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Procedure Number	Revision
13.4.1	043/005
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Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043
Title: EMERGENCY NOTIFICATIONS		Minor Rev: 005
		Page: 1 of 33

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Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 2 of 33
Title: EMERGENCY NOTIFICATIONS		

DESCRIPTION OF CHANGES

Justification (required for major revision)
Adding guidance on reporting to emergency response facilities during a loss of normal communications.

Page(s)	Description (including summary, reason, initiating document, if applicable)
Page 7	Section 4.1.1, deleted "Use 'WNP2' as the password. Otherwise, follow the normal notification protocol." Language is not necessary as process is contained in the referenced form 26171.
Page 7	Section 4.1.2, deleted "Use 'WNP2' as the password." Process is contained in the form and password is not necessary.
Page 9	Section 4.1.10 <u>Conduct a roll call of the Off-site Agencies and transmit the following information:</u> <ul style="list-style-type: none"> • Type of notification, This is a DRILL / EMERGENCY (select one) • Individual making call • Facility experiencing emergency, Columbia Generating Station • Time of classification • Emergency Classification • Applicable Protective Action Recommendations (PARs) This was added to align to EPlan Section 4.6.5.
Pages 12 and 13	Sections 4.2.2 and 4.3.2 were rewritten to clarify completion of the CNF form and PAR review.
Page 14	Section 4.4.3 pertaining to Followup Notifications was rewritten as follows: Follow-up messages containing applicable information will be transmitted to the response organizations. This information may include such items as: Individual bullets were modified for consistency to the EPlan Section 4.6.6.
Page 16	Section 5.0 References. Modified to be consistent with SWP-PRO-01.
Page 18	Attachment 7.1, Agency Notification List, 4., changed to read DOE-RL EOC. Language previously referred to the ONC. DOE-RL previously changed from ONC to EOC and this modification reflects that change.
Page 19	Attachment 7.2, Bullet 2 rewritten for clarification as follows: A complete list of ERO members' work, home, and pager numbers is maintained in selected Emergency Phone Directories for use in the Main Control Room, EOF, TSC, and SCC personnel in these locations may use the Part B Notification List to contact ERO personnel in the event of an auto-dialer or paging system failure.

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 3 of 33
Title: EMERGENCY NOTIFICATIONS		

Page 20	Attachment 7.3, Title changed to title listed in the Emergency Phone Directory: Offsite Support Agency Notification Checklist
Page 20	Attachment 7.3, Second bullet changed to read "A Part C - Offsite Support Agency Notifications Checklist is located in the Part A/C Notifications Section of the Emergency Phone Directory.
Page 20	Attachment 7.3, Added a fifth bullet which reads as follows: SCC makes the initial Part C Notifications until relieved of that function by the EOF Site Support Manager. This language accurately reflects the process being performed.
Page 20	Attachment 7.3, Agency Notification List. Deleted "Chemical & Nuclear Preparedness and Protection Division (CNPPD)" and replaced it with "Federal Emergency Management Agency (FEMA)." This change makes this language consistent with the Emergency Plan, Table 4.1, Notification of Principle Emergency Response Organizations.
Page 22	Attachment 7.4, Fifth paragraph, changed SWP-FFD-1 to SWP-FFD-01 for accuracy.
Page 30	Attachment 7.6, CRASH Failure, d. Changed phone number for DOE-RL EOC to 9-376-3030 due to a previous typographical error.
Page 18	Minor Revision 001(Editorial) -- Updated PPM 13.5.1 title to current title
Page 11	Minor Revision 002 (Editorial) – Updated Section 4.1.16 reference Section 4.5 to 4.4
Page 14	Minor Revision 003 (Editorial) Section 4.4: Added Note box with directions on what to do for a CNF with incorrect information.
Page 24	Minor Revision 004 (Editorial) Revised ERO response number from 375-6201 to the new response phone numbers, 855-896-2903 or 844-417-8128.
Page 15	Minor Revision 004 (Editorial) Revised CNF block numbers associated with the Part C Offsite Support Agency Notification to reflect the changes of block numbers on the CNF.
Page 16	Minor Revision 004 (Editorial) Revised CNF block numbers associated with the Part C Offsite Support Agency Notification to reflect the changes of block numbers on the CNF
Page 22	Minor Revision 004 (Editorial) Revised CNF block numbers associated with the Part C Offsite Support Agency Notification to reflect the changes of block numbers on the CNF.
Page 11	Minor Revision 005 (Editorial): 1. Simplified Step 4.1.14 by removing extraneous language (incorporated into a note). 2. Added a Note before first bullet in step 4.1.14 that incorporated the location of the phone numbers. 3. Removed phone numbers that are duplicative to the ones on the form that is called out in the same step.
Throughout	Minor Revision 005 (Editorial) - Replaced RTS/AR numbers in French brackets with respective references section number, no rev bars used.

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 4 of 33
Title: EMERGENCY NOTIFICATIONS		

TABLE OF CONTENTS

		<u>Page</u>
1.0	PURPOSE	5
2.0	DISCUSSION.....	5
2.1	General	5
2.2	Security Considerations	5
2.3	Precautions and Limitations	6
2.4	Information Requested by NRC.....	7
3.0	RESPONSIBILITIES	7
3.1	Shift Manager.....	7
3.2	TSC Manager.....	7
3.3	EOF Manager	8
3.4	Security Communications Center (SCC)	8
3.5	Site Support Manager	8
4.0	PROCEDURE	8
4.1	Notifications Made by the Shift Manager Acting as Emergency Director (ED)	8
4.2	Notifications Made By the TSC Manager Acting as Emergency Director (ED).....	12
4.3	Notifications Made By the EOF Manager Acting as Emergency Director (ED).....	13
4.4	Followup Notifications	14
4.5	Notifications Made By the Security Communications Center (SCC)	15
4.6	Notifications Made by the Site Support Manager.....	16
4.7	Emergency Response Data System (ERDS) Operations	16
4.8	Notification of Transitory Events.....	16
4.9	Notification of Event Termination.....	17
5.0	REFERENCES	18
6.0	DOCUMENTATION	19
7.0	ATTACHMENTS	19
7.1	Emergency Notification Lists Part A - Immediate Notification List.....	20
7.2	Emergency Notification Lists Part B - ERO Notification List.....	21
7.3	Emergency Notification Lists Part C - Offsite Notification Checklist	22
7.4	Emergency Response Organization (ERO) Notification and Response Instructions.....	23
7.5	Notification of Transitory Event	32
7.6	Crash Failure	33

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 5 of 33
Title: EMERGENCY NOTIFICATIONS		

1.0 PURPOSE

This procedure provides instructions for notification of Federal, State and County organizations should a classified emergency provided for in PPM 13.1.1 be declared, upgraded, terminated, or a Protective Action Recommendation (PAR) be made or modified. It also provides instruction for notification, acknowledgment, and response actions by Energy Northwest emergency response personnel. {R-5.1}

2.0 DISCUSSION

2.1 General

Initial notification of Washington State and local authorities must be made within 15 minutes following declaration of the emergency event. For Energy Northwest, local authorities are defined as Benton County, Franklin County, Washington State, and the Department of Energy, Richland. Initial notification of the NRC via the Emergency Notification System (ENS) should be made immediately after notification of the appropriate state and local authorities, and must be made not later than one (1) hour after emergency event declaration. Immediate notifications are outlined in Attachment 7.1, Emergency Notification List, Part A – Immediate Notification List. Notification of other offsite agencies is outlined in Attachment 7.3, Emergency Notification List, Part C - Offsite Agency Notification List. {R-5.4}

Notification of selected non-ERO supervisory staff (Construction and Project Management) is intended to prompt them to notify personnel they are responsible for of an emergency declaration so that appropriate protective action may be initiated for individuals in high noise environments or otherwise out of public address range within the owner controlled area.

Emergency notifications are one of the responsibilities assigned to the designated Emergency Director (ED) and will transfer along with the ED function from the Shift Manager to the TSC Manager or EOF Manager. The ED cannot delegate the decision to notify offsite authorities responsible for offsite emergency measures, but may delegate notification actions to other individuals in accordance with this procedure.

If a Transitory Event is discovered as outlined in PPM 13.1.1, ENS notification to the NRC must be made within one (1) hour of the discovery of the undeclared (or mis-classified) event. State and county authorities will be notified by Emergency Preparedness.

2.2 Security Considerations

2.2.1 The authority to temporarily suspend affected security measures is given to the Columbia Generating Station Emergency Director.

2.2.2 Affected security measures may be suspended per 10 CFR 50.54(x) and 10CFR50.54(y) in an emergency when this action is immediately needed to protect the public health and safety and no other immediately apparent action, consistent with the Columbia Generating Station license conditions and technical specifications, can provide adequate or equivalent protection. Suspension of security measures must be approved as a minimum by a licensed senior reactor operator before taking this action. {R-5.3}

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 6 of 33
Title: EMERGENCY NOTIFICATIONS		

- 2.2.3 During severe weather, affected security measures may be suspended when immediately needed to protect the personal health and safety of security force personnel and no other immediately apparent action consistent with the license conditions and technical specifications can provide adequate or equivalent protection. This suspension of security measures must be approved, as a minimum, by a licensed senior operator, with input from the security supervisor or manager, before taking this action. {R-5.3}
- 2.2.4 The temporary suspension must be approved by the Emergency Director prior to taking the action unless a life-threatening situation exists and there is insufficient time to obtain prior approval. {R-5.3}
- 2.2.5 If security measures are temporarily suspended, the NRC Operations Center should be notified as soon as practicable, and in all cases, within one hour of the occurrence. Upon restoration of security measures, the NRC Operations Center shall be notified as soon as practicable. {R-5.3}
- 2.2.6 Suspended security measures must be restored as soon as practical. {R-5.3}

2.3 Precautions and Limitations

- 2.3.1 State and local authorities are required to receive emergency event notifications within 15 minutes of event classification, a change in event classification, or changes in Protective Action Recommendations (PARs).

NOTE: The time of classification entered on the new CNF should be the time of the new classification or Protective Action Recommendation.
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- 2.3.2 If after beginning to fill out a Classification Notification Form (CNF), but before the event is communicated to anyone offsite, event conditions change which make it necessary to reclassify the event or change PARs, discontinue completing the first CNF and begin filling out a new one. If the hard copy CNF is used, mark the discontinued CNF void and include it with the After Action Report per PPM 13.13.4. The initial 15 minute notification requirement is not waived and the new CNF must be completed within 15 minutes of declaring the previous classification.
- 2.3.3 If event conditions change which make it necessary to reclassify the event or change PARs and offsite notifications are in progress, the current 15 minute notification requirement is not waived. Notifications in progress for the lower level classification or PARs must be completed. Inform the offsite agencies on the Crash phone that classification or PARs will be upgraded and another notification will be forthcoming shortly.

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 7 of 33
Title: EMERGENCY NOTIFICATIONS		

2.4 Information Requested by NRC

The following information may be requested by the Headquarters Operations Officer:

- Is there any change to the classification of the event?
- What is the ongoing/imminent damage to the facility, including affected equipment and safety features?
- Have toxic or radiological releases occurred or been projected, including changes in the release rate? If so, what are the projected onsite and offsite releases and what is the basis of assessment?
- What are the health effects or consequences to onsite and offsite people? How many onsite or offsite people will be or are affected, and to what extent?
- Is the event under control? When was control established, or what is planned to bring the event under control? What mitigative action is planned or underway?
- What onsite protective measures have been taken or planned?
- What offsite protective actions have been recommended to state or local officials?
- What is the status of state, local or other federal agencies responses, if known?
- If applicable, what is the status of public information activities, such as alarm, broadcast, or press releases by the state, local, or other federal response agency? Has a Joint Information Center been activated?

3.0 RESPONSIBILITIES

3.1 Shift Manager

The Shift Manager while acting as the Emergency Director is responsible for:

- 3.1.1 Approving and ensuring required notifications of Offsite Agencies are performed;
- 3.1.2 Ensuring notification of the ERO.

3.2 TSC Manager

The TSC Manager while acting as the Emergency Director is responsible for:

- 3.2.1 Approving and ensuring required notifications of Offsite Agencies are performed;
- 3.2.2 Ensuring notification of the ERO.

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 8 of 33
Title: EMERGENCY NOTIFICATIONS		

3.3 EOF Manager

The EOF Manager while acting as the Emergency Director is responsible for:

- 3.3.1 Approving and ensuring required notifications of Offsite Agencies are performed;
- 3.3.2 Ensuring notification of the ERO.

3.4 Security Communications Center (SCC)

The SCC is responsible for:

- 3.4.1 Activating the ERO Notification System;
- 3.4.2 Providing approved information to offsite agencies;
- 3.4.3 Notification of additional offsite agencies (Part C) until relieved by the Site Support Manager.

3.5 Site Support Manager

The Site Support Manager is responsible for:

- 3.5.1 Notification of additional offsite agencies (Part C).

4.0 PROCEDURE

4.1 Notifications Made by the Shift Manager Acting as Emergency Director (ED)

NOTES: When making a classification change and full Emergency Response Organization (ERO) activation was initiated by a previous classification, it is not necessary to repeat ERO notification.

The following steps may be performed out of sequence.

- 4.1.1 IF the need to activate the TSC and OSC exists at the Unusual Event classification, THEN refer to the instructions contained on Form 26171, Partial Activation or Manpower Schedule Message, to start the autodialer and record an "on-the-fly" message.
 - Notify the SCC that the Control Room will initiate the autodialer scenario.
 - If an autodialer scenario is already running, cancel the operating scenario.
- 4.1.2 IF special instructions are required for ERO activation, THEN prepare an "on-the-fly" message notification using form 26171.

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 9 of 33
Title: EMERGENCY NOTIFICATIONS		

4.1.3 IF security event conditions exist for an emergency classification, THEN declare the appropriate classification and initiate the offsite agency notification process, but do not summon the ERO or activate emergency centers until it is safe to do so. Confer with the Security Supervisor to make that determination.

However:

- IF it is determined that is safe to activate the ERO and all emergency centers, THEN initiate the appropriate autodialer scenario.
- IF it is determined that it is NOT safe to activate the ERO or any emergency center, THEN initiate the security contingency autodialer scenario (#191).

Based on consultation with the Security Supervisor, instruct on- site TSC and OSC responders to delay reporting to their emergency centers. Refer to form 26045 (pink form) to prepare an appropriate PA announcement for on-site responders. Otherwise, inform the OSC and TSC responders to report to their emergency center directly.

4.1.4 WHEN emergency classification decisions are made, THEN notify the SCC Duty Officer on the dedicated ring down line or available phone line if the dedicated line is unavailable to initiate the appropriate ERO notification system.

4.1.5 At Site Area Emergency, direct the SCC to initiate Industrial Development complex evacuation, and inform the SCC if an offsite radiological release is in progress.

4.1.6 Complete the Classification Notification Form (CNF), Form 24075 or Electronic Classification Notification Form (ECNF). Refer to PPM 13.2.2 to determine if the event classification also requires Protective Action Recommendations (PARs)

4.1.7 Transmit the CNF to the SCC and offsite agencies via facsimile.
IF facsimile failure occurs, THEN go directly to Crash phone notification.

4.1.8 Initiate the Crash call by either;

- a. Using the dedicated CRASH Phone and dial 400, or
- b. Using the Shift Manager's phone (either in SM Office or on Main Control Room Podium), SELECT "EN Crash" and dial 400.

4.1.9 IF the CRASH system does not initiate;
THEN Refer to Attachment 7.6; CRASH FAILURE.

NOTE: Offsite agencies that must be notified within 15 minutes are:

- Benton County
- Franklin County
- Washington State
- DOE-RL

- 4.1.10 Conduct a roll call of the Off-site Agencies and transmit the following information:
- Type of notification, This is a DRILL / EMERGENCY (select one)
 - Individual making call
 - Facility experiencing emergency, Columbia Generating Station
 - Time of classification
 - Emergency Classification
 - Applicable Protective Action Recommendations (PARs)
- 4.1.11 Verify the SCC Duty Officer has received the CNF and is prepared to address the Offsite agencies on the Crash phone.
- IF the SCC has NOT received the faxed CNF or is otherwise not prepared to address the Offsite agencies on the Crash phone,
THEN the Control Room must read the CNF information block by block in numerical sequence to the agency representatives.
- 4.1.12 WHEN the SCC Duty Officer has received the CNF and assumes responsibility for addressing the Off-site agencies on the Crash line.
THEN the SCC Duty Officer will read the CNF information block by block in numerical sequence to the agency representatives.
- 4.1.13 Ensure that plant PA announcements are made using the format of Form 26045. Also ensure that the override switch for the public address system is in the "override" position. Return it to the normal position when done.

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 11 of 33
Title: EMERGENCY NOTIFICATIONS		

- 4.1.14 Ensure that immediately after notification of the appropriate state and local agencies but not later than one hour after event classification, a designated communicator: {R-5.2}

NOTE: NRC Emergency Notification System (ENS) primary and commercial backup phone numbers are listed on Form 25665 (Reactor Plant Event Notification Worksheet, [NRC Form 361]) and in EPD-01 (the Emergency Phone Directory).

- Provides the NRC with event information using guidance contained in Form 25665 via the NRC ENS.
- Provides information to the NRC on event classification changes.
- Maintains continuous communication with the NRC for whatever period they request or until relieved by the Plant/NRC Liaison in the TSC.
- When the TSC Plant/NRC Liaison comes on line, provides turnover information via ENS which includes, as a minimum, classification level, reactor status and other relevant plant status items.
- Obtains permission from the NRC ENS communicator prior to transferring ENS responsibilities to the TSC Plant/NRC Liaison.

- 4.1.15 IF security measures are temporarily suspended per 10C CFR 50.54(x) and 10 CFR 50.54(y) to protect the health and safety of the public, THEN notify the NRC as soon as practicable and in all cases, within one hour of the occurrence. Notify the NRC upon restoration of security measures as soon as practicable. {R-5.3}

- 4.1.16 About once per hour, or when radiological or plant conditions change, initiate a follow-up message by Crash phone and fax to offsite agencies. Refer to Section 4.4, Followup Notifications.

- 4.1.17 Direct that the Control Room's facsimile transmittal activity reports be attached to applicable CNFs and that CNFs and NRC Event Notification work sheets be attached to After Action Reports.

- 4.1.18 Monitor Plant conditions and, if changes in the emergency classification are required, repeat Steps 4.1.1 - 4.1.12.

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 12 of 33
Title: EMERGENCY NOTIFICATIONS		

4.2 Notifications Made By the TSC Manager Acting as Emergency Director (ED)

NOTE: The following steps should be completed in order, however, under certain circumstances such as equipment failure or time constraints, steps may be performed out of sequence.

- 4.2.1 IF a change in event classification or PARs is indicated, THEN confer with the Shift Manager using the Emergency Director ringdown phone as necessary.
- 4.2.2 Complete the CNF, Form 24075 or ECNF. Refer to PPM 13.2.2 to determine if the event classification also requires Protective Action Recommendations (PARs).
- 4.2.3 Direct that the CNF be sent to the Offsite agencies via facsimile.
 - IF facsimile failure occurs, THEN go directly to Crash phone notification.
- 4.2.4 Initiate the Crash phone system by dialing 400.
- 4.2.5 IF the CRASH system does not initiate; THEN Refer to Attachment 7.6; CRASH FAILURE.
- 4.2.6 Review CNF information with the Offsite agencies on the Crash phone; ensure their questions are answered and that they understand the information regarding current conditions.
- 4.2.7 Direct that facsimile transmittal activity reports be attached to all original CNFs and retained for records.
- 4.2.8 IF the Columbia River/Horn Rapids siren alerting system cannot be activated by Benton County Emergency Dispatch Center (EDC) personnel, THEN if requested direct the Security Communications Center (SCC) personnel activate the sirens and announce the prescribed messages over the alerting system.
- 4.2.9 About once per hour, or when radiological or plant conditions change, initiate a follow-up message by Crash phone and fax to Offsite agencies. Refer to Section 4.4, Follow-up Notifications.

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 13 of 33
Title: EMERGENCY NOTIFICATIONS		

4.3 Notifications Made By the EOF Manager Acting as Emergency Director (ED)

NOTE: The following steps should be completed in order, however, under certain circumstances such as equipment failure or time constraints, steps may be performed out of sequence.

- 4.3.1 IF a change in event classification or PARs is indicated,
THEN confer with the TSC Manager and the Shift Manager using the Emergency Director ringdown phone as necessary.
- 4.3.2 Complete the CNF, Form 24075 or ECNF. Refer to PPM 13.2.2 to determine if the event classification also requires Protective Action Recommendations (PARs).
- 4.3.3 Coordinate with the TSC Manager to have announcements of plant conditions, hazardous areas to avoid, or security conditions be made to personnel in or near the plant, using the public address system microphone in the TSC.
- 4.3.4 Direct that the CNF be sent to the Offsite agencies via facsimile.

IF facsimile failure occurs,
THEN go directly to Crash phone notification.
- 4.3.5 Initiate the Crash phone system by dialing 400.
- 4.3.6 IF the CRASH system does not initiate;
THEN Refer to Attachment 7.6; CRASH FAILURE.
- 4.3.7 Review CNF information with the Offsite agencies on the Crash phone, ensure their questions are answered and that they understand the information regarding current conditions.
- 4.3.8 Direct that the facsimile transmittal activity reports are attached to all original CNFs and retained for records.
- 4.3.9 IF the Columbia River/Horn Rapids siren alerting system cannot be activated by Benton County Emergency Dispatch Center (EDC) personnel,
THEN if requested direct the Security Communications Center (SCC) personnel activate the sirens and announce the prescribed messages over the alerting system.
- 4.3.10 About once per hour, or when radiological or plant conditions change, initiate a follow-up message by Crash phone and fax to offsite agencies. Refer to Section 4.4, Followup Notifications.

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 14 of 33
Title: EMERGENCY NOTIFICATIONS		

4.4 Followup Notifications

NOTE: If it is discovered that incorrect information has been transmitted on a previous CNF, an informational CNF should be initiated and transmitted along with a CRASH call to correct the incorrect information.

- 4.4.1 About once per hour, or when radiological or plant conditions change, initiate a followup message by Crash phone and fax to offsite agencies.
- 4.4.2 Use form 24075, Classification Notification Form, Indicate "Information" as reason for notification.
- 4.4.3 Follow-up messages containing applicable information will be transmitted to the response organizations. This information may include such items as {R-5.1}
- Name and phone number of caller
 - Location of incident
 - Date and time of incident
 - Classification of Emergency
 - Type of actual or projected release, estimated duration/ impact times
 - Estimate of the quantity of radioactive material released or being released, and the point of the release
 - Chemical and physical form of released material including estimates of relative quantities and concentration of noble gases, iodines, and particulates
 - Meteorological conditions or changes
 - Actual or projected dose rates at the site boundary; projected integrated dose at the site boundary
 - Projected dose rates and integrated dose at the projected peak and at 2 miles and 10 miles, including sector(s) affected
 - Estimate of any surface radioactive contamination; in plant, on site or offsite
 - Emergency response actions underway
 - Recommended emergency actions, including PARs
 - Request for Offsite organization needed support
 - Prognosis for worsening or termination of event based on plant information

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 15 of 33
Title: EMERGENCY NOTIFICATIONS		

4.5 Notifications Made By the Security Communications Center (SCC)

- 4.5.1 IF the Columbia River/Horn Rapids area Public Alerting system cannot be activated by the Benton County Emergency Dispatch Center (EDC) or Franklin County Emergency Management personnel, THEN upon request activate the sirens and announce prescribed messages on the alerting system.
- 4.5.2 IF notified of event classification by other than the Crash or alternate Dial-Up phone system, THEN call the Shift Manager back on the dedicated line for verification prior to providing notification to offsite agencies.
- 4.5.3 Upon receipt of official notification of emergency event classification, implement Form 26573, SCC Duty Officer Checklist.
- 4.5.4 For notifications of event classifications or changes prior to ERO activation, activate the ERO notification system using the automatic dialer. Do not initiate a new scenario if the Control Room has activated the auto-dialer at the Unusual Event classification unless upgrading to an Alert or higher emergency.
- 4.5.5 For event notifications or changes prior to ERO activation when automatic dialer is not operational, activate the ERO paging system.
- 4.5.6 Monitor Crash system CNF notifications to Offsite agencies, and for notifications from the Shift Manager, follow up with any necessary clarifications or missed data.
- 4.5.7 Log a record of offsite agency CNF notifications.
- 4.5.8 Instruct the Central Alarm Station (CAS) Operator to inform the Security Supervisor of the incident, and request a responder to the Security Communications Center to provide notification assistance.
- 4.5.9 When the responder arrives, give briefing on event notification status, Benton County EDC requests for siren activation or PA announcements, and direct the responder to assist with SCC operations.
- 4.5.10 For initial or fast breaking classifications where the Site Support Manager has not yet arrived at the EOF to take over Part C notifications,
 - a. Make two (2) attempts to contact the listed agencies in the Part C notification list (Attachment 7.3). If requested, provide Items 1-7, 9, and 13 on the CNF.
 - b. When contacted, inform the EOF Site Support Manager of those listed agencies you were unable to contact.
- 4.5.11 Each time the classification is changed, and the Emergency Director function is still in the Control Room, cease the notification sequence and start over from Step 4.5.1. If the ERO Notification system was already activated at the Alert or higher classification, do not reactivate it.

When contacted by the Site Support Manager in the EOF, turn over responsibility for Part C notifications.

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 16 of 33
Title: EMERGENCY NOTIFICATIONS		

4.6 Notifications Made by the Site Support Manager

- 4.6.1 Upon arrival at the EOF, contact the SCC Duty Officer and assume responsibility for making the Attachment 7.3, Emergency Notification List, Part C Offsite Notification Checklist.
- 4.6.2 Make the Part C notifications as required for appropriate event classifications. Provide items 1-7, 9, and 13 on the CNF as requested.
- 4.6.3 Make two (2) attempts to contact the agencies/locations listed in Part C. Inform the EOF Manager of those listed agencies you were unable to contact.

4.7 Emergency Response Data System (ERDS) Operations

NOTE: The responsibility for ERDS activation resides with the on-shift Chemistry Technician. The Control Room Incident Advisor, the on-call Emergency Planner, the TSC Plant/NRC Liaison or the PDIS Analyst in the EOF should activate ERDS if not already accomplished.

- 4.7.1 Activate ERDS as soon as possible, but not later than one (1) hour after declaring an Alert or higher emergency classification. {R-5.2}, {R-1936}
- 4.7.2 Use instructions on Form 26497, Activation and Termination of ERDS to activate system.

4.8 Notification of Transitory Events

NOTE: This notification is the responsibility of the Shift Manager or Emergency Director following discovery of the event.

- 4.8.1 If a Transitory Event has been discovered per PPM 13.1.1, Classifying the Emergency, complete the following notifications:
 - a. Ensure ENS notification to the NRC is made within one (1) hour of the discovery of the undeclared (or mis-classified) event.
 - b. Contact the Emergency Preparedness Manager and request that Emergency Preparedness inform the Offsite agencies of the Transitory Event.
- 4.8.2 Upon notification of a Transitory Event, the Emergency Preparedness Manager completes notification of Offsite agencies in accordance with Attachment 7.5, Notification of Transitory Event. The completed Attachment 7.5, Notification of Transitory Event, is filed in the EP File and sent to Plant File in accordance with SWP-REC-01.

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 17 of 33
Title: EMERGENCY NOTIFICATIONS		

4.9 Notification of Event Termination

NOTE: When conditions have improved, stabilized and the following conditions have been met, the Unusual Event or Alert may be terminated in accordance with Procedure 13.13.2, Emergency Event Termination and Recovery Operations.

- Emergency Action Level criteria are no longer exceeded or met,
- Situation prognosis is stable or improving.

4.9.1 For notification of termination of an Unusual Event or Alert, perform the following:

- Fill out an event termination CNF.
- Initiate a Crash call informing offsite agencies of the event termination.
- Notify NRC using the ENS line of the event termination.

4.9.2 For transition from a Site Area Emergency or General Emergency event to the Recovery phase, terminate emergency operations and transition to Recovery Operations in accordance with PPM 13.13.2. Emergency Event Termination and Recovery Operations

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 18 of 33
Title: EMERGENCY NOTIFICATIONS		

5.0 REFERENCES

- 5.1 10 CFR 50.47(b), Emergency Plans {R-1586}, {R-1587}, {R-1588}, {R-1589}, {R-1590}
- 5.2 10 CFR 50.72, Immediate Notification Requirements for Operating Nuclear Power Reactors {R-1932}
- 5.3 10 CFR 73.55, Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors Against Radiological Sabotage {R-20124}, {R-20125}, {R-20126}, {R-20127}
- 5.4 10 CFR 50 Appendix E (IV)(C), Activation of Emergency Organization {R-5731}
- 5.5 Columbia Generating Station Physical Security Plan
- 5.6 10 CFR 26, Fitness for Duty Program
- 5.7 NUREG-0654/FEMA-REP-1, Rev. 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants
- 5.8 NUREG-1022, Event Reporting Systems
- 5.9 IEN 98-08, Information Likely to be Requested if an Emergency is Declared
- 5.10 FSAR, Chapter 13.3, Emergency Plan, Section 4
- 5.11 SWP-FFD-01, Fitness For Duty
- 5.12 PPM 13.1.1, Classifying the Emergency
- 5.13 PPM 13.2.2, Determining Protective Action Recommendations
- 5.14 PPM 13.5.1, Local, Protected Area and Site Evacuation
- 5.15 PPM 13.10.6, Plant/NRC Liaison Duties
- 5.16 PPM 13.13.2, Emergency Event Termination and Recovery Operations
- 5.17 PPM 13.13.4, After Action Reporting
- 5.18 Initiation and Termination of ERDS, 26497
- 5.19 Classification Notification Form, 24075
- 5.20 Emergency Classification or Other Emergency Messages, 26045
- 5.21 Partial Activation or Manpower Schedule Message, 26171
- 5.22 SCC Duty Officer Checklist, 26573

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 19 of 33
Title: EMERGENCY NOTIFICATIONS		

6.0 DOCUMENTATION

All logs, forms and records completed as the result of implementing this procedure during an actual declared event shall be retained as permanent plant records. Transmit documents to the Permanent Plant File under DIC 2304.2.

A sub-set of documents generated during drills shall be maintained in the Emergency Preparedness Department files, as necessary, to support completion of drill/exercise commitments.

7.0 ATTACHMENTS

- 7.1 Emergency Notification Lists, Part A – Immediate Notification List
- 7.2 Emergency Notification Lists, Part B – ERO Notification List
- 7.3 Emergency Notification Lists, Part C – Offsite Notification Checklist
- 7.4 Emergency Response Organization (ERO) Notification and Response Instructions
- 7.5 Notification of Transitory Event
- 7.6 Crash Failure

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 20 of 33
Title: EMERGENCY NOTIFICATIONS		

EMERGENCY NOTIFICATION LISTS PART A – IMMEDIATE NOTIFICATION LIST

Discussion

- This is a list of State and local authorities that shall be notified within fifteen (15) minutes of all emergency event classifications, changes in classification and Protective Action Recommendations (PARs) as required by 10 CFR 50.72.
- Notification to these agencies is normally by Crash dedicated phone, but in the event of Crash phone failure, the Dial-Up system should be used for contact. The agencies should be contacted in order of listing when using the Dial-Up system.
- These offsite agencies are entitled to know ALL information contained on the Classification Notification Form (CNF). A copy of the CNF should be transmitted by facsimile concurrent with phone notification.

Agency Notification List

1. Benton County EOC
2. Franklin County EOC
3. Washington State EOC
4. DOE-RL: Contact the DOE/RL EOC.

END

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043
Title: EMERGENCY NOTIFICATIONS		Minor Rev: 005
		Page: 21 of 33

EMERGENCY NOTIFICATION LISTS PART B – ERO NOTIFICATION LIST

Discussion

- The Part B notification represents the essential and augmenting Emergency Response Organization (ERO) positions for Energy Northwest that shall be notified as soon as possible after classification of an emergency event.
- A complete list of ERO members' work, home, and pager numbers is maintained in selected Emergency Phone Directories for use in the Main Control Room, EOF, TSC/OSC and SCC. Personnel in these locations may use the Part B Notification List to contact ERO personnel in the event of an auto-dialer or paging system failure.
- Selected Energy Northwest supervisory staff not on the ERO is also included in this notification list. This assures that Energy Northwest staff and contractor personnel out of public address system range or in high noise environments within the owner controlled area will be notified of an emergency declaration at Columbia Generating Station.
- These positions are normally notified by pager, computerized phone system, or public address system.

ERO Notification List

See Emergency Phone Book

END

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 22 of 33
Title: EMERGENCY NOTIFICATIONS		

EMERGENCY NOTIFICATION LISTS PART C – OFFSITE SUPPORT AGENCY NOTIFICATION CHECKLIST

Discussion

- These offsite agencies are notified as soon as possible after Part A notifications are made. Notification is made at the indicated emergency classification level and at any subsequent reclassification (except as noted below), including termination.
- Notifications are made via commercial phone, radio or facsimile. A Part C Offsite Support Agency Notification Checklist is located in the Part A/C Notification Section of the Emergency Phone Directory.
- These agencies are normally provided information contained in items 1-7, 9, and 13 of the CNF.
- The agencies are listed in the order of preferred notification. However, Energy Northwest reserves the right to modify the order as required for effective emergency preparedness coordination.
- SCC makes the initial Part C Notifications until relieved of that function by the EOF Site Support Manager.
- After two (2) unsuccessful attempts to contact a listed agency, further attempts will be discontinued and an "unable to contact" notice given to the Site Support Manager.

AGENCY NOTIFICATION LIST

At Unusual Event or Above

1. Bonneville Power Administration (BPA)
2. Federal Emergency Management Agency (FEMA)

At Alert or Above

3. Industrial Development Complex Manager (or Industrial Development Authority (IDA))
4. Security Training Facility
5. Institute of Nuclear Power Operations (INPO)
6. American Nuclear Insurer (ANI)

At Site Area Emergency or Above

7. Framtome
8. General Electric of San Jose

END

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 23 of 33
Title: EMERGENCY NOTIFICATIONS		

EMERGENCY RESPONSE ORGANIZATION (ERO)
NOTIFICATION AND RESPONSE INSTRUCTIONS

General Instructions

If the ERO is summoned during freezing or snowy weather, call the Hanford Patrol Operations Center and request that the roads to the plant be cleared or sanded as necessary. Refer to the Emergency Phone Directory for the number.

If an evacuation is necessary beyond the Exclusion Area, contact the Benton and Franklin County Emergency Operations Centers and request that the Benton and Franklin County road supervisors be contacted to assist in determining evacuation risk. Refer to the Emergency Phone Directory for the number.

At Alert or higher emergency classification, on call and Support personnel should report to their assigned emergency centers. Selected ERO personnel may also be instructed to respond at the Unusual Event classification. Security personnel at Energy Northwest roadblocks will direct Plant responders reporting from home to the Health Physics Center (HPC) at the Kootenai Building before going to the Plant if there are hazardous conditions to consider. Otherwise, personnel will report directly to their assigned emergency center.

Emergency centers are required to be activated within about 90 minutes of classification and of notifying the ERO to report. The 90-minute time window starts at the time ERO pagers activate.

On call ERO members must meet Energy Northwest's Fitness for Duty criteria contained in SWP-FFD-01. Personnel should not acknowledge a telephone notification or report to their emergency center unless Fitness for Duty criteria is met.

10 CFR 26 and Energy Northwest procedures, such as SWP-FFD-01, specify that the consumption of alcohol is prohibited for five hours prior to "any scheduled working tour" and "during the period of any scheduled working tour." Abstinence is not specifically required for other periods. For Emergency Preparedness purposes, a scheduled drill/exercise is considered as a scheduled working tour. Response to an actual event is considered as a call-in situation or unscheduled working tour.

10 CFR 26 and SWP-FFD-01 address alcohol consumption for call-in/unscheduled working tours. The called-in person(s) must state whether alcohol has been consumed within the preceding five hours, and the Supervisor/Manager must ensure this information is provided. For those reporting for a call-in/unscheduled working tour and not meeting the five hour abstinence period, a determination of fitness must be made (including any necessary controls or conditions such as supervision or monitoring).

During events that would impact the safe operation of CGS, such as a large scale loss or degradation of the electrical grid, and area communications (pagers, cell towers, internet, land line phone systems) are being challenged or are not working, ERO personnel are expected to ensure their family and home are safe then report to their Emergency Response Facility if they cannot contact the plant for additional guidance.

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 24 of 33
Title: EMERGENCY NOTIFICATIONS		

Notification Acknowledgement/Response

While at work, ERO personnel may be notified of emergency classifications by one of the following:

- Pager notification
- Public address (PA) announcements
- Word of Mouth
- Telephone message from an automatic dialer

Required response to the autodialer is detailed below.

If you receive an ERO notification on your home phone:

- Follow the scripted directions using a touch tone phone. The auto-dialer cannot recognize a Rotary dial or pulse tone phone.
- If you miss part of the message, you may call Dial: "9-1-855-896-2903" or "9-1-844-417-8128" (If first number does not work). Otherwise, report directly to your emergency center, or as directed.

ERO Response Expectations

NOTE: The following section applies to all Actual Events, Off-hours Drills, and any other ERO related notification *real or simulated* EXCEPT for regularly scheduled, pre-advertised Day Shift ERO Team Training Drills (for which the drill team has been pre-designated).

Day Shift ERO Team Training Drills are typically held four or more times per calendar year and are listed on the published ERO Team Drill/Exercise Schedule.

IF in doubt about whether the drill is one of the few regularly scheduled, pre-advertised Day Shift ERO Team Training Drills, THEN respond as described below for your ERO category as if it is an actual event.

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 25 of 33
Title: EMERGENCY NOTIFICATIONS		

Essential Category

1. When an ERO Call-out Notification occurs, all available "ESSENTIAL" category personnel from all four ERO teams (A, B, C, and D) should arrive at their emergency centers as soon as possible but within approximately 60 minutes, regardless of which ERO team is the scheduled duty team at the time of the Call-out Notification. All four teams are required to respond to assure that at least one person arrives in time to fill each "ESSENTIAL" category position within about 60 minutes so as to provide the best chance that all emergency centers will be activated within the 90-minute requirement.
2. All ERO personnel in positions classified as "ESSENTIAL" category should report to their emergency centers immediately when paged with either a "222" or "444" code (or to their designated alternate location for Security Contingency codes "191" or "393" when received while off-site. Onsite response to Security Contingency pager codes "191" or "393" is in accordance with the plant PA announcement.) "ESSENTIAL" category members are not expected to call the auto-dialer. "ESSENTIAL" category personnel on all four ERO teams (A, B, C, and D) will receive contact calls from the auto-dialer soon after the pager notification. However, "ESSENTIAL" category personnel should not wait for the auto-dialer call or take the time to interact with the auto-dialer unless the auto-dialer's call is their first notification contact.
3. "ESSENTIAL" category members who receive a pager notification with either a "000" (informational message) or "333" (Unusual Event) code should call the auto-dialer and follow its instructions.
4. "ESSENTIAL" category members not on-call are not required to remain fit for duty when not on-call. "ESSENTIAL" category members not on-call are expected to carry their pagers with them at all times. However, if an ERO Call-out occurs, all available "ESSENTIAL" category members not on-call are to report if fit for duty.
5. The 90-minute center activation time requirement is measured from the point in time when the pagers are activated, not at the time the event is declared by the Shift Manager.

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 26 of 33
Title: EMERGENCY NOTIFICATIONS		

Augmenting Category

1. All "AUGMENTING" category personnel should call the auto-dialer promptly when paged before reporting to preclude the auto-dialer from attempting to fill the position with members from the ERO teams that are not on-call.
2. However, if an "AUGMENTING" category ERO member from a team that is not on-call is contacted by the auto-dialer that means the on-call member in that position has not responded to the auto-dialer and presumably will not respond. In this event, that "AUGMENTING" category team member not on-call is needed to support the on-call ERO team and should respond to the dialer and report to the emergency center if fit for duty.
3. On-call "AUGMENTING" category ERO members who cannot contact the auto-dialer (despite multiple attempts) or who receive notice upon contacting the auto-dialer that their position has already been filled (presumably by an off-duty member) should respond to their assigned location to fill their position during actual events (pager code "444" or "191") or call-out drills (pager code "222" or "393") or when subsequently directed by appropriate ERO authority. This expectation for on-call staff is necessary to maximize team fidelity and establish team rotation sequence, should subsequent shift staffing be needed.
4. "AUGMENTING" category members who are not on-call are not required to remain fit for duty when not on-call. However, if an ERO Call-out occurs, all "AUGMENTING" category members who are contacted by the auto-dialer should report if fit for duty, regardless of whether or not they are on-call.
5. Although a 60-minute response expectation does not apply to "AUGMENTING" category members, all "AUGMENTING" category ERO members responding to a Call-out should report as soon as possible.

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 27 of 33
Title: EMERGENCY NOTIFICATIONS		

Support Category

1. All "SUPPORT" category personnel should respond to the auto-dialer when called before reporting to preclude the auto-dialer from attempting to fill the position with members from the ERO teams that are not on-call.
2. However, if a "SUPPORT" category ERO member from a team that is not on-call is contacted by the auto-dialer, that means the on-call member in that position has not responded to the auto-dialer and presumably will not respond. In this event, that "SUPPORT" category team member not on-call is needed to support the on-call ERO team and should respond to the dialer and report to the emergency center if fit for duty.
3. On-call "SUPPORT" category ERO members (with a Pager) who cannot contact the auto-dialer (despite multiple attempts) or who receive notice upon contacting the auto-dialer that their position has already been filled (presumably by an off-duty member) should respond to their assigned location to fill their position during actual events (pager code "444" or "191") or call-out drills (pager code "222" or "393") or when subsequently directed by appropriate ERO authority. This expectation for on-call staff is necessary to maximize team fidelity and establish team rotation sequence, should subsequent shift staffing be needed.
4. An approximate 60-minute response expectation applies to "SUPPORT" category members from telephonic notification. All "SUPPORT" category ERO members responding to a Call-out Notification should report as soon as possible.
5. "SUPPORT" category members who are not on-call are not required to remain fit for duty when not on-call. However, if an ERO Call-out occurs, all "SUPPORT" category members who are contacted by the auto-dialer should report if fit for duty, regardless of whether or not they are on-call.

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 28 of 33
Title: EMERGENCY NOTIFICATIONS		

ERO Response Expectations –ERO Scheduled Team Training Drills ONLY

1. For published, regularly scheduled, pre-advertised ERO Team Training Drills, the scheduled ERO team's members, scheduled fill-ins, and other ERO staff designated to support the drill are expected to respond to the Drill notification according to the guidance provided by category below.
2. Scheduled ERO Team Training Drills are typically held four or more times per calendar year, involve a pre-designated drill team, and are scheduled months in advance. See the published ERO Team Drill/Exercise Schedule to confirm the team assignment for Scheduled ERO Team Training Drills.
3. To minimize unnecessary impact to other scheduled station activities, those ERO members not designated to participate in the Scheduled ERO Team Training Drill on a given day should initially allow the designated training team to respond.
4. ERO members who are not scheduled to participate in that day's Scheduled ERO Team Training Drill should give the scheduled team time to call in to the auto-dialer (about 20 minutes).
5. Response to Scheduled ERO Team Training Drills by the scheduled participants should be as prompt as safely possible, and should not exceed 60 minutes from initial notification.

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 29 of 33
Title: EMERGENCY NOTIFICATIONS		

Essential Category Response Expectations –ERO Team Training Drills

1. **“ESSENTIAL” category ERO members who are scheduled to participate in the drill** should report to their designated drill location without delay. They should not take time to contact the auto-dialer. Prompt arrival is critical to ensure full staffing to activate.
2. “ESSENTIAL” category ERO members who are **not** participating in the drill should confirm they received a pager code for a training drill (either “222” or “393”) or that the plant announcement stated it was for an ERO Drill and await contact by the auto-dialer. This is done to ensure the notification was not for an actual event and to keep auto-dialer lines open to accept calls from the designated training team.
 - a. After confirming that the occurrence is a Drill, the non-participating “ESSENTIAL” category ERO members should await contact from the auto-dialer, listen to the call (to confirm it is for the scheduled Drill) and decline the position. This is done to “free up” auto-dialer resources to contact ERO members who are participating in the drill.
 - b. IF a non-participating “ESSENTIAL” category ERO member is contacted by ERO personnel & asked to respond, THEN they must do so immediately, if fit for duty. This request indicates that the scheduled “ESSENTIAL” category team member is presumed to be unable to respond and the non-scheduled person is needed to report to their designated location to support center activation.
3. Non-scheduled ERO Members will be released upon arrival of and completion of turnover from their counterpart who was scheduled for that drill.

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 30 of 33
Title: EMERGENCY NOTIFICATIONS		

Augmenting Category Response Expectations –ERO Team Training Drills

1. **“AUGMENTING” category ERO members who are scheduled to participate in the drill** should contact the auto-dialer immediately and repeatedly (if needed) in order to report their intent to respond.
2. **“AUGMENTING” category ERO members who are not participating in the drill** should confirm they received a pager code for a training drill (either “222” or “393”) or that the plant announcement stated it was for an ERO Drill and await contact by the auto-dialer. This is done to ensure the notification was not for an actual event and to keep auto-dialer lines open to accept calls from the designated training team.
 - a. After confirming that the occurrence is a Drill, the non-participating **“AUGMENTING” category ERO members who receive a call from the auto-dialer** should neither accept nor decline the first call. They should listen to the call and hang up before accepting or declining the position. This is done to allow the scheduled participant additional time to call in and accept the position, while keeping the auto-dialer primed to call this person back if the scheduled person does not fill the position.
 - b. **“AUGMENTING” category ERO members who receive a second call from the auto-dialer** should then listen to the call, accept the position, and report to their designated location. In this event, the scheduled **“AUGMENTING” category team member** is presumed to be unable to respond and the non-scheduled person is needed to support the responding ERO team and should report to their designated location if fit for duty.
 - c. **“AUGMENTING” category ERO members who receive a call from their ERO center requesting their support** should accept the position, and report to their designated location. In this event, the scheduled **“AUGMENTING” category team member** is presumed to be unable to respond and the non-scheduled person is needed to support the responding ERO team and should report to their designated location if fit for duty.
3. Non-scheduled ERO Members will be released upon arrival of and completion of turnover from their counterpart who was scheduled for that drill.

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 31 of 33
Title: EMERGENCY NOTIFICATIONS		

Support Category Response Expectations –ERO Team Training Drills

1. **“SUPPORT” category ERO members who are scheduled to participate in the drill** should contact the auto-dialer immediately and repeatedly (if needed) in order to report their intent to respond.
2. **“SUPPORT” category ERO members who are not participating in the drill** should listen to plant announcements to confirm that the occurrence is an ERO Drill and then await contact by the auto-dialer. This is done to ensure the notification was not for an actual event and to keep auto-dialer lines open to accept calls from the designated training team.
 - a. After confirming that the occurrence is a Drill, the non-participating “SUPPORT” category ERO members who receive a call from the auto-dialer should neither accept nor decline the first call. They should listen to the call and hang up before accepting or declining the position. This is done to allow the scheduled participant additional time to call in and accept the position, while keeping the auto-dialer primed to call this person back if the scheduled person does not fill the position.
 - b. “SUPPORT” category ERO members who receive a second call from the auto-dialer should listen to the call, accept the position, and report to their designated location. In this event, the scheduled "SUPPORT" category team member is presumed to be unable to respond and the non-scheduled person is needed to support the responding ERO team and should report to their designated location if fit for duty.
 - c. “SUPPORT” category ERO members who receive a call from their ERO center requesting their support should accept the position, and report to their designated location. In this event, the scheduled "SUPPORT" category team member is presumed to be unable to respond and the non-scheduled person is needed to support the responding ERO team and should report to their designated location if fit for duty.
 - d. Non-scheduled ERO Members will be released upon arrival of and completion of turnover from their counterpart who was scheduled for that drill.

END

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043
Title: EMERGENCY NOTIFICATIONS		Minor Rev: 005
		Page: 32 of 33

NOTIFICATION OF TRANSITORY EVENT

I. TRANSMITTAL OF INFORMATION

A. An event occurred at _____ on _____ which would have
Time Date

required the declaration of a(n):

Unusual Event Alert Site Area Emergency General Emergency

B. This event was exited at _____ on _____ prior to
Time Date

any offsite notifications. Current emergency classification at Columbia Generating Station is:

None Unusual Event Alert Site Area Emergency

C. The event was: _____

Approval signature for release of this information: Manager, Emergency Preparedness

Print Name	Signature	Date	Time

II. NOTIFICATION DOCUMENTATION

NOTE: This notification of Transitory Event is for information purposes only. NO RESPONSE ACTION is required on the part of the individual receiving this notification.

The following notifications were made for the event:

	DATE	TIME	PERSON NOTIFIED
Benton County EOC			
Franklin County EOC			
WA. State EOC			
DOE-RL			
NRC			(By Control Room)

END

Number: 13.4.1	Use Category: REFERENCE	Major Rev: 043 Minor Rev: 005 Page: 33 of 33
Title: EMERGENCY NOTIFICATIONS		

CRASH FAILURE

IF the CRASH system does not initiate,
THEN perform the following:

- a. Dial 400 and then press * # #. Hang up and attempt to initiate the Crash by dialing 400.
- b. IF the above step does not work,
THEN Dial 444 and then press * # #. Hang up and dial 400 to attempt to initiate the Crash call.
- c. IF you are not successful in initiating the Crash,
THEN begin using the Dial-up system to make notifications,
SELECT "Dial-up" and use the following phone numbers:

Benton County EOC -----3630

Franklin County EOC -----3641

Washington State EOC -----3654

DOE-RL -----3635

- d. IF Crash system failure requires that you provide notification by other means,
THEN use the commercial / business phone system (refer to Emergency Phone Directory, Crash and Call Roster section, for instructions).

Benton County EOC (Emergency Dispatch 9-628-0333 or 9-628-2616)

Franklin County EOC (Dispatch 9-545-3510 or EOC 9-545-3546)

Washington State EOC (9-1-800-258-5990 or 9-1-253-912-4901)


DOE-RL EOC (Shift Office 9-376-3030)

- e. IF using an alternate method,
THEN you may receive call backs to verify the notification is authentic.

END

Verify Revision Information Prior To Use	Initials	
	Date	

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039
Title: Emergency Dose Projection System Operations		Minor Rev: 001
		Page: 1 of 32

PLANT PROCEDURES MANUAL	PCN#: N/A
 13.8.1	Effective Date: 11/12/18

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 2 of 32
Title: Emergency Dose Projection System Operations		

DESCRIPTION OF CHANGES

Justification (required for major revision)
Revision 39: Added Attachment 7.8, Detailed URI

Page(s)	Description (including summary, reason, initiating document, if applicable)
11	Added statement to refer to Attachment 7.8, Detailed URI Deleted steps in Section 4.3 that are now contained in Attachment 7.8
13	Added Attachment 7.8, Detailed URI, to list of Attachments.
16,19, 23	Revised NOTE to indicate that the MET tower would be OOS during a loss of SM-8 and that met information from FFTF should be used instead.
27	Added NOTE describing idiosyncrasies of the sample rack.
31, 32	Added Attachment 7.8, Detailed URI
23	Minor Rev 001: Name change from PNNL to Mission Service Alliance (MSA)

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 3 of 32
Title: Emergency Dose Projection System Operations		

TABLE OF CONTENTS

		<u>Page</u>
1.0	PURPOSE	4
2.0	DEFINITIONS	4
3.0	RESPONSIBILITIES	6
4.0	PROCEDURE	6
4.1	General Instructions	6
4.2	Dose Estimation Using Rapid URI	9
4.3	Dose Estimation Using Detailed URI	11
5.0	REFERENCES	12
6.0	DOCUMENTATION	12
7.0	ATTACHMENTS	13
7.1	URI User Guidance	14
7.2	Air Sampling Worksheet Calculation	22
7.3	Obtaining Alternate Met Data	23
7.4	Computer Points Used in the eDNA View Radiological Status Screen	26
7.5	Alternate Stack Monitor Effluent Determination from Stack Door Monitor	27
7.6	Compensatory Measures for TEA or WEA	30
7.7	Alternate Method for ARMs or OG-RIS-612	29
7.8	Detailed URI	31

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 4 of 32
Title: Emergency Dose Projection System Operations		

1.0 PURPOSE

This procedure provides instructions for the use of the computerized dose projection system Unified RASCAL Interface (URI) to predict offsite dose rates, integrated doses and radioactive material deposition for locations within the 10-mile Plume Emergency Planning Zone (EPZ) and the 50-mile Ingestion EPZ. Actual manipulation of system display terminals is described in document MAN-URI-01 referred to as the URI User's Manual.

The dose projection system is used for estimating the whole body (TEDE) and thyroid (CDE) doses of onsite and offsite persons in the event of potential or actual accidental release of radioactivity to the environment. The dose projection system used at Columbia consists of a computer software program that relies on pre-calculated, real time, site-specific relationships between effluent monitor readings (or sample results) and on-site and offsite dose rates.

The dose projection system is available in the Control Room, TSC, EOF, and Alternate EOF. Having the dose projection system software loaded on multiple, stand-alone computers located in the various emergency centers maximizes dose projection capability. Field Team data may be used to calculate dose projections or validate previous projections.

The software program supports a rapid version of dose projection using limited pathways for a rapid evaluation of the release out to 10 miles. The software also supports a detailed dose projection based on more detailed pathways with dose projections from the site boundary out to 10 or 50 miles.

State and county organizations will have access to this system in the EOF or by transmission of output information to their emergency centers.

2.0 DEFINITIONS

- 2.1 CDE Thyroid – Committed Dose Equivalent to the thyroid.
- 2.2 Delta T - The temperature difference between two sensors located at different elevations on a meteorological tower.
- 2.3 EDE to TEDE Ratio (EDE/TEDE) – Ratios computed by URI that are used for determining the Emergency Worker Dose Adjustment Factor. The EDE is the external gamma dose that is normally monitored by emergency workers through their self-reading dosimeters (electronic dosimeters or pocket ion chambers); and TEDE is the total dose from both EDE and the internal dose from inhaled iodines and particulates.
- 2.4 Elevated Release – An effluent release point model that assumes that the release point is from a discreet true elevated (tall) stack.
- 2.5 Emergency Worker Dose Adjustment Factor (EWDAF) - An adjustment factor determined from the EDE/TEDE Ratio that is used by offsite emergency workers to monitor their TEDE whole body dose based on their EDE doses as measured on their self-reading dosimeters. The adjustment factor is the inverse of the EDE/TEDE Ratio reported by URI (for example, an EDE/TEDE Ratio of 0.15 would mean that the EWDAF is $1 / 0.15 = 6.7$).

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 5 of 32
Title: Emergency Dose Projection System Operations		

- 2.6 Radioactive Release - A radioactive release is in progress when:
- Effluent monitors indicate an increase in radiation levels from normal readings for plant operating conditions,
- or**
- Field teams detect environmental radiation 10 times greater than normal background.
- AND**
- The increased levels are attributable to the emergency event.
- 2.7 Radioactive Release Termination - A radioactive release is terminated when the following criteria have been met:
1. The source of the release has been isolated;
 2. The effluent monitors are trending downward (if available);
 3. Environmental Field Team surveys indicate a decrease in radiation levels or airborne radioactivity.
- 2.8 RASCAL - NRC supported and distributed computer software for determining source term, atmospheric dispersion, and dose consequences:
- 2.9 Site Boundary (SB) - Closest distance between owner controlled area boundary and core, set at 1.2 miles.
- 2.10 Source Term - The quantity and radionuclide makeup of the material in the release. The source term used in URI is based on NUREG-1228.
- 2.11 Stability Class - Values from A to G representing ranges of Delta T which in turn represent atmospheric mixing estimations. The NRC definitions of these ranges are used to define the stability classes used in URI.
- 2.12 Stack Door Monitor (SDM) - A portable radiation survey meter (e.g., Teletector) or radiation monitoring instrument (e.g., AMP-100) used for monitoring radiation levels at the exterior and center of the Elevated Release Stack Access Door (R-DOOR-R515). This provides an alternate means for monitoring Reactor Building post-accident effluent releases when the installed Process Radiation Monitor (PRM) Stack Monitor is inoperable or unavailable. SDM readings (in mR/hr) are available from HP; or, when set up for remote monitoring, through eDNA Real-Time Client or eDNA Trend from eDNA Point IDs EP99M (mid-range SDM) and EP99H (high-range SDM) in the ENW.WRM Service.
- 2.13 TEDE - Total Effective Dose Equivalent (TEDE) - The sum of the Deep Dose Equivalent (DDE) and the Committed Effective Dose Equivalent (CEDE).
- 2.14 Unified RASCAL Interface (URI) - Computer software which replaces the NRC issued RASCAL user interface for user input of dose assessment parameters and interpretation of results that interfaces to the RASCAL meteorological and dose processor modules.

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 6 of 32
Title: Emergency Dose Projection System Operations		

3.0 RESPONSIBILITIES

3.1 STA / Incident Advisor

Responsible for performing dose assessments until relieved by an on-call ERO Member.

3.2 Dose Projection HP

Once the EOF takes control of offsite radiological assessment the Dose Projection HP is responsible for performing dose assessments until the event is terminated.

3.3 Chemistry Effluent Manager

Once the TSC is manned, the Chemistry Effluent Manager is responsible for performing dose assessments if required for the TSC.

4.0 PROCEDURE

4.1 General Instructions

4.1.1 URI is not to be used for UE classification.

4.1.2 If in a declared emergency and an offsite dose or dose rate projection is needed, or if so directed, use URI to perform offsite dose calculations.

4.1.3 Access the Plant Data Information System (PDIS) through the electronic Distributed Network Architecture (eDNA) software to obtain and monitor key radiation monitor, meteorological, and Plant effluent data.

a. At a LAN supported computer:

- 1) Double click on the "eDNA View" icon on the Desktop, if available. If no "eDNA View" icon is available, open eDNA through the network folder and select eDNA View.
- 2) Select CGS, then "PDIS", and "Rad Status" to obtain the "Radiological Status" screen.
 - A screen print of the "Radiological Status" screen may be used to capture the current values of radiation monitor, meteorological, and effluent data for tracking changes (setup printer to Landscape mode, and use the "Print Direct" function rather than "Print" from the "File" drop-down menu on the eDNA View "Radiological Status" screen or if the file menu is not available, right click the eDNA screen and select "Print Direct").
 - Access other eDNA View screens of PDIS data by selecting the appropriate "eDNA View (*.rtv)" in the Application Service Utility window, as desired.
 - Graphical trends of the plant parameters displayed on the eDNA View screens can be displayed by clicking in the appropriate plant parameter display box. The time span of the graphical trend may be modified by selecting "Modify Graph Parameters" in the "Graph" pull-down menu, selecting the "Graph" tab, and entering the desired date and time range (click to check the "Y-Axis Auto Scale" box for a clearer graph).

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 7 of 32
Title: Emergency Dose Projection System Operations		

3) Area Radiation Monitor (ARM), effluent monitor (TEA, WEA, PRM and SDM, and meteorological data are also available through eDNA applications (e.g., eDNA Real-Time Client or eDNA Trend) from the Start menu/All Programs/eDNA folder and selecting the appropriate ENW Service (e.g., ENW.CGS, ENW.WRM, etc.).

- 4.1.4 Use URI to estimate doses within 15 minutes of a start of a release or as information becomes available. Also use URI to estimate offsite dose during rapidly changing meteorological conditions or release conditions as appropriate.
- 4.1.5 Start URI by double-clicking on the appropriate icon on the Desktop or start from the "C" drive.
- 4.1.6 If necessary, refer to Attachment 7.1, URI User Guidance, which provides detailed guidance on using URI.
- 4.1.7 Review dose projection printouts, note any qualifying factors as appropriate and brief the RPM or REM on the dose projection.
- 4.1.8 In the EOF/TSC, if any data is suspect, request the Radiation Detection System Engineer or the EOF/TSC Information Coordinator to verify the data.
- 4.1.9 In the event of unmonitored release paths or if instrumentation (including alternate instrumentation) is out of service or off-scale, Field Team results are used to calculate dose projections. Use one of the following processes to assess Field Team results:
 - a. Air sample Excel spreadsheet calculator found on the Window Desktop
 - 1) Enter the cartridge and background readings, and press the tab key to perform the calculation.
 - b. Attachment 7.2, Air Sampling Worksheet Calculation
 - 1) Enter sample and background count rate and sample volume into calculations to determine micro curies/cc ($\mu\text{Ci/cc}$).
 - c. Air Sample Calculator in URI Detailed assessment (preferred)
 - 1) See Attachment 7.1 for details on Air Sample Calculator use.

NOTE: GPS coordinates for the center of the Reactor Pressure Vessel are 119.33278 longitude and 46.47167 latitude

- 4.1.10 Provide the Emergency Worker Dose Adjustment Factor to the REM and Field Team Coordinator for their use in establishing field team exposure limits.
 - a. If the Dose Adjustment Factor is 5 or greater, use Dose Adjustment Factor of 5.
 - b. On page three of the detailed Dose Assessment Report invert the EDE/TEDE ratios to acquire the Dose Adjustment Factor. Use the EDE/TEDE Ratio with Iodine. If respiratory protection or a thyroid blocking agent (i.e., potassium

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 8 of 32
Title: Emergency Dose Projection System Operations		

iodide) is being used, then it may be appropriate to use the EDE/TEDE Ratio without Iodine.

Example:

EDE/TEDE ratio with iodine at 2 miles is 0.90 the Emergency Worker Dose Adjustment Factor would be 1.1. (1 divided by 0.9)

- c. If the EDE/TEDE ratio is less than or equal to 0.2, use a Dose Adjustment Factor of 5.

4.1.11 If intentionally venting the primary containment, perform dose projection assessment using Reactor Building Exhaust radiation monitors or field team data as applicable. Venting is a puff release and thus release duration for intentional venting is one hour.

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 9 of 32
Title: Emergency Dose Projection System Operations		

4.2 Dose Estimation Using Rapid URI

NOTE: Use of Rapid URI requires that the release pathway matches one of the limited options in the Rapid URI software.

- 4.2.1 The following steps will provide guidance on performing a Rapid URI dose assessment with normal met tower and radiation monitors available. See Attachment 7.1 for URI implementation when normal plant indications are not available.
- a. Start the URI software with icon (software on "C" drive if icon missing)
 - b. If not a real event then select "This is a drill"
 - c. Select Rapid – LIGHTNING BOLT icon at top left of startup page
 - d. Select Fuel Clad Damage "Yes", if EAL chart PPM 13.1.1 Table 3 Effluent Monitor reading is Greater Than or Equal to Alert value, otherwise select NO.
 - e. If reactor power is LE 1% (shutdown), select box for Reactor Shutdown
 - f. Verify shutdown date / time – change if needed
 - g. Select CGS 33ft Tower (Channel A primary, Channel B backup) and enter Met data, otherwise use FFTF #9
 - h. Enter Release Duration – for ongoing release round up to next hour and add two
 - i. Select Release Point Pathway – NOTE ensure correct release point pathway is selected; might have to go to "Detailed" URI
 - j. Select an Effluent Monitor that has valid and on-scale data for selected pathway
 - k. Enter the monitor reading for the selected monitor
 - l. Enter the Release Point Flow Rate, if SGT is running and Reactor Building Exhaust Fans are shutdown; use the total of the running SGT train flowrates.
 - m. Select "Process Assessment" button. A green progress bar will be displayed. Typical calculation times will be less than 20 seconds.
 - n. When complete, a graphic of affected areas that may require protective action will be displayed
 - o. Double click on the protective action display to show a pop-up of the dose results table.

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 10 of 32
Title: Emergency Dose Projection System Operations		

NOTE: To perform an additional calculation, change any or all input values as needed and select the Process Assessment button again. If only changing one field, it may be necessary to click out of that field to get the Process Assessment button to appear.

- 4.2.2 See Attachment 7.1, URI User Guidance, for URI use when normal plant indications are not available.
- 4.2.3 Select Print to Default Printer (printer icon, upper left corner of page) to produce a paper output.
- 4.2.4 URI has the capability of summing dose assessments from multiple release points, proceed as follows.
 - a. Clicking on the sigma icon in the upper left of the screen will bring up the Assessment Summations table. Minimize this screen for later use.
 - b. Clicking on the plus icon in the upper right of the screen will add the latest assessment to the summations table.
 - c. Run a new dose assessment and click on the plus icon to sum the two dose projections. Assessments performed earlier can be added to the summations table by clicking on the browse button in summations table.
 - d. A combined dose assessment report and evacuation area map appears at the bottom of the summations table.
- 4.2.5 Have the REM or RPM compare URI output at 1.2 miles for EALs per PPM 13.1.1 and for potential protective action recommendations beyond 10 miles per PPM 13.2.2.
- 4.2.6 Have ED, RPM, or REM sign printed data for distribution.
 - a. Forward to the Emergency Director for approval prior to releasing data for distribution.
 - b. In the Control Room the Shift Manager as Emergency Director has approval authority.
 - c. The Washington Senior State Official approves release data for distribution during the ingestion phase.
- 4.2.7 Distribution of Maps and Data
 - a. Any dose projection maps or data printouts selected for distribution to offsite agencies shall have REM and Emergency Director review and approval.

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 11 of 32
Title: Emergency Dose Projection System Operations		

4.3 Dose Estimation Using Detailed URI

- 4.3.1 See Attachment 7.8, Detailed URI, for dose assessment performance.
- 4.3.2 URI has the capability of summing dose assessments from multiple release points.
 - a. Selecting the sigma icon in the upper right of the screen will bring up the Assessment Summations table. Minimize this screen for later use.
 - b. Selecting the plus icon in the upper right of the screen will add the latest assessment to the summations table.
 - c. Run a new dose assessment and click on the plus icon to sum the two dose projections. Assessments performed earlier can be added to the summations table by clicking on the browse button in summations table.
 - d. A combined dose assessment report and evacuation area map appears at the bottom of the summations table.
- 4.3.3 The Washington Senior State Official approves release data for distribution during the ingestion phase.
- 4.3.4 Distribution of Maps and Data
 - a. Any dose projection maps or data printouts selected for distribution to offsite agencies shall have REM and Emergency Director review and approval.
 - b. Maps selected for distribution should always be accompanied by the data. This is very important because the plume projected on the map is not closed and without the data sheet, the plume may be misinterpreted.
- 4.3.5 For Plume map, select "View Receptor Point Locations" (World) icon in the upper left of screen under "View"
 - a. Recommend selecting RASCAL puff grids and Show Balloons.
 - b. Hover above grid point with cursor to obtain grid projected dose.
 - c. Print option is in lower right hand corner of map screen.

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 12 of 32
Title: Emergency Dose Projection System Operations		

5.0 REFERENCES

5.1 Documents

- 5.1.1 10 CFR 50 .47(b) Planning Standard
- 5.1.2 10 CFR 50, Appendix E, Emergency Plan
- 5.1.3 GI2-03-020, Elimination of Requirements for Post-Accident Sampling System
- 5.1.4 NUREG-0654, FEMA REP-1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants
- 5.1.5 NUREG 1228, Source Term Estimation During Incident Response to Severe Nuclear Power Plant Accidents
- 5.1.6 RSCS TSD-13-035 (CVI 1057-00,131) TEA and WEA replacement
- 5.1.7 NE-02-09-12 CGS Emergency Action Levels (EALs) Technical Bases
- 5.1.8 NE-02-10-05 URI
- 5.1.9 FW-SOFT-COTS-RASCAL and FW-SOFT-COTS-URI
- 5.1.10 CR 244578, CMR changed EAL classification value without adequate 50.54q
- 5.1.11 SQA SDD SDD-PDIS-01, Plant Data Information System Software Design Description
- 5.1.12 Radiation Protection Calculation 15-04, Calculation of Iodine Air Sampling Cartridge Efficiencies

5.2 Procedures

- 5.2.1 PPM 13.1.1, Classifying the Emergency
- 5.2.2 PPM 13.2.1, Emergency Exposure Levels/Protective Action Guides
- 5.2.3 PPM 13.2.2, Determining Protective Action Recommendations
- 5.2.4 PPM 13.14.11, EP Equipment

6.0 DOCUMENTATION

All logs, forms and records completed as the result of implementing this procedure during an actual declared event shall be retained as permanent plant records. Transmit documents to the Permanent Plant File under DIC 2304.2.

A sub-set of documents generated during drills shall be maintained in the Emergency Preparedness Department files, as necessary, to support completion of drill/exercise commitments.

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 13 of 32
Title: Emergency Dose Projection System Operations		

7.0 ATTACHMENTS

7.1 URI User Guidance

7.2 Air Sampling Worksheet Calculation

7.3 Alternate Method for Obtaining Met Data

7.4 Computer Points Used in the eDNA View Radiological Status Screen

7.5 Alternate Method for PRM Stack Monitor

7.6 Alternate Method for TEA-RIS-13 or WEA-RIS-14

7.7 Alternate Method for ARM or OG-RIS-612

7.8 Detailed URI

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 14 of 32
Title: Emergency Dose Projection System Operations		

URI User Guidance

1.0 OVERVIEW

- 1.1 For ease of explanation, the different sections of the URI screen will be described as "groupings" with the name in the upper left of the grouping as the title of that grouping.
- 1.2 Options used in the Source Term Grouping will determine which options will be available in succeeding grouping.
- 1.3 The red octagons with the exclamation point inside are warnings that an option needs to be selected or information filled in to before the calculation can be performed. A message also appears in the lower left hand corner of the page stating that all errors must be resolved to complete the calculation. If the cursor is placed over the octagon, a message is provided that will describe the range of the input variable.
- 1.4 Holding the cursor over a box will often result in the program providing information about the contents of the box.
- 1.5 Options used in the Release Point Pathway Grouping will determine which inputs to the Process Reduction Factor will become available.
- 1.6 Options used in the Release Point Pathway Grouping will determine which options will be available in the Assessment Methodologies Grouping.
- 1.7 Notes: Stack Door Monitor (SDM) is a direct monitored input option. FFTF delta-T is a direct input for stability class. CGS has committed to performing ground release assessments; so only ten meter Met conditions should be selected.
- 1.8 During the ingestion phase, determine manual contour lines on the 10-50 mile map by selecting grid and balloon options to determine the projected 500 μ R (relocation boundary), 20 μ R and 0.4 μ R (food control boundary).

2.0 Rapid URI

Activate Rapid URI by selecting the Rapid option (upper right hand corner) on the URI main screen. The Rapid Assessment page is now available for data input.

2.1.1 Source Term Grouping (this grouping provides input on what type of damage to the fuel has occurred)

- a. In the Source Term box, answer the initial question concerning Fuel Clad Damage. If damage to the core is suspected (PPM 13.1.1 Table 3 Effluent Monitor reading is GT Alert value), or Field Team data shows a release in progress, select "yes". This causes the assessment to include isotopic mix and inventory for fuel clad damage.
- b. Selecting Fuel Clad Damage "No" causes selection of normal coolant concentrations as the basis of the source term. This also activates the Conditions for Coolant Spiking question. Select "Yes" if Reactor Building process radiation monitors spike following a plant transient; otherwise select "No".

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 15 of 32
Title: Emergency Dose Projection System Operations		

- c. Check the "Reactor Shutdown" box if appropriate and enter date of shutdown using the pull down calendar. Overwrite the indicated time as necessary.
- d. Select Damaged Spent Fuel Assembly for any Spent Fuel Pool handling accidents. This will change the Reactor Shutdown date/time box to "Last Irradiated" and allow input of when the spent fuel was last irradiated. This should be 5/13/17. (CGS does not have the ability to update software.)

2.1.2 Meteorological Data Grouping (this grouping allows input of meteorological data pertinent to the release)

NOTE: If Primary Met Tower information is not available, see attachment 7.3 for obtaining alternate met tower information. {5.1.4}

NOTE: Met Data is normally taken from the eDNA View "Radiological Status" or PDIS Rad Status display. Met Channel A is primary input, Channel B is backup input. IF any parameter cannot be obtained from eDNA View or PDIS THEN refer to Attachment 7.3, Obtaining Alternate Met Data, to determine appropriate Stability Class.

NOTE: If the wind direction value is greater than 360° subtract 360 from value before entering it into URI program.

- a. Select one of the three choices of met tower input to be used. Meteorological parameters from the primary met tower are normally available on the Radiological Parameters screen. If the primary met tower (default) is not selected, the program will provide a notification of this.
- b. Input Wind Speed and Wind Direction data. Wind Speed range is GE 0 to LE 60 mph. Wind Direction range is GE 0 and LT 360
- c. Input delta T or select appropriate Stability Class from the pull down menu. Delta T range is GT -10 to LE 10.
- d. Use the pull down menu to select the appropriate level of precipitation.

2.1.3 Release Duration Grouping (this grouping allows input on how long the release has been in progress)

- a. Provide release duration in hours and minutes. This function defaults to 3 hours. If End of Release is not known, a default value of the time of the release is rounded up to the next hour plus two hours should be used.
- b. EXAMPLE: Release has lasted for 25 minutes. Round 25 minutes up to 1 hour and add 2 hours to give a release duration of 3 hours.

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 16 of 32
Title: Emergency Dose Projection System Operations		

2.1.4 Release Point Pathway Grouping (this grouping allows input on where the release originates from and its path for leaving the plant)

NOTE: A Radwaste building release pathway is only available in Detailed URI

- a. Select the appropriate release path from the available list. A description of the pathway will appear as the cursor is held over the individual pathways. A list of available monitors will also be displayed. Choose the pathway that best matches the conditions of the release in progress.
- b. Selections made in the Source Term Grouping will determine which release paths are available.
- c. The release path selected will determine which effluent monitors will be available.
- d. The release path selected will also determine the Process Reduction Factor (PRF) applied to the calculation of the offsite dose. **IF SGT is running the Rx Building hold up time needs to be changed to 2-24 hours.**
- e. The pathway and assumptions for the input to the PRF are displayed in the lower right portion of the screen.

NOTE: In the event of a loss of SM-8, the PRM Stack Monitors and the MET tower will be out of service (OOS). Alternate indications of Reactor Building effluents can be obtained from the Stack Door Monitor. Use the readings from the Stack Door Monitor to input directly into URI. Meteorological information can be obtained from FFTF.
In the event of a loss of SM-7, PRMs for Turbine and Radwaste buildings are OOS. Alternate methods for TEA and WEA monitors are the sample carts.

2.1.5 Release Point Information Grouping (this grouping allows input on the condition of the monitors at the release point)

- a. Select "Yes" if effluent monitors are available. Depending on the Pathway selected, Turbine or Reactor Building monitors will be made available for selection in the Monitor Grouping.
 - 1) Select the monitor to be used
 - 2) Provide the appropriate reading in the Reading box, ensuring the units are correct
 - 3) Verify the Release Point Flow Rate is correct or revise default value to accurately reflect plant conditions. If SGT is running and Reactor Building Exhaust Fans are shutdown; use the total of the running SGT train flowrates. If building exhaust flow indication is lost, the Control Room should be contacted to determine flow rate via ODCM 6.1.2.D method.
 - 4) Click on the Process Assessment button to run a Rapid Assessment based on the supplied input data.

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 17 of 32
Title: Emergency Dose Projection System Operations		

- b. Select "No" if effluent monitors are not available. This action will bring up several options for input.
 - a) If RCS leakage is suspected, select "Estimated RCS Leak Rate", fill in a known leak rate or select the "I Don't Know" option. Click on the Process Assessment button to run a Rapid Assessment based on the supplied input data.
 - b) If "Containment Leakage" is selected (only available if a Pathway from the Drywell has been selected), select either containment high rad monitor and provide an appropriate reading in the R/hr box or select "No HRA Available or Applicable". Click on the Process Assessment button to run a Rapid Assessment based on the supplied input data.
- c. If Damaged Spent Fuel Assembly is selected in the Source Term Grouping and no effluent monitors are available, proceed as follows.
 - a) Select "Unmonitored Damaged Spent Fuel Assembly". Click on the Process Assessment button to run a Rapid Assessment based on the supplied input data.

3.0 Detailed URI

Activate Detailed URI by selecting the Detailed option (upper right hand corner) on the URI main screen. The Detailed Assessment page is now available for data input.

3.1.1 Source Term Grouping (this grouping provides input on what type of damage to fuel has occurred)

- a. In the Source Term box, select "Normal Coolant" if there is no core damage (No PPM 13.1.1 Table 3 Effluent Monitor reading is GE Alert value or Field Team data shows a release is not in progress). Select Spiking Factor if Reactor Building process radiation monitors spike following a plant transient. The numerical Spiking Factor defaults to "30".
- b. Reactor Core Accident is selected if there is actual or suspected damage to fuel assemblies. Technical support or core damage procedures should be used to estimate the extent of core damage.
 - 1) The Clad damage option is selected if the core conditions have caused the fuel pin cladding to fail but the core temperature has not become sufficiently high to cause melting of the ceramic fuel matrix.
 - 2) The Melt option is selected if SAGs are entered and core has been uncovered for greater 30 minutes.
- c. The Spent Fuel Accident option is selected if the incident involves damage to spent fuel in a depressurized condition.
 - 1) Select "Old" for Fuel Age. "New" is not a valid option for CGS.
 - 2) "Fuel Status" and "Amount of Spent Fuel Damage" will be provided by the software when the Selected Pathway Option is selected. This will also provide the estimated % damage based on the water level in the Spent Fuel Pool.

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 18 of 32
Title: Emergency Dose Projection System Operations		

- 3) Checking the "Unmonitored Spent Fuel Accident with No other method applicable" box is only done when there is no other option for determining spent fuel source term due to loss of building integrity, loss of monitors, or other major failure making source term assessment unavailable.

3.1.2 Meteorological Data Grouping (this grouping allows input of meteorological data pertinent to the release)

NOTE: If Primary Met Tower information is not available, see attachment 7.3 for obtaining alternate met tower information. {5.1.4}

- a. Select one of the four choices of "site" met tower input to be used. The two FFTF towers are considered "site" met towers. Meteorological parameters from the primary met tower are normally available on the Radiological Parameters screen. If the primary met tower (default) is not selected, the program will provide a notification of this.
- b. Input Wind Speed and Wind Direction data. Wind Speed range is GE 0 to LE 60 mph. Wind Direction range is GE 0 and LT 360. Double clicking on the Wind Direction box will bring up a depiction of a compass that may assist in selecting wind direction.
- c. Input delta T or select appropriate Stability Class from the pull down menu. Delta T range is GT -10 to LE 10. Attachment 7.3 has additional information in determining Stability Class.
- d. Use the pull down menu to select the appropriate level of precipitation.

3.1.3 Reactor Status Grouping (this grouping allows input of reactor status or time since the last time the spent fuel was irradiated)

NOTE: For ATWS Conditions:
 IF reactor power is GT 1%: leave the Time Since Reactor Shutdown value set to zero unless the Main Control Room (MCR) states the reactor is shutdown.
 IF reactor power is LE 1%: Contact the MCR, use the amount of time from when the MCR declares reactor shutdown.

- a. When "Normal Coolant" or "Reactor Core Accident" is selected in the Source Term Grouping, "Reactor Status" will be shown next to the check box. If the Reactor is shutdown, click in this box. Change the date/time box to reflect actual shutdown if needed. The "TAS" box will update automatically. Time after shutdown can be entered directly into the "TAS" box by double clicking in the box.
- b. Select Spent Fuel Accident for any spent fuel handling accidents in the Spent Fuel Pool. This will change the Reactor Shutdown date/time box to "Last Irradiated" and allow input of when the spent fuel was last irradiated. This should be 5/13/17. (CGS does not have the ability to update software.)

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 19 of 32
Title: Emergency Dose Projection System Operations		

3.1.4 Release Duration Grouping (this grouping allows input of the duration of the release)

- a. Provide release duration in hours and minutes. This function defaults to 3 hours. If End of Release is not known, a default value of the time of the release is rounded up to the next hour plus two hours should be used. Release duration must be input in 15 minute increments. Range is 15 min to LE 48 hours.

EXAMPLE: Release has lasted for 25 minutes. Round 25 minutes up to 1 hour and add 2 hours to give a release duration of 3 hours.

3.1.5 Selected Pathway Options Grouping (allows input as to the release flow path and inputs to the Process Reduction Factor)

- a. To view the list of available pathways, click on the small yellow box to the right of the "Pathway" box. This action will take you to the Pathways screen. Available pathway options will depend on selections made in the Source Term Grouping. A description of the pathway will appear as the cursor is held over the "Path" box to the right of the pathway to be selected. A list of available assessment methodologies will also be displayed. Choose the pathway that matches the conditions of the release in progress.
- b. The pathway chosen will determine which "Process Reduction Factors" (PRF) will be used in the dose calculation. Hold-up times can be changed from the default values. Other options include use of Drywell sprays, condition of the Suppression Pool, and whether SGBT is working (operable with no high moisture alarms). **If SGT is running, Rx Building hold up time needs to be changed to 2-24hrs.**
- c. When pathway has been selected and PRF options have been made, click on the "Accept" button. This action will return you to the main Detailed Assessment screen. The pathway chosen will be displayed in the "Pathway" box. The PRF will be displayed under the "Pathway" box along with inputs to the PRF.

NOTE: In the event of a loss of SM-8, the PRM Stack Monitors and the MET tower will be out of service (OOS). Alternate indications of Reactor Building effluents can be obtained from the Stack Door Monitor. Use the readings from the Stack Door Monitor to input directly into URI. Meteorological information can be obtained from FFTF.
In the event of a loss of SM-7, PRMs for Turbine and Radwaste buildings are OOS. Alternate methods for TEA and WEA monitors are the sample carts.

3.1.6 Assessment Methodologies Grouping (allows input to the dose assessment calculation depending on available monitors, leakage rates, samples taken, or field team results, depending on available information)

- a. Monitored TAB (available when chosen Pathway is monitored by installed or temporary plant radiation monitor)
- 1) Release Point: The release point is based on the Selected Pathway chosen. No input required

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 20 of 32
Title: Emergency Dose Projection System Operations		

- 2) Monitor: Select the radiation monitor you wish to use or select the building as appropriate.
 - 3) Release Point Flow Rate: Input real time data from plant computer system/instrument readings.
Range for Reactor and Radwaste buildings is GE 0 to LE 2E6 CFM,
Range for Turbine Building is GE 0 to LE 5E6 CFM.
IF SGT is running and Reactor Building Exhaust Fans are shutdown; use the total of the running SGT train flowrates.
If building (RB, RW, TB) exhaust flow indication is lost, the Control Room should be contacted to determine flow rate via ODCM 6.1.2.D method.
 - 4) Monitor Reading: Input real time data from plant computer system or instrument readings. Ensure units match those in the program.
Range is GE 1E-7 to LE 1E+6 $\mu\text{Ci/cc}$ for the PRM Stack Monitor,
GE 0 to LE 1E3 $\mu\text{Ci/cc}$ for TB and RW bldgs.
- b. Containment Leakage TAB (available when chosen Pathway originates inside containment)
- 1) Method
 - a) Normal Coolant /w Spiking Factor
 - b) % Fuel Damage range is GE 0 to LE 100%
 - c) Containment Radiation Monitors range is GT 0 to LE 1E7 R/hr
 - 2) Release Mode
 - a) Leakage range is GT 0 to LE 100%
 - b) Failure to Isolate
 - c) Catastrophic Failure
 - d) Calculated Containment Leak Rate range is GT 0 cfm
- c. RCS Leakage TAB (available for all chosen Pathways except Spent Fuel Pool) is used when the release pathway does not include normal plant effluent monitors (or they are unavailable).
- 1) Method
 - a) Normal Coolant /w Spiking Factor
 - b) % Fuel Damage range is GE 1 to LE 100%, used when the Core Damage option is selected in the Source Term Grouping. The amount of core damage should be entered as obtained from TSC Core Thermal Engineer or STA.
 - 2) Release Mode
 - a) Unknown Release Mode
 - b) Calculated RCS Leak Rate range is GE 1 to LT 1E6 gpm

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 21 of 32
Title: Emergency Dose Projection System Operations		

- d. Release Pt. Sample TAB (available for all chosen Pathways except those directly releasing to the environment) is used when there is a valid sample collected from the effluent release point.
 - 1) Release Point Data, no discernable range in SCFM, enter actual release point flow rate from the time of sample. If SGT is running and Reactor Building Exhaust Fans are shutdown, use the total of the running SGT train flowrates. If building (RB, RW, TB) exhaust flow indication is lost, the Control Room should be contacted to determine flow rate via ODCM 6.1.2.D method.
 - 2) Isotope Box range is GE 0 to 1E4 $\mu\text{Ci/cc}$, enter the observed concentrations of each identified isotope
- e. Field Team TAB (available for all chosen Pathways) is used to estimate the source term and to calculate a complete dose projection based on readings obtained from monitoring teams in the field.
 - 1) Analysis Basis
 - a) Downwind (Miles) range .25 to 10 miles (1.2 miles is SB)
 - b) Exp. Rate (mR/hr) range 0.1 to 99999.9 data must be based on observations in the centerline of the plume
 - c) I-131 Conc. ($\mu\text{Ci/cc}$) range 1E-11 to 1E11 $\mu\text{Ci/cc}$, data must be based on observations in the centerline of the plume. This field is auto filled in when using the Air Sample Calculation. To use the Air Sample Calculation:
 - (1) Bring up Air Sample Calculation screen by selecting it from the Calculations TAB in the upper left of the URI Detailed screen.
 - (2) Select Count Rate Meter from the Iodine Cartridge Instrument pulldown menu.
 - (3) Enter Background and Cartridge Gross count rate
 - (4) Enter Sample Flow Rate and Sample Collection Time
 - (5) Press Enter and then the "Transfer to Field Team Calc" button
 - (6) The Iodine concentration is transferred to the Field Team Tab for use in the assessment.
 - d) Survey Date/Time, enter date and time of sample taking
 - 2) Travel Information
 - a) "Travel Time" is derived from the "Downwind (Miles)" input and the Wind Speed used in the Meteorological Data Grouping section. No input required.
 - b) "Release Time" is derived from "Travel Time" and the date/time used in the "Survey Date/Time" box. No input required.

END

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039
Title: Emergency Dose Projection System Operations		Minor Rev: 001
		Page: 22 of 32

Air Sampling Worksheet Calculation

1. Cartridge Filter: AgZ Filter

NOTE: $1.89 \times 10^8 = 0.003 \text{ (eff)} \times 2.83 \times 10^4 \text{ cc/ft}^3 \times 2.22 \times 10^6 \text{ dpm/}\mu\text{Ci}$

(Sample CPM: _____) - (Background CPM: _____) = Net CPM _____

$$\frac{\text{Net CPM}}{(1.89 \times 10^8) \times (\text{sample volume } \text{ft}^3)} = \text{_____ } \mu\text{Ci/cc I Activity}$$

2. Particulate Filter

NOTE: $5.65 \times 10^9 = 0.09 \text{ (eff)} \times 2.83 \times 10^4 \text{ cc/ft}^3 \times 2.22 \times 10^6 \text{ dpm/}\mu\text{Ci}$

(Sample CPM: _____) - (Background CPM: _____) = Net CPM _____

$$\frac{\text{Net CPM}}{(5.65 \times 10^9) \times (\text{sample volume } \text{ft}^3)} = \text{_____ } \mu\text{Ci/cc Particulate Activity}$$

END

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 23 of 32
Title: Emergency Dose Projection System Operations		

Alternate Method for Obtaining Met Data

NOTE: In the event of a loss of SM-8, the MET tower will be out of service.

1. IF Met Channel A instrument data is not available through the eDNA View "Radiological Status" screen, then the corresponding Met Channel B data should be used. If neither Met Channel A nor Met Channel B data is available, then alternate indications should be obtained from the following sources in the order given: {5.1.4}

- Hanford Internet Site Weather Page (primary alternate):
 Select the Hanford weather icon to access the FFTF (400 Area, Station #9) meteorological information via the Internet.

IF the icon is not available, THEN start Internet Explorer and enter the following address:
<http://www.hanford.gov/page.cfm/hms>

When the icon is selected on the desktop, either a Hanford site map or the data for FFTF will be displayed. IF the Hanford site map is displayed, THEN select the 400 Area (Station # 9) to view the FFTF data. (Use Station #11 if #9 is not available and #13 last if necessary. These 3 Stations have delta T, which can be used to determine Stability Class.)

Use the wind speed and direction for the 10 meter height since a ground level release is assumed. Take 60m minus 10m temperature reading and enter into FFTF delta-T at 10 meter tower selection.
- Mission Service Alliance (MSA) Weather Forecaster (secondary alternate) at 373-2710
 Request wind speed, direction, and differential temperature for the FFTF met tower. If this information is not available from the MSA forecaster, contact the National Weather Service.
- Telephone the National Weather Service Forecaster (tertiary alternate) at one of the following locations:

1-541-276-8234	Pendleton, Oregon	(Primary)
1-206-526-6083	Seattle, Washington	(Secondary)

Request the following met data for the Hanford weather station: Wind speed (in MPH), wind direction, and atmospheric stability. The National Weather Service does not provide a temperature differential. The NWS will describe the stability category as neutral, moderately stable, per step 2a.
- National Weather Service website: <http://www.nws.noaa.gov/>

2. IF the Stability Class is not shown on the eDNA View "Radiological Status" screen or the PDIS Rad Status screen, THEN determine Stability Class as follows:
 - a. IF the ΔT can be obtained from PN H13-P823 Board L - Met System located in the Control Room via the Information Coordinator, THEN input ΔT into URI to obtain Stability Class.

NOTE: The following table represents CGS ΔT vs Stability Class. Main Control Room Board L Operator Aid will require updating if the below table is revised

Stability Class vs. Temperature Change for Station Met Tower		
Stability Classification	NRC Categories Stability	Temperature Change With Height (°F/212 ft – 75m – 10m)
Extremely unstable	A	$\Delta T \leq -2.2$
Moderately unstable	B	$-2.2 < \Delta T \leq -2.0$
Slightly unstable	C	$-2.0 < \Delta T \leq -1.7$
Neutral	D	$-1.7 < \Delta T \leq -0.6$
Slightly stable	E	$-0.6 < \Delta T \leq 1.7$
Moderately stable	F	$1.7 < \Delta T \leq 4.7$
Extremely stable	G	$\Delta T > 4.7$

b. IF no ΔT is available, THEN use the following table to determine Stability Class:

Stability Class Determination							
Surface Wind Speed (mph)	Daytime Solar Radiation (For moderate cloud cover move one column to the right)				Nighttime Conditions		
	Summer Clear Sky	Spring/Fall Clear Sky	Winter	Heavy Overcast Rain	Thin overcast (>1/2 cloud cover)	< 3/8 cloud cover	Heavy Overcast Rain
< 4.5	A	B	B	D	F	F	D
to 6.7	A	B	C	D	E	F	D
to 11.0	B	C	C	D	D	E	D
to 13	B	D	D	D	D	D	D
> 13	C	D	D	D	C	D	D

Table developed using guidance in EPA-454/R-99-005 (2000).

END

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039
Title: Emergency Dose Projection System Operations		Minor Rev: 001
		Page: 26 of 32

Computer Points Used In The eDNA View Radiological Status Screen

Radiological Status		ENW.CGS.TIMET																																																																																																		
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Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 27 of 32
Title: Emergency Dose Projection System Operations		

Alternate Method for PRM Stack Monitor

NOTE: When the low range detector purges and transfers to the medium range detector the low range will show downscale. The alarms on H13-P602 will clear during the purge and then come back in after the purge is complete; this takes about three minutes. The medium range and composite will remain reading at all times (power allowing). eDNA will turn red on the Composite and remain red at the Alert alarm value; the ALERT alarm is NOT an EAL Alert, but is a warning you are approaching an EAL UE. GDS Overview has the stack composite value at the bottom of the screen. The E1 Containment and eDNA Containment Status reads the Composite for all PRMs. IF the sample rack loses power for GT 4 seconds, the Sample Rack (and pumps) will go through an auto-reboot process where no data is available to the MCR for ~ 2 to 3 minutes after power is regained; expect this if regaining SM-8 power from DG2.

A portable radiation survey meter or an installed radiation monitoring instrument measuring radiation levels at the exterior center of the Elevated Release Stack Access Door (R-DOOR-R515) provides an alternate means of monitoring radioactive effluent releases through the Reactor Building Stack when the installed post-accident effluent monitor PRM Stack Monitor is unavailable. The radiation level readings (in mR/hr) from this Stack Door Monitor (SDM) can be input into the Monitor Reading field in URI to perform a dose projection. The technical basis for this SDM to PRM equivalency can be found in Engineering Calculation NE-02-09-12. The use of the table may be used for Table 3 equivalency if needed i.e., URI is not available. Note: for the UE value, background at 100% power is ~4.1 mr/hr.

Data from eDNA Points EP99M (mid-range SDM, 5 mR/hr to 1E6 mR/hr) and EP99H (high-range SDM, 1000 mR/hr to 1E7 mR/hr) is updated approximately every minute and is displayed in mR/hr. Always round to the nearest whole number (e.g., 23.645 mR/hr should be rounded to 24 mR/hr).

When Stack Door Monitor net reading is (mR/hr)	Table 3 Equivalent ($\mu\text{Ci/cc}$)	Action Notes (based on filtered releases)
8	3.05E-3 (11)	PPM 13.1.1 Table 3 Unusual Event EAL threshold*
12,100	2.82E+01 (12)	PPM 13.1.1 Table 3 Alert EAL threshold*
1.21E5	7.50E+01 (13)	PPM 13.1.1 Table 3 Site Area Emergency EAL threshold*
1.21E6	7.50E+02 (13)	PPM 13.1.1 Table 3 General Emergency EAL threshold*

*If URI is not available.

END

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 28 of 32
Title: Emergency Dose Projection System Operations		

Alternate Method for TEA-RIS-13 or WEA-RIS-14

Compensatory Noble Gas Monitor (CNGM) sample cart(s) will be available to measure radiation levels as a compensatory measure when the normal sample racks for TEA-RIS-13 and/or WEA-RIS-14 are unavailable. There is one cart for TEA, and a different cart for WEA readings. While the equations below apply directly to the readings from either cart, it is critical to ensure that the WEA cart readings are only used for WEA dose assessments and TEA readings be used for TEA dose assessments. IF both WEA and TEA are non-functional, then both carts will be in operation and the dose assessments must be derived from the respective cart.

The technical basis for this compensatory measure equivalency can be found in RSCS TSD-13-035 (CVI 1057-00,131). The conversion equations below are used for calculating equivalent inputs for URI. Data from the CNGM will be available to the Main Control Room for monitoring a release during this compensatory measure. There is a slide at the frisker which is inserted for normal readings LTE 400,000 cpm and withdrawn for readings GT 400,000 cpm.

- 1) IF URI is unavailable, THEN use Table 3 of PPM 13.1.1 to classify.
- 2) IF frisker reading is GT 400,000 cpm, THEN direct Chemistry to withdraw the CNGM slide.
- 3) If calculating TEA values to input into URI, then use the following conversion factors, otherwise N/A this step:

- IF TEA frisker reading is LTE 400,000 cpm, slide inserted (Low Range Input) THEN
TEA URI INPUT ($\mu\text{Ci/cc}$) = [Frisker output (cpm)] / 1.01E7 cpm/ $\mu\text{Ci/cc}$

Example: the frisker reading obtained from the sample cart is 80,000 cpm. The equivalent URI input for either TEA or WEA would be:

$$\text{TEA } 80000 \text{ cpm divided by } 1.01\text{E}7 \text{ cpm}/\mu\text{Ci/cc} = 7.92\text{e-}3 \mu\text{Ci/cc}$$

Enter this value into URI for the TEA monitor.

- IF frisker slide is withdrawn, THEN
TEA URI INPUT ($\mu\text{Ci/cc}$) = [Frisker output (cpm)] / 3.87E6 cpm/ $\mu\text{Ci/cc}$

- 4) If calculating WEA values to input into URI, then use the following conversion factors, otherwise N/A this step:

- IF WEA frisker reading is LTE 400,000 cpm, slide inserted (Low Range Input) THEN
WEA URI INPUT ($\mu\text{Ci/cc}$) = [Frisker output (cpm)] / 1.01E7 cpm/ $\mu\text{Ci/cc}$

- IF frisker slide is withdrawn, THEN
URI INPUT ($\mu\text{Ci/cc}$) = [Frisker output (cpm)] / 3.98E6 cpm/ $\mu\text{Ci/cc}$

END

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 29 of 32
Title: Emergency Dose Projection System Operations		

Alternate Method for ARMs or OG-RIS-612

This attachment will provide direction to establish and maintain alternate method(s) for one or more inoperable ARMs or OG-RIS-612.

The following ARMs are used for EAL classification per PPM 13.1.1: ARM-RIS-1, ARM-RIS-2, ARM-RIS-4 thru 13, ARM-RIS-19, ARM-RIS-23, ARM-RIS-24, ARM-RIS-30, ARM-RIS-32 thru 34. HP will install the alternate methods, in accordance with the requirements of PPM 11.2.9.32 and the tables within this instruction. One disabled ARM power supply can disable multiple ARMs.

OG-RIS-612 is used for EAL classification per PPM 13.1.1. HP will establish the alternate method, as described in PPM 11.2.24.2 Attachment 8.5.

1.0 PORTABLE ARMS:

The wireless remote radiation monitoring devices to be used are PAM-TRX and AMP-100.

NOTE: Wireless Radiation monitors cannot be used in the Main Control Room. In the event ARM-RIS-19 is disabled, notify HP to install a non-transmitting portable area radiation monitor with an alarm set-point of 15 mr/hr.

NOTE: In the event of unplanned ARM failures, an hourly H.P. tour of the affected areas should be established until the measures of this attachment are established.

2.0 CONTROL ROOM PERSONNEL:

2.1 Direct HP to establish the applicable compensatory measures as per this attachment.

2.2 During this evolution, area radiation levels will be provided as follows:

- HP will have established wireless remote monitors into each of the areas affected, in accordance with the requirements of PPM 11.2.9.32. These monitors will provide indication to a remote monitor in the HP access area.
- In the event an area radiation level meet or exceed an ARM set-point identified by PPM 4.602.A5, the Control Room will be notified immediately. These indications should be treated as actual ARM indications. Consider directing continuous monitoring. The Control Room will be notified immediately of instrument failure.
- In the event of an emergency classification of ALERT or higher, this information will be available by request of the TSC. Continuous monitoring is not required.
- In the event that OG-RIS-612 has been replaced with an area radiation monitor, EAL classification can be made based on area radiation monitor indication that is equivalent to OG Pretreatment Hi-Hi alarm. Refer to ODCM 6.1.2.1.

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 30 of 32
Title: Emergency Dose Projection System Operations		

3.0 HP DEPARTMENT STAFF:

- 3.1 For ARMs, establish wireless remote monitors, in accordance with the requirements of PPM 11.2.9.32, in each of the affected areas, as directed by the Control Room.
- 3.2 For OG-RIS-612, establish the compensatory measures, as described in PPM 11.2.24.2 Attachment 8.5.
- 3.3 Ensure a knowledgeable individual is stationed at a monitor to observe the read-outs from each of the wireless remote monitors. Also ensure telephone communication is established with the Control Room.
- 3.4 Provide direction to the knowledgeable individual to ensure the following is clearly understood:
- The radiation indications to be monitored.
 - Until released by the Control Room, remain available. Check the remote monitor radiation levels at least every 15 minutes. This may be more frequent or continuous, as directed by the Control Room.
 - Notify the Control Room if radiation levels on any monitor increase above an ARM set-point or 10 R/hr.
 - Provide the detector locations and the radiation levels observed.
 - Make an HP log entry of the notification and information transmitted.
 - If a monitor indication fails (excluding "LOST CONTACT" for less than 10 minutes), IMMEDIATELY notify the Control Room.

4.0 ARMs by Power Supply

ARMs 1 thru 10 powered by ARM-E/S-603A

ARMs 11 thru 20 powered by ARM-E/S-603B

ARMs 21 thru 30 powered by ARM-E/S-603C

ARMs 32 thru 34 powered by E-CP-H13/P614

END

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 31 of 32
Title: Emergency Dose Projection System Operations		

DETAILED URI

The following steps will provide guidance on performing a Detailed URI dose assessment with normal met tower and radiation monitors available.

For multiple release point summing, **REFER** to Section 4.3 step 4.3.2.

1. **START** URI with icon (software on "C" drive if icon missing).
2. IF not a real event, THEN SELECT "This is a drill".
3. **SELECT** Detailed – CLOUD icon top of startup page.
4. **SELECT** Source Term–
 - **Normal Coolant** -If Normal Coolant is selected, select Spiking Factor if Reactor Building process radiation monitors spike following a plant transient.
 - **Reactor Core Accident** -If Reactor Core Accident – select core condition;
 - CLAD (PPM 13.1.1 Table 3 Effluent Monitor reading is greater than or equal to an Alert value) or
 - MELT (SAGs entered).
 - **Spent Fuel Accident** -If Spent Fuel Accident, select "Old" and specify age based on last refueling outage shutdown, currently 5/13/17.
5. **ENTER** Meteorological data.
 - **SELECT** CGS 33ft Tower (Channel A primary, Channel B backup), if not available, then select FFTF #9 10m.
 - **ENTER** Wind Speed
 - **ENTER** Wind Direction (W/D)
 - **SELECT** Stab Class
 - **SELECT** Precipitation
6. IF reactor power is LE 1% (shutdown), THEN SELECT box for Reactor Shutdown.
7. **VERIFY** shutdown date / time – **CHANGE** if needed.
8. **VERIFY** TAS (time after shutdown) – **CHANGE** if needed.
9. **ENTER** Release Duration – for ongoing release round up to next hour and add two.
10. **DOUBLE CLICK** yellow Pathway bar to show pathways selection screen.
11. **SELECT** best matching pathway.

NOTE: Factor groupings that are grey do not apply to the selected pathway.

From ARP 4.811.K2 4-3

Continued operation of the SGT system with a high relative humidity can result in a decrease in charcoal filter efficiency due to increased charcoal moisture content, this decrease in efficiency occurs at 70% relative humidity. Decreased filter efficiency is required to be accounted for in the Off-Site Dose Calculations. This is accomplished by selecting "Not Working" for SGBT.

12. **REVIEW** the process reduction factor selections on the bottom of the pathway page. Defaults are specified but these may be changed as needed to better represent the plant status.
 - IF pathway is through Standby Gas Treatment (SBGT),
 - THEN CHANGE "Reactor Building Reductions" Hold-Up Time to 2-24 Hours.
 - THEN SELECT SBGT Status (Working or Not Working)
13. **SELECT** "Accept" on the pathways page.

Number: 13.8.1	Use Category: REFERENCE	Major Rev: 039 Minor Rev: 001 Page: 32 of 32
Title: Emergency Dose Projection System Operations		

NOTE: If TAB cannot be selected, then the pathway selected does not support monitored release assessment.

14. IF pathway is from the RB Stack, TB Exhaust or RW Exhaust,
THEN SELECT Monitored TAB top center.

NOTE:

- If release is from the Reactor Building Stack, you may use Stack Comp (Rad Stat) or Composite (Containment Status) if available; select Monitor based upon value as shown below:
 - PRM-RE-11 (low) if radiation level is LE 1E-2 $\mu\text{Ci/cc}$
 - PRM-RE-12 (mid) if radiation level is GT 1E-2 thru LE 1E1 $\mu\text{Ci/cc}$
 - PRM-RE-13 (hi) if radiation level is GT 1E1 $\mu\text{Ci/cc}$
 - Stack Door Monitor (if in service as compensatory measure)
- If release is from the Turbine Building Exhaust, use the COMP reading
- If release is from the Radwaste Building Exhaust, use the COMP reading

15. **SELECT** a monitor that has valid and on-scale data for selected pathway.
16. **ENTER** the Monitor reading for the selected monitor.
17. **ENTER** the Release Point Flow Rate. (If SGBT is running and Reactor Building Exhaust Fans are shutdown; use the total of the running SGBT train flowrates.)
18. **SELECT** the 10 miles or 50 miles Process Assessment button. – A green progress bar will be displayed. Typical calculation times will be less than 20 seconds.
- Results for dose assessment by distance will be displayed.
19. **SELECT** "View the Evacuation Area Graphic" (GLOBE) icon below "Monitored" TAB for PAR graphic.
20. To perform an update or different calculation,
CHANGE any or all input values as needed and
SELECT the Process Assessment button again. If only changing one field, it may be necessary to click out of that field to get the Process Assessment button to appear.
21. **SELECT** Print Preview Options (magnifying glass icon directly below the "Monitored" TAB) to view the Dose Assessment report. The Receptor Point Report is not used at CGS.
22. Either **SELECT** the "Printer" to print or **SELECT** "Close" to return to the main screen.
23. IF printing is desired from the main screen,
THEN SELECT Print Options (printer icon directly below the "Monitored" TAB) to print out a copy of the Dose Assessment report.
24. **COMPARE** URI output at 1.2 miles for EALs per PPM 13.1.1 and for potential protective action recommendations.
25. Shift Manager, RPM or REM **SIGNS** printed data for distribution.
26. **FORWARD** to the Emergency Director for approval prior to releasing data for distribution.