Florida Power
CORPORATION
Crystal River Unit 3
Docket No. 50-302
Operating License No. DPR-72

August 31, 1999
3F0899-23

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: Adoption of NEI 97-03 Draft Final Revision 3, October 1998 (formerly NUMARC/NESP-007) "Methodology for Development of Emergency Action Levels" (TAC No. MA1706)

References: (1) FPC to NRC Letter 3F0798-20 dated July 29, 1998, "Adoption of NUMARC/NESP-007, Revision 2, "Methodology for Development of Emergency Action Levels"

(2) FPC to NRC Letter 3F0799-22 dated July 13, 1999, "Adoption of NEI 97-03 Draft Final Revision 3, October 1998 (formerly NUMARC/NESP-007) "Methodology for Development of Emergency Action Levels" (TAC No. MA1706)

Dear Sir:

The purpose of this letter is to provide additional information in response to several NRC staff questions needed to complete the NRC staff's review of Florida Power Corporation's (FPC) request to adopt a revised emergency action level (EAL) classification methodology for Crystal River Nuclear Unit 3 (CR-3). These questions were related to changes made by FPC to proposed EALs and their basis documents as reflected in FPC's letter dated July 13, 1999 (Reference 2). The NRC staff's questions requiring response are provided as Attachment D to this letter and reflect the discussions held between FPC personnel and members of the NRC staff during a conference call conducted on August 26, 1999.

Attachments A through C of this letter are updated and resubmitted with this letter to aid in the completion of NRC staff's review. Revisions are shown with a bar in the right hand margin. Attachment A, "Classification of Postulated Conditions," is organized into five sections: Abnormal Radiation Levels/Radiological Effluent; Natural/Man-Made Hazards and Emergency Coordinator (EC) Judgment; System Malfunction; Loss of Power; and Fission Product Barrier Matrix. Attachment B, "Crystal River Unit 3 Emergency Action Level Basis Document," addresses site-specific information, values, and equipment descriptions, cross-references the initiating conditions described in the NEI document, and also provides a list of definitions. Attachment C, "Deviations from NEI 97-03" provides a matrix containing a description and explanation of the deviations between proposed CR-3 EAL's and industry guidelines reflected in NEI 97-03, Draft Final Revision 3.

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As stated in Reference 1, when the EAL changes are approved by the NRC, FPC will obtain formal concurrence of the CR-3 site emergency classification system from the State of Florida and affected counties prior to implementation. In accordance with administrative procedures, an implementation plan will be developed to support this and other associated actions.

No new regulatory commitments are established by this letter.

If you have any questions regarding this submittal, please contact Mr. John D. Stephenson, Manager, Radiological Emergency Planning at (352) 563-4522.

Sincerely,

S L Bernhoft

S.L. Bernhoft,
Director, Nuclear Regulatory Affairs

SLB/twc

Attachments

xc: Regional Administrator, Region II
Senior Resident Inspector
NRR Project Manager
Chief, Emergency Preparedness and Radiation Protection Branch (w/o Attachments)

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

DOCKET NUMBER 50-302/LICENSE NUMBER DPR-72

ATTACHMENT A TO LETTER 3F0899-23

CLASSIFICATION OF POSTULATED CONDITIONS

ACCIDENT CONDITION:

ABNORMAL RAD LEVELS/RADIOLOGICAL EFFLUENT

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
Gaseous Effluents MODES: ALL	1.1 (1 or 2) 1. A valid reading on RM-A1 or RM-A2 gas channel exceeds the Unusual Event threshold value listed on the Radioactive Release Permit for 60 minutes or longer OR 2. Sample analysis confirms gaseous effluent being released exceeds 2 times the ODCM noble gas release setpoint for 60 minutes or longer	1.2 (1 or 2) 1. A valid reading on the Mid-Range of RM-A1 or RM-A2 exceeds the Alert threshold value listed on the Radioactive Release Permit for 15 minutes or longer OR 2. Sample analysis confirms gaseous effluent being released exceeds 200 times the ODCM noble gas release setpoint for 15 minutes or longer	1.3 (1 or 2 or 3) 1. Valid RM-A1 or RM-A2 Mid-Range monitor reading exceeds the values on the following Table for the current Stability Class for 15 minutes or longer: Stab. Class / Reading (mR/hr) A, B or C / 80 D or E / 20 F or G / 5 OR 2. Dose Assessment results indicate site boundary dose >100 mR TEDE or >500 mR Thyroid CDE for the actual or projected duration of the release OR 3. Field survey results indicate closed windows dose rates >100mR/hr expected to continue for more than one hour; or analyses of field survey samples indicate thyroid CDE of 500mR for one hour of inhalation, at or beyond site boundary	1.4 (1 or 2 or 3) 1. Valid RM-A1 or RM-A2 Mid-Range monitor reading exceeds the values on the Table below for the current Stability Class for 15 minutes or longer: Stab. Class / Reading (mR/hr) A, B or C / 800 D or E / 200 F or G / 50 OR 2. Dose Assessment results indicate site boundary dose >1000 mR TEDE or >5000 mR Thyroid CDE for the actual or projected duration of the release AND core damage is suspected or has occurred OR 3. Field survey results indicate closed windows dose rates >1000mR/hr expected to continue for more than one hour; or analyses of field survey samples indicate thyroid CDE of 5000mR for one hour of inhalation, at or beyond site boundary
Liquid Effluents MODES: ALL	1.5 (1 or 2) 1. A valid reading on RM-L2, RM-L7, or sample analysis confirms the release exceeds 2 times the ODCM release setpoint for 60 minutes or longer OR 2. Release continued for 60 minutes or longer with no dilution flow	1.6 A valid reading on RM-L2, RM-L7, or sample analysis confirms the release exceeds 200 times the ODCM release setpont for 15 minutes or longer	*Not Applicable*	*Not Applicable*

ACCIDENT CONDITION:

ABNORMAL RAD LEVELS/RADIOLOGICAL EFFLUENT

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
Unexpected Radiation Levels MODES: ALL	1.7 One or more valid radiation monitor readings unexpectedly exceed the values below for 15 minutes or longer: RM-G3 = 400 mR/hr RM-G4 = 600 mR/hr RM-G5 = 3000 mR/hr RM-G9 = 100 mR/hr RM-G10 = 800 mR/hr RMG-14 = 1000 mR/hr RM-G17 = 800 mR/hr	1.8 (1 or 2) 1. Valid radiation reading greater then 15 mR/hr for 15 minutes or longer in the Control Room (RM-G1) or the Central Alarm Station (CAS) OR 2. Valid area radiation monitor reading unexpectedly exceed one or more of the values below for 15 minutes or longer: RM-G3 = 5,000 mR/hr RM-G4 = 5,000 mR/hr RM-G9 = 5,000 mR/hr RM-G10 = 5,000 mR/hr RM-G17 = 5,000 mR/hr	*Refer to Fission Product Barrier Matrix, Gaseous Effluents, or Emergency Coordinator Judgment*	*Refer to Fission Product Barrier Matrix, Gaseous Effluents, or Emergency Coordinator Judgment*
Fuel Handling/Fuel Handling Pool Water Level MODES: ALL	1.9 (1 and 2) 1. (a or b) a. Uncontrolled level decrease resulting in indications of -2.5 feet in spent fuel pool OR b. Plant personnel report water level drop in spent fuel pool or transfer canal AND 2. Fuel remains covered with water	1.10 (1 or 2) 1. (a and b) a. Plant personnel report damage of irradiated fuel AND b. Valid high alarm as indicated on RM-G15 or RM-G16 OR 2. Plant personnel report spent fuel pool or transfer canal water level drop has or will exceed makeup capacity such that irradiated fuel will be uncovered	*Refer to Gaseous Effluents or Emergency Coordinator Judgment*	*Refer to Gaseous Effluents or Emergency Coordinator Judgment*

ACCIDENT CONDITION

NATURAL/MAN-MADE HAZARDS AND EC JUDGMENT

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
Earthquake Experienced MODES: ALL	2.1 (1 and 2) 1. Ground motion sensed by plant personnel AND 2. Confirmed earthquake causing Annunciator C-3-14 "Seismic System Trouble" alarm	2.2 (1 and 2) 1. Ground motion sensed by plant personnel or confirmed Annunciator C-3-14 "Seismic System Trouble" alarm AND 2. (a or b) a. Analysis confirms the earthquake at >0.05g OR b. Indications show degraded safe shutdown equipment performance due to the earthquake	*Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment*	*Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment*
Flood MODES: ALL	2.3 Intake canal level or visual observation indicates flood water level ≥98 feet	2.4 (1 and 2) 1. Intake canal level or visual observation indicates flood water level ≥ 98 feet AND 2. Indications show degraded safe shutdown equipment performance due to the flooding	*Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment*	*Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment*
Hurricane MODES: ALL	2.5 The plant is within a Hurricane Warning area	*Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment*	*Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment*	*Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment*

ACCIDENT CONDITION:

NATURAL/MAN-MADE HAZARDS AND EC JUDGMENT

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
Tornado/High Winds MODES: ALL	2.6 Report by plant personnel of a Tornado striking within the Protected Area	2.7 **(1 and 2)** 1. Tornado or High Winds or windborne object strike one of the following structures: - Auxiliary Building, - BWST, - Control Complex, - Diesel Generator Building, - EFT-2 Building, - Intermediate Building, or - Reactor Building **AND** 2. **(a or b)** **a.** Confirmed report of significant visible damage to buildings listed above **OR** **b.** Indications show degraded safe shutdown equipment performance due to the tornado or high winds	*Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment*	*Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment*
Aircraft/Vehicle Crash MODES: ALL	2.8 Report by plant personnel of Aircraft or Vehicle Crash involving the following permanent structures within the Protected Area: - Auxiliary Building, - BWST, - Control Complex, - Diesel Generator Building, - EFT-2 Building, - Intermediate Building, or - Reactor Building	2.9 **(1 and 2)** 1. Confirmed report of significant visible damage to buildings listed below: - Auxiliary Building, - BWST, - Control Complex, - Diesel Generator Building, - EFT-2 Building, - Intermediate Building, or - Reactor Building **AND** 2. Indications show degraded safe shutdown equipment performance due to the Aircraft or Vehicle Crash	*Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment*	*Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment*

ACCIDENT CONDITION:

NATURAL/MAN-MADE HAZARDS AND EC JUDGMENT

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
Toxic or Flammable Gas MODES: ALL	2.10 (1 or 2) 1. Report or detection of Toxic or Flammable Gas within the site boundary that could enter the Protected Area in amounts that can affect normal operation of the plant OR 2. Confirmed notification by FPC, County, or State personnel to evacuate or shelter site personnel based on an offsite event	2.11 (1 or 2 or 3) 1. Flammable Gas levels > 25% Lower Explosive Limit OR 2. Toxic Gas levels ≥ IDLH levels in areas that require continuous occupancy to maintain safe operation or establish or maintain cold shutdown OR 3. Toxic Gas levels ≥ IDLH levels within the Protected Area such that plant personnel are unable to perform actions necessary to maintain safe operations or establish and maintain cold shutdown using personal protective equipment	*Refer to Fission Product Barrier Matrix, System Malfunction, or Emergency Coordinator Judgment*	*Refer to Fission Product Barrier Matrix, System Malfunction, or Emergency Coordinator Judgment*

ACCIDENT CONDITION:

NATURAL/MAN-MADE HAZARDS AND EC JUDGMENT

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
Explosions/ Catastrophic Pressurized Equipment Failure MODES: ALL	2.12 Report by plant personnel of visible damage to permanent structures or equipment within the Protected Area due to an explosion or catastrophic failure of pressurized equipment *Refer to Security*	2.13 (1 and 2) 1. Explosion or catastrophic failure of pressurized equipment in any of the following structures: - Auxiliary Building, - BWST, - Control Complex, - Diesel Generator Building, - EFT-2 Building, - Intermediate Building, or - Reactor Building AND 2. (a or b) a. Report by plant personnel of explosion or catastrophic failure of pressurized equipment causing visible damage to Safe Shutdown equipment OR b. Indications show degraded safe shutdown equipment performance due to the Explosion or pressurized equipment failure	*Refer to Fission Product Barrier Matrix, System Malfunction, or Emergency Coordinator Judgment*	*Refer to Fission Product Barrier Matrix, System Malfunction, or Emergency Coordinator Judgment*
Fire MODES: ALL	2.14 (1 and 2) 1. Fire in or threatening one of the following structures: - Auxiliary Building, - BWST, - Control Complex, - Diesel Generator Building, - EFT-2 Building, - Intermediate Building, or - Reactor Building AND 2. Fire not extinguished within 15 minutes from Control Room notification or receipt of a verified Control Room fire alarm	2.15 (1 or 2) 1. Report by plant personnel of visible damage to Safe Shutdown equipment due to the Fire OR 2. Indications show degraded safe shutdown equipment performance due to the Fire	*Refer to Fission Product Barrier Matrix, Control Room Evacuation, System Malfunctions, or Emergency Coordinator Judgment*	*Refer to Fission Product Barrier Matrix, Control Room Evacuation, System Malfunctions, or Emergency Coordinator Judgment*

ACCIDENT CONDITION:

NATURAL/MAN-MADE HAZARDS AND EC JUDGMENT

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
Control Room Evacuation MODES: ALL	*Not Applicable*	2.16 Control Room evacuation is required per AP-990, "Shutdown Outside of the Control Room"	2.17 **(1 and 2)** 1. Control Room evacuation is required per AP-990, "Shutdown Outside of the Control Room" **AND** 2. Control of the necessary equipment not established per AP-990 within 15 minutes	*Refer to Fission Product Barrier Matrix, System Malfunction, or Emergency Coordinator Judgment*
Security Event MODES: ALL	2.18 **(a or b or c)** Report by Security Shift Supervisor of one or more of the following events: a. Occurrence of Sabotage/Intrusion **OR** b. Hostage/Extortion situation or hostile strike action threatening to interrupt plant operations **OR** c. A violent Civil Disturbance ongoing outside of the Protected Area but within the Owner Controlled Area (site boundary)	2.19 **(1 or 2)** 1. Discovery of bomb within the Protected Area **OR** 2. Intruder(s) penetrates the Protected Area	2.20 Intruder(s) penetrates or a bomb is discovered in any of the areas listed below: - Auxiliary Building, - BWST, - Control Complex, - EFT-2 Building, - Diesel Generator Building, - Intermediate Building, - Reactor Building	2.21 Intruder(s) has taken control of the Control Room, or Remote Shutdown Room or plant equipment such that plant personnel are unable to operate equipment required to establish and maintain safe shutdown conditions

ACCIDENT CONDITION:

NATURAL/MAN-MADE HAZARDS AND EC JUDGMENT

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
Internal Flooding Modes: ALL	2.22 (1 and 2) 1. Indication of uncontrolled flooding in the Auxiliary Building or Intermediate Building AND 2. Water level/flooding has the potential to affect or immerse Safe Shutdown equipment	2.23 (1 and 2) 1. Water level exceeds 1.5 feet in the Auxiliary Building or Intermediate Building AND 2. (a or b) a. Indications show degraded safe shutdown equipment due to the flooding OR b. Electrical hazards prevent plant personnel normal access to areas of plant containing safe shutdown equipment	*Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment*	*Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment*
Emergency Coordinator Judgment MODES: ALL	2.24 Other conditions exist which indicate a potential degradation of the level of safety of the plant	2.25 Other conditions exist which indicate that events are in process or have occurred which involve potential or actual substantial degradation of the level of safety of the plant	2.26 Other conditions exist which indicate actual or likely major failures of plant functions needed for the protection of the public	2.27 (1 or 2) Other conditions exist which indicate: 1. Actual or imminent substantial core degradation with potential loss of containment integrity OR 2. The potential for uncontrolled radionuclide releases that can be expected to exceed EPA Protective Action Guidelines Plume Exposure Levels beyond the site boundary (see EAL 1.4)

ACCIDENT CONDITION:

SYSTEM MALFUNCTION

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
Loss of Communication MODES: ALL	3.1 (1 or 2) 1. Loss of all the following in plant communications capability: a. FPC Internal Telephone System **AND** b. PAX **AND** c. Portable UHF Radios **OR** 2. Loss of all of the following Offsite Communication capability: a. FPC Telephone System **AND** b. State Hot Ringdown (SHRD) **AND** c. All FTS 2000 NRC phones (ENS, HPN, etc.) **AND** d. State-Wide Emergency Satellite Communication (ESATCOM) System **AND** e. Control Room Cellular Phone	*Not Applicable*	*Not Applicable*	*Not Applicable*
Failure of Reactor Protection MODES: 1,2,3 for ALERT MODES: 1,2 for SITE AREA and GENERAL Emergencies	*Not Applicable*	3.2 **(1 and 2)** 1. RPS Trip setpoint exceeded and no Reactor trip occurred **AND** 2. Manual Reactor trip from Control Room was successful and reactor is shutdown	3.3 **(1 and 2)** 1. RPS Trip setpoint exceeded and no Reactor trip occurred **AND** 2. Manual Reactor trip from Control Room was not successful in shutting down the reactor	3.4 **(1 and 2)** **1. (a and b)** **a.** RPS Trip setpoint exceeded and no Reactor Trip occurred **AND** **b.** Manual Reactor trip from Control Room was not successful in shutting down the reactor **AND** **2. (a or b)** **a.** Core exit thermocouple temperatures > 700°F, as indicated on SPDS. **OR** **b.** Adequate Secondary Cooling not available

ACCIDENT CONDITION:

SYSTEM MALFUNCTION

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
Inability to reach required mode within Improved Technical Specification time limits MODES: 1,2,3,4	3.5 (1 and 2) 1. Entry into an Improved Technical Specification LCO statement requiring a mode reduction AND 2. The plant is not in the required operating mode within the time prescribed by the LCO required action	*Not Applicable*	*Not Applicable*	*Not Applicable*
Loss of Indications MODES: 1,2,3,4	3.6 (1 or 2) 1. Unplanned loss of Annunciator panels A-G and Annunciator printer for 15 minutes or longer OR 2. Unplanned loss of NNI-X and NNI-Y for 15 minutes or longer	3.7 (1 and 2) 1. (a or b) a. Unplanned loss of Annunciator panels A-G and Annunciator printer for 15 minutes or longer OR b. Unplanned loss of NNI-X and NNI-Y for 15 minutes or longer AND 2. (a or b) a. Significant Transient in progress OR b. Loss of Plant Computer and SPDS	3.8 (1 and 2 and 3 and 4) 1. (a or b) a. Loss of Annunciator panels A-G and Annunciator printer for 15 minutes or longer OR b. Unplanned loss of NNI-X and NNI-Y for 15 minutes or longer AND 2. Significant transient in progress AND 3. Loss of Plant Computer and SPDS AND 4. Inability to directly monitor any one of the following: Subcriticality Core Cooling Containment RCS Inventory	*Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment*

ACCIDENT CONDITION:

SYSTEM MALFUNCTION

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
Fuel Clad Degradation MODES: ALL	3.9 (a or b) Radiochemistry analysis indicates: a. Dose Equivalent Iodine (I-131) >1.0 µCi/gm for 48 hours or longer OR b. Specific activity >100/E-bar for 48 hours or longer	*Refer to Fission Product Barrier Matrix*	*Refer to Fission Product Barrier Matrix*	*Refer to Fission Product Barrier Matrix*
Turbine Failure MODES: 1,2,3	3.10 Report by plant personnel of penetration of the turbine casing or damage to main generator seals	3.11 (1 or 2) 1. Report by plant personnel of projectiles causing significant visible damage any of the following structures: - Auxiliary Building, - BWST, - Control Complex, - Diesel Generator Building, - EFT-2 Building, - Intermediate Building, or - Reactor Building OR 2. Indications show degraded safe shutdown equipment performance due to turbine generated projectiles	*Refer to Fission Product Barrier Matrix*	*Refer to Fission Product Barrier Matrix*

ACCIDENT CONDITION:

SYSTEM MALFUNCTION

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
RCS Leakage MODES: 1,2,3,4	3.12 (1 or 2) 1. Unidentified Leakage or Pressure Boundary Leakage ≥ 10 gpm OR 2. Identified leakage ≥ 25 gpm	*Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment*	*Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment*	*Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment*
Loss of Function (Hot Shutdown) MODES: 1,2,3,4	*Not Applicable*	*Not Applicable*	3.13 (1 and 2) 1. Complete loss of Main, Emergency, and Auxiliary Feedwater and unable to establish HPI cooling AND 2. Loss of subcooling margin	*Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment*
Inadvertent Criticality MODES: 2,3,4,5,6	3.14 An extended or unplanned sustained positive startup rate monitored by nuclear instrumentation	*Not Applicable*	*Not Applicable*	*Not Applicable*
Inability to Maintain Plant in Cold Shutdown MODES: 5,6	*Not Applicable*	*3.15* (1 or 2) 1. Inability to maintain reactor coolant temperature below 200°F OR 2. Uncontrolled reactor coolant temperature approaching 200°F	*Not Applicable*	*Not Applicable*

ACCIDENT CONDITION:

SYSTEM MALFUNCTION

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
Loss of Water Level in Reactor Vessel that Has Uncovered or Will Uncover Fuel MODES: 5,6	*Not Applicable*	*Not Applicable*	3.16 (1 and 2) 1. Loss of decay heat removal per AP-404 AND 2. (a or b) a. Incores indicating superheated conditions OR b. Incores unavailable and time to uncovery exceeded as specified in OP-301	*Not Applicable*

ACCIDENT CONDITION:

LOSS OF POWER

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
Loss of AC Power MODES: ALL for UNUSUAL EVENT MODES: 1,2,3,4 for ALERT, SITE AREA and GENERAL Emergencies	4.1 (1 and 2) 1. OPT and BEST and Auxiliary Transformer not available for 15 minutes or longer AND 2. EDGs supplying power to required 4160V ES Busses	4.2 AC power capability to the ES 4160V busses reduced to a single power source for 15 minutes or longer such that only one of the following is available: - "A" EGDG - "B" EGDG - Offsite Power Transformer(OPT) - Backup ES Transformer (BEST) - Aux Transformer	4.3 Neither 4160 ES bus is capable of being energized within 15 minutes	4.4 (1 and 2) 1. Neither 4160 ES bus is capable of being energized AND 2. (a or b) a. Restoration of 4160V ES Bus A or 4160V ES Bus B is not likely within 4 hours OR b. Core exit thermocouples > 700°F as indicated on SPDS
Loss of AC Power (Shutdown) MODES: 5,6, No Mode (defueled)	*Not Applicable*	4.5 Neither 4160 ES bus is capable of being energized within 15 minutes	*Refer to Fission Product Barrier Matrix*	*Refer to Fission Product Barrier Matrix*
Loss of Vital DC Power MODES: 1,2,3,4	*Not Applicable*	*Not Applicable*	4.6 Standby Power Status Lights for BUS A1, A2, and BUS B1, B2 on the Main Control Board (SSF Panel) are out for 15 minutes or longer	*Refer to Fission Product Barrier Matrix*
Loss of Vital DC Power (Shutdown) MODES: 5,6	4.7 Standby Power Status Lights for BUS A1, A2, and BUS B1, B2 on the Main Control Board (SSF Panel) are out for 15 minutes or longer	*Not Applicable*	*Refer to Fission Product Barrier Matrix*	*Refer to Fission Product Barrier Matrix*

FISSION PRODUCT BARRIER MATRIX

BARRIER LOSS (APPLICABLE MODES: 1-4)
COMPLETE FOR ALL BARRIERS, CHECK ANY APPLICABLE SYMPTOMS

FUEL CLAD LOSS FACTOR		RCS LOSS FACTOR		CONTAINMENT LOSS FACTOR	
1. CORE CONDITIONS IN REGION 3 OR SEVERE ACCIDENT REGION OF ICC CURVES		1. RCS LEAK RESULTING IN LOSS OF ADEQUATE SUBCOOLING MARGIN		1. RAPID UNEXPLAINED RB PRESSURE DECREASE FOLLOWING INITIAL INCREASE	
2. RCS ACTIVITY >300 µCi/gm I-131		2. OTSG TUBE LEAK RESULTS IN LOSS OF ADEQUATE SUBCOOLING MARGIN		2. CONTAINMENT PRESSURE OR SUMP LEVEL RESPONSE NOT CONSISTENT WITH LOCA CONDITIONS	
3. RM-G29 OR 30 >100 R/hr FOR 15 MINUTES OR LONGER		3. RM-G29 OR 30 > 10 R/hr FOR 15 MINUTES OR LONGER		3. AN OTSG HAS TUBE LEAK PER EOP-06, SGTR AND AN UNISOLABLE STEAM LEAK OUTSIDE RB ~~PER EOP-06, SGTR~~	
4. EC DEEMS FUEL CLAD BARRIER IS LOST		4. EC DEEMS RCS BARRIER IS LOST		4. CONTAINMENT ISOLATION IS INCOMPLETE AND RELEASE PATH TO THE ENVIRONMENT EXISTS	
				5. EC DEEMS CONTAINMENT BARRIER IS LOST	
IF ANY ITEM IS CHECKED, BARRIER IS LOST, ENTER 4 FOR FUEL CLAD FACTOR IN EAL TABLE BELOW		**IF ANY ITEM IS CHECKED, BARRIER IS LOST ENTER 4 FOR RCS FACTOR IN EAL TABLE BELOW**		**IF ANY ITEM IS CHECKED, BARRIER IS LOST ENTER 2 FOR CONT FACTOR IN EAL TABLE BELOW**	

POTENTIAL BARRIER LOSS (APPLICABLE MODES: 1-4)
COMPLETE FOR ANY BARRIER NOT DEEMED LOST ABOVE, CHECK ANY APPLICABLE SYMPTOMS

FUEL CLAD POTENTIAL LOSS FACTOR		RCS POTENTIAL LOSS FACTOR		CONTAINMENT POTENTIAL LOSS FACTOR	
1. RCS CONDITIONS WARRANT ENTRY INTO EOP-07		1. RCS LEAK REQUIRING ONE OR MORE INJECTION VALVES		1. RB PRESSURE >54 psig	
2. CORE EXIT THERMOCOUPLES >700°F		2. OTSG TUBE LEAK REQUIRING ONE OR MORE INJECTION VALVES		2. RB HYDROGEN CONCENTRATION >4%	
3. EC DEEMS FUEL CLAD BARRIER IN JEOPARDY		3. RCS LEAK RESULTS IN ES ACTUATION ON LOW RCS PRESSURE		3. RB PRESSURE >30 psig WITH NO BUILDING SPRAY AVAILABLE	
		4. OTSG TUBE LEAK RESULTS IN ES ACTUATION ON LOW RCS PRESSURE		4. RMG-29 OR 30 READINGS >25,000 R/hr	
		5. RCS PRESSURE/TEMPERATURE RELATIONSHIP VIOLATES NDT LIMITS		5. CORE CONDITIONS IN SEVERE ACCIDENT REGION OF ICC CURVES FOR >15 MINUTES	
		6. EC DEEMS RCS BARRIER IN JEOPARDY		6. EC DEEMS CONTAINMENT BARRIER IN JEOPARDY	
IF ANY ITEM IS CHECKED, BARRIER IS POTENTIALLY LOST , ENTER 3 FOR FUEL CLAD FACTOR IN EAL TABLE BELOW		**IF ANY ITEM IS CHECKED, BARRIER IS POTENTIALLY LOST, ENTER 3 FOR RCS FACTOR IN EAL TABLE BELOW**		**IF ANY ITEM IS CHECKED, BARRIER IS POTENTIALLY LOST , ENTER 1.5 FOR CONT FACTOR IN EAL TABLE BELOW**	

EAL TABLE

ENTER LOSS FACTOR OR POTENTIAL LOSS FACTOR OR ZERO FOR EACH BARRIER THEN TOTAL AND DETERMINE CLASS BELOW

FUEL CLAD FACTOR _____ + RCS FACTOR _____ + CONTAINMENT FACTOR _____ = _____

IF TOTAL IS:	RECOMMENDED EVENT CLASSIFICATION IS:	
0	NO CLASSIFICATION	
> 0 BUT ≤ 2	UNUSUAL EVENT	
> 2 BUT ≤ 4	ALERT	
> 4 BUT ≤ 8.5	SITE AREA EMERGENCY	
> 8.5	GENERAL EMERGENCY	