~	41
~~PC2a-loss + FC2-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC2-loss + RCS3b-pot.-loss~~	41
~~PC2a-loss + FC2-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC2-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC2-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2a-loss + FC3-loss + RCS1a-pot.-loss~~	9, 11
~~PC2a-loss + FC3-loss + RCS1b-pot.-loss~~	9, 11
~~PC2a-loss + FC3-loss + RCS2-pot.-loss~~	9, 11
~~PC2a-loss + FC3-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC3-loss + RCS3b-pot.-loss~~	9, 11
~~PC2a-loss + FC3-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC3-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC3-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2a-loss + FC4-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC4-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC4-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC4-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC4-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC2a-loss + FC4-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC4-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC4-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC5-loss + RCS1a-pot.-loss~~	41, Cont press dec + Rad5%
~~PC2a-loss + FC5-loss + RCS1b-pot.-loss~~	41
~~PC2a-loss + FC5-loss + RCS2-pot.-loss~~	41
~~PC2a-loss + FC5-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC5-loss + RCS3b-pot.-loss~~	41
~~PC2a-loss + FC5-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC5-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC5-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2a-loss + FC6-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC6-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC6-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC6-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC6-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC6-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC6-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC6-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC7-loss + RCS1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2a-loss + FC7-loss + RCS1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2a-loss + FC7-loss + RCS2-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2a-loss + FC7-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC7-loss + RCS3b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2a-loss + FC7-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2a-loss + FC7-loss + RCS5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2a-loss + FC7-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2b-loss + FC1a-loss + RCS1a-pot.-loss~~	11
~~PC2b-loss + FC1a-loss + RCS1b-pot.-loss~~	11
~~PC2b-loss + FC1a-loss + RCS2-pot.-loss~~	11
~~PC2b-loss + FC1a-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC1a-loss + RCS3b-pot.-loss~~	11
~~PC2b-loss + FC1a-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC1a-loss + RCS5-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC2b-loss + FC1a-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2b-loss + FC1b-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC1b-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC1b-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC1b-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC1b-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC1b-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC1b-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC1b-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC2-loss + RCS1a-pot.-loss~~	42, Inc loca resp + Act5%
~~PC2b-loss + FC2-loss + RCS1b-pot.-loss~~	42
~~PC2b-loss + FC2-loss + RCS2-pot.-loss~~	42
~~PC2b-loss + FC2-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC2-loss + RCS3b-pot.-loss~~	42
~~PC2b-loss + FC2-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC2-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC2-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2b-loss + FC3-loss + RCS1a-pot.-loss~~	9, 11
~~PC2b-loss + FC3-loss + RCS1b-pot.-loss~~	9, 11
~~PC2b-loss + FC3-loss + RCS2-pot.-loss~~	9, 11
~~PC2b-loss + FC3-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC3-loss + RCS3b-pot.-loss~~	9, 11
~~PC2b-loss + FC3-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC3-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC3-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2b-loss + FC4-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC4-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC4-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC4-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC4-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC4-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC4-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC4-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC5-loss + RCS1a-pot.-loss~~	42, Inc loca resp + Rad5%

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC2b-loss + FC5-loss + RCS1b-pot.-loss~~	42
~~PC2b-loss + FC5-loss + RCS2-pot.-loss~~	42
~~PC2b-loss + FC5-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC5-loss + RCS3b-pot.-loss~~	42
~~PC2b-loss + FC5-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC5-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC5-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2b-loss + FC6-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC6-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC6-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC6-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC6-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC6-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC6-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC6-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC7-loss + RCS1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2b-loss + FC7-loss + RCS1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2b-loss + FC7-loss + RCS2-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2b-loss + FC7-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC7-loss + RCS3b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2b-loss + FC7-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2b-loss + FC7-loss + RCS5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2b-loss + FC7-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC2c-loss + FC1a-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC1a-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC1a-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC1a-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC1a-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC1a-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC1a-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC1a-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC1b-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC1b-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC1b-loss + RCS2-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC2c-loss + FC1b-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC1b-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC1b-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC1b-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC1b-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC2-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC2-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC2-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC2-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC2-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC2-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC2-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC2-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC3-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC3-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC3-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC3-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC3-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC3-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC3-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC3-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC4-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC4-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC4-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC4-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC4-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC4-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC4-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC4-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC5-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC5-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC5-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC5-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC5-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC2c-loss + FC5-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC5-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC5-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC6-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC6-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC6-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC6-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC6-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC6-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC6-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC6-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC7-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC7-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC7-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC7-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC7-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC7-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC7-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC2c-loss + FC7-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC1a-loss + RCS1a-pot.-loss~~	11
~~PC3-loss + FC1a-loss + RCS1b-pot.-loss~~	11
~~PC3-loss + FC1a-loss + RCS2-pot.-loss~~	11
~~PC3-loss + FC1a-loss + RCS3apot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC1a-loss + RCS3b-pot.-loss~~	11
~~PC3-loss + FC1a-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC1a-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC1a-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC3-loss + FC1b-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC1b-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC1b-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC1b-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC1b-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC1b-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC1b-loss + RCS5-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC3-loss + FC1b-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC2-loss + RCS1a-pot.-loss~~	43, failsol + Act5%
~~PC3-loss + FC2-loss + RCS1b-pot.-loss~~	43
~~PC3-loss + FC2-loss + RCS2-pot.-loss~~	43
~~PC3-loss + FC2-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC2-loss + RCS3b-pot.-loss~~	43
~~PC3-loss + FC2-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC2-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC2-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC3-loss + FC3-loss + RCS1a-pot.-loss~~	9, 11
~~PC3-loss + FC3-loss + RCS1b-pot.-loss~~	9, 11
~~PC3-loss + FC3-loss + RCS2-pot.-loss~~	9, 11
~~PC3-loss + FC3-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC3-loss + RCS3b-pot.-loss~~	9, 11
~~PC3-loss + FC3-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC3-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC3-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC3-loss + FC4-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC4-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC4-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC4-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC4-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC4-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC4-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC4-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC5-loss + RCS1a-pot.-loss~~	43, failsol + Rad5%
~~PC3-loss + FC5-loss + RCS1b-pot.-loss~~	43
~~PC3-loss + FC5-loss + RCS2-pot.-loss~~	43
~~PC3-loss + FC5-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC5-loss + RCS3b-pot.-loss~~	43
~~PC3-loss + FC5-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC5-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC5-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC3-loss + FC6-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC3-loss + FC6-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC6-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC6-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC6-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC6-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC6-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC6-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC7-loss + RCS1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC3-loss + FC7-loss + RCS1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC3-loss + FC7-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC7-loss + RCS3a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC3-loss + FC7-loss + RCS3b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC3-loss + FC7-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC3-loss + FC7-loss + RCS4-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC3-loss + FC7-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC4-loss + FC1a-loss + RCS1a-pot.-loss~~	11
~~PC4-loss + FC1a-loss + RCS1b-pot.-loss~~	11
~~PC4-loss + FC1a-loss + RCS2-pot.-loss~~	11
~~PC4-loss + FC1a-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC1a-loss + RCS3b-pot.-loss~~	11
~~PC4-loss + FC1a-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC1a-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC1a-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC4-loss + FC1b-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC1b-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC1b-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC1b-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC1b-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC1b-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC1b-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC1b-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC2-loss + RCS1a-pot.-loss~~	48
~~PC4-loss + FC2-loss + RCS1b-pot.-loss~~	48
~~PC4-loss + FC2-loss + RCS2-pot.-loss~~	48

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC4-loss + FC2-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC2-loss + RCS3b-pot.-loss~~	48
~~PC4-loss + FC2-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC2-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC2-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC4-loss + FC3-loss + RCS1a-pot.-loss~~	9, 11
~~PC4-loss + FC3-loss + RCS1b-pot.-loss~~	9, 11
~~PC4-loss + FC3-loss + RCS2-pot.-loss~~	9, 11
~~PC4-loss + FC3-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC3-loss + RCS3b-pot.-loss~~	9, 11
~~PC4-loss + FC3-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC3-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC3-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC4-loss + FC4-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC4-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC4-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC4-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC4-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC4-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC4-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC4-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC5-loss + RCS1a-pot.-loss~~	48
~~PC4-loss + FC5-loss + RCS1b-pot.-loss~~	48
~~PC4-loss + FC5-loss + RCS2-pot.-loss~~	48
~~PC4-loss + FC5-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC5-loss + RCS3b-pot.-loss~~	48
~~PC4-loss + FC5-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC5-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC5-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC4-loss + FC6-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC6-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC6-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC6-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC6-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC4-loss + FC6-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC6-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC6-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC7-loss + RCS1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC4-loss + FC7-loss + RCS1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC4-loss + FC7-loss + RCS2-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC4-loss + FC7-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC7-loss + RCS3b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC4-loss + FC7-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC4-loss + FC7-loss + RCS5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC4-loss + FC7-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC5-loss + FC1a-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC1a-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC1a-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC1a-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC1a-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC1a-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC1a-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC1a-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC1b-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC1b-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC1b-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC1b-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC1b-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC1b-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC1b-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC1b-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC2-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC2-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC2-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC2-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC2-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC2-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC2-loss + RCS5-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC5-loss + FC2-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC3-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC3-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC3-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC3-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC3-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC3-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC3-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC3-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC4-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC4-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC4-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC4-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC4-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC4-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC4-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC4-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC5-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC5-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC5-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC5-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC5-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC5-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC5-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC5-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC6-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC6-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC6-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC6-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC6-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC6-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC6-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC6-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC7-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC5-loss + FC7-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC7-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC7-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC7-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC7-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC7-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC5-loss + FC7-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC1a-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC1a-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC1a-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC1a-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC1a-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC1a-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC1a-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC1a-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC1b-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC1b-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC1b-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC1b-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC1b-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC1b-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC1b-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC1b-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC2-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC2-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC2-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC2-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC2-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC2-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC2-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC2-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC3-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC3-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC3-loss + RCS2-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC6a-loss + FC3-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC3-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC3-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC3-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC3-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC4-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC4-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC4-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC4-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC4-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC4-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC4-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC4-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC5-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC5-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC5-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC5-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC5-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC5-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC5-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC5-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC6-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC6-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC6-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC6-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC6-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC6-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC6-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC6-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC7-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC7-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC7-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC7-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC7-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC6a-loss + FC7-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC7-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC6a-loss + FC7-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC1a-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC1a-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC1a-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC1a-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC1a-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC1a-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC1a-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC1a-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC1b-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC1b-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC1b-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC1b-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC1b-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC1b-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC1b-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC1b-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC2-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC2-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC2-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC2-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC2-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC2-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC2-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC2-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC3-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC3-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC3-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC3-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC3-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC3-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC3-loss + RCS5-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC6b-loss + FC3-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC4-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC4-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC4-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC4-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC4-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC4-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC4-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC4-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC5-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC5-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC5-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC5-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC5-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC5-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC5-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC5-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC6-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC6-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC6-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC6-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC6-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC6-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC6-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC6-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC7-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC7-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC7-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC7-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC7-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC7-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC7-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC6b-loss + FC7-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC1a-loss + RCS1a-pot.-loss~~	11

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC7-loss + FC1a-loss + RCS1b-pot.-loss~~	11
~~PC7-loss + FC1a-loss + RCS2-pot.-loss~~	11
~~PC7-loss + FC1a-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC1a-loss + RCS3b-pot.-loss~~	11
~~PC7-loss + FC1a-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC1a-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC1a-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC7-loss + FC1b-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC1b-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC1b-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC1b-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC1b-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC1b-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC1b-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC1b-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC2-loss + RCS1a-pot.-loss~~	40
~~PC7-loss + FC2-loss + RCS1b-pot.-loss~~	40
~~PC7-loss + FC2-loss + RCS2-pot.-loss~~	40
~~PC7-loss + FC2-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC2-loss + RCS3b-pot.-loss~~	40
~~PC7-loss + FC2-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC2-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC2-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC7-loss + FC3-loss + RCS1a-pot.-loss~~	9, 11
~~PC7-loss + FC3-loss + RCS1b-pot.-loss~~	9, 11
~~PC7-loss + FC3-loss + RCS2-pot.-loss~~	9, 11
~~PC7-loss + FC3-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC3-loss + RCS3b-pot.-loss~~	9, 11
~~PC7-loss + FC3-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC3-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC3-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC7-loss + FC4-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC4-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC4-loss + RCS2-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC7-loss + FC4-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC4-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC4-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC4-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC4-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC5-loss + RCS1a-pot.-loss~~	40
~~PC7-loss + FC5-loss + RCS1b-pot.-loss~~	40
~~PC7-loss + FC5-loss + RCS2-pot.-loss~~	40
~~PC7-loss + FC5-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC5-loss + RCS3b-pot.-loss~~	40
~~PC7-loss + FC5-loss + RCS4pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC5-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC5-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC7-loss + FC6-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC6-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC6-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC6-loss + RCS3apot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC6-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC6-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC6-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC6-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC7-loss + RCS1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC7-loss + FC7-loss + RCS1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC7-loss + FC7-loss + RCS2-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC7-loss + FC7-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC7-loss + RCS3b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC7-loss + FC7-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC7-loss + FC7-loss + RCS5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC7-loss + FC7-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC1a-loss + RCS1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC1a-loss + RCS1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC1a-loss + RCS2-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC1a-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC1a-loss + RCS3b-pot.-loss~~	Subsumed in "Judgment" EAL.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC8-loss + FC1a-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC1a-loss + RCS5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC1a-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC1b-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC1b-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC1b-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC1b-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC1b-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC1b-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC1b-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC1b-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC2-loss + RCS1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC2-loss + RCS1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC2-loss + RCS2-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC2-loss + RCS3apot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC2-loss + RCS3b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC2-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC2-loss + RCS5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC2-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC3-loss + RCS1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC3-loss + RCS1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC3-loss + RCS2-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC3-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC3-loss + RCS3b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC3-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC3-loss + RCS5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC3-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC4-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC4-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC4-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC4-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC4-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC4-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC4-loss + RCS5-pot.-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~PC8-loss + FC4-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC5-loss + RCS1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC5-loss + RCS1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC5-loss + RCS2-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC5-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC5-loss + RCS3b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC5-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC5-loss + RCS5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC5-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC6-loss + RCS1a-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC6-loss + RCS1b-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC6-loss + RCS2-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC6-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC6-loss + RCS3b-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC6-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC6-loss + RCS5-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC6-loss + RCS6-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC7-loss + RCS1a-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC7-loss + RCS1b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC7-loss + RCS2-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC7-loss + RCS3a-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC7-loss + RCS3b-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC7-loss + RCS4-pot.-loss~~	Condition not supported in PEG.
~~PC8-loss + FC7-loss + RCS5-pot.-loss~~	Subsumed in "Judgment" EAL.
~~PC8-loss + FC7-loss + RCS6-pot.-loss~~	Subsumed in "Judgment" EAL.
Loss of FC + loss of RCS + loss of PC	
~~FC1a-loss + RCS1a-loss + PC1-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1a-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1a-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1a-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1a-loss + PC3-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1a-loss + PC4-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC1a-loss + RCS1a-loss + PC5-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1a-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1a-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1a-loss + PC7-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1a-loss + PC8-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC1-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC3-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC4-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC5-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC7-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS1b-loss + PC8-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS2-loss + PC1-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS2-loss + PC2a-loss~~	11, 26
~~FC1a-loss + RCS2-loss + PC2b-loss~~	11
~~FC1a-loss + RCS2-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS2-loss + PC3-loss~~	11
~~FC1a-loss + RCS2-loss + PC4-loss~~	11
~~FC1a-loss + RCS2-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS2-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS2-loss + PC7-loss~~	11
~~FC1a-loss + RCS2-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS3a-loss + PC1-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3a-loss + PC2a-loss~~	11, 26
~~FC1a-loss + RCS3a-loss + PC2b-loss~~	11, 6
~~FC1a-loss + RCS3a-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3a-loss + PC3-loss~~	11
~~FC1a-loss + RCS3a-loss + PC4-loss~~	11
~~FC1a-loss + RCS3a-loss + PC5-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3a-loss + PC6a-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC1a-loss + RCS3a-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3a-loss + PC7-loss~~	11
~~FC1a-loss + RCS3a-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS3b-loss + PC1-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC3-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC4-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC5-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC7-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS3b-loss + PC8-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS4-loss + PC1-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS4-loss + PC2a-loss~~	11, 26
~~FC1a-loss + RCS4-loss + PC2b-loss~~	11, 6
~~FC1a-loss + RCS4-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS4-loss + PC3-loss~~	11
~~FC1a-loss + RCS4-loss + PC4-loss~~	11
~~FC1a-loss + RCS4-loss + PC5-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS4-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS4-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS4-loss + PC7-loss~~	11
~~FC1a-loss + RCS4-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS5-loss + PC1-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS5-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS5-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS5-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS5-loss + PC3-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS5-loss + PC4-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS5-loss + PC5-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS5-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS5-loss + PC6b-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC1a-loss + RCS5-loss + PC7-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS5-loss + PC8-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS6-loss + PC1-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS6-loss + PC2a-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS6-loss + PC2b-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS6-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS6-loss + PC3-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS6-loss + PC4-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS6-loss + PC5-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS6-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS6-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC1a-loss + RCS6-loss + PC7-loss~~	Subsumed in "Judgment" EAL.
~~FC1a-loss + RCS6-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC1b-loss + RCS1a-loss + PC1-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC3-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC4-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC5-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC7-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1a-loss + PC8-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC1-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC3-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC4-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC5-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS1b-loss + PC7-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC1b-loss + RCS1b-loss + PC8-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC1-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC3-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC4-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC7-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS2-loss + PC8-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC1-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC3-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC4-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC5-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC7-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3a-loss + PC8-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC1-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC3-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC4-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC5-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC7-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS3b-loss + PC8-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC1-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC1b-loss + RCS4-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC3-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC4-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC5-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC7-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS4-loss + PC8-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC1-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC3-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC4-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC5-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC7-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS5-loss + PC8-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC1-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC3-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC4-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC5-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC7-loss~~	Condition not supported in PEG.
~~FC1b-loss + RCS6-loss + PC8-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC1-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC2a-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC2-loss + RCS1a-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC3-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC4-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC5-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC7-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1a-loss + PC8-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC1-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC3-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC4-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC5-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC7-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS1b-loss + PC8-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS2-loss + PC1-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS2-loss + PC2a-loss~~	26
~~FC2-loss + RCS2-loss + PC2b-loss~~	42
~~FC2-loss + RCS2-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS2-loss + PC3-loss~~	43
~~FC2-loss + RCS2-loss + PC4-loss~~	48
~~FC2-loss + RCS2-loss + PC5-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS2-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS2-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS2-loss + PC7-loss~~	40
~~FC2-loss + RCS2-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS3a-loss + PC1-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3a-loss + PC2a-loss~~	26
~~FC2-loss + RCS3a-loss + PC2b-loss~~	6, 42

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC2-loss + RCS3a-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3a-loss + PC3-loss~~	43
~~FC2-loss + RCS3a-loss + PC4-loss~~	48
~~FC2-loss + RCS3a-loss + PC5-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3a-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3a-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3a-loss + PC7-loss~~	40
~~FC2-loss + RCS3a-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS3b-loss + PC1-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC3-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC4-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC5-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC7-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS3b-loss + PC8-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS4-loss + PC1-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS4-loss + PC2a-loss~~	26
~~FC2-loss + RCS4-loss + PC2b-loss~~	6, 42
~~FC2-loss + RCS4-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS4-loss + PC3-loss~~	43
~~FC2-loss + RCS4-loss + PC4-loss~~	48
~~FC2-loss + RCS4-loss + PC5-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS4-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS4-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS4-loss + PC7-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS4-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS5-loss + PC1-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS5-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS5-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS5-loss + PC2c-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC2-loss + RCS5-loss + PC3-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS5-loss + PC4-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS5-loss + PC5-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS5-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS5-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS5-loss + PC7-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS5-loss + PC8-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS6-loss + PC1-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS6-loss + PC2a-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS6-loss + PC2b-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS6-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS6-loss + PC3-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS6-loss + PC4-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS6-loss + PC5-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS6-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS6-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC2-loss + RCS6-loss + PC7-loss~~	Subsumed in "Judgment" EAL.
~~FC2-loss + RCS6-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS1a-loss + PC1-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1a-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1a-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1a-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1a-loss + PC3-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1a-loss + PC4-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1a-loss + PC5-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1a-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1a-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1a-loss + PC7-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1a-loss + PC8-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC1-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC3-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC3-loss + RCS1b-loss + PC4-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC5-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC7-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS1b-loss + PC8-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS2-loss + PC1-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS2-loss + PC2a-loss~~	9, 11, 26
~~FC3-loss + RCS2-loss + PC2b-loss~~	9, 11, 42
~~FC3-loss + RCS2-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS2-loss + PC3-loss~~	43
~~FC3-loss + RCS2-loss + PC4-loss~~	48
~~FC3-loss + RCS2-loss + PC5-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS2-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS2-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS2-loss + PC7-loss~~	48
~~FC3-loss + RCS2-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS3a-loss + PC1-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3a-loss + PC2a-loss~~	9, 11, 26
~~FC3-loss + RCS3a-loss + PC2b-loss~~	9, 11, 42
~~FC3-loss + RCS3a-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3a-loss + PC3-loss~~	43
~~FC3-loss + RCS3a-loss + PC4-loss~~	48
~~FC3-loss + RCS3a-loss + PC5-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3a-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3a-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3a-loss + PC7-loss~~	40
~~FC3-loss + RCS3a-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS3b-loss + PC1-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3b-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3b-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3b-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3b-loss + PC3-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3b-loss + PC4-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC3-loss + RCS3b-loss + PC5-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3b-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3b-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3b-loss + PC7-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS3b-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS4-loss + PC1-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS4-loss + PC2a-loss~~	9, 11, 26
~~FC3-loss + RCS4-loss + PC2b-loss~~	9, 11, 42
~~FC3-loss + RCS4-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS4-loss + PC3-loss~~	43
~~FC3-loss + RCS4-loss + PC4-loss~~	48
~~FC3-loss + RCS4-loss + PC5-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS4-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS4-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS4-loss + PC7-loss~~	40
~~FC3-loss + RCS4-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS5-loss + PC1-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS5-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS5-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS5-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS5-loss + PC3-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS5-loss + PC4-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS5-loss + PC5-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS5-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS5-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS5-loss + PC7-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS5-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS6-loss + PC1-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS6-loss + PC2a-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS6-loss + PC2b-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS6-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS6-loss + PC3-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS6-loss + PC4-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS6-loss + PC5-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC3-loss + RCS6-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS6-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC3-loss + RCS6-loss + PC7-loss~~	Subsumed in "Judgment" EAL.
~~FC3-loss + RCS6-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC4-loss + RCS1a-loss + PC1-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC3-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC4-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC5-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC7-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1a-loss + PC8-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC1-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC3-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC4-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC5-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC7-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS1b-loss + PC8-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS2-loss + PC1-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS2-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS2-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS2-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS2-loss + PC3-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS2-loss + PC4-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS2-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS2-loss + PC6b-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC4-loss + RCS2-loss + PC7-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS2-loss + PC8-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC1-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC3-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC4-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC5-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC7-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3a-loss + PC8-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC1-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC3-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC4-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC5-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC7-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS3b-loss + PC8-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC1-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC3-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC4-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC5-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS4-loss + PC7-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC4-loss + RCS4-loss + PC8-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC1-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC3-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC4-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC5-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC7-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS5-loss + PC8-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC1-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC3-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC4-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC5-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC7-loss~~	Condition not supported in PEG.
~~FC4-loss + RCS6-loss + PC8-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC1-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC3-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC4-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC5-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC7-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1a-loss + PC8-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC5-loss + RCS1b-loss + PC1-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC3-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC4-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC5-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC7-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS1b-loss + PC8-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS2-loss + PC1-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS2-loss + PC2a-loss~~	26
~~FC5-loss + RCS2-loss + PC2b-loss~~	6, 42
~~FC5-loss + RCS2-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS2-loss + PC3-loss~~	43
~~FC5-loss + RCS2-loss + PC4-loss~~	48
~~FC5-loss + RCS2-loss + PC5-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS2-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS2-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS2-loss + PC7-loss~~	40
~~FC5-loss + RCS2-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS3a-loss + PC1-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3a-loss + PC2a-loss~~	26
~~FC5-loss + RCS3a-loss + PC2b-loss~~	6, 42
~~FC5-loss + RCS3a-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3a-loss + PC3-loss~~	43
~~FC5-loss + RCS3a-loss + PC4-loss~~	48
~~FC5-loss + RCS3a-loss + PC5-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3a-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3a-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3a-loss + PC7-loss~~	40
~~FC5-loss + RCS3a-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS3b-loss + PC1-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC5-loss + RCS3b-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3b-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3b-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3b-loss + PC3-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3b-loss + PC4-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3b-loss + PC5-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3b-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3b-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3b-loss + PC7-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS3b-loss + PC8-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS4-loss + PC1-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS4-loss + PC2a-loss~~	26
~~FC5-loss + RCS4-loss + PC2b-loss~~	6, 42
~~FC5-loss + RCS4-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS4-loss + PC3-loss~~	43
~~FC5-loss + RCS4-loss + PC4-loss~~	48
~~FC5-loss + RCS4-loss + PC5-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS4-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS4-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS4-loss + PC7-loss~~	40
~~FC5-loss + RCS4-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS5-loss + PC1-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS5-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS5-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS5-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS5-loss + PC3-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS5-loss + PC4-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS5-loss + PC5-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS5-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS5-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS5-loss + PC7-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS5-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS6-loss + PC1-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS6-loss + PC2a-loss~~	Subsumed in "Judgment" EAL.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC5-loss + RCS6-loss + PC2b-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS6-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS6-loss + PC3-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS6-loss + PC4-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS6-loss + PC5-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS6-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS6-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC5-loss + RCS6-loss + PC7-loss~~	Subsumed in "Judgment" EAL.
~~FC5-loss + RCS6-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC6-loss + RCS1a-loss + PC1-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC3-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC4-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC5-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC7-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1a-loss + PC8-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC1-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC3-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC4-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC5-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC7-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS1b-loss + PC8-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC1-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC2b-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC6-loss + RCS2-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC3-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC4-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC5-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC7-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS2-loss + PC8-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC1-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC3-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC4-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC5-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC7-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3a-loss + PC8-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC1-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC3-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC4-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC5-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC7-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS3b-loss + PC8-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC1-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC2c-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC6-loss + RCS4-loss + PC3-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC4-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC5-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC7-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS4-loss + PC8-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC1-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC3-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC4-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC5-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC7-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS5-loss + PC8-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC1-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC3-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC4-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC5-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC7-loss~~	Condition not supported in PEG.
~~FC6-loss + RCS6-loss + PC8-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC1-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC3-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC7-loss + RCS1a-loss + PC4-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC5-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC7-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1a-loss + PC8-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC1-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC2a-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC2b-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC3-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC4-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC5-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC7-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS1b-loss + PC8-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS2-loss + PC1-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS2-loss + PC2a-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS2-loss + PC2b-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS2-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS2-loss + PC3-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS2-loss + PC4-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS2-loss + PC5-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS2-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS2-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS2-loss + PC7-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS2-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3a-loss + PC1-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS3a-loss + PC2a-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3a-loss + PC2b-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3a-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS3a-loss + PC3-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3a-loss + PC4-loss~~	Subsumed in "Judgment" EAL.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC7-loss + RCS3a-loss + PC5-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS3a-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS3a-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS3a-loss + PC7-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3a-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3b-loss + PC1-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS3b-loss + PC2a-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3b-loss + PC2b-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3b-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS3b-loss + PC3-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3b-loss + PC4-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3b-loss + PC5-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS3b-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS3b-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS3b-loss + PC7-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS3b-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS4-loss + PC1-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS4-loss + PC2a-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS4-loss + PC2b-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS4-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS4-loss + PC3-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS4-loss + PC4-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS4-loss + PC5-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS4-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS4-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS4-loss + PC7-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS4-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS5-loss + PC1-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS5-loss + PC2a-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS5-loss + PC2b-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS5-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS5-loss + PC3-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS5-loss + PC4-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS5-loss + PC5-loss~~	Condition not supported in PEG.

Table D – IP-2/3 Fission Product Barrier

General Emergencies

NESP-007	Remarks
~~FC7-loss + RCS5-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS5-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS5-loss + PC7-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS5-loss + PC8-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS6-loss + PC1-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS6-loss + PC2a-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS6-loss + PC2b-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS6-loss + PC2c-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS6-loss + PC3-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS6-loss + PC4-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS6-loss + PC5-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS6-loss + PC6a-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS6-loss + PC6b-loss~~	Condition not supported in PEG.
~~FC7-loss + RCS6-loss + PC7-loss~~	Subsumed in "Judgment" EAL.
~~FC7-loss + RCS6-loss + PC8-loss~~	Subsumed in "Judgment" EAL.

Appendix 1 – Fission Product Barrier Remarks

1. The only source of significant containment pressure increase other than a faulted steam generator is an RCS boundary breach. By definition, loss of the RCS boundary and the loss of the primary containment boundary require a Site Area Emergency classification. Therefore, this EAL is unnecessary and can be deleted.

2. If an inconsistent loca response is observed, a loss of the RCS has occurred. By definition, loss of the RCS boundary and the loss of the primary containment boundary require a Site Area Emergency classification. Therefore, this EAL is unnecessary and can be deleted.

3. The initiation signal for containment isolations are result of an RCS breach. By definition, loss of the RCS boundary and the loss of the primary containment boundary require a Site Area Emergency classification. Therefore, this EAL is unnecessary and can be deleted.

4. In order to reach containment-red on the CSFST, containment design pressure has been reached or exceeded. This is indicative of a loss of RCS boundary. It is not possible to reach this condition without also being in a Heat Sink-Red or Core Cooling-Red CSFST which is a loss of RCS and the fuel clad barrier. The source of energy must be the result of severe degradation of core cooling or loss of heat sink. Since the EAL is a potential loss of containment by definition, this combination of conditions requires the declaration of a General Emergency. Therefore, this EAL is unnecessary and can be deleted.

5. Containment design pressure can only be reached as a result of a severe loca event. This represents a loss of the RCS barrier and a potential loss of the primary containment. By definition, this combination of conditions requires the declaration of at least an Alert classification. Therefore, this EAL is unnecessary and can be deleted.

6. Generation of this level of hydrogen concentration in the containment indicates that a loss of fuel clad barrier and loss of RCS barrier has occurred with a potential loss of the primary containment barrier. By definition, this combination of conditions requires the declaration of a General Emergency. Therefore, this EAL is unnecessary and can be deleted.

7. The conditions listed in this EAL represent a loss of the RCS barrier with a potential loss of containment. By definition, the loss of the RCS barrier

Appendix 1 – Fission Product Barrier Remarks

requires the declaration of an Alert. Therefore, this EAL is unnecessary and can be deleted.

8. These containment radiation levels can only be reached as a result of a severe core damage. This represents a loss of the fuel clad barrier and the loss of the RCS barrier with a potential loss of the primary containment. By definition, this combination of conditions requires the declaration of a General Emergency. Therefore, this EAL is unnecessary and can be deleted.

9. Core Exit Thermocouple readings ≥1200 °F with a failure of restoration procedures represent a potential loss of the primary containment, a loss of fuel clad barrier, and a loss of subcooling which is a fundamental indication of a loss of the RCS barrier. By definition, this combination of conditions requires the declaration of a General Emergency. Therefore, this EAL is unnecessary and can be deleted.

10. A Core Exit Thermocouple reading ≥700 °F with reactor vessel water level below the top of active fuel requires entry to the Core Cooling-Red CSFST and warrants declaration of a General Emergency. See justification #11. Therefore, this EAL is unnecessary and can be deleted.

11. Core Cooling-Red on the CSFST is indicative of a Core Exit Thermocouple reading of ≥1200 °F, or reactor vessel water level below the top of active fuel with a Core Exit Thermocouple reading of ≥700 °F. EAL# FC3.1 and EAL# FC3.2 represent a loss and potential loss of the fuel clad based on Core Exit Thermocouple readings of 1200 °F and 700 °F, respectively. EAL# RCS2.1 represents a loss of subcooling, therefore, entry into Core Cooling-Red also represents a loss of the RCS barrier. EAL# PC6.5 is indicative of a Core Exit Thermocouple reading ≥700 °F and represents a potential loss of primary containment barrier. Thus, entry into Core Cooling-Red requires declaration of a General Emergency. Therefore, this EAL is unnecessary and can be deleted.

12. Core Cooling-Orange on the CSFST represents a potential loss of the fuel clad barrier and a loss of subcooling which is indicative of a loss of the RCS barrier. By definition, this combination of conditions requires the declaration of a Site Area Emergency. Therefore, this EAL is unnecessary and can be deleted.

Appendix 1 – Fission Product Barrier Remarks

13. Heat Sink-Red on the CSFST represents an extreme challenge to the heat sink function and, by EAL# SS4.1, requires the declaration of a Site Area Emergency. Therefore, this EAL is unnecessary and can be deleted.

14. A Core Exit Thermocouple reading ≥700 °F represents a potential loss of the fuel clad and a loss of subcooling which is a loss of the RCS barrier. By definition, this combination of conditions requires the declaration of a Site Area Emergency. Therefore, this EAL is unnecessary and can be deleted.

15. RVILS less than or equal to the top of active fuel requires, by EAL# SS5.1, the declaration of a Site Area Emergency. Therefore, this EAL is unnecessary and can be deleted.

16. [Deleted]

17. A SGTR with a resultant path to the environment represents breach of both the RCS and the primary containment barriers. This combination of conditions requires, by definition, a Site Area Emergency declaration. Therefore, this EAL is unnecessary and can be deleted.

18. The containment radiation monitor reading for EAL# RCS4.1 bounds the reading given in EAL# FC5.1. Therefore, EAL# FC5.1 is unnecessary and can be deleted.

19. Heat Sink-Red on the CSFST represents a potential loss of the fuel clad barrier and the RCS barrier. This combination of conditions requires, by definition, the declaration of a Site Area Emergency. Therefore, this EAL is unnecessary and can be deleted.

20. The RCS leakage for EAL# RCS2.2 bounds the leakage given in EAL# RCS3.2. Therefore, EAL# RCS3.2 is unnecessary and can be deleted.

21. EAL# FC5.1 is a containment radiation level corresponding to 5% fuel clad failure. It is also indicative of an RCS failure because EAL# RCS4.1 will always be a value less than EAL# FC5.1. Therefore, EAL# FC5.1 alone requires declaration of a Site Area Emergency.

22. This combination of conditions would produce a containment radiation level at least at the level of EAL# FC5.1. Therefore, this combination of conditions is unnecessary and can be deleted.

Appendix 1 – Fission Product Barrier Remarks

23. (Not Applicable)

24. EAL# FC4.1 is indicative of reactor vessel water level less than the top of active fuel. This condition always requires a CSFST entry to Core Cooling-Orange or Core Cooling-Red. Core Cooling-Orange is addressed in EAL# FC1.2 and Core Cooling-Red is addressed in EAL# FC1.1. Therefore, declaration of a Site Area Emergency due to EAL# FC4.1 is unnecessary and can be deleted.

25. EAL# FC3.2 is indicative of a Core Exit Thermocouple reading at or above 700 °F. This condition always requires a CSFST entry to Core Cooling-Orange or Core Cooling-Red. Core Cooling-Orange is addressed in EAL# FC1.2 and Core Cooling-Red is addressed in EAL# FC1.1. Therefore, declaration of a Site Area Emergency due to EAL# FC3.1 is unnecessary and can be deleted.

26. EAL# PC2.1 is an entry into Containment Cooling-Red CSFST which requires a declaration of a General Emergency under EAL# PC1.1. Therefore, all combinations of conditions involving EAL# PC2.1 are unnecessary and can be deleted.

27. EAL# RCS2.1 is indicative of a loss of subcooling. EAL# FC1.1 is based on entry to Core Cooling-Red CSFST which is indicative of a loss of subcooling. Therefore, EAL# RCS2.1 can be deleted from this combination of conditions.

28. EAL# PC6.2 is indicative of a Core Exit Thermocouple reading of 700 °F. EAL# FC1.1 is based on entry to Core Cooling-Red CSFST. Core Cooling-Red cannot be entered without exceeding a 700 °F Core Exit Thermocouple reading. Therefore, this combination of conditions is unnecessary and can be deleted.

29. This combination of conditions is adequately covered by EAL# FC1.1 in combination with EAL# PC2.5.

30. EAL# PC6.2 is indicative of a Core Exit Thermocouple reading at or above 700 °F and reactor vessel water level below the top of active fuel. These conditions require an entry to Core Cooling-Red. Core Cooling-Red defines EAL# FC1.1. Therefore, EAL# PC6.2 can be deleted from this combination of conditions.

Appendix 1 – Fission Product Barrier Remarks

31. EAL# PC6.2 is indicative of a Core Exit Thermocouple reading at or above 700 °F with a failure of restoration procedures. Core Exit Thermocouple reading at or above 700 °F is a loss of subcooling which is the condition that defines EAL# RCS2.1. Therefore, EAL# RCS2.1 is unnecessary and can be deleted from this combination of conditions.

32. The purpose of EAL# RCS2.1 is to indicate the loss of the RCS barrier. In order to reach the condition of EAL# PC2.5, a breach of the RCS barrier is required. Thus, EAL# RCS2.1 is bounded by EAL# PC2.5. Therefore, EAL# RCS2.1 is unnecessary and can be deleted from this combination of conditions.

33. EAL# PC2.5 is indicative of a loss of the RCS barrier and a potential loss of the primary containment barrier. EAL# RCS3.1 is indicative of a loss of both RCS and primary containment barriers. A potential loss of primary containment barrier is irrelevant to this combination of conditions. Therefore, EAL# PC2.5 is unnecessary and can be deleted from this combination of conditions.

34. EAL# RCS4.1 corresponds to a containment radiation level which is always less than that in EAL# FC5.1. EAL# RCS4.1 only indicates a loss of the RCS barrier where as EAL# FC5.1 indicates a loss of both RCS and fuel clad barriers. Therefore, EAL# RCS4.1 is unnecessary in defining the General Emergency conditions. With this change, the resulting combination of conditions is identical to those given above with justification #32.

35. EAL# RCS4.1 represents containment radiation levels resulting from a loss of the RCS barrier. However, EAL# PC2.6 is indicative of a potential loss of the primary containment barrier and a loss of the RCS barrier. Therefore, EAL# RCS4.1 is bounded by EAL# PC2.6 and can be deleted from this combination of conditions.

36. EAL# FC1.2 is an entry to Core Cooling-Orange on the CSFST. EAL# RCS2.1 is an indication of a loss of subcooling and is also an entry to Core Cooling-Orange on the CSFST. Thus, EAL# FC1.2 bounds EAL# RCS2.1. Therefore, EAL# RCS2.1 is unnecessary and can be deleted from this combination of conditions.

37. RCS3.1 represents both a loss of RCS and loss of primary containment barrier. Therefore, PC2.1 can be deleted from any combination of RCS3.1 loss and fuel clad potential loss.

Appendix 1 – Fission Product Barrier Remarks

38. EAL# PC2.1, EAL# PC2.2, and EAL# PC3.1 represent a loss of the RCS and primary containment barriers. Therefore, EAL# RCS2.1 which represents a loss of RCS barrier is unnecessary and can be deleted from this combination of conditions.

39. By justification #38 above, any combination of EAL# PC2.1, EAL# PC2.2, or EAL# PC3.1 and any of the following: EAL# FC1.2, EAL# FC3.1, or EAL# FC4.1, results in the declaration of a General Emergency. Therefore, this combination of conditions is redundant and can be deleted.

40. EAL# PC7.1 is used only as loss of primary containment barrier for the Unusual Event declaration. For the Site Area Emergency and the General Emergency declaration, EAL# PC7.1 is subsumed into the "Judgment" EAL. Loss of containment airlock doors is event dependent. The airlock doors may be open for reasons other than an emergency situation (e. g., maintenance activities, etc.). Shift personnel will rapidly respond to failure of other barriers by reclosing the doors. If the doors are not reclosed, any loss of the RCS barrier that occurs with the doors open will appear as an inconsistent loca response. Therefore, this event need not be used to indicate a loss of the primary containment barrier unless the Emergency Director determines such a declaration is needed.

41. EAL# PC2.1 is indicative of a loss of the primary containment barrier and a loss of the RCS barrier. Any combination of EAL# PC2.1 with a loss of the fuel clad barrier alone requires declaration of a General Emergency. Therefore, the third EAL condition is unnecessary and can be deleted. Any other combinations of conditions using EAL# PC2.1 and fuel clad barrier losses are redundant and can be deleted.

42. EAL# PC2.2 is indicative of a loss of the primary containment barrier and a loss of the RCS barrier. Any combination of EAL# PC2.2 with a loss of the fuel clad barrier alone requires declaration of a General Emergency. Therefore, the third EAL condition is unnecessary and can be deleted. Any other combinations of conditions using EAL# PC2.2 and fuel clad barrier losses are redundant and can be deleted.

43. EAL# PC3.1 is indicative of a loss of the primary containment barrier and a loss of the RCS barrier. Any combination of EAL# PC3.1 with a loss of the fuel clad barrier alone requires declaration of a General Emergency. Therefore, the third EAL condition is unnecessary and can be deleted.

Appendix 1 – Fission Product Barrier Remarks

Any other combinations of conditions using EAL# PC3.1 and fuel clad barrier losses are redundant and can be deleted.

44. [Deleted]

45. [Deleted]

46. While RCS 1.1 is a potential loss of RCS, the concern for RCS loss is reactor vessel integrity. PC4.1 is a loss of containment in that a secondary side release with primary to secondary leakage > Tech. Spec. provides a pathway from the RCS to outside containment. While it is feasible for both of these conditions to exist simultaneously, they are not related such that the failure associated with red path integrity (reactor vessel structural failure) interfaces with the containment loss mechanism (steam generator tube leakage). Therefore this combination is not appropriate.

47. While RCS 2.1 and RCS4.1 are losses of RCS, the concern for RCS loss is reactor vessel integrity. PC4.1 is a loss of containment in that a secondary side release with primary to secondary leakage > Tech. Spec. provides a pathway from the RCS to outside containment. While it is feasible for both of these conditions to exist simultaneously, they are not related such that the failure associated with a loss of coolant (reactor vessel structural failure) interfaces with the containment loss mechanism (steam generator tube leakage). If primary to secondary leakage was of the magnitude to have caused the loss of inventory, then declaration would be made per RCS 3.1. Therefore this combination is not appropriate.

48. While RCS 1.1, RCS1.2, RCS 2.1 and RCS4.1 are losses of RCS, the concern for RCS loss is reactor vessel integrity. PC4.1 is a loss of containment in that a secondary side release with primary to secondary leakage > Tech. Spec. provides a pathway from the RCS to outside containment. While it is feasible for both of these conditions to exist simultaneously in conjunction with one or more of the fuel clad loss indicators (FC1.2, FC1.3, FC2.1, FC3.2, FC4.1, FC5.1), they are not related such that the failure associated with a loss of coolant (reactor vessel structural failure) interfaces with the containment loss mechanism (steam generator tube leakage). If SG leakage was of the magnitude to have caused the loss of inventory, then declaration would be made per RCS 3.1 + one of the fuel clad loss indicators. Therefore this combination is not appropriate.

Appendix 2 – Summary of Fission Product Barrier Evaluation

The following summarizes the EALs which resulted from the analysis performed of the fission product barrier methodology of NUMARC-007 for Indian Point 2:

Unusual Event

- PC4.1-loss
- PC7.1-loss
- Emergency Director Judgement

Alert:

- FC2.1-loss
- RCS1.1-pot loss
- RCS2.1-loss
- RCS4.1-loss
- RCS2.2-pot loss
- Emergency Director Judgement

Site Area Emergency:

- FC1.2-pot loss
- FC1.3-pot loss/RCS1.2-pot loss
- RCS3.1-loss
- FC5.1-loss

Appendix 2 – Summary of Fission Product Barrier Evaluation

Site Area Emergency (cont):

- PC2.1-loss
- PC2.2-loss
- PC3.1-loss
- RCS2.2-pot loss + PC4.1-loss
- FC2.1-loss + PC4.1-loss
- Emergency Director Judgement

General Emergency:

- PC1.1-pot. loss
- FC1.1-loss
- PC2.4-pot. loss
- PC5.1-pot. loss
- PC2.5-pot loss + ANY:
  -FC2.1-loss
  -FC5.1-loss
- RCS3.1-loss + ANY:
  -FC1.2-pot loss
  -FC1.3-pot loss
  -FC2.1-loss
  -FC3.2-pot loss
  -FC4.1-pot loss
  -FC5.1-loss

Appendix 2 – Summary of Fission Product Barrier Evaluation

General Emergency (cont):

- PC2.1-loss + ANY:
  - -FC1.2-pot loss
  - -FC1.3-pot loss
  - -FC2.1-loss
  - -FC3.2-pot loss
  - -FC4.1-pot loss
  - -FC5.1-loss
- PC2.2-loss + ANY:
  - -FC1.2-pot loss
  - -FC1.3-pot loss
  - -FC2.1-loss
  - -FC3.2-pot loss
  - -FC4.1-pot loss
  - -FC5.1-loss
- PC3.1-loss + ANY:
  - -FC1.2-pot loss
  - -FC1.3-pot loss
  - -FC2.1-loss
  - -FC3.2-pot loss
  - -FC4.1-pot loss
  - -FC5.1-loss
- PC6.1-pot. loss
- PC6.2-pot loss
- Emergency Director Judgement

1.0 CSFST Status

1.1 Subcriticality CSFST Status
SA2.1
SS2.1
SG2.1 (Heat Sink) *(IP2/IP3) redundant to 1.3*

1.2 Core Cooling CSFST Status
FC1.1 (General)
FC1.2 (SAE)
PC6.1(General)
PC6.2(General)
SG2.1 (Core Cooling)

1.3 Heat Sink CSFST Status
FC1.3/RCS1.2 (SAE)
SS4.1
SG2.1 (Heat Sink)

1.4 Integrity CSFST Status
RCS1.1 (Alert)

1.5 Containment CSFST Status
PC1.1 (General)

2.0 Reactor Fuel

2.1 Coolant Activity
SU4.2
FC2.1 (Alert)

2.2 Failed Fuel Detectors *(Ginna only)*
SU4.1
FC6.1 (Alert)
FC6.1 + RCS1.1 (SAE)
+ RCS2.2 (SAE)
+ RCS2.1 (SAE)

2.3 Containment Radiation
RCS4.1 (Alert)
FC5.1 (SAE)
PC5.1 (General)

2.4 Refueling Accidents or Other Radiation Monitors
AU2.1
AA2.1
AA2.2

3.0 Reactor Coolant System

3.1 RCS Leakage

SU5.1
RCS2.2 (Alert)
SS5.1

3.2 Primary to Secondary Leakage

PC4.1 (NUE)
PC4.1 + RCS2.2 (SAE)
PC4.1 + FC2.1 (SAE)

3.3 RCS Subcooling

RCS2.1 (Alert)

4.0 Containment

4.1 Containment Integrity Status

PC7.1 (NUE)
PC2.1 (SAE)
PC2.2 (SAE)
PC3.1 (SAE)
PC2.5 + FC2.1 (General)
+ FC5.1
+ FC6.1*(Ginna only)*
PC2.1 + FC1.2(General)
+ FC1.3
+ FC2.1
+ FC3.2
+ FC4.1
+ FC5.1
+ FC6.1*(Ginna only)*
PC2.2 + FC1.2(General)
+ FC1.3
+ FC2.1
+ FC3.2
+ FC4.1
+ FC5.1
+ FC6.1*(Ginna only)*
PC3.1 + FC1.2(General)
+ FC1.3
+ FC2.1
+ FC3.2
+ FC4.1
+ FC5.1
+ FC6.1*(Ginna only)*

4.2 SG Tube Rupture with Secondary Release
RCS3.1(SAE)
RCS3.1 + FC1.2(General)
+ FC1.3
+ FC2.1
+ FC3.2
+ FC4.1
+ FC5.1
+ FC6.1*(Ginna only)*

4.3 Combusible Gas Concentrations
PC2.4(General)

5.0 Radioactivity Release / Area Radiation

5.1 Effluent Monitors
AU1.1
AA1.1
AS1.1
AG1.1

5.2 Dose Projections/ Environmental Measurements
AU1.2
AA1.2
AS1.3
AS1.4
AG1.3
AG1.4

5.3 Area Radiation Levels
AU2.4
AA3.1
AA3.2

6.0 Electrical Failures

6.1 Loss of AC Power Sources

SU1.1
SA1.1
SA5.1
SS1.1
SG1.1

6.2 Loss of DC Power Sources

SU7.1
SS3.1

7.0 Equipment Failures

7.1 Technical Specification Requirements

SU2.1

7.2 System Failures or Control Room Evacuation

HU1.6
HA1.6
HA5.1
HS2.1
SA3.1

7.3 Loss of Indications/Alarm/Communication Capability

SU3.1
SU6.1
SA4.1
SS6.1

8.0 Hazards

8.1 Security Threats

HU4.1
HU4.2
HA4.1
HA4.2
HS1.1
HS1.2
HG1.1
HG1.2

8.2 Fire or Explosion

HU2.1
HU1.5
HA2.1

8.3 Man-Made Events

HU1.4
HU3.1
HU3.2
HA1.5
HA3.1
HA3.2

8.4 Natural Events

HU1.1
HU1.2
HU1.3
HU1.7
HA1.1
HA1.2
HA1.3
HA1.7

9.0 Other

FC7.1
RCS6.1
PC8.1
HU5.1
HA6.1
HS3.1
HG2.1

New York EAL Upgrade Project

Indian Point 2

Emergency Action Levels

Technical Bases

Revision 0

6/20/94

OSSI

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PURPOSE

The purpose of this document is to provide an explanation and rationale for each of the emergency action levels (EALs) included in the EAL Upgrade Program for Indian Point Station No. 2 (IP-2). It is also intended to facilitate the review process of the IP-2 EALs and provide historical documentation for future reference. This document is also intended to be utilized by those individuals responsible for implementation of IP-1024 "Emergency Classification" as a technical reference and aid in EAL interpretation.

DISCUSSION

EALs are the plant-specific indications, conditions or instrument readings which are utilized to classify emergency conditions defined in the IP-2 Emergency Plan.

Subsequent to the acceptance by the NRC of NUMARC/NESP-007 "Methodology for Development of Emergency Action Levels" as an acceptable alternative to the NUREG 0654 EAL guidance, the four nuclear utilities in the State of New York decided to perform a joint implementation of the new methodology. This upgrade project involved the following plants:

- Nine Mile Point Unit 1 (NMPC)
- Nine Mile Point Unit 2 (NMPC)
- James A. FitzPatrick Nuclear Power Plant (NYPA)
- Indian Point Station 2 (ConEd)
- Indian Point 3 Nuclear Power Station (NYPA)
- R.E. Ginna Nuclear Power Station (RG&E)

While the upgraded EALs are site specific, an objective of the upgrade project was to ensure conformity and consistency between the sites to the extent possible.

The revised EALs were derived from the Initiating Conditions and example EALs given in the IP-2 Plant-Specific EAL Guideline (PEG). The PEG is the IP-2 interpretation of the NUMARC methodology for developing EALs. The PEG identifies deletions from the NUMARC methodology by striking out words and phrases that are not applicable to IP-2; additions are identified by underlining new words and phrases. The source of documents for PEG changes from NUMARC methodology are listed in the references section of the PEG.

Many of the EALs derived from the NUMARC methodology are fission product barrier based. That is, the conditions which define the EALs are based upon loss or potential loss of one or more of the three fission product barriers.

The primary fission product barriers are:

A. Reactor Fuel Cladding: The fuel cladding is comprised of the zirconium tubes which house the ceramic uranium oxide pellets along with the end plugs which are welded into each end of the fuel rods.

B. Reactor Coolant System (RCS): The RCS is comprised of the reactor vessel shell, vessel head, vessel nozzles and penetrations and all primary systems directly connected to the reactor vessel up to the first containment isolation valve.

C. Containment: The containment is comprised of the vapor containment structure and all isolation valves required to maintain containment integrity under accident conditions.

The following criteria serves as the bases for event classification related to fission product barrier loss:

Unusual Event:

Any loss or potential loss of containment

Alert:

Any loss or any potential loss of either fuel clad or RCS

Site Area Emergency:

Any loss of both fuel clad and RCS
or
Any potential loss of both fuel clad and RCS
or
Any potential loss of either fuel clad or RCS with a loss of any additional barrier

General Emergency:

Loss of any two barriers with loss or potential loss of a third

Those EALs which reference one or more of the fission product barrier IC designators (FC, RCS and PC) in the PEG Reference section of the technical bases are derived from the Fission Product Barrier Analysis. The analysis entailed an evaluation of every combination of the plant specific barrier loss/potential loss indicators applied to the above criteria.

Where possible, the EALs have been made consistent with and utilize the conditions defined in the IP-2 Critical Safety Function Status Trees (CSFSTs). While the symptoms that drive operator actions specified in the CSFSTs are not indicative of all possible conditions which warrant emergency classification, they do define the symptoms, independent of initiating events, for which reactor plant safety and/or fission product barrier integrity are threatened. Where these symptoms are clearly representative of one of the PEG Initiating Conditions, they have been utilized as an EAL. This allows for rapid classification of emergency situations based on plant conditions without the need for additional evaluation or event diagnosis. Although some of the EALs presented here are based on conditions defined in the CSFSTs, classification of emergencies using these EALs is not dependent upon Emergency Operating Procedures (EOPs) entry or execution. The EALs can be utilized independently or in conjunction with the EOPs.

To the extent possible, the EALs are symptom based. That is, the action level is defined by values of key plant operating parameters which identify emergency or potential emergency conditions. This approach is appropriate because it allows the full scope of variations in the types of events to be classified as emergencies. But, a purely symptom based approach is not sufficient to address all events for which emergency classification is appropriate. Particular events to which no predetermined symptoms can be ascribed have also been utilized as EALs since they may be indicative of potentially more serious conditions not yet fully realized.

The EALs are grouped into nine categories to simplify their presentation and to promote a rapid understanding by their users. These categories are:

1. CSFST Status
2. Reactor Fuel
3. Reactor Coolant System
4. Containment
5. Radioactivity Release / Area Radiation
6. Electrical Failures
7. Equipment Failures
8. Hazards
9. Other

Categories 1 through 5 are primarily symptom based. The symptoms are indicative of actual or potential degradation of either fission product barriers or personnel safety.

Categories 6, 7 and 8 are event based. Electrical Failures are those events associated with losses of either AC or vital DC electrical power. Equipment Failures are abnormal and emergency events associated with vital plant system failures, while Hazards are those non-plant system related events which have affected or may affect plant safety.

Category 9 provides the Emergency Director (Senior Watch Supervisor) the latitude to classify and declare emergencies based on plant symptoms or events which in his judgment warrant classification. This judgment includes evaluation of loss or potential loss of one or more fission product barriers warranting emergency classification consistent with the NUMARC barrier loss criteria.

Categories are further divided into one or more subcategories depending on the types and number of plant conditions that dictate emergency classifications. For example, the Electrical Failures category has two subcategories whose values can be indicative of losses of electrical power sources: loss of AC power sources and loss of DC power sources. An EAL may or may not exist for each sub category at all four classification levels. Similarly, more than one EAL may exist for a sub category in a given emergency classification when appropriate (i.e. no EAL at the General Emergency level but three EALs at the Unusual Event level).

For each EAL, the following information is provided:

- Classification: Unusual Event, Alert, Site Area Emergency, or General Emergency
- Operating Mode Applicability: One or more of the following plant operating conditions are listed: Power Operation, Hot Shutdown, Cold Shutdown, Refuel and Defueled
- EAL: Description of the condition or set of conditions which comprise the EAL
- Basis: Description of the rationale for the EAL
- PEG Reference: PEG IC(s) and example EAL(s) from which the EAL is derived
- Basis Reference(s): Source documentation from which the EAL is derived

The identified operating modes are defined as follows

Power Operations
Reactor shutdown margin is less than Technical Specification minimum required with coolant temperature (Tavg) at or above normal operating temperature.

Hot Shutdown
Reactor shutdown margin greater than or equal to Technical Specification minimum required with coolant temperature (Tavg) less than normal operating temperature.

Cold Shutdown
Reactor shutdown margin greater than or equal to Technical Specification minimum required with coolant temperature (Tavg) less than or equal to 200 °F.

Refuel
Reactor shutdown margin greater than or equal to Technical Specification minimum required for refueling operations and coolant temperature (Tavg) less than or equal to 140 °F.

Defueled
Reactor vessel contains no irradiated fuel.

These operating modes correlate to the NUMARC-007 and PEG identified operating modes as follows:

NUMARC-007	Technical Bases
Power Operations	Power Operations
Startup/Hot standby	Power Operation
Hot Shutdown	Hot Shutdown
Cold Shutdown	Cold Shutdown
Refuel	Refuel
Defueled	Defueled
All	All

1.0 CSFST STATUS

Plant Emergency Operating Procedures (EOPs) are designed to maintain and/or restore a set of critical safety functions which are prioritized for restoration efforts during accident conditions. By monitoring the critical safety functions status, the impact of multiple events can be inherently addressed.

The critical safety functions are monitored through the use of Critical Safety Function Status Trees (CSFSTs). When certain plant parameters exceed threshold values specified by the CSFST, the plant operator is directed to one or more functional restoration and/or EOPs in an attempt to restore those parameters to within acceptable limits. The following CSFSTs are utilized to be indicative of failures or potential failures of one or more fission product barriers:

- Subcriticality: Orange or Red paths in this CSFST indicate losses of reactivity control which may pose a threat to fuel clad and RCS integrity.
- Core Cooling: Orange or Red paths in this CSFST indicate losses of core subcooling and thus pose a direct threat to the integrity of the reactor fuel clad.
- Heat Sink: The Red path of this CSFST is indicative of a loss of ability to remove decay heat from the core and thus poses a direct threat to fuel clad integrity.
- Integrity: The Red path of this CSFST is indicative of a direct threat to RCS barrier integrity.
- Containment: Red path of this CSFST is indicative to a loss of RCS barrier and direct threat to the containment barrier integrity.

1.0 CSFST Status 1.1 Subcriticality

1.1.1 Alert

Either:
ORANGE path F-0.1 SUBCRITICALITY
AND
Emergency boration is required
OR
RED path F-0.1 SUBCRITICALITY
AND
Emergency boration is required

Mode Applicability:

Power Operations, Hot Shutdown

Basis:

CSFST Subcriticality - ORANGE path is entered based on failure of the intermediate range startup rate monitors to indicate negative or zero following reactor trip. This EAL addresses any manual trip or automatic trip signal followed by a manual which fails to shut down the reactor to an extent requiring emergency boration. A manual trip is any set of actions by the reactor operator(s) at the reactor control console which causes control rods to be rapidly inserted into the core and brings the reactor subcritical (e. g., reactor trip button).

This condition indicates failure of the automatic and manual protection systems to trip the reactor to the extent which precludes the reactor being made sub-critical. Although a front line automatic protection system did not function in response to a plant transient, it is the continued criticality under conditions requiring a reactor trip which poses the potential threat to fuel clad integrity and thus warranting declaration of an Alert.

PEG Reference:

SA2.1

Basis Reference(s):

1. CSFST F-0.1, Subcriticality
2. FR-S.1, Response to Nuclear Generation/ATWS

1.0 CSFST Status 1.1 Subcriticality

1.1.2 · Site Area Emergency

RED path in F-0.1 SUBCRITICALITY
AND either:
Emergency boration is inoperable
OR
Power range not < 5% within 15 min. of initiation of emergency boration

Mode Applicability:

Power Operations, Hot Shutdown

Basis:

CSFST Subcriticality - RED path is entered based on failure of power range indication to decrease below 5% following a reactor trip. This portion of the EAL addresses any manual trip or automatic trip signal followed by a manual trip which fails to shut down the reactor to an extent that the reactor is producing more heat load for which the safety systems were designed. A manual trip is any set of actions by the reactor operator(s) at the reactor control console which causes control rods to be rapidly inserted into the core and brings the reactor subcritical (e. g., reactor trip button).

This condition indicates failure of both the automatic and manual protection systems to trip the reactor in conjunction with a failure of alternate boration systems to reduce reactor power below decay heat levels. The combination of failure of both front line and backup protection systems to function in response to a plant transient, along with the continued production of heat poses a direct threat to fuel clad and RCS integrity and thus warrants declaration of a Site Area Emergency.

15 minutes is specified to allow time for emergency boration to be effective and provides a discriminator between SA2.1 and SS2.1. The classification should be made as soon as it is apparent that emergency boration is not or will not be effective in reducing reactor power below 5%.

PEG Reference:

SS2.1

Basis Reference(s):

1. CSFST F-0.1, Subcriticality
2. FR-S.1, Response to Nuclear Generation/ATWS

1.0 CSFST Status 1.1 Subcriticality

1.1.3 General Emergency

RED path in F-0.1, SUBCRITICALITY
AND
Emergency boration is required
AND
RED path in F-0.3, HEAT SINK
AND
Heat sink is required

Mode Applicability:

Power Operations, Hot Shutdown

Basis:

CSFST Heat Sink - RED path is entered based on both:

- all S/G's narrow range level < 8% (36% adv. cnmt.)

AND

- Total feedwater flow to S/Gs < 400 gpm

CSFST Subcriticality - RED path is entered based on ≥ 5% reactor power following a reactor trip.

The combination of these two conditions (Heat Sink-RED and reactor power ≥ 5%) indicates the ultimate heat sink function is under extreme challenge. Additionally, the efforts to bring the reactor subcritical have been unsuccessful and, as a result, the reactor is producing more heat load for which the safety systems were designed. This situation could be the precursor for a core melt sequence.

A major consideration is the inability to initially remove heat during the early stages of this sequence. If emergency feedwater flow is insufficient to remove the amount of heat required by design from at least one steam generator, an extreme challenge should be considered to exist. This equates to a HEAT Sink RED condition.

In the event this challenge exists at a time when the reactor has not been brought below the power associated with safety system design power (5%) a core melt sequence is considered to exist. In this situation, core degradation can occur rapidly. For this reason, the General Emergency declaration is intended to be anticipatory of the fission product barrier matrix declaration to permit maximum offsite intervention time.

PEG Reference:

SG2.1 (Heat Sink) This EAL is redundant to 1.3.2

Basis Reference(s):

1. CSFST F-0.3, Heat Sink
2. CSFST F-0.1, Subcriticality
3. FR-S.1, Response to Reactor Restart/ATWS
4. FR-S.2, Response to Loss of Core Shutdown

1.0 CSFST Status 1.2 Core Cooling

1.2.1 Site Area Emergency

ORANGE or RED path in F-0.2, CORE COOLING

Mode Applicability:

Power Operations, Hot Shutdown

Basis:

CSFST Core Cooling - ORANGE path is entered based on either:

- Core exit thermocouples > 700 °F

OR

- RVLIS level < 39% w/ no RCPs (TAF)
  < 44% w/ 4 RCPs
  < 38% w/ 3 RCPs
  < 20% w/ 2 RCPs
  < 13% w/ 1 RCPs

Either condition indicates subcooling has been lost and that some clad damage may occur. It must also be assumed that the loss of RCS inventory is a result of a loss of RCS barrier. Therefore a Site Area Emergency is warranted based upon the potential loss of fuel clad with loss of RCS barriers.

PEG Reference:

FC1.2
FC3.2
FC4.1

Basis Reference(s):

1. CSFST F-0.2, Core Cooling

1.0 CSFST Status 1.2 Core Cooling

1.2.2 General Emergency

RED path in F-0.2, CORE COOLING
AND
Functional restoration actions taken and procedures not effective within 15 min.

Mode Applicability:

Power Operations, Hot Shutdown

Basis:

CSFST Core Cooling - RED path is entered based on either:

- Core exit thermocouples > 1200 °F

OR

- Core exit thermocouples > 700 °F
  AND
- RVLIS level < 39% w/ no RCPs (TAF)
  < 44% w/ 4 RCPs
  < 38% w/ 3 RCPs
  < 20% w/ 2 RCPs
  < 13% w/ 1 RCPs

Either condition indicates significant core exit superheating and core uncovery and is considered a loss of the Fuel Clad Barrier. It must also be assumed that the loss of RCS inventory is a result of a loss of RCS barrier. These conditions, if not mitigated, will likely lead to core melt which will in turn result in a potential loss of containment. Therefore, declaration of a General Emergency is warranted.

Severe accident analyses (e. g., NUREG-1150) have concluded that function restoration procedures can arrest core degradation within the reactor vessel in a significant fraction of the core damage scenarios, and that the likelihood of containment failure is very small in these events. Given this, it is appropriate to provide a reasonable period to allow function restoration procedures to arrest the core melt sequence. Whether or not procedures will be effective should be apparent within 15 minutes. The Emergency Director should make the declaration as soon as it is determined that the procedures have not been, or will not be effective.

For the purpose of this EAL the term 'effective' with regards to functional restoration procedures means that the CSFST Core Cooling - RED path entry criterion no longer exists.

PEG Reference:

FC1.1
SG2.1 (Core Cooling)
PC6.1
PC6.2

Basis Reference(s):

1. CSFST F-0.2, Core Cooling

1.0 CSFST Status 1.3 Heat Sink

1.3.1 Site Area Emergency

RED path in F-0.3, HEAT SINK
AND
Heat sink is required

Mode Applicability:

Power Operations, Hot Shutdown

Basis:

CSFST Heat Sink - RED path is entered based on both:

- all S/G's narrow range level < 8% (36% adv. cnmt.)

AND

- Total feedwater flow to S/Gs < 400 gpm

The combination of these two conditions indicates the ultimate heat sink function is under extreme challenge. This EAL addresses loss of functions required for hot shutdown with the reactor at pressure and temperature. Under these conditions, there is an actual major failure of a system intended for protection of the public with potential for multiple fission product barrier loss. Therefore, declaration of a Site Area Emergency is warranted.

PEG Reference:

FC1.3
RCS1.2
SS4.1

Basis Reference(s):

1. CSFST F-0.3, Heat Sink

1.0 CSFST Status 1.3 Heat Sink

1.3.2 General Emergency

RED path in F-0.3, HEAT SINK
AND
Heat sink is required
AND
RED path in F-0.1, SUBCRITICALITY
AND
Emergency boration is required

Mode Applicability:

Power Operations, Hot Shutdown

Basis:

CSFST Heat Sink - RED path is entered based on both:

- all S/G's narrow range level < 8% (36% adv. cnmt.)

AND

- Total feedwater flow to S/Gs < 400 gpm

CSFST Subcriticality - RED path is entered based on ≥ 5% reactor power following a reactor trip.

The combination of these two conditions (Heat Sink-RED and reactor power ≥ 5%) indicates the ultimate heat sink function is under extreme challenge. Additionally, the efforts to bring the reactor subcritical have been unsuccessful and, as a result, the reactor is producing more heat load for which the safety systems were designed. This situation could be the precursor for a core melt sequence.

A major consideration is the inability to initially remove heat during the early stages of this sequence. If emergency feedwater flow is insufficient to remove the amount of heat required by design from at least one steam generator, an extreme challenge should be considered to exist. This equates to a HEAT Sink RED condition.

In the event this challenge exists at a time when the reactor has not been brought below the power associated with safety system design power (5%) a core melt sequence is considered to exist. In this situation, core degradation can occur rapidly. For this reason, the General Emergency declaration is intended to be anticipatory of the fission product barrier matrix declaration to permit maximum offsite intervention time.

PEG Reference:

SG2.1 (Heat Sink)

Basis Reference(s):

1. CSFST F-0.3, Heat Sink
2. CSFST F-0.1, Subcriticality
3. FR-S.1, Response to Reactor Restart/ATWS
4. FR-S.2, Response to Loss of Core Shutdown

1.0 CSFST Status 1.4 Integrity

1.4.1 Alert

RED path on F-0.4, INTEGRITY

Mode Applicability:

Power Operations, Hot Shutdown

Basis:

CSFST Integrity - RED path is entered based on both:

- exceeding RCS cooldown rate of 100 °F/hr

AND

- all RCS cold leg temperatures to the left of the RCS Pressure/RCS Cold Leg Temperature Curve

The combination of these two conditions indicates the RCS barrier is under significant challenge and should be considered a potential loss of RCS barrier. Any loss or potential loss of RCS barrier warrants declaration of an Alert.

PEG Reference:

RCS1.1

Basis Reference(s):

1. CSFST F-0.4, Integrity

1.0 CSFST Status 1.5 Containment

1.5.1 General Emergency

RED path F-0.5, CONTAINMENT resulting from loss of coolant

Mode Applicability:

Power Operations, Hot Shutdown

Basis:

CSFST Containment - RED path is entered based on exceeding containment design pressure of 47 psig. This pressure is well in excess of that expected from the design basis loss of coolant accident. This is indicative of a loss of both RCS and fuel clad boundaries in that it is not possible to reach this condition without also being in a Heat Sink-RED or Core Cooling-RED CSFST. The source of energy must be the result of severe degradation of core cooling or loss of heat sink. Since containment pressures at or approaching design levels is also a potential loss of containment, this combination of conditions requires the declaration of a General Emergency.

PEG Reference:

PC1.1

Basis Reference(s):

1. CSFST F-0.5, Containment

1.0 CSFST Status 1.5 Containment

1.5.1 General Emergency

RED path F-0.5, CONTAINMENT

Mode Applicability:

Power Operations, Hot Shutdown

Basis:

CSFST Containment - RED path is entered based on exceeding containment design pressure of 47 psig. This pressure is well in excess of that expected from the design basis loss of coolant accident. This is indicative of a loss of both RCS and fuel clad boundaries in that it is not possible to reach this condition without also being in a Heat Sink-RED or Core Cooling-RED CSFST. The source of energy must be the result of severe degradation of core cooling or loss of heat sink. Since containment pressures at or approaching design levels is also a potential loss of containment, this combination of conditions requires the declaration of a General Emergency.

PEG Reference:

PC1.1

Basis Reference(s):

1. CSFST F-0.5, Containment

2.0 REACTOR FUEL

The reactor fuel cladding serves as the primary fission product barrier. Over the useful life of a fuel bundle, the integrity of this barrier should remain intact as long as fuel cladding integrity limits are not exceeded.

Should fuel damage occur (breach of the fuel cladding integrity) radioactive fission products are released to the reactor coolant. The magnitude of such a release is dependent upon the extent of the damage as well as the mechanism by which the damage occurred. Once released into the reactor coolant, the highly radioactive fission products can pose significant radiological hazards inplant from reactor coolant process streams. If other fission product barriers were to fail, these radioactive fission products can pose significant offsite radiological consequences.

The following parameters/indicators are indicative of possible fuel failures:

- Coolant Activity: During normal operation, reactor coolant fission product activity is very low. Small concentrations of fission products in the coolant are primarily from the fission of tramp uranium in the fuel cladding or minor perforations in the cladding itself. Any significant increase from these base-line levels is indicative of fuel failures.

- Containment Radiation Monitors: Although not a direct indication or measurement of fuel damage, exceeding predetermined limits on containment high range radiation monitors under LOCA conditions is indicative possible fuel failures.

- Refueling Accidents & Other Radiation Monitors: Both area and process radiation monitoring systems designed to detect fission products during refueling conditions as well as visual observation can be utilized to indicate loss or potential loss of spent fuel cladding integrity.

2.0 Reactor Fuel 2.1 Coolant Activity

2.1.1 Unusual Event

Coolant sample activity ≥ **60/(E bar) μCi/cc**

Mode Applicability:

All

Basis:

Elevated reactor coolant activity represents a potential degradation in the level of safety of the plant and a potential precursor of more serious problems. This EAL addresses reactor coolant samples exceeding coolant technical specifications.

PEG Reference:

SU4.2

Basis Reference(s):

1. Technical Specifications para. 3.1.D.1

2.0 Reactor Fuel 2.1 Coolant Activity

2.1.2 Alert

Coolant activity > **300 µCi/cc** I-131 equivalent

Mode Applicability:

Power operation, hot shutdown

Basis:

Elevated reactor coolant activity represents a potential degradation in the level of safety of the plant and a potential precursor of more serious problems. This amount of coolant activity corresponds to about 2% to 5% fuel clad damage. When reactor coolant activity reaches this level, significant clad heating has occurred and thus the fuel clad barrier is considered lost. Therefore, declaration of an Alert is warranted.

A site specific evaluation of coolant activity associated with 5% clad failures was performed. The calculation was based upon WOG core damage assessment source terms and made the conservative assumption that the I-131 equivalent activity is 2 x I-131 source term (2 x 2.4E5 Ci). Based on a 90,000 gal. RCS volume @ 579 °F, the resulting coolant concentration was calculated as 102.3 µCi/cc. Since the assumptions and source of the NUMARC number is unknown, there is no way to know how these two numbers compare. It has been decided to use the value provided by NUMARC.

PEG Reference:

FC2.1

Basis Reference(s):

Letter from D. Gaynor to R. Burns 7/27/93 "EAL Technical Basis 2.1.2"

2.0 Reactor Fuel 2.2 Containment Radiation

2.2.1 Alert

Rapid rise on R-41 or R-42 with coolant sample activity ≥ **60/(E bar)** μCi/cc and increasing RCS leakage

Mode Applicability:

Power operation, hot shutdown

Basis:

A rapid rise on R-41/42 with confirmation by coolant sample of concentrations in excess of Technical Specifications indicates the release of reactor coolant to the containment. The indication was derived assuming the instantaneous release and dispersal of the reactor coolant noble gas and iodine inventory associated with normal operating concentrations (i. e., within T/S) into the containment atmosphere. This EAL is indicative of a RCS leak only. If R-25 readings increase to that specified by Reactor Fuel EAL 2.2.2, significant fuel damage would also be indicated.

PEG Reference:

RCS4.1

Basis Reference(s):

1. None

2.0 Reactor Fuel 2.2 Containment Radiation

2.2.2 Site Area Emergency

Containment radiation monitor R-25 or R-26 **> 17 R/hr**

Mode Applicability:

Power operation, hot shutdown

Basis:

The 17 R/hr reading is a value which indicates the release of reactor coolant, with elevated activity indicative of fuel damage, into the containment. The reading is calculated assuming the instantaneous release and dispersal of the reactor coolant noble gas and iodine inventory associated with a concentration of 300 μCi/gm dose equivalent I-131 into the containment atmosphere. Reactor coolant concentrations of this magnitude are several times larger than the maximum concentrations allowed within technical specifications and are therefore indicative of fuel damage (approximately 5 % clad failure depending on core inventory and RCS volume). This value is higher than that specified in EAL 2.2.1 which would be indicative of only the RCS barrier. Thus, this EAL indicates a loss of both the fuel clad barrier and a loss of RCS barrier warranting declaration of a Site Area Emergency.

PEG Reference:

FC5.1

Basis Reference(s):

1. Letter from DA Smith

2.0 Reactor Fuel 2.2 Containment Radiation

2.2.3 General Emergency

Containment radiation monitor R-25 or R-26 **> 68 R/hr**

Mode Applicability:

Power operation, hot shutdown

Basis:

The 68 R/hr reading is a value which indicates significant fuel damage (20 % clad failure) well in excess of the EALs associated with both loss of fuel clad and loss of RCS barriers. A major release of radioactivity requiring offsite protective actions from core damage is not possible unless a major failure of fuel cladding allows radioactive material to be released from the core into the reactor coolant. Regardless of whether containment is challenged, this amount of activity in containment, if released, could have such severe consequences that it is prudent to treat this as a potential loss of containment, such that a General Emergency declaration is warranted. NUREG-1228 "Source Estimations During Incident Response to Severe Nuclear Power Plant Accidents," indicates that such conditions do not exist when the amount of clad damage is less than 20%.

PEG Reference:

PC5.1

Basis Reference(s):

1. Letter from DA Smith

2.0 Reactor Fuel 2.3 Refueling Accidents or Other Radiation Monitors

2.3.1 Unusual Event

Spent fuel pool (reactor cavity during refueling) water level cannot be restored and maintained above the Technical Specification minimum water level

Mode Applicability:

All

Basis:

In light of Reactor Cavity Seal failure, incidents at two different PWRs and loss of water in the Spent Fuel Pit/Fuel Transfer Canal at a BWR all occurring since 1984, explicit coverage of these types of events via EALs 2.3.1 and 2.3.32 is appropriate given their potential for increased doses to plant staff. Classification as an Unusual Event is warranted as a precursor to a more serious event.

The spent fuel pool Technical Specification minimum water level is 93' 2". The spent fuel pool low water level alarm setpoint is 93' 3". The definition of "... cannot be restored and maintained above ..." allows the operator to visually observe the low water level condition, if possible, and to attempt water level restoration instructions as long as water level remains above the top of irradiated fuel. Water level restoration instructions for loss of refueling cavity water level during refueling are performed in accordance with AOI-17-0.3.

When the fuel transfer canal is directly connected to the spent fuel pool and reactor cavity, there could exist the possibility of uncovering irradiated fuel in the fuel transfer canal. Therefore, this EAL is applicable for conditions in which irradiated fuel is being transferred to and from the RPV and spent fuel pool.

PEG Reference:

AU2.1

Basis Reference(s):

1. AOI-17-0.3
2. ARP-SGF

2.0 Reactor Fuel 2.3 Refueling Accidents or Other Radiation Monitors

2.3.2 Alert

Confirmed sustained alarm on any of the following radiation monitors resulting from fuel damage caused by an uncontrolled fuel handling process:

- R-2/R-7 Vapor Containment Area Monitors
- R-5 Fuel Storage Building Area Monitor
- R-25/26 Vapor Containment High Radiation Area Monitors

Mode Applicability:

All

Basis:

NUREG-0818, "Emergency Action Levels for Light Water Reactors," forms the basis for this EAL. This EAL is defined by the specific area where irradiated fuel is located such as reactor cavity, reactor vessel, or spent fuel pool.

NUREG/CR-4982, "Severe Accident in Spent Fuel Pools in Support of Generic Safety Issue 82," July 1987, indicates that even if corrective actions are not taken, no prompt fatalities are predicted, and that risk of injury is low. In addition, NRC Information Notice No. 90-08, "KR-85 Hazards from Decayed Fuel" presents the following in its discussion:

> "In the event of a serious accident involving decayed spent fuel, protective actions would be needed for personnel on site, while offsite doses (assuming an exclusion area radius of one mile from the plant site) would be well below the Environmental Protection Agency's Protective Action Guides. Accordingly, it is important to be able to properly survey and monitor for Kr-85 in the event of an accident with decayed spent fuel."

An "uncontrolled fuel handling process" is defined as any event or activity related to the movement of irradiated fuel which results in unexpected or uncontrolled conditions. This terminology has been specifically added to exclude anticipated increases in area radiation levels as a result of actions performed in accordance with approved procedures during refueling operations.

Thus, an Alert Classification for this event is appropriate. Escalation, if appropriate, would occur via Emergency Director judgment in EAL Category 9.0.

PEG Reference:

AA2.1

Basis Reference(s):

1. System Description No. 12, Radiation Monitoring And Protection System
2. System Description No. 17, Fuel and Core Component Handling System

2.0 Reactor Fuel 2.3 Refueling Accidents or Other Radiation Monitors

2.3.3 Alert

Report of visual observation of irradiated fuel uncovered

Mode Applicability:

All

Basis:

This EAL is defined by the specific areas where irradiated fuel is located such as reactor cavity, reactor vessel, or spent fuel pool.

There is no indication that water level in the spent fuel pool or refueling cavity has dropped to the level of the fuel other than by visual observation. Since there is no level indicating system in the fuel transfer canal, visual observation of loss of water level would also be required.

Sufficient time exists to take corrective actions for these conditions and there is little potential for substantial fuel damage. NUREG/CR-4982 "Severe Accident in Spent Fuel Pools in Support of Generic Safety Issue 82" indicates that even if corrective actions are not taken, no prompt fatalities are predicted and the risk of injury is low. In addition, NRC Information Notice No. 90-08, "KR-85 Hazards from Decayed Fuel" presents the following it its discussion:

> "In the event of a serious accident involving decayed spent fuel, protective actions would be needed for personnel on site, while offsite doses (assuming an exclusion area radius of one mile from the plant site) would be well below the Environmental Protection Agency's Protective Action Guides. Accordingly, it is important to be able to properly survey and monitor for Kr-85 in the event of an accident with decayed spent fuel.

Thus, an Alert Classification for this event is appropriate. Escalation, if appropriate, would occur via radioactivity release category 5.0 or Emergency Director judgment in EAL Category 9.0.

This EAL applies to spent fuel requiring water coverage and is not intended to address spent fuel which is licensed for dry storage.

PEG Reference:

AA2.2

Basis Reference(s):

1. System Description No. 12, Radiation Monitoring And Protection System
2. System Description No. 17, Fuel and Core Component Handling System
3. NUREG/CR-4982 "Severe Accident in Spent Fuel Pools in Support of Generic Safety Issue 82"
4 NRC Information Notice No. 90-08, "KR-85 Hazards from Decayed Fuel"

3.0 REACTOR COOLANT SYSTEM (RCS)

The reactor vessel provides a volume for the coolant which covers the reactor core. The reactor vessel and associated pressure piping (reactor coolant system) together provide a barrier to limit the release of radioactive material should the reactor fuel cladding integrity fail.

There are three RCS parameters which are indicative of conditions which may pose a threat to RCS or fuel cladding integrity:

- RCS Leakage: Excessive (> Technical Specification) RCS leakage indications are utilized to indicate potential pipe cracks which may propagate to an extent threatening fuel clad, RCS and containment integrity. RCS leakage of a degree requiring ECCS to maintain RCS inventory poses a direct threat to fuel clad integrity. Reactor vessel water level is also directly related to the status of adequate core cooling, and therefore fuel cladding integrity.

- Primary to Secondary Leakage: A subset of RCS leakage, excessive primary to secondary leakage in conjunction with unisolable secondary releases to environment may result in losses of containment integrity as well as threaten fuel clad integrity for more severe SG tube ruptures.

- RCS Subcooling: A loss of RCS subcooling is a fundamental indication that the inventory control systems are inadequate in maintaining RCS pressure and inventory against mass loss through a leak.

3.0 Reactor Coolant System 3.1 RCS Leakage

3.1.1 Unusual Event

Unidentified or pressure boundary leakage **> 10 gpm**
OR
Identified leakage **> 25 gpm**

Mode Applicability:

Power operation, hot shutdown

Basis:

The conditions of this EAL may be a precursor of more serious conditions and, as a result, is considered to be a potential degradation of the level of safety of the plant. The 10 gpm value for the unidentified leakage and pressure boundary leakage was selected because it is observable with normal Control Room indications. Smaller values must be determined through time-consuming surveillance tests (e. g., mass balances). The 25 gpm value for identified leakage is set at a higher value because of the significance of identified leakage in comparison to unidentified or pressure boundary leakage.

Only operating modes in which there is fuel in the reactor coolant system and the system is pressurized are specified.

PEG Reference:

SU5.1

Basis Reference(s):

None

3.0 Reactor Coolant System 3.1 RCS Leakage

3.1.2 Alert

Primary system leakage exceeding capacity (**> 75 gpm**) of a single charging pump

Mode Applicability:

Power operation, hot shutdown

Basis:

This EAL is based on the inability to maintain normal liquid inventory within the Reactor Coolant System (RCS) when RCS leakage exceeds the capacity of one charging pump. 75 gpm is the minimum operability flow rate for each charging pump.

PEG Reference:

RCS2.2

Basis Reference(s):

1. Drawing no. 198OM 1085
2. PT-Q33

3.0 Reactor Coolant System 3.1 RCS Leakage

3.1.3 Site Area Emergency

RVLIS cannot be maintained > 39% with no RCPs running
OR
With the reactor vessel head removed, it is reported that water level in the Reactor Vessel is dropping in an uncontrolled manner and core uncovery is likely

Mode Applicability:

Power operation, hot shutdown, cold shutdown, refuel

Basis:

The reactor vessel water level used in this EAL is the top of active fuel (TAF). This value corresponds to the level which is used in CSFSTs to indicate challenge to core cooling and loss of the fuel clad barrier. This is the minimum water level to assure core cooling without further degradation of the clad. Severe core damage can occur and reactor coolant system pressure boundary integrity may not be assured if reactor vessel water level is not maintained above that corresponding to RVLIS at 39% w/ no RCPs running (Dynamic range: < 44% w/ 4 RCPs, < 38% w/ 3 RCPs, < 20% w/ 2 RCPs, < 13% w/ 1 RCPs). RVLIS dynamic range indications are not utilized in this EAL since the RCPs would not be running under conditions where vessel level is approaching TAF.

Thus, declaration of a Site Area Emergency is warranted under the conditions specified by this EAL. Escalation to a General Emergency would be via radioactivity release category 5.0.

PEG Reference:

SS5.1
FC4.1

Basis Reference(s):

1. FR-C.1 "Response to Inadequate Core Cooling
2. Abnormal Operating Instruction 4.2.1, Loss Of Residual Heat Removal System

3.0 Reactor Coolant System 3.2 Primary to Secondary Leakage

3.2.1 Unusual Event

Unisolable release of secondary side to atmosphere from the affected steam generator(s) with primary to secondary leakage **> 0.3 gpm** in any steam generator

Mode Applicability:

Power operation, hot shutdown

Basis:

This EAL addresses SG tube leaks indicative of a loss of containment. Unisolable secondary side releases to atmosphere include feed line or steam line breaks as well as stuck open safety or atmospheric relief valves that cannot be isolated once isolation has been directed by the EOPs. A steam generator which is required to be used for plant cooldown would also be covered under this EAL. For small leaks, not exceeding the normal charging capacity threshold in RCS leakage EAL 3.1.2, this EAL results in an Unusual Event. For larger leaks, RCS leakage EAL 3.2.2 would result in a Site Area Emergency. For SG tube ruptures which may involve multiple steam generators or unisolable secondary line breaks, SG tube rupture EAL 4.2.1 would also result in a Site Area Emergency.

PEG Reference:

PC4.1

Basis Reference(s):

1. Technical Specifications, Amendment No. 152, paragraph 3.1.F, page 3.1.F-3

3.0 Reactor Coolant System 3.2 Primary to Secondary Leakage

3.2.2 Site Area Emergency

Unisolable release of secondary side to atmosphere from the affected steam generator(s) with primary to secondary leakage exceeding capacity (**> 75 gpm**) of a single charging pump

Mode Applicability:

Power operation, hot shutdown

Basis:

This EAL addresses SG tube leaks indicative of a loss of both RCS and containment barriers. Unisolable secondary side releases to atmosphere include feed line or steam line breaks as well as stuck open safety or atmospheric relief valves that cannot be isolated once isolation has been directed by the EOPs. A steam generator which is required to be used for plant cooldown would also be covered under this EAL. Primary to secondary leakage in excess of the capacity of one charging pump (>75 gpm) is based on the inability to maintain normal liquid inventory within the Reactor Coolant System (RCS). 75 gpm is the minimum operability flow rate for each charging pump. For primary to secondary leakage in excess of the capacity of a single charging pump in the absence of secondary to atmosphere release, an Alert would be declared based on EAL 3.1.2.

This EAL represents the loss of both RCS and containment barriers and therefore warrants declaration of a Site Area Emergency.

PEG Reference:

PC4.1 + RCS2.2

Basis Reference(s):

1. E-3 "Steam Generator Tube Rupture"
2. Technical Specifications, Amendment No. 152, paragraph 3.1.F, page 3.1.F-3
3. Drawing no. 198OM 1085
4. PT-Q33

3.0 Reactor Coolant System 3.2 Primary to Secondary Leakage

3.2.3 Site Area Emergency

Unisolable release of secondary side to atmosphere from the affected steam generator(s) with primary to secondary leakage **> 0.3 gpm** in any steam generator
AND
Coolant activity **> 300 µCi/cc** of I-131

Mode Applicability:

Power operation, hot shutdown

Basis:

This EAL addresses SG tube leaks indicative of a loss of containment in conjunction with a loss of fuel cladding. Unisolable secondary side releases to atmosphere include feed line or steam line breaks as well as stuck open safety or atmospheric relief valves that cannot be isolated once isolation has been directed by the EOPs. A steam generator which is required to be used for plant cooldown would also be covered under this EAL.

A coolant activity > 300 µCi/cc of I-131 indicates a loss of fuel cladding. Refer to EAL #2.1.2 basis

This condition represents a loss of both primary containment with the loss of fuel cladding and thus warrants declaration of a Site Area Emergency.

PEG Reference:

PC4.1 + FC2.1

Basis Reference(s):

1. Technical Specifications Section 3.1.F

3.0 Reactor Coolant System 3.3 RCS Subcooling

3.3.1 Alert

RCS subcooling < SI initiation setpoint due to RCS leakage

Mode Applicability:

Power operation, hot shutdown

Basis:

This EAL addresses conditions where leakage from the RCS is greater than available inventory control capacity such that a loss of subcooling has occurred. The loss of subcooling is the fundamental indication that the inventory control systems are inadequate in maintaining RCS pressure and inventory against the mass loss through the leak.

Loss of the RCS barrier warrants declaration of an Alert.

PEG Reference:

RCS2.1

Basis Reference(s):

1. E-0, Reactor Trip Or Safety Injection

4.0 CONTAINMENT

The containment structure is an atmospheric vapor containment system. It forms a fission product barrier designed to contain the radioactive fission products generated from any postulated accident so as to preclude exceeding offsite exposure limits.

The containment structure is a low leakage system housing the reactor vessel, the reactor coolant piping, steam generators and other branch connections of the reactor primary system. The containment is equipped with isolation valves for systems which penetrate the containment boundary. These valves automatically actuate to isolate systems under emergency conditions.

There are three containment parameters which are indicative of conditions which may pose a threat to containment integrity or indicate degradation of RCS or reactor fuel clad integrity.

- Containment Integrity Status: Abnormally high containment pressure or failure of containment cooling systems following a LOCA are indicative of potential losses of the containment barrier integrity.

  The existence of an unisolable CI or CVI line break outside containment constitutes a loss of containment integrity as well as a loss of RCS boundary. Inconsistent containment response to a known LOCA is also indicative of containment loss in conjunction with RCS barrier breach. Should a loss of fuel cladding integrity occur under either of these conditions, the potential for release of large amounts of radioactive materials to the environment exists.

- Steam Generator Tube Rupture with Secondary Release: SG tube ruptures in conjunction with a secondary system line break resulting in release to the environment constitutes losses of both RCS and containment integrity.

  Primary to secondary leakage in excess of Technical Specifications in conjunction with fuel clad damage and secondary system leakage to the environment constitutes losses of fuel clad, RCS and containment integrity. This condition provides the potential for release of large amounts of radioactive materials to the environment.

- Combustible Gas Concentrations: The existence of combustible gas concentrations in containment pose a severe threat to containment integrity and are indicative of severely degraded reactor core and RCS conditions.

4.0 Containment 4.1 Containment Integrity Status

4.1.1 Unusual Event

Both doors open on a VC airlock for > 4 hrs.
OR
Inability to close containment pressure relief or purge valves which results in a radiological release pathway to the environment for > 4 hrs.

Mode Applicability:

Power operation, hot shutdown

Basis:

This EAL addresses an indication that unambiguously indicates loss of the containment barrier under conditions when containment integrity is required.

It is important to note however, that loss of containment due to both airlock doors being open is event dependent. Upon recognition, shift personnel would rapidly respond in an attempt to reestablish containment integrity. If the doors cannot be reclosed, any loss of the RCS barrier that occurs with the doors open would appear as an inconsistent LOCA response. Therefore, this event is not used as a definitive indicator of loss of the primary containment barrier for purposes of defining higher classification EALs. Rather it is left to the Emergency Director's judgment whether such a loss has occurred.

PEG Reference:

PC7.1

Basis Reference(s):

Tech Spec. 3.6.A.1.D and 3.6.A.3"

4.0 Containment 4.1 Containment Integrity Status

4.1.2 Site Area Emergency

Rapid uncontrolled decrease in containment pressure following initial increase due to RCS failure
OR
Loss of primary coolant inside containment with containment pressure or sump level response not consistent with LOCA conditions

Mode Applicability:

Power operation, hot shutdown

Basis:

Rapid unexplained loss of pressure (i. e., not attributable to containment spray or Fan Cooling Units or condensation effects) following an initial pressure increase indicates a loss of both RCS and containment integrity. Containment pressure and sump levels should increase as a result of the mass and energy release into containment from a LOCA. Thus, sump level or pressure not increasing indicates containment bypass (V-sequence) and a loss of containment integrity.

This EAL indicates loss of both RCS and containment and therefore warrants declaration of a Site Area Emergency.

PEG Reference:

PC2.1
PC2.2

Basis Reference(s):

None

4.0 Containment 4.1 Containment Integrity Status

4.1.3 Site Area Emergency

Either:
Any Phase "A" or Phase "B" or containment ventilation isolation valve(s) not closed when required following confirmed LOCA
OR
Inability to isolate any primary system discharging outside containment
AND
Radiological release to the environment exists as a result

Mode Applicability:

Power operation, hot shutdown

Basis:

This EAL is intended to address incomplete containment isolation that allows direct release to the environment. It represents a loss of both the RCS and containment barrier and therefore warrants declaration of a Site Area Emergency.

Failure of Phase "A" or Phase "B" or containment ventilation isolation valves to isolate is intended to address incomplete containment isolation that allows direct release to the environment. It represents a loss of both the RCS and containment barrier.

"Inability to isolate any primary system discharging outside containment" is intended to address other primary systems, either direct or indirect, which the inability to isolate indicate loss of both RCS and containment.

PEG Reference:

PC3.1

Basis Reference(s):

1. Technical Specifications 3.6.A.1.1 and 3.6.A.1.A

4.0 Containment 4.1 Containment Integrity Status

4.1.4 General Emergency

Confirmed phase "B" isolation signal with less than minimum containment cooling safeguards equipment operating, Table 4.3
AND
Any indicators of fuel clad loss, Table 4.1

Table 4.3 Minimum Containment Cooling Safeguards Equipment	
Fan Cooler Units Operating	Spray Pumps Required
< 3	2
3	1
5	0

Table 4.1 Fuel Clad Loss Indicators
1. Coolant activity > 300 μCi/cc of I-131 2. Containment radiation monitor R-25/R-26 reading >17 R/hr

Mode Applicability:

Power operation, hot shutdown

Basis:

This EAL represents a potential loss of containment in conjunction with losses of both RCS and fuel clad.

A potential loss of containment is considered to exist in that a containment heat removal/depressurization system (e. g., containment sprays, Fan Cooler Units, but not including containment venting strategies) is either lost or performing in a degraded manner, as indicated by containment pressure greater than the setpoint at which the equipment was supposed to have actuated.

RCS is also assumed to be lost in this condition due to the high containment pressure.

Table 4.1 presents fuel clad loss indicators which represent 2 - 5% clad failures. Refer to EAL #'s 2.1.2 and 2.2.2 for bases of these indicators.

PEG Reference:

PC2.5 + FC2.1, FC5.1

Basis Reference(s):

1. Updated FSAR, Chapter 5, page 5.1-16/17, para. 3.
2. CCF Design Basis Document (DBD)
3. Design Basis Document, "Containment Spray System"
4. EOP E-0, Reactor Trip Or Safety Injection, for Phase "A" and "B" containment pressure signals
5. Technical Specifications 3.6.B-2

4.0 Containment 4.1 Containment Integrity Status

4.1.5 General Emergency

Either:

Rapid uncontrolled decrease in containment pressure following initial increase

OR

Loss of primary coolant inside containment with containment pressure or sump level response not consistent with LOCA conditions

AND

Any indicators of fuel clad damage, Table 4.2

Table 4.2 Fuel Clad Damage Indicators
1. ORANGE or RED path in F-0.2, CORE COOLING 2. RED path in F-0.3, HEAT SINK AND Heat sink is required 3. Coolant activity > 300 µCi/cc of I-131 4. Containment radiation monitor R-25/R-26 reading >17 R/hr

Mode Applicability:

Power operation, hot shutdown

Basis:

This EAL indicates loss of both RCS and containment with loss or potential loss of the fuel cladding and therefore warrants declaration of a General Emergency.

Rapid unexplained loss of pressure (i. e., not attributable to containment spray or Fan Cooling Units or condensation effects) following an initial pressure increase indicates a loss of both RCS and containment integrity. Containment pressure and sump levels should increase as a result of the mass and energy release into containment from a LOCA. Thus, sump level or pressure not increasing indicates containment bypass (V-sequence) and a loss of containment integrity.

Table 4.2 presents fuel clad loss and potential loss indicators:

- ORANGE path in F-0.2, Core Cooling: Refer to EAL #1.1.1 basis
- RED path in F-0.3, Heat Sink: Refer to EAL #1.2.1 basis
- Coolant activity > 300 µCi/cc of I-131: Refer to EAL #2.1.2 basis

- Containment rad monitor reading > 17 R/hr: Refer to EAL #2.2.2 basis

PEG Reference:

PC2.1/PC2.2 + FC1.2, FC1.3, FC2.1, FC3.2, FC4.1, and FC5.1

Basis Reference(s):

1. F-0.2, Rev. 2, CORE COOLING
2. F-0.3, Rev.2, HEAT SINK

4.0 Containment 4.1 Containment Integrity Status

4.1.6 General Emergency

Either:
Any Phase "A" or Phase "B" or containment ventilation isolation valve(s) not closed when required following confirmed LOCA
OR
Inability to isolate any primary system discharging outside containment
AND
Radiological release to the environment exists as a result
AND
Any indicators of fuel clad damage, Table 4.2

Table 4.2 Fuel Clad Damage Indicators
1. ORANGE or RED path in F-0.2, CORE COOLING 2. RED path in F-0.3, HEAT SINK AND Heat sink is required 3. Coolant activity > 300 µCi/cc of I-131 4. Containment radiation monitor R-25/R-26 reading >17 R/hr

Mode Applicability:

Power operation, hot shutdown

Basis:

This EAL indicates loss of both RCS and containment with loss or potential loss of the fuel cladding and therefore warrants declaration of a General Emergency.

Failure of Phase "A" or Phase "B" or CVI valves to isolate is intended to address incomplete containment isolation that allows direct release to the environment. It represents a loss of both the RCS and containment barrier.

"Inability to isolate any primary system discharging outside containment" is intended to address other primary systems, either direct or indirect, which the inability to isolate indicate loss of both RCS and containment.

Table 4.2 presents fuel clad loss and potential loss indicators:

- ORANGE path in F-0.2, Core Cooling: Refer to EAL #1.1.1 basis
- RED path in F-0.3, Heat Sink: Refer to EAL #1.2.1 basis

4.0 Containment 4.1 Containment Integrity Status

4.1.6 General Emergency

Either:
Any Phase "A" or Phase "B" or containment ventilation isolation valve(s) not closed when required following confirmed LOCA
OR
Inability to isolate any primary system discharging outside containment
AND
Direct radiological release pathway to the environment exists as a result
AND
Any indicators of fuel clad damage, Table 4.2

Table 4.2 Fuel Clad Damage Indicators
1. ORANGE or RED path in F-0.2, CORE COOLING 2. RED path in F-0.3, HEAT SINK AND Heat sink is required (RCS pressure > intact SG) 3. Coolant activity > 300 µCi/cc of I-131 4. Containment radiation monitor R-25/R-26 reading >17 R/hr

Mode Applicability:

Power operation, hot shutdown

Basis:

This EAL indicates loss of both RCS and containment with loss or potential loss of the fuel cladding and therefore warrants declaration of a General Emergency.

Failure of Phase "A" or Phase "B" or CVI valves to isolate is intended to address incomplete containment isolation that allows direct release to the environment. It represents a loss of both the RCS and containment barrier.

"Inability to isolate any primary system discharging outside containment" is intended to address other primary systems, either direct or indirect, which the inability to isolate indicate loss of both RCS and containment.

Table 4.2 presents fuel clad loss and potential loss indicators:

- ORANGE path in F-0.2, Core Cooling: Refer to EAL #1.1.1 basis
- RED path in F-0.3, Heat Sink: Refer to EAL #1.2.1 basis

- Coolant activity > 300 μCi/cc of I-131: Refer to EAL #2.1.2 basis
- Containment rad monitor reading > 17 R/hr: Refer to EAL #2.2.2 basis

PEG Reference:

PC3.1 + FC1.2, FC1.3, FC2.1, FC3.2, FC4.1, and FC5.1

Basis Reference(s):

1. Tour of Simulator Control Room, Discussion with Training Instructor R. Burns
2. Technical Specification 3.6.A.1.A and 3.6.A.1.B
3. F-0.2, Rev. 2, CORE COOLING
4. F-0.3, Rev.2, HEAT SINK

4.0 Containment 4.2 SG Tube Rupture w/ Secondary Release

4.2.1 Site Area Emergency

Unisolated faulted (outside VC) ruptured steam generator

Mode Applicability:

Power operation, hot shutdown

Basis:

This EAL is intended to address the full spectrum of Steam Generator (SG) tube rupture events in conjunction with a loss of containment due to a significant secondary line break. This EAL addresses ruptured SG(s) with an unisolable secondary line break corresponding to the loss of 2 of 3 fission product barriers (RCS barrier and containment barrier). This allows the direct release of radioactive fission and activation products to the environment. Resultant offsite dose rates are a function of many variables. Examples include: coolant activity, actual leak rate, SG carry over, iodine partitioning, and meteorology.

The indications utilized should be consistent with the diagnostic activities of the emergency operating procedures (EOPs), if available. This should include indication of reduction in primary coolant inventory, increased secondary radiation levels, and an uncontrolled or complete depressurization of the ruptured SG. Secondary radiation increases should be observed via radiation monitoring of condenser air ejector discharge, SG blowdown, main steam, and/or SG sampling system. Determination of the "uncontrolled" depressurization of the ruptured SG should be based on indication that the pressure decrease in the ruptured steam generator is not a function of operator action. This should prevent declaration based on a depressurization that results from an EOP induced cooldown of the RCS that does not involve the prolonged release of contaminated secondary coolant from the affected SG to the environment. This EAL encompasses steam breaks, feed breaks, and stuck open safety or relief valves.

PEG Reference:

RCS3.1

Basis Reference(s):

1. E-3 "Steam Generator Tube Rupture"
2. AOI 1.2, Steam Generator Tube Leak
3. E-0, Reactor Trip Or Safety Injection

4.0 Containment 4.2 SG Tube Rupture w/ Secondary Release

4.2.2 General Emergency

Unisolated faulted (outside VC) ruptured steam generator
AND
Any indicators of fuel clad damage, Table 4.2

Table 4.2 Fuel Clad Damage Indicators
1. ORANGE or RED path in F-0.2, CORE COOLING 2. RED path in F-0.3, HEAT SINK AND Heat sink is required 3. Coolant activity > 300 μCi/cc of I-131 4. Containment radiation monitor R-25/R-26 reading >17 R/hr

Mode Applicability:

Power operation, hot shutdown

Basis:

This EAL is intended to address the full spectrum of Steam Generator (SG) tube rupture events in conjunction with a loss of containment due to a significant secondary line break with actual or potential loss of the fuel clad integrity. This EAL addresses ruptured SG(s) with an unisolable secondary line break corresponding to the loss of 2 of 3 fission product barriers (RCS barrier and containment barrier) with the actual or potential loss of the third (fuel cladding). This allows the direct release of radioactive fission and activation products to the environment. Resultant offsite dose rates are a function of many variables. Examples include: coolant activity, actual leak rate, SG carry over, iodine partitioning, and meteorology.

The indications utilized should be consistent with the diagnostic activities of the emergency operating procedures (EOPs), if available. This should include indication of reduction in primary coolant inventory, increased secondary radiation levels, and an uncontrolled or complete depressurization of the ruptured SG. Secondary radiation increases should be observed via radiation monitoring of condenser air ejector discharge, SG blowdown, main steam, and/or SG sampling system. Determination of the "uncontrolled" depressurization of the ruptured SG should be based on indication that the pressure decrease in the ruptured steam generator is not a function of operator action. This should prevent declaration based on a depressurization that results from an EOP induced cooldown of the RCS that does not involve

the prolonged release of contaminated secondary coolant from the affected SG to the environment. This EAL encompasses steam breaks, feed breaks, and stuck open safety or relief valves.

Table 4.2 presents fuel clad loss and potential loss indicators:

- ORANGE path in F-0.2, Core Cooling: Refer to EAL #1.1.1 basis
- RED path in F-0.3, Heat Sink: Refer to EAL #1.2.1 basis
- Coolant activity > 300 μCi/cc of I-131: Refer to EAL #2.1.2 basis
- Containment rad monitor reading > 17 R/hr: Refer to EAL #2.2.2 basis

This condition represents a loss of both RCS and primary containment with the loss or potential loss of fuel cladding and thus warrants declaration of a General Emergency.

PEG Reference:

RCS 3.1 + FC1.2, FC1.3, FC2.1, FC3.2, FC4.1, and FC5.1

Basis Reference(s):

1. Technical Specifications Section 3.1.F
2. F-0.2, Rev. 2, CORE COOLING
3. F-0.3, Rev.2, HEAT SINK

4.0 Containment 4.3 Combustible Gas Concentrations

4.3.1 General Emergency

≥ 4% hydrogen concentration in containment

Mode Applicability:

Power operation, hot shutdown

Basis:

Existence of an explosive mixture (4 % hydrogen) means a hydrogen and oxygen concentration of at least the lower deflagration limit curve exists.

When hydrogen and oxygen concentrations reach or exceed the deflagration limits, imminent loss of the containment barrier exists. To generate such levels of combustible gas, loss of the fuel clad and RCS barriers must have occurred.

This EAL represents loss of both fuel clad and RCS with the potential loss of containment and therefore warrants declaration of a General Emergency.

PEG Reference:

PC2.4

Basis Reference(s):

1. SOP 10.9.1, "Hydrogen Recombiners"

5.0 RADIOACTIVITY RELEASE / AREA RADIATION

Many EALs are based on actual or potential degradation of fission product barriers because of the increased potential for offsite radioactivity release. Degradation of fission product barriers though, is not always apparent via non-radiological symptoms. Therefore, direct indication of increased radiological effluents or area radiation levels are appropriate symptoms for emergency classification.

At lower levels, abnormal radioactivity releases may be indicative of a failure of containment systems or precursors to more significant releases. At higher release rates, offsite radiological conditions may result which require offsite protective actions. Increased area radiation levels in plant may also be indicative of the failure of containment systems or preclude access to plant vital equipment necessary to ensure plant safety.

There are two basic indications of radioactivity release rates and one for area radiation levels which warrant emergency classifications.

- Effluent Monitors: Direct indication of effluent radiation monitoring systems provides a rapid assessment mechanism to determine releases in excess of classifiable limits.

- Dose Projections / Environmental Measurements: Projected offsite doses (based on effluent monitor readings) or actual offsite field measurements indicating doses or dose rates above classifiable limits.

- Area Radiation Level: Sustained general area radiation levels in excess of those indicating loss of control of radioactive materials or those levels which may preclude access to vital plant areas also warrant emergency classification.

5.0 Radioactivity Release / Area Radiation

5.1 Effluent Monitors

5.1.1 Unusual Event

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

Table 5.1 Effluent Monitor Classification Thresholds

Monitor	GE	SAE	Alert	UE
R-27	53 µCi/cc	5.3 µCi/cc	5.3E-1 µCi/cc	2.3E-3 µCi/cc
R-44	53 µCi/cc	5.3 µCi/cc	5.3E-1 µCi/cc	2.3E-3 µCi/cc
R-54	N/A	N/A	2.5E-1 µCi/cc	2.5E-3 µCi/cc
R-49	N/A	N/A	2.7E-2 µCi/cc	2.7E-4 µCi/cc

Mode Applicability:

All

Basis:

The "value shown" for each monitor is two times the calculated Technical Specification release rates as specified in the IP-1007.

Valid means that a radiation monitor reading has been confirmed by operators to be correct. Unplanned releases in excess of two times the site technical specifications that continue for 60 minutes or longer represent an uncontrolled situation and hence, a potential degradation in the level of safety. The final integrated dose (which is very low in the Unusual Event emergency class) is not the primary concern here; it is the degradation in plant control implied by the fact that the release was not isolated within 60 minutes. Therefore, it is not intended that the release be averaged over 60 minutes. For example, a release of 4 times T/S for 30 minutes does not exceed this initiating condition. Further, the Emergency Director should not wait until 60 minutes has elapsed, but should declare the event as soon as it is determined that the release duration has or will likely exceed 60 minutes.

Monitor indications are calculated on the basis of the methodology of IP-1007. Annual average meteorology is used.

Valid means that a radiation monitor reading has been confirmed by the operators to be correct.

PEG Reference:

AU1.1

Basis Reference(s):

1. System Description No. 12, Radiation Monitoring And Protections System
2. IP-1007 "Determination of the Magnitude of Release and Exposure Rate"
3. Technical Specifications Section 3.9
4. Letter from D. Smith to R. Burns

5.0 Radioactivity Release / Area Radiation 5.1 Effluent Monitors

5.1.2 Alert

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

Table 5.1 Effluent Monitor Classification Thresholds

Monitor	GE	SAE	Alert	UE
R-27	53 µCi/cc	5.3 µCi/cc	5.3E-1 µCi/cc	2.3E-3 µCi/cc
R-44	53 µCi/cc	5.3 µCi/cc	5.3E-1 µCi/cc	2.3E-3 µCi/cc
R-54	N/A	N/A	2.5E-1 µCi/cc	2.5E-3 µCi/cc
R-49	N/A	N/A	2.7E-2 µCi/cc	2.7E-4 µCi/cc

Mode Applicability:

All

Basis:

This event escalates from the Unusual Event by escalating the magnitude of the release by a factor of 100. Prorating the 500 mR/yr criterion for both time (8766 hr/yr) and the 200 multiplier, the associated site boundary dose rate would be 10 mR/hr. The required release duration was reduced to 15 minutes in recognition of the increased severity.

Monitor indications are calculated on the basis of the methodology of IP-1007, "Determination of the Magnitude of Release and Exposure Rate". Annual average meteorology is used.

As previously stated, the 10 mR/hr value is based on a proration of 200 times the 500 mR/yr basis of the 10CFR20 non-occupational MPC limits, rounded down to 10 mR/hr. The values for the gaseous effluent radiation monitors are based upon not exceeding 10 mR/hr at the site boundary as a result of the release.

Valid means that a radiation monitor reading has been confirmed by the operators to be correct.

PEG Reference:

AA1.1

Basis Reference(s):

1. System Description No. 12, Radiation Monitoring And Protections System
2. IP-1007, "Determination of the Magnitude of Release and Exposure Rate"
3. Technical Specifications Section 3.9
4. Letter from D. Smith to R. Burns

5.0 Radioactivity Release / Area Radiation

5.1 Effluent Monitors

5.1.3 Site Area Emergency

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

Table 5.1 Effluent Monitor Classification Thresholds

Monitor	GE	SAE	Alert	UE
R-27	53 µCi/cc	5.3 µCi/cc	5.3E-1 µCi/cc	2.3E-3 µCi/cc
R-44	53 µCi/cc	5.3 µCi/cc	5.3E-1 µCi/cc	2.3E-3 µCi/cc
R-54	N/A	N/A	2.5E-1 µCi/cc	2.5E-3 µCi/cc
R-49	N/A	N/A	2.7E-2 µCi/cc	2.7E-4 µCi/cc

Mode Applicability:

All

Basis:

The values shown were determined utilizing IP-1007, "Determination of the Magnitude of Release and Exposure Rate" based upon a 100 mR whole body exposure. These values where determined using annual average meteorology.

The 100 mR integrated dose is based on the proposed 10CFR20 annual average population exposure. This value also provides a desirable gradient (one order of magnitude) between the Alert, Site Area Emergency, and General Emergency classes. It is deemed that exposures less than this limit are not consistent with the Site Area Emergency class description. The 500 mR integrated child thyroid dose was established in consideration of the 1:5 ratio of the EPA Protective Action Guidelines for whole body thyroid.

Integrated doses are generally not monitored in real-time. In establishing the emergency action levels, a duration of one hour is assumed, based on a site boundary dose of 100 mR/hour whole body or 500 mR/hour child thyroid, whichever is more limiting (depends on source term assumptions).

Valid means that a radiation monitor reading has been confirmed by the operators to be correct.

PEG Reference:

AS1.1

Basis Reference(s):

1. System Description No. 12, Radiation Monitoring And Protections System
2. IP-1007, "Determination of the Magnitude of Release and Exposure Rate"
3. Technical Specifications Section 3.9
4. Letter from D. Smith to R. Burns

5.0 Radioactivity Release / Area Radiation 5.1 Effluent Monitors

5.1.4 General Emergency

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

Table 5.1 Effluent Monitor Classification Thresholds

Monitor	GE	SAE	Alert	UE
R-27	53 µCi/cc	5.3 µCi/cc	5.3E-1 µCi/cc	2.3E-3 µCi/cc
R-44	53 µCi/cc	5.3 µCi/cc	5.3E-1 µCi/cc	2.3E-3 µCi/cc
R-54	N/A	N/A	2.5E-1 µCi/cc	2.5E-3 µCi/cc
R-49	N/A	N/A	2.7E-2 µCi/cc	2.7E-4 µCi/cc

Mode Applicability:

All

Basis:

The values shown were determined utilizing IP-1007, "Determination of the Magnitude of Release and Exposure Rate" based upon a 100 mR whole body exposure. These values where determined using annual average meteorology.

The 1000 mR whole body and the 5000 mR child thyroid integrated dose are based on the EPA protective action guidance which indicates that public protective actions are indicated if the dose exceeds 1 rem whole body or 5 rem child thyroid. This is consistent with the emergency class description for a General Emergency. This level constitutes the upper level of the desirable gradient for the Site Area Emergency.

Integrated doses are generally not monitored in real-time. In establishing the emergency action levels, a duration of one hour is assumed, based on a site boundary dose of 1000 mR/hour whole body or 5000 mR/hour child thyroid, whichever is more limiting (depends on source term assumptions).

Valid means that a radiation monitor reading has been confirmed by the operators to be correct.

PEG Reference:

AG1.1

Basis Reference(s):

1. System Description No. 12, Radiation Monitoring And Protections System
2. IP-1007, "Determination of the Magnitude of Release and Exposure Rate"
3. Technical Specifications Section 3.9
4. Letter from D. Smith to R. Burns

5.0 Radioactivity Release / Area Radiation

5.2 Dose Projections/ Environmental Measurements/ Release Rates

5.2.1 Unusual Event

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

Mode Applicability:

All

Basis:

Unplanned releases in excess of two times the site technical specifications that continue for 60 minutes or longer represent an uncontrolled situation and hence, a potential degradation in the level of safety. The final integrated dose (which is very low in the Unusual Event emergency class) is not the primary concern here; it is the degradation in plant control implied by the fact that the release was not isolated within 60 minutes. Therefore, it is not intended that the release be averaged over 60 minutes. For example, a release of 4 times T/S for 30 minutes does not exceed this initiating condition. Further, the Emergency Director should not wait until 60 minutes has elapsed, but should declare the event as soon as it is determined that the release duration has or will likely exceed 60 minutes

PEG Reference:

AU1.2

Basis Reference(s):

1. Technical Specifications Section 3.9

5.0 Radioactivity Release / Area Radiation

5.2 Dose Projections/ Environmental Measurements/ Release Rates

5.2.2 Alert

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

Mode Applicability:

All

Basis:

Confirmed sample analyses in excess of two hundred times the site technical specifications that continue for 15 minutes or longer represent an uncontrolled situation and hence, a potential degradation in the level of safety. This event escalates from the Unusual Event by increasing the magnitude of the release by a factor of 100 over the Unusual Event level (i. e., 200 times Technical Specifications). Prorating the 500 mR/yr basis of the 10CFR20 non-occupational MPC limits for both time (8766 hr/yr) and the 200 multiplier, the associated site boundary dose rate would be 10 mR/hr. The required release duration was reduced to 15 minutes in recognition of the increased severity.

PEG Reference:

AA1.2

Basis Reference(s):

1. Technical Specifications Section 3.9

5.0 Radioactivity Release / Area Radiation

5.2 Dose Projections/ Environmental Measurements/ Release Rates

5.2.3 Alert

Dose projections or field surveys which indicate doses / dose rates in excess of Table 5.2 column "Alert" at the site boundary or beyond.

Table 5.2 Dose Projection / Env. Measurement Classification Thresholds

	GE	SAE	Alert
TEDE	1000 mR	100 mR	10 mR
CDE Thyroid	5000 mR	500 mR	N/A
TEDE rate	1000 mR/hr	100 mR/hr	10 mR/hr
CDE Thyroid rate	5000 mR/hr	500 mR/hr	N/A

Mode Applicability:

All

Basis:

Offsite integrated doses in excess of 10 mR TEDE or dose rates in excess of 10 mR/hr TEDE represent an uncontrolled situation and hence, a potential degradation in the level of safety. This event escalates from the Unusual Event by increasing the magnitude of the release by a factor of 100 over the Unusual Event level (i. e., 200 times Technical Specifications). Prorating the 500 mR/yr basis of 10CFR20 for both time (8766 hr/yr) and the 200 multiplier, the associated site boundary dose rate would be 10 mR/hr.

As previously stated, the 10 mR/hr value is based on a proration of 200 times the 500 mR/yr basis of 10CFR20, rounded down to 10 mR/hr.

PEG Reference:

AA1.2

Basis Reference(s):

1. IP-1007, "Determination of the Magnitude of Release and Exposure Rate"
2. Technical Specifications Section 3.9

5.0 Radioactivity Release / Area Radiation

5.2 Dose Projections/ Environmental Measurements/ Release Rates

5.2.4 Site Area Emergency

Dose projections or field surveys which indicate doses / dose rates in excess of Table 5.2 column "SAE" at the site boundary or beyond.

Table 5.2 Dose Projection / Env. Measurement Classification Thresholds

	GE	SAE	Alert
TEDE	1000 mR	100 mR	10 mR
CDE Thyroid	5000 mR	500 mR	N/A
TEDE rate	1000 mR/hr	100 mR/hr	10 mR/hr
CDE Thyroid rate	5000 mR/hr	500 mR/hr	N/A

Mode Applicability:

All

Basis:

The 100 mR integrated TEDE dose in this EAL is based on the proposed 10CFR20 annual average population exposure. This value also provides a desirable gradient (one order of magnitude) between the Alert, Site Area Emergency, and General Emergency classes. It is deemed that exposures less than this limit are not consistent with the Site Area Emergency class description. The 500 mR integrated CDE thyroid dose was established in consideration of the 1:5 ratio of the EPA Protective Action Guidelines for whole body thyroid. In establishing the dose rate emergency action levels, a duration of one hour is assumed. Therefore, the dose rate EALs are based on a site boundary dose rate of 100 mR/hr TEDE or 500 mR/hr CDE thyroid, whichever is more limiting.

PEG Reference:

AS1.3
AS1.4

Basis Reference(s):

1. IP-1007, "Determination of the Magnitude of Release and Exposure Rate"
2. Technical Specifications Section 3.9

5.0 Radioactivity Release / Area Radiation

5.2 Dose Projections/ Environmental Measurements/ Release Rates

5.2.5 General Emergency

Dose projections or field surveys which indicate doses / dose rates in excess of Table 5.2 column "GE" at the site boundary or beyond.

Table 5.2 Dose Projection / Env. Measurement Classification Thresholds			
	GE	SAE	Alert
TEDE	1000 mR	100 mR	10 mR
CDE Thyroid	5000 mR	500 mR	N/A
TEDE rate	1000 mR/hr	100 mR/hr	10 mR/hr
CDE Thyroid rate	5000 mR/hr	500 mR/hr	N/A

Mode Applicability:

All

Basis:

The General Emergency values of Table 5.2 are based on the boundary dose resulting from an actual or imminent release of gaseous radioactivity that exceeds 1000 mR TEDE or 5000 mR CDE thyroid for the actual or projected duration of the release. The 1000 mR TEDE and the 5000 mR CDE thyroid integrated dose are based on the EPA protective action guidance which indicates that public protective actions are indicated if the dose exceeds 1 rem TEDE or 5 rem CDE thyroid. This is consistent with the emergency class description for a General Emergency. This level constitutes the upper level of the desirable gradient for the Site Area Emergency. Actual meteorology is specifically identified since it gives the most accurate dose assessment. Actual meteorology (including forecasts) should be used whenever possible. In establishing the dose rate emergency action levels, a duration of one hour is assumed. Therefore, the dose rate EALs are based on a site boundary dose rate of 1000 mR/hr TEDE or 5000 mR/hr CDE thyroid, whichever is more limiting.

PEG Reference:

AG1.3
AG1.4

Basis Reference(s):

1. IP-1007, "Determination of the Magnitude of Release and Exposure Rate"
2. Technical Specifications Section 3.9

5.0 Radioactivity Release / Area Radiation

5.3 Area Radiation Levels

5.3.1 Unusual Event

Any sustained direct ARM readings **> 100 x alarm** or offscale hi resulting from an uncontrolled process

Mode Applicability:

All

Basis:

Valid elevated area radiation levels usually have long lead times relative to the potential for radiological release beyond the site boundary, thus impact to public health and safety is very low.

This EAL addresses unplanned increases in radiation levels inside the plant. These radiation levels represent a degradation in the control of radioactive material and a potential degradation in the level of safety of the plant. Area radiation levels above 100 times the alarm setpoint have been selected because they are readily identifiable on ARM instrumentation. Since ARM setpoints are nominally set one decade over normal levels, 100 times the alarm setpoint provides an appropriate threshold for emergency classification. For those ARMs whose upper range limit are less than 100 times the alarm setpoint, a value of offscale high is used. This EAL escalates to an Alert, if the increases impair the level of safe plant operation.

PEG Reference:

AU2.4

Basis Reference(s):

None

5.0 Radioactivity Release / Area Radiation
5.3 Area Radiation Levels

5.3.2 Alert

Sustained area radiation levels > **15 mR/hr** in either:
Control Room
OR
Central Alarm Station and Secondary Alarm Station

Mode Applicability:

All

Basis:

This EAL addresses increased radiation levels that impede necessary access to operating stations requiring continuous occupancy to maintain safe plant operation or perform a safe plant shutdown. Areas requiring continuous occupancy include the Control Room, the central alarm station (CAS) and the secondary security alarm station (SAS). The security alarm stations are included in this EAL because of their importance to permitting access to areas required to assure safe plant operations.

The value of 15 mR/hr is derived from the GDC 19 value of 5 rem in 30 days with adjustment for expected occupancy times. Although Section III.D.3 of NUREG-0737, "Clarification of TMI Action Plan Requirements", provides that the 15 mR/hr value can be averaged over the 30 days, the value is used here without averaging. A 30 day duration implies an event potentially more significant than an Alert.

It is the impaired ability to operate the plant that results in the actual or potential degradation of the level of safety of the plant. The cause or magnitude of the increase in radiation levels is not a concern of this EAL. The Emergency Director must consider the source or cause of the increased radiation levels and determine if any other EALs may be involved. For example, a dose rate of 15 mR/hr in the Control Room may be a problem in itself. However, the increase may also be indicative of high dose rates in the containment due to a LOCA. In this latter case, a Site Area Emergency or a General Emergency may be indicated by other EAL categories.

This EAL is not intended to apply to anticipated temporary radiation increases due to planned events (e. g., radwaste container movement, depleted resin transfers, etc.).

PEG Reference:

AA3.1

Basis Reference(s):

1. GDC 19
2. NUREG-0737, "Clarification of TMI Action Plan Requirements", Section III.D.3

5.0 Radioactivity Release / Area Radiation
5.3 Area Radiation Levels

5.3.3 Alert

Sustained abnormal area radiation levels > 8 **R/hr** within any areas, Table 5.3
AND
Access is required for safe operation or shutdown

Table 5.3 Plant Areas
• Condensate Storage Tank • RWST • Service Water Intake Structure • Service Water Valve Pit East • Fuel Storage Building • Primary Auxiliary Building/Fan House • 480 Volt Switchgear Room (Control Building) • Cable Spreading Room/Electrical Tunnel • Diesel Generator Building/Fuel Tank Area • Auxiliary Feedwater Pump Building • Battery Room (Control Building 33' 0" ele.)

Mode Applicability:

All

Basis:

This EAL addresses increased radiation levels in areas requiring infrequent access in order to maintain safe plant operation or perform a safe plant shutdown. Area radiation levels at or above 8 R/hr are indicative of radiation fields which may limit personnel access or adversely affect equipment whose operation may be needed to assure adequate core cooling or shutdown the reactor. The basis of the value is described in NMPC memo File Code NMP31027 "Exposure Guidelines For Unusual/Accident Conditions". The areas selected are consistent with those listed in other EALs and represent those structures which house systems and equipment necessary for the safe operation and shutdown of the plant.

It is the impaired ability to operate the plant that results in the actual or potential degradation of the level of safety of the plant. The cause or magnitude of the increase in radiation levels is not a concern of this EAL. The Emergency Director must consider the source or cause of the increased

radiation levels and determine if any other EAL may be involved. For example, a dose rate of 8 R/hr may be a problem in itself. However, the increase may also be indicative of high dose rates in the containment due to a LOCA. In this latter case, a Site Area Emergency or a General Emergency may be indicated by other EAL categories.

This EAL is not meant to apply to increases in the containment radiation monitors as these are events which are addressed in other EALs. Nor is it intended to apply to anticipated temporary radiation increases due to planned events (e. g., radwaste container movement, deplete resin transfers, etc.).

PEG Reference:

AA3.2

Basis Reference(s):

1. Niagara Mohawk Power Corporation memo File Code NMP31027 "Exposure Guidelines For Unusual/Accident Conditions", Revision 1, 3/18/93

6.0 ELECTRICAL FAILURES

Loss of vital plant electrical power can compromise plant safety system operability including decay heat removal and emergency core cooling systems which may be necessary to ensure fission product barrier integrity.

The events of this category have been grouped into the following two loss of electrical power types:

- Loss of AC Power Sources: This category includes losses of onsite and/or offsite AC power sources including station blackout events.
- Loss of DC Power Sources: This category involves total losses of vital plant 125 vdc power sources.

6.0 Electrical Failures 6.1 Loss of AC Power Sources

6.1.1 Unusual Event

None of the following sources of offsite power available for > 15 min.:

- Unit Auxiliary transformer
- Station Auxiliary transformer
- 13.8 KV gas turbine transformer

Mode Applicability:

All

Basis:

Prolonged loss of all offsite AC power reduces required redundancy and potentially degrades the level of safety of the plant by rendering the plant more vulnerable to a complete loss of AC power (station blackout). Fifteen minutes was selected as a threshold to exclude transient or momentary power losses.

PEG Reference:

SU1.1

Basis Reference(s):

1. Design Basis Document (DBD) for 480 V system
2. Oneline Diagram of IP-2 electrical distribution

6.0 Electrical Failures 6.1 Loss of AC Power Sources

6.1.2 Alert

Loss of AC power to all 480 volt busses (5A, 2A/3A, 6A) for > 15 min.
AND
Inability to power required core cooling systems with alternate power sources for > 15 min.

Mode Applicability:

Cold Shutdown, Refueling

Basis:

Loss of all AC power compromises all plant safety systems requiring electric power. This EAL is indicated by: loss of all offsite AND onsite AC power to buses 2A, 3A, 5A AND 6A for greater than 15 minutes as well as loss of alternate power sources such as Alternate Safe Shutdown or other temporary sources of power. When in cold shutdown or refueling mode the event can be classified as an Alert, because of the significantly reduced decay heat, lower temperature and pressure, increasing the time to restore one of the emergency busses, relative to that specified for the Site Area Emergency EAL. Escalating to the Site Area Emergency, if appropriate, is by Abnormal Rad Levels/Radiological Effluent, or Emergency Director Judgment ICs. Fifteen minutes was selected as a threshold to exclude transient or momentary power losses.

PEG Reference:

SA1.1

Basis Reference(s):

1. Design Basis Document (DBD) for 480 V system
2. Oneline Diagram of IP-2 electrical distribution
3. ECA-0.0, Loss Of All AC Power

6.0 Electrical Failures 6.1 Loss of AC Power Sources

6.1.3 Alert

Available emergency bus AC power sources reduced to only one of the following for > 15 min.:

- 480V EDG 21
- 480V EDG 22
- 480V EDG 23
- Unit Auxiliary transformer
- Station Auxiliary transformer
- 13.8 KV gas turbine transformer

Mode Applicability:

Power operation, hot shutdown

Basis:

The condition indicated by this EAL is the degradation of the offsite power with a concurrent failure of all but one emergency generator to supply power to its emergency bus. Another related condition could be the loss of all offsite power and loss of onsite emergency diesels with only one train of emergency busses being fed from the unit main generator, or the loss of onsite emergency diesels with only one train of emergency busses being fed from offsite power. The subsequent loss of this single power source would escalate the event to a Site Area Emergency.

PEG Reference:

SA5.1

Basis Reference(s):

1. Design Basis Document (DBD) for 480 V system
2. Oneline Diagram of IP-2 electrical distribution
3. ECA-0.0, Loss Of All AC Power

6.0 Electrical Failures 6.1 Loss of AC Power Sources

6.1.4 Site Area Emergency

Loss of AC power to all 480 volt busses (5A, 2A/3A, 6A) for > 15 min.
AND
Inability to power required core cooling systems with alternate power sources for > 15 min.

Mode Applicability:

Power operation, hot shutdown

Basis:

Loss of all AC power compromises all plant safety systems requiring electric power. This EAL is indicated by: loss of all offsite AND onsite AC power to buses 2A/3A, 5A AND 6A for greater than 15 minutes as well as loss of alternate power sources such as Alternate Safe Shutdown or other temporary sources of power. Prolonged loss of all AC power will cause core uncovery and loss of containment integrity, thus this event can escalate to a General Emergency. The time duration should be selected to exclude transient or momentary power losses, but should not exceed 15 minutes.

PEG Reference:

SS1.1

Basis Reference(s):

1. Design Basis Document (DBD) for 480 V system
2. Oneline Diagram of IP-2 electrical distribution
3. ECA-0.0, Loss Of All AC Power

6.0 Electrical Failures 6.1 Loss of AC Power Sources

6.1.5 General Emergency

Loss of all emergency bus AC power
AND either:
Power cannot be restored to required core cooling systems in ≤ 1 hr
OR
ORANGE or RED path on F-0.2, "CORE COOLING"

Mode Applicability:

Power operation, hot shutdown

Basis:

Loss of all AC power compromises all plant safety systems requiring electric power. Prolonged loss of all AC power will lead to loss of fuel clad, RCS, and containment. Although this EAL may be viewed as redundant to the RPV Water Level EALs, its inclusion is necessary to better assure timely recognition and emergency response.

This EAL is specified to assure that in the unlikely event of prolonged station blackout, timely recognition of the seriousness of the event occurs and that declaration of a General Emergency occurs as early as is appropriate, based on a reasonable assessment of the event trajectory.

The likelihood of restoring at least one emergency bus should be based on a realistic appraisal of the situation since a delay in an upgrade decision based on only a chance of mitigating the event could result in a loss of valuable time in preparing and implementing public protective actions.

In addition, under these conditions, fission product barrier monitoring capability may be degraded. Although it may be difficult to predict when power can be restored, the Emergency Director should declare a General Emergency based on two major considerations:

1. Are there any present indications that core cooling is already degraded to the point that Loss or Potential Loss of fission product barriers is imminent?

2. If there are no present indications of such core cooling degradation, how likely is it that power can be restored in time to assure that a loss of two barriers with a potential loss of the third barrier can be prevented?

Thus, indication of continuing core cooling degradation must be based on fission product barrier monitoring with particular emphasis on Emergency Director judgment as it relates to imminent loss or potential loss of fission product barriers and degraded ability to monitor fission product barriers.

The time to restore AC power is based on site blackout coping analysis performed in conformance with 10CFR50.63 and Regulatory Guide 1.155, "Station Blackout", with appropriate allowance for offsite emergency response.

PEG Reference:

SG1.1

Basis Reference(s):

1. F-0.2, "CORE COOLING,"
2. Design Basis Document (DBD) for 480 V system
3. Oneline Diagram of IP-2 electrical distribution
4. ECA-0.0, Loss Of All AC Power
5. Letter IPN-92-0 Letter of 4/14/89 to NRC Mail Station PI-137, re Station Blackout Rule 10 CFR 50.63

6.0 Electrical Failures 6.2 Loss of DC Power Sources

6.2.1 Unusual Event

< 105 vdc bus voltage indications for > 15 min. on the switchable voltmeter for all of the following panels:

- 21
- 22
- 23
- 24

Mode Applicability:

Cold Shutdown, Refueling

Basis:

The purpose of this EAL is to recognize a loss of DC power compromising the ability to monitor and control the removal of decay heat during cold shutdown or refueling operations. This EAL is intended to be anticipatory in as much as the operating crew may not have necessary indication and control of equipment needed to respond to the loss.

The bus voltage is based on the minimum bus voltage necessary for the operation of safety related equipment. This voltage value incorporates a margin of at least 15 minutes of operation before the onset of inability to operate loads.

PEG Reference:

SU7.1

Basis Reference(s):

1. Design Basis Document (DBD) for 125 VDC System

6.0 Electrical Failures 6.2 Loss of DC Power Sources

6.2.2 Site Area Emergency

< 105 vdc bus voltage indications for > 15 min. on the switchable voltmeter for all of the following panels:

- 21
- 22
- 23
- 24

Mode Applicability:

Power operation, hot shutdown

Basis:

Loss of all DC power compromises ability to monitor and control plant safety functions. Prolonged loss of all DC power will cause core uncovering and loss of containment integrity when there is significant decay heat and sensible heat in the reactor system. Escalation to a General Emergency would occur by other EAL categories. Fifteen minutes was selected as a threshold to exclude transient or momentary power losses.

The bus voltage is based on the minimum bus voltage necessary for the operation of safety related equipment. This voltage value incorporates a margin of at least 15 minutes of operation before the onset of inability to operate loads.

PEG Reference:

SS3.1

Basis Reference(s):

1. Design Basis Document (DBD) for 125 VDC System
2. AOI 27.1.11, Rev. 2, LOSS OF 125VDC POWER

7.0 EQUIPMENT FAILURES

Numerous plant system related equipment failure events which warrant emergency classification, based upon their potential to pose actual or potential threats to plant safety, have been identified in this category.

The events of this category have been grouped into the following event types:

- Technical Specifications: Only one EAL falls under this event type related to the failure of the plant to be brought to the required plant operating condition required by technical specifications.

- System Failures or Control Room Evacuation: This category includes events which are indicative of losses of operability of safety systems such as ECCS, isolation functions, Control Room habitability or cold and hot shutdown capabilities.

- Loss of Indication, Alarm, or Communication Capability: Certain events which degrade the plant operators ability to effectively assess plant conditions or communicate with essential personnel within or external to the plant warrant emergency classification. Under this event type are losses of annunciators and/or communication equipment.

7.0 Equipment Failures 7.1 Technical Specification Requirements

7.1.1 Unusual Event

Plant is not brought to required operating mode within Technical Specifications LCO Action Statement Time.

Mode Applicability:

Power operation, hot shutdown

Basis:

Limiting Conditions of Operation (LCOs) require the plant to be brought to a required shutdown mode when the Technical Specification required configuration cannot be restored. Depending on the circumstances, this may or may not be an emergency or precursor to a more severe condition. In any case, the initiation of plant shutdown required by the site Technical Specification requires a one hour report under 10CFR50.72 (b) non-emergency events. The plant is within its safety envelope when being shut down within the allowable action statement time in the Technical Specifications. An immediate Notification of an Unusual Event is required when the plant is not brought to the required operating mode within the allowable action statement time in the Technical Specifications. Declaration of an Unusual Event is based on the time at which the LCO-specified action statement time period elapses under the site Technical Specifications and is not related to how long a condition may have existed. Other required Technical Specification shutdowns that involve precursors to more serious events are addressed by other EALs.

PEG Reference:

SU2.1

Basis Reference(s):

1. Technical Specifications, paragraph 3.0.1, page 3.1.A-1

7.0 Equipment Failures 7.2 System Failures or Control Room Evacuation

7.2.1 Unusual Event

Report of main turbine failure requiring turbine trip resulting in:
Damage to turbine-generator seals causing a release of lubricating oil or hydrogen
OR
Casing penetration.

Mode Applicability:

Power Operations

Basis:

This EAL is intended to address main turbine rotating component failures of sufficient magnitude to cause observable damage to the turbine casing or to the seals of the turbine generator. Of major concern is the potential for significant leakage of combustible fluids (lubricating oils) and gases (hydrogen cooling) to the plant environs. It is not the intent of this EAL to classify minor operational leakage. Actual fires and flammable gas build up are appropriately classified through other EALs. This EAL is consistent with the definition of an Unusual Event while maintaining the anticipatory nature desired and recognizing the risk to non-safety related equipment.

PEG Reference:

HU1.6

Basis Reference(s):

None

7.0 Equipment Failures 7.2 System Failures or Control Room Evacuation

7.2.2 Alert

Turbine failure generated missiles which causes or potentially causes any required safety related system or structure to become inoperable

Mode Applicability:

Power Operations, Hot Shutdown

Basis:

This EAL addresses the threat to safety related equipment imposed by missiles generated by main turbine rotating component failures. The involved equipment includes: Service Water System, Condensate Storage Tank and piping, Refueling Water Storage Tank and piping, Shield wall area, P. A. B., Electrical penetration area, Diesel Generators, and Central Control Room. This EAL is consistent with the definition of an ALERT in that, if missiles have damaged or penetrated areas containing safety-related equipment, the potential exists for substantial degradation of the level of safety of the plant.

PEG Reference:

HA1.6

Basis Reference(s):

1. AOI 26.4.2, Rev. 2, TURBINE MISSILE GENERATION, 12/18/90

7.0 Equipment Failures 7.2 System Failures or Control Room Evacuation

7.2.3 Alert

Control Room evacuation

Mode Applicability:

All

Basis:

With the Control Room evacuated, additional support, monitoring and direction through the Technical Support Center and/or other emergency operations center is necessary. Inability to establish plant control from outside the Control Room will escalate this event to a Site Area Emergency.

PEG Reference:

HA5.1

Basis Reference(s):

1. AOI 27.1.9, Control Room Inaccessibility/Safe Shutdown Control

7.0 Equipment Failures 7.2 System Failures or Control Room Evacuation

7.2.4 Alert

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

Mode Applicability:

Cold Shutdown, Refueling

Basis:

This EAL addresses complete loss of functions required for core cooling during refueling and cold shutdown modes. Escalation to Site Area Emergency or General Emergency would be through other EALs.

A reactor coolant temperature increase that approaches or exceeds the cold shutdown technical specification limit warrants declaration of an Alert irrespective of the availability of technical specification required functions to maintain cold shutdown. The concern of this EAL is the loss of ability to maintain the plant in cold shutdown which is defined by reactor coolant temperature and not the operability of equipment which supports removal of heat from the reactor.

PEG Reference:

SA3.1

Basis Reference(s):

1. Technical Specifications Amendment 152, Table 3.1.A.1, pg. 3 of 4
2. Technical Specifications Figure 3.10-1

7.0 Equipment Failures 7.2 System Failures or Control Room Evacuation

7.2.5 Site Area Emergency

Control Room evacuation
AND
Core cooling cannot be established per AOI 27.1.9, "Control Room Inaccessibility/Safe Shutdown" in ≤ 15 min.

Mode Applicability:

All

Basis:

This EAL indicates that expeditious transfer of safety systems has not occurred but fission product barrier damage may not yet be indicated. The time interval for transfer is based on analysis or assessments as to how quickly control must be reestablished without core uncovering and/or core damage.

In cold shutdown and refueling modes, operator concern is directed toward maintaining core cooling such as is discussed in Generic Letter 88-17, "Loss of Decay Heat Removal." In power operation , and hot shutdown modes, operator concern is primarily directed toward maintaining critical safety functions and thereby assuring fission product barrier integrity.

PEG Reference:

HS2.1

Basis Reference(s):

1. AOI 27.1.9, "Control Room Inaccessibility/Safe Shutdown"
2. Generic Letter 88-17, "Loss of Decay Heat Removal."

7.0 Equipment Failures 7.3 Loss of Indications /Alarms / Communication Capability

7.3.1 Unusual Event

Unplanned loss of most (approx. 75%) annunciators or indications on Control Room Panels for > 15 min.
AND
Increased surveillance is required for safe plant operation

Mode Applicability:

Power operation, hot shutdown

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.

"Unplanned" loss of annunciators or indicators excludes 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 Senior Watch Supervisor as the threshold for determining the severity of the plant conditions. This judgment is supported by the specific opinion of the Senior Watch Supervisor that additional operating personnel will be required to provide increased monitoring of system operation to safely operate the plant.

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 their 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.

PEG Reference:

SU3.1

Basis Reference(s):

Simulator Walkdown

7.0 Equipment Failures 7.3 Loss of Indications /Alarms / Communication Capability

7.3.2 Unusual Event

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

Mode Applicability:

All

Basis:

The purpose of this EAL is to recognize a loss of communications capability that either defeats the plant operations staff ability to perform routine tasks necessary for plant operations or the ability to communicate problems with offsite authorities. The loss of offsite communications ability is expected to be significantly more comprehensive than the condition addressed by 10CFR50.72.

The onsite communications loss must encompass the loss of all means of routine communications (i. e., phones, sound powered phone systems, page party system, and radios/walkie talkies).

The offsite communications loss must encompass the loss of all means of communications with offsite authorities. This should include ENS, Bell lines, FAX transmissions, and dedicated phone systems. This EAL is intended to be used only when extraordinary means are being utilized to make communications possible (relaying of information from radio transmissions, individuals being sent to offsite locations, etc.).

PEG Reference:

SU6.1

Basis Reference(s):

None

7.0 Equipment Failures 7.3 Loss of Indications /Alarms / Communication Capability

7.3.3 Alert

Unplanned loss of most (approx. 75%) annunciators or indications on Control Room Panels for > 15 min.
AND
Increased surveillance is required for safe plant operation
AND either:
A plant transient in progress
OR
PROTEUS and SAS are unavailable

Mode Applicability:

Power operation, hot shutdown

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. Recognition of the availability of computer based indication equipment is considered (PROTEUS, SAS, etc.).

"Unplanned" loss of annunciators or indicators does not include 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 Senior Watch Supervisor as the threshold for determining the severity of the plant conditions. This judgment is supported by the specific opinion of the Senior Watch Supervisor that additional operating personnel will be required to provide increased monitoring of system operation to safely operate the plant.

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.

Annunciators or indicators for this EAL includes 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.).

"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.

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.

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

PEG Reference:

SA4.1

Basis Reference(s):

Simulator walkdown

7.0 Equipment Failures 7.3 Loss of Indications /Alarms / Communication Capability

7.3.4 Site Area Emergency

Loss of most (approx. 75%) annunciators or indications on Control Room Panels
AND
Complete loss of ability to monitor all critical safety function status
AND
A plant transient in progress

Mode Applicability:

Power operation, hot shutdown

Basis:

This EAL recognizes the inability of the Control Room staff to monitor the plant response to a transient. A Site Area Emergency is considered to exist if the Control Room staff cannot monitor safety functions needed for protection of the public.

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., 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.

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, 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.

PEG Reference:

SS6.1

Basis Reference(s):

None

8.0 Hazards

Hazards are those non-plant system related events which can directly or indirectly impact plant operation or reactor plant and personnel safety.

The events of this category have been grouped into the following types:

- Security Threats: This category includes unauthorized entry attempts into the Protected Area as well as bomb threats and sabotage attempts. Also addressed are actual security compromises threatening loss of physical control of the plant.

- Fire or Explosion: Fires can pose significant hazards to personnel and reactor safety. Appropriate for classification are fires within the site Protected Area or which may affect operability of vital equipment.

- Man-made Events: Man-made events are those non-naturally occurring events which can cause damage to plant facilities such as aircraft crashes, missile impacts, toxic or flammable gas leaks or explosions from whatever source.

- Natural Events: Events such as hurricanes, earthquakes or tornados which have potential to cause damage to plant structures or equipment significant enough to threaten personnel or plant safety.

8.0 Hazards 8.1 Security Threats

8.1.1 Unusual Event

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

Mode Applicability:

All

Basis:

This EAL is based on the IP-2 Safeguards Contingency Plan. Security events which do not represent at least a potential degradation in the level of safety of the plant, are reported under 10CFR73.71 or in some cases under 10CFR50.72.

The plant Protected Area boundary is within the security isolation zone and is defined in the security plan. Bomb devices discovered within the plant vital area would result in EAL escalation.

PEG Reference:

HU4.1
HU4.2

Basis Reference(s):

1. IP-2 Safeguards Contingency Plan
2. Table 3.1, "Vital Areas By Type And Category."

8.0 Hazards 8.1 Security Threats

8.1.2 Alert

Intrusion into plant Protected Area by an adversary.

Mode Applicability:

All

Basis:

This class of security events represents an escalated threat to plant safety above that contained in the Unusual Event. For the purposes of this EAL, the intrusion by armed or suspected to be armed unauthorized personnel inside the Protected Area boundary can be considered a significant security threat. Intrusion into a vital area by similar personnel will escalate this event to a Site Area Emergency.

PEG Reference:

HA4.1
HA4.2

Basis Reference(s):

1. IP-2 Safeguards Contingency Plan
2. Table 3.1, "Vital Areas By Type And Category."

8.0 Hazards 8.1 Security Threats

8.1.3 Site Area Emergency

Intrusion into a plant security vital area by an adversary.

Mode Applicability:

All

Basis:

This class of security events represents an escalated threat to plant safety above that contained in the Alert in that armed or suspected to be armed unauthorized personnel have progressed from the Protected Area to the vital area.

PEG Reference:

HS1.1
HS1.2

Basis Reference(s):

1. IP-2 Safeguards Contingency Plan
2. Table 3.1, "Vital Areas By Type And Category."

8.0 Hazards 8.1 Security Threats

8.1.4 General Emergency

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

Mode Applicability:

All

Basis:

This EAL encompasses conditions under which unauthorized personnel have taken physical control of vital areas required to reach and maintain safe shutdown.

PEG Reference:

HG1.1
HG1.2

Basis Reference(s):

1. IP-2 Safeguards Contingency Plan
2. Table 3.1, "Vital Areas By Type And Category."

8.0 Hazards 8.2 Fire or Explosion

8.2.1 Unusual Event

Confirmed fire in any plant area, Table 8.2 not extinguished in ≤ 15 min. of Control Room notification.

Table 8.2 Plant Vital Areas
• Condensate Storage Tank • RWST • Service Water Pump Structure • Service Water Valve Pit East • Fuel Storage Building • Primary Auxiliary Building/Fan House • Vapor Containment Building • 480 Volt Switchgear Room (Control Bldg.) • Cable Spreading Room/Electrical Tunnel • Central Control Room • Diesel Generator Building/Fuel Tank Area • Auxiliary Feedwater Pump Building • Battery Room (Control Bldg. 33'0" ele.) • Central Alarm Station

Mode Applicability:

All

Basis:

The purpose of this EAL is to address the magnitude and extent of fires that may be potentially significant precursors to damage to safety systems. This excludes such items as fires within administration buildings, waste-basket fires, and other small fires of no safety consequence.

PEG Reference:

HU2.1

Basis Reference(s):

1. Table 3.1, "Vital Areas By Type And Category."

8.0 Hazards 8.2 Fire or Explosion

8.2.2 Unusual Event

Report by plant personnel of an explosion within Protected Area boundary which impacts plant safety related systems or structures.

Mode Applicability:

All

Basis:

The Protected Area boundary is within the security isolation zone and is defined in the site security plan.

For this EAL, only those explosions of sufficient force to damage permanent structures or equipment within the Protected Area should be considered. As used here, an explosion is a rapid, violent, unconfined combustion, or a catastrophic failure of pressurized equipment, that potentially imparts significant energy to near by structures and materials. No attempt is made in this EAL to assess the actual magnitude of the damage. The occurrence of the explosion with reports of evidence of damage (e. g., deformation, scorching) is sufficient for declaration. The Emergency Director also needs to consider any security aspects of the explosion.

PEG Reference:

HU1.5

Basis Reference(s):

1. Site Plot Plan

8.0 Hazards 8.2 Fire or Explosion

8.2.3 Alert

Fire or explosion in any plant area, Table 8.2 which causes or potentially causes any required safety related system or structure to become inoperable

Table 8.2 Plant Vital Areas
• Condensate Storage Tank • RWST • Service Water Pump Structure • Service Water Valve Pit East • Fuel Storage Building • Primary Auxiliary Building/Fan House • Vapor Containment Building • 480 Volt Switchgear Room (Control Bldg.) • Cable Spreading Room/Electrical Tunnel • Central Control Room • Diesel Generator Building/Fuel Tank Area • Auxiliary Feedwater Pump Building • Battery Room (Control Bldg. 33'0" ele.) • Central Alarm Station

Mode Applicability:

All

Basis:

The listed areas contain functions and systems required for the safe shutdown of the plant. The IP-2 safe shutdown analysis was consulted for equipment and plant areas required for the applicable mode.

With regard to explosions, only those explosions of sufficient force to damage permanent structures or equipment required for safe operation within the identified plant areas should be considered. As used here, an explosion is a rapid, violent, unconfined combustion, or a catastrophic failure of pressurized equipment, that potentially imparts significant energy to nearby structures and materials. No attempt is made in this EAL to assess the actual magnitude of the damage. The declaration of an Alert and the activation of the TSC will provide the Emergency Director with the resources needed to perform damage assessments. The Emergency Director also needs to consider any security aspects of the explosions.

PEG Reference:

HA2.1

Basis Reference(s):

1. Table 3.1, "Vital Areas By Type And Category."

8.0 Hazards

8.3 Man-Made Events

8.3.1 Unusual Event

Vehicle crash into or projectile which impacts plant safety related structures or systems within Protected Area boundary

Mode Applicability:

All

Basis:

The Protected Area boundary is within the security isolation zone and is defined in the site security plan.

This EAL addresses such items as plane, helicopter, train, barge, car or truck crash, or impact of other projectiles that may potentially damage plant structures containing functions and systems required for safe shutdown of the plant. If the crash is confirmed to affect a plant vital area, the event may be escalated to Alert.

PEG Reference:

HU1.4

Basis Reference(s):

1. Site Plot Plan

8.0 Hazards 8.3 Man-Made Events

8.3.2 Unusual Event

Report or detection of toxic or flammable gases that could enter or have entered within the Protected Area boundary in amounts that could affect the health of plant personnel or safe plant operation
OR
Report by local, county or state officials, or Unit 3, for potential evacuation of site personnel based on offsite event

Mode Applicability:

All

Basis:

This EAL is based on releases in concentrations within the site boundary that will affect the health of plant personnel or affecting the safe operation of the plant with the plant being within the evacuation area of an offsite event (i. e., tanker truck accident releasing toxic gases, etc.). The evacuation area is as determined from the DOT Evacuation Tables for Selected Hazardous Materials, in the DOT Emergency Response Guide for Hazardous Materials.

Should an explosion occur within a specified plant area, an Alert would be declared based on EAL 8.2.2.

PEG Reference:

HU3.1
HU3.2

Basis Reference(s):

None

8.0 Hazards 8.3 Man-Made Events

8.3.3 Alert

Vehicle crash or projectile impact which causes or potentially causes any required safety related system or structure to become inoperable, Table 8.2

Table 8.2 Plant Vital Areas
• Condensate Storage Tank • RWST • Service Water Pump Structure • Service Water Valve Pit East • Fuel Storage Building • Primary Auxiliary Building/Fan House • Vapor Containment Building • 480 Volt Switchgear Room (Control Bldg.) • Cable Spreading Room/Electrical Tunnel • Central Control Room • Diesel Generator Building/Fuel Tank Area • Auxiliary Feedwater Pump Building • Battery Room (Control Bldg. 33'0" ele.) • Central Alarm Station

Mode Applicability:

All

Basis:

This EAL addresses events that may have resulted in a plant vital area being subjected to forces beyond design limits, and thus damage may be assumed to have occurred to plant safety systems. The initial report should not be interpreted as mandating a lengthy damage assessment prior to classification. No attempt is made in this EAL to assess the actual magnitude of the damage.

This EAL addresses such items as plane, helicopter, train, barge, car or truck crash, or impact of projectiles into a plant vital area.

PEG Reference:

HA1.5

Basis Reference(s):

1. Table 3.1, "Vital Areas By Type And Category."

8.0 Hazards 8.3 Man-Made Events

8.3.4 Alert

Report or detection of toxic or flammable gases within a plant area, Table 8.2, in concentrations that will be life threatening to plant personnel or preclude access to equipment (even when using personal protective equipment) necessary for safe plant operation

Table 8.2 Plant Vital Areas
• Condensate Storage Tank • RWST • Service Water Pump Structure • Service Water Valve Pit East • Fuel Storage Building • Primary Auxiliary Building/Fan House • Vapor Containment Building • 480 Volt Switchgear Room (Control Bldg.) • Cable Spreading Room/Electrical Tunnel • Central Control Room • Diesel Generator Building/Fuel Tank Area • Auxiliary Feedwater Pump Building • Battery Room (Control Bldg. 33'0" ele.) • Central Alarm Station

Mode Applicability:

All

Basis:

This EAL is based on gases that have entered a plant structure precluding access to equipment necessary for the safe operation of the plant. This EAL applies to buildings and areas contiguous to plant vital areas or other significant buildings or areas. The intent of this EAL is not to include buildings (i. e., warehouses) or other areas that are not contiguous or immediately adjacent to plant vital areas. It is appropriate that increased monitoring be done to ascertain whether consequential damage has occurred.

PEG Reference:

HA3.1
HA3.2

Basis Reference(s):

None

8.0 Hazards 8.4 Natural Events

8.4.1 Unusual Event

Earthquake felt in plant by any plant operator
AND
Notification received from Unit 3 that an earthquake has been detected on their instrumentation

Mode Applicability:

All

Basis:

Unit 3 seismic instrumentation actuates at 0.01 g.

Damage to some portions of the site may occur but it should not affect ability of safety functions to operate. Methods of detection can be based on instrumentation validated by a reliable source, operator assessment, or indication received from outside agencies. As defined in the EPRI-sponsored "Guidelines for Nuclear Plant Response to an Earthquake", dated October 1989, a "felt earthquake" is:

> "An earthquake of sufficient intensity such that: (a) the inventory ground motion is felt at the nuclear plant site and recognized as an earthquake based on a consensus of Control Room operators on duty at the time, and (b) for plants with operable seismic instrumentation, the seismic switches of the plant are activated. For most plants with seismic instrumentation , the seismic switches are set at an acceleration of about 0.01 g."

PEG Reference:

HU1.1

Basis Reference(s):

1. EPRI document, "Guidelines for Nuclear Plant Response to an Earthquake", dated October 1989
2. Abnormal Operating Instruction 28.0.8

8.0 Hazards 8.4 Natural Events

8.4.2 Unusual Event

Report by plant personnel of tornado within plant Protected Area boundary

Mode Applicability:

All

Basis:

This EAL is based on the assumption that a tornado striking (touching down) within the Protected Area boundary may have potentially damaged plant structures containing functions or systems required for safe shutdown of the plant. If such damage is confirmed visually or by other in-plant indications, the event may be escalated to Alert.

PEG Reference:

HU1.2

Basis Reference(s):

1. NRC Safety Evaluation Report, 11/26/70

8.0 Hazards 8.4 Natural Events

8.4.3 Unusual Event

Assessment by Control Room personnel that a natural event has occurred which impacts plant safety related structures or systems, Table 8.2

Table 8.2 Plant Vital Areas
• Condensate Storage Tank • RWST • Service Water Pump Structure • Service Water Valve Pit East • Fuel Storage Building • Primary Auxiliary Building/Fan House • Vapor Containment Building • 480 Volt Switchgear Room (Control Bldg.) • Cable Spreading Room/Electrical Tunnel • Central Control Room • Diesel Generator Building/Fuel Tank Area • Auxiliary Feedwater Pump Building • Battery Room (Control Bldg. 33'0" ele.) • Central Alarm Station

Mode Applicability:

All

Basis:

This EAL allows for the Control Room to determine that an event has occurred and take appropriate action based on personal assessment as opposed to verification (i. e., an earthquake is felt but does not register on any plant-specific instrumentation, etc.).

PEG Reference:

HU1.3

Basis Reference(s):

None

8.0 Hazards 8.4 Natural Events

8.4.4 Unusual Event

River level ≥ **14.5'** (0MSL)
OR
Service water bay level < **-4.5'** (0MSL)

Mode Applicability:

All

Basis:

This covers high and low river water level conditions that could be precursors of more serious events. River water level > 14.5 ft. corresponds to the maximum anticipated river runup level. Service water Bay level < -4.5 ft. corresponds to the minimum level to support design service water flow rate.

PEG Reference:

HU1.7

Basis Reference(s):

1. FSAR Section 2.5
2. Service Water Design Basis Document Section 1.4.1.1.2

8.0 Hazards 8.4 Natural Events

8.4.5 Alert

Earthquake felt in plant by any plant operator
AND
Notification from Unit 3 that an earthquake of a magnitude ≥ **0.15 g** horizontal or ≥ **0.10 g** vertical has occurred.

Mode Applicability:

All

Basis:

This EAL addresses events that may have resulted in a plant vital area being subjected to forces beyond design limits, and thus damage may be assumed to have occurred to plant safety systems. The initial report should not be interpreted as mandating a lengthy damage assessment prior to classification. No attempt is made in this EAL to assess the actual magnitude of the damage.

This EAL is based on the FSAR design basis operating earthquake of 0.15 g horizontal or 0.10 g vertical. Seismic events of this magnitude can cause damage to plant safety functions.

PEG Reference:

HA1.1

Basis Reference(s):

1. Abnormal Operating Instruction 28.0.8

8.0 Hazards 8.4 Natural Events

8.4.6 Alert

Sustained winds > **100 mph** onsite
OR
Tornado strikes a plant vital area, Table 8.2

Table 8.2 Plant Vital Areas
• Condensate Storage Tank • RWST • Service Water Pump Structure • Service Water Valve Pit East • Fuel Storage Building • Primary Auxiliary Building/Fan House • Vapor Containment Building • 480 Volt Switchgear Room (Control Bldg.) • Cable Spreading Room/Electrical Tunnel • Central Control Room • Diesel Generator Building/Fuel Tank Area • Auxiliary Feedwater Pump Building • Battery Room (Control Bldg. 33'0" ele.) • Central Alarm Station

Mode Applicability:

All

Basis:

This EAL addresses events that may have resulted in a plant vital area being subjected to forces beyond design limits, and thus damage may be assumed to have occurred to plant safety systems. The initial report should not be interpreted as mandating a lengthy damage assessment prior to classification. No attempt is made in this EAL to assess the actual magnitude of the damage.

This EAL is based on the FSAR design basis of 100 mph. Wind loads of this magnitude can cause damage to safety functions.

PEG Reference:

HA1.2

Basis Reference(s):

1. NRC Safety Evaluation Report, 11/26/70

8.0 Hazards

8.4 Natural Events

8.4.7 Alert

Assessment by the Control Room personnel that a natural event has occurred which causes or potentially causes any required safety related system or structure to become inoperable, Table 8.2

Table 8.2 Plant Vital Areas
• Condensate Storage Tank • RWST • Service Water Pump Structure • Service Water Valve Pit East • Fuel Storage Building • Primary Auxiliary Building/Fan House • Vapor Containment Building • 480 Volt Switchgear Room (Control Bldg.) • Cable Spreading Room/Electrical Tunnel • Central Control Room • Diesel Generator Building/Fuel Tank Area • Auxiliary Feedwater Pump Building • Battery Room (Control Bldg. 33'0" ele.) • Central Alarm Station

Mode Applicability:

All

Basis:

This EAL addresses events that may have resulted in a plant vital area being subjected to forces beyond design limits, and thus damage may be assumed to have occurred to plant safety systems. The initial report should not be interpreted as mandating a lengthy damage assessment prior to classification. No attempt is made in this EAL to assess the actual magnitude of the damage.

This EAL specifies areas in which structures containing systems and functions required for safe shutdown of the plant are located.

PEG Reference:

HA1.3

Basis Reference(s):

1. Table 3.1, "Vital Areas By Type And Category

8.0 Hazards 8.4 Natural Events

8.4.8 Alert

River level ≥ 15' (0MSL)
OR
Low service water bay level resulting in a loss of service water flow

Mode Applicability:

All

Basis:

This EAL addresses events that may have resulted in a plant vital area being subjected to levels beyond design limits, and thus damage may be assumed to have occurred to plant safety systems.

This EAL covers high and low lake water level conditions that exceed levels which threaten vital equipment. A river level > 15 ft. corresponds to FSAR defined critical flood level which would threaten vital equipment. Service Water Bay level below that which results in a loss of service water flow would result in a loss of cooling water to numerous vital components.

PEG Reference:

HA1.7

Basis Reference(s):

1. FSAR Section 2.5
2. Service Water Design Basis Document Section 1.4.1.1.2

9.0 OTHER

The EALs defined in categories 1.0 through 8.0 specify the predetermined symptoms or events which are indicative of emergency or potential emergency conditions, and which warrant classification. While these EALs have been developed to address the full spectrum of possible emergency conditions which may warrant classification and subsequent implementation of the Emergency Plan, a provision for classification of emergencies based on operator/management experience and judgment is still necessary. The EALs of this category provide the Senior Watch Supervisor, POM or Emergency Director the latitude to classify emergency conditions consistent with the established classification criteria, based upon their judgment.

9.0 Other

9.1.1 Unusual Event

Any event, as determined by the Senior Watch Supervisor, POM or Emergency Director, that could lead to or has led to a potential degradation of the level of safety of the plant.

Mode Applicability:

All

Basis:

This EAL addresses unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the Emergency Director to fall under the Unusual Event emergency class.

From a broad perspective, one area that may warrant Emergency Director judgment is related to likely or actual breakdown of site specific event mitigating actions. Examples to consider include inadequate emergency response procedures, transient response either unexpected or not understood, failure or unavailability of emergency systems during an accident in excess of that assumed in accident analysis, or insufficient availability of equipment and/or support personnel.

PEG Reference:

HU5.1

Basis Reference(s):

None

9.0 Other

9.1.2 Unusual Event

Any event, as determined by the Senior Watch Supervisor, POM or Emergency Director, that could lead to or has led to a loss or potential loss of containment.

Mode Applicability:

Power operation, hot shutdown

Basis:

This EAL addresses any other factors that are to be used by the Emergency Director in determining whether the containment barrier is lost or potentially lost. In addition, the inability to monitor the barrier should also be incorporated in this EAL as a factor in Emergency Director judgment that the barrier may be considered lost or potentially lost.

PEG Reference:

PC8.1

Basis Reference(s):

None

9.0 Other

9.1.3 Alert

Any event, as determined by the Senior Watch Supervisor, POM or Emergency Director, that could cause or has caused actual substantial degradation of the level of safety of the plant.

Mode Applicability:

All

Basis:

This EAL addresses unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the Emergency Director to fall under the Alert emergency class.

PEG Reference:

HA6.1

Basis Reference(s):

None

9.0 Other

9.1.4 Alert

Any event, as determined by the Senior Watch Supervisor, POM or Emergency Director, that could lead or has led to a loss or potential loss of either fuel clad or RCS barrier.

Mode Applicability:

Power operation, hot shutdown

Basis:

This EAL addresses any other factors that are to be used by the Emergency Director in determining whether the fuel clad or RCS barriers are lost or potentially lost. In addition, the inability to monitor the barriers should also be considered in this EAL as a factor in Emergency Director judgment that the barriers may be considered lost or potentially lost.

PEG Reference:

FC7.1
RCS6.1

Basis Reference(s):

None

9.0 Other

9.1.5 Site Area Emergency

As determined by the Senior Watch Supervisor, POM or Emergency Director, events are in progress which indicate actual or likely failures of plant systems needed to protect the public. Any releases are not expected to result in exposures which exceed EPA PAGs.

Mode Applicability:

All

Basis:

This EAL addresses unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the Emergency Director to fall under the emergency class description for Site Area Emergency.

PEG Reference:

HS3.1

Basis Reference(s):

None

9.0 Other

9.1.6 Site Area Emergency

Any event, as determined by the Senior Watch Supervisor, POM or Emergency Director, that could lead or has led to either:

Loss or potential loss of both fuel clad and RCS barrier
OR
Loss or potential loss of either fuel clad or RCS barrier in conjunction with a loss of containment

Mode Applicability:

Power operation, hot shutdown

Basis:

This EAL addresses unanticipated conditions affecting fission product barriers which are not addressed explicitly elsewhere. Declaration of an emergency is warranted because conditions exist which are believed by the Emergency Director to fall under the emergency class description for Site Area Emergency.

PEG Reference:

FC7.1
RCS6.1
PC8.1

Basis Reference(s):

None

9.0 Other

9.1.7 General Emergency

As determined by the Senior Watch Supervisor, POM or Emergency Director, events are in progress which indicate actual or imminent core damage and the potential for a large release of radioactive material in excess of EPA PAGs outside the site boundary.

Mode Applicability:

All

Basis:

This EAL addresses unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the Emergency Director to fall under the General Emergency class.

Releases can reasonably be expected to exceed EPA PAG plume exposure levels outside the site boundary.

PEG Reference:

HG2.1

Basis Reference(s):

None

9.0 Other

9.1.8 General Emergency

Any event, as determined by the Senior Watch Supervisor, POM or Emergency Director, that could lead or has led to a loss of any two fission product barriers and loss or potential loss of the third.

Mode Applicability:

Power operation, hot shutdown

Basis:

This EAL addresses unanticipated conditions affecting fission product barriers which are not addressed explicitly elsewhere. Declaration of an emergency is warranted because conditions exist which are believed by the Emergency Director to fall under the emergency class description for the General Emergency class.

PEG Reference:

FC7.1
RCS6.1
PC8.1

Basis Reference(s):

None

ATTACHMENT A

WORD LIST/DEFINITIONS

Actuate

To put into operation; to move to action; commonly used to refer to automated, multi-faceted operations. "Actuate ECCS".

Adversary

As applied to security EALs, an armed or suspected to be armed intruder whose intent is to commit sabotage, disrupt Station operations or otherwise commit a crime on station property.

Alert

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

Available

The state or condition of being ready and able to be used (placed into operation) to accomplish the stated (or implied) action or function. As applied to a system, this requires the operability of necessary support systems (electrical power supplies, cooling water, lubrication, etc.).

Can/Cannot be determined (</>)

The current value or status of an identified parameter relative to that specified can/cannot be ascertained using all available indications (direct and indirect, singly or in combination).

Can/Cannot be maintained above/below (</>)

The value of the identified parameter(s) is/is not able to be kept above /below specified limits. This determination includes making an evaluation that considers both current and future system performance in relation to the current value and trend of the parameter(s). Neither implies that the parameter must actually exceed the limit before the action is taken nor that the action must be taken before the limit is reached.

Can/Cannot be restored above/below (</>)

The value of the identified parameter(s) is/is not able to be returned to above/below specified limits after having passed those limits. This determination includes making an evaluation that considers both current and future systems performances in relation to the current value and trend of the parameter(s). Does not imply any specific time interval but does not permit prolonged operation beyond a limit without taking the specified action.

As applied to loss of electrical power sources (ex.: Power cannot be restored to any vital bus in ≤ **4 hrs**) the specified power source cannot be returned to service within the specified time. This determination includes making an evaluation that considers both current and future restoration capabilities. Implies that the declaration should be made as soon as the determination is made that the power source cannot be restored within the specified time.

Close

To position a valve or damper so as to prevent flow of the process fluid.

To make an electrical connection to supply power.

Confirm / Confirmation

To validate, through visual observation or physical inspection, that an assumed condition is as expected or required, without taking action to alter the "as found" configuration.

Control

Take action, as necessary, to maintain the value of a specified parameter within applicable limits; to fix or adjust the time, amount, or rate of; to regulate or restrict.

Decrease

To become progressively less in size, amount, number, or intensity.

Discharge

Removal of a fluid/gas from a volume or system.

Enter

To go into.

Establish

To perform actions necessary to meet a stated condition. "Establish communication with the Control Room."

Evacuate

To remove the contents of; to remove personnel from an area.

Exceeds

To go or be beyond a stated or implied limit, measure, or degree.

Exist

To have being with respect to understood limitations or conditions.

Failure

A state of inability to perform a normal function.

General Emergency

Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

If

Logic term which indicates that taking the action prescribed is contingent upon the current existence of the stated condition(s). If the identified conditions do not exist, the prescribed action is not to be taken and execution of operator actions must proceed promptly in accordance with subsequent instructions.

Increase

To become progressively greater in size, amount, number or intensity.

Indicate

To point out or point to; to display the value of a process variable; to be a sign or symbol.

Initiate

The act of placing equipment or a system into service, either manually or automatically. Activation of a function or protective feature (i.e. initiate a manual trip).

Injection

The act of forcing a fluid into a volume or vessel.

Inoperable

Not able to perform it's intended function

Intrusion

The act of entering without authorization

Loss

Failure of operability or lack of access to.

Maintain

Take action, as necessary, to keep the value of the specified parameter within the applicable limits.

Monitor

Observe and evaluate at a frequency sufficient to remain apprised of the value, trend, and rate of change of the specified parameter.

Notify

To give notice of or report the occurrence of; to make known to; to inform specified personnel; to advise; to communicate; to contact; to relay.

Open

To position a valve or damper so as to allow flow of the process fluid.

To break an electrical connection which removes a power supply from an electrical device.

To make available for entry or passage by turning back, removing, or clearing away.

Operable

Able to perform it's intended function

Perform

To carry out an action; to accomplish; to affect; to reach an objective.

Primary System

The pipes, valves, and other equipment which connect directly to the reactor vessel or reactor coolant system such that a reduction in reactor coolant system pressure will effect a decrease in the steam or water being discharged through an unisolated break in the system.

Remove

To change the location or position of.

Report

To describe as being in a specific state.

Require

To demand as necessary or essential.

Restore

Take the appropriate action requires to return the value of an identified parameter to within applicable limits.

Rise

Describes an increase in a parameter as the result of an operator or automatic action.

Sample

To perform an analysis on a specified media to determine its properties.

Shut down

To perform operations necessary to cause equipment to cease or suspend operation; to stop. "Shut down unnecessary equipment."

Site Area Emergency

Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels except near the site boundary.

Sustained

Prolonged. Not intermittent or of transitory nature

Trip

To de-energize a pump or fan motor; to position a breaker so as to interrupt or prevent the flow of current in the associated circuit; to manually activate a semi-automatic feature.

To take action to cause shutdown of the reactor by rapidly inserting a control rod or control rods (PWR).

Uncontrolled

An evolution lacking control but is not the result of operator action.

Unplanned

Not as an expected result of deliberate action.

Until

Indicates that the associated prescribed action is to proceed only so long as the identified condition does not exist.

Unusual Event

Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

Valid

Supported or corroborated on a sound basis.

Vent

To open an effluent (exhaust) flowpath from an enclosed volume; to reduce pressure in an enclosed volume.

Verify

To confirm a condition and take action to establish that condition if required. "Verify reactor trip, verify SI pumps running."

Indian Point 2 Emergency Action Levels

Category 1.0	CSFST Status
Category 2.0	Reactor Fuel
Category 3.0	Reactor Coolant System
Category 4.0	Containment
Category 5.0	Radioactivity Release
Category 6.0	Electrical Failures
Category 7.0	Equipment Failures
Category 8.0	Hazards
Category 9.0	Other

6/20/94

1.0 CSFST Status

1.1 Subcriticality

1.1.1 Alert

Either:
ORANGE path F-0.1 SUBCRITICALITY
AND
Emergency boration is required
OR
RED path F-0.1 SUBCRITICALITY
AND
Emergency boration is required

Power Operations, Hot Shutdown

1.1.2 Site Area Emergency

RED path in F-0.1 SUBCRITICALITY
AND either:
Emergency boration is inoperable
OR
Power range not < 5% within 15 min. of initiation of emergency boration

Power Operations, Hot Shutdown

1.1.3 General Emergency

RED path in F-0.1, SUBCRITICALITY
AND
Emergency boration is required
AND
RED path in F-0.3, HEAT SINK
AND
Heat sink is required

Power Operations

1.0 CSFST Status

1.2 Core Cooling

1.2.1 Site Area Emergency

ORANGE or RED path in F-0.2, CORE COOLING

Power Operations, Hot Shutdown

1.2.2 General Emergency

RED path in F-0.2, CORE COOLING
AND
Functional restoration actions taken and procedures not effective within 15 min.

Power Operations, Hot Shutdown

1.0 CSFST Status

1.3 Heat Sink

1.3.1 Site Area Emergency

RED path in F-0.3, HEAT SINK
AND
Heat sink is required

Power Operations, Hot Shutdown

1.3.2 General Emergency

RED path in F-0.3, HEAT SINK
AND
Heat sink is required
AND
RED path in F-0.1, SUBCRITICALITY
AND
Emergency boration is required

Power Operations

1.0 CSFST Status

1.4 Integrity

1.4.1 Alert

RED path on F-0.4, INTEGRITY

Power Operations, Hot Shutdown

1.0 CSFST Status

1.5 Containment

1.5.1 General Emergency

RED path F-0.5, CONTAINMENT resulting from loss of coolant

Power Operations, Hot Shutdown

2.0 Reactor Fuel

2.1 Coolant Activity

2.1.1 Unusual Event

Coolant sample activity ≥ **60/(E bar) μCi/cc**

All

2.1.2 Alert

Coolant activity > **300 μCi/cc** I-131 equivalent

Power operation, hot shutdown

2.0 Reactor Fuel

2.2 Containment Radiation

2.2.1 Alert

Rapid rise on R-41 or R-42 with coolant sample activity ≥ **60/(E bar) μCi/cc** and increasing RCS leakage

Power operation, hot shutdown

2.2.2 Site Area Emergency

Containment radiation monitor R-25 or R-26 > **17 R/hr**

Power operation, hot shutdown

2.2.3 General Emergency

Containment radiation monitor R-25 or R-26 > **68 R/hr**

Power operation, hot shutdown

2.0 Reactor Fuel

2.3 Refueling Accidents or Other Radiation Monitors

2.3.1 Unusual Event

Spent fuel pool (reactor cavity during refueling) water level cannot be restored and maintained above the Technical Specification minimum water level

All

2.3.2 Alert

Confirmed sustained alarm on any of the following radiation monitors resulting from fuel damage caused by an uncontrolled fuel handling process:

- R-2/R-7 Vapor Containment Area Monitors
- R-5 Fuel Storage Building Area Monitor
- R-25/26 Vapor Containment High Radiation Area Monitors

All

2.3.3 Alert

Report of visual observation of irradiated fuel uncovered

All

3.0 Reactor Coolant System

3.1 RCS Leakage

3.1.1 Unusual Event

Unidentified or pressure boundary leakage **> 10 gpm**
OR
Identified leakage **> 25 gpm**

Power operation, hot shutdown

3.1.2 Alert

Primary system leakage exceeding capacity **(> 75 gpm)** of a single charging pump

Power operation, hot shutdown

3.1.3 Site Area Emergency

RVLIS cannot be maintained > **39%** with no RCPs running
OR
With the reactor vessel head removed, it is reported that water level in the reactor vessel is dropping in an uncontrolled manner and core uncovery is likely

Power operation, hot shutdown, cold shutdown, refuel

3.0 Reactor Coolant System

3.2 Primary to Secondary Leakage

3.2.1 Unusual Event

Unisolable release of secondary side to atmosphere from the affected steam generator(s) with primary to secondary leakage **> 0.3 gpm** in any steam generator

Power operation, hot shutdown

3.2.2 Site Area Emergency

Unisolable release of secondary side to atmosphere from the affected steam generator(s) with primary to secondary leakage exceeding capacity **(> 75 gpm)** of a single charging pump

Power operation, hot shutdown

3.2.3 Site Area Emergency

Unisolable release of secondary side to atmosphere from the affected steam generator(s) with primary to secondary leakage **> 0.3 gpm** in any steam generator
AND
Coolant activity **> 300 µCi/cc** of I-131

Power operation, hot shutdown

3.0 Reactor Coolant System

3.3 RCS Subcooling

3.3.1 Alert

RCS subcooling < SI initiation setpoint due to RCS leakage

Power operation, hot shutdown

4.0 Containment

4.1 Containment Integrity Status

4.1.1 Unusual Event

Both doors open on a VC airlock for > 4 hrs.
OR
Inability to close containment pressure relief or purge valves which results in a radiological release pathway to the environment for > 4 hrs.

Power operation, hot shutdown

4.1.2 Site Area Emergency

Rapid uncontrolled decrease in containment pressure following initial increase due to RCS failure
OR
Loss of primary coolant inside containment with containment pressure or sump level response not consistent with LOCA conditions

Power operation, hot shutdown

4.0 Containment

4.1 Containment Integrity Status

4.1.3 Site Area Emergency

Either:
Any Phase "A" or Phase "B" or containment ventilation isolation valve(s) not closed when required following confirmed LOCA
OR
Inability to isolate any primary system discharging outside containment
AND
Radiological release to the environment exists as a result

Power operation, hot shutdown

4.1.4 General Emergency

Confirmed phase "B" isolation signal with less than minimum containment cooling safeguards equipment operating, Table 4.3
AND
Any indicators of fuel clad loss, Table 4.1

Power operation, hot shutdown

4.0 Containment

4.1 Containment Integrity Status

4.1.5 General Emergency

Either:
Rapid uncontrolled decrease in containment pressure following initial increase due to RCS failure
OR
Loss of primary coolant inside containment with containment pressure or sump level response not consistent with LOCA conditions
AND
Any indicators of fuel clad damage, Table 4.2

Power operation, hot shutdown

4.1.6 General Emergency

Either:
Any Phase "A" or Phase "B" or containment ventilation isolation valve(s) not closed when required following confirmed LOCA
OR
Inability to isolate any primary system discharging outside containment
AND
Radiological release to the environment exists as a result
AND
Any indicators of fuel clad damage, Table 4.2

Power operation, hot shutdown

4.0 Containment

4.2 SG Tube Rupture w/ Secondary Release

4.2.1 Site Area Emergency

Unisolated faulted (outside VC) ruptured steam generator

Power operation, hot shutdown

4.2.2 General Emergency

Unisolated faulted (outside VC) ruptured steam generator
AND
Any indicators of fuel clad damage, Table 4.2

Power operation, hot shutdown

4.0 Containment

4.3 Combustible Gas Concentrations

4.3.1 General Emergency

≥ 4% hydrogen concentration in containment

Power operation, hot shutdown

Table 4.1 Fuel Clad Loss Indicators
1. Coolant activity > 300 µCi/cc of I-131 2. Containment radiation monitor R-25/R-26 reading >17 R/hr

Table 4.2 Fuel Clad Damage Indicators
1. ORANGE or RED path in F-0.2, CORE COOLING 2. RED path in F-0.3, HEAT SINK AND Heat sink is required 3. Coolant activity > 300 µCi/cc of I-131 4. Containment radiation monitor R-25/R-26 reading >17 R/hr

Table 4.3 Minimum Containment Cooling Safeguards Equipment	
Fan Cooler Units Operating	Spray Pumps Required
< 3	2
3	1
5	0

5.0 Radioactivity Release / Area Radiation

5.1 Effluent Monitors

5.1.1 Unusual Event

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

All

5.1.2 Alert

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

All

5.1.3 Site Area Emergency

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

All

5.1.4 General Emergency

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

All

5.0 Radioactivity Release / Area Radiation

5.2 Dose Projections/ Environmental Measurements/ Release Rates

5.2.1 Unusual Event

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

All

5.2.2 Alert

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

All

5.2.3 Alert

Dose projections or field surveys which indicate doses / dose rates > Table 5.2 column "Alert" at the site boundary or beyond.

All

5.0 Radioactivity Release / Area Radiation

5.2 Dose Projections/ Environmental Measurements/ Release Rates

5.2.4 Site Area Emergency

Dose projections or field surveys which indicate doses / dose rates > Table 5.2 column "SAE" at the site boundary or beyond.

All

5.2.5 General Emergency

Dose projections or field surveys which indicate doses / dose rates > Table 5.2 column "GE" at the site boundary or beyond.

All

5.0 Radioactivity Release / Area Radiation

5.3 Area Radiation Levels

5.3.1 Unusual Event

Any sustained direct ARM readings **> 100 x alarm** or offscale hi resulting from an uncontrolled process

All

5.3.2 Alert

Sustained area radiation levels **> 15 mR/hr** in either:
Control Room
OR
Central Alarm Station and Secondary Alarm Station

All

5.3.3 Alert

Sustained abnormal area radiation levels **> 8 R/hr** within any areas, Table 5.3
AND
Access is required for safe operation or shutdown

All

Table 5.1 Effluent Monitor Classification Thresholds				
Monitor	GE	SAE	Alert	UE
R-27	53 µCi/cc	5.3 µCi/cc	5.3E-1 µCi/cc	2.3E-3 µCi/cc
R-44	53 µCi/cc	5.3 µCi/cc	5.3E-1 µCi/cc	2.3E-3 µCi/cc
R-54	N/A	N/A	2.5E-1 µCi/cc	2.5E-3 µCi/cc
R-49	N/A	N/A	2.7E-2 µCi/cc	2.7E-4 µCi/cc

Table 5.2 Dose Projection / Env. Measurement Classification Thresholds			
	GE	SAE	Alert
TEDE	1000 mR	100 mR	10 mR
CDE Thyroid	5000 mR	500 mR	N/A
TEDE rate	1000 mR/hr	100 mR/hr	10 mR/hr
CDE Thyroid rate	5000 mR/hr	500 mR/hr	N/A

Table 5.3 Plant Areas
• Condensate Storage Tank • RWST • Service Water Pump Structure • Service Water Valve Pit East • Fuel Storage Building • Primary Auxiliary Building/Fan House • 480 Volt Switchgear Room (Control Building) • Cable Spreading Room/Electrical Tunnel • Diesel Generator Building/Fuel Tank Area • Auxiliary Feedwater Pump Building • Battery Room (Control Building 33' 0" ele.)

6.0 Electrical Failures

6.1 Loss of AC Power Sources

6.1.1 Unusual Event

None of the following sources of offsite power available for > 15 min.:

- Unit Auxiliary transformer
- Station Auxiliary transformer
- 13.8 KV gas turbine transformer

All

6.1.2 Alert

Loss of AC power to all 480 volt busses (5A, 2A/3A, 6A) for > 15 min.
AND
Inability to power required core cooling systems with alternate power sources for > 15 min.

Cold Shutdown, Refueling

6.0 Electrical Failures

6.1 Loss of AC Power Sources

6.1.3 Alert

Available emergency bus AC power sources reduced to only one of the following for > 15 min.:

- 480V EDG 21
- 480V EDG 22
- 480V EDG 23
- Unit Auxiliary transformer
- Station Auxiliary transformer
- 13.8 KV gas turbine transformer

Power operation, hot shutdown

6.1.4 Site Area Emergency

Loss of AC power to all 480 volt busses (5A, 2A/3A, 6A) for > 15 min.
AND
Inability to power required core cooling systems with alternate power sources for > 15 min.

Power operation, hot shutdown

6.0 Electrical Failures

6.1 Loss of AC Power Sources

6.1.5 General Emergency

Loss of all emergency bus AC power
AND either:
Power cannot be restored to required core cooling systems in ≤ 1 hr
OR
ORANGE or RED path on F-0.2, "CORE COOLING"

Power operation, hot shutdown

6.0 Electrical Failures

6.2 Loss of DC Power Sources

6.2.1 Unusual Event

< 105 vdc bus voltage indications for > 15 min. on the switchable voltmeter for all of the following panels:

- 21
- 22
- 23
- 24

Cold Shutdown, Refueling

6.2.2 Site Area Emergency

< 105 vdc bus voltage indications for > 15 min. on the switchable voltmeter for all of the following panels:

- 21
- 22
- 23
- 24

Power operation, hot shutdown

7.0 Equipment Failures

7.1 Technical Specification\Requirements

7.1.1 Unusual Event

Plant is not brought to required operating mode within Technical Specifications LCO Action Statement Time.

Power operation, hot shutdown

7.0 Equipment Failures

7.2 System Failures or Control Room Evacuation

7.2.1 Unusual Event

Report of main turbine failure requiring turbine trip resulting in:
Damage to turbine generator seals
OR
Casing penetration

Power Operations

7.2.2 Alert

Turbine failure generated missiles which causes or potentially causes any required safety related system or structure to become inoperable

Power Operations, Hot Shutdown

7.2.3 Alert

Control Room evacuation

All

7.0 Equipment Failures

7.2 System Failures or Control Room Evacuation

7.2.4 Alert

Reactor coolant temperature cannot be maintained < 200 °F

Cold Shutdown, Refueling

7.2.5 Site Area Emergency

Control Room evacuation
AND
Core cooling cannot be established per AOI 27.1.9, "Control Room Inaccessibility/Safe Shutdown" in ≤ 15 min.

All

7.0 Equipment Failures

7.3 Loss of Indications /Alarms / Communication Capability

7.3.1 Unusual Event

Unplanned loss of most (approx. 75%) annunciators or indications on Control Room Panels for > 15 min.
AND
Increased surveillance is required for safe plant operation

Power operation, hot shutdown

7.3.2 Unusual Event

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

All

7.0 Equipment Failures

7.3 Loss of Indications /Alarms / Communication Capability

7.3.3 Alert

Unplanned loss of most (approx. 75%) annunciators or indications on Control Room Panels for > 15 min.
AND
Increased surveillance is required for safe plant operation
AND either:
A plant transient in progress
OR
PROTEUS and SAS are unavailable

Power operation, hot shutdown

7.3.4 Site Area Emergency

Loss of most (approx. 75%) annunciators or indications on Control Room Panels
AND
Complete loss of ability to monitor all critical safety function status
AND
A plant transient in progress

Power operation, hot shutdown

8.0 Hazards

8.1 Security Threats

8.1.1 Unusual Event

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

All

8.1.2 Alert

Intrusion into plant Protected Area by an adversary.

All

8.1.3 Site Area Emergency

Intrusion into a plant security vital area by an adversary.

All

8.1.4 General Emergency

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

All

8.0 Hazards

8.2 Fire or Explosion

8.2.1 Unusual Event

Confirmed fire in any plant area, Table 8.2 not extinguished in ≤ 15 min. of Control Room notification.

All

8.2.2 Unusual Event

Report by plant personnel of an explosion within Protected Area boundary which impacts plant safety related systems or structures.

All

8.2.3 Alert

Fire or explosion in any plant area, Table 8.2 which causes or potentially causes any required safety related system or structure to become inoperable

All

8.0 Hazards

8.3 Man-Made Events

8.3.1 Unusual Event

Vehicle crash into or projectile which impacts plant safety related structures or systems within Protected Area boundary

All

8.3.2 Unusual Event

Report or detection of toxic or flammable gases that could enter or have entered within the Protected Area boundary in amounts that could affect the health of plant personnel or safe plant operation
OR
Report by local, county or state officials, or Unit 3, for potential evacuation of site personnel based on offsite event

All

8.3.3 Alert

Vehicle crash or projectile impact which causes or potentially causes any required safety related system or structure to become inoperable, Table 8.2

All

8.0 Hazards

8.3 Man-Made Events

8.3.4 Alert

Report or detection of toxic or flammable gases within a plant area, Table 8.2, in concentrations that will be life threatening to plant personnel or preclude access to equipment (even when using personal protective equipment) needed for safe plant operation

All

8.0 Hazards

8.4 Natural Events

8.4.1 Unusual Event

Earthquake felt in plant by any plant operator
AND
Notification received from Unit 3 that an earthquake has been detected on their instrumentation

All

8.4.2 Unusual Event

Report by plant personnel of tornado within plant Protected Area boundary

All

8.4.3 Unusual Event

Assessment by Control Room personnel that a natural event has occurred which impacts plant safety related structures or systems, Table 8.2

All

8.0 Hazards

8.4 Natural Events

8.4.4 Unusual Event

River level ≥ **14.5'** (0MSL)
OR
Service water bay level < **-4.5'** (0MSL)

All

8.4.5 Alert

Earthquake felt in plant by any plant operator
AND
Notification from Unit 3 that an earthquake of a magnitude ≥ **0.15 g** horizontal or ≥ **0.10 g** vertical has occurred.

All

8.4.6 Alert

Sustained winds > **100 mph** onsite
OR
Tornado strikes a plant vital area, Table 8.2

All

8.0 Hazards

8.4 Natural Events

8.4.7 Alert

Assessment by the Control Room personnel that a natural event has occurred which causes or potentially causes any required safety related system or structure to become inoperable, Table 8.2

All

8.4.8 Alert

River level ≥ 15' (0MSL)
OR
Low service water bay level resulting in a loss of service water flow

All

Table 8.2 Plant Vital Areas
• Condensate Storage Tank • RWST • Service Water Pump Structure • Service Water Valve Pit East • Fuel Storage Building • Primary Auxiliary Building/Fan House • Vapor Containment Building • 480 Volt Switchgear Room (Control Bldg.) • Cable Spreading Room/Electrical Tunnel • Central Control Room • Diesel Generator Building/Fuel Tank Area • Auxiliary Feedwater Pump Building • Battery Room (Control Bldg. 33'0" ele) • Central Alarm Station

9.0 Other

9.1.1 Unusual Event

Any event, as determined by the Senior Watch Supervisor, POM or Emergency Director, that could lead to or has led to a potential degradation of the level of safety of the plant.

All

9.1.2 Unusual Event

Any event, as determined by the Senior Watch Supervisor, POM or Emergency Director, that could lead to or has led to a loss or potential loss of containment.

Power operation, hot shutdown

9.1.3 Alert

Any event, as determined by the Senior Watch Supervisor, POM or Emergency Director, that could cause or has caused actual substantial degradation of the level of safety of the plant.

All

9.0 Other

9.1.4 Alert

Any event, as determined by the Senior Watch Supervisor, POM or Emergency Director, that could lead or has led to a loss or potential loss of either fuel clad or RCS barrier.

Power operation, hot shutdown

9.1.5 Site Area Emergency

As determined by the Senior Watch Supervisor, POM or Emergency Director, events are in progress which indicate actual or likely failures of plant systems needed to protect the public. Any releases are not expected to result in exposures which exceed EPA PAGs.

All

9.1.6 Site Area Emergency

Any event, as determined by the Senior Watch Supervisor, POM or Emergency Director, that could lead or has led to either:

Loss or potential loss of both fuel clad and RCS barrier

OR

Loss or potential loss of either fuel clad or RCS barrier in conjunction with a loss of containment

Power operation, hot shutdown

9.0 Other

9.1.7 General Emergency

As determined by the Senior Watch Supervisor, POM or Emergency Director, events are in progress which indicate actual or imminent core damage and the potential for a large release of radioactive material in excess of EPA PAGs outside the site boundary.

All

9.1.8 General Emergency

Any event, as determined by the Senior Watch Supervisor, POM or Emergency Director, that could lead or has led to a loss of any two fission product barriers and loss or potential loss of the third.

Power operation, hot shutdown