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PILGRIM NUCLEAR POWER STATION

Procedure No. EP-IP-100

EMERGENCY CLASSIFICATION AND NOTIFICATION



Stop
Think
Act
Review

SAFETY REVIEW REQUIRED

SAFETY RELATED

REVISION LOG

REVISION 13

Date Originated 9/00

Pages Affected

Description

5,6,27

Revise to include design basis core cooling requirements (2/3 core height with Core Spray) specified in EOP-01.

8

Add new definition for radiation monitor readings.

27

Revise EAL 1.4.1.4 and EAL 1.4.1.3 with new EAL values for Drywell and Torus High Range Radiation Monitors.

REVISION 12

Date Originated 1/00

Pages Affected

Description

All

All pages formatted to reflect the updated Procedures format. Revision bars are not shown for reformatting.

8-10,14

Revise titles.

41

Revise titles, editorial changes, and changes for new CANS.

42

Revise titles and changes for new CANS.

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1.0 PURPOSE

This Procedure provides instruction of the entry conditions at which specific emergency classifications must be declared, guidelines for the implementation of the Emergency Plan, and the process used to notify response personnel and organizations.

2.0 REFERENCES

- [1] EP-AD-600, "Emergency Action Level Technical Bases"
- [2] EP-PP-01, "PNPS Emergency Plan"
- [3] PNPS Technical Specifications

3.0 DEFINITIONS

- [1] Adequate Core Cooling - Heat removal from the Reactor sufficient to prevent rupturing the fuel clad. Three viable mechanisms for establishing adequate core cooling are defined: core submergence, spray cooling, and steam cooling.
 - (a) Submergence is the preferred method for cooling the core. The core is adequately cooled by submergence when it can be determined that RPV water level is at or above the top of the active fuel. All fuel nodes are then assumed to be covered with water and heat is removed by boiling heat transfer.
 - (b) Adequate Spray Cooling is provided, assuming a bounding axial power shape, when at least one Core Spray subsystem is injecting into the RPV at the design flow rate (3,600 GPM) and RPV water level is at or above the elevation of the jet pump suctions (-175 in.). The covered portion of the core is then cooled by submergence while the uncovered portion is cooled by the spray flow. The required spray flow must be supplied by a single subsystem to ensure adequate spray distribution to all fuel bundles.
 - (c) Steam Cooling is relied upon only if RPV water level cannot be restored and maintained above the top of the active fuel, cannot be determined, or must be intentionally lowered below the top of the active fuel. The core is adequately cooled by steam if the steam flow across the uncovered length of each fuel bundle is sufficient to maintain the hottest peak clad temperature below the appropriate limiting value; 1500°F if makeup can be injected, 1800°F if makeup cannot be injected. The covered portion of the core remains cooled by boiling heat transfer and generates the steam which cools the uncovered portion.

Steam cooling with makeup capability is established by maintaining RPV water level above the Minimum Steam Cooling RPV Water Level (-150 in.) or RPV pressure above the Minimum Alternate RPV Flooding Pressure (a function of the number of open SRVs). In either case, the peak clad temperature is limited to 1500°F, the threshold for fuel rod perforation.

Steam cooling without makeup capability is established as long as RPV water level remains above the Minimum Zero-Injection RPV Water Level (-160 in.). The peak clad temperature is permitted to rise to 1800°F, the threshold for significant metal-water reaction, to maximize the heat transfer to steam and to delay the need for RPV depressurization as long as possible. The minimum RPV water level at which adequate steam flow exists is higher when makeup capability exists because:

- The limiting fuel temperature is lower (1500°F). The higher limit of 1800°F is used only when cladding perforation cannot be avoided.
- With injection, water at the core inlet is subcooled. Some of the energy produced by the core must then be expended in raising the temperature of the liquid to saturation and less steam will be produced to cool the uncovered portions of the core.

- [2] Alert - Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety at PNPS. Any releases are expected to be limited to small fractions of EPA Protective Action Guideline exposure levels.
- [3] BECONS - The PNPS community offsite notification system.
- [4] Computerized Automated Notification System (CANS) - A computer-assisted system that, when activated, has the following capabilities:
- (a) Activating the emergency pager system.
 - (b) Accepting calls from authorized responders to inform them of an abnormal or emergency condition at PNPS.
 - (c) Calling response personnel at their home or work phone to inform them of an abnormal or emergency condition at PNPS.
 - (d) Maintaining an updated list of personnel responding and their estimated time of arrival at their facility.
- [5] Cannot Be Determined - The current value or status of an identified parameter relative to that specified in the Emergency Action Level (EAL) cannot be ascertained using all available indications (direct and indirect, singly or in combination).

- [6] Cannot Be Maintained Above/Below - The value of the identified parameter(s) is not able to be kept above/below specified limits. This determination includes making an evaluation that considers both current and future system performance in relation to the current value and trend of the parameter(s). It does not imply that the actual value of the parameter must first pass the specified limit.
- [7] Cannot Be Restored Above/Below - The value of the identified parameter(s) is not able to be returned to above/below specified limits after having passed those limits. This determination includes making an evaluation that considers both current and future system performance in relation to the current value and trend of the parameter(s). It does not imply any specific time interval, but does not permit prolonged operation beyond the limit without declaring the specified emergency classification. (May be used in combination with Definition 3.0[6].)
- [8] Controlled Process - A preplanned activity for which the conditions specified in an EAL are anticipated to be or are intentionally exceeded as part of an approved Procedure.
- [9] DNN - Digital Notification Network.
- [10] Emergency Release is/is not in Progress - For purposes of offsite notification, any release of radioactivity is considered 'an emergency release in progress' which:
- Meets any EAL of Classification Subsection 5.1, Effluent Monitors
- OR
- Involves an actual or suspected Turbine Building or unmonitored release which is associated with the emergency event.
- [11] ENS - NRC Emergency Notification System.
- [12] Essential Information Checklist - The form used by oncoming Emergency Director when relieving present Emergency Director of the responsibilities outlined in this Procedure. This form may also be used to provide information to Media Center and Corporate personnel.
- [13] Essential Personnel - Those individuals assigned specific emergency response duties as identified in the PNPS Emergency Plan and Implementing Procedures.
- [14] Follow-Up Information Form - The form used to initiate and document periodic emergency classification updates to offsite agencies.
- [15] General Emergency - Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with the potential for loss of containment integrity. Releases can be expected to exceed EPA Protective Action Guideline exposure levels for more than the area near the site boundary.
- [16] Initial Notification Form - The form used to initiate and document initial emergency classification notifications to offsite agencies.

- [17] Non-Essential Personnel - Personnel who are not assigned specific emergency response duties.
- [18] Primary System - The pipes, valves, and other equipment which connect directly to the Reactor Pressure Vessel (RPV) such that a reduction in RPV pressure will effect a decrease in the steam or water being discharged through an unisolated break in the system.
- [19] Radiation Monitor Channel A and B Above/Below EAL Threshold Readings - The value of both channels statements above or below a threshold reading may not apply when one channel is known to be inoperable or out of service. The determination of a valid reading on either channel that exceeds the EAL threshold constitutes that the intent of the EAL has been met and the associated classification should be declared.
- [20] Release is above/below Protective Action Guides (PAGs) - PAGs are defined by the EPA as dose in excess of 1 rem TEDE or 5 rem CDE Thyroid. For purposes of offsite notification and in the absence of dose assessment data, an emergency release is considered above PAGs when the General Emergency criteria for EAL category 5.0, Radioactivity Release, Classification Sections 5.1, Effluent Monitors, and 5.2, Dose Projection & Environmental Measurements (EALs 5.1.1.4, 5.2.1.4, and 5.2.2.4) are met.
- [21] Shutdown - As regards Reactor status, the Reactor is shutdown if the Reactor is subcritical (power decreasing) and below the heating range (IRM range 7).
- [22] Site Area Emergency - Events are in progress or have occurred which involve actual or likely major failures of PNPS functions needed for the protection of the public. Any releases are not expected to exceed EPA Protective Action Guidelines exposure levels except near the site boundary.
- [23] Sustained Loss - Loss of power supply, system or component operability for which the return to service has not been determined to be imminent. It does not imply any specific time interval, but prolonged operation is not permitted without declaring the specified emergency condition based on the potential for degraded plant safety.
- [24] Termination - The point at which the event is no longer considered to be an emergency. Termination of the emergency is formally identified by an Initial Notification message transmission and entry into Recovery.
- [25] Transitory Event - An event in which PNPS exceeded an Emergency Action Level (EAL) but conditions improved prior to classification.
- [26] Unusual Event - Events are in progress or have occurred that indicate a potential degradation of the level of safety at PNPS. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

4.0 RESPONSIBILITIES

- [1] The Operations Shift Superintendent, or the Control Room Supervisor if the Operations Shift Superintendent is incapacitated or away from the Control Room, shall be responsible for the initial emergency classification declaration and implementation of this Procedure.
- [2] The Operations Shift Superintendent, or Control Room Supervisor if the Operations Shift Superintendent is unavailable, shall assume the role of Emergency Director upon initial declaration of any emergency classification and shall continue to function as the Emergency Director until relieved of those duties by the on-call Emergency Director or other qualified individual (i.e., Emergency Plant Operations Supervisor or off-shift Operations Shift Superintendent).
- [3] The Emergency Director is the final authority for determining the emergency classification level (initial classification, downgrading, or terminating to recovery). This authority may not be delegated.
- [4] The Emergency Director is responsible for directing and overseeing notification of the on-call PNPS Emergency Response Organization.
- [5] The Control Room Operations Assistant or a designated alternate is responsible for the following:
 - (a) When directed, notifying the on-call PNPS Emergency Response Organization.
 - (b) Periodically checking on the status of personnel responding to the notification process.
 - (c) If CANS and BEEPS fail, Security is responsible for notifying on-call personnel using commercial telephone lines.

5.0 PROCEDURE

5.1 RECOGNIZING AN EMERGENCY

- [1] When indications of abnormal conditions are received, personnel will verify the symptoms/indications and then compare them with the Emergency Action Levels (Attachment 5).

- [2] Identify the highest emergency classification level (if multiple EALs are exceeded) for which an EAL has been met or exceeded considering the following:
- (a) If conditions warrant the issuance of Protective Action Recommendations (PARs), the classification of General Emergency will be made.
 - (b) If plant conditions indicate a possible radiological release or a release is in progress or suspected, evaluate the applicability of offsite dose-based EALs (category 5.2).
 - (c) If a classification level was met or exceeded but the classifiable condition no longer exists (a lesser classification level may or may not still be appropriate), refer to Section 5.4, Transitory Events.

5.2 INITIAL DECLARATION OF AN EMERGENCY FROM THE CONTROL ROOM

- [1] The Operations Shift Superintendent, or Control Room Supervisor if the Operations Shift Superintendent is unavailable, shall announce to the Control Room operating staff:
- (a) That an emergency has been declared.
 - (b) The emergency classification level.
 - (c) That the Operations Shift Superintendent (Control Room Supervisor) has assumed the role of Emergency Director.
- [2] Conduct initial emergency notifications as follows:

NOTE

In the event the public address system is inoperative during notifications to Station personnel at any time, determine alternate means to disseminate information to plant personnel.

- (a) For events which are classified as a General Emergency, complete the General Emergency Notifications Checklist (Attachment 4).

NOTE

If during the declaration process it becomes necessary to upgrade the emergency classification level before the actual initial notification transmittal, do not send simultaneous notifications. Generate and send a new notification form with the appropriate classification level.

- (b) For events which are classified as a Site Area Emergency, complete the Site Area Emergency Notifications Checklist (Attachment 3).

- (c) For events which are classified as an Alert, complete the Alert Notifications Checklist (Attachment 2).
 - (d) For events which are classified as an Unusual Event, complete the Unusual Event Notifications Checklist (Attachment 1).
- [3] Contact (or direct an assistant to contact) the on-shift Radiation Protection Supervisor/Technician and direct them to review EP-IP-231 and assume the responsibilities of the Onsite Radiological Supervisor for emergency exposure controls until relieved by the on-call Onsite Radiological Supervisor.
 - [4] Contact (or direct an assistant to contact) on-shift Production Maintenance personnel not already involved in the emergency and inform them to report to the Control Room or the OSC to stand by for repair and corrective action activities if necessary.
 - [5] The Emergency Plant Operations Supervisor (EPOS) may relieve the Operations Shift Superintendent as Emergency Director until the on-call Emergency Director assumes responsibility for the position in the EOF.
 - [6] The on-shift Emergency Director will remain in the Control Room until relieved by the on-call Emergency Director.

5.3 WHILE IN A CLASSIFIED EMERGENCY

- [1] As soon as possible, but no later than 1 hour after event classification, ensure that the ENS or a commercial telephone line is continuously staffed with a knowledgeable individual to provide additional event notification and plant information to the NRC.
- [2] Emergency response personnel will continuously review the Emergency Action Levels (Attachment 5) to ensure proper and appropriate event classification.
 - (a) If the declaration of a higher classification is warranted, conduct initial emergency notifications as follows:
 - (1) For events which are classified as a General Emergency complete the General Emergency Notifications Checklist (Attachment 4).

NOTE

If during the declaration process it becomes necessary to upgrade the emergency classification level before the actual initial notification transmittal, do not send simultaneous notifications. Generate and send a new notification form with the appropriate classification level.

- (2) For events which are classified as a Site Area Emergency, complete the Site Area Emergency Notifications Checklist (Attachment 3).

- (3) For events which are classified as an Alert, complete the Alert Notifications Checklist (Attachment 2).
 - (b) If a higher classification level was met but that classifiable condition no longer exists (a lesser classification level may or may not still be appropriate), refer to Section 5.4, Transitory Events.
 - (c) If the emergency conditions support downgrading the classification level, refer to Section 5.5, Downgrading Emergency Classifications.
 - (d) If the situation has been controlled and a state of emergency is no longer necessary, refer to Section 5.6, Transition to Recovery.
- [3] Provide periodic updates (hourly or whenever conditions change) to the Commonwealth and local communities using Follow-Up Information Forms (Attachment 7). The update periodicity may be adjusted by mutual agreement with the Commonwealth.
- [4] As conditions improve and additional personnel and resources become available, certain recovery activities (described in EP-IP-520) may be initiated prior to termination of the emergency.
- [5] Turnover of the Emergency Director Position
- (a) The outgoing Emergency Director will provide the oncoming Emergency Director with a briefing of the emergency conditions and the status of offsite notifications.
 - (b) Items contained on the Essential Information Checklist (Attachment 9) will be used to facilitate the turnover briefing as follows:
 - (1) The outgoing Emergency Director may complete an essential Information Checklist and provide a copy to the oncoming Emergency Director to be used for the turnover briefing.
 - (2) The oncoming Emergency Director may complete an Essential Information Checklist while covering each item during conduct of the turnover briefing.
 - (c) Discuss any Protective Action Recommendations issued to offsite agencies as applicable.

5.4 TRANSITORY EVENTS

[1] For situations which begin under non-emergency conditions then experience events which ultimately result in a classifiable emergency, enter and execute the following Attachment which corresponds to the appropriate current classification level:

- (a) Attachment 1, Unusual Event Notifications Checklist.
- (b) Attachment 2, Alert Notifications Checklist.
- (c) Attachment 3, Site Area Emergency Notifications Checklist.

[2] For situations which begin under non-emergency conditions, experience events which qualify as a classifiable emergency, and result in conditions which no longer meet a classification level:

- (a) Consider the following items prior to entering Recovery:
 - (1) Conditions no longer meet an Emergency Action Level and it appears unlikely that conditions will deteriorate.
 - (2) Plant releases of radioactive materials to the environment are under control (within Technical Specifications) or have ceased and the potential for an uncontrolled radioactive release is acceptably low.
 - (3) The Reactor is in a stable condition and long-term core cooling is available.
 - (4) Offsite conditions do not unreasonably limit access of outside support to the Station and qualified personnel and support services are available.
- (b) Complete and distribute an Initial Notification Form to specify the transitory event classification level and signify entry into Recovery (EAL number 0.0.0.0 is used to signify entry into Recovery).
- (c) Exit this Procedure and enter EP-IP-520, "*Transition and Recovery.*"

[3] For situations which begin in a classified emergency then experience events which ultimately result in:

(a) A return to the current classification level

Complete and distribute an Initial Notification Form to specify the transitory event classification level and signify return to the current classification level.

NOTE

Transitory events which occur during an emergency cannot directly result in a downgraded classification level or entry into Recovery. These actions must be performed separately.

(b) A lower classification level or no longer meet a classification level

Complete and distribute an Initial Notification Form to specify the transitory event classification level and signify return to the current classification level.

[4] Return to Section 5.3.

5.5 DOWNGRADING EMERGENCY CLASSIFICATIONS

[1] Once in an Alert or higher classification level, the decision to downgrade below the Alert level shall only be made after the TSC, OSC, and EOF have been activated.

[2] Have the Control Room make the following announcement over the public address system, TWICE:

"Attention all personnel, attention all personnel: The emergency classification level has been downgraded to a/an (applicable classification level)."

[3] Complete and distribute an Initial Notification Form to signify entry into the lower emergency classification level.

[4] Return to Section 5.3.

5.6 TRANSITION TO RECOVERY

[1] If entering Recovery from an Unusual Event, determine the need for a Recovery Plan and support organization. Generally, the activities following an Unusual Event will not require the formation of a Recovery Organization or a transition period prior to event termination and entry into Recovery. Refer to EP-IP-520 for guidance if recovery efforts following an Unusual Event extend beyond offsite notification and the generation of required reports.

- [2] Complete the Termination Checklist (Attachment 8).
- (a) If conditions will allow for the termination of the emergency and entry into Recovery, exit this Procedure and enter EP-IP-520, "Recovery."
 - (b) If conditions do not support termination of the emergency and entry into Recovery, continue following the guidance provided in Section 5.3 of this procedure.

5.7 INITIAL NOTIFICATION FORM DESCRIPTION

NOTE

Upon activation of the EOF, the Control Room and EOF must coordinate the numbering sequence of notifications to ensure consecutive numbers are assigned to notification forms.

- [1] Form Number: Notification form numbers are assigned sequentially from the start of the emergency. The sequence includes the Initial Notification Form as well as the Follow-Up Information Form.
- [2] Block 1: Designation for notifications conducted as part of a drill or exercise versus an actual event.
- [3] Block 2: Specifies the time, circumstance, and classification level applicable to the notification form as follows:
 - (a) The time and date denote the point at which the Emergency Director (or Operations Shift Superintendent) recognized and formally declared the new event classification level.
 - (b) The "entered" check box is used when the first Initial Notification Form is completed for an emergency.
 - (c) The "transitory" check box is used to provide a location to enter the highest classification level which was met during a transitory event.
 - (d) The "upgraded to" check box is used to provide initial notification of emergencies which require the declaration of a higher classification.
 - (e) The "downgraded to" check box is used to provide initial notification of emergencies which warrant lowering the classification level.
 - (f) The classification level boxes are used to indicate the classification applicable to the notification.

- [4] Block 3: Provides the applicable EAL number and description for the specified classification level as follows:
- (a) For events with more than one EAL in the highest classification level, provide the EAL number for which the event was classified on. Additional EAL numbers may be provided in the description section if desired.
 - (b) EAL number 0.0.0.0 is used to signify entry into Recovery.
 - (c) A brief non-technical description (avoiding abbreviations and acronyms) is provided in enough detail to allow an understanding of the nature of the EAL number (and the transitory event if applicable).
- [5] Block 4: Provides indication of an emergency radioactive release and the relative magnitude. If necessary, refer to EP-IP-400, "*Protective Actions*", to determine whether an emergency release is in progress, whether an emergency release is above protective action guides, and what protective action recommendations are necessary.
- [6] Block 5: Provides the most recent meteorological data obtained from any of the available sources.
- [7] Block 6: Provides any applicable protective action recommendations made by PNPS ERO personnel as follows
- (a) Protective Action Recommendations are only issued by PNPS in a General Emergency. If the classification level is not a General Emergency, the "No Protective Actions Necessary" check box shall be selected.
 - (b) If MEMA or MDPH representatives are present in the EOF and the classification level is General Emergency, the "Provided to MEMA/MDPH" check box is selected.
 - (c) If MEMA or MDPH representatives are not present in the EOF and the classification level is General Emergency, the appropriate protective action recommendations check boxes and affected subareas are selected.
- [8] Block 7: Indicates the time and date when transmission of the form was begun and the name of the individual performing the transmission.
- [9] Block 8: Indicated the time and date when transmission of the form was received and the name of the individual receiving the transmission.
- [10] Block 9: Provides the protective action recommendations made by PNPS ERO personnel when MEMA or MDPH representatives are present in the EOF (only applicable for General Emergency classifications).
- [11] Block 10: Emergency Director approval signature.

5.8 FOLLOW-UP INFORMATION FORM DESCRIPTION

- [1] Form Number: Notification form numbers are assigned sequentially from the start of the emergency. The sequence includes the Initial Notification Form as well as the Follow-Up Information Form.
- [2] Block 1: Designation for notifications conducted as part of a drill or exercise versus an actual event.
- [3] Block 2: Specifies the time and classification level applicable to the Follow-Up Information Form.
- [4] Block 3: Indicates the prevailing trend for conditions at the Station.
- [5] Block 4: Provides the applicable EAL number and description for the specified classification level as follows:
 - (a) For events with more than one EAL in the highest classification level, provide the EAL number for which the event was classified on. Additional EAL numbers may be provided in the description section if desired.
 - (b) A brief non-technical description (avoiding abbreviations and acronyms) is provided in enough detail to allow an understanding of the nature of the EAL number.
- [6] Block 5: Indicates whether offsite assistance has been requested, the type of assistance, and the reason for the request.
- [7] Block 6: Provides indication of an emergency radioactive release and the relative magnitude. If necessary, refer to EP-IP-400, "Protective Actions", to determine whether an emergency release is in progress, whether an emergency release is above protective action guides, and what protective action recommendations are necessary.
- [8] Block 7: Provides the most recent meteorological data obtained from any of the available sources.
- [9] Block 8: Provides any applicable protective action recommendations made by PNPS ERO personnel as follows:
 - (a) Protective Action Recommendations are only issued by PNPS in a General Emergency. If the classification level is not a General Emergency, the "No Protective Actions Required" check box shall be selected.
 - (b) If MEMA or MDPH representatives are present in the EOF and the classification level is General Emergency, the "Provided to MEMA/MDPH" check box is selected.

- (c) If MEMA or MDPH representatives are not present in the EOF and the classification level is General Emergency, the appropriate Protective Action Recommendations check boxes and affected subareas are selected.

- [10] Block 9: Indicates the time and date when transmission of the form was begun and the name of the individual performing the transmission.
- [11] Block 10: Indicates the time and date when transmission of the form was received and the name of the individual receiving the transmission.
- [12] Block 11: Provides the protective action recommendations and their bases made by PNPS ERO personnel when MEMA or MDPH representatives are present in the EOF (only applicable for General Emergency classifications).
- [13] Block 12: Emergency Director approval signature.

6.0 RECORDS

- [1] The following documents are generated as a result of the implementation of this Procedure:
 - (a) Unusual Event Notifications Checklist
 - (b) Alert Notifications Checklist
 - (c) Site Area Emergency Notifications Checklist
 - (d) General Emergency Notifications Checklist
 - (e) Essential Information Checklist
 - (f) Initial Notification Form
 - (g) Follow-Up Information Form
 - (h) Termination Checklist
- [2] All records shall be forwarded to Emergency Preparedness for final disposition following the termination of the emergency.

7.0 ATTACHMENTS

ATTACHMENT 1 - UNUSUAL EVENT NOTIFICATIONS CHECKLIST

ATTACHMENT 2 - ALERT NOTIFICATIONS CHECKLIST

ATTACHMENT 3 - SITE AREA EMERGENCY NOTIFICATIONS CHECKLIST

ATTACHMENT 4 - GENERAL EMERGENCY NOTIFICATIONS CHECKLIST

ATTACHMENT 5 - EMERGENCY ACTION LEVELS

ATTACHMENT 6 - SAMPLE - INITIAL NOTIFICATION FORM

ATTACHMENT 7 - SAMPLE - FOLLOW-UP INFORMATION FORM

ATTACHMENT 8 - SAMPLE - TERMINATION CHECKLIST

ATTACHMENT 9 - SAMPLE - ESSENTIAL INFORMATION CHECKLIST

ATTACHMENT 10 - ACTIVATION OF THE EMERGENCY RESPONSE ORGANIZATION

ATTACHMENT 11 - DOCUMENT CROSS-REFERENCES

ATTACHMENT 12 - IDENTIFICATION OF COMMITMENTS

UNUSUAL EVENT

NOTIFICATION OF STATION PERSONNEL - STANDBY STATUS

CAUTION

During a security threat it may be advisable **NOT** to sound an alarm.

Sound/have the Control Room sound the Operator Recall Alarm and make the following announcement over the public-address system, TWICE:

- A. "Attention all personnel, attention all personnel: An Unusual Event has been declared due to (*brief description of initiating event*). All on-call members of the Emergency Response Organization stand by for further instructions. All other personnel continue with your present duties until additional instruction is given."
- B. If there is a localized emergency (for example, high radiation, fire), announce its type and location and instruct personnel to stand clear of this area.

Time Completed: _____

NOTIFICATION OF THE ERO - STANDBY STATUS

Notify or direct notification of the ERO in accordance with Attachment 10, Activation of the Emergency Response Organization.

Time Completed: _____

NOTIFICATION OF STATE AND LOCAL AGENCIES

Within 15 minutes of the event classification transmit an Initial Notification Form (Attachment 6) to the Commonwealth and local authorities.

Time Completed: _____

NOTIFICATION OF THE NRC

Inform the NRC of the event classification using the ENS or a commercial telephone (Attachment 6 Step 4).

Time Completed: _____

RETURN TO THE PROCEDURE

(EITHER STEP 5.2[2] OR 5.4[1])

ALERT

SITE & PUBLIC AREA NOTIFICATION - RELEASE OF NONESSENTIAL PERSONNEL

CAUTION

During a security threat it may be advisable NOT to sound an alarm.

Sound/have the Control Room sound the Operator Recall Alarm and make the following announcement over the public-address system, TWICE:

- A. "Attention all personnel, attention all personnel: An Alert has been declared due to (*brief description of initiating event*). All on-call members of the Emergency Response Organization report to your designated emergency response facility. All Pilgrim Station personnel assemble in your normal office or shop area, report to your supervisor, and await instructions. All visitors, all nonessential contractor personnel, all declared pregnant females, and all handicapped personnel please leave the site at this time."
- B. If there is a localized emergency (for example, high radiation, fire), announce its type and location and instruct personnel to stand clear of this area.
- C. If there is a potential for an airborne radiological release, consider announcing that there will be no eating, drinking, or smoking until further notice.
- D. (*Turn on the outside speakers*) "Attention please! Attention please! This is Pilgrim Station. Please leave the recreation areas without delay." (*Turn off the outside speakers*)

Time Completed: _____

NOTIFICATION OF THE ERO - EMERGENCY FACILITY ACTIVATION

Notify or direct notification of the ERO in accordance with Attachment 10, Activation of the Emergency Response Organization.

Time Completed: _____

NOTIFICATION OF STATE AND LOCAL AGENCIES

Within 15 minutes of the event classification transmit an Initial Notification Form (Attachment 6) to the Commonwealth and local authorities.

Time Completed: _____

ALERT (Continued)

NOTIFICATION OF THE NRC

Inform the NRC of the event classification using the ENS or a commercial telephone (Attachment 6 Step 4).

Time Completed: _____

ACTION VERIFICATION

Have Security verify public access areas have been evacuated.

Time Completed: _____

RETURN TO THE PROCEDURE

(EITHER STEP 5.2[2], 5.3[2](a), OR 5.4[1])

SITE AREA EMERGENCY

ASSEMBLY AREA DESIGNATION

Determine the Assembly Area based on meteorological conditions as follows:

Assembly Area

- Support Building Cafeteria
- Chiltonville Training Center

Wind Direction (° from)

- 000°-289° or 324°-360°
- 290°-323°

NOTIFICATION OF SECURITY (IF NOT PREVIOUSLY DONE)

1. Inform Security of the location of the designated Assembly Area and the official declaration time of the Site Area Emergency.
2. Direct Security to ensure that personnel in the Support Building are sent to their assembly area.
3. Direct Security to initiate personnel accountability procedures.
4. Direct Security to verify public access areas are being/have been evacuated.

Time Notified: _____

SITE & PUBLIC AREA NOTIFICATION - PROTECTED AREA EVACUATION

CAUTION

During a security threat it may be advisable **NOT** to sound an alarm.

Consider radiological conditions when preparing to evacuate personnel. If high dose rates will be encountered, it may be better to shelter non-essential personnel on-site.

Sound/have the Control Room sound the Emergency Site Evacuation Alarm and make the following announcement over the public-address system, TWICE:

A. If entering from no event or an Unusual Event:

"Attention all personnel, attention all personnel: A Site Area Emergency has been declared due to (*brief description of event*). All on-call Emergency Response Organization members report to your designated emergency response facility. All other personnel evacuate to (*Assembly Area*)."

If upgrading from an Alert:

"Attention all personnel, attention all personnel: A Site Area Emergency has been declared due to (*brief description of event*). All personnel who are not part of the on-call Emergency Response Organization evacuate to (*Assembly Area*)."

Continued on next page.

SITE AREA EMERGENCY (Continued)

SITE & PUBLIC AREA NOTIFICATION - PROTECTED AREA EVACUATION (CONTINUED)

- B. If there is a localized emergency (for example, high radiation, fire), announce its type and location and instruct personnel to stand clear of this area.
- C. If there is a potential for an airborne radiological release, consider announcing that there will be no eating, drinking, or smoking until further notice.
- D. If not previously done: (*Turn on the outside speakers*) "Attention please! Attention please! This is Pilgrim Station. Please leave the recreation areas without delay". (*Turn off the outside speakers.*)

Time Completed: _____

NOTIFICATION OF THE ERO - EMERGENCY FACILITY ACTIVATION

If not already notified, notify or direct notification of the ERO in accordance with Attachment 10, Activation of the Emergency Response Organization.

Time Completed: _____

NOTIFICATION OF STATE AND LOCAL AGENCIES

Within 15 minutes of the event classification transmit an Initial Notification Form (Attachment 6) to the Commonwealth and local authorities.

Time Completed: _____

NOTIFICATION OF THE NRC

Inform the NRC of the event classification using the ENS or a commercial telephone (Attachment 6 Step 4).

Time Completed: _____

VERIFY ACCOUNTABILITY

Security should report within 30 minutes of declaration of a Site Area Emergency that accountability is complete and provide the names of missing persons, if any. Log the time that accountability was completed.

Time Completed: _____

RETURN TO THE PROCEDURE

(EITHER STEP 5.2[2], 5.3[2](a), OR 5.4[1])

GENERAL EMERGENCY

ASSEMBLY AREA DESIGNATION

Determine the Assembly Area based on meteorological conditions as follows:

Assembly Area

- Support Building Cafeteria
 Chiltonville Training Center

Wind Direction (° from)

- 000°-289° or 324°-360°
290°-323°

NOTIFICATION OF SECURITY (IF NOT PREVIOUSLY DONE)

1. Inform Security of the location of the designated Assembly Area and the official declaration time of the General Emergency
2. Direct Security to ensure that personnel in the Support Building are sent to their assembly area.
3. Direct Security to initiate personnel accountability procedures.
4. Direct Security to verify public access areas are being/have been evacuated.

Time Notified: _____

SITE & PUBLIC AREA NOTIFICATION - PROTECTED AREA EVACUATION

CAUTION

During a security threat it may be advisable **NOT** to sound an alarm.

Consider radiological conditions when preparing to evacuate personnel. If high dose rates will be encountered, it may be better to shelter nonessential personnel on-site.

Sound/have the Control Room sound the Emergency Site Evacuation Alarm and make the following announcement over the public-address system, TWICE:

- A. If entering into a General Emergency from an Alert or lower: "Attention all personnel, attention all personnel: A General Emergency has been declared due to (*brief description of event*). All on-call members of the Emergency Response Organization report to your designated emergency response facility. All other personnel evacuate to (*Assembly Area*). There will be no eating, drinking, or smoking until further notice."

If upgrading from an Site Area Emergency: "Attention all personnel, attention all personnel: A General Emergency has been declared due to (*brief description of event*). There will be no eating, drinking, or smoking until further notice."

Continued on next page.

GENERAL EMERGENCY (CONTINUED)

SITE & PUBLIC AREA NOTIFICATION - PROTECTED AREA EVACUATION (CONTINUED)

- B. If there is a localized emergency (for example, high radiation, fire), announce its type and location and instruct personnel to stand clear of this area.
- C. If not previously done: (*Turn on the outside speakers*) "Attention please! Attention please! This is Pilgrim Station. Please leave the recreation areas without delay." (*Turn off the outside speakers.*)

Time Completed: _____

NOTIFICATION OF THE ERO - EMERGENCY FACILITY ACTIVATION

If not already notified, notify or direct notification of the ERO in accordance with Attachment 10, Activation of the Emergency Response Organization.

Time Completed: _____

NOTIFICATION OF STATE AND LOCAL AGENCIES

Within 15 minutes of the event classification transmit an Initial Notification Form (Attachment 6) to the Commonwealth and local authorities. Protective Action Recommendations issued in accordance with EP-IP-400 are mandatory for a General Emergency classification.

Time Completed: _____

NOTIFICATION OF THE NRC

Inform the NRC of the event classification using the ENS or a commercial telephone (Attachment 6 Step 4).

Time Completed: _____

VERIFY ACCOUNTABILITY

If not previously done, Security should report within 30 minutes of declaration of a General Emergency that accountability is complete and provide the names of missing persons, if any. Log the time that accountability was completed.

Time Completed: _____

RETURN TO THE PROCEDURE

(EITHER STEP 5.2[2] OR 5.3[2](a))

1.0 REACTOR FUEL

	GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
1.1 Coolant Activity	1.1.1.4 Reactor coolant system sample activity which indicates a core melt condition as determined by EP-IP-330, "Core Damage."		1.1.1.2 Reactor coolant system sample activity > 200 microcuries/ml total iodine	1.1.1.1 Reactor coolant system sample activity > 20 microcuries/ml total iodine.
1.2 Off-gas Activity			1.2.1.2 Air ejector off-gas radiation monitors 1705-3A and B Panel 910 reading > 20,000 mfi/hr.	1.2.1.1 Air ejector off-gas radiation levels approaching Technical Specification release limits as indicated by Air Ejector Off-gas Radiation Monitors 1705-3A and B Panel 910 High/High alarm which does not clear within 13 minutes
1.3 Thermal Limits				1.3.1.1 MCPR < Technical Specification fuel cladding integrity safety limit.
1.4 Radiation Monitors	1.4.1.4 Valid Drywell High Range Area Radiation Monitor reading > 10,000 R/hr (RIT-1001-606A and B) or Valid Torus High Range Area Radiation Monitor reading > 200 R/hr (RIT-1001-607A and B) due to degraded reactor fuel integrity conditions.	1.4.1.3 Valid Drywell High Range Area Radiation Monitor reading > 200 R/hr (RIT-1001-606A and B) or Valid Torus High Range Area Radiation Monitor reading > 3 R/hr (RIT-1001-607A and B) due to degraded reactor fuel integrity conditions.	1.4.1.2 Refuel Floor Ventilation Exhaust Radiation (RFVE) Monitor 1705-8 Channel A(A/C) and Channel B(B/D) High Trip Panel 910. AND Upscale alarm on two or more of the following Area Radiation Monitors Panel 911 which cannot be attributed to a controlled process: <ul style="list-style-type: none"> • New fuel storage area (#11) • Refueling floor spent fuel pool room (#12) • Refuel floor reactor basin separator (#13) • Refuel floor reactor basin spent fuel area (#14) 	

2.0 REACTOR PRESSURE VESSEL

2.1 Reactor Water Level	2.1.1.4 Sustained RPV water level < -160 inches. AND No sources of RPV injection available. 2.1.2.4 RPV is depressurized and no mechanism of adequate core cooling can be established by injection into the RPV from any source (Primary Containment Flooding is required)	2.1.1.3 RPV water level cannot be maintained above -125 inches (TAF). AND No sources (EOP 1 Table C Injection Subsystems) of adequate capacity are available to restore water level.	2.1.1.2 RPV water level cannot be determined (RPV Flooding is required).	2.1.1.1 RPV water level cannot be restored and maintained above +12 inches
2.2 Reactor Pressure			2.2.1.2 Sustained reactor vessel dome pressure > 1325 psig.	2.2.1.1 Reactor vessel dome pressure cannot be maintained < 1115 psig (except during RPV hydrostatic testing).
2.3 Reactor Power	2.3.1.4 Reactor power > 3% and torus temperature above the "Boron Injection Initiation Temperature" (BIIT) EOP Figure 4. AND EITHER <ul style="list-style-type: none"> • An SRV is open. OR <ul style="list-style-type: none"> • Drywell pressure > 2.2 psig. 	2.3.1.3 Boron injection into the RPV intentionally initiated (boron injection required) with either: <ul style="list-style-type: none"> • Standby Liquid Control System (SBLC). OR <ul style="list-style-type: none"> • One or more of the methods detailed in PNPS Procedure 5.3.20, "Alternate Borate Injection." 	2.3.1.2 A reactor Scram has been initiated. AND The reactor is not shutdown.	

3.0 PRIMARY CONTAINMENT

3.1 Drywell Temperature		3.1.1.3 Bulk drywell temperature cannot be maintained < 280°F as determined by PNPS Procedure 2.1.27, "Drywell Temperature Indication."		3.1.1.1 Bulk drywell temperature cannot be maintained < 150°F as determined by PNPS Procedure 2.1.27, "Drywell Temperature Indication." AND Primary containment integrity is required.
3.2 Torus water Temperature		3.2.1.3 Torus water temperature cannot be maintained below the "Heat Capacity Temperature Limit" (HCTL) Figure 3.		3.2.1.1 Torus water temperature > 110°F
3.3 Containment Water Level	3.3.1.4 Primary containment water level cannot be maintained < 77 feet.	3.3.1.3 Both torus water level and RPV pressure cannot be maintained below the "SRV Tail Pipe Level Limit" (SRVTPLL) EOP Figure 2. 3.3.2.3 Torus water level cannot be maintained > 90 inches.	3.3.1.2 Torus water level cannot be maintained < 180 inches.	3.3.1.1 Reactor coolant system to drywell unidentified leakage > 5 gpm with reactor coolant temperature > 212°F OR Reactor coolant system to drywell total leakage > 25 gpm with reactor coolant temperature > 212°F. 3.3.2.1 Torus water level cannot be maintained: • < 132 inches (-1 inches narrow range) OR • > 127 inches (-6 inches narrow range). AND Primary containment integrity is required.
3.4 Primary Containment Pressure	3.4.1.4 Torus pressure approaching "The Primary Containment Pressure Limit" (PCPL) EOP Figure 7 (prior to initiation of containment venting).	3.4.1.3 Torus bottom pressure cannot be maintained below the "Pressure Suppression Pressure" (PSP) EOP Figure 6 (except during testing such as ILRT, etc.).	3.4.1.2 Primary containment pressure cannot be maintained < 2.2 psig (except during testing such as ILRT, etc.)	
3.5 Containment H ₂ & O ₂ Concentration	3.5.1.4 Drywell or torus hydrogen concentration ≥ 6%. AND Drywell or torus oxygen concentration ≥ 5% (Prior to initiation of containment venting). 3.5.2.4 Drywell or torus hydrogen concentration cannot be determined to be < 6%. AND Drywell or torus oxygen concentration cannot be determined to be < 5% (Prior to initiation of containment venting).	3.5.1.3 Drywell or torus hydrogen concentration > 1%. AND Drywell or torus oxygen concentration > 4%.	3.5.1.2 Drywell or torus hydrogen concentration > 1%.	

4.0 SECONDARY CONTAINMENT

4.1 Secondary Containment Area Water Levels		4.1.1.3 Secondary containment area water levels exceed the "Maximum Safe Operating Value" in two or more areas EOP Table L. <u>AND</u> A primary system is discharging into the area <u>AND</u> Reactor coolant temperature > 212°F with irradiated fuel in the vessel.		4.1.1.1 Secondary containment area water levels exceed the "Maximum Safe Operating Value" in two or more areas EOP Table L. <u>AND</u> Reactor coolant temperature > 212°F with irradiated fuel in the vessel.
4.2 Secondary Containment Area Temperatures		4.2.1.3 Secondary containment area temperatures exceed the "Maximum Safe Operating Value" in two or more areas EOP Table L. <u>AND</u> A primary system is discharging into the area <u>AND</u> Reactor coolant temperature > 212°F with irradiated fuel in the vessel.		4.2.1.1 Secondary containment area temperatures exceed the "Maximum Safe Operating Value" in two or more areas EOP Table L. <u>AND</u> Reactor coolant temperature > 212°F with irradiated fuel in the vessel.
4.3 Secondary Containment Area Radiation Levels		4.3.1.3 Secondary containment radiation levels exceed the "Maximum Safe Operating Value" in two or more areas EOP Table L. <u>AND</u> A primary system is discharging into the area.	4.3.1.2 General area radiation levels measured in-plant which increase by a factor of 1000 times normal as a result of airborne radioactivity which cannot be attributed to a controlled process.	

5.0 RADIOACTIVITY RELEASE

5.1 Effluent Monitors	5.1.1.4 Valid Main Stack Process Radiation Monitor 1705-18 A and B Panel 910 reading > 2.4E5 cps	5.1.1.3 Valid Main Stack Process Radiation Monitor 1705-18 A and B Panel 910 reading > 2.4E4 cps.	5.1.1.2 Valid Reactor Building Ventilation Exhaust (RBVE) monitor 1705-32A and B Panel 910 high-high alarm which does not clear within 15 minutes from the time action is taken to isolate the source. 5.1.2.2 Valid Main Stack Process Radiation Monitor 1705-18A and B Panel 910 reading > 10,000 cps for greater than 15 minutes.	5.1.1.1 Valid Reactor Building Ventilation Exhaust (RBVE) monitor 1705-32A and B Panel 910 high alarm which does not clear within 15 minutes from the time action is taken to isolate the source 5.1.2.1 Main stack radioactivity effluents in excess of the high-high alarm setpoint for greater than 15 minutes as indicated by the Main Stack Process Radiation Monitors 1705-18A and B Panel 910. 5.1.3.1 Radwaste Effluent Radiation Monitor (1705-30) high alarm Panel 910. <u>AND</u> Radwaste discharge is not isolated (FV-7214-A and B).
5.2 Dose Projection & Environmental Measurements	5.2.1.4 Dose projection based on effluent monitors or actual environmental measurements which indicate doses in excess of 1000 mrem whole body or 5000 mrem thyroid at the site boundary or beyond. 5.2.2.4 Dose projection based on effluent monitors or actual environmental measurements which indicate dose rates in excess of 1000 mrem/hr whole body or 5000 mrem/hr thyroid at the site boundary or beyond	5.2.1.3 Dose projection based on effluent monitors or actual environmental measurements which indicate doses in excess of 100 mrem whole body or 500 mrem thyroid at the site boundary or beyond.		
5.3 Contaminated Injury				5.3.1.1 Transportation of a contaminated injured person to an offsite medical facility.

6.0 INTERNAL EVENTS

	GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
6.1 Technical Specifications				6.1.1.1 The plant is not brought to the required operating mode within Technical Specifications LCO Action Statement time
6.2 Safety Systems		6.2.1.3 Evacuation of Control Room without establishment of plant control from remote shutdown stations within 15 minutes. 6.2.2.3 Steam line break outside primary containment without isolation. <u>AND</u> Reactor coolant temperature > 212°F. 6.2.3.3 Inability to immediately isolate any Main Steam Line following a valid PCIS signal (Group I). <u>AND</u> Reactor coolant temperature > 212°F.	6.2.1.2 Loss of Control Room habitability (e.g., fire, smoke, radiological hazards, etc.). 6.2.2.2 Inability to establish and maintain cold shutdown conditions as indicated by: • Reactor Mode Switch in "Shutdown." <u>AND</u> • Reactor coolant temperature cannot be maintained ≤ 212°F.	6.2.1.1 Failure of a reactor Safety Relief Valve (RV-203-3A thru D) to close following reduction of applicable pressure as indicated by either: • Acoustic monitor ZI-203 Panel C171. <u>OR</u> • SRV tailpipe temperature recorder TR-260-20 Panel 921. <u>AND</u> Reactor coolant temperature > 212°F with irradiated fuel in the vessel.
6.3 Electrical System Failures		6.3.1.3 Sustained loss of all AC power capability as indicated by the inability to power any 4kV bus (A1 thru A6) from any source (all 4kV buses de-energized). 6.3.2.3 Sustained loss of all 125 VDC power capability as indicated by: Voltage < 105 VDC Panel D-16. <u>AND</u> Voltage < 105 VDC Panel D-17.	6.3.1.2 Loss of all AC power capability as indicated by the inability to power any 4kV bus (A1 thru A6) from any source (all 4kV buses de-energized). 6.3.2.2 Loss of all 125 VDC power capability as indicated by: Voltage < 105 VDC Panel D-16. <u>AND</u> Voltage < 105 VDC Panel D-17.	6.3.1.1 Loss of all vital onsite AC power capability as indicated by: Inability to power Bus A5 from any onsite generator*. <u>AND</u> Inability to power Bus A6 from any onsite generator* * Onsite generators are: • Main Generator via Unit Auxiliary Transformer • Emergency Diesel Generator A • Emergency Diesel Generator B • Station Blackout Diesel Generator 6.3.2.1 Loss of all vital offsite AC power capability as indicated by: Inability to immediately supply AC power to Bus A5 from any offsite power supply transformer*. <u>AND</u> Inability to immediately supply AC power to Bus A6 from any offsite power supply transformer*. * Offsite power supply transformers are: • Startup Transformer (X4) • Shutdown Transformer (X13) • Main Transformer with Main Generator phase bus links removed (backscuttle)
6.4 Loss of Indication, Alarm, or Comm Capability			6.4.1.2 Complete loss of plant process computer alarm and indications <u>AND</u> Loss of most or all Control Room annunciators. <u>AND</u> Reactor coolant temperature is > 212°F	6.4.1.1 Loss of indications and/or alarms which cause a significant loss of assessment capabilities such as: Loss of indication or annunciation on safety-related equipment to an extent requiring shutdown by Technical Specifications. <u>AND</u> Reactor coolant temperature is > 212°F 6.4.2.1 Loss of all ability to communicate with or adequately activate the Emergency Response Organization as indicated by the complete loss of the onsite telephone systems

7.0 EXTERNAL EVENTS

7.1 Security Threats	7.1.1.4 An ongoing security compromise which in the judgment of the Operations Shift Superintendent has led to the loss of physical control of the plant.	7.1.1.3 An ongoing security compromise which in the judgment of the Operations Shift Superintendent may lead to the loss of physical control of the plant.	7.1.1.2 Any ongoing security compromise (> 10 minutes) as determined by the Station Security Force.	7.1.1.1 Any attempted unauthorized entry into the Protected Area as determined by the Station Security Force. 7.1.2.1 Any indication of attempted sabotage 7.1.3.1 Receipt of a credible bomb threat as determined by the Station Security Force	
7.2 Fire	<p align="center">Table 7-1 Safety Systems</p> <hr/> <p>Residual Heat Removal</p> <p>Core Spray</p> <p>Emergency Diesel Generators</p> <p>High Pressure Coolant Injection</p> <p>Automatic Depressurization System</p> <p>Reactor Protection System</p> <p>ATWS/ARI</p> <p>Primary Containment Isolation System</p> <p>Standby Gas Treatment</p> <p>Standby Liquid Control</p> <p>Reactor Building Closed Cooling Water</p> <p>Service Water</p>		7.2.1.3 Any fire which has affected the ability of two or more safety systems (Table 7-1) to perform their intended function and poses a significant potential for release of radioactivity. <u>AND</u> Reactor coolant temperature > 212°F.	7.2.1.2 Fire burning out of control in a plant vital area	7.2.1.1 Fire within the Protected Area lasting > 10 minutes from the time firefighting efforts begin (Fire Brigade fire fighting efforts have begun when the Fire Brigade first applies fire fighting agents on the fire.). <u>OR</u> Any fire onsite for which offsite fire fighting assistance is requested (the required notification of the Plymouth Fire Department for any onsite fire does not constitute a request for offsite fire fighting assistance.)
7.3 Man-made Events			7.3.1.3 Any of the following which has affected the ability of two or more safety systems (Table 7-1) to perform their intended function and poses a significant potential for release of radioactivity: • Aircraft crash on facility. • Missile impact from any source on facility. • Entry of toxic or flammable gas into a plant process building atmosphere • Explosion (Unplanned). <u>AND</u> Reactor coolant temperature > 212°F.	7.3.1.2 Any of the following events occurring which affect plant operation: • Aircraft crash on facility. • Missile impact from any source on facility. • Entry of toxic or flammable gas into a plant process building atmosphere (includes significant Main Generator hydrogen leaks). • Explosion (unplanned).	7.3.1.1 Any of the following events occurring onsite: • Aircraft crash. • Explosion (unplanned) • Toxic or flammable gas release.
7.4 Natural Events			7.4.1.3 Any of the following which has affected the ability of two or more safety systems (Table 7-1) to perform their intended function and poses a significant potential for release of radioactivity: • Earthquake • Tornado • Hurricane • Other Natural Phenomena <u>AND</u> Reactor coolant temperature is > 212°F	7.4.1.2 Any of the following which causes damage to permanent plant structures or equipment which affect plant operation: • Earthquake • Tornado • Hurricane • Other Natural Phenomena 7.4.2.2 Any earthquake onsite which has been determined to be greater than Operating Basis Earthquake levels (0.08 g).	7.4.1.1 Sustained winds (> 5 minutes) in excess of 75 mph as indicated on wind speed recorder Panel MT1 7.4.2.1 Report of a tornado onsite 7.4.3.1 Any earthquake detected by seismic instrumentation as indicated by: • Seismic monitor event alarm Panel 911. <u>OR</u> • "Seismic Recorder Operating" annunciator Panel C1 Right A-7. <u>AND</u> Ground motion is felt by one or more plant operations personnel.

8.0 OTHER

8.1 Other	8.1.1.4 In the opinion of the Operations Shift Superintendent or Emergency Director events are in progress which indicate actual or imminent core damage and the potential for a large release of radioactive material outside the site boundary	8.1.1.3 In the opinion of the Operations Shift Superintendent or Emergency Director events are in progress which indicate actual or likely failures of plant systems needed to protect the public and pose a significant radioactivity release potential.	8.1.1.2 Any event which in the opinion of the Operations Shift Superintendent or Emergency Director could or has caused actual substantial degradation of the level of plant safety.	8.1.1.1 Any event which in the opinion of the Operations Shift Superintendent or Emergency Director could or has led to a potential degradation of the level of safety of the plant 8.1.2.1 Any event which in the opinion of the Operations Shift Superintendent or Emergency Director warrants the prompt notification of Commonwealth and local authorities and precautionary notification of Emergency Response Organization personnel
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PILGRIM NUCLEAR POWER STATION

INITIAL NOTIFICATION FORM

No.

1 THIS IS: A DRILL AN ACTUAL EVENT

2 AS OF: PILGRIM NUCLEAR POWER STATION HAS:
time date

ENTERED: AN UNUSUAL EVENT
 HAD A TRANSITORY _____ AN ALERT
THEN ENTERED: A SITE AREA EMERGENCY
 UPGRADED TO: A GENERAL EMERGENCY
 DOWNGRADED TO: RECOVERY

3 EAL No. _____ BRIEF DESCRIPTION OF EVENT:

4 RADIOACTIVE RELEASE:
 IS IS NOT IN PROGRESS
 IS ABOVE IS BELOW PROTECTIVE ACTION GUIDES

5 METEOROLOGICAL DATA AS OF _____ :
 WIND DIRECTION FROM _____ ° TO _____ ° AT _____ mph

6 PNPS's PROTECTIVE ACTION RECOMMENDATIONS (PARs):
 NO PROTECTIVE ACTIONS NECESSARY
GENERAL EMERGENCY AND MEMA/MDPH ARE PRESENT IN THE EOF:
 PROVIDED TO MEMA/MDPH
GENERAL EMERGENCY AND MEMA/MDPH ARE NOT PRESENT IN THE EOF:
 SHELTER SUBAREA(s) 1 2 3 4 5 6 7 8 9 10 11
 EVACUATE SUBAREA(s) 1 2 3 4 5 6 7 8 9 10 11 12 (circle the affected subareas)

7 NOTIFICATION INITIATED BY
time date name

8 NOTIFICATION RECEIVED BY
time date name

INITIAL NOTIFICATION FORM (Cont.)

No.

NOTE

DO NOT TRANSMIT THIS SHEET OVER DNN

9

APPLICABLE ONLY IN A GENERAL EMERGENCY

PILGRIM STATION'S PROTECTIVE ACTION RECOMMENDATIONS GIVEN TO MEMA/MDPH REPRESENTATIVES IN THE EMERGENCY OPERATIONS FACILITY (circle the affected subareas):

SHELTER SUBAREA(s) 1 2 3 4 5 6 7 8 9 10 11

EVACUATE SUBAREA(s) 1 2 3 4 5 6 7 8 9 10 11 12

10

EMERGENCY DIRECTOR REVIEW AND APPROVAL:

THE EMERGENCY DIRECTOR SHALL REVIEW AND SIGN THESE FORMS INDICATING VERIFICATION OF AND APPROVAL FOR INFORMATION RELEASE AND PROTECTIVE ACTION RECOMMENDATION (if given).

APPROVED FOR RELEASE:

Emergency Director's Signature

INITIAL NOTIFICATION FORM TRANSMISSION INSTRUCTIONS

NO: _____

(Check off the boxes as steps are completed.)

Step 1: TRANSMIT THE FORM

- Verify Blocks 1 - 6 are complete, release is approved by signature, and then fill out Block 7 of the form. *For guidance on individual Block descriptions refer to EP-IP-100.*
- Place only the first page of the completed form face down in the DNN fax machine.
- Follow the posted instructions at the DNN fax machine. *Proceed immediately to Step 2.*

Step 2: CONTACT THE COMMONWEALTH AND LOCAL OFFICIALS

If notification is made on anything other than dedicated communication links (DNN or BECONS), request a verification callback.

- Pick up the DNN ring-down phone and read the following message twice:
"Attention, attention. Please standby for a roll call."
- Perform a roll call and check off the responding locations as they are identified.
 - Middleboro State Police Carver Marshfield
 - Framingham MEMA Duxbury Plymouth
 - Bridgewater Kingston Taunton
- Read the following message twice:
"This is the Pilgrim Nuclear Power Station. An Initial Notification Form is being transmitted. Obtain the transmitted form from your telecopy machine or obtain a blank form and standby for initial notification data."

Step 3: TRANSMIT THE DATA

- Read the information in Block 1 through Block 6.
- Tell those parties who have complete information to hang up, then provide missing information to remaining parties.
- Contact locations not answering roll call via BECONS or commercial telephone (auto-dialer) and read the information in Block 1 through Block 6.

Step 4: NOTIFY THE NRC

- Using the ENS or commercial phone read the information in Block 1 through 6.
Name of Contact: _____ Time: _____

Step 5: ORGANIZE THE REPORT

- Obtain the printed report from the DNN fax machine and staple it to this form.
- Inform the Emergency Director that transmission was completed at time: _____

COMPLETED BY: _____ Time: _____
Signature of person making notifications

PILGRIM NUCLEAR POWER STATION

FOLLOW-UP INFORMATION FORM

No.

1 THIS IS: A DRILL AN ACTUAL EVENT

2 AS OF: PILGRIM NUCLEAR POWER STATION IS STILL AT A:
time date
 UNUSUAL EVENT ALERT SITE AREA EMERGENCY GENERAL EMERGENCY

3 STATION CONDITIONS ARE: IMPROVING STABLE DEGRADING

4 EAL No. _____ BRIEF DESCRIPTION OF EVENT:

5 OUTSIDE ASSISTANCE: HAS HAS NOT BEEN REQUESTED
 AMBULANCE FIRE DEPARTMENT POLICE OTHER (Specify) _____
 REASON FOR OUTSIDE ASSISTANCE: _____

6 RADIOACTIVE RELEASE:
 IS IS NOTIN PROGRESS
 IS ABOVE IS BELOWPROTECTIVE ACTION GUIDES

7 METEOROLOGICAL DATA AS OF _____:
 STABILITY CLASS _____ WIND DIRECTION FROM _____ ° TO _____ ° AT _____ mph

8 PNPS's PROTECTIVE ACTION RECOMMENDATIONS (PARs):
 NO PROTECTIVE ACTIONS REQUIRED
GENERAL EMERGENCY AND MEMA/MDPH ARE PRESENT IN THE EOF:
 PROVIDED TO MEMA/MDPH
GENERAL EMERGENCY AND MEMA/MDPH ARE NOT PRESENT IN THE EOF:
 SHELTER SUBAREA(s) 1 2 3 4 5 6 7 8 9 10 11
 EVACUATE SUBAREA(s) 1 2 3 4 5 6 7 8 9 10 11 12 (circle the affected subareas)

9 NOTIFICATION INITIATED BY
time date name

10 NOTIFICATION RECEIVED BY
time date name

FOLLOW-UP INFORMATION FORM (Cont.)

No.

NOTE

DO NOT TRANSMIT THIS SHEET OVER DNN

11

APPLICABLE ONLY IN A GENERAL EMERGENCY

PILGRIM STATION'S PROTECTIVE ACTION RECOMMENDATION GIVEN TO MEMA/MDPH REPRESENTATIVES IN THE EMERGENCY OPERATIONS FACILITY (circle the affected subareas):

SHELTER SUBAREA(s) 1 2 3 4 5 6 7 8 9 10 11

EVACUATE SUBAREA(s) 1 2 3 4 5 6 7 8 9 10 11 12

SINCE PREVIOUS NOTIFICATION, THIS RECOMMENDATION HAS:

CHANGED REMAINED THE SAME

THIS RECOMMENDATION IS BASED ON:

PLANT CONDITIONS PROJECTED RELEASE ACTUAL RELEASE

12

EMERGENCY DIRECTOR REVIEW AND APPROVAL:

THE EMERGENCY DIRECTOR SHALL REVIEW AND SIGN THIS FORM INDICATING VERIFICATION OF AND APPROVAL FOR INFORMATION RELEASE AND PROTECTIVE ACTION RECOMMENDATION (if given).

APPROVED FOR RELEASE:

Emergency Director's Signature

FOLLOW-UP INFORMATION FORM TRANSMISSION INSTRUCTIONS

No: _____

(Check off the boxes as steps are completed.)

Step 1: TRANSMIT THE FORM

- Verify Blocks 1 - 8 are complete, release is approved by signature, and then fill out Block 9 of the form. *For guidance on individual Block descriptions refer to EP-IP-100..*
- Place only the first page of the completed form face down in the DNN fax machine.
- Follow the posted instructions at the DNN fax machine. *Proceed immediately to Step 2.*

Step 2: CONTACT THE COMMONWEALTH AND LOCAL OFFICIALS

If notification is made on anything other than dedicated communication links (DNN or BECONS), request a verification callback.

- Pick up the DNN ring-down phone, and read the following message twice:
"Attention, attention. Please standby for a roll call."
- Perform a roll call and check off the responding locations as they are identified.

<input type="checkbox"/> Middleboro State Police	<input type="checkbox"/> Carver	<input type="checkbox"/> Marshfield
<input type="checkbox"/> Framingham MEMA	<input type="checkbox"/> Duxbury	<input type="checkbox"/> Plymouth
<input type="checkbox"/> Bridgewater	<input type="checkbox"/> Kingston	<input type="checkbox"/> Taunton

- Read the following message twice:
"This is the Pilgrim Nuclear Power Station. A Follow-Up Information Form is being transmitted. Obtain the transmitted form from your telecopy machine or obtain a blank form and standby for follow-up information data."

Step 3: TRANSMIT THE DATA

- Read the information in Block 1 through Block 8.
- Tell those parties who have complete information to hang up, then provide missing information to remaining parties.
- Contact locations not answering roll call via BECONS or commercial telephone (auto-dialer) and read the information in Block 1 through Block 8.

Step 4: NOTIFY THE NRC

- Using the ENS or commercial phone read the information in Block 1 through 8.
Name of Contact: _____ Time: _____

Step 5: ORGANIZE THE REPORT

- Obtain the printed report from the DNN fax machine and staple it to this form.
- Inform the Emergency Director that transmission was completed at time: _____

COMPLETED BY: _____ Time: _____
Signature of person making notifications

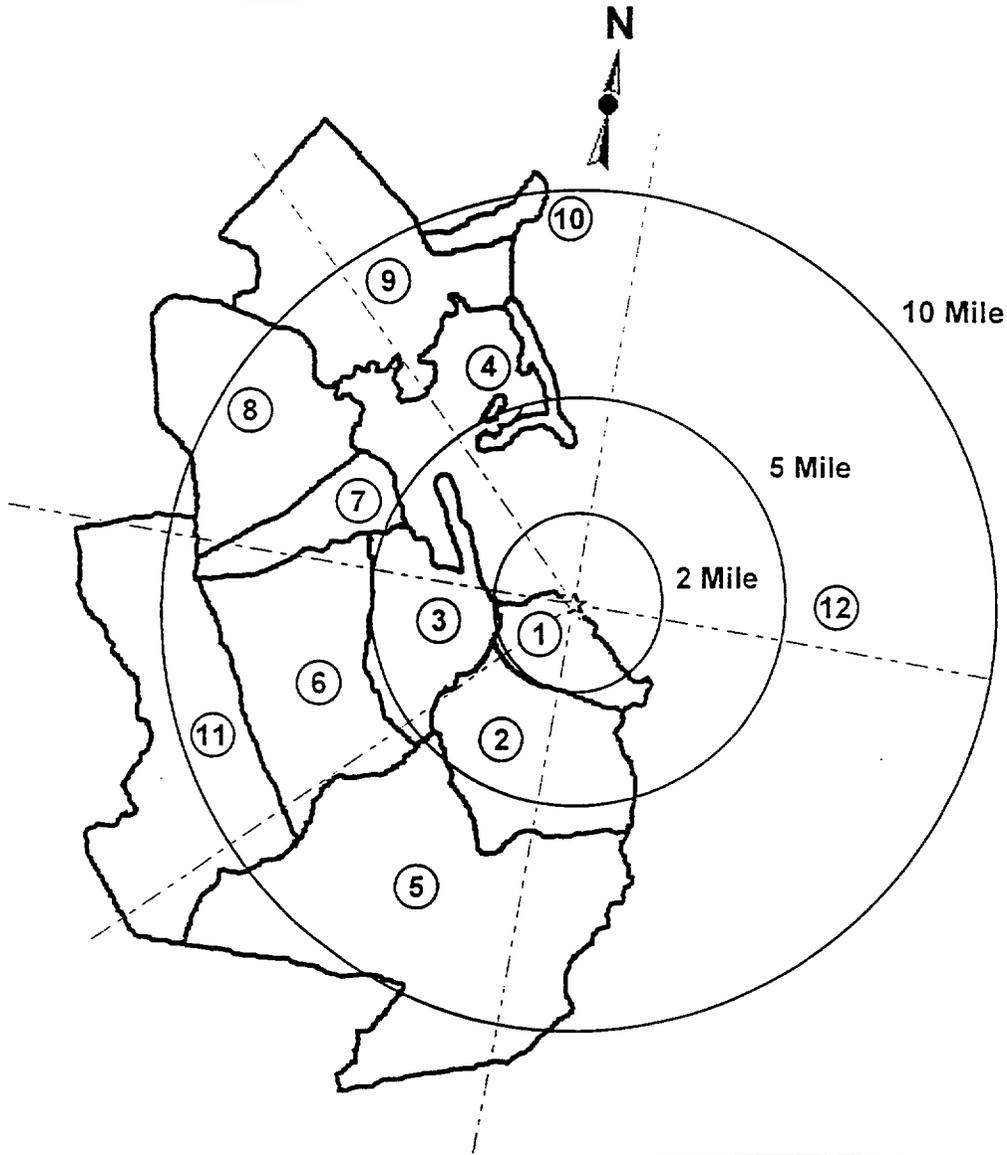
TERMINATION CHECKLIST

- | | <u>True</u> | <u>False</u> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|------------------------------------------|
| <p>1. Conditions no longer meet an Emergency Action Level and it appears unlikely that conditions will deteriorate.
List any EAL(s) which is/are still exceeded and a justification as to why a state of emergency is no longer applicable:</p> <p><u>EAL</u> <u>Justification</u></p> <hr/> <hr/> <hr/> <hr/> | <input type="checkbox"/>

 | <input type="checkbox"/>

 |
| 2. Plant releases of radioactive materials to the environment are under control (within Technical Specifications) or have ceased and the potential for an uncontrolled radioactive release is acceptably low. | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. The radioactive plume has dissipated and plume tracking is no longer required. The only environmental assessment activities in progress are those necessary to determine the extent of deposition resulting from passage of the plume. | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. In-plant radiation levels are stable or decreasing, and acceptable given the plant conditions. | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. The reactor is in a stable shutdown condition and long-term core cooling is available. | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. The integrity of the Reactor Containment Building is within Technical Specifications limits. | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. The operability and integrity of radioactive waste systems, decontamination facilities, power supplies, electrical equipment, and plant instrumentation including radiation monitoring equipment are acceptable. | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Any fire, flood, earthquake, or similar emergency condition or threat to security no longer exists. | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Any contaminated, injured person has been treated and/or transported to a medical care facility. | <input type="checkbox"/> | <input type="checkbox"/> |

ESSENTIAL INFORMATION CHECKLIST



Additional Information:

ACTIVATION OF THE EMERGENCY RESPONSE ORGANIZATION

I. Emergency Response Organization Notification Using CANS

NOTE

If at any time CANS cannot be contacted or does not respond as indicated, go to Section II (Notification Using Group Pages if CANS Fails) in this Attachment.

If the individual activating CANS is not the Operations Shift Superintendent, Control Room Supervisor, Shift Control Room Engineer, or the Operations Assistant, it is necessary for the individual to obtain a security code (Social Security number) from one of these individuals.

- [1] Ascertain the current emergency classification from the Emergency Director.
- [2] Obtain the phone number for CANS from the Immediate Notification section of the PNPS Emergency Telephone Directory.
- [3] Attempt to contact CANS using any touch-tone phone line.
- [4] Listen for the introductory message and enter your security code (Social Security number) upon request followed by the # sign.

NOTE

For activation of the ERO for drills and exercise, precede the following classification codes with DRILL (37455 on telephone keypad). For example, for a drill classification of Alert, enter DRILL 2222 (374552222) as the emergency classification code.

- [5] Listen for verbal prompt and enter the proper code for present emergency classification. The codes are:
 - 1111 Unusual Event
 - 2222 Alert
 - 3333 Site Area Emergency
 - 4444 General Emergency
 - 0000 Termination of classifiable event/Recovery

- [6] If you are NOT satisfied with the emergency classification, press the # sign to re-enter classification.

OR

If you are satisfied, hang up the phone to start the notification process.

- [7] Verify CANS operability by checking the emergency pager located in the locker in the Operations Shift Superintendent's office. Ensure that the pager is activated and indicates the proper emergency classification. Allow approximately 5 minutes for CANS to activate the pager.

NOTE

If communication is established with the EOF prior to initiation of Step [8], Step [8] may be omitted.

- [8] If the Emergency Operations Facility has not contacted the Control Room after approximately 35 to 40 minutes from the time the Control Room pager has activated, check on-call personnel response in the following manner:
- (a) Obtain the CANS phone number from the Immediate Notification section of the PNPS Emergency Telephone Directory.
 - (b) Contact CANS using any available touch-tone phone. If no contact is made, pause and try again.
 - (c) Listen for the introductory message and enter your security code (Social Security number) when requested followed by the # sign.
 - (d) When prompted, enter '3' for the status of the classification scenario.
 - (e) Retrieve the CANS report from the DNN facsimile machine and review the list for unfilled positions.
 - (f) Repeat Steps (a) through (e) above as often as necessary to keep apprised of the notification process.

II. Notification Using Group Pages if CANS Fails

NOTE

If contact with the paging system cannot be made or the paging system does not respond as indicated, go to Section III (Notification Using Telephones if Both CANS and the Paging System Fail) of this Attachment.

- [1] Obtain the ERO pager PIN and the access telephone number from the Immediate Notification section of the PNPS Emergency Telephone Directory.
- [2] Contact the paging system by dialing the access telephone number.
- [3] Upon contact, listen for the verbal prompt to enter the PIN number. When prompted, enter the ERO pager PIN followed by the # sign. If the verbal prompt is not heard, repeat Step [2].
- [4] Listen for the verbal prompt to enter display message. When prompted, enter the proper code for present emergency classification. The codes are:
 - 1111 Unusual Event
 - 2222 Alert
 - 3333 Site Area Emergency
 - 4444 General Emergency
 - 0000 Termination of classifiable event / Recovery
- [5] Press the # sign to complete the entry.

III. Notification using Telephones if Both CANS and the Paging System Fail

- [1] Request the Emergency Director to inform Security at the Primary Access Control Point to notify the Emergency Response Organization using the PNPS Emergency Telephone Directory and commercial telephone lines in accordance with EP-IP-240.
- [2] Call out one individual for each of the following emergency positions using the PNPS Emergency Telephone Directory. When contact is made, ask if any alcoholic beverage has been consumed within the last 5 hours. If the individual answers YES, inform them that an alternate shall be contacted. If the individual answers NO, inform them of the event and that CANS and the pager system have failed. Record the name and response time below.

<u>Emergency Director (EOF)</u>	
_____	_____
Name	Response Time (min.)

<u>Emergency Plant Manager (TSC/OSC)</u>	
_____	_____
Name	Response Time (min.)

<u>Emergency Offsite Manager (EOF)</u>	
_____	_____
Name	Response Time (min.)

DOCUMENT CROSS-REFERENCES

This Attachment lists those documents, other than source documents, which may be affected by changes to this Procedure.

Document Number	Document Title
EP-IP-400	Protective Action Recommendations
EP-IP-520	Transition and Recovery
EP-AD-600*	PNPS EAL Technical Bases Document
PNPS 2.1.27	Drywell Temperature Indication
PNPS 5.3.20	Alternate Borate Injection
----	EAL Wall Chart

* Any revision to Attachment 5 of EP-IP-100 shall require a corresponding revision to EP-AD-600.

IDENTIFICATION OF COMMITMENTS

This Attachment lists those external commitments (i.e., NRC commitments, QAA audit findings, and INPO inspection items) implemented in this Procedure.

Reference Document	Commitment	Affected Section(s)
NRC Inspection Finding 81-15-34	Develop and implement a system for use by the Control Room staff to aid in promptly classifying events.	Att. 5, EAL Chart
NRC Inspection Finding 81-15-35	Provide EALs which include specific and observable Control Room instrument readings for each EAL corresponding to the respective initiating condition.	Att. 5
NRC Inspection Finding 81-15-35, 84-41-02, 86-33-01	Provide EALs which address and conform to all pertinent initiating conditions contained in Appendix 1 of NUREG-0654.	Att. 5
NRC Inspecting Finding 81-15-36	Revise the offsite notification procedures to specify protective action recommendations in the notification messages.	Att. 6
NRC Inspecting Finding 81-15-41	Revise the communication procedures to ensure (verify) correct transmission.	Att. 6 & 7
NRC Inspection Finding 84-05-04	Provide EALs based on field monitoring results and on the methods used if the effluent and containment monitors are inoperable or off-scale.	Att. 5 (Category 5.2)
NRC Inspection Finding 84-41-01	Revise the EAL on hurricane wind speed to reflect the National Weather Service definition for hurricanes.	Att. 5 (EAL 7.4.1.1)
NRC Inspecting Finding 84-41-06	Review the offsite notification procedure and make appropriate changes to provide a high probability of completing offsite notification.	Att 6 & 7
QAA Audit Report 87-48 DR 1723, Issue 1	Include in the EALs all initiating conditions in Appendix 1 of NUREG-0654.	Att. 5
QAA Audit Report 87-48 DR 1723, Item 4	Ensure public access areas are closed at an Alert or above.	Att. 2, 3, 4
NRC Inspection Report 50-293/88-28 Item 2.4 and 7.4.2.3	Provide further clarification and quantification for earthquake EALs.	Att. 5 (EAL 7.4.2.2)
	Modifications to transmitted portions of Initial Notification and Follow-Up Information Form shall be reviewed with the Commonwealth.	

PILGRIM NUCLEAR POWER STATION

Procedure No. EP-IP-400

PROTECTIVE ACTION RECOMMENDATIONS



Stop
Think
Act
Review

SAFETY REVIEW REQUIRED

SAFETY RELATED

REVISION LOG

REVISION 8

Date Originated 9/00

Pages Affected

Description

All

Reformat all pages IAW PNPS 1.3.4-1. Revision bars are not shown for reformat changes.

4

Add EOP-01 to References.

7,8,12

Incorporate revised EAL 1.4.1.4 General Emergency threshold values and include design basis core cooling requirements (2/3 core height with Core Spray) specified in EOP-01 for indication of substantial core damage.

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1.0 PURPOSE

This Procedure provides instruction and guidance in determining offsite Protective Action Recommendations (PARs) in the event of a radiological emergency at the Pilgrim Nuclear Power Station (PNPS).

2.0 REFERENCES

- [1] EOP-01, "RPV Control"
- [2] EP-PP-01, "PNPS Emergency Plan"
- [3] EPA 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents", October, 1991
- [4] IE Information Notice No. 83-28, "Criteria for Protective Action Recommendations for General Emergencies", dated May 4, 1983
- [5] NUREG-0654 FEMA REP-1, Rev. 1, Supplement 3; "Criteria for Protective Action Recommendations for Severe Accidents"

3.0 DEFINITIONS

- [1] Core Melt Sequence - A situation in which the core is uncovered and there is no means for restoring coolant to the core. Without coolant, overheating and melting of the fuel will occur.
- [2] Dose Assessment - The dose calculated to occur at a downwind receptor based on actual release rates and meteorological data. Dose assessments are primarily used to ensure plant-based Protective Action Recommendations are adequate.
- [3] Dose Commitment - The dose that will be accumulated by a specific organ over a specified period following uptake.
- [4] Dose Projection - The dose calculated to occur at a downwind receptor based on projected release rates or meteorological data. Dose projections are primarily used to conduct bounding calculations prior to a release occurring.
- [5] Emergency Planning Zones (EPZs) - Areas established around a nuclear power station in which predetermined protective action plans are needed.

The first EPZ has an approximate radius of 10 miles for the plume exposure pathway.

The second EPZ has an approximate radius of 50 miles for the food and water ingestion exposure pathway.

- [6] Evacuation Exposure Period - The period during which those being evacuated are exposed to the radioactive plume.
- [7] Gap Release Sequence - A situation in which the core is overheated and/or uncovered and there is no rapid means for restoring coolant to the core. Without cooling, overheating and failure of the fuel cladding will occur.
- [8] MEMA/OEP - Massachusetts Emergency Management Agency/Office of Emergency Preparedness.
- [9] MDPH - Massachusetts Department of Public Health.
- [10] Offsite - The area outside the owner controlled area.
- [11] Projected Exposure Time - That period of time in which the offsite population will be exposed to radiation as a result of an airborne radioactive release.

4.0 DISCUSSION

None

5.0 RESPONSIBILITIES

- [1] The Emergency Director is responsible for recommending protective actions to offsite agencies (MEMA/OEP, State Police, EPZ and host communities) to protect the health and safety of the general public.
- [2] The Emergency Offsite Manager is responsible for recommending offsite protective actions to the Emergency Director following discussions with the Offsite Radiological Supervisor and the Operations Advisor.
- [3] The Offsite Radiological Supervisor is responsible for determining the need for offsite protective actions, based on radiological considerations, and for providing these recommendations to the Emergency Offsite Manager.
- [4] The Operations Advisor is responsible for determining the need for offsite protective actions, based on plant conditions, and for providing these recommendations to the Emergency Offsite Manager.

6.0 PROCEDURE

6.1 BACKGROUND

- [1] Protective Action Recommendations (PARs) are made by PNPS personnel whenever a General Emergency is declared. Additionally, if in the opinion of the Emergency Director conditions warrant the issuance of PARs, a General Emergency will be declared (PNPS will not issue PARs for any accident classified below a General Emergency).
- [2] PARs provided in response to a radioactive release include evacuation and taking shelter.
 - (a) Dose assessment results which indicate exposure > 1 rem whole body (EPA TEDE) or > 5 rem thyroid (EPA CDE thyroid) should be used as the threshold for dose-based evacuation PARs.
 - (b) Evacuation is the preferred action unless external conditions impose a greater risk from the evacuation than from the dose received.
 - (c) PNPS personnel do not have the necessary information to determine whether offsite conditions would require sheltering instead of an evacuation. Therefore, an effort to base PARs on external factors (such as road conditions, traffic/traffic control, weather, or offsite emergency worker response) should not be attempted.
- [3] At a minimum, a plant condition-driven PAR to evacuate the 2 mile ring and 5 miles downwind, and shelter all other subareas, is given at the declaration of a General Emergency. Depending on the plant conditions, evacuation of a 5 mile radius and 10 miles downwind, and shelter all other subareas, may be issued instead of the minimum PAR.
 - (a) PARs are included with the initial and follow-up notifications issued at a General Emergency.
 - (b) The PAR must be provided to the Commonwealth within 15 minutes, and to the NRC within 60 minutes of:
 - (1) The General Emergency classification.
 - (2) Any change in recommended actions.

- [4] The Emergency Director may elect to specify the PARs for any combination of subareas or the entire EPZ (or beyond) regardless of plant and dose-based guidance. However, dose-based PARs should not normally be extended based on the results of hypothetical dose projections. Plant-based PARs are inherently conservative such that expanding the evacuation zone as an added precaution could result in a greater risk from the evacuation than from the radiological consequences of a release. It also would dilute the effectiveness of the offsite resources used to accommodate the evacuation. Plant-based PARs should only be extended as provided for in Steps 6.2[5] and 6.2[6] and Section 6.3.
- [5] Protective actions taken in areas affected by plume deposition following the release are determined and controlled by offsite governmental agencies.
- (a) PNPS is not expected to develop offsite recommendations involving ingestion or relocation issues following plume passage.
 - (b) PNPS may be requested to provide resources to support the determination of postplume protective actions.
- [6] Throughout the duration of a General Emergency, assess plant conditions and effluent release status to ensure the established PARs are adequate.
- [7] Additional protective action guidance is provided in Attachment 2 (Accident Phases and Exposure Pathways).

6.2 PLANT-BASED PROTECTIVE ACTION RECOMMENDATIONS

- [1] Use Attachment 1 (Protective Action Recommendation Process) as an aid in determining the proper PAR.
- [2] At a minimum, evacuation of the 2 mile ring and 5 miles downwind (with sheltering of all other subareas) will be recommended for a declaration of General Emergency.
- [3] For plant conditions in which substantial core damage is imminent or has occurred **AND** a significant release of Reactor coolant into the containment is imminent or has occurred **AND** containment failure is imminent or has occurred, evacuation of the 5 mile ring and 10 miles downwind (with sheltering of all other subareas) will be recommended.
- (a) Indications that substantial core damage is imminent or has occurred include:
 - (1) Core damage > 1% melt.
 - (2) CHRMs reading > General Emergency EAL 1.4.1.4 threshold values.
 - (3) Containment hydrogen reading > 18%.
 - (4) Core temperatures > 2400°F.

- (5) RPV water level cannot be restored and maintained above -150 inches (Minimum Steam Cooling RPV Water Level) for an extended period of time **AND** no Core Spray subsystem flow can be restored and maintained above 3,600 GPM (design Core Spray flow).
 - (6) RPV water level cannot be restored and maintained above -175 inches (elevation of jet pump suction) for an extended period of time.
- (b) Indications that a significant release of Reactor coolant is imminent or has occurred include:
- (1) A large break (> approximately 6") loss of coolant accident.
 - (2) The presence of hydrogen gas in containment not attributable to chemistry processes.
 - (3) Excessive leakage or makeup not attributable to operating conditions or transients.
 - (4) Rapid vessel depressurization.
- (c) Indications that containment failure is imminent or has occurred include:
- (1) A release of radioactivity that cannot be maintained below the General Emergency criteria of EAL 5.0 classifications.
 - (2) Primary Containment pressure cannot be maintained below the PCPL curve (EOP Figure 7).
 - (3) Primary Containment H₂ and O₂ gas concentrations cannot be maintained below combustible limits ($\geq 6\%$ hydrogen and $\geq 5\%$ oxygen).
 - (4) EOPs are entered and actions have begun which will lead to the emergency venting of containment.

[4] Containment monitors can provide indication of both core damage and RCS leakage. Monitor values used to determine a specific amount of core damage are dependent on plant conditions, power history, and time after shutdown. Monitor readings used to quantify an amount of damage or coolant leakage should be complimented by other indications and engineering judgment.

[5] If no release is in progress, then:

- (a) Perform dose projections on possible conditions as time permits to determine whether Protective Action Guides (PAGs) could be exceeded.
- (b) Consider adding any subareas requiring evacuation as determined by dose projection to the plant-based PARs.

6.3 DOSE ASSESSMENT-BASED PROTECTIVE ACTION RECOMMENDATIONS

NOTE

Dose projections are not required to support the decision process in Attachment 1 (Protective Action Recommendation Process).

- [1] In the event dose assessment results indicate the need to recommend actions beyond the outer EPZ boundaries, that is past 10 miles:
 - (a) Dispatch Radiation Monitoring Teams to downwind areas to verify the calculated exposure rates prior to issuing PARs outside the EPZ.
 - (b) Many assumptions exist in dose assessment calculations, involving both source term and meteorological factors, which make predictions over long distances highly questionable.
- [2] From the Control Room: If a release is in progress and time permits, direct the SCRE or other qualified SRO to perform offsite dose assessment in accordance with EP-IP-300 to determine whether the plant-based PARs of Attachment 1 are adequate.
- [3] From the Emergency Operations Facility: Conduct offsite dose assessment in accordance with EP-IP-300 to determine whether the plant-based PARs of Attachment 1 are adequate using the following methods as applicable:
 - (a) Monitored Release:
 - (1) If a release is in progress, assess the calculated impact to determine whether the plant-based PARs of Attachment 1 are adequate.
 - (2) If a release is not in progress, use current meteorological and core damage data to project effluent monitor threshold values which would require 2, 5, and 10 mile evacuations (Attachment 3). Reestablish threshold values whenever meteorological conditions or core damage assessment values change.
 - (b) Containment Leakage/Failure:
 - (1) If a release is in progress, assess the calculated impact to determine whether the plant-based PARs of Attachment 1 are adequate.
 - (2) If a release is not in progress, use current meteorological and core damage data on various scenarios (design leakage, failure to isolate, catastrophic failure) to project the dose consequences to determine whether the plant-based PARs of Attachment 1 are adequate. Reestablish scenario values whenever meteorological conditions or core damage assessment values change.

- (c) Field Team Analysis: Actual field readings from Radiation Monitoring Teams should be compared to dose assessment results and used as a dose projection method to validate calculated PARs and to determine whether the plant or release-based protective actions of Attachment 1 are adequate.
- (d) Release Point Analysis: Actual sample data from monitored or unmonitored release points should be utilized in conjunction with other dose assessment and projection methods to validate calculated PARs and to determine whether the plant-based protective actions of Attachment 1 are adequate.

[4] The Emergency Director, the Emergency Offsite Manager, and the Offsite Radiological Supervisor shall discuss dose assessment and projection analysis results and evaluate their applicability prior to issuing PARs to the Commonwealth.

7.0 RECORDS

All forms and other documentation shall be reviewed for completeness and forwarded to the Emergency Preparedness Manager.

8.0 ATTACHMENTS

ATTACHMENT 1 - PROTECTIVE ACTION RECOMMENDATION PROCESS

ATTACHMENT 2 - ACCIDENT PHASE AND EXPOSURE PATHWAYS

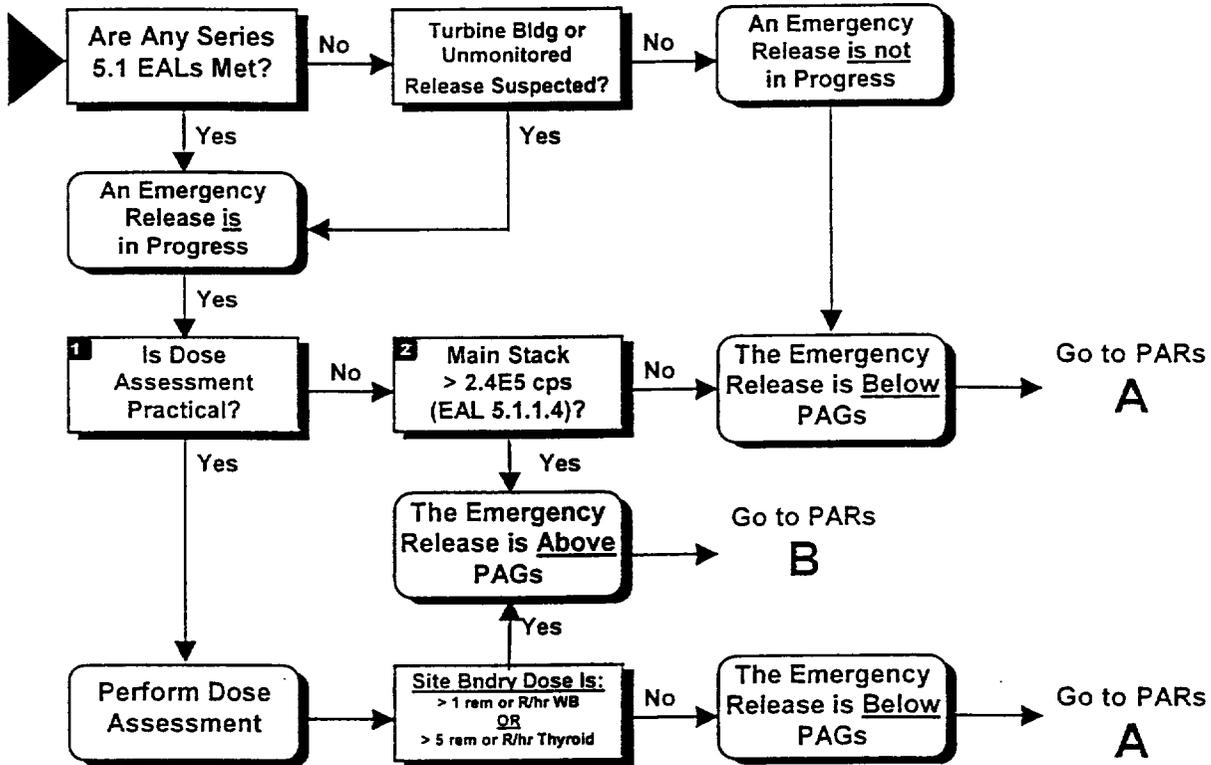
ATTACHMENT 3 - PROTECTIVE ACTION RECOMMENDATION BOUNDING
CALCULATIONS

ATTACHMENT 4 - DOCUMENT CROSS-REFERENCES

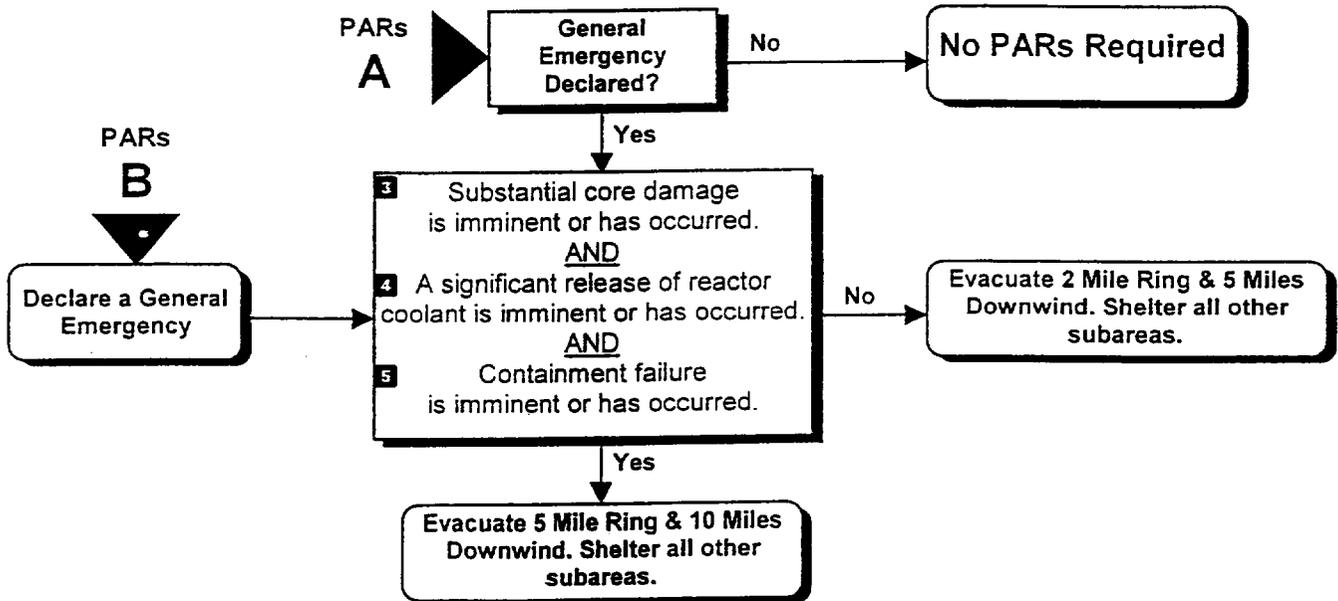
ATTACHMENT 5 - IDENTIFICATION OF COMMITMENTS

PROTECTIVE ACTION RECOMMENDATION PROCESS

Step 1: Determine Emergency Release Status



Step 2: Determine the Appropriate PARs



PROTECTIVE ACTION RECOMMENDATION PROCESS (CONT.)

Notes

- 1) CONTROL ROOM ONLY: Qualified individual is immediately available to perform dose assessment.
- 2) Perform dose assessment as soon as possible to verify that the release is below/above PAGs and to determine whether additional subareas require evacuation.
- 3) Indications that substantial core damage is imminent or has occurred include:
 - Core damage > 1% melt.
 - CHRMs reading > General Emergency EAL 1.4.1.4 threshold values.
 - Containment hydrogen reading > 18%.
 - Core temperatures > 2400°F.
 - RPV water level cannot be restored and maintained above -150 inches (Minimum Steam Cooling RPV Water Level) for an extended period of time AND no Core Spray subsystem flow can be restored and maintained above 3,600 GPM (design Core Spray flow).
 - RPV water level cannot be restored and maintained above -175 inches (elevation of jet pump suction) for an extended period of time.
- 4) Indications that a significant release of Reactor coolant is imminent or has occurred include:
 - A large break (> 6") loss of coolant accident.
 - Presence of hydrogen gas in containment not attributable to chemistry processes.
 - Excessive leakage or makeup not attributable to operating conditions or transients.
 - Rapid vessel depressurization.
- 5) Indications that containment failure is imminent or has occurred include:
 - A release of radioactivity that cannot be maintained below the General Emergency criteria of EAL 5.0 classifications.
 - Primary Containment pressure cannot be maintained below the PCPL curve (EOP Figure 7).
 - Primary Containment H₂ and O₂ gas concentrations cannot be maintained below combustible limits (≥ 6% hydrogen and ≥ 5% oxygen).
 - EOPs are entered and actions have begun which will lead to the emergency venting of containment.

2 Mile Ring, 5 Miles Downwind

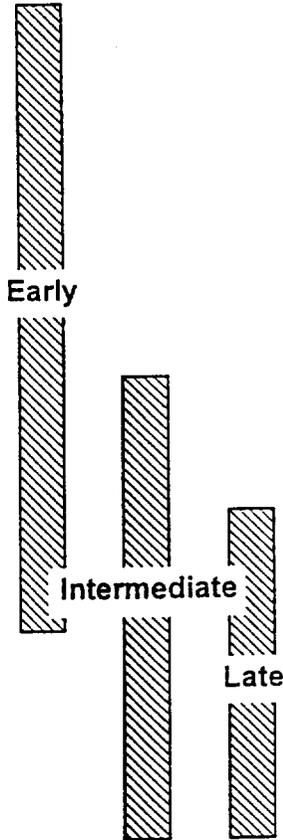
Wind Direction (° From)	Affected Subareas
020° - 069°	1, 12, 2, 3
070° - 122°	1, 12, 3
123° - 140°	1, 12, 3, 4
141° - 183°	1, 12, 4
184° - 305°	1, 12
306° - 019°	1, 12, 2
Any Subareas requiring evacuation as determined by Dose Assessment are added to the plant-based PARs.	
Shelter All Other Subareas	

5 Mile Ring, 10 Miles Downwind

Wind Direction (° From)	Affected Subareas
020° - 021°	1, 12, 2, 3, 4, 5, 6
022° - 056°	1, 12, 2, 3, 4, 5, 6, 11
057° - 066°	1, 12, 2, 3, 4, 6, 11
067° - 069°	1, 12, 2, 3, 4, 6, 7, 11
070° - 103°	1, 12, 2, 3, 4, 6, 7, 8, 11
104° - 109°	1, 12, 2, 3, 4, 6, 7, 8, 9, 11
110° - 115°	1, 12, 2, 3, 4, 6, 7, 8, 9
116° - 129°	1, 12, 2, 3, 4, 7, 8, 9
130° - 132°	1, 12, 2, 3, 4, 7, 8, 9, 10
133° - 140°	1, 12, 2, 3, 4, 8, 9, 10
141° - 175°	1, 12, 2, 3, 4, 9, 10
176° - 179°	1, 12, 2, 3, 4, 10
180° - 318°	1, 12, 2, 3, 4
319° - 019°	1, 12, 2, 3, 4, 5
Shelter All Other Subareas	

ACCIDENT PHASE AND EXPOSURE PATHWAYS

Potential Exposure Pathways And Incident Phases	Protective Actions
1. External radiation from the facility.	Shelter Evacuation Access Control
2. External radiation from the plume.	Shelter Evacuation Access Control
3. Inhalation of activity in the plume.	Shelter Administration of KI Evacuation Access Control
4. Contamination of skin and clothes.	Shelter Evacuation Decontamination of Persons
5. External radiation from ground deposition.	Evacuation Relocation Decontamination of Land Decontamination of Property
6. Ingestion of contaminated food and water.	Food and Water Controls
7. Inhalation of resuspended activity.	Relocation Decontamination of Land Decontamination of Property



Note: The use of stored animal feed and uncontaminated water to limit the uptake of radionuclides by domestic animals in the food chain can be applicable in any of the phases.

PROTECTIVE ACTION RECOMMENDATION BOUNDING CALCULATIONS

Name: _____ Date: _____ Time: _____

Basis

Monitor Reading

	Monitor	SB-2 Mile Evacuation	2-5 Mile Evacuation	5-10 Mile Evacuation
Wind Speed: _____				
Wind Direction: _____	Main Stack			
Stability Class: _____	Reactor Building			
Release Duration: _____	Turbine Building			

Notes:

1. Insert "N/A" in monitor reading boxes where threshold values will not provide a dose necessary to drive the evacuation.
2. Site Boundary to 2 mile evacuations require an indicated dose:
 ≥ 1 rem Whole Body ≥ 5 rem Thyroid at the Site Boundary
and
 < 1 rem Whole Body and < 5 rem Thyroid at 2 miles.
3. 2 to 5 mile evacuations require an indicated dose:
 ≥ 1 rem Whole Body or ≥ 5 rem Thyroid at 2 miles
and
 < 1 rem Whole Body and < 5 rem Thyroid at 5 miles.
4. 5 to 10 mile evacuations require an indicated dose \geq to 1 rem Whole Body or ≥ 5 rem Thyroid at 5 miles.

DOCUMENT CROSS-REFERENCES

This Attachment lists those documents, other than source documents, which may be affected by changes to this Procedure.

Document Number	Document Title
EP-IP-100	Emergency Classifications
EP-IP-300	Offsite Dose Assessment
EP-IP-330	Core Damage

IDENTIFICATION OF COMMITMENTS

This Attachment lists those external commitments (i.e., NRC commitments, QA audit findings, and INPO inspection items) implemented in this Procedure.

Reference Document	Commitment	Affected Section(s)/Step(s)
NRC Inspections Finding 81-15-38	Provide recommended protective actions based on actual and projected core/containment conditions and offsite factors which may impact on the effectiveness of the recommendations and consider the near-site population.	6.2, 5.3, Att. 1
NRC Inspection Finding 84-35-06	Include discussion of radiological data analysis and evaluation by key EOF staff members prior to making protective action recommendations to the state.	6.3.5
QA Audit Report 86-74 Recommendation 86-74-08	As part of the protective actions recommendation procedure, include offsite protective action decision making based on plant conditions as suggested in NUREG 0654, Appendix 1, and NRC IE Information Notice 83-28.	6.2, Att. 1