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Ucinta De Leon

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<u>Control Copy</u>	<u>Location</u>	<u>Mail Drop</u>
2	*Control Room (501) (IOM to CRS)	901A
3	*Shift Manager (501)	901A
5	Licensed Training (PSF Rm. 249)	1050
6	*Simulator (PSF Rm. 235)	1050
12	PEC Library	PEC
25	Bruce Bond	964F
26	Region IV, NRC	---
28	Region IV, NRC	---
30	EOF Support Engineering Library	1050
31	*TSC Emergency Response	901A
35	NRC Resident Inspector	---
52	State of Washington, Military Department/Lomax	---
55	Federal Emergency Mgmt. Agency	---
57	Benton County Dept of Emergency Mgmt.	---
58	*CGS Security (SAS-CR) (13.1.1, 13.4.1, 13.5.1, 13.5.3, 13.5.5, 13.10.8, 13.11.10, 13.12.19, 13.13.4)	901A
59	*CGS Security (CAS-AAP) (13.1.1, 13.4.1, 13.5.1, 13.5.3, 13.5.5, 13.10.8, 13.11.10, 13.12.19, 13.13.4)	901A
60	CGS Security	988A
63	Emergency Training	PE30
64	*Radwaste Control Room (467)	901A
66	*Simulator, Shift Manager (PSF Rm. 235)	1050
68	*Remote Shutdown Room (467) (13.1.1, 13.2.1, 13.2.2, 13.4.1, 13.5.1, 13.10.1, 13.10.9)	901A
75	Dept. of Health Radiation Protection	---
78	*Control Room - (501) STA's Desk	901A
83	*MUDAC	1020
86	*Simulator - STA's Desk	1050
87	Document Control Desk, NRC	---
+ + 90	*Joint Information Center (Keys)	901A
94	*EOF	1050
97	*EOF	1050
114	EP Manager	PE30
127-130 (4)	Licensed Training (Rms. 225, 247 or 248)	1050
132	Licensed Training (Rms. 225, 247 or 248)	1050
134-136 (3)	*MUDAC Field Team Kits (13.9.1, 13.9.5, 13.9.8, 13.13.4, 13.14.4)	1050
+ + 137	*MPF Field Team Kit (13.7.5, 13.9.1, 13.9.5, 13.9.8, 13.13.4, 13.14.4)	901A
142	Hanford EOC/SMT	---
146	FEMA RX Liaison	---
155	*Maintenance Library (Memo to Veena)	901A
160	*OSC Emergency Support	901A
161	Equipment Operator Training	1050
164	Oregon State Dept. of Energy	---
219-221 (3)	Licensed Training (Rms. 225, 247 or 248)	1050
223	Franklin County Emergency Management	---
236	Site 1 (B.Lyons) (13.5.3, 13.4.1, 13.5.7, 13.13.4, 13.14.9)	817
+ + 238	*Alternate EOF (Keys)	901A

+ + Procedure Control does the filing at downtown - Bring keys

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**COLUMBIA GENERATING STATION
PLANT PROCEDURES MANUAL**

PROCEDURE NUMBER

*13.1.1

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VOLUME NAME

EMERGENCY PLAN IMPLEMENTING PROCEDURES

SECTION

EMERGENCY CLASSIFICATION

TITLE

CLASSIFYING THE EMERGENCY

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Attachment 5.1

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
9 Hazards 9.4 Natural Events	<p>Natural and destructive phenomena affecting the Protected Area Boundary</p> <p>9.4.U.1 1 2 3 4 5 def</p> <p>MINIMUM SEISMIC EARTHQUAKE alarm (H13-P851-S1-2.5) AND CR receives report from plant personnel who have felt an earthquake</p> <p>9.4.U.2 1 2 3 4 5 def</p> <p>Weather Service projected winds GT 80 mph OR CR measured winds GT 61 mph (15 minute average at 33 ft) OR Report by plant personnel confirming the occurrence of a tornado striking within the Protected Area Boundary</p> <p>9.4.U.3 1 2 3 4 5 def</p> <p>Range fires near the plant which threaten to reduce the level of safety</p>	<p>Natural and destructive phenomena affecting Safe Shutdown Buildings</p> <p>9.4.A.1 1 2 3 4 5 def</p> <p>OPERATING BASIS EARTHQUAKE alarm (H13-P851-S1-5.1) AND CR receives report from plant personnel who have felt an earthquake</p> <p>9.4.A.2 1 2 3 4 5 def</p> <p>Weather Service projected winds GT 100 mph OR CR measured winds GT 70 mph (15 minute average at 33 ft) OR Report by plant personnel confirming the occurrence of a tornado striking a plant safe shutdown building, Table 5</p> <p>9.4.A.3 1 2 3 4 5 def</p> <p>Ash fallout from volcanic activity is severe enough to warrant plant shutdown</p>		

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CLASSIFYING THE EMERGENCY - TECHNICAL BASES

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- 2.17 NUREG-0654/FEMA-REP-1, Rev. 1, Appendix 1 ("Basis For Emergency Action Levels For Nuclear Power Facilities")
- 2.18 Columbia Generating Station Safeguards Contingency Plan
- 2.19 ABN-CR-EVAC, Control Room Evacuation and Remote Cooldown
- 2.20 ABN-FLOODING, Flooding
- 2.21 ABN-WIND, Tornado/High Winds
- 2.22 PPM 5.0.10, EOP Flowchart Training Manual
- 2.23 PPM 5.1.2, RPV Control-ATWS
- 2.24 PPM 5.7.1, RPV & Primary Containment Flooding Severe Accident Guidelines
- 2.25 GI2-03-020, Elimination of Requirements for Post Accident Sampling System {C-11712}

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1 Reactor Fuel 1.1 Coolant Activity

1.1.A.1 Alert

NUMARC IC: Loss or potential loss of fuel clad

APPLICABILITY:

Operating Conditions

1	2	3			
---	---	---	--	--	--

EMERGENCY ACTION LEVEL:

Coolant activity GT 300 $\mu\text{Ci/gm}$ dose equivalent iodine

BASES:

This EAL is indicative of the loss of the fuel clad barrier. Fuel Clad barrier damage is indicated by a coolant activity of 300 $\mu\text{Ci/gm}$ dose equivalent I-131. This amount of activity is well above that expected for iodine spikes and corresponds to approximately 2-5% fuel clad failure in accordance with assessment performed by the NUMARC EAL task force. This amount of clad failure indicates significant clad heating and, thus, the Fuel Clad barrier is considered lost. {C-11712}

REFERENCE(S):

Columbia Generating Station Technical Specifications

NUMARC NESP-007, Methodology for Development of Emergency Action Levels, Rev. 2, Fission Product Barrier Basis Information for Table 3

Columbia Generating Station Fission Product Barrier Evaluation

Columbia Generating Station Plant Specific EAL Guideline, FC1.1

Attachment 4.1

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9 Hazards 9.4 Natural Events

9.4.U.2 Unusual Event

NUMARC IC: HU1 - Natural and destructive phenomena affecting the Protected Area Boundary.

APPLICABILITY:

Operating Conditions

1	2	3	4	5	def
---	---	---	---	---	-----

EMERGENCY ACTION LEVEL:

Weather Service projected winds GT 80 mph

OR

CR measured winds GT 61 mph (15 minute average at 33 ft)

OR

Report by plant personnel confirming the occurrence of a tornado striking within the Protected Area Boundary

BASES:

This event is a natural and potentially destructive phenomena that may accompany certain events such as a tornado or hurricane. These sustained high winds may also be produced by unstable weather conditions. However this event occurs, it may be a precursor to a more serious event and, therefore, represents a potential degradation in the level of safety of the plant.

A tornado touching down within the Protected Area is an observed event with the potential to cause damage to structures containing systems or functions necessary for the safe shutdown of the plant. As such, the occurrence of a tornado strike represents a potential degradation in the level of safety of the plant. If structural damage is confirmed, this event would be escalated to Alert 9.4.A.2. If it is determined that the occurrence of the tornado strike has either affected or caused the loss of shutdown cooling functions, then the consequences of the event are assessed under event category 7.1, "System Failures". The event may then be escalated via this category if appropriate.

REFERENCE(S):

NUMARC NESP-007, Methodology for Development of Emergency Action Levels, Rev. 2, Unusual Event HU1

Columbia Generating Station Tornado/High Winds, ABN-WIND

Columbia Generating Station Plant Specific EAL Guideline, HU1.1

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9 Hazards 9.4 Natural Events

9.4.A.2 Alert

NUMARC IC: HA1 - Natural and destructive phenomena affecting Safe Shutdown Buildings.

APPLICABILITY:

Operating Conditions

1	2	3	4	5	def
---	---	---	---	---	-----

EMERGENCY ACTION LEVEL:

Weather Service projected winds GT 100 mph

OR

CR measured winds GT 70 mph (15 minute average at 33 ft)

OR

Report by plant personnel confirming the occurrence of a tornado striking a plant safe shutdown building, Table 5

BASES:

This event is a natural and potentially destructive phenomena that may accompany certain events such as a tornado or hurricane. These sustained high winds may also be produced by unstable weather conditions. However this event occurs, it may be a precursor to a more serious event and, therefore, represents a potential for substantial degradation in the level of safety of the plant. Sustained high winds at this level are beyond the design basis limits for the plant as described in SAR Section 3.3, Wind Loading. Wind loads of this magnitude have the potential to damage safety-related systems and functions. As such, the potential exists for substantial degradation of the level of the safety of the plant.

This EAL is intended to address events that may have resulted in Safe Shutdown Buildings being subjected to forces beyond design limits and, thus, damage may be assumed to have occurred to safe shutdown systems. The initial "report" should not be interpreted as mandating a lengthy damage assessment prior to classification. No attempt is made in these EALs to assess the actual magnitude of the damage. Escalation to a higher emergency class, if appropriate, will be based on the specific system malfunctions, fission product barrier degradation, abnormal radiological releases, or Emergency Director judgment ICs.

For the purposes of this EAL, Safe Shutdown Buildings are considered to be the following locations:

- Vital portions of the Radwaste/Control Building
- Reactor Building
- Vital portions of the Turbine Building
- Standby Service Water Pump Houses
- Diesel Generator Building
- Diesel Generator Fuel Oil Storage Area

Attachment 4.1

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PROCEDURE NUMBER	APPROVED BY	DATE
*13.8.1	JEW - Revision 23	05/10/02
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EMERGENCY PLAN IMPLEMENTING PROCEDURES		
SECTION		
OFFSITE DOSE CALCULATIONS		
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EMERGENCY DOSE PROJECTION SYSTEM OPERATIONS		

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1.0 PURPOSE

This procedure provides instructions for the use of the computerized Emergency Dose Projection System (EDPS) 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 the Emergency Dose Projection System Users Manual referred to as the Users Manual. {R1594}

2.0 REFERENCES

- 2.1 10 CFR 50 .47(b) {R1594}
- 2.2 GI2-03-020, Elimination of Requirements for Post Accident Sampling System {C-11714}
- 2.3 Emergency Dose Projection System Users Manual
- 2.4 FSAR, Chapter 13.3, Emergency Plan, Section 5.3
- 2.5 NUREG 1228, Source Term Estimation During Incident Response to Severe Nuclear Power Plant Accidents
- 2.6 PPM 13.1.1, Classifying the Emergency
- 2.7 PPM 13.2.1, Emergency Exposure Levels/Protective Action Guides
- 2.8 PPM 13.2.2, Determining Protective Action Recommendations

3.0 DEFINITIONS

- 3.1 Contours - Lines on the output map(s) connecting points of equal dose/dose rate/deposition.
- 3.2 Delta T - The temperature difference between two sensors located at different elevations on a meteorological tower.
- 3.3 EDPS (Puff) - A dose projection computer program which employs all the design capabilities of multi-meteorology station data, variable source term via iterative data entry, full release time specification and a full output map selection. EDPS will compute dose/dose rate/deposition based on effluent monitor releases or reactor conditions out to 50 miles. EDPS provides the opportunity to modify the source term, reactor power, and release rates. EDPS will accept data from up to 50 meteorology stations to more realistically model the radioactive release via the puff dispersion model.

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- 4) Once the release has stabilized or is decreasing, then sole use of EDPS is appropriate with constant meteorological conditions.
- 5) Use of the EDPS Puff model at the end of the Early (plume) phase, in the Intermediate phase, or with variable meteorological conditions, is appropriate.

4.1.6 Refer to Attachment 5.1 as a guide through EDPS. For more detail consult the EDPS Users Manual.

4.1.7 Real time radiological and meteorological data is used by QEDPS and EPDS by default. Historical dose projections are estimated in Section 4.5.

4.1.8 Review dose projection printouts, note any qualifying factors, as appropriate, initial for release and brief the RPM or REM, as appropriate, on the dose projection.

4.1.9 Refer to PPM 13.2.2 for Protective Action Recommendation (PAR) guidelines.

4.2 Dose Estimation Using QEDPS {C-11714}

4.2.1 Verify that system is operational by turning on the surge protector, CPU, monitor, and printer, if necessary.

4.2.2 Activate QEDPS by double clicking the QEDPS icon.

- a. The Monitoring/Field Data screen lists the Plant Monitors and Field Team options used to calculate a release. Readings for all monitors listed are normally available on the Rad Status screen in PDIS for use in the TSC or EOF.
- b. Select monitor to be used for the calculations from Columbia Generating Station and enter data in appropriate blocks.
 - 1) If the release path is out the Reactor Building, the primary choice is a Stack Monitor.
 - 2) When a Stack Monitor is selected, a screen will be displayed requesting Standby Gas Treatment System (SGT) information.
 - If you receive notification that the Control Room has received a high moisture alarm on Standby Gas Treatment, ensure that dose projections are performed with the SGTS Damaged option checked.

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PLANT EMERGENCY FACILITIES

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CONTROL ROOM OPERATIONS AND SHIFT MANAGER DUTIES

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- a) With assistance from the STA, Incident Advisor, or Emergency Response SRO, determine the necessity to change the emergency classification in accordance with PPM 13.1.1. Make the necessary public address announcements:

CAUTION: At the Unusual Event level when it is desired to activate the TSC and OSC, DO NOT activate the standard auto-dialer scenario for Unusual Event. Record an on-the-fly message to summon TSC and OSC staff using form 26171, Partial Activation or Manpower Schedule, instead.

- 1) Emergency center activation. Refer to Emergency Classification or Other Emergency Messages, 26045, (pink form) or,
 - 2) Localized evacuation. Refer to Public Address Emergency Message Format - Localized Evacuation, 26048, (blue form) or,
 - 3) Protected Area Evacuation. Refer to Public Address Emergency Message Format - Protected Area Evacuation, 26050, (green form) or
 - 4) Exclusion Area Evacuation. Refer to Public Address Emergency Message Format - Exclusion Area Evacuation, 26051, (yellow form).
- b) Ensure appropriate Control Room log entries are made for the emergency classifications and offsite notification actions.
- c) At Site Area Emergency or higher classification, assign an individual in the Control Room to perform center accountability duties per PPM 13.5.5 if manual accountability is necessary.

4.1.3 If it becomes necessary to activate the TSC and OSC at an Unusual Event for additional support, activate both centers.

- a) Use form 26171, Partial Activation or Manpower Schedule, to record an on-the-fly auto-dialer message to summon OSC and TSC staff at Unusual Event.

4.1.4 For any potential security scenario that could pose a threat to emergency center activation and personnel safety, confer with the Security Supervisor to determine:

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