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FROM: NUCLEAR RECORDS DOCUMENT CONTROL CENTER (NUCSA-2)

THE FOLLOWING CHANGES HAVE OCCURRED TO THE HARDCOPY OR ELECTRONIC MANUAL ASSIGNED TO YOU:

137 - 137 TSC NRC COMMUNICATOR

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CATEGORY: PROCEDURES TYPE: EP

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1045



EMERGENCY PLAN POSITION SPECIFIC PROCEDURE



PROCEDURE COVER SHEET

PPL SUSQUEHANNA, LLC		NUCLEAR DEPARTMENT PROCEDURE	
<p>TSC NRC COMMUNICATOR Emergency Plan Position Specific Instruction</p>			<p>EP-PS-137 Revision 0 Page 1 of 3</p>
<p>QUALITY CLASSIFICATION: () QA Program (X) Non-QA Program</p>		<p>APPROVAL CLASSIFICATION: () Plant () Non-Plant (X) Instruction</p>	
<p>EFFECTIVE DATE: <u>6-26-2003</u></p> <p>PERIODIC REVIEW FREQUENCY: <u>Two Years</u></p> <p>PERIODIC REVIEW DUE DATE: <u>6-26-2005</u></p>			
<p>RECOMMENDED REVIEWS:</p>			
<p>Procedure Owner: <u>Nuclear Emergency Planning</u></p> <p>Responsible Supervisor: <u>Manager-Nuclear Operations</u></p> <p>Responsible FUM: <u>Supv.-Nuclear Emergency Planning</u></p> <p>Responsible Approver: <u>VP-Nuclear Operations</u></p>			

TECHNICAL SUPPORT CENTER (TSC) COMMUNICATOR: Emergency Plan-Position
Specific Procedure

WHEN: Technical Support Center (TSC) is activated

HOW NOTIFIED: Paged, 24 hours/day

REPORT TO: Operations Coordinator

WHERE TO REPORT: TSC

OVERALL DUTY:

Summarize and transmit information about the emergency, until the EOF takes over communications. After EOF takeover, maintain the ENS hotline to answer NRC questions about the plant, and serve as technical advisor to the Operations Coordinator.

<u>MAJOR TASKS:</u>	<u>TAB:</u>	<u>REVISION:</u>
Perform required offsite notifications for event upgrade until the arrival of the TSC E-Plan Communicator.	TAB A	0
Obtain information on the nature and status of the event and provide detailed information to the NRC on a continuing basis.	TAB B	0
Make sure functions that are in progress during shift relief are turned over smoothly.	TAB C	0

SUPPORTING INFORMATION:

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o Protective Action Recommendation Form	
o Emergency Notification Report	
Notification Matrix - TSC Communicator	TAB 8
VHF Radio Instructions for Backup Communications	TAB 9
NRC Required Information	TAB 10

REFERENCES:

SSES Emergency Plan

NUREG-0654, Planning Standards and Evaluation Criteria

NUREG-0731, Guidelines for Utility Management Structure and Technical Resources,
September 1980

NUREG-0696, Functional Criteria for Emergency Response Facilities

Distribution Department Instruction I-505, SSES Sirens: Tests, Maintenance and
Repairs

IE Notice 82-15
IE Notice 85-62
IE Notice 85-80

IE Notice 86-28
IE Notice 86-97
IE Notice 87-58

MAJOR TASK:

Perform required offsite notifications for event upgrade until the arrival of the TSC E-Plan Communicator.

SPECIFIC TASKS:

HOW:

NOTE:

Only the TSC NRC Communicator is required for TSC activation. The TSC E-Plan Communicator is required within 60 minutes.

1. If the TSC is activated and an event upgrade is made, perform ENR notifications to Offsite Agencies until the arrival of the TSC E-Plan Communicator.

- 1a. Refer to EP-PS-127 to perform the offsite agency notifications.

MAJOR TASK:

Obtain information on the nature and status of the event and provide detailed information to the NRC on a continuing basis.

SPECIFIC TASKS:

HOW:

1. Obtain information required for NRC notification.

- 1a. Obtain a copy of the NRC requested information form from the Control Room NRC Communicator.
- 1b. Update the form from the Control Room NRC Communicator as necessary.

-HELP

NRC REQUESTED INFORMATION
See TAB 10

2. Initiate communication with the NRC via ENS phone line.

NOTE:

Once this communication is initiated expect to remain on the line until relieved by another TSC NRC Communicator.

NOTE:

The NRC communications function is not turned over to the EOF. It remains with the TSC.

- 2a. Communicate information obtained from Tab 10 to the NRC.
- 2b. Remain on the line with the NRC and respond to any questions or requests for additional information.

NOTE:

It is permissible to leave the phone for short periods but the line should remain open.

SPECIFIC TASKS:

HOW:

3. Provide continuous updates to NRC via ENS phone line.

- 3a. Provide updated information on the following:

- (1) Classification Upgrades
- (2) Protective Action Recommendations
- (3) Status of Release in Progress
- (4) Updated Information from "NRC Requested Information" Tab 10

MAJOR TASK:

Make sure functions that are in progress during shift relief are turned over smoothly.

SPECIFIC TASKS:

HOW:

1. Remain at your duty station with full responsibility until properly relieved.
2. Brief the relieving Communicator on the status of both the emergency and shift turnover.
 - 2a. Make sure the relieving Communicator is fully briefed on all pertinent emergency information and data.
 - (1) Current status of plant
 - (2) Emergency classification
 - (3) Big Picture
 - (4) Status of notifications
3. Leave a contact telephone number with the TSC Administrative Coordinator.

EMERGENCY TELEPHONE INSTRUCTIONS

DEFINITIONS:

1. **Electric Tandem Network (ETN):** The telephone system installed in all PPL Incorporated facilities, utilizing local network access codes, location numbers and attendant numbers. (Reference Electronic Tandem Network Telephone Directory).

Example: 8-321-6202

8 (represents the Network Access Code)

321 (represents the Location Number for Wilkes-Barre)

6202 (represents the Attendant Number)

2. **Centrex Telephone Network (CTN):** The telephone system installed in all Nuclear Emergency Response Facilities to provide an alternate communications system with additional capabilities, (e.g. three digit conference calling, four digit calling to other Emergency Response Facilities without using a Network Access Code or three digit Location Code).

INSTRUCTIONS:

1. The **location codes** for calling **within the PPL system** to Emergency Response Facilities are:

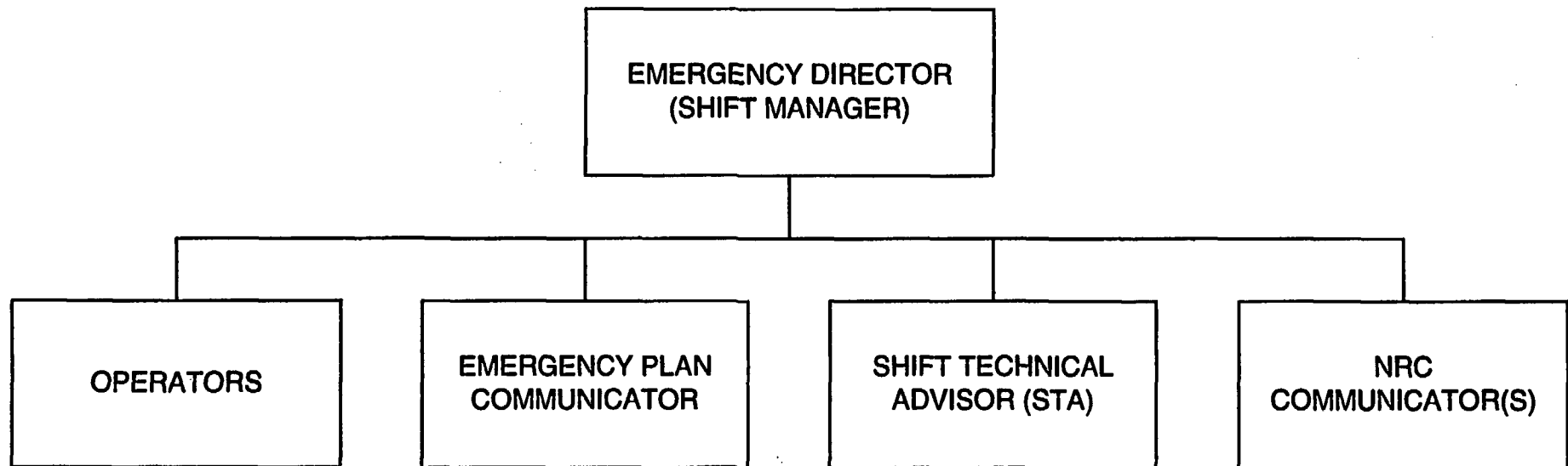
- * 254 - Control Room, Operations Support Center, Technical Support Center, and SSES Security.
- * 321 - Emergency Operations Facility and Media Operations Center.
- * 220 - General Office Support Personnel.
- * 353 - To access Centrex Telephone Network extensions from the Electronic Tandem Network system.

Note: When calling one CTN telephone to another CTN telephone anywhere in the system, no location code is required. Just dial the four-digit CTN extension number. (Reference the Emergency Telephone Directory located in all the Emergency Response Facilities.)

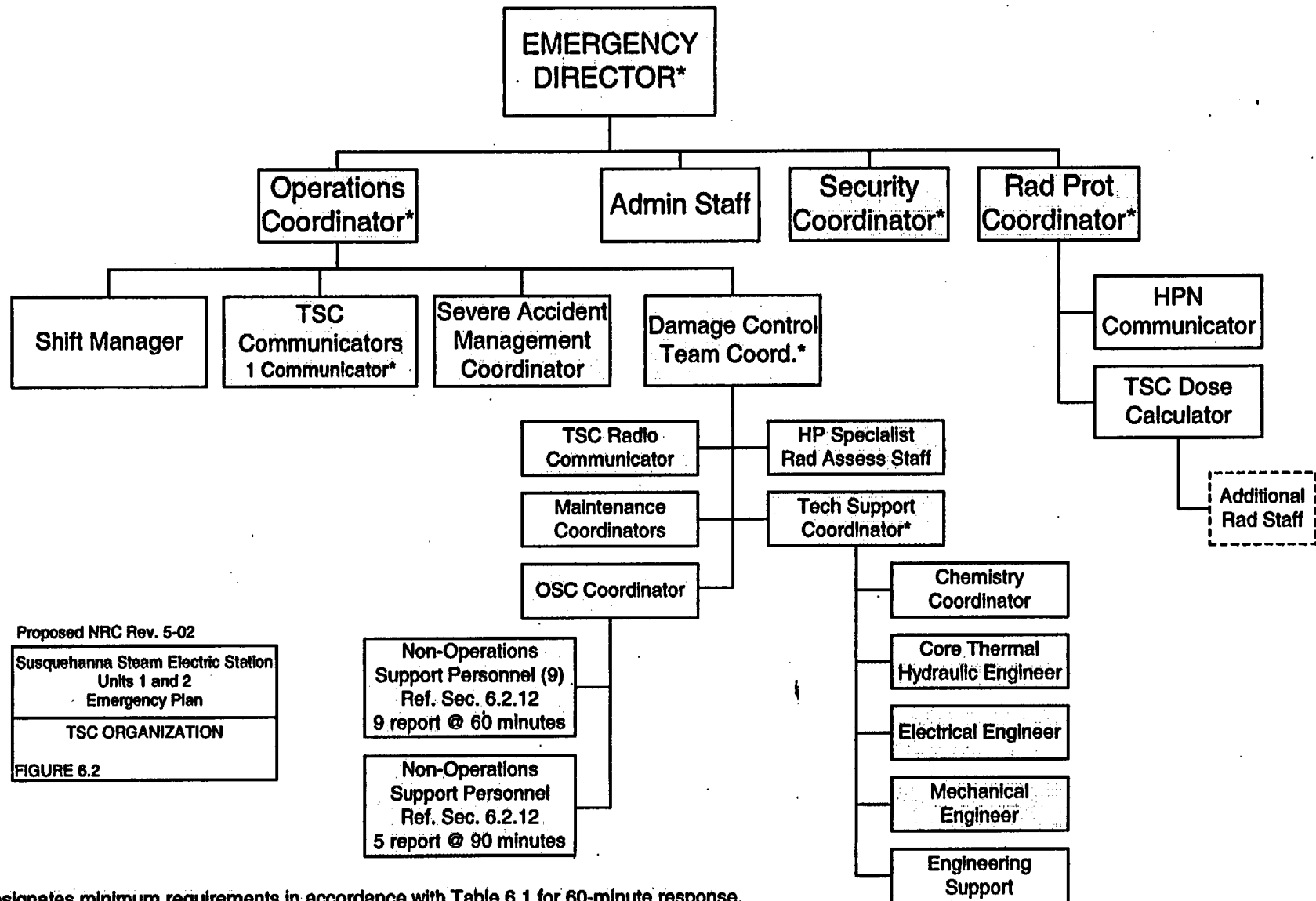
2. The Location Codes when calling from outside telephone lines into the system are:

- * 542 - Control Room, Operations Support Center, Technical Support Center and SSES Security.
- * 831 - Emergency Operations Facility and Media Operations Center.
- * 774 - General Office Support Personnel.
- * 759 - To access the CTN System from an outside telephone line.

EMERGENCY ORGANIZATION CONTROL ROOM



TSC ORGANIZATION

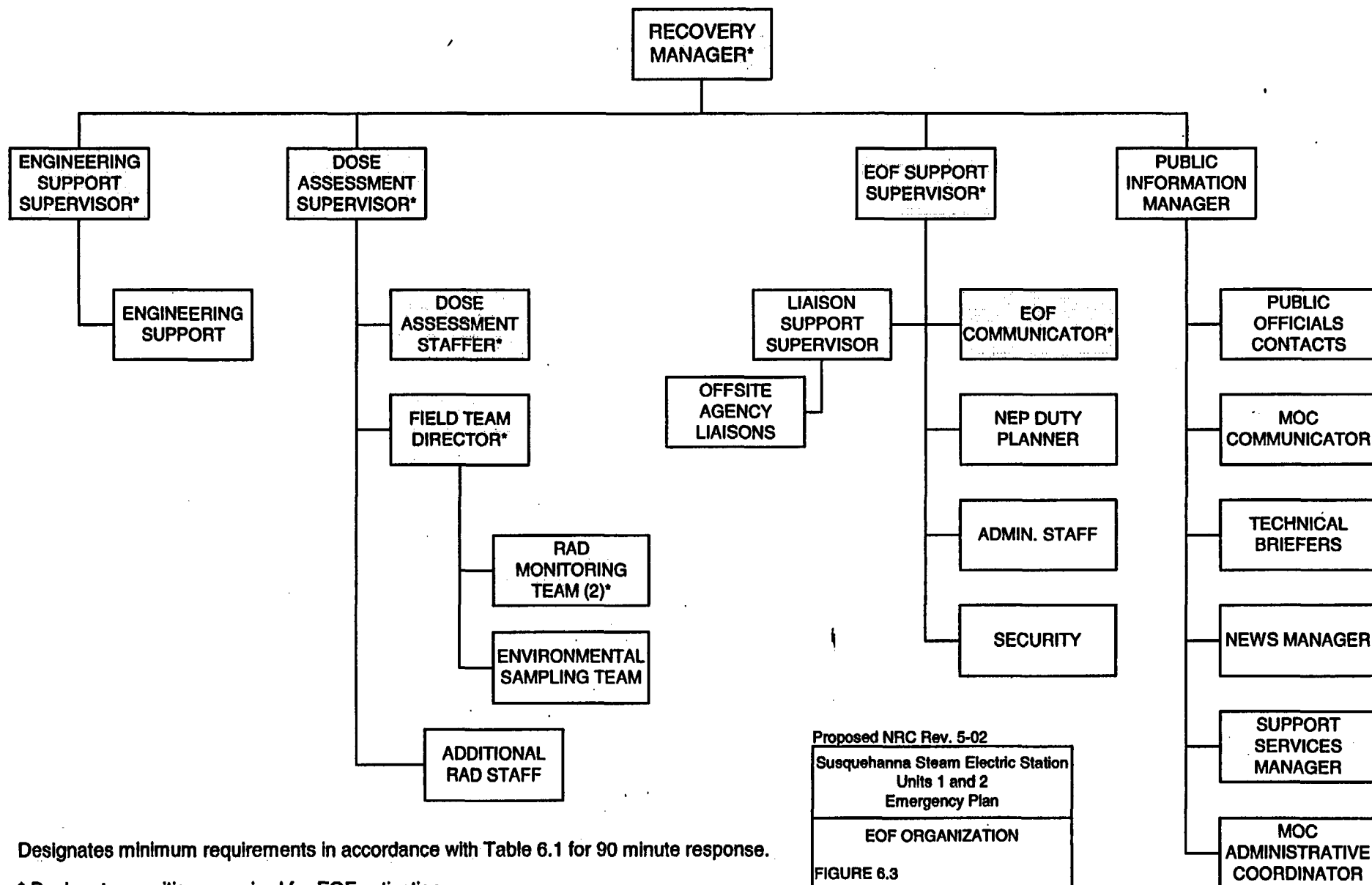


Designates minimum requirements in accordance with Table 6.1 for 60-minute response.

----- Individuals may be located in the OSC, TSC, or Field.

* Designates positions required for TSC activation.

EOF ORGANIZATION



Designates minimum requirements in accordance with Table 6.1 for 90 minute response.

* Designates positions required for EOF activation.

LOGKEEPING

Logs are chronological records of events and decisions used to reconstruct an event. To create a log that is useful, accurate, and legal, follow these instructions:

1. Make entries in black ink.
2. Correct mistakes by crossing them out with a single line, followed by your initials and the date you made the correction.
3. Begin each entry with the military time (Example: 0600 for 6:00 a.m., 1800 for 6:00 p.m.).
4. List changes, events, decisions, and/or conditions chronologically.
5. Explain any action that results from a decision-making process, when appropriate. If possible, answer these questions:
 - a. Who acted or made the decision?
 - b. What did they do or decide?
 - c. Why did they do or decide what they did?

Example: John Jones, Recovery Manager, recommends evacuation to Mr. Smith of
PA DEP/BRP because Iodine concentrations rose above
_____.

EMERGENCY CLASSIFICATION

CHECK ☒

1.0 TIMING OF CLASSIFICATION

☐ 1.1 UNUSUAL EVENT

An **UNUSUAL EVENT** shall be declared within 15 minutes of having information necessary to make a declaration.

☐ 1.2 ALERT

An **ALERT** shall be declared within 15 minutes of having information necessary to make a declaration.

☐ 1.3 SITE AREA EMERGENCY

A **SITE AREA EMERGENCY** shall be declared within 15 minutes of having information necessary to make a declaration.

☐ 1.4 GENERAL EMERGENCY

A **GENERAL EMERGENCY** shall be declared within 15 minutes of having information necessary to make a declaration.

CLASSIFICATION OF EMERGENCY CONDITIONS

USE OF EMERGENCY CLASSIFICATION MATRIX

**NOTE: CONFIRM THAT INDICATORS AND/OR ALARMS REFLECT
ACTUAL CONDITIONS PRIOR TO TAKING ACTION BASED ON THE
INDICATOR OR ALARM.**

The matrix is worded in a manner that assumes parameter values indicated are the actual conditions present in the plant.

The matrix is designed to make it possible to precisely classify an abnormal occurrence into the proper emergency classification based on detailed Emergency Action Level (EAL) descriptions. It is impossible to anticipate every abnormal occurrence. Therefore, before classifying any abnormal occurrence based on the EALs in the matrix, one should verify that the general conditions prevalent in-plant and offsite meet the general class description of the emergency classification. In addition, prior to classification, one should be aware of the ramifications in-plant and particularly offsite of that classification. Special consideration of offsite consequences should be made prior to declaring a **GENERAL EMERGENCY**.

CLASS DESCRIPTIONS

- UNUSUAL EVENT** - Events that are occurring 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.
- ALERT** - Events that are occurring 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.
- SITE AREA EMERGENCY** - Events that are occurring or have occurred which involve actual or imminent major failures of plant functions needed for protection of the public. Any releases are not expected to exceed EPA Protective Action Guideline exposure levels except inside the emergency planning boundary.
- GENERAL EMERGENCY** - Events that are occurring or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Expectation is that releases will exceed EPA Protective Action Guideline exposure levels beyond the emergency planning boundary.

CATEGORY INDEX TO THE MATRIX FOR THE CLASSIFICATION OF EMERGENCY CONDITIONS TABLE OF CONTENTS

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1 - AIRCRAFT/TRAIN ACTIVITY

UNUSUAL EVENT

- EAL# 1.1** Aircraft crash or train derailment onsite as indicated by:
- Visual observation or notification received by control room operator.

ALERT

- EAL# 1.2** Aircraft or missile strikes a station structure as indicated by:
- Direct observation or notification received by control room operator.

SITE AREA EMERGENCY

- EAL# 1.3** Severe damage to safe shutdown equipment from aircraft crash or missile impact when not in cold shutdown, determined by:
- (A and B and C)
- A. Direct observation or notification received by control room operator.
- and
- B. Shift Supervisor evaluation.
- and
- C. Reactor Coolant temperature greater than 200°F as indicated on Panel 1C651 (2C651).

GENERAL EMERGENCY

- EAL# 1.4** None.

2 - CONTROL ROOM EVACUATION

UNUSUAL EVENT

EAL# 2.1 None.

ALERT

EAL# 2.2 Control Room evacuation as indicated by:

(A and B)

A. Initiation of control room evacuation procedures.

and

B. Establishment of control of shutdown systems from local stations.

SITE AREA EMERGENCY

EAL# 2.3 Delayed Control Room Evacuation as indicated by:

(A and B)

A. Initiation of control room evacuation procedures.

and

B. Shutdown systems control at local stations not established within 15 minutes.

GENERAL EMERGENCY

EAL# 2.4 None.

3 - FUEL CLADDING DEGRADATION

UNUSUAL EVENT

EAL# 3.1 Core degradation as indicated by:

(A or B)

A. Valid Off-gas Pre-treatment Monitor high radiation alarm annunciation on Panel 1C651 (2C651) or indication on Panel 1C600 (2C600).

or

B. Reactor coolant activity, determined by sample analysis greater than or equal to 2 $\mu\text{Ci/cc}$ of I-131 equivalent.

ALERT

EAL# 3.2 Severe fuel cladding degradation as indicated by:

(A or B or C or D)

A. Valid Off-gas Pre-treatment monitor High-High radiation alarm annunciation on Panel 1C651 (2C651) or indication on Panel 1C600 (2C600).

or

B. Valid Reactor coolant activity greater than 300 $\mu\text{Ci/cc}$ of equivalent I-131, as determined by sample analysis.

or

C. Valid Main Steam Line High radiation trip annunciation or indication on Panel 1C651 (2C651).

or

D. Valid containment post accident monitor indication on Panel 1C601 (2C601) greater than 200 R/hr. (An 8R/hr correction factor must be added manually to the indication to offset a downscale error if primary containment temperature exceeds 225 degrees Fahrenheit. Reference EC-079-0521.)

(CONTINUED ON NEXT PAGE)

3 - FUEL CLADDING DEGRADATION (continued)

SITE AREA EMERGENCY

EAL# 3.3 Severely degraded core as indicated by:

(A or B)

A. Reactor coolant activity greater than 1,000 $\mu\text{Ci/cc}$ of equivalent I-131 as determined by sample analysis.

or

B. Valid containment post accident monitor indication on Panel 1C601 (2C601) greater than 400 R/hr. (An 8 R/hr correction factor must be added manually to the indication to offset a downscale error if primary containment temperature exceeds 225 degrees Fahrenheit. Reference EC-079-0521.)

(CONTINUED ON NEXT PAGE)

3 - FUEL CLADDING DEGRADATION (continued)

GENERAL EMERGENCY

EAL# 3.4.a Fuel cladding degradation. Loss of 2 out of 3 fission product barriers (fuel cladding and reactor coolant pressure boundary) with potential loss of the third barrier (primary containment) as indicated by:

(A or B)

A. (1 and 2)

1. Valid containment post accident monitor indication on Panel 1C601 (2C601) greater than 400 R/hr. (An 8 R/hr correction factor must be added manually to the indication to offset a downscale error if primary containment temperature exceeds 225 degrees Fahrenheit. Reference EC-079-0521.)

and

2. (a or b or c)

- a. Containment pressure greater than 40.4 PSIG, indicated on Panel 1C601 (2C601).

or

- b. A visual inspection of the containment indicates a potential for loss of containment (e.g. anchorage or penetration failure, a crack in containment concrete at tendon).

or

- c. Other indications of potential or actual loss of primary containment.

or

B. (1 and 2)

1. Reactor coolant activity greater than 1,000 $\mu\text{Ci/cc}$ of equivalent I-131 as determined by sample analysis.

and

2. Actual or potential failure of reactor coolant isolation valves to isolate a coolant leak outside containment as determined by valve position indication on Panel 1C601 (2C601) or visual inspection.

OR

EAL# 3.4.b Core melt as indicated by:

(A and B)

- A. Valid containment post accident monitor indication on Panel 1C601 (2C601) greater than 2000 R/hr. (An 8 R/hr correction factor must be added manually to the indication to offset a downscale error if primary containment temperature exceeds 225 degrees Fahrenheit. Reference EC-079-0521.)

and

- B. Containment high pressure indication or annunciation on Panel 1C601 (2C601).

4 - GENERAL

UNUSUAL EVENT

- EAL# 4.1** Plant conditions exist that warrant increased awareness on the part of plant operating staff or state and/or local offsite authorities as indicated by:

Events that are occurring 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.

ALERT

- EAL# 4.2** Other plant conditions exist that warrant precautionary activation of PPL, State, County, and local emergency centers as indicated by:

Events that are occurring 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.

SITE AREA EMERGENCY

- EAL# 4.3** Other plant conditions exist that warrant activation of emergency centers and monitoring teams or a precautionary notification to the public near the site as indicated by:

Events that are occurring or have occurred which involve actual or imminent major failures of plant functions needed for protection of the public. Any releases are not expected to exceed EPA Protective Action Guideline exposure levels except inside the emergency planning boundary.

GENERAL EMERGENCY

- EAL# 4.4** Other plant conditions exist, from whatever, source, that make release of large amounts of radioactivity in a short time period available as indicated by:

Events that are occurring or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Expectation is that releases will exceed EPA Protective Action Guideline exposure levels beyond the emergency planning boundary.

5.- INJURED/CONTAMINATED PERSONNEL

UNUSUAL EVENT

EAL# 5.1 Transportation of externally contaminated injured individual from site to offsite medical facility as deemed appropriate by Shift Supervisor.

ALERT

EAL# 5.2 None.

SITE AREA EMERGENCY

EAL# 5.3 None.

GENERAL EMERGENCY

EAL# 5.4 None.

6 - IN-PLANT HIGH RADIATION

UNUSUAL EVENT

EAL# 6.1 Unanticipated or unplanned concentrations of airborne activity exist in normally accessible areas, which are not due to planned maintenance activities, as indicated by:

Concentrations exceed 500 times the DAC values of 10CFR20 Appendix B, Table I values for a single isotope, or for multiple isotopes where

$$\frac{C_A}{DAC_A} + \frac{C_B}{DAC_B} + \frac{C_C}{DAC_C} \dots \frac{C_N}{DAC_N} \geq 500$$

ALERT

EAL# 6.2 Unexpected in-plant high radiation levels or airborne contamination which indicates a severe degradation in the control of radioactive material as indicated by:

Area Radiation Monitor reading 1000 times normal annunciation on Panel 1C601 (2C601) or indication on Panel 1C600 (2C600).

SITE AREA EMERGENCY

EAL# 6.3 None.

GENERAL EMERGENCY

EAL# 6.4 None.

7 - LOSS OF AC POWER

UNUSUAL EVENT

EAL# 7.1 Loss of offsite power or loss of all onsite AC power supplies as indicated by:

(A *or* B)

A. Loss of power to Startup Transformer 10 and 20 annunciation or indication on Panel 0C653.

or

B. Failure of all diesel generators to start or synchronize to the emergency buses by indication or annunciation on Panel 0C653.

ALERT

EAL# 7.2 Loss of all offsite power and all onsite AC power supplies as indicated by:

(A *and* B)

A. Loss of power to Startup Transformer 10 and 20 annunciation or indication on Panel 0C653.

and

B. Failure of all diesel generators to start or synchronize to the emergency buses by annunciation or indication on Panel 0C653.

SITE AREA EMERGENCY

EAL# 7.3 Loss of all offsite power and loss of all onsite AC power supplies for greater than 15 minutes as indicated by:

(A *and* B *and* C)

A. Loss of offsite power.

and

B. Failure of all diesel generators to startup or synchronize to the emergency buses by indication or annunciation on 0C653.

and

C. The above conditions exist for greater than 15 minutes.

GENERAL EMERGENCY

EAL# 7.4 None.

8 - LOSS OF CONTROL ROOM ALARMS AND ANNUNCIATORS

UNUSUAL EVENT

EAL# 8.1 None.

ALERT

EAL# 8.2 Loss of all control room annunciators as indicated by:

In the opinion of the Shift Supervisor, all Control Room annunciators and the Plant Process Computer are lost, or insufficient annunciators are available to safely operate the unit(s) without supplemental observation of plant systems.

SITE AREA EMERGENCY

EAL# 8.3 All annunciators lost and plant transient initiated while annunciators are lost as indicated by:

(A and B)

A. In the opinion of the Shift Supervisor, all Control Room annunciators and the Plant Process Computer are lost, or insufficient annunciators are available to safely operate the unit(s) without supplemental observation of plant systems.

and

B. (1 or 2 or 3 or 4)

1. Low-Low reactor water level indication on Panel 1C651 (2C651) followed by ECCS initiation on Panel 1C601 (2C601).

or

2. Reactor coolant temperature change greater than 100°F per hour indication on recorder TR-1R006 on Panel 1C007 (2C007) (Reactor Building elevation 683').

or

3. High reactor pressure indication on Panel 1C651 (2C651) and followed by scram indication on Panel 1C651 (2C651).

or

4. Any indication that transient has occurred or is in progress.

GENERAL EMERGENCY

EAL# 8.4 None.

9 - LOSS OF DC POWER

UNUSUAL EVENT

EAL# 9.1 None.

ALERT

EAL# 9.2 Loss of onsite vital DC power as indicated by:

(A and B)

A. Less than 210 volts on the 250 VDC main distribution Panel buses, 1D652 (2D652) and 1D662 (2D662) as indicated by trouble alarms on Panel 1C651 (2C651).

and

B. Less than 105 volts on the 125 VDC main distribution buses 1D612 (2D612), 1D622 (2D622), 1D632 (2D632), and 1D642 (2D642) as indicated by trouble alarms on Panel 1C651 (2C651).

NOTE: Buses are not tripped on undervoltage condition.

SITE AREA EMERGENCY

EAL# 9.3 Loss of all vital onsite DC power sustained for greater than 15 minutes as indicated by:

(A and B and C)

A. Less than 210 volts on the 250 VDC main distribution Panel buses, 1D652 (2D652) and 1D662 (2D662) as indicated by trouble alarms on Panel 1C651 (2C651).

and

B. Less than 105 volts on the 125 VDC main distribution buses 1D612 (2D612), 1D622 (2D622), 1D632 (2D632), and 1D642 (2D642) as indicated by trouble alarms on Panel 1C651 (2C651).

and

C. The above condition exists for greater than 15 minutes.

NOTE: Buses are not tripped on undervoltage condition.

GENERAL EMERGENCY

EAL# 9.4 None.

10 - LOSS OF DECAY HEAT REMOVAL CAPABILITY

UNUSUAL EVENT

EAL# 10.1 None.

ALERT

EAL# 10.2 Inability to remove decay heat while in plant condition 4, inability to maintain the plant in cold shutdown as indicated by:

Inability to maintain reactor coolant temperature less than 200°F with the reactor mode switch in shutdown; exception is when testing per Special Test Exception TS 3.10.1 which allows maximum temperature of 212°F.

SITE AREA EMERGENCY

EAL# 10.3 Inability to remove decay heat while the plant is shutdown as indicated by:

(A and B and C)

A. Reactor Mode switch in shutdown.

and

B. Reactor Coolant System temperature greater than 200°F and rising.

and

C. Suppression Pool temperature greater than 120°F and rising.

GENERAL EMERGENCY

EAL# 10.4 Inability to remove decay heat while the plant is shutdown with possible release of large amounts of radioactivity as indicated by:

(A and B and C)

A. Reactor mode switch in shutdown.

and

B. Reactor coolant system temperature greater than 200°F and rising.

and

C. Suppression pool temperature greater than 290°F indicated on the computer output (MAT 12,13,14,15 or 16).

11 - LOSS OF REACTIVITY CONTROL

UNUSUAL EVENT

EAL# 11.1 Inadvertent Criticality as indicated by:

Unexpected increasing neutron flux indication on Panel 1C651 (2C651).

ALERT

EAL# 11.2 Failure of the Reactor Protection System or the Alternate Rod Insertion System to initiate and complete a scram that brings the reactor subcritical as indicated by:

(A or B) and (C and D and E)

A. Trip of at least one sub-channel in each trip system (RPS A and RPS B) as indicated by annunciators and trip status lights on Panel 1C651 (2C651).

or

B. Trip of both trip systems (ARI A and ARI B) as indicated by annunciators on Panel 1C601 (2C601).

and

C. Failure of control rods to insert, confirmed by the full core display indication on Panel 1C651 (2C651) or process computer indications.

and

D. Failure to bring the reactor subcritical confirmed by neutron count rate on the neutron monitoring indication on Panel 1C651 (2C651).

and

E. Reactor power >5% as indicated on Panel 1C651 (2C651).

(CONTINUED ON NEXT PAGE)

11 - LOSS OF REACTIVITY CONTROL (continued)

SITE AREA EMERGENCY

EAL# 11.3 Loss of functions needed to bring the reactor subcritical and loss of ability to bring the reactor to cold shutdown as indicated by:

(A and B and C and D)

A. Inability to insert sufficient control rods to bring the reactor subcritical as indicated by count rate on the neutron monitoring instrumentation on Panel 1C651 (2C651).

and

B. (1 or 2)

Failure of both loops of standby liquid control to inject into the vessel indicated by:

1. Low pump discharge pressure indication on Panel 1C601 (2C601).

or

2. Low flow indication on Panel 1C601 (2C601).

and

C. Reactor coolant temperature greater than 200°F, indicated on Panel 1C651 (2C651).

and

D. Reactor power >5% indicated on Panel 1C651 (2C651).

GENERAL EMERGENCY

EAL# 11.4 Loss of functions needed to bring the reactor subcritical and transient in progress that makes release of large amounts of radioactivity in a short period possible as indicated by:

(A or B) and (C and D)

A. Trip of at least one sub-channel in each trip system (RPS A and RPS B), indicated by annunciation or trip status lights on Panel 1C651 (2C651).

or

B. Trip of both systems (ARI A and ARI B) as indicated by annunciators on Panel 1C601 (2C601).

and

C. Loss of SLC system capability to inject, indicated by instrumentation on Panel 1C601 (2C601).

and

D. Reactor power greater than 25% of rated, indicated on Panel 1C651 (2C651).

12 - LOSS OF REACTOR VESSEL INVENTORY

UNUSUAL EVENT

EAL# 12.1 Valid initiation of an Emergency Core Cooling System (ECCS) System as indicated by:

(A or B)

A. Initiation of an ECCS System and low, low, low reactor water level (-129) annunciation or indication on Panel 1C651 (2C651).

or

B. Initiation of an ECCS System and High Drywell Pressure annunciation or indication on Panel 1C601 (2C601).

ALERT

EAL# 12.2 Reactor coolant system leak rate greater than 50 gpm as indicated by:

(A or B)

A. Drywell floor drain sump A or B Hi-Hi alarm on Panel 1C601 (2C601) and 2 or more drywell floor drain pumps continuously running as indicated on Panel 1C601 (2C601).

or

B. Other estimates of Reactor coolant system leakage indicating greater than 50 gpm.

SITE AREA EMERGENCY

EAL# 12.3 Known loss of coolant accident greater than make-up capacity as indicated by:

Water level below (and failure to return to) top of active fuel for greater than three minutes as indicated on fuel zone level indicator on Panel 1C601 (2C601).

(CONTINUED ON NEXT PAGE)

12 - LOSS OF REACTOR VESSEL INVENTORY (continued)

GENERAL EMERGENCY

EAL# 12.4.a Loss of coolant accident with possibility of imminent release of large amounts of radioactivity as indicated by:

Water level below (and failure to return to) top of active fuel for greater than 20 minutes as indicated on fuel zone level indicator on Panel 1C601 (2C601).

OR

EAL# 12.4.b Loss of Reactor Vessel inventory. Loss of 2 out of 3 fission product barriers (fuel cladding & reactor coolant pressure boundary) with potential loss of the third barrier (primary containment), as indicated by:

(A or B)

A. (1 and 2 and 3)

1. High drywell pressure annunciation or indication on Panel 1C601 (2C601).

and

2. (a or b or c)

a. Containment pressure exceeds 40.4 PSIG as indicated on Panel 1C601 (2C601).

or

b. A visual inspection of the containment indicates a potential or actual loss of containment (e.g. anchorage or penetration failure).

or

c. Containment isolation valve(s) fail to close as indicated by valve position indication on Panel 1C601 (2C601).

and

3. Reactor Vessel level drops below (and fails to return to) top of active fuel for greater than three minutes as indicated on fuel zone level indicator on Panel 1C601 (2C601).

or

B. (1 and 2)

1. Failure of reactor pressure vessel isolation valves to isolate coolant break outside containment as indicated by valve position indication on Panel 1C601 (2C601) or visual inspection.

and

2. Reactor vessel level drops below (and fails to return to) top of active fuel for greater than three minutes as indicated on fuel zone level indicator on Panel 1C601 (2C601).

13 - NATURAL PHENOMENA

UNUSUAL EVENT

EAL# 13.1 Natural phenomenon occurrence as indicated by:

(A or B or C)

A. Tornado impact on site.

or

B. Hurricane impact on site.

or

C. Earthquake detected by seismic instrumentation systems on Panel 0C696.

ALERT

EAL# 13.2 Natural Phenomenon Occurrence as indicated by:

(A or B or C)

A. Tornado with reported wind velocities greater than 200 mph impacting on site.*

or

B. Reported hurricane or sustained winds greater than 70 mph.*

or

C. Earthquake at greater than operating basis earthquake (OBE) levels as indicated on Panel 0C696.

* Telephone numbers for the National Weather Bureau are located in the Emergency Telephone Directory.

(CONTINUED ON NEXT PAGE)

13 - NATURAL PHENOMENA (continued)

SITE AREA EMERGENCY

EAL# 13.3 Severe natural phenomenon occurrence, with plant not in cold shutdown, as indicated by:

(A and B)

A. Reactor Coolant Temperature greater than 200°F as indicated on Panel 1C651 (2C651).

and

B. (1 or 2 or 3)

1. Reported hurricane or sustained winds greater than 80 mph.*

or

2. Earthquake with greater than Safe Shutdown Earthquake (SSE) levels as indicated on Panel 0C696.

or

3. Tornado with reported wind velocities greater than 220 mph impacting on site.*

GENERAL EMERGENCY

EAL# 13.4 None.

- * Telephone numbers for the National Weather Bureau are located in the Emergency Telephone Directory.

14 - ONSITE FIRE/EXPLOSION

UNUSUAL EVENT

EAL# 14.1 Significant fire within the plant as indicated by:

(A and B)

A. Activation of fire brigade by Shift Supervisor.

and

B. Duration of fire longer than 15 minutes after time of notification.

OR

Explosion inside security protected area, with no significant damage to station facilities, as indicated by:

Visual observation or notification received by control room operator and Shift Supervisor evaluation.

ALERT

EAL# 14.2 On-site Fire/Explosion as indicated by:

(A or B)

A. Fire lasting more than 15 minutes and fire is in the vicinity of equipment required for safe shutdown of the plant and the fire is damaging or is threatening to damage the equipment due to heat, smoke, flame, or other hazard.

or

B. (1 and 2)

Explosion damage to facility affecting plant operation as determined by:

1. Direct observation or notification received by control room operator.

and

2. Shift Supervisor observation.

(CONTINUED ON NEXT PAGE)

14 - ONSITE FIRE/EXPLOSION (continued)

SITE AREA EMERGENCY

EAL# 14.3 Damage to safe shutdown equipment due to fire or explosion has occurred when plant is not in cold shutdown, and damage is causing or threatens malfunction of equipment required for safe shutdown of the plant as determined by:

(A and B and C)

A. Direct observation or notification received by control room operator.

and

B. Shift Supervisor evaluation.

and

C. Reactor Coolant Temperature greater than 200°F as indicated on Panel 1C651 (2C651).

GENERAL EMERGENCY

EAL# 14.4 None.

15 - RADIOLOGICAL EFFLUENT

UNUSUAL EVENT

EAL# 15.1 Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds 2 times the Technical Requirements Manual limits for 60 minutes or longer.

EAL# 15.1 (1 or 2 or 3)

1. Valid Noble Gas vent stack monitor reading(s) that exceeds a total site release rate of $2.0E+6$ $\mu\text{Ci}/\text{min}$ and that is sustained for 60 minutes or longer.

OR

2. Confirmed sample analyses for airborne releases indicates total site release rates at the site boundary with a release duration of 60 minutes or longer resulting in dose rates of:
 - a) Noble gases >1000 mrem/year whole body, or
 - b) Noble gases >6000 mrem/year skin, or
 - c) I-131, I-133, H-3, and particulates with half lives >8 days >3000 mrem/year to any organ (inhalation pathways only).

OR

3. Confirmed sample analyses for liquid releases indicates concentrations with a release duration of 60 minutes or longer in excess of two times the Technical Requirements Manual liquid effluent limits.

(CONTINUED ON NEXT PAGE)

15 - RADIOLOGICAL EFFLUENT (continued)

ALERT

EAL# 15.2 Any unplanned release of gaseous or liquid radioactivity to the environment that exceeds 200 times Technical Requirement Manual limits for 15 minutes or longer.

EAL# 15.2 (1 or 2 or 3)

1. Valid Noble Gas vent stack monitor reading(s) that exceeds a total site release rate of $2E+8$ $\mu\text{Ci}/\text{min}$ and that is sustained for 15 minutes or longer.

OR

- 2 Confirmed sample analyses for airborne releases indicates total site release rates at the site boundary for 15 minutes or longer resulting in dose rates of:
 - a) Noble gases $>1.0E+5$ mrem/year whole body, or
 - b) Noble gases $>6.0E+5$ mrem/year skin, or
 - c) I-131, I-133, H-3, and particulates with half-lives >8 days $>3.0E+5$ mrem/year to any organ (inhalation pathways only).

OR

3. Confirmed sample analyses for liquid releases indicates concentrations in excess of 200 times the Technical Requirements Manual liquid effluent limits for 15 minutes or longer.

(CONTINUED ON NEXT PAGE)

15 - RADIOLOGICAL EFFLUENT (continued)

SITE AREA EMERGENCY

EAL# 15.3 Dose at the Emergency Plan boundary resulting from an actual or imminent release of gaseous radioactivity exceeds 100 mrem whole body TEDE or 500 mrem child thyroid CDE for the actual or projected duration of release.

EAL# 15.3 (1 or 2 or 3 or 4 or 5)

1. Valid Noble Gas vent stack monitor readings(s) that exceeds a total release rate $6.2E8 \mu\text{Ci/min}$ for greater than 15 minutes and Dose Projections are not available.

Note: If the required dose projection cannot be completed within the 15 minute period, then the declaration must be made based on a valid sustained monitor reading(s).

OR

2. Valid dose assessment using actual meteorology indicates projected doses greater than 100 mrem whole body TEDE or 500 mrem child thyroid CDE at or beyond the EPB.

OR

3. A valid reading sustained for 15 minutes or longer on the RMS perimeter radiation monitoring system greater than 100 mR/hr.

OR

4. Field survey results indicate Emergency Planning boundary dose rates exceeding 100 mR/hr expected to continue for more than one hour.

OR

5. Analyses of field survey samples indicate child thyroid dose commitment at the Emergency Planning Boundary of 500 mrem for one hour of inhalation.

(CONTINUED ON NEXT PAGE)

15 - RADIOLOGICAL EFFLUENT (continued)

GENERAL EMERGENCY

EAL# 15.4 Dose at the Emergency Planning Boundary resulting from an actual or imminent release of gaseous radioactivity exceeds 1000 mrem whole body TEDE or 5000 mrem child thyroid CDE for the actual or projected duration of the release using actual meteorology.

EAL# 15.4 (1 or 2 or 3 or 4 or 5)

1. Valid Noble Gas vent stack monitor readings(s) that exceed a total release rate of $6.2E9 \mu\text{Ci/min}$ for greater than 15 minutes and Dose Projections are not available.

Note: If the required dose projection cannot be completed within the 15 minute period, then the declaration must be made based on a valid sustained monitor reading(s).

OR

2. Valid dose assessment using actual meteorology indicates projected doses greater than 1000 mrem whole body TEDE or 5000 mrem child thyroid CDE at or beyond the EPB.

OR

3. A valid reading sustained for 15 minutes or longer on the RMS perimeter radiation monitoring system greater than 1000 mR/hr.

OR

4. Field survey results indicate Emergency Planning Boundary dose rates exceeding 1000 mR/hr expected to continue for more than one hour.

OR

5. Analyses of field survey samples indicate child thyroid dose commitment at the Emergency Planning Boundary of 5000 mrem for one hour of inhalation.

16 - SECURITY EVENT

UNUSUAL EVENT

EAL# 16.1 Security threat or attempted entry or attempted sabotage as indicated by:

(A or B or C)

A. A report from Security of a security threat, attempted entry, or attempted sabotage of the owner controlled area adjacent to the site.

or

B. Any attempted act of sabotage which is deemed legitimate in the judgment of the SHIFT SUPERVISOR/EMERGENCY DIRECTOR, and affects plant operation.

or

C. A site specific credible security threat notification.

ALERT

EAL# 16.2 Ongoing Security Compromise as indicated by:

(A or B)

A. A report from Security that a security compromise is at the site but no penetration of protected areas has occurred.

or

B. Any act of sabotage which results in an actual or potential substantial degradation of the level of safety of the plant as judged by the SHIFT SUPERVISOR/EMERGENCY DIRECTOR.

SITE AREA EMERGENCY

EAL# 16.3 An ongoing adversary event threatens imminent loss of physical control of plant as indicated by:

(A or B)

A. Report from Security that the security of the plant vital area is threatened by unauthorized (forcible) entry into the protected area.

or

B. Any act of sabotage which results in actual or likely major failures of plant functions needed for protection of the public as judged by the SHIFT SUPERVISOR/EMERGENCY DIRECTOR.

(CONTINUED ON NEXT PAGE)

16 - SECURITY EVENT (continued)

GENERAL EMERGENCY

EAL# 16.4 Loss of physical control of facilities as indicated by:

(A or B)

A. Report from Security that a loss of physical control of plant vital areas has occurred.

or

B. Any act of sabotage which results in imminent significant cladding failure or fuel melting with a potential for loss of containment integrity or the potential for release of significant amounts of radioactivity in a short time as judged by the SHIFT SUPERVISOR/EMERGENCY DIRECTOR.

17 - SPENT FUEL RELATED INCIDENT

UNUSUAL EVENT

EAL# 17.1 Unanticipated or unplanned concentrations of airborne activity exist in normally accessible areas, which is not due to planned maintenance activities, as indicated by:

Concentrations exceed 500 times the DAC values of 10CFR20 Appendix B, Table I values for a single isotope, or full multiple isotopes where

$$\frac{C_A}{DAC_A} + \frac{C_B}{DAC_B} + \frac{C_C}{DAC_C} \dots \frac{C_N}{DAC_N} \geq 500$$

ALERT

EAL# 17.2 Unexpected in-plant high radiation levels or airborne contamination which indicates a severe fuel handling accident as indicated by:

Refuel floor area radiation monitor reading 1000 times normal annunciation on Panel 1C601 (2C601) or indication on Panel 1C600 (2C600).

(CONTINUED ON NEXT PAGE)

17 - SPENT FUEL RELATED INCIDENT (continued)

SITE AREA EMERGENCY

EAL# 17.3.a Major damage to irradiated fuel with actual or clear potential for significant release of radioactive material to the environment as indicated by:

(A and B)

A. Dropping, bumping, or otherwise rough handling of a new OR irradiated fuel bundle with irradiated fuel in the pool.

and

B. (1 or 2)

1. Refueling floor area radiation monitor reading 1000 times normal annunciation on Panel 1C601 (2C601) or indication on Panel 1C600 (2C600).

or

2. Reactor Building vent stack monitoring system high radiation annunciation or indication on Panel 0C630 or 0C677.

OR

EAL# 17.3.b Damage to irradiated fuel due to uncontrolled decrease in the fuel pool level to below the level of the fuel as indicated by:

(A and B)

A. (1 or 2)

1. Uncovering of irradiated fuel confirmation by verification of significant leakage from spent fuel pool.

or

2. Visual observation of water level below irradiated fuel in the pool.

and

B. (1 or 2)

1. Refueling floor area radiation monitor annunciation on Panel 1C651 (2C651) or indication on Panel 1C600 (2C600).

or

2. Reactor Building vent stack monitoring system high radiation annunciation or indication on Panel 0C630 or 0C677.

GENERAL EMERGENCY

EAL# 17.4 None.

18 - STEAM LINE BREAK

UNUSUAL EVENT

EAL# 18.1 None.

ALERT

EAL# 18.2 MSIV malfunction causing leakage as indicated by:

(A *and* B)

A. Valid MSIV closure signal or indication on Panel 1C601 (2C601).

and

B. (1 *or* 2)

1. Valid Main Steam Line flow indication on Panel 1C652 (2C652).

or

2. Valid Main Steam Line radiation indication on Panel 1C600 (2C600).

(CONTINUED ON NEXT PAGE)

18 - STEAM LINE BREAK (continued)

SITE AREA EMERGENCY

EAL# 18.3 Steam line break occurs outside of containment without isolation as indicated by:

(A or B or C or D)

A. (1 and 2)

1. Failure of both MSIVs in the line with the leak to close as indicated by position indication on Panel 1C601 (2C601).

and

2. (a or b)

- a. High MSL flow annunciation on Panel 1C601 (2C601) or indication on Panel 1C652 (2C652).

or

- b. Other indication of main steam leakage outside containment.

or

B. (1 and 2)

1. Failure of RCIC steam isolation valves HV-F008 and HV-F007 to close as indicated on Panel 1C601 (2C601).

and

2. (a or b or c or d or e or f)

- a. RCIC steamline pipe routing area high temperature annunciation on Panel 1C601 (2C601), or indication on Panel 1C614 (2C614).

or

- b. RCIC equipment area high temperature annunciation on Panel 1C601 (2C601) or indication on Panel 1C614 (2C614).

or

- c. RCIC steamline high flow annunciation on Panel 1C601 (2C601).

or

- d. RCIC steamline tunnel ventilation high delta temperature annunciation on Panel 1C601 (2C601).

or

- e. RCIC turbine exhaust diaphragm high pressure annunciation on Panel 1C601 (2C601).

or

- f. Other indication of steam leakage from the RCIC system.

(CONTINUED ON NEXT PAGE)

18 - STEAM LINE BREAK (continued)

SITE AREA EMERGENCY (continued)

or

C. (1 and 2)

1. Failure of HPCI steam isolation valves HV-F002 and HV-F003 to close as indicated by position indicator on Panel 1C601 (2C601).

and

2. (a or b or c or d or e or f)

- a. HPCI steamline pipe routing area high temperature annunciation on Panel 1C601 (2C601), or indication on Panel 1C614 (2C614).

or

- b. HPCI equipment area high temperature annunciation on Panel 1C601 (2C601) or indication on Panel 1C614 (2C614).

or

- c. HPCI steamline high flow annunciation on Panel 1C601 (2C601).

or

- d. HPCI steamline tunnel ventilation high delta temperature annunciation on Panel 1C601 (2C601).

or

- e. HPCI turbine exhaust diaphragm high pressure annunciation on Panel 1C601 (2C601).

or

- f. Other indication of steam leakage from the HPCI system.

or

D. Any other un-isolatable steam line breaks.

GENERAL EMERGENCY

EAL# 18.4 None.

19 - TOXIC/FLAMMABLE GASES

UNUSUAL EVENT

EAL# 19.1 Nearby or onsite release of potentially harmful quantities of toxic or flammable material as indicated by:

Visual observation or notification received by the control room operator.

ALERT

EAL# 19.2 Entry of toxic or flammable gases into the facility, with subsequent habitability problem as indicated by:

Visual observation, direct measurement, or notification received by the control room operator.

SITE AREA EMERGENCY

EAL# 19.3 Toxic or flammable gases enter vital areas, restricting access and restricted access constitutes a safety problem, as determined by:

(A and B)

A. Shift Supervisor's evaluation.

and

B. Visual observation, direct measurement, or notification received by control room operator.

GENERAL EMERGENCY

EAL# 19.4 None.

20 - TECHNICAL SPECIFICATION SAFETY LIMIT

UNUSUAL EVENT

EAL# 20.1 Abnormal occurrences which result in operator complying with any of the Technical Specification SAFETY LIMIT ACTION statements indicated by:

(A or B or C or D)

A. Exceeding THERMAL POWER, low pressure or low flow safety limit 2.1.1.1.

or

B. Exceeding THERMAL POWER, high pressure and high flow safety limit 2.1.1.2.

or

C. Exceeding REACTOR VESSEL WATER LEVEL safety limit 2.1.1.3.

or

D. Exceeding REACTOR COOLANT SYSTEM PRESSURE safety limit 2.1.2.

ALERT

EAL# 20.2 None.

SITE AREA EMERGENCY

EAL# 20.3 None.

GENERAL EMERGENCY

EAL# 20.4 None.

21 – DRY FUEL STORAGE

UNUSUAL EVENT

EAL# 21.1.a. Situations are occurring or have occurred during the transport of the irradiated spent fuel to the onsite storage facility, which jeopardize the integrity of the spent fuel or its container as indicated by:

(A or B)

A. Radiological readings exceed 2 R/hour at the external surface of any transfer cask or horizontal storage module.

or

B. Radiological readings exceed 1 R/hour one foot away from the external surface of any transfer cask or horizontal storage module.

OR

EAL# 21.1.b. Situations are occurring or have occurred at the irradiated spent fuel storage facility, which jeopardize the integrity of the dry cask storage system as indicated by:

(A or B)

A. Radiological readings exceed 2 R/hour at the external surface of any transfer cask or horizontal storage module.

or

B. Radiological readings exceed 1 R/hour one foot away from the external surface of any transfer cask or horizontal storage module.

ALERT

EAL# 21.2 None.

SITE AREA EMERGENCY

EAL# 21.3 None.

GENERAL EMERGENCY

EAL# 21.4 None

BRIEF NON-TECHNICAL DESCRIPTIONS OF EAL

EAL# 1.1: **Aircraft/Train Activity**
 Unusual Event

Brief Non-Technical Description:

(Aircraft crash/Train derailment) within the plant security fence (protected area). Based on current plant conditions, the safety of the general public is not threatened.

EAL# 1.2: **Aircraft/Train Activity**
 Alert

Brief Non-Technical Description:

(Aircraft crash/Projectile strike) onto a permanent plant structure. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 1.3: **Aircraft/Train Activity**
 Site Emergency

Brief Non-Technical Description:

(Aircraft crash/Projectile strike) which caused damage to some equipment used to safely shut down the reactor.

EAL# 2.2:	Control Room Evacuation <i>Alert</i>
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Brief Non-Technical Description:

The Control Room was evacuated, then control of plant systems was established from another location within the plant. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 2.3:	Control Room Evacuation <i>Site Emergency</i>
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Brief Non-Technical Description:

Within 15 minutes of evacuating the Control Room, operators have been unable to establish remote stations for controlling plant systems.

EAL# 3.1: Fuel Cladding Degradation
Unusual Event

Brief Non-Technical Description:

Minor damage has occurred to the metal tubes that hold uranium fuel pellets. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 3.2: Fuel Cladding Degradation
Alert

Brief Non-Technical Description:

There has been significant damage to metal tubes that hold uranium fuel pellets. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 3.3: Fuel Cladding Degradation
Site Emergency

Brief Non-Technical Description:

Severe damage has taken place to the metal tubes that hold uranium fuel pellets. Abnormally high radiation levels are present in the water which acts as a reactor coolant or in the containment structure surrounding the reactor.

EAL# 3.4.a: Fuel Cladding Degradation
General Emergency

Brief Non-Technical Description:

Severe damage to metal tubes that hold uranium fuel pellets. Higher than normal radiation levels in reactor coolant or containment structure surrounding reactor, with a potential for off-site radioactivity release.

EAL# 3.4.b: Fuel Cladding Degradation <i>General Emergency</i>

Brief Non-Technical Description:

Indication of uranium fuel melting. Potential for off-site radioactivity release.

EAL# 4.1: **General**
 Unusual Event

Brief Non-Technical Description:

(Specific Event) which potentially threatens the safety of the plant. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 4.2: **General**
 Alert

Brief Non-Technical Description:

(Specific Event) which actually threatens the safety of the plant. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 4.3: **General**
 Site Emergency

Brief Non-Technical Description:

(Specific Event) has occurred which indicates an (actual/imminent) loss of important plant safety systems.

EAL# 4.4: **General**
 General Emergency

Brief Non-Technical Description:

(Specific Event) has occurred which indicates an (actual/imminent) major release of radioactivity.

EAL# 5.1: Injured/Contaminated Personnel <i>Unusual Event</i>
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Brief Non-Technical Description:

An injured person(s), contaminated with radioactive material, is or has been moved outside the immediate area of the plant. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 6.1:	In-plant High Radiation <i>Unusual Event</i>
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Brief Non-Technical Description:

High levels of airborne radioactivity have been detected inside the plant. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 6.2:	In-plant High Radiation <i>Alert</i>
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Brief Non-Technical Description:

Very high levels of radiation have been detected in the plant. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 7.1: **Loss of AC Power**
Unusual Event

Brief Non-Technical Description:

AC electrical power from either off-site or on-site sources is needed to operate plant safety equipment. Either the off-site or on-site source has been lost; however, power is still available from the other source. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 7.2: **Loss of AC Power**
Alert

Brief Non-Technical Description:

All AC electrical power (from both on-site and off-site) needed to operate plant safety equipment has been temporarily lost. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 7.3: **Loss of AC Power**
Site Emergency

Brief Non-Technical Description:

All AC electrical power (from both on-site and off-site) needed to operate plant safety equipment has been lost for a sustained period of time (15 minutes). Based on current plant conditions, the safety of the general public is not threatened.

EAL# 8.2:	Loss of Control Room Alarms and Annunciators <i>Alert</i>
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Brief Non-Technical Description:

All control room alarms have been lost. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 8.3:	Loss of Control Room Alarms and Annunciators <i>Site Emergency</i>
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Brief Non-Technical Description:

All control room alarms have been lost in combination with another plant operating problem (plant transient).

EAL# 9.2:	Loss of DC Power <i>Alert</i>
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Brief Non-Technical Description:

All DC electrical power in the plant has been lost temporarily. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 9.3:	Loss of DC Power <i>Site Emergency</i>
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Brief Non-Technical Description:

All DC electrical power--needed to operate some plant safety equipment--has been lost for more than 15 minutes.

EAL# 10.2: Loss of Decay Heat Removal Capability
Alert

Brief Non-Technical Description:

While the reactor is shutdown (cold shutdown), equipment needed to maintain reactor water temperature below 200° F has been lost. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 10.3: Loss of Decay Heat Removal Capability
Site Emergency

Brief Non-Technical Description:

While the unit is shutdown, operators are unable to effectively cool the reactor.

EAL# 10.4: Loss of Decay Heat Removal Capability
General Emergency

Brief Non-Technical Description:

Operators are unable to cool the reactor; a release of radioactivity is possible.

EAL# 11.1: Loss of Reactivity Control
Unusual Event

Brief Non-Technical Description:

Reactor power has increased in a way that was not anticipated. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 11.2: Loss of Reactivity Control
Alert

Brief Non-Technical Description:

During attempted reactor shutdown, the reactor's control rods failed to insert fully (scram). Based on current plant conditions, the safety of the general public is not threatened.

EAL# 11.3: Loss of Reactivity Control
Site Emergency

Brief Non-Technical Description:

Operators are unable to shut down and cool the reactor. Reactor control rods failed to fully insert. A back-up chemical control system also failed.

EAL# 11.4: Loss of Reactivity Control
General Emergency

Brief Non-Technical Description:

Operators are unable to shut down and cool down the reactor. Reactor control rods failed to fully insert. The back-up chemical control system also failed. The situation could lead to a radioactivity release.

EAL# 12.1: Loss of Reactor Vessel Inventory
Unusual Event

Brief Non-Technical Description:

To maintain reactor water level, an emergency cooling system has been activated. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 12.2: Loss of Reactor Vessel Inventory
Alert

Brief Non-Technical Description:

Excessive water is leaking from the reactor coolant systems into the containment structure surrounding the reactor vessel. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 12.3: Loss of Reactor Vessel Inventory
Site Emergency

Brief Non-Technical Description:

The ability to maintain water level above the fuel has been lost.

EAL# 12.4.a: Loss of Reactor Vessel Inventory
General Emergency

Brief Non-Technical Description:

The ability to maintain an adequate water level in the reactor vessel has been lost; severe fuel damage and release of radioactivity are possible.

EAL# 12.4.b: Loss of Reactor Vessel Inventory
General Emergency

Brief Non-Technical Description:

Fuel damage and a reactor coolant leak have occurred, with a potential loss of the ability to contain radioactive releases.

EAL# 13.1: Natural Phenomena
Unusual Event

Brief Non-Technical Description:

(Tornado/ Hurricane/ Earthquake) has struck the plant site. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 13.2: Natural Phenomena
Alert

Brief Non-Technical Description:

(Tornado/ Hurricane/ Earthquake) has struck the plant and could affect plant safety. Based on current plant conditions, the safety of the general public is not threatened. The event may be severe enough to impact plant equipment.

EAL# 13.3: Natural Phenomena
Site Emergency

Brief Non-Technical Description:

Severe (Tornado/ Hurricane/ Earthquake) is affecting plant safety while plant is not in cold shutdown.

EAL# 14.1: On-site Fire/Explosion
Unusual Event

Brief Non-Technical Description:

A (fire/ explosion) has occurred on-site, within the (plant/ security fence). Based on current plant conditions, the safety of the general public is not threatened.

EAL# 14.2: On-Site Fire/Explosion
Alert

Brief Non-Technical Description:

A (fire/ explosion) has occurred on-site that has affected plant operation. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 14.3: On-site Fire/Explosion
Site Emergency

Brief Non-Technical Description:

A (fire/ explosion) has damaged equipment needed to safely shut down the reactor.

EAL# 15.1: Radiological Effluent
Unusual Event

Brief Non-Technical Description:

Radioactivity is being released from the plant that exceeds plant operating license limits (Technical Specifications) for liquid releases or exceeds 2 times plant operating license limits for gaseous releases. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 15.2: Radiological Effluent
Alert

Brief Non-Technical Description:

Radioactivity is being released at levels at least ten times higher than those allowed by the plant operating license limits (Technical Specifications) for liquid release or exceeds 200 times plant operating license limits for gaseous limits. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 15.3: Radiological Effluent
Site Emergency

Brief Non-Technical Description:

Radioactivity is being or has been released which may result in low levels of exposure to people outside the immediate plant area (emergency planning boundary).

EAL# 15.4: Radiological Effluent
General Emergency

Brief Non-Technical Description:

Radioactivity is being released that exceeds federal guidelines which specify actions like sheltering or evacuation to protect the public.

EAL# 16.1: Security Event
Unusual Event

Brief Non-Technical Description:

An attempt has been made to breach station security or a site-specific credible threat has been received. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 16.2: Security Event
Alert

Brief Non-Technical Description:

A compromise of Station security has occurred or is imminent. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 16.3: Security Event
Site Emergency

Brief Non-Technical Description:

Security has been compromised in a way that threatens plant safety systems.

EAL# 16.4: Security Event
General Emergency

Brief Non-Technical Description:

Security has been compromised in a way that has caused loss of control of some or all vital areas of the plant.

EAL# 17.1: Spent Fuel Related Incident
Unusual Event

Brief Non-Technical Description:

Used fuel assemblies (groups of the metal rods containing irradiated uranium fuel pellets), being stored in the unit's spent fuel pool, are leaking radioactive material. This is causing abnormally high radiation levels in some areas of the plant. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 17.2: Spent Fuel Related Incident
Alert

Brief Non-Technical Description:

Used fuel assemblies (groups of the metal rods containing irradiated uranium fuel pellets), being stored in the unit's spent fuel pool are leaking radioactive material. This is causing very high radiation levels in some areas of the plant. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 17.3.a: Spent Fuel Related Incident
Site Emergency

Brief Non-Technical Description:

Severe damage has occurred to some used fuel assemblies (metal rods containing irradiated uranium fuel pellets) stored in the unit's spent fuel pool. A radioactivity release is possible.

EAL# 17.3.b: Spent Fuel Related Incident
Site Emergency

Brief Non-Technical Description:

Used (irradiated) fuel assemblies in the unit's spent fuel pool are damaged and no longer covered with cooling water. A radioactive release is possible.

EAL# 18.2: Steam Line Break

Alert

Brief Non-Technical Description:

Isolation valves have failed to completely shut off the flow of radioactive steam from the reactor to the turbine-generator. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 18.3: Steam Line Break

Site Emergency

Brief Non-Technical Description:

Isolation valves have failed to properly shut and there is significant flow of radioactive steam from the reactor to areas outside the primary containment.

EAL# 19.1: Toxic/Flammable Gases
Unusual Event

Brief Non-Technical Description:

(Toxic/ flammable) gas has been released (near-site/ on-site). Based on current plant conditions, the safety of the general public is not threatened.

EAL# 19.2: Toxic/Flammable Gases
Alert

Brief Non-Technical Description:

(Toxic/ flammable) gas has entered plant facilities. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 19.3: Toxic/Flammable Gases
Site Emergency

Brief Non-Technical Description:

(Toxic/ flammable) gas has entered areas within plant buildings which contain vital safety equipment (plant vital areas).

EAL# 20.1: Technical Specification Safety Limit <i>Unusual Event</i>

Brief Non-Technical Description:

An abnormal plant condition has occurred. Based on current plant conditions, the safety of the general public is not threatened.

EAL# 21.1.a: Irradiated Spent Fuel in Dry Storage

Unusual Event

Brief Non-Technical Description:

While transporting the used (spent) fuel assemblies (groups of rods containing irradiated uranium fuel pellets) from the spent fuel pool to the onsite storage facility, radiological readings indicate that the spent fuel or its container may be damaged.

EAL# 21.1.b: Irradiated Spent Fuel in Dry Storage

Unusual Event

Brief Non-Technical Description:

After the used (spent) fuel assemblies (groups of rods containing irradiated uranium fuel pellets) have been transported from the spent fuel pool and placed in the horizontal storage module (a concrete structure which will house the steel canister of spent fuel), radiological readings indicate that the fuel storage system may be damaged.

NRC/TSC COMMUNICATOR PHONE INFORMATION

1. Transmission Control Center
Dial 8-1-484-634-4090
Give the classification.
2. Offsite Agency Phone Numbers
INPO: 800-321-0614
Pennsylvania Rural Electric Assn:
717-233-5704
American Nuclear Insurers:
860-561-3433
PPL Insurance Group:
 - J. Diacogiannis:
220-4961 (W)
610-865-4410 (H)
 - T. Novatnack:
220-4962 (W)
610-867-7296 (H)

Control # _____

EMERGENCY NOTIFICATION REPORT

☐ THIS IS A DRILL ☐ THIS IS NOT A DRILL

1. This is: _____ at Susquehanna Steam Electric Station.
(Communicator's Name)

My telephone number is: _____ . The time is _____ .
(Callback telephone number) (Time notification initiated)

2. **EMERGENCY CLASSIFICATION:**

- ☐ UNUSUAL EVENT ☐ SITE AREA EMERGENCY
☐ ALERT ☐ GENERAL EMERGENCY
☐ The event has been terminated.

UNIT: ☐ ONE
 ☐ TWO
 ☐ ONE & TWO

TIME: _____
(Time classification/
termination declared)

DATE: _____
(Date classification/
termination declared)

THIS REPRESENTS A/AN:

- ☐ INITIAL DECLARATION
☐ ESCALATION
☐ NO CHANGE

} IN CLASSIFICATION STATUS

3. **BRIEF NON-TECHNICAL
DESCRIPTION OF THE EVENT:**

- For initial declaration, static update, or escalation, provide current EAL number only.
- For status reports, significant events, or when directed by the ED, RM, or EOFSS, provide a brief description.
- For termination, write emergency has been terminated.

4. THERE IS: ☐ No
 ☐ AN AIRBORNE } NON-ROUTINE RADIOLOGICAL RELEASE IN PROGRESS
 ☐ A LIQUID }

5. **WHEN GENERAL EMERGENCY IS THE INITIAL EVENT, PROVIDE PROTECTIVE
ACTION RECOMMENDATIONS BELOW:** (Control Room Use only, TSC and EOF mark N/A.)

6. WIND DIRECTION IS FROM: _____ . WIND SPEED IS: _____ mph.
(Data from 10 meter meteorological tower, available on PICSY.)

☐ THIS IS A DRILL ☐ THIS IS NOT A DRILL

APPROVED: _____ Time: _____ Date: _____
(ED, RM, or EOFSS) (Time form approved) (Date form approved)

EMERGENCY NOTIFICATION LOG SHEET

EMERGENCY CLASSIFICATION

☐ UNUSUAL EVENT
☐ ALERT
☐ SITE AREA EMERGENCY
☐ GENERAL EMERGENCY

☐ STATIC UPDATE

☐ TIME OF DECLARATION

☐ TIME OF TERMINATION

TIME ACCOUNTABILITY
INITIATED/COMPLETED /

TIME SITE EVACUATION
INITIATED/COMPLETED /

EMERGENCY NOTIFICATION
REPORT (ENR) CONTROL NO.

PROTECTIVE ACTION RECOMMENDATION
FORM (PAR) CONTROL NO.

AGENCY	NAME OF CONTACT	TIME TRANSMITTED	ENR FORM TRANSMITTED	PAR FORM TRANSMITTED
PEMA				N/A
LCEMA				N/A
CCDES				N/A
MOC				N/A
NRC				
PIM				
DEP/BRP				

ADDITIONAL INFORMATION

**NOTIFICATION MATRIX
TECHNICAL SUPPORT CENTER COMMUNICATOR**

AGENCY/CONTACT	PHONE NUMBER	UPGRADE or DOWNGRADE	STATIC UPDATE	SIGNIFICANT EVENT	HAZARDOUS MATERIAL	PROTECTIVE ACTION RECOMMENDATION FORM	TERMINATION
PEMA (4960/4961) LCEMA (4906/4907) CCDPS (4955/4956) MOC (4903/4902)	191	X Within 15 minutes	X Every hour	X	X	NA	X
Nuclear Regulatory Commission	ENS or 1-301-816-5100	X Within 1 hour	X	X	X	X	X
Transmission Control Center	8-1-484-634-4090	X After NRC notification	NA				X
Institute of Nuclear Power (INPO)	8-1-800-321-0614	X Within 2 hours					X
American Nuclear Insurers	8-1-860-561-3433	X Within 2 hours.					X
PA Rural Electric Assn.	8-1-717-233-5704	X Within 2 hours					X

Note: Additional telephone numbers are located in the Emergency Telephone Directory available at each workstation.

VHF RADIO INSTRUCTIONS

1. Inform HP Radioman you need to use the VHF radio base unit to make notifications to LCEMA and CCDPS.
2. Turn the VHF base unit to Channel 1.
3. Contact LCEMA and CCDPS, then inform them you are using this method for Emergency Notification Report notifications.
4. Transmit Emergency Notification Report information.
5. Turn VHF base station back to HP Radioman.

NRC REQUIRED INFORMATION

Time: _____ Date: _____ Plant: Susquehanna SES

NOTE (1): This is not a form to be read to the NRC but the information is the type of information that the NRC will request.

NOTE (2): Items in **Bold *** should be obtained from/discussed with Shift Manager/ED or TSC ED. Initials indicate information concurred with by SM/ED or TSC ED. _____

1. Your Name/phone number/and position in the Control Room, i.e. PCO, SRO, STA

2. Affected Unit _____

3*. Current EAL Classification and Declaration time _____

4*. Basis for declaration - This information should explain in general terms the basis for the declaration

5*. Is there a Release in Progress Yes _____ No _____

6*. Protective Action Recommendations made to the State _____

7*. Any local area/RCA/Site evacuations ordered Yes _____ No _____
(Specify) _____

8*. Mitigating actions in progress:

- To Restore critical safety functions _____
- To bring plant to cold shutdown _____
- Restore vital equipment _____

9. Has NERO been activated Yes _____ No _____

10. Has accountability been initiated Yes _____ No _____

11*. Prognosis for escalation or termination _____
(from Shift Manager)

12. Have off-site notifications been initiated Yes _____ No _____

13. Provide a reference for RPV level, i.e. TAF is-161"

14*. EOP's in use to mitigate the event _____

- | | | |
|--------------------------------------|--|---------------------------------------|
| <input type="checkbox"/> RPV Control | <input type="checkbox"/> Rad Release | <input type="checkbox"/> RPV Flooding |
| <input type="checkbox"/> PC Control | <input type="checkbox"/> Emerg. Depressurization | |
| <input type="checkbox"/> SC Control | <input type="checkbox"/> ATWS | |

PARAMETER DATA FORM

TIME >>>>>	UNIT				
REACTOR POWER					
RX VESSEL LEVEL					
PRIMARY PRESSURE					
FEEDWATER FLOW	GPM				
RCIC FLOW	GPM				
CORE SPRAY FLOW A	GPM				
CORE SPRAY FLOW B	GPM				
LPCI/RHR FLOW A	GPM				
LPCI/RHR FLOW B	GPM				
SRV STATUS	O/C				
DRYWELL SUMP LEVEL					
DRYWELL PRESSURE					
DRYWELL TEMP	°F				
SUPPRESS POOL LEVEL					
SUPPRESS POOL TEMP	°F				
HYDROGEN CONCEN.	%				
OXYGEN CONCEN.	%				
DRYWELL RADIATION					
WETWELL RADIATION					

PLANT CONTROL STATUS FORM (BOILING WR)

Reactivity Control

All Control Rods Inserted? ☐ Yes ☐ No: Number _____ rods
Reactor Subcritical? ☐ Yes ☐ No
Standby Liquid Control Initiated? ☐ Yes ☐ No
Shutdown Margin within Tech Specs? ☐ Yes ☐ No

Reactor Vessel Level Control

Level controlled by one or more of the following:

☐ Condensate/Feedwater ☐ RHR Service Water
☐ RCIC ☐ Fire Water
☐ HPCI/HPCS ☐ Control Rod Drive
☐ Core Spray ☐ Other: _____
☐ LPCI

Reactor Vessel Pressure Control

Main Steam Isolation Valves: ☐ All Open ☐ All Closed ☐ Other: _____

Reactor Vessel Pressure Control by:

☐ Turbine Bypass or Turbine Control
☐ Safety Relief Valves (SRV)/ Automatic Depressurization System (ADS)
☐ Other: _____

Stuck Open Safety Relief Valve ☐ No ☐ Yes: Number _____

Heat Sink Control

☐ Condenser
☐ Suppression Pool
☐ Residual Heat Removal/Shutdown Cooling
☒ Isolation Condenser, where applicable (N/A for Susquehanna)
☐ Other: _____

Containment Control

Containment Spray ☐ On ☐ Off
Suppression Pool Cooling ☐ On ☐ Off
Standby Gas Treatment ☐ On ☐ Off
Hydrogen Control: ☐ Recombiner
☒ Igniter (N/A for Susquehanna)
☐ Containment Atmosphere Dilution