



September 29, 2000

PG&E Letter DCL-00-124

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

Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2
Emergency Plan Implementing Procedure Update

Dear Commissioners and Staff:

In accordance with Section V, "Implementing Procedures," of 10 CFR 50, Appendix E, enclosed is an update to the emergency plan implementing procedures for Diablo Canyon Power Plant, Units 1 and 2.

As provided under 10 CFR 50.54(q), the changes in this update do not decrease the effectiveness of the emergency plan and, therefore have been made without prior NRC approval. The plan, as changed, continues to meet the standards of 10 CFR 50.47(b) and 10 CFR 50, Appendix E.

This update contains privacy/proprietary information that has been bracketed in accordance with NRC Generic Letter 81-27.

If there are any questions regarding this update, please contact Mr. Mark Lemke of my staff at (805) 545-4787.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. R. Becker', written over a horizontal line.

James R. Becker
Manager - Operations Services

Enclosures

A045

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cc: Steven D. Bloom
Ellis W. Merschoff - w/a (2)
David L. Proulx

DDM/1345

**LOCATION OF PRIVACY/PROPRIETARY INFORMATION IN
EMERGENCY PLAN IMPLEMENTING PROCEDURES
FOR DIABLO CANYON POWER PLANT, UNITS 1 AND 2**

Procedure Number	Privacy/ Proprietary Information	Title/Location of Privacy/Proprietary Information
EP G-1 Revision 29	No	Emergency Classification and Emergency Plan Activation
EP G-2 On The Spot Change 8/30	No	Activation and Operation of the Interim Site Emergency Organization
EP G-4 Revision 17	Yes	Personnel Assembly, Accountability and Site Access Control During Emergencies Page 11, 13, and 14 Page 1 of Attachments 9.3, 9.4, 9.5, 9.6, and 9.7
EP RB-8 Revision 13	Yes	Instructions for Field Monitoring Teams Page 3 Page 1 of Attachment 7.6
EP RB-12 Revision 6	No	Plant Vent Iodine and Particulate Sampling During Accident Conditions
EP EF-2 Revision 24	Yes	Activation and Operation of the Operational Support Center Page 1 of Attachment 6.8
EP EF-9 Revision 7	No	Backup Emergency Response Facilities

DIABLO CANYON POWER PLANT EMERGENCY PLAN IMPLEMENTING PROCEDURES

Table of Contents - Emergency Plan Implementing Procedures
Volume 1A (OM10.ID3 only), Volume 1B (OM10.DC1 only), and Volume 3B

Proc. No.	Rev.	Title
OM10.ID3	6	Emergency Plan Training
OM10.DC1	1B	Emergency Preparedness Drills and Exercises
EP G-1*	29	Emergency Classification and Emergency Plan Activation
EP G-2*	21	Activation and Operation of the Interim Site Emergency
	OTSC	Organization (Control Room)
EP G-3	33XPR	Notification of Off-Site Agencies and Emergency Response Organization Personnel
EP G-4*	17	Personnel Assembly, Accountability and Site Access Control During Emergencies
EP G-5	8	Evacuation of Nonessential Site Personnel
EP R-2	19C	Release of Airborne Radioactive Materials Initial Assessment
EP R-3	8B	Release of Radioactive Liquids
EP R-7	13	Off-Site Transportation Accidents
EP OR-3	6	Emergency Recovery
EP RB-1	5B	Personnel Dosimetry
EP RB-2	4B	Emergency Exposure Guides
EP RB-3	4	Stable Iodine Thyroid Blocking
EP RB-4	4A	Access to and Establishment of Controlled Areas Under Emergency Conditions
EP RB-5	4C	Personnel Decontamination
EP RB-8*	13	Instructions for Field Monitoring Teams
EP RB-9	11	Calculation of Release Rate
EP RB-10	7	Protective Action Recommendations
EP RB-11	11C	Emergency Offsite Dose Calculations
EP RB-12*	6	Plant Vent Iodine and Particulate Sampling During Accident Conditions
EP RB-13**		Rescinded
EP RB-14	5B	Core Damage Assessment Procedure
EP RB-15	8	Post Accident Sampling System
EP EF-1	24	Activation and Operation of the Technical Support Center
EP EF-2*	24	Activation and Operation of the Operational Support Center
EP EF-3	16XPR	Activation and Operation of the Emergency Operations Facility
EP EF-4	13A	Activation of the Mobile Environmental Monitoring Laboratory
EP EF-6	11	Operation of EARS
EP EF-9*	7	Backup Emergency Response Facilities
EP EF-10	4	Joint Media Center Activation and Operation

* Procedure included in this submittal

**Procedure rescinded remove from use

*** ISSUED FOR USE BY: _____ DATE: _____ EXPIRES: _____ ***
PACIFIC GAS AND ELECTRIC COMPANY NUMBER EP G-1
NUCLEAR POWER GENERATION REVISION 29
DIABLO CANYON POWER PLANT PAGE 1 OF 3
EMERGENCY PLAN IMPLEMENTING PROCEDURE UNITS

TITLE: Emergency Classification and Emergency Plan Activation

1 AND 2

9.8.00
EFFECTIVE DATE

PROCEDURE CLASSIFICATION: QUALITY RELATED

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1. SCOPE

- 1.1 This procedure describes accident classification guidelines and Emergency Plan activation responsibilities.
- 1.2 This procedure was rewritten; therefore, revision bars are not included.

2. DISCUSSION

- 2.1 The steps required by this procedure are in addition to the steps required to maintain the plant in, or restore the plant to, a safe condition.
- 2.2 Events not meeting the minimum classification criteria contained in this procedure should be reviewed for reportability in XI1.ID2, "Regulatory Reporting Requirements and Reporting Process."

3. DEFINITIONS

- 3.1 Emergency Classification Levels (ECLs)
 - 3.1.1 Notification of Unusual Event (NUE) - characterized by off-normal conditions that:
 - a. May not in themselves be particularly significant from an emergency preparedness standpoint, but could reasonably indicate a potential degradation of the level of safety of the plant if proper action is not taken or if circumstances beyond the control of the operating staff render the situation more serious from a safety stand point. No releases of radioactive material requiring off-site response or monitoring are expected.

TITLE: Emergency Classification and Emergency Plan Activation

- 3.1.2 Alert - events in progress or having occurred, involving an actual or potentially substantial degradation of the plant safety level.
- a. Small releases of radioactivity may occur (greater than Technical Specification limits for normal operation, but only a small fraction of the EPA Protective Action Guideline (PAG) exposure levels at the site boundary). It is the lowest level where emergency offsite response may be anticipated.
 - b. The lowest classification level where off-site emergency response is anticipated.
- 3.1.3 Site Area Emergency (SAE) - events which are in progress or have occurred involving actual or likely major failures of plant functions needed for protection of the public, but a core meltdown situation is not indicated based on current information.
- a. Any releases are not expected to exceed EPA Protective Action Guides except near the site boundary. However, because the possible release is significant, care must be taken in alerting offsite authorities to distinguish whether the release is merely potential, likely, or actually occurring. Response of offsite authorities will be guided initially by this determination.
- 3.1.4 General Emergency (GE) - event(s) in progress or having occurred which indicate:
- a. Imminent substantial core degradation or melting .
 - b. Potential for containment loss.
 - c. Radioactive releases can be reasonably expected to exceed EPA PAGs off-site for more than the immediate area.

4. RESPONSIBILITIES

- 4.1 Interim Site Emergency Coordinator (Interim SEC or ISEC) - Control Room Shift Manager is responsible for initial event classification and emergency plan activation. The ISEC may upgrade the event classification until relieved by either the SEC or RM. In addition, the ISEC may downgrade a NUE to no ECL.
- 4.2 Site Emergency Coordinator (SEC) - The SEC may upgrade the classification of an event until relieved by the Recovery Manager.
- 4.3 Recovery Manager (RM) - The RM, once staffed, is responsible for upgrading or downgrading ECLs, and may direct the SEC to change ECLs.

TITLE: Emergency Classification and Emergency Plan Activation

5. INSTRUCTIONS

5.1 The Interim Site Emergency Coordinator shall:

5.1.1 Initially classify and declare the event using ONLY the guidance in Attachment 7.1 of this procedure.

NOTE: Simultaneous EALs that increase the probability of release require escalation of the ECL to one level above the higher EAL.

5.1.2 Formally announce all emergency classification declarations to the Control Room, TSC, or EOF, respectively.

5.2 The ISEC or SEC may:

5.2.1 Upgrade the event to a higher ECL until the Recovery Manager arrives at and assumes responsibility in the EOF. However, the ISEC and SEC shall not downgrade an event classified at the Alert or higher level at any time. The ISEC may downgrade a NUE to no ECL.

5.2.2 Only the Recovery Manager may downgrade an ECL at the Alert or higher level according to the most current controlling EAL.

6. RECORDS

6.1 There are no quality or nonquality records generated by this procedure.

7. ATTACHMENTS

7.1 "Emergency Action Level Classification Chart," 08/18/00

8. REFERENCES

8.1 EP EF-1, "Activation and Operation of the Technical Support Center."

8.2 EP EF-2, "Activation and Operation of the Operational Support Center."

8.3 EP EF-3, "Activation and Operation of the Emergency Operations Facility."

8.4 EP OR-3, "Emergency Recovery."

8.5 EP G-3, "Notification of Offsite Agencies and Emergency Response Personnel."

DIABLO CANYON POWER PLANT
EP G-1
ATTACHMENT 7.1

1 AND 2

TITLE: Emergency Action Level Classification Chart

UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY	
<p>I. FIRE (All Modes)</p>	<p>1. Fire <u>not</u> under control within 15 minutes of initiating fire fighting efforts <u>AND</u> affecting plant equipment or power supplies in or near the Protected Area(s).</p>	<p>1. Fire <u>not</u> under control within 15 minutes of initiating fire-fighting efforts <u>AND</u> threatening the loss of function of any of the following Safety Related systems required for safe shutdown:</p> <ul style="list-style-type: none"> - Vital Power Supplies: D/Gs, DFOT, Vital 4kV, 480V, 120VAC, or 125VDC - Primary Systems and Auxiliaries: RCS, CCW, RHR, or Charging and Boration - Heat Sinks: AFW, ASW, 10% Dumps, S/G Safeties, or MSIVs - Control Room, Cable Spreading Rooms, or HSDP. 	<p>1. Fire causing the complete loss of function of any one of the following safety related systems required for safe shutdown:</p> <ul style="list-style-type: none"> - Vital Power Supplies: D/Gs, DFOT, Vital 4kV, 480V, 120VAC, or 125VDC - Primary Systems and Auxiliaries: RCS, CCW, RHR, or Charging and Boration - Heat Sinks: AFW, ASW, 10% Dumps, S/G Safeties, or MSIVs - Control Room, Cable Spreading Rooms, or HSDP. 	<p>1. Site Emergency Coordinator judges that a fire could cause common damage to plant systems which is determined to have the potential to release radioactive material in quantities sufficient to cause exposures comparable to General Emergency #4.</p>
<p>II. FUEL DAMAGE OR VESSEL DAMAGE (Modes 1-4)</p>	<p>2. Indication of Fuel Damage as shown by:</p> <p>Confirmed RCS sample shows > 100/E μCi/gm specific activity (Tech Spec 3.4.8)</p> <p style="text-align: center;"><u>OR</u></p> <p>Confirmed RCS sample shows dose equivalent I-131 activity > Tech Spec limit for Iodine Spike (Tech Spec Fig. 3.4-1).</p> <p>Category II Continued on next page.</p>	<p>2. Indication of Fuel Damage as shown by:</p> <p>Confirmed RCS sample > 300 μCi/cc of equivalent I-131 specific activity <u>OR</u> equivalent fuel failure is measured by exposure rate from systems carrying reactor coolant per EP RB-14</p> <p style="text-align: center;"><u>OR</u></p> <p>Confirmed RCS sample indicates > 1% fuel failure within 30 minutes or 5% total fuel failure.</p> <p>Category II Continued on next page.</p>	<p>See SAE #14 for Steam Line Break</p> <p>Category II Continued on next page.</p>	<p>2. Degraded core with possible loss of coolable geometry as indicated by:</p> <p>5 or more thermocouple readings > 1200 deg. F.</p> <p style="text-align: center;"><u>OR</u></p> <p>LOCA with no indication of ECCS flow <u>AND</u> indication of fuel damage (See Alert #2)</p> <p style="text-align: center;"><u>OR</u></p> <p>LOCA with containment rad levels > values for 100% gap release in EP RB-14.</p> <p>Category II Continued on next page.</p>

NOTE: SIMULTANEOUS EALS THAT INCREASE THE PROBABILITY OF RELEASE REQUIRE ESCALATION OF THE CLASSIFICATION TO ONE LEVEL ABOVE THE HIGHER EAL.

TITLE: Emergency Action Level Classification Chart

II. FUEL DAMAGE OR VESSEL DAMAGE (Modes 1-4) (Continued)	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
	3. Pressurized Thermal Shock is verified by entry into EOP FR-P.1 AND Left of Limit A curve (EOP FR-P.1).			3. Loss of 2 of 3 Fission Product Barriers: A) Indication of fuel damage (See Alert #2) AND Determination of a Steam Generator Tube Rupture (SGTR) which requires entry into EOP E-3 AND Steam release from ruptured S/G, either used for plant cooldown purposes or due to a steamline break. B) Indication of Fuel Damage (See Alert #2) AND Determination of a SGTR requiring entry into EOP E-3 AND Indication of a steam line break inside containment AND High potential for loss of containment integrity (e.g., loss of function of both Containment Spray trains OR loss of function of one Containment Spray train and four CFCUs).

NOTE: SIMULTANEOUS EALS THAT INCREASE THE PROBABILITY OF RELEASE REQUIRE ESCALATION OF THE CLASSIFICATION TO ONE LEVEL ABOVE THE HIGHER EAL.

EP G-1 (UNITS 1 AND 2)
ATTACHMENT 7.1

TITLE: Emergency Action Level Classification Chart

	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p>II. FUEL DAMAGE OR VESSEL DAMAGE (Modes 1-4) (Continued)</p>	<p>3. Pressurized Thermal Shock is verified by entry into EOP FR-P.1 AND Left of Limit A curve (EOP FR-P.1). (Continued)</p>			<p>C) Indication of Fuel Damage (See Alert #2) AND Determination of a SGTR which requires entry into EOP E-3 AND Indication of a steam line break outside containment with inability to isolate the break.</p> <p>D) Potential fuel damage indicated by incore thermocouples > 700 deg. F or RVLIS < 32% AND LOCA as indicated by RCS leakage and SI AND Loss of containment integrity.</p>
<p>III. FUEL HANDLING ACCIDENT (All Modes)</p>		<p>3. Fuel Handling Accident causing a release in Containment or the Fuel Handling Building WITH The potential to exceed the criteria listed in Alert #4 or #5.</p>	<p>2. Fuel Handling Accident causing a release in Containment or the Fuel Handling Building WITH The potential to exceed the criteria listed in SAE #3.</p>	
<p>IV. LOSS OF CONTROL OR RELEASE OF RADIOACTIVE MATERIAL (All Modes)</p>	<p>4. Projected dose rate at the Site Boundary (800 meters) is ≥ 0.057 mRem/hr TEDE OR ≥ 0.170 mRem/hr Thyroid CDE for actual or expected release. Category IV Continued on next page.</p>	<p>4. Projected dose rate at the Site Boundary (800 meters) is ≥ 0.57 mRem/hr TEDE OR ≥ 1.7 mRem/hr Thyroid CDE for actual or expected release. Category IV Continued on next page.</p>	<p>3. Projected dose at the Site Boundary (800 meters) is ≥ 100 mRem TEDE OR ≥ 500 mRem Thyroid CDE for actual or expected release. Category IV Continued on next page.</p>	<p>4. Projected dose at the Site Boundary (800 meters) is ≥ 1,000 mRem TEDE OR ≥ 5,000 mRem Thyroid CDE for actual or expected release. Category IV Continued on next page.</p>

NOTE: SIMULTANEOUS EALS THAT INCREASE THE PROBABILITY OF RELEASE REQUIRE ESCALATION OF THE CLASSIFICATION TO ONE LEVEL ABOVE THE HIGHER EAL.

EP G-1 (UNITS 1 AND 2)
ATTACHMENT 7.1

TITLE: Emergency Action Level Classification Chart

	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
IV. LOSS OF CONTROL OR RELEASE OF RADIOACTIVE MATERIAL (All Modes) (Continued)	5. A valid reading in excess of the isolation setpoint, which fails to isolate the release on any of the Radiological Process Effluent Monitors: RE-18 OR RE-23 During discharge <u>only</u> .	5. Valid alarm on plant vent high range noble gas monitor RE-29. NOTE: ALARMS AT STATE OES SACRAMENTO.		
	6. An actual liquid release which exceeds the limits of 10 CFR 20, Appendix B, Table 2, Col. 2 per CY2.ID1.	6. An actual liquid release which exceeds 10x the limits of 10 CFR 20, Appendix B, Table 2, Col. 2 per CY2.ID1.		
	7. Radiological Effluent Process Monitor High Radiation Alarm with valid reading in excess of alarm setpoint on any of the following monitors: RE-14/14R RE-24/24R RE-28/28R.	7. Unplanned or unanticipated increase of 1 R/hr or greater in any of the following areas: Passageways, <u>OR</u> Normally occupied areas, <u>OR</u> Accessible areas normally < 100 mR/hr, <u>OR</u> Outside boundaries of Radiologically Controlled Areas <u>AND</u> , for any area above, a potential exists for <u>EITHER</u> an uncontrolled release to the environment <u>OR</u> a loss of ability to maintain plant safety functions.		
	8. Unplanned or uncontrolled release to the environment exceeding alarm setpoints on RE-3.	8. Unexplained increase of 50 X DAC in airborne radioactivity outside the boundary of the Radiologically Controlled Areas, but within the Plant Protected Area.		

NOTE: SIMULTANEOUS EALS THAT INCREASE THE PROBABILITY OF RELEASE REQUIRE ESCALATION OF THE CLASSIFICATION TO ONE LEVEL ABOVE THE HIGHER EAL.

EP G-1 (UNITS 1 AND 2)
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TITLE: Emergency Action Level Classification Chart

	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
V. LOSS OF CONTROL ROOM (All Modes)		9. Entry into OP AP-8A, "Control Room Accessibility," AND controls established within 15 minutes.	4. Entry into OP AP-8A, "Control Room Accessibility," AND controls not established within 15 minutes.	
VI. LOSS OF ENGINEERED SAFETY FEATURE	9. Plant is not brought to required operating Mode within any applicable Tech Spec Action Statement time limit (Modes 1-4).		5. Complete loss for greater than 15 minutes of any of the following functions needed to reach or maintain Hot Shutdown (while in Modes 1-4): AFW capability Steam Dump System and S/G Safety Valves Loss of the capability to maintain RCS inventory as evidenced by a loss of all charging pumps coincident with the inability to depressurize and inject with the Safety Injection pumps Loss of capability to increase the Boric Acid concentration sufficient to maintain Keff less than .99 in Mode 4 with a loss of capability to trip control rods ASW or CCW Systems Loss of electrical power or I&C for any of the above listed systems, causing a complete loss of function.	5. Loss of Heat Sink indicated by: Entry into EOP FR H.1 AND Loss of water inventory in 3 S/Gs (< 23% [34%] Wide Range).
	10. Loss of function of both RHR trains for greater than 15 minutes while in Mode 5-or 6.	10. Loss of function of both RHR trains for greater than 15 minutes in Modes 1-4.		
	11. A loss of function of all charging pumps for greater than 15 minutes when normally used for RCS inventory control (Modes 1-4).	11. An unplanned shutdown of the RHR System (while in Mode 5 or 6) for > 1 hour with no other normal means of decay heat removal available (e.g., flooded reactor cavity or steam generators with loops filled). 12. An unplanned loss of function of the RHR System (Mode 5 or 6) for greater than 15 minutes AND RCS thermocouple temperature is projected to exceed 200 deg.F within 1 hour of RHR loss (see Appendix B of OP AP SD series) OR RCS thermocouple temperature exceeds 200 deg.F.		

NOTE: SIMULTANEOUS EALS THAT INCREASE THE PROBABILITY OF RELEASE REQUIRE ESCALATION OF THE CLASSIFICATION TO ONE LEVEL ABOVE THE HIGHER EAL.

EP G-1 (UNITS 1 AND 2)
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TITLE: Emergency Action Level Classification Chart

	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
VII. LOSS OF POWER OR ALARMS OR ASSESSMENT OR COMMUNICATIONS	12. Loss of <u>all</u> off-site power for greater than 15 minutes <u>AND</u> at least 2 D/Gs are supplying their vital busses (Modes 1-4).	13. Loss of <u>all</u> off-site power for greater than 15 minutes <u>AND</u> only 1 D/G is supplying its vital bus (Modes 1-4).	6. Loss of all on-site <u>AND</u> off-site AC power for > 15 minutes (Modes 1-4).	See General Emergency Condition #5 under LOSS OF ENGINEERED SAFETY FEATURE.
	13. Loss of <u>all</u> off-site power for greater than 15 minutes <u>AND</u> at least 1 D/G is supplying its vital bus (Modes 5 and 6).	14. Loss of <u>all</u> off-site and on-site AC power for greater than 15 minutes in Modes 5 or 6.		
	14. Loss of all vital DC power as indicated by DC Bus 11(21), 12(22), and 13(23) undervoltage for > 15 minutes (Modes 5 and 6)	15. Loss of all vital DC power as indicated by DC Bus 11(21), 12 (22) and 13 (23) undervoltage for < 15 minutes (Modes 1-4).	7. Loss of all vital DC power as indicated by DC Bus 11 (21), 12 (22) and 13 (23) undervoltage for > 15 minutes (Modes 1-4).	
	15. Loss of assessment capabilities as indicated by a total loss of SPDS in the Control Room <u>AND</u> simultaneous loss of all displays for any "Accident Monitoring" variable in Tech Spec Table 3.3-10 for > 1 hour while in Modes 1, 2 or 3. *			
	16. Main Control Room Annunciators PKs 1 through 5 <u>AND</u> CRT <u>AND</u> typewriter all do not respond to an alarm condition in Modes 1-4 for over 15 minutes..	16. Main Control Room Annunciators PKs 1 through 5 <u>AND</u> CRT <u>AND</u> typewriter all do not respond to an alarm condition in MODES 1-4 for over 15 minutes <u>AND</u> the plant is in a significant transient (plant trip, SI, or generator runback >25 Mw/min), nonannunciating systems available.	8. Main Control Room Annunciators PKs 1 through 5 <u>AND</u> CRT <u>AND</u> typewriter all do not respond to an alarm condition in MODES 1-4 for over 15 minutes <u>AND</u> the plant is in a significant transient <u>AND</u> backup, nonannunciating systems are not available (PPC, SPDS).	

NOTE: SIMULTANEOUS EALS THAT INCREASE THE PROBABILITY OF RELEASE REQUIRE ESCALATION OF THE CLASSIFICATION TO ONE LEVEL ABOVE THE HIGHER EAL.

* IF THE AFFECTED VARIABLE IN TABLE 3.3-10 IS THE PLANT VENT RADIATION MONITOR-HIGH RANGE, REFER TO THE COMPENSATORY MEASURES IN STP G-16.

EP G-1 (UNITS 1 AND 2)
ATTACHMENT 7.1

TITLE: Emergency Action Level Classification Chart

	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
VII. LOSS OF POWER OR ALARMS OR ASSESSMENT OR COMMUNICATIONS (Continued)	17. Total loss of communication capability with off-site agencies (all Modes) as indicated by the inability to communicate with SLO County (by telephone and radio) <u>OR</u> the NRC Operations Center.			
	18. Ground motion felt and recognized as an earthquake by a consensus of Control Room operators on duty <u>AND</u> measuring greater than 0.01g on the Earthquake Force Monitor.	17. Earthquake > 0.2 g verified by Seismic Monitors.	9. Earthquake > 0.4 g verified by Seismic Monitors.	6. Site Emergency Coordinator's judgment that major internal or external events (e.g., earthquakes, wind damage, explosions, etc.) which could cause massive common damage to plant systems which is determined to have the potential to release radioactive material in quantities sufficient to cause exposures comparable to General Emergency #4.
	19. Flooding of any plant structure that causes initiation of entry to Mode 3 due to a Tech Spec action statement.	18. High water exceeding Intake Structure main deck elevation or low water causing cavitation and shutdown of both ASW pumps for < 15 minutes.	10. High water causing flooding of ASW pump compartments or low water causing the shutdown of both ASW pumps for > 15 minutes.	
	20. Tsunami or Hurricane Warning from the State, NOAA, NWS, Coast Guard or System Dispatcher <u>OR</u> Observation of low or high water levels at the Intake Structure indicative of a Tsunami or Hurricane.	19. Sustained wind of 85 mph (38 m/sec) at any elevation on the Met. Tower.	11. Sustained wind speed > 100 mph (45 m/sec).	
	21. A tornado sighted within Site Boundary.	20. Tornado strikes the plant protected area.		

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EP G-1 (UNITS 1 AND 2)
ATTACHMENT 7.1

TITLE: Emergency Action Level Classification Chart

	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
IX. OTHER HAZARDS (All Modes)	22. Report of airplane crash within the Site Boundary or unusual airplane activity threatening the plant.	21. Confirmed missile, airplane crash or explosion involving a plant structure in the protected area.	12. Missile, airplane crash or explosion causing complete loss of a safety system function that causes entry into a Tech Spec Action Statement.	See General Emergency #6 above.
	23. Confirmed explosion on-site.			
	24. Turbine failure causing casing penetration <u>OR</u> damage to turbine or generator seals	22. turbine failure generating missiles that cause visual damage to other safety related structures, equipment, controls <u>OR</u> power supplies.		
	25. Significant release of flammable <u>OR</u> toxic gas <u>OR</u> liquid that prevents, even with SCBAs, operations inside the power block <u>OR</u> intake structure (ref. CP M-9a).	23. Release of flammable <u>OR</u> toxic gas <u>OR</u> liquid that jeopardizes operation of safety related systems by either preventing required access <u>OR</u> by threatening imminent damage.		
X. PRIMARY OR PRI/SEC OR SECONDARY LEAK) (Modes 1-4	26. RCS unidentified <u>OR</u> pressure boundary leakage that exceeds 10 gpm <u>OR</u> identified leakage that exceeds 25 gpm.	24. Primary leak rate > 50 gpm.	13. Known primary system LOCA during which RCS subcooling cannot be maintained >20°F <u>OR</u> PZR level cannot be maintained >4% (28% with adverse containment).	See General Emergency #3 under Fuel or Vessel Damage.
	27. SI Actuation with ECCS injection into the RCS resulting from a valid signal based on actual plant conditions. NOTE: SI ACTUATION ALSO ALARMS AT OES IN SACRAMENTO.	25. Determination of a SGTR which results in entry into EOP E-3.		
	28. Steam line break which results in SI actuation.	26. Determination of a steam line break with > 10 gpm Primary to Secondary leakage.		
	29. Failure of a PZR PORV <u>AND</u> Block Valve <u>OR</u> Safety Valve fails to reset, excluding allowable leakage, following a pressure reduction below the reset point.			

NOTE: SIMULTANEOUS EALS THAT INCREASE THE PROBABILITY OF RELEASE REQUIRE ESCALATION OF THE CLASSIFICATION TO ONE LEVEL ABOVE THE HIGHER EAL.

EP G-1 (UNITS 1 AND 2)
ATTACHMENT 7.1

TITLE: Emergency Action Level Classification Chart

	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
XI. REACTOR PROTECTION SYSTEM FAILURE (Modes 1-4)		27. Anticipated Transient Without Scram (ATWS) as indicated by: Failure of an automatic reactor trip to trip the reactor.	15. An ATWS condition with no fuel damage evident AND An additional failure of a system required for Hot Shutdown (See SAE #5) to actuate.	7. ATWS with Fuel Damage indications (see Alert Condition #2 under FUEL DAMAGE) OR ATWS with potential Core Melt indicated by incore thermocouples > 700 deg. F AND RVLIS < 32%.
XII. SECURITY THREAT (Modes 1-4)	30. Report by Security that a forcible entry or sabotage attempt has occurred or a credible bomb threat has been received against the areas within the protected area boundary.	28. Security reports ongoing security threat involving physical attack on the facility or a sabotage device has been detected that threatens the operability of safety related equipment (see Alert #1).	16. Security reports ongoing physical attack on the facility or a sabotage device causing a confirmed loss of a safety system function that causes an entry into a Tech Spec Action Statement (see SAE #1).	8. Security reports ongoing security threat which causes loss of control of the operations of the plant to hostile forces.
XIII. SITE EMERGENCY COORDINATOR'S JUDGMENT (All Modes)	31. Site Emergency Coordinator determines conditions warrant increased awareness on the part of off-site authorities of initiation of a plant shutdown per Tech Spec LCOs or involve other than normal controlled shutdown.	29. Site Emergency Coordinator judges plant conditions exist that warrant precautionary activation of the TSC and placing the EOF and other key emergency personnel on stand-by.	17. Site Emergency Coordinator judges that conditions exist that warrant activation of the emergency centers and monitoring teams or a precautionary notification to the public near the site.	9. Site Emergency Coordinator judges conditions exist which have a potential to release radioactive material in quantities sufficient to cause exposures comparable to General Emergency #4.

NOTE: SIMULTANEOUS EALS THAT INCREASE THE PROBABILITY OF RELEASE REQUIRE ESCALATION OF THE CLASSIFICATION TO ONE LEVEL ABOVE THE HIGHER EAL.

On-The-Spot-Change

PREPARER	1. PROCEDURE NO. <u>EP G-2</u>		2. CURRENT REV. <u>21</u>		3. UNIT <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 1&2		
	4. OTSC TYPE <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary - Expiration Date/Event/Task: _____						
	5. If Temporary, do others using this procedure need to implement this change? <input type="checkbox"/> Y <input type="checkbox"/> N						
	6. REASON FOR CHANGE: (REFERENCE AR, QE, NCR, ETC. ATTACH ADDITIONAL PAGES IF NECESSARY.) <u>TO ALLOW A DESIGNEE TO MAKE OFFSITE AGENCY NOTIFICATIONS</u>						
	7. LIST PROCEDURE PAGES AFFECTED			8. LIST ATTACHMENTS AND PAGES OF ATTACHMENTS AFFECTED <u>ATTACHMENTS 1, 3, 4, AND 5 PAGE 1</u>			
	9. Mark-up clean copy of affected pages (preferably using pen-and-ink) in a manner which ensures that users can read and understand the changes. <ul style="list-style-type: none"> Affected pages shall include any previous OTSCs affecting that page. Leave previous OTSCs (including dates) as is unless the content is being changed by the new OTSC. Include revision bars, the notation "OTSC" and today's date in the margin next to the change. Highlighting techniques such as a hand drawn "balloon" should be used to clearly identify the change. Additional pages to the procedure shall be given the appropriate page number followed by an alphabetic suffix (e.g., page 3A). 						
	10. <input checked="" type="checkbox"/> N/A - Cross Discipline Review(s) required if OTSC has significant impact on other organizations. Organization: <u>OPERATIONS</u> Print Reviewer's Last Name: <u>ANDERSON</u>						
	11. Complete the Screen sections on page 2, sign and give to an ITR and if required, an SRO. After authorizations are obtained, process as shown at the bottom of this page.						
	ITR	12. Review change and LBIE screen for technical accuracy. Sign and date page 2.					
		13. SRO review and authorization required if procedure is (a) PGOM sponsored; (b) a Surveillance Test; (c) an Emergency Plan Implementing procedure; (d) a change that affects equipment or system OPERABILITY or availability. If NOT, check SRO block N/A - OTSC is authorized by ITR.					
SRO	14. This change does NOT adversely impact the operating license NOR have an adverse impact on the operating status of plant equipment.						
	15. If the approving SRO is not the affected unit SFM, then, if appropriate, notify affected unit SFM. <input type="checkbox"/> N/A Print Last Name: <u>Anderson</u> Signature: <u>[Signature]</u> Date: <u>8/30/00</u>						
PREPARER - Ensure original OTSC and mark-ups are <u>immediately</u> hand carried to the drop box in the Clearance Coordinator's office or Procedure Services.							
PROCEDURE SERVICES ACTIVITIES (REFERENCE AD3.ID5.)							
16. DATE RECEIVED <u>8-31-00</u>		17. OTSC FLAG SET (INITIALS) <u>mh</u>		18. IMMEDIATE DIST (INITIALS) <u>mh</u> <input type="checkbox"/> N/A		19. SECONDARY DIST (INITIALS) <u>mh</u> <input type="checkbox"/> N/A	
20. PSRC REVIEW? <input checked="" type="checkbox"/> N <input type="checkbox"/> Y- PSRC MTG#: _____				21. DATE CHANGE NOTICE SENT: _____			<input checked="" type="checkbox"/> N/A
22. <input type="checkbox"/> Approved <u>OR</u> <input type="checkbox"/> Rejected Remarks: _____							
Approval Authority: _____				Date: _____			
VP & NTS: _____				<input type="checkbox"/> N/A Date: _____			

Rules for use:

DO NOT use an OTSC if any questions are answered "YES."

An OTSC may be used and the LBIE Screen box checked "NO" when a safety evaluation was conducted and documented for a related document and this OTSC is reflecting the approved change. Source document shall be referenced in the Reason for Change Block.

Does the OTSC:	
• Change the essential purpose, major activities, equipment, Operating Mode(s), performance frequency, or range of operation, which define the limits of the intended use of the procedure?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
• Cause safety-related equipment to become inoperable or unable to perform its intended safety function?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
• Eliminate a step required to verify operability or functionality, or satisfy a commitment?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
• Reduce quality verification requirements (e.g., hold points, independent verifications)?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N

Licensing Basis Impact Evaluation Screen	
The term "SAR" is defined in TS3.ID2.	
Does the OTSC:	
• Involve a change to the Facility Operating License (OL), including OL attachments (current and Improved Technical Specifications, Environmental Protection Plan, and Antitrust Conditions)?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
• Impact a regulatory commitment or obligation contained in the PCD?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
• Involve a change to the facility design, function, or method of performing the function as described in the SAR?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
• Involve a change to procedures, system operation, or administrative control over plant activities as described in the SAR (except Chapter 17 of the updated FSAR)?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
• Result in a test, experiment, condition, or configuration that might affect safe operation of the plant but was not anticipated, described, or evaluated in the SAR?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
• Rely on a vendor safety evaluation which has not been PSRC reviewed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
• Involve a change to the Fire Protection Program as described in the FSAR Update Chapter 9.5?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
• Involve a change to the QA Program as described in FSAR Update Chapter 17?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Base the following reviews on the TS3.ID2 "pre-screens" and/or the actual plan(s). Document any assistance in the Reason for Change block.	
• Does this OTSC result in a change to the Emergency Plan, Security Plans (PSP, SCP, STQP), or Environmental Protection Plan, or create a situation that may be adverse to the environment?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N

PREPARER	I have a PIMS qualification title for procedure sponsor.			
	This change meets the OTSC rules for use and I have completed the LBIE Screen and determined that an LBIE is not required.			
	PREPARER SIGNATURE <i>J. D. Healey</i>	DATE 8/30/00	PRINT LAST NAME HEALEY	PHONE 6090

ITR	I have been designated by the Plant Manager as an independent technical reviewer.			
	The OTSC is technically correct, meets the OTSC rules for use, and does not require an LBIE.			
	ITR SIGNATURE <i>A. Friend</i>	DATE 8/30/00	PRINT LAST NAME FRIEND	PHONE 3420

Notification of Unusual Event Checklist

SIGNATURE

DATE

- 1) Approve Emergency Classification.
- 2) Announce Emergency to Control Room staff and direct staff to assume their Emergency Response roles.
- 3) Complete **DCPP Event Notification Form** (EP G-3, Attachment 9.3).
- 4) Complete **PAR Form** (EP RB-10).
- 5) Direct CRA to initiate VANS (if required).
- 6) Direct the Emergency Liaison Coordinator to **complete** (EP G-3, Attachment 9.4 **Off-Site Notification Log Sheet.**)

OR DESIGNEE → *MAKE OFFSITE AGENCY NOTIFICATIONS.* | *OTSC 08/30/00*

- 7) Make PA Announcement. →

Attention all personnel:
The Diablo Canyon Emergency Plan has been activated at the _____ level for Unit _____, due to _____.
No actions by emergency response personnel are required at this time.

- 8) If a release of airborne radioactive materials may be occurring or has occurred, direct the Emergency Evaluation Coordinator to perform an off-site dose assessment per EP R-2.
- 9) WHEN plant conditions no longer meet any emergency classification criteria, THEN terminate the emergency using the TERMINATION Checklist.
- 10) Route this completed checklist to the Emergency Planning Supervisor for retention.

Alert Checklist

SIGNATURE

DATE

- 1) Approve Emergency Classification.
- 2) Announce Emergency to Control Room staff and, unless previously done, direct staff to assume their Emergency Response roles.
- 3) Complete **DCPP Event Notification Form** (EP G-3, Attachment 9.3).
- 4) Complete **PAR Form** (EP RB-10).

Note: If KI needs to be issued prior to the TSC being activated, then refer to EP RB-3.

- 5) Direct CRA to initiate VANS (if required). *OR DESIGNEE*
- 6) Direct the Emergency Liaison Coordinator to make Off-Site Agency Notifications. (EP G-3, Attachment 9.4 **Off-Site Notification Log Sheet.**)

*OTSC
08/30/00*

- 7) Make PA Announcement. **—————>**
- 8) Sound the Site Emergency Signal for 60 sec.
- 9) Repeat the PA announcement. **—————>**

Attention all personnel:
The Diablo Canyon Emergency Plan has been activated (or upgraded) at the _____ level for Unit _____, due to _____.
Emergency Plan position holders report immediately to your assigned response location.

- 10) Contact DCPD Watch Commander (if required) to:
 - Implement Personnel assembly, accountability and Site Access control during emergencies (EP G-4).
 - Initiate Evacuation of non-essential personnel (EP G-5).
- 11) If a release of airborne radioactive materials may be occurring or has occurred, direct the Emergency Evaluation Coordinator to perform an off-site dose assessment per EP R-2.
- 12) Ensure emergency responsibilities are turned over to the Emergency Response Organization as soon as possible. Use **ISEC / SEC / RM Turnover Checklist.**
- 13) Announce to the Control Room that Emergency Response Facilities have been activated.
- 14) Route this completed checklist to the Emergency Planning Supervisor for retention.

Site Area Emergency Checklist

SIGNATURE

DATE

- 1) Approve Emergency Classification
- 2) Announce Emergency to Control Room staff and, unless previously done, direct staff to assume their Emergency Response roles.
- 3) Complete **DCPP Event Notification Form** (EP G-3, Attachment 9.3).
- 4) Complete **PAR Form** (EP RB-10).

Note: If KI needs to be issued prior to the TSC being activated, then refer to EP RB-3.

- 5) Direct CRA to initiate VANS (if required).
- 6) Direct the Emergency Liaison Coordinator to make Off-Site Agency Notifications. (EP G-3, Attachment 9.4 **Off-Site Notification Log Sheet**.)

OR SIGNATURE

*OTSC
08/30/00*

- 7) Make PA Announcement. **—————>**
- 8) Unless already sounded, sound the Site Emergency Signal for 60 sec.
- 9) Repeat the PA announcement. **—————>**

Attention all personnel:
The Diablo Canyon Emergency Plan has been activated (or upgraded) at the _____ level for Unit _____, due to _____.
Emergency Plan position holders report immediately to your assigned response location.

- 10) Contact DCPW Watch Commander (if required) to:
 - Implement **Personnel assembly, accountability and Site Access control during emergencies** (EP G-4).
 - Initiate **Evacuation of non-essential personnel** (EP G-5).
- 11) If a release of airborne radioactive materials may be occurring or has occurred, direct the Emergency Evaluation Coordinator to perform an off-site dose assessment per EP R-2.
- 12) Ensure emergency responsibilities are turned over to the Emergency Response Organization as soon as possible. Use **ISEC / SEC / RM Turnover Checklist**.
- 13) Announce to the Control Room that Emergency Response Facilities have been activated.
- 14) Route this completed checklist to the Emergency Planning Supervisor for retention.

General Emergency Checklist

SIGNATURE

DATE

- 1) Approve Emergency Classification.
- 2) Announce Emergency to Control Room staff and, unless previously done, direct staff to assume their Emergency Response roles.
- 3) Complete **DCPP Event Notification Form** (EP G-3, Attachment 9.3).
- 4) Complete **PAR Form** (EP RB-10).

Note: If KI needs to be issued prior to the TSC being activated, then refer to EP RB-3.

- 5) Direct CRA to initiate VANS (if required).
- 6) Direct the Emergency Liaison Coordinator to make Off-Site Agency Notifications. (EP G-3, Attachment 9.4 **Off-Site Notification Log Sheet.**)

or designate

*OTSC
08/30/00*

- 7) Make PA Announcement. **—————>**
- 8) Unless already sounded, sound the Site Emergency Signal for 60 sec.
- 9) Repeat the PA announcement. **—————>**

Attention all personnel:
The Diablo Canyon Emergency Plan has been activated (or upgraded) at the _____ level for Unit _____, due to _____.
Emergency Plan position holders report immediately to your assigned response location.

- 10) Contact DCPD Watch Commander (if required) to:
 - Implement **Personnel assembly, accountability and Site Access control during emergencies** (EP G-4).
 - Initiate **Evacuation of non-essential personnel** (EP G-5).
- 11) If a release of airborne radioactive materials may be occurring or has occurred, direct the Emergency Evaluation Coordinator to perform an off-site dose assessment per EP R-2.
- 12) Ensure emergency responsibilities are turned over to the Emergency Response Organization as soon as possible. Use **ISEC / SEC / RM Turnover Checklist**.
- 13) Announce to the Control Room that Emergency Response Facilities have been activated.
- 14) Route this completed checklist to the Emergency Planning Supervisor for retention.

*** ISSUED FOR USE BY: _____ DATE: _____ EXPIRES: _____ ***
PACIFIC GAS AND ELECTRIC COMPANY NUMBER EP G-4
NUCLEAR POWER GENERATION REVISION 17
DIABLO CANYON POWER PLANT PAGE 1 OF 15
EMERGENCY PLAN IMPLEMENTING PROCEDURE UNITS

**TITLE: Personnel Assembly, Accountability and Site Access
Control During Emergencies**

1 AND 2

9.5.00
EFFECTIVE DATE

PROCEDURE CLASSIFICATION: QUALITY RELATED

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1. SCOPE

1.1 This procedure describes emergency assembly of onsite personnel, accountability for individuals in the Protected Area and site access control during declared emergencies including radiological hazards and natural disasters.

2. DEFINITIONS

2.1 **ACCOUNTABILITY:** The process of determining the location of all individuals by name within the Protected Area.

2.2 **ACCOUNTABILITY COORDINATOR:** The Diablo Canyon Watch Commander or designee.

2.3 **ASSEMBLY:** The process of assembling Emergency Response Organization (ERO) personnel at assigned Emergency Response Facilities within the Protected Area and relocating nonessential site personnel to designated assembly areas outside the Protected Area.

2.4 This procedure was rewritten; therefore revision bars are not included.

**TITLE: Personnel Assembly, Accountability and Site Access
Control During Emergencies**

- 2.5 **ASSEMBLY AREA:** A designated area where personnel, after hearing the Site Emergency signal or public address announcement initiating assembly, are directed to report and wait for further instructions.
- 2.6 **CONTINUOUS ACCOUNTABILITY:** Maintaining accountability by name and location of individuals within the Protected Area after initial accountability has been established.
- 2.7 **DESIGNATED ASSEMBLY AREA SUPERVISORS (DAAS):** The senior person of a designated assembly area.
- 2.8 **MISSING PERSONNEL:** Individuals presumed to be within the Protected Area who cannot be located.
- 2.9 **OWNER CONTROLLED AREA:** The PG&E property enclosed by a fence to which access is protected. Access to this area is through the Avila Gate to the South and through Montana de Oro State Park to the North.
- 2.10 **POTENTIAL ESSENTIAL PERSONNEL:** Personnel awaiting assignments supporting the ERO. Essential Personnel are contacted by the OSC via pagers or through public address announcements.
- 2.11 **EMERGENCY ACCOUNTABILITY LISTING:** A listing generated by the Diablo Canyon Watch Commander that lists all individuals within the Protected Area.
- 2.12 **PROTECTED AREA:** The area of the plant encompassed by physical barriers and to which access is controlled. (For purposes of this procedure the Intake Area is excluded.)
- 2.13 **SEARCH AND RESCUE:** Locating and recovering missing individuals through systematic walkdowns and entries into accessible plant areas by coordinated team efforts.
- 2.14 **STRAGGLER:** Individual who reports late to an assembly area or is accounted for by the DAAS after the initial list of individuals has been sent to the Accountability Coordinator.
- 2.15 **SWEEP:** Walking through areas to determine if individuals are present.

3. **DISCUSSION**

Assembly and accountability are initiated by sounding the Site Emergency signal or using a public address announcement and providing alternate Assembly Areas. Assembly and accountability are initiated using EP G-2, "Activation and Operation of the Interim Site Emergency Organization."

3.1 **Individuals Assembly**

- 3.1.1 In an emergency, site individuals (including visitors) must be notified of the emergency, given specified directions regarding their safety and accountability, and respond by reporting to predetermined Assembly Areas where they will receive further instructions.
- 3.1.2 If Assembly Areas or normal assembly routes become undesirable, directions for alternate assembly routes and areas will be provided by either public address announcements or Security Officers.

**TITLE: Personnel Assembly, Accountability and Site Access
Control During Emergencies**

3.2 Assembly Areas

- 3.2.1 Signs posted inside the Protected Area direct individuals to Assembly Areas. These give instructions for the Site Emergency signal as well as the employee's specific assembly area location. Overhead views of assembly areas are depicted in Attachments 9.9 through 9.12.**
- 3.2.2 Essential individuals responding to DCPD after callout shall report to their designated assembly area after arriving onsite, unless directed otherwise. The requirements regarding fitness for duty capability identified in OM17.ID3, "Fitness for Duty Program," shall be followed.**

3.3 Assembly Area Management

- 3.3.1 The DAAS:
 - a. Completes assembly/accountability checklists for Assembly Areas within the Protected Area and Assembly Area Rosters for Assembly Areas outside the Protected Area.**
 - b. Notifies the Accountability Coordinator of individuals in Assembly Areas within the Protected Area.****

3.4 Accountability

- 3.4.1 The goal of accountability is to identify all individuals within the Protected Area by name and location within approximately 30 minutes. Individuals within the Protected Area whose locations are unknown shall be considered missing.**
- 3.4.2 The accountability 30 minute time starts when the announcement to assemble is made or the Site Emergency signal is sounded, whichever is first.**
- 3.4.3 DAAS within the Protected Area report individuals by name and keycard number to the Accountability Coordinator.**
- 3.4.4 Individuals leaving the Protected Area are logged out in the Security Building.**
- 3.4.5 The Accountability Coordinator compares assembly reports received from the Protected Area DAAS to the Emergency Accountability Listing to identify missing personnel.**

4. RESPONSIBILITIES

4.1 ACCOUNTABILITY COORDINATOR

- 4.1.1 Coordinates the accountability process for the Protected Area.**
- 4.1.2 Assists Protected Area DAAS by maintaining continuous accountability during the emergency.**

**TITLE: Personnel Assembly, Accountability and Site Access
Control During Emergencies**

4.1.3 Establishes phone locations at the Protected Area access control point (Security Building) for individuals after Protected Area assembly areas are manned with DAAS.

4.1.4 Ensures individuals entering the Protected Area, phone the DAAS of their destination after assembly areas are established.

4.2 DESIGNATED ASSEMBLY AREA SUPERVISOR:

4.2.1 Completes assembly area roster.

4.2.2 Advises and controls individuals assigned to a designated assembly area.

4.2.3 Within the Protected Area, maintains continuous accountability of individuals assigned to their area throughout the emergency.

4.3 EMERGENCY MAINTENANCE COORDINATOR: Completes accountability checklist for the OSC organization.

4.4 SECURITY ADVISOR (TSC)

4.4.1 Ensures personnel accountability is performed.

4.4.2 Provides Site Emergency Coordinator (SEC) with a list of missing personnel.

4.4.3 Updates the SEC on status of missing personnel.

4.4.4 Performs accountability for the TSC.

4.5 OPERATIONS SHIFT MANAGER:

4.5.1 Maintains continuous accountability of Operations individuals assigned to the on-watch crew in the Control Room, plant, or the Operations Ready Room prior to OSC activation.

4.5.2 Recommends protective actions to the Diablo Canyon Watch Commander for Security individuals prior to TSC activation.

4.5.3 Provides protective action instructions to individuals using public address announcements, or communications with DAAS or the Accountability Coordinator.

4.6 SITE EMERGENCY COORDINATOR (SEC): Directs assembly, accountability, site access control, and search and rescue of missing personnel.

4.7 RADIOLOGICAL ADVISOR: Reviews radiological hazards in assembly areas and recommends protective action to the SEC and the Security Advisor for security personnel.

5. PREREQUISITES

5.1 The SEC has decided to initiate assembly and accountability or the Site Emergency signal has sounded.

TITLE: Personnel Assembly, Accountability and Site Access
Control During Emergencies

6. INSTRUCTIONS

6.1 Assembly

6.1.1 All individuals shall report to their designated Assembly Areas when hearing the Site Emergency signal or public address announcement directing assembly and accountability for locations assignment. Individuals outside of the Protected Area should sign in, or be listed, on Form 69-13236.

NOTE 1: Individuals working on a specific job should place work area in a safe condition before proceeding to designated assembly areas.

NOTE 2: Individuals in the RCA should proceed to Radiological Access Control and then to assigned assembly areas.

6.1.2 Bio Lab individuals should assemble at the Training Building and wait for instructions from announcements made over the plant public address system.

6.1.3 On-call Emergency Response Organization personnel shall report to the designated Emergency Response Facility.

6.1.4 500KV Switchyard Area personnel shall assemble at the switchyard area and wait for announcements over the public address system.

NOTE: Depending upon plant conditions, they may decide to relocate to San Luis Obispo Distribution Operations Facility with SEC permission.

6.1.5 Medical Staff shall remain in the Medical Facility during the Alert level of an emergency and relocate to the OSC during a Site Area or General Emergency. Injured individuals at the facility, deemed by the medical staff to need offsite care, should be transported by an offsite ambulance.

6.1.6 Contractors and temporary additional should report to Parking Lot #7 and wait for instructions from the public address system.

6.1.7 Designated Assembly Area Supervisors outside the Protected Area shall complete Form 69-13236, and fax to the Accountability Coordinator.

6.1.8 Radiological Controls Area (RCA)

a. On-watch Operations individuals should report to Radiological Access Control and then the Control Room unless otherwise directed by Control Room personnel.

b. Operations, Maintenance and Radiation Protection individuals engaged in critical operations or emergency response actions, as directed by the Interim SEC or Emergency Operations Coordinator, shall call or report to Radiological Access Control as soon as practical and then proceed to assigned assembly areas.

c. When hearing the containment evacuation signal, individuals in containment shall immediately leave and report to Radiological Access Control.

TITLE: Personnel Assembly, Accountability and Site Access
Control During Emergencies

6.1.9 Security Personnel shall report into CAS via radio check or telephone.

6.1.10 Visitors shall be escorted to the Security Building lobby by the escort assigned to them for emergency accountability listing and further instructions regarding their movement depending on the level of emergency.

6.2 Accountability

6.2.1 Accountability Coordinator shall assist the Diablo Canyon Watch Commander with accountability by following Appendix 8.2. Complete accountability and report results to the Security Advisor in the TSC.

6.2.2 Operations personnel assigned to the on-watch crew shall report to the Control Room for accountability. The Shift Manager, or designee, shall report findings to the Accountability Coordinator on Form 69-13231.

6.2.3 Emergency Maintenance Coordinator shall direct one of the Maintenance Coordinators to act as the OSC DAAS and complete Form 69-13232.

6.2.4 Medical Staff shall complete Form 69-13234 and fax to the Accountability Coordinator.

NOTE: The Medical Staff shall relocate to the OSC upon declaration of a Site Area or General Emergency. The Medical Staff will become part of Emergency Safety Services.

6.2.5 The Security Advisor shall complete Form 69-13233.

6.2.6 Personnel within the Radiological Controls Area (RCA)

- a. Maintenance and Radiation Protection individuals performing critical operations or emergency actions shall be accounted for by calling the OSC as soon as practical, or the radiological access control point when the OSC is not manned.
- b. Individuals manning the radiological access control point shall complete Form 69-13235 for individuals within the RCA only and forward the list to the Accountability Coordinator. Individuals manning the radiological access control point shall instruct individuals exiting the RCA to proceed directly to their assigned assembly area.

7. RECORDS

7.1 Forms in this procedure completed for a drill, exercise, or actual emergency shall be forwarded the next working day to the Emergency Planning Supervisor for review and retention.

8. APPENDICES

8.1 Assembly Areas

8.2 Accountability Coordinator Checklist

**TITLE: Personnel Assembly, Accountability and Site Access
Control During Emergencies**

9. ATTACHMENTS

- 9.1 Form 69-13229, "Assembly Area Roster Summary," 08/17/00
- 9.2 Form 69-13230, "Missing Personnel Roster," 07/27/00
- 9.3 Form 69-13231, "Control Room - Assembly And Accountability Checklist," 07/27/00
- 9.4 Form 69-13232, "Operational Support Center - Assembly And Accountability Checklist," 08/02/00
- 9.5 Form 69-13233, "Technical Support Center - Assembly And Accountability Checklist," 08/02/00
- 9.6 Form 69-13234, "Medical Facility - Assembly And Accountability Checklist," 08/02/00
- 9.7 Form 69-13235, "Radiological Access Control 85' Elevation - Assembly And Accountability," 08/02/00
- 9.8 Form 69-13236, "Assembly Area Roster (Outside Protected Area)," 08/02/00
- 9.9 "DCPP Aerial View," 08/10/00
- 9.10 "Building 109, Training Center, First Floor," 08/10/00
- 9.11 "Building 109, Training Center, Second Floor," 08/10/00
- 9.12 "Building 119, Maintenance Center, First Floor," 08/10/00

10. REFERENCES

- 10.1 EP EF-1, "Activation and Operation of the Technical Support Center."
- 10.2 EP EF-2, "Activation and Operation of the Operational Support Center."
- 10.3 EP G-2, "Activation and Operation of the Interim Site Emergency Organization."
- 10.4 EP G-3, "Notification of Off-site Agencies and Emergency Organization Personnel."
- 10.5 EP G-5, "Evacuation of Nonessential Site Personnel."

TITLE: Personnel Assembly, Accountability and Site Access
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APPENDIX 8.1
 ASSEMBLY AREAS

<u>Assembly Area #</u>	<u>Assembly Area Location</u>	<u>Assembly Area Personnel</u>
#1	Control Room	**Shift Foreman Shift Manager Operators, STAs, Clerks Resident NRC Inspector
#2	TSC	**Security Advisor TSC Emergency Response Organization Personnel
#3	OSC	**Emergency Maintenance Coordinator OSC Emergency Response Organization Personnel
#4	Radiological Access Control	**RP Foreman, CHEM Foreman or Senior RP/Chemistry person present Individuals manning RAC.
#5	Security Bldg Lobby	Security Staff Officers not on patrol. Visitors (Posted officers remain in position and respond to communications checks unless directed otherwise.)
#6	Learning Center <u>Training Building (109)</u>	
	Room 107,108,109	All ASSET Teams
	Room 114	General Services
	Room 121	Engineering Services
	Room 122,123	C&TS, Human Resources and Other PG&E not listed
	Room 205	Outage Services
	Room 206	Plant Management
	Room 207, 212	Operation Services
	Room 237	Learning Services, Bio Lab personnel
	Room 243	Procedure Services

** Designated Assembly Area Supervisor

TITLE: Personnel Assembly, Accountability and Site Access
Control During Emergencies

APPENDIX 8.1 (Continued)

<u>Assembly Area #</u>	<u>Assembly Area Location</u>	<u>Assembly Area Personnel</u>
#6	Learning Center <u>Maintenance Shop Bldg (119)</u> Room 144 (NPG Library)	Materials/Services, Regulatory Services NQS
#8	500 kV Switchyard	**Substation Operating Foreman System Operator Switchyard personnel
#9	Parking Lot #7	Contractors/Temporary additional
#10	Medical Facility	Medical personnel

** Designated Assembly Area Supervisor

TITLE: Personnel Assembly, Accountability and Site Access
Control During Emergencies

APPENDIX 8.2

ACCOUNTABILITY COORDINATOR CHECKLIST

ACCOUNTABILITY COORDINATOR: _____ DATE _____

TIME/INITIALS

Diablo Canyon Watch Commander assign "Accountability Coordinator," if needed.

_____ / _____

1. INCOMING INFORMATION:

Assign an officer to the bridge line and FAX machine to receive accountability information from Assembly Areas within the Protected Area.

_____ / _____

2. HIGH TRAFFIC AREAS:

Assign an officer to expedite emergency egress (i.e., Doors 129, 517-2 and Security Building), as required.

_____ / _____

3. SITE INGRESS AND EGRESS:

Notify Avila Gate of plant conditions and status of personnel, i.e., visitors, tour buses.

_____ / _____

NOTE: Call the security advisor if TSC is manned and/or Control Room for instructions.

Instruct Avila Gate staff to control access and egress depending on site conditions.

_____ / _____

Individuals with current valid DCPD automobile passes will be granted plant access. Authorization is implied for individuals called out for emergency response and they will be allowed access through Avila Gate. Other individuals will require SEC approval.

_____ / _____

NOTE: If the Avila Gate is not manned, the Security Watch Commander will send a security mobile control unit to the gate.

4. CENTRAL ALARM STATION (CAS)

Security Personnel: Complete Accountability Radio Check

_____ / _____

5. PROTECTED AREA ACCOUNTABILITY:

Initiate accountability upon sounding of the site emergency signal or public address announcement directing accountability.

Accountability Start Time: _____

_____ / _____

(Accountability starts at the sounding of the Site Emergency signal or public address announcing assembly/accountability whichever occurs first.)

**TITLE: Personnel Assembly, Accountability and Site Access
Control During Emergencies**

APPENDIX 8.2 (Continued)

TIME/INITIALS

5. **PROTECTED AREA ACCOUNTABILITY (Continued):**

After receiving accountability checklists from the following assembly areas, compare them to the computer generated Emergency Accountability Listing:

- Control Room (x3377) _____ /
- Technical Support Center (x3260) _____ /
- Operational Support Center (x2605) _____ /
- Medical Facility (x4566, or x4516) _____ /
- Radiological Access Control 85' Elevation (x3247) _____ /
- CAS (Report of Accountability Radio Check) _____ /

Late Badges:

When computer generates Emergency Accountability Listing, direct a Security Officer to collect keycards at the exit turnstyle. Mark these individuals off the Emergency Accountability Listing. _____ /

Compare information received from Assembly Areas with Emergency Accountability Listing, complete Missing Personnel Roster, Form 69-13230, and forward to the TSC Security Advisor if TSC is activated. If TSC is not activated, forward to the Interim SEC (Operations Shift Manager). _____ /

Accountability Completion Time: _____

(Accountability is complete when all Protected Area accountability reports are received, a comparison has been made against the Emergency Accountability Listing report and missing individuals are identified.)

If facilities within the Protected Area are not activated prior to completion of accountability, a followup Emergency Accountability Listing shall be completed. _____ /

Establish phone locations at checkin counter for individuals entering Protected Area to call destination assembly area for accountability after facility activation. _____ /

After TSC and OSC are activated, ensure individuals entering Protected Area call destination Assembly Areas. If there is a loss of site power, dispatch a Security Officer to the main warehouse to alert individuals of the sounding of the site emergency alarm. _____ /

TITLE: Personnel Assembly, Accountability and Site Access
Control During Emergencies

APPENDIX 8.2 (Continued)

TIME/INITIALS

6. MISSING PERSONNEL:

If there are missing personnel, initiate the following additional actions:

Last Known Location:

Attempt to identify the last known location of the person(s) through Emergency Accountability Listing printout or alternate Security Computer command.

/

Search and Rescue:

Check Assembly Area Rosters (Outside Protected Area), Form 69-13236 for names of missing personnel.

Provide names and potential locations of missing individuals to the TSC Security Advisor or the Control Room Interim SEC (if the TSC is not activated). Forward Missing Personnel Roster, Form 69-13230 to the TSC Security Advisor or the ISEC if the TSC is not manned.

/

If individuals are missing within the Protected Area, sweeps of the following areas should be conducted:

Lube Oil and Dirty Lube Oil Storage Room (Door #193) -

Inside Door 129, turn left; on west wall up a ladder next to Nash Vacuum Pump.

/

Condensate Pump Pit U-1 -

Inside and north of Door 123-1; along west wall, three large yellow pumps.

/

Heater Drip Pump (DRP) -

Unit 1 - Inside and south of Door 123-1; along west wall (one pump).

/

Unit 2 - Inside and north of Door 123-2; along west wall (one pump).

/

Condensate Pump Pit U-2 -

Inside and south of Door 123-2; along west wall, three large yellow pumps.

/

Post LOCA Sample Room U-1 -

Door 116-1 (inside)

/

Post LOCA Sample Room U-2 -

Inside Door 192-2 and then inside 197-2.

/

**TITLE: Personnel Assembly, Accountability and Site Access
Control During Emergencies**

APPENDIX 8.2 (Continued)

TIME/INITIALS

- 6. MISSING PERSONNEL (Continued):
 - 85' AUX Building -
 - Primary Chemistry Lab /
 - Chemistry Foreman's and Decon Foreman's Office /
 - Security Building
 - APs Offices behind break room /
 - ADMIN BUILDING -
 - ARA Office in NE corner of 1st floor /
 - Main Warehouse And Loading Dock /
 - 140' Turbine Bldg
 - U-2 Maintenance crew trailer /
- 7. AREA RELOCATION:
 - The SEC may direct Assembly Area relocation(s) or evacuation(s).
Assist as necessary. /
- 8. VISITORS:
 - Assign an officer to initiate an Emergency Accountability Listing and
provide further instructions to visitors assembled in the Security
Building Lobby. /
- 9. ASSEMBLY AREAS:

NOTE: Assembly Areas may initiate communications using [x2001] (bridge
line).

Provide plant status updates to Assembly Areas and assist areas as
necessary.

 - Parking Lot #7 [x6499] /
 - 500 KV Switchyard Operations Supervisor [x3519] /

TITLE: Personnel Assembly, Accountability and Site Access
 Control During Emergencies

APPENDIX 8.2 (Continued)

TIME/INITIALS

10. NOTIFICATIONS:

Notify MAP groups or tours presently on site. Refer to MAP folder in
 DCPD Watch Commander's office for current information.

/

Call Adjoining Property:

Inform individuals on properties north and south of the plant of
 conditions. Direct them to exit the Montana de Oro or Avila Gate.

/

South Property:

Halfway House

595-2948

/

North Property

Ranch House

Kitchen

528-3514

/

Dining Area

528-3324

/

Downstairs Conference Room

528-3515

/

Upstairs Conference Room
 West

528-3871

/

Upstairs Conference Room East

528-3324

/

Bob Blanchard

In trailer near ranch house

534-9649

/

The Petersons

House near North Gate

528-8268

/

Point San Luis
 Lighthouse

595-2936

/

Owner Controlled Area:

Notify temporary workers within this area and ensure they exit through
 the north or south gate as appropriate.

/

Outside the Protected Area

Sea Water Reverse Osmosis Facility near the Biology Lab.

/

Hazardous Waste Area (Area 10) near the Marine Biology Lab.

/

South bound mobile Marine Biology Lab - If tour group is present,
 ensure they are boarding the bus to proceed off-site.

/

North bound mobile agriculture workers on the bench land will be
 alerted by dispatching a Security Officer to the area notifying them of
 the emergency and explaining what actions are expected of them.

/

**TITLE: Personnel Assembly, Accountability and Site Access
Control During Emergencies**

APPENDIX 8.2 (Continued)

TIME/INITIALS

10. NOTIFICATIONS (Continued):

Fitness Trail

_____/_____

Ionic Makeup Water Treatment Facility (next to raw water storage area or west of 230KV Switchgear Yard)

_____/_____

Pecho Ranch Property - If tour group is present, escort them to the Montano de Oro Park gate exit.

_____/_____

11. SITE VEHICLE INFORMATION:

Assign a Security Officer to determine approximate number of vehicles on site. The Sheriff's Department will need this information to determine traffic control needs if evacuation occurs.

_____/_____

Report number of vehicles to the TSC Security Advisor.

_____/_____

All other units should contact CAS for status reports and instructions.

Secondary Alarm Station (SAS):

Marine Channel 7A:

_____/_____

Check for TES individuals out on boats.

_____/_____

12. RELOCATING SECURITY PERSONNEL:

With the coordination of the Security Advisor and based on radiological conditions, relocate security individuals to safe positions, yet maintain security commitments (including those in the Security Building and the Central Alarm Station). Repositioning that reduces the effectiveness of commitments must be coordinated through the security advisor and approved by a senior reactor licensed person prior to implementation.

_____/_____

DIABLO CANYON POWER PLANT
 EP G-4
 ATTACHMENT 9.1

1 AND 2

TITLE: Assembly Area Roster Summary

Initial each line acknowledging receipt of accountability forms.

TRAINING BUILDING	RECEIVED	ACCOUNTABILITY FORM COMPLETED BY
Room 107		
Room 108		
Room 109		
Room 114		
Room 121		
Room 122		
Room 123		
Room 205		
Room 206		
Room 207		
Room 212		
Room 237		
Room 243		
MAINTENANCE SHOPS BUILDING		
Room 144		
500 KV Switchyard		
Parking Lot #7		

DIABLO CANYON POWER PLANT
EP G-4
ATTACHMENT 9.2

1 AND 2

TITLE: Missing Personnel Roster

	PRINT LAST NAME	PRINT FIRST NAME	KEYCARD NUMBER
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			

Completed By: _____ Date/Time _____ / _____

NOTE: FORWARD THIS LIST TO THE TSC SECURITY ADVISOR OR THE INTERIM SEC IN THE CONTROL ROOM IF THE TSC IS NOT MANNED.

DIABLO CANYON POWER PLANT
EP G-4
ATTACHMENT 9.8

1 AND 2

TITLE: Assembly Area Roster (Outside Protected Area)

ASSEMBLY AREA LOCATION: _____

DATE: _____

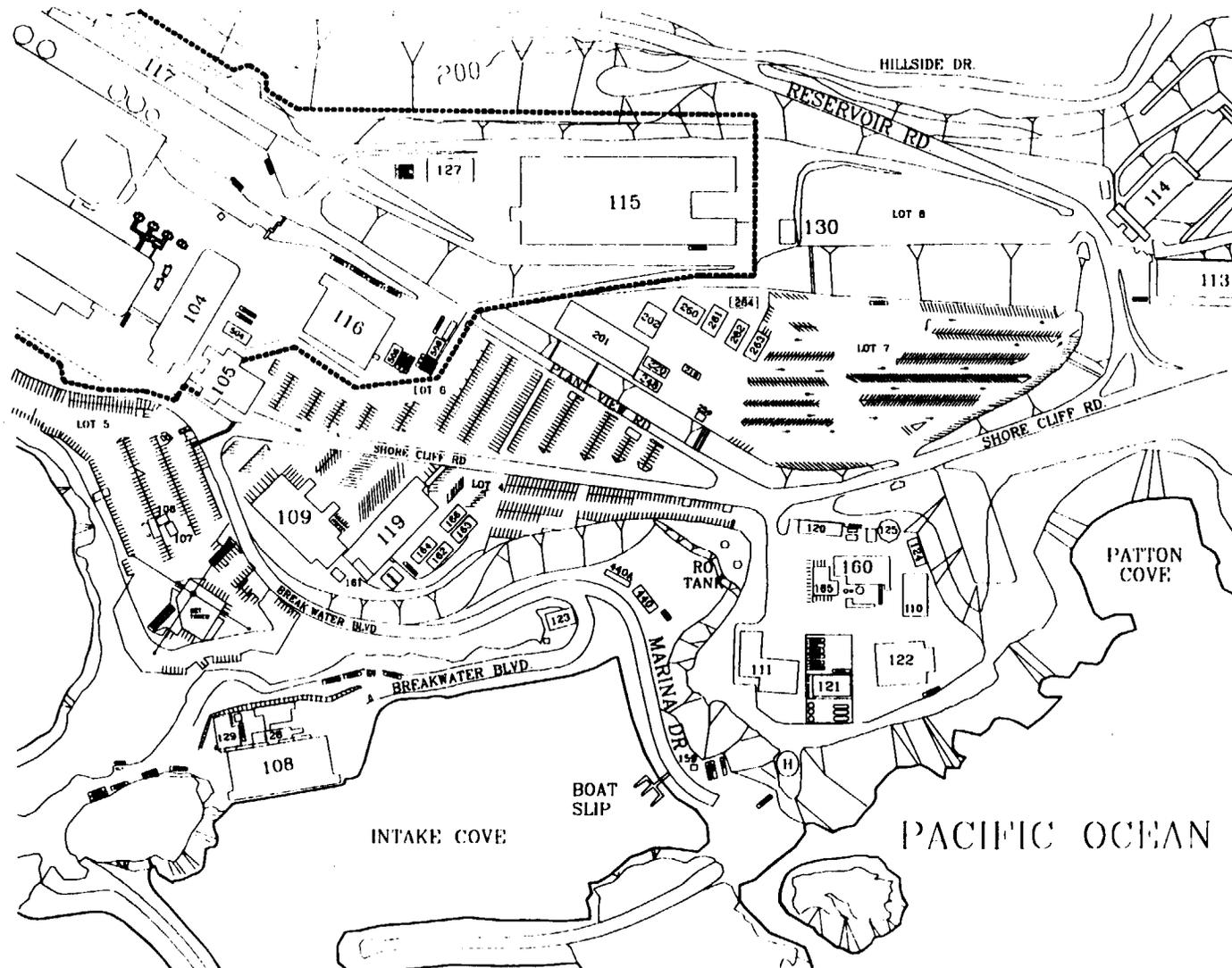
	PRINT LAST NAME	KEYCARD NUMBER	SOCIAL SECURITY #
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			

Completed By: _____ Date/Time _____ / _____

DIABLO CANYON POWER PLANT
EP G-4
ATTACHMENT 9.9

1 AND 2

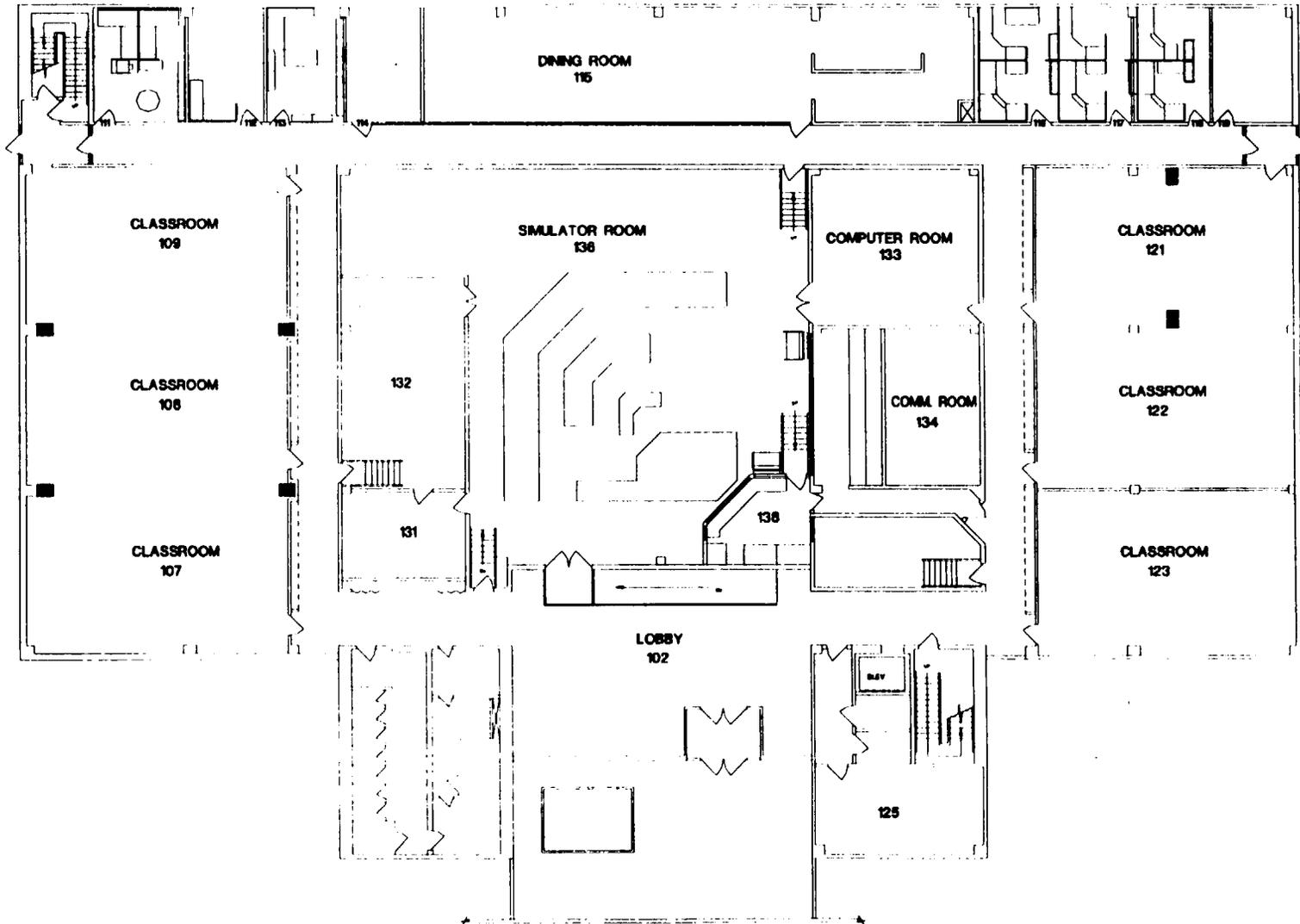
TITLE: DCPD Aerial View



DIABLO CANYON POWER PLANT
EP G-4
ATTACHMENT 9.10

1 AND 2

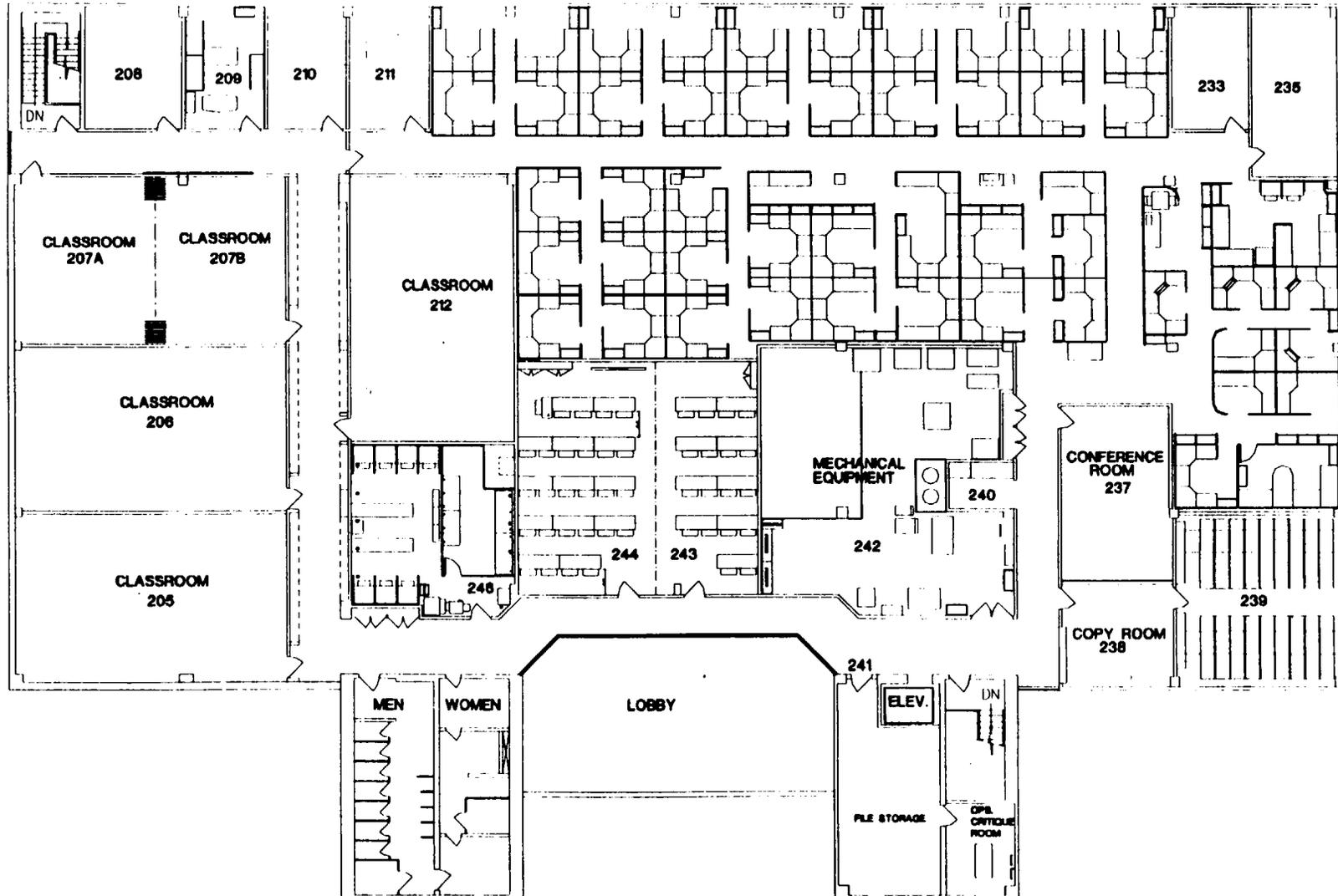
TITLE: Building 109, Training Center, First Floor



DIABLO CANYON POWER PLANT
EP G-4
ATTACHMENT 9.11

1 AND 2

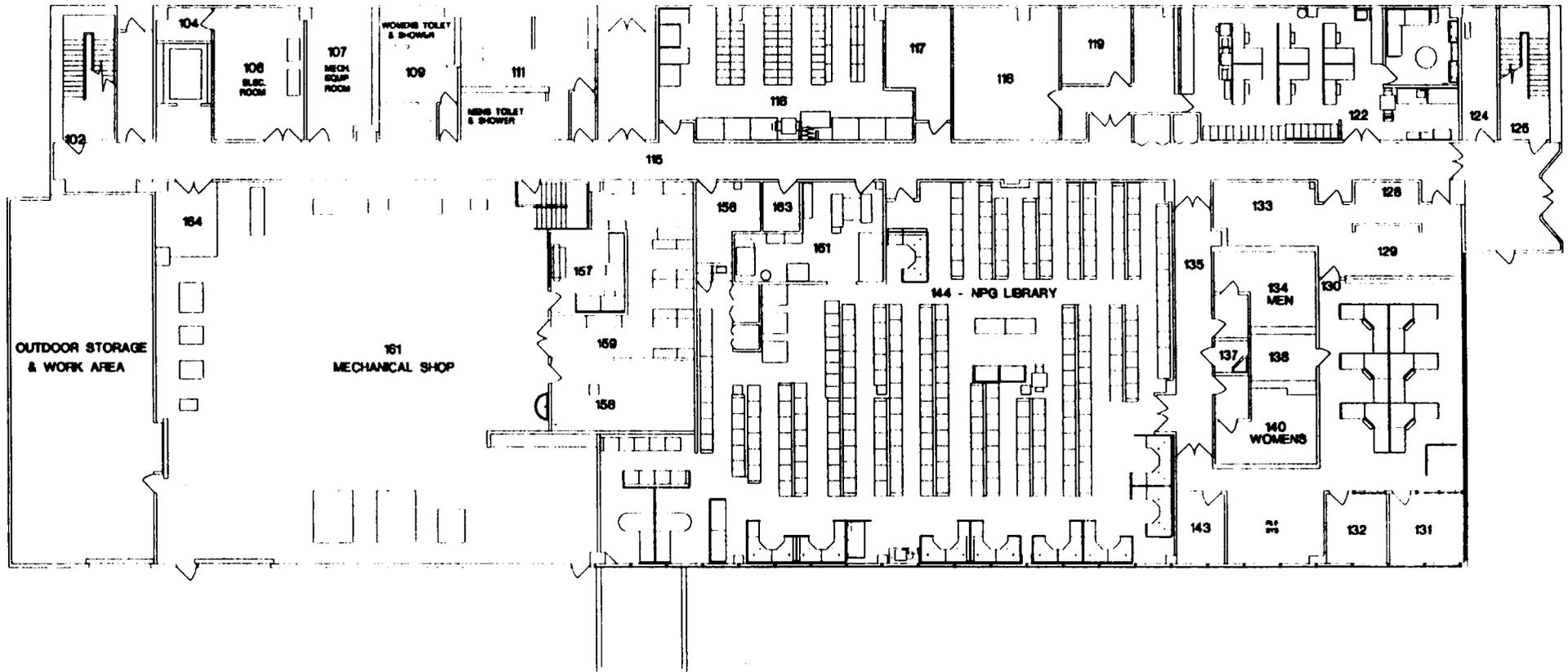
TITLE: Building 109, Training Center, Second Floor



DIABLO CANYON POWER PLANT
EP G-4
ATTACHMENT 9.12

1 AND 2

TITLE: Building 119, Maintenance Center, First Floor



*** ISSUED FOR USE BY: _____ DATE: _____ EXPIRES: _____ ***
PACIFIC GAS AND ELECTRIC COMPANY
NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT
EMERGENCY PLAN IMPLEMENTING PROCEDURE

NUMBER EP RB-8
REVISION 13
PAGE 1 OF 10
UNITS

TITLE: Instructions for Field Monitoring Teams

1 AND 2

9.5.00
EFFECTIVE DATE

PROCEDURE CLASSIFICATION: QUALITY RELATED

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1. SCOPE

- 1.1 This procedure provides instructions for performing field monitoring during an emergency event.
- 1.2 This procedure does not provide instructions for duties routinely performed by individuals qualified in radiation protection procedures, e.g. performing radiation surveys, donning protective clothing and dosimetry. Instructions unique to field monitoring are included, such as collecting soil and vegetation samples.
- 1.3 This procedure was rewritten; therefore, revision bars are not included.

2. DISCUSSION

- 2.1 For emergencies at the Alert, or higher level, Field Monitoring Teams (FMTs) are dispatched to designated field locations to determine general area dose rates, ground contamination count rates, and activity concentrations of airborne radionuclides. Ingestion pathway samples may be collected. FMTs gather data and information to determine protective actions to protect public health and safety.
- 2.2 Offsite field monitoring is performed by San Luis Obispo (SLO) County and PG&E personnel to produce one set of FMT data. Redundant sampling is not necessary. SLO County may take additional measurements and samples. For convenience, each FMT has field monitoring equipment stored in kits. Kits contain sampling equipment and survey instruments. Dosimetry, protective clothing, radios, and miscellaneous supplies are stored on shelves next to the kits.

TITLE: Instructions for Field Monitoring Teams

2.3 Individuals trained in field monitoring techniques may transport field samples from FMTs to a counting facility for analysis.

2.4 Each FMT should be comprised of two individuals, a HP technician and another individual trained in field monitoring techniques to provide support.

2.4.1 Each offsite FMT should consist of one of the following:

- a. (2) HP Technician and (1) SLO County Environmental Health Specialist, or
- b. (1) HP Technician and (1) Decontamination Specialist or Utility Worker, or
- c. (1) HP Technician and (1) SLO County Environmental Health Specialist.

2.4.2 Each onsite FMT should consist of one of the following:

- a. (2) HP Technicians, or
- b. (1) HP Technician and (1) Decontamination Specialist or Utility Worker.

3. RESPONSIBILITIES

3.1 HP Technicians assume responsibility as the FMT leader. If two HP Technicians are assigned as a FMT, the senior technician assumes the role as FMT Leader.

3.2 Initially Radiation Protection dispatches the FMTs directly from Access Control upon declaration of an Alert or higher event. The Control Room assumes the responsibility for command and control of FMTs until the TSC and UDAC staff can assume responsibility. Once the TSC is activated, command and control of onsite FMTs becomes the responsibility of the TSC. Once the UDAC is activated, command and control of offsite FMTs becomes the responsibility of UDAC.

3.3 Offsite Environmental Laboratory (OEL) operators coordinate dispatching offsite FMTs, including assigning individuals to teams and providing the initial team briefs. If the OEL operator is not present, team assignment and dispatch will be coordinated directly by UDAC.

4. RADIOLOGICAL PRECAUTIONS

4.1 **500 mR/hr is the default turnback dose rate** unless the controlling facility determines an adjusted turnback dose rate. If a turnback dose rate is approached, or exceeded, depart the area immediately to a lower dose rate area and report to the controlling facility for further instructions.

4.2 Potassium iodide (KI) should only be taken when authorized by the controlling facility.

4.3 Maintain exposures ALARA. Keep plume stay times to a minimum.

4.4 Always have survey instruments powered on and within your possession.

4.5 Report to the controlling facility at least hourly, whenever radiological conditions significantly change, or upon arrival at a new monitoring location.

TITLE: Instructions for Field Monitoring Teams

- 4.6 Self reading dosimeters should be read approximately every 15 minutes as a rule of thumb, depending on the general area dose rates. Dose should be reported to the controlling facility hourly or when the SLO County Environmental Health Specialist report their dose. Unexpected dose readings should be reported immediately.
- 4.7 When driving in the plume close all vehicle windows and turn off outside air ventilation.
- 4.8 Don respiratory protection whenever:
 - 4.8.1 directed by the controlling facility, or
 - 4.8.2 entering a plume of unknown or suspected high particulate or iodine concentrations.

5. INSTRUCTIONS

5.1 During the pre-deployment stage FMT members should:

NOTE: Use your personal vehicle to report to the OEL garage from offsite.

- 5.1.1 Obtain a company dedicated vehicle and fill with fuel.
- 5.1.2 Obtain a TLD.

- a. If reporting from onsite, retain your TLD when exiting the Protected Area.
- b. If reporting to the OEL garage from offsite, an estimating device and/or TLD will be issued by the OEL Operator.

5.1.3 Report to the assigned field monitoring staging area.

NOTE: The PG&E Service Center front gate will be locked. The Center can be accessed at the back entry gate using a [PG&E 909 key] or by obtaining the front gate access code from the Access Senior [x3247].

- a. Onsite FMT Kits are stored at the Learning Services Building, Room 126 (near the lobby elevator).
- b. Offsite FMT Kits are stored at the OEL garage. The garage door has an Omnilock keypad. To obtain the Omnilock code, call the Access Senior [x3247].

5.1.4 Upon arrival at the staging area, immediately contact the controlling facility for Minimum Staff accountability (signs with the EOF and TSC phone numbers to use are on the OEL door and the onsite FMT Kit room door). Perform a radio check and receive an initial briefing. The OEL Operator will organize the PG&E and SLO County personnel into the Offsite FMTs and will conduct an initial tailboard, prior to the teams being dispatched into the field.

TITLE: Instructions for Field Monitoring Teams

- a. Board mounted radios (OEL only), and hand held radios are stored next to kits and are equipped with a 12V battery adapter (to be plugged into the vehicle cigarette lighter) along with an amplified gain antenna (to be attached to the vehicle roof).
 - b. When performing the radio check, verify communications can be established on field monitoring channels CH-7, CH- 8, and CH-11. If a radio does not function properly, chose another. If adequate radio communications can not be established, telephone the controlling facility for instructions using the phone numbers in Attachment 7.6.
- 5.1.5 Obtain a kit and check for contents.
- a. Read the kit label and take only the kits designated for your team.
 - b. If kits plastic seal(s) are broken perform a complete inventory.
- 5.1.6 Battery check and response check the survey instruments.
- a. A copy of RCP D-900 is in the PG&E FMT position binder.
 - b. The check sources are mounted on the wall next to the kit storage shelves.
- 5.1.7 Obtain respirators and filter cartridges from the shelf.
- a. Select the correct size respirator (Small-gray, Medium-black, or Large-orange).
 - b. Attach fresh cartridge filters and perform a respirator inspection.
- 5.1.8 Don coveralls from the storage shelves.
- 5.1.9 Place gloves, booties, hoods, and inspected respirators in vehicle for ready use when contamination is encountered.
- 5.1.10 Zero pocket ion chambers and don dosimetry (stored on the shelf next to the kits).
- a. low range (0-200 mR) pocket ion chamber, and
 - b. high range (0-5 R) pocket ion chamber, and/or
 - c. TLD
- 5.1.11 Operationally check the battery operated air sampler as follows.
- a. Turn the vehicle off.
 - b. Attach the red cable of the air sampler to the (+) battery terminal.
 - c. Attach the black cable to a metal chassis ground (unpainted).
 - d. Position the air sampler away from the vehicle radiator fan. Do not place the air sampler on the ground.

TITLE: Instructions for Field Monitoring Teams

- e. Start vehicle engine.
 - f. Attach the air sample head containing the particulate filter and iodine cartridge. Start the air sampler.
 - g. Check that air flow is in the readable range.
 - h. Obtain another air sampler if the check is unsatisfactory.
 - i. Turn off and disconnect the air sampler. Stop the vehicle engine if the check is satisfactory.
- 5.1.12 If time permits, pre-stage equipment (load air sampler heads, label coin envelopes, complete top of Attachment 7.8.).
- 5.2 Each FMT should follow the general instructions below.
- 5.2.1 Proceed to field monitoring location as directed by the controlling facility.
- 5.2.2 Periodically report dose rates and count rates inside the vehicle to the controlling facility as you travel, especially significant change.
- 5.2.3 Document field monitoring results using Attachment 7.8.
- 5.2.4 After receiving instruction from the controlling facility, perform the following field monitoring surveys.
- NOTE:** Dose rate survey results should be reported as soon as possible.
- a. measure general area dose rates (open and closed window), and
 - b. collect an air sample
 - c. collect a minimum of 2 smears
 - d. if requested by the controlling facility, obtain a pressurized ion chamber reading if one is located at the monitoring location
- 5.2.5 Without stepping out of the vehicle,
- a. Obtain a ground count rate with an E-140N or equivalent.
 - 1. Probe should be held within 1 inch of the ground surface.
 - 2. $n_{cpm} = (\text{actual reading}) - 60 \text{ cpm}$.
 - b. If greater than 100 ncpm:
 - 1. inform the controlling facility, and
 - 2. don appropriate protective clothing.
- 5.2.6 Move to a low background area (~60 ncpm) and perform field analysis of the particulate filter, iodine cartridge, and smears.
- 5.2.7 Place individually collected packaged and labeled samples into a large ziplock bag and label the outside using preprinted labels.

TITLE: Instructions for Field Monitoring Teams

- 5.2.8 Take a smear survey of the large ziplock bag to verify the outside surface is uncontaminated. If contaminated, initiate actions to minimize the spread of contamination (e.g., wipe down the surface, rebag the item).
- 5.2.9 Upon completing monitoring activities, report results to the controlling facility.
- 5.2.10 Follow the instructions in the following sections as applicable.

SECTION	ADDITIONAL INSTRUCTIONS	PAGE
5.3	Collecting An Air Sample	6
5.4	Initial Count Rate Of The Air Sample Head	7
5.5	Determining Particulate Air Concentration	7
5.6	Determining Iodine Concentration	8
5.7	Determining Smearable Contamination	8
5.8	Pressurized Ion Chambers	9
5.9	Vegetation Samples	9
5.10	Liquid Samples	9
5.11	Soil Samples	9
5.12	Determining Skyshine	9

5.3 Collecting An Air Sample

NOTE: DO NOT USE CHARCOAL CARTRIDGES. The air sampler is calibrated for TEDA-impregnated cartridges only.

- 5.3.1 Load the particulate filter and TEDA-impregnated cartridge in the air sampler head and attach the loaded head to the air sampler.
- 5.3.2 Attach the air sampler to the battery.
 - a. Turn the vehicle off.
 - b. Attach the red cable of the air sampler to the (+) battery terminal.
 - c. Attach the black cable to a metal chassis ground (unpainted).
 - d. Position the air sampler away from the vehicle radiator fan. Do not place the air sampler on the ground.
 - e. Start vehicle engine.
 - f. Start the air sampler.
 - 1. Check for air flow.
 - 2. Do not attempt to adjust the air flow set screw.
- 5.3.3 Record the air sample start time and flow rate on the Attachment 7.8.
- 5.3.4 Collect at least a 10 ft³ sample (a 30-50 ft³ sample is preferred).

TITLE: Instructions for Field Monitoring Teams

- 5.3.5 Stop the air sampler. Record the air sample stop time on Attachment 7.8.
- 5.3.6 Calculate the air sample volume collected.
- 5.3.7 If required for contamination control or to prevent loss of radioactivity, place the loaded air sampler head in a unused ziplock bag. Place the sealed bag in the vehicle for analysis.

5.4 Initial Count Rate Of The Air Sample Head

- 5.4.1 Obtain a count rate on contact with the face of the loaded filter head. Noble gas retained in the filter and iodine cartridge may result in a higher than expected reading.
 - a. If in a normal background area (e.g., 60 cpm) and the sample indicates no ncpm, report the results to the controlling facility and skip Sections 5.5 and 5.6.
 - b. If in a normal or higher than normal background area (~ 300 ncpm), but the air sample activity is sufficient to obtain a valid ncpm reading, go to section 5.5 and 5.6.
 - c. If in a higher than normal background area and the air sample activity is too low to obtain a valid ncpm reading, go to another low background and proceed with 5.5 and 5.6.

5.5 Determining Particulate Air Concentration

- 5.5.1 Remove the filter from the sample head and then count it using the constant geometry jig. Record the particulate sample count rate on Attachment 7.8.
- 5.5.2 Label a coin envelope using the preprinted labels and place the particulate sample in the labeled coin envelope.
- 5.5.3 Using the particulate filter count rate and the air sample volume, calculate the gross particulate air concentration and record on the Field Monitoring Data Sheet.

$$\mu\text{Ci/cc} = \frac{(1.6E - 10) \times (\text{ncpm})}{V}$$

where:

$\text{ncpm} = (\text{gross cpm on filter paper in jig}) - (\text{bkg count rate})$

$V = \text{volume of air collected (ft}^3\text{)}$

5.6 Determining Iodine Concentration

- 5.6.1 In a low background area remove the particulate filter if it has not been done.
 - a. Remove the iodine cartridge, reverse it, and then place it back into the sample holder.

TITLE: Instructions for Field Monitoring Teams

- b. Attach the sample head on the air sampler. Start the air sampler and purge the iodine cartridge for a minimum of 1 ft³ to remove entrained noble gases. This should take approximately 30 seconds at a flow rate of 2 cfm. Longer purge times may be needed if the sample was taken in high noble gas fields. Remove the iodine cartridge after the purge is done.
 - c. Count the iodine cartridge using the constant geometry jig. Record the iodine sample count rate on Attachment 7.8.
- 5.6.2 Label a small ziplock bag using the preprinted labels binder and place the iodine sample in the labeled bag.
- 5.6.3 Using the iodine cartridge count rate and the air sample volume, calculate the gross particulate air concentration and record on Attachment 7.8.

$$\mu\text{Ci/cc} = \frac{(5.6E - 09) \times (ncpm)}{V}$$

where:

$$ncpm = (\text{gross cpm on iodine cartridge in jig}) - (\text{bkg count rate})$$
$$V = \text{volume of air collected (ft}^3\text{)}$$

5.7 Determining Smearable Contamination

- 5.7.1 In a low background area count the smear using the constant geometry jig. Record the smear count rate on Attachment 7.8.
- 5.7.2 Label a coin envelope using the preprinted labels binder and place the smear sample in the labeled coin envelope.
- 5.7.3 Using the smear count rate, calculate the dpm per 100 cm² and record on Attachment 7.8.

5.8 Pressurized Ion Chambers

- 5.8.1 Pressurized Ion Chambers may be read directly (some require pressing the "READ" push button installed on the front face of the instrument).
- 5.8.2 Review the strip chart for dose rate trending.
 - a. The trace which indicates the range (usually a straight line) matches one of the markings immediately below the chart. The PICs are auto-ranging units so normal readings are in units of $\mu\text{R/hr}$. When the $\mu\text{R/hr}$ range is exceeded, the actual dose rate is in units of mR/hr .
 - b. The second trace indicates the actual dose rate and should correspond with that shown on the digital display.
- 5.8.3 Record data on Attachment 7.8.
- 5.8.4 Report the reading to the controlling facility.

TITLE: Instructions for Field Monitoring Teams

5.9 Vegetation Samples

- 5.9.1 Cut vegetation from at least a 1m² area of ground (approximately 1 to 2 pounds). Cut vegetation at a height of 1 to 2 cm from its base to approximate what a grazing animal would consume. Avoid contaminating the sample with dirt.
- 5.9.2 Place the vegetation in a plastic bag. Seal the bag and take an external contact count rate. Verify that the outside of the bag is uncontaminated. If contaminated, initiate actions to minimize the spread of contamination.
- 5.9.3 Label the bag (date, location, net contact count rate).

5.10 Liquid Samples

- 5.10.1 Collect and label a 1 liter sample and retain for later analysis. If readings ≥ 200 net cpm are obtained on contact or if general area contamination was noted, place the 1 liter sample in a sealed plastic bag.

5.11 Soil Samples

- 5.11.1 Sample the soil from a 1m² area. Using a trowel, collect on higher than the top ¼ inch surface of soil.
- 5.11.2 Place the sample in a bag, seal, count and label. Verify the outside of the bag is uncontaminated. If contaminated, initiate actions to minimize the spread of contamination.

5.12 Determining Skyshine

- 5.12.1 Using an E-140 with a shielded HP-210 GM pancake probe or equivalent held at waist height, measure the count rate with the probe mylar window pointed UP, toward the sky. Record the WINDOW UP count rate Attachment 7.8.
- 5.12.2 Using an E-140 with a shielded HP-210 GM pancake probe or equivalent held at waist height, measure the count rate with the probe mylar window pointed DOWN, toward the ground. Record the WINDOW DOWN count rate on Attachment 7.8.
- 5.12.3 To calculate skyshine, subtract the down count rate from the up count rate. Record the skyshine net count rate on Attachment 7.8.

5.13 The FMTs should perform the following after field monitoring is no longer required.

- 5.13.1 Return the vehicle to the OEL, fill the tank, and return the key.
- 5.13.2 Inventory, replenish, seal, and return the field monitoring kit to ready status. If supplies are unavailable to replenish the kit, notify the Safety and Fire Protection supervisor the next working day.

TITLE: Instructions for Field Monitoring Teams

6. RECORDS

- 6.1 The FMT leader shall ensure completed Attachment 7.8 forms are sent to the controlling facility.
- 6.2 The attachments generated during an emergency drill or exercise should be sent to the Emergency Planning Group for review and retention.

7. ATTACHMENTS

- 7.1 "Offsite Field Monitoring Locations Map," 08/10/00
- 7.2 "Offsite Field Monitoring Locations Descriptions," 08/17/00
- 7.3 "Onsite Field Monitoring Locations Map," 08/10/00
- 7.4 "Onsite Field Monitoring Locations Descriptions," 08/17/00
- 7.5 "Pressurized ION Chamber Location Descriptions," 08/10/00
- 7.6 "Communication Guidelines," 08/17/00
- 7.7 "Exposure Tracking Guidance," 08/10/00
- 7.8 "Field Monitoring Data Sheet," 08/10/00

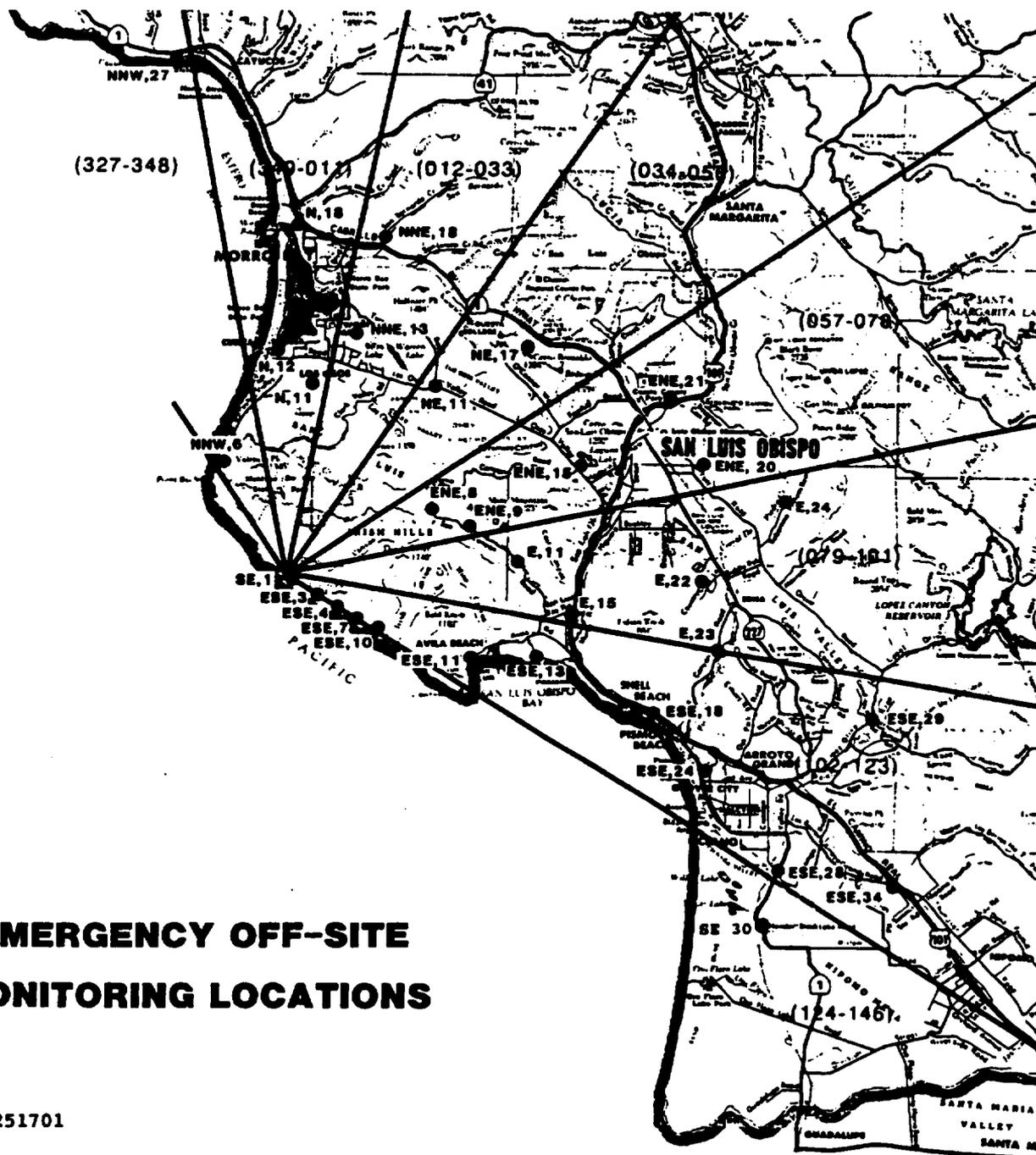
8. REFERENCES

- 8.1 RCP D-900, "Performance Tests For Radiation Protection Instruments"
- 8.2 Action Request #A0489282
- 8.3 Regulatory action technical basis and recommended response to Action Requests #A0489282 and #A0489299, Henry Fong, 2/29/2000.

DIABLO CANYON POWER PLANT
EP RB-8
ATTACHMENT 7.1

1 AND 2

TITLE: Offsite Field Monitoring Locations Map



**EMERGENCY OFF-SITE
MONITORING LOCATIONS**

00251701

DIABLO CANYON POWER PLANT
EP RB-8
ATTACHMENT 7.2

1 AND 2

TITLE: Offsite Field Monitoring Locations Descriptions

	NEAR	DESCRIPTION
ESE, 29	Arroyo Grande	Market parking lot at corner Cecchetti and Lopez Lake Drive. Hwy. 101 south to Grand Ave. exit, east through old Arroyo Grande (Branch St.), continue east (Lopez Lake Dr.) to Cecchetti. No phone.
ESE, 34	Arroyo Grande	Intersection of Highway 101 S and Los Berros Road. No phone.
E, 11	Avila Beach	See Canyon Road, 1.7 miles up from San Luis Bay Drive intersection. Survey at intersection of See Canyon Road and Davis Canyon Road. Phone at nearby residences.
E, 15	Avila Beach	PG&E Community Center, Ontario Rd, west Hwy. 101 frontage just south of the San Luis Bay Drive turnoff.
ENE, 8	Avila Beach	See Canyon Road at intersection with Coon Creek Road (6.0 miles from San Luis Bay Drive on See Canyon Road).
ENE, 9	Avila Beach	See Canyon Road, 4.2 miles up from San Luis Bay Drive intersection (intersection of See Canyon Road and Black Walnut Road). Phone at residences. Rattlesnake hazard.
ESE, 13	Avila Beach	Pirate's Cove parking lot. West on Avila Beach Rd exit off Hwy. 101, turn east on Cave Landing Rd. No phone.
NNE, 13	Baywood Park	Los Osos Middle School. Take Los Osos Valley Road west, turn north on South Bay Boulevard to El Morro Ave. Phone available during school hours.
NNW, 27	Cayucos	Cayucos Pier. Going north on Highway 1, take second Cayucos exit marked Cayucos Drive. Phone available.
ESE, 10	DCPP	DCPP access road at Gate, 6.2 miles from the Security Building. (Between mile markers 1.4 - 1.5.) Marked with red/white fence post. Phone available.
ESE, 11	DCPP	South of DCPP front gate in boat storage lot. Phone at front gate guard shack.
ESE, 3	DCPP	Turnout on DCPP access road, 1.6 miles from Security Building. Marked with red/white fence post. (At mile marker 5.8.)
ESE, 4	DCPP	Turnout on DCPP access road 2.8 miles from Security Building. Marked with red/white fence post. (Between mile markers 4.5 - 4.6.)

EP RB-8 (UNITS 1 AND 2)
ATTACHMENT 7.2

TITLE: Offsite Field Monitoring Locations Descriptions

	NEAR	DESCRIPTION
ESE, 7	DCPP	By Ranch Road, 4.3 miles from Security Building along DCPP access road. Marked with red/white fence post. Between mile markers 3.0 - 3.1.
SE, 1	DCPP	Turnout on DCPP access road, 0.8 miles from Security Building near meteorological Tower A. Marked with red/white fence post. Between mile markers 6.5 - 6.6. Phone in tower building.
ESE, 24	Grover Beach	Pismo State Beach. Grand Ave. at Highway 1. Hwy. 101 south to 4th St. exit, south to Grand Ave., west to Hwy. 1. Phones at nearby commercial enterprises.
N, 11	Los Osos	South Bay Park Fire Station. Take Los Osos Valley Road west, turn south off LOVR onto Bayview Heights Drive (up one block). Phone available.
N, 12	Los Osos	Sea Pines Golf Course Clubhouse. Take Los Osos Valley Road to Pecho Valley Road. Turn west off Pecho Valley Road onto Monarch Lane. Right on Del Norte. Right on Howard. Phone at clubhouse.
NNW, 6	Los Osos	Montana de Oro State Park. Take Los Osos Valley Road west, go south on Pecho Road through the park to the parking lot near end of road at southern park boundary. Phone at Ranger Station at Spooner Cove.
N, 18	Morro Bay	Morro Bay Power Plant. Phone available.
NNE, 18	Morro Bay	Take Hwy 1 north past Cuesta College, turn north on San Bernardo Creek Rd 0.3 miles north along San Bernardo Creek Road. Phone at nearby residences.
ESE, 28	Oceano	Market on the corner of Halcyon and Highway 1 (Mesa View Drive intersection at top of hill). See directions to ESE, 24, then south on Hwy 1 to Halcyon.
SE, 30	Oceano	Intersection at Highway 1 and Callender. See directions to ESE, 28. Continue south on Hwy 1 past Halcyon towards Guadalupe to Callender Rd. No phone.
E, 23	Pismo Beach	Intersection of Price Canyon Road and Oromonde. Hwy 101 south to Price Canyon Rd (Hinds Ave. turnoff, turn left), then north to Oromonde.
ESE, 18	Shell Beach	Shell Beach, Margo Dodd Park, Seaview and Ocean Blvd. Hwy 101 south to Spyglass exit, south on Shell Beach (frontage) Rd to Seaview, turn right. Phone at nearby residences.
E, 22	SLO	SLO Country Club. Take Broad St. (227) to Edna Rd, go west on Edna, turn right onto Los Ranchos Rd, then right on Country Club Dr. East side of club parking lot. Phone at club during working hours, otherwise at nearby residences.

EP RB-8 (UNITS 1 AND 2)
ATTACHMENT 7.2

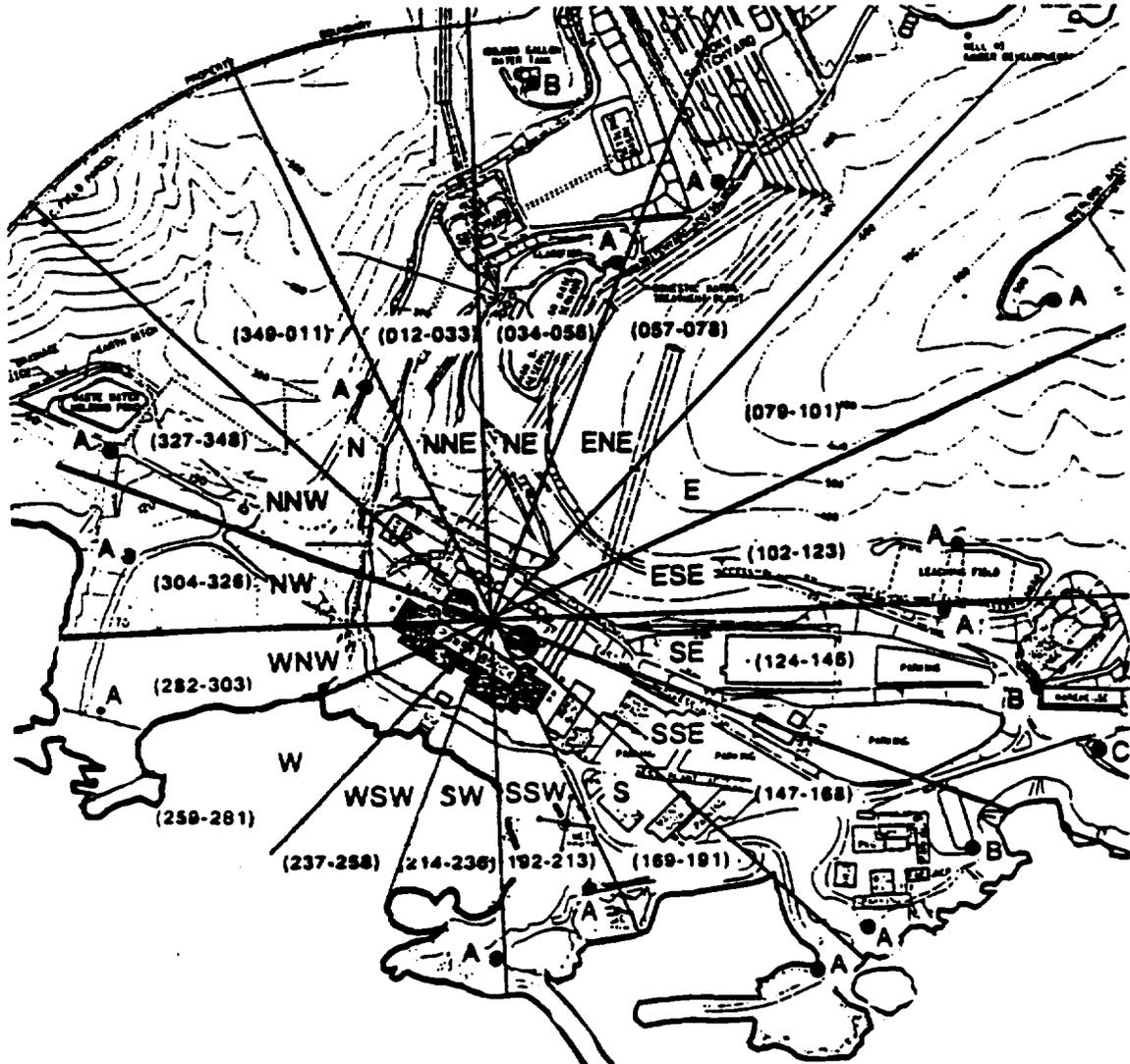
TITLE: Offsite Field Monitoring Locations Descriptions

	NEAR	DESCRIPTION
E, 24	SLO	Righetti Road at intersection of Coyote Canyon Road at metal gate. See directions to ENE, 20. Then go south on Orcutt Rd to Righetti, turn left on Righetti. No phone, but a few scattered residences in the area.
ENE, 15	SLO	Laguna Middle School at intersection of Los Osos Valley Road and Prefumo Canyon Road, north side of LOVR. Phone available during school hours, otherwise at nearby residences.
ENE, 20	SLO	PG&E Substation at corner of Orcutt and Johnson Streets. North on Higuera St., turn east on Tank Farm Rd, then north on 227 (Broad St.), then east on Orcutt Rd to intersection with Johnson Ave.
ENE, 21	SLO	Cuesta County Park. 101 N, left on Grand, right on Loomis to Park. Phone in parking lot.
NE, 11	SLO	Intersection of Los Osos Valley Road and Turri Road.
NE, 17	SLO	EOF. Turn south off Highway 1 just north of SLO at sign indicating Sheriff's Operational Center. Phone available.

DIABLO CANYON POWER PLANT
EP RB-8
ATTACHMENT 7.3

1 AND 2

TITLE: Onsite Field Monitoring Locations Map



DIABLO CANYON POWER PLANT
EP RB-8
ATTACHMENT 7.4

1 AND 2

TITLE: Onsite Field Monitoring Locations Descriptions

COORDINATE	LOCATION DESCRIPTION
E, A	End of Skyline Drive at the top of the hill
ENE, A	South of switchyard fence next to Reservoir Road
ESE, A	On Hillside Drive road near ditch
N, A	South side of Water Tank road
NE, A	Junction of Tribar Road and Reservoir Road
NE, B	In front of water tank
NNW, A	Shore Cliff Road, SW of pond near intersection
NW, A	Top of hill on side road west of Shore Cliff Road
S, A	On Marina Road near breakwater gate
SE, A	On Reservoir Road by ditch, east end of parking lot #8
SE, B	North end of Warehouse B, near pressurized ion chamber
SE, C	North-East corner of parking lot #1
SSE, A	Helicopter pad
SSE, B	South end of parking lot #2
SSW, A	On Breakwater Road outside intake area
SW, A	Near gate to breakwater
WNW, A	Near gate at end of side road west of Shore Cliff Road
NW, B	1.1 miles North of North gate. West side of road on power pole, near farm buildings
NW, C	2.1 miles North of North gate. West side of road on power pole, after pond
NW, D	3.5 miles North of North gate. Near farm house on power pole, south of Montana de Oro.

DIABLO CANYON POWER PLANT
EP RB-8
ATTACHMENT 7.5

1 AND 2

TITLE: Pressurized ION Chamber Location Descriptions

PIC #	DESCRIPTION
1.	DCPP North Gate Guard Post.
2.	SSW Corner of Target Range (near onsite field monitoring location, SE,B).
3.	Morro Bay Power Plant, near front gate.
4.	Montana de Oro State Park. At the Park Ranger's residence, adjacent to the siren.
5.	South Bay Fire Department.
6.	Outside rear entrance to EOF east side of building (NE, 17 next to generator.
7.	SLO Police Department. Intersection of Santa Rosa Street and Walnut Street. Behind fence SW of Walnut Street driveway.
8.	SLO Service Center, 4325 So. Higuera St., SLO (OEL Garage).
9.	PG&E Community Center (E,15).
10.	DCPP Front Gate.
11.	Pismo Beach at the PG&E Pismo Warehouse on Price Canyon Road, about 0.5 miles NE of the Price Street intersection. PIC is located in the upper parking lot.
12.	SLO County Building, Grover Beach. Exit Hwy. 101 at 4th street. Take 4th to Longbranch and proceed NE on Longbranch. County Social Services Building is on corner of 16th and Longbranch

**DIABLO CANYON POWER PLANT
EP RB-8
ATTACHMENT 7.6**

1 AND 2

TITLE: Communication Guidelines

1. Hand held radios are the primary mode of communication between FMTs and the controlling facility. If radios are not available, FMTs should use telephones.
2. Onsite FMTs will be assigned the team names FMT 1 or FMT 2. Offsite FMTs will be assigned one of the following team names: FMT Alpha, FMT Bravo, or FMT Charlie.
3. Radio Techniques
 - a) Hold the radio upright, directly in front of the mouth.
 - b) Before transmitting, verify no one else is transmitting on the selected frequency.
 - c) After pushing transmit button, wait 1 to 2 seconds to allow for automatic radio encoding.
4. Backup communications is by telephone. The following table provides the controlling facility phone numbers.

CONTROLLING FACILITY	PHONE #
Control Room	545-1234 545-2324 545-3377
TSC Radio Operator	545-3252
EOF RMD	545-3181 549-8070
OEL	546-3833

5. Each monitoring team should contact their controlling facility for the following:
 - a) Radio checks and initial team briefings.
 - b) Upon arriving at a monitoring location, to report initial radiological conditions.
 - c) After sampling at a monitoring location, to report results and to obtain additional instructions.
 - d) Reporting significant change in radiological conditions.
 - e) Hourly (about once an hour) to maintain communications.
6. Avoid use of acronyms that may be misunderstood, e.g., cpm v. dpm, PIC v. dosimeter. Use the complete words or phrases instead of an abbreviations.
7. Don't "walk over" other teams' transmissions.

DIABLO CANYON POWER PLANT
EP RB-8
ATTACHMENT 7.7

1 AND 2

TITLE: Exposure Tracking Guidance

The tables below provides multipliers for estimating TEDE and Thyroid CDE from external self reading dosimeter readings. The multipliers tables are based on assumptions using FSAR isotopic mixes, thus are conservative values and should be only used when better information is not available.

FMTs SHOULD NOT REPORT CONVERTED PIC READINGS. The controlling facility is responsible for estimating internal exposures and tracking FMT doses.

PLANT VENT RELEASE			
Source Term	TEDE	THYROID CDE (WITH KI)	THYROID CDE (WITHOUT KI)
Coolant	3	4	43
Gap	25	53	530
Core	22	16	160

ASSUMPTIONS:

Decay time = 1 hour since time of trip.

Release duration = 1 hour.

Plant vent release is unfiltered.

Plant vent flow rate = 300,000 ft³.

X/Q = 5.0 E-05 sec/m³.

SGTR WITH ATMOSPHERIC STEAM RELEASE			
SG Level	TEDE	THYROID CDE (with KI)	THYROID CDE (without KI)
Empty	60	140	1,400
Normal	12	26	260
Flooded	110	250	2,500

ASSUMPTIONS:

Source term = FSAR Gap dispersed in RCS Volume (12,560 ft³) with secondary coolant in equilibrium.

Decay time = 10 hours since time of trip.

Release duration = 1 hour.

Steam flow rate = 4 E+05 lbm/hr (10% Steam Dump).

X/Q = 5 E-05 sec/m³.

DIABLO CANYON POWER PLANT
EP RB-8
ATTACHMENT 7.8

1 AND 2

TITLE: Field Monitoring Data Sheet

Instruction: Complete the following general information.

*** TURNBACK DOSE RATE = _____ mR/hr (default = 500 mR/hr) ***

Date: _____ FMT Leader: _____

[] FMT Alpha [] FMT Bravo [] FMT Charlie [] FMT 1 [] FMT 2

E-140N RP # _____ ASP-1 RP # _____ H809C RP # _____

Monitoring Location (circle below, or describe): _____

- NW,A NNW,A N,A NE,A NE,B ENE,A E,A SSW,A WNW,A
- ESE,A SE,A SE,B SE,C SSE,A SSE,B S,A SW,A
- NNW,6 N,18 NE,17 ENE,20 E,22 ESE,4 ESE,13 ESE,29
- NNW,27 NNE,13 ENE,8 ENE,21 E,23 ESE,7 ESE,18 ESE,34
- N,11 NNE,18 ENE,9 E,11 E,24 ESE,10 ESE,24 SE,1
- N,12 NE,11 ENE,15 E,15 ESE,3 ESE,11 ESE,28 SE,30

GROUND COUNT RATE (E-140N)

Instruction: While in vehicle, lean out and survey ground using an E-140N with a shielded HP-210 probe. Report to controlling facility if ground contamination is greater than 100 net cpm.

SURVEY TIME	GROSS CPM	-	BKG CPM	=	NET CPM
_____	_____	60	_____		_____

SKYSHINE (E-140N)

Instruction: Survey skyshine using an using an E-140N with a shielded HP-210 probe.

SURVEY TIME	WINDOW UP (CPM)	WINDOW DOWN (CPM)	NET CPM
_____	_____	_____	_____

GENERAL AREA DOSE RATE (ASP-1)

Instruction: Survey the general area dose rates at waist level using an ASP-1 with a HP-270 probe. Take window open and window closed reading. Report dose rate results to the to controlling facility as soon as possible.

SURVEY TIME	WINDOW OPEN (mR/hr)	WINDOW CLOSED (mR/hr)
initial _____	_____	_____
follow-up _____	_____	_____

EP RB-8 (UNITS 1 AND 2)
ATTACHMENT 7.8

TITLE: Field Monitoring Data Sheet

Instruction: Collect two smears and calculate surface dpm/100 cm².

SMEARABLE CONTAMINATION (E-140)

	SURVEY TIME	GROSS CPM	BKG CPM	NET CPM	CONV. FACTOR	dpm / 100 cm ²
initial	_____	_____	- _____	= _____	× 10	_____
follow-up	_____	_____	- _____	= _____	× 10	_____

AIR SAMPLE VOLUME (H809)

Instruction: Calculate the average air volume collected.

	STOP TIME	START TIME	RUN TIME (MIN)	AVG. FLOW (FT ³ /MIN)	VOLUME (FT ³)
initial	_____	- _____	_____	× _____	_____
follow-up	_____	- _____	_____	× _____	_____

PARTICULATE AIR CONCENTRATION (E-140)

Instruction: Calculate the particulate air concentration from the filter paper air sample.

	SURVEY TIME	GROSS CPM	BKG CPM	NET CPM	CONV. FACTOR	VOLUME FT ³	PARTIC μCi/cc
initial	_____	_____	- _____	_____	× 1.6E-10	÷ _____	_____
follow-up	_____	_____	- _____	_____	× 1.6E-10	÷ _____	_____

IODINE AIR CONCENTRATION (E-140)

Instruction: Calculate the iodine air concentration from the TEDA impregnated cartridge air sample.

	SURVEY TIME	GROSS CPM	BKG CPM	NET CPM	CONV. FACTOR	VOLUME FT ³	IODINE μCi/cc
initial	_____	_____	- _____	= _____	× 5.6E-09	÷ _____	= _____
follow-up	_____	_____	- _____	= _____	× 5.6E-09	÷ _____	= _____

PRESSURIZED ION CHAMBER

Instruction: If requested by the controlling facility, locally read the PIC. . Circle the correct units of measurement (μR/hr or mR/hr)

SURVEY TIME	PIC ID #	μR/hr or mR/hr
_____	_____	_____

Instruction: Return completed form to controlling facility.

FORM COMPLETED BY: _____

*** ISSUED FOR USE BY: _____ DATE: _____ EXPIRES: _____ ***
PACIFIC GAS AND ELECTRIC COMPANY NUMBER EP RB-12
NUCLEAR POWER GENERATION REVISION 6
DIABLO CANYON POWER PLANT PAGE 1 OF 34
EMERGENCY PLAN IMPLEMENTING PROCEDURE UNITS

**TITLE: Plant Vent Iodine and Particulate Sampling During
 Accident Conditions**

1 AND 2

9.5.00

EFFECTIVE DATE

PROCEDURE CLASSIFICATION: QUALITY RELATED

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TITLE: Plant Vent Iodine and Particulate Sampling During
Accident Conditions

1. SCOPE

This procedure provides the Plant Vent Iodine and Particulate Sampling (and/or monitoring) Instructions for assessing radioactive iodine and particulate effluents in the event of a severe plant emergency.

2. DISCUSSION

- 2.1 Instructional steps are provided for intermediate range monitoring using RE-24R and high range sampling utilizing RF-87A and RF-87B or RF-24R.
- 2.2 When the Plant Vent Extended Range (PVER) skid's RE-87 "switchover" point occurs on the plant vent's RE-14, both the Plant Vent Normal Range (NR) and Plant Vent Redundant Normal Range (RNR) skids' sampling lines are isolated and their skid pumps shut down. This action also starts the PVER skid sampling pump directing the plant vent air sample through either the RF-87A or RF-87B filter then into the RE-87 noble gas detection chamber. Button switches for either of these filters will light up on the Remote Display Unit (RDU) in the Control Room and on the Local Radiation Processor (LRP) at the NR skid. At that time high range iodine and particulate sampling starts with either RF-87A or RF-87B. The sample pump light also switches from NR/RC-14 to ER/RC-87 on the NR's RDU and LRP.
- 2.3 Prior to severe accident conditions, the low (normal operations) to mid range radiation detectors RE-14, RE-24, and RE-28 on the NR skid and RE-14R, RE-24R, and RE-28R on the RNR skid monitor respectively noble gases, iodines, and particulates continuously. Their ranges are seen in Figure 6 (Attachment 11.6). RE-14/14R are 2" beta scintillators each viewing a pressurized chamber of continually flowing noble gases. RE-24/24R are 2" sodium iodide (AM-241 seeded for gain stabilization) gamma scintillators each viewing a fixed Ag Zeolite cartridge and "windowed" to see I-131's photo peak. RE-28/28R are 2" beta scintillators each viewing a fixed filter paper. All of these detectors have their analog signals amplified, converted to digital pulses, mathematically smoothed and analyzed as well as archived at the nearby LRP.
- 2.4 In order to use RE-24R (and optionally RE-28R) for intermediate to high range monitoring, the shutdown of the RNR skid by RE-14 (during the switchover to the PVER skid) must be overridden, the RNR skid's sample line un-isolated, and the RNR skid's sample pump re-started.
- 2.5 Reactivating RE-24R (and optionally RE-28R) or RF-24R (with RF-28R) and the RNR skid pump after the high range "switchover" requires at least one visit to the plant vent skid room to perform this manual "switchback" operation.

TITLE: Plant Vent Iodine and Particulate Sampling During
Accident Conditions

- 2.6 The "switchover" by RE-14 to the PVER skid is triggered by high noble gas activities. The "switchover" protects RE-14 (and normally RE-14R). Activities of the iodines and particulates will probably not have reached similar high levels. So, RE-24R and RE-28R could probably still read on scale. RE-24 and RE-28 are isolated along with RE-14, but RE-24R and RE-28R can be brought back into service with disregard to RE-14R. When RE-24R (and optionally RE-28R) is used in this manner there are two possible paths of operation described in that which follows.
- 2.7 Using the 'RE-24R' method requires someone in attendance at the RDU in the Control Room after the RNR skid has been reactivated in order to relay readings and to turn the skid pump on and off. There are two advantages to this method. Obtaining iodine and, optionally, particulate release information via the Control Room is not only less manpower intensive, but also keeps personnel exposures to a minimum. Also recycling the skid pump on and off gets more use out of the cartridges and filters.
- 2.8 In the 'μCi/cc' readout (see EP RB-9) portion of the 'RE-24R' method there's the extra advantage of having the microprocessor automatically perform the calculation (i.e., integrations) of a release concentration directly in μCi/cc. This makes the measurements the least labor intensive and the least error prone. However, it takes 20 minutes or more for the LRP's microprocessor to reach an integrated reading of RE-24R (and RE-28R) in μCi/cc. If the activity concentrations are high, a 20 minute collection interval (between turning on and off the skid pump) may not accommodate a detector reading 'on-scale' (i.e., < 1E7 cpm). Also, whenever RE-24R reads near 2 E-4 μCi/cc or the raw countrate on RE-24R or RE-28R reads 1E7 cpm it's time to change out the iodine cartridge and/or the particulate filter (RF-24R and/or RF-28R).
- 2.9 When the intervals between cycling the RNR skid pump (off-on-off) have to be less than 20 minutes then the 'RE-24R' method must shift to the 'cpm' readout (see EP RB-9) operation. This requires a precise Control Room readout of not only the time but beginning cpm when the RNR skid pump is turned on then the time and ending cpm when the pump is turned off for each cycling of the pump. Also RE-24R must be in the "DISP OP", "3", "DISP" keypad readout option. Since releases of iodines are of a higher priority, a reading of the particulate channel RE-28R will not be pursued in the 'cpm' readout operation. This is because the left-most or 'particulate' channel display accommodates only one reading at a time for a "DISP OP" reading. Either iodine or particulate, but not both.
- 2.10 When the pump cycling intervals and cartridge changeout times become too short to keep ahead of detector countrate saturation then this method must shift away from Control Room operation and resort to sample collection and TSC counting with RF-87A&B or RF-24R (below).

**TITLE: Plant Vent Iodine and Particulate Sampling During
Accident Conditions**

-
- 2.11 The High Range Plant Vent Sampling System using RF-87A&B or RF-24R is designed to reliably collect samples of plant vent iodine and particulate effluents. For RF-87A&B, a 1-inch diameter particulate filter pasted onto a 1-inch diameter Ag Zeolite cartridge is used to collect the samples. For RF-24R, the standard 2-inch filter/cartridge is used. These samples are then analyzed using the Gamma Spectroscopy System in the Technical Support Center (TSC) Laboratory.
- 2.12 High Range sampling with RF-87A/B is set up to give both iodines and particulate release assessments. If however, RE-87's sample pump is down, or RF-87A and RF-87B filters are unobtainable, or electrical Bus "G" is out, then RF-24R cartridge is available for high range iodine sampling only (see instructional Step 6.3.1).
- 2.13 High range sampling and analysis is to be performed within the General Design Criteria (GDC) 19 dose limits for Reg Guide 1.4 source terms referenced in Reg. Guide 1.97 and NUREG 0737 for PWRs. GDC 19 imposes a 5 rem whole body dose limit and a 75 rem extremity dose limit on any one individual. When these limits are approached, the procedure allows for more than one individual to perform the steps collectively. The dose limits are also met for DCCP's most severe Design Base Accident (D.B.A.) case as described in the FSAR. This case is the major LOCA with Reg. Guide 1.4 releases.
- 2.14 During a severe accident condition two high range radiation detectors also monitor the plant vent. These are RE-29, an 8 decade (0.1 to 1E7 mR/hr) ion chamber viewing directly the plant vent and RE-87, a cadmium sulfide scintillator viewing a sampled stream of noble gases from the plant vent. Their ranges are also seen in Figure 6 (Attachment 11.6) with an overlap shown to the low-(mid) range monitors. Their response curves are shown, respectively in Figures 4 and 5 (Appendix 10.2) and in Figure 3 (Appendix 10.1) as reproduced from EP RB-9. RE-29's readings are dominated by noble gases but could have small contributions due to the accompanying iodines and particulates, whereas RE-87's readings are confined strictly to the noble gases. However, both monitors are intended to accompany this sampling procedure for indications on the conditions. Their readings are formally utilized for quantitative analysis in EP RB-9 for release rate determinations.

**TITLE: Plant Vent Iodine and Particulate Sampling During
Accident Conditions**

3. RESPONSIBILITIES

- 3.1 The Radiological Advisor (RA) has the ultimate responsibility for invoking this procedure.
- 3.2 The Site Chemistry Coordinator is responsible for coordinating and interfacing with the ERA or an appointed assistant to the ERA in invoking this procedure.
- 3.3 The Site Chemistry Coordinator (SCC) and the Site Radiation Protection Coordinator are responsible for interfacing with each other to ensure this procedure is properly performed.
- 3.4 The Site Radiation Protection Coordinator is responsible for accessing radiological conditions of the various plant locations used for the particular sampling method being executed by this procedure. Upon assessment the Site Radiation Protection Coordinator is responsible for providing radiological protection controls and ensuring a radiological briefing tailboard is conducted.
- 3.5 The Site Chemistry Coordinator (SCC) is responsible for the selection of qualified individuals to perform the tasks described in this procedure and that a technical briefing tailboard is conducted.
- 3.6 The Site Chemistry Coordinator (SCC) is responsible for reviewing the sampling and analysis data for verification and validation purposes.
- 3.7 Upon review of the sampling data and analysis results, the Site Chemistry Coordinator (SCC) is responsible for communicating this information to the ERA or an appointed assistant to the ERA.
- 3.8 Personnel assigned to collect samples and radiation monitor data or perform handling and analysis on the samples in the TSC lab are responsible for adhering to the procedural requirements described herein.

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4. PREREQUISITES

- 4.1 The personnel responsible for performing this procedure must have had prior training in its implementation.
- 4.2 The following tools and associated equipment must be available:
- 4.2.1 Equipment and tools kept in the TSC Laboratory
- a. Modified carrier cask with large and small shield plugs
 - b. Transfer cage
 - c. Extractor bar
 - d. Push stick
 - e. Extra filter/cartridge ingot
 - f. Extra 1-inch (RF-87) and 2-inch Ag Zeolite cartridges, 1-inch particulate filter (RF-87), and 47mm particulate filters
 - g. Spare O-rings for the ingot
 - h. Pair of pliers
 - i. Wipe rags
 - j. Small sample bags
 - k. Sample labels
 - l. Tape
 - m. Medium size screwdriver
 - n. RF-24R cartridge holder cap grip/removal tool
- NOTE:** The next item may be kept in P.V. Skid Room.
- o. Carrier cask for RF-24R

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- 4.2.2 Equipment and tools kept near the Chemistry Foreman's Office
 - a. Pair of pliers
 - b. Tongs
 - c. Keys to unlock transport dolly in the Plant Vent Skid Room (Key Id. XAA)
 - d. Local Radiation Processor (LRP) keys
 - e. Wipe rags
 - f. Small sample bags
 - g. Sample labels
 - h. Tape
 - i. Medium size screwdriver
- 4.2.3 Equipment from Radiation Protection
 - a. One contamination survey meter (TSC Lab Use)
 - b. Two Dose Rate Meters (one for sample collection, one for TSC lab use)
- 4.2.4 Equipment and tools kept in the Plant Vent Skid Room
 - a. Carrier casks for RF-87A and RF-87B
 - b. An extractor bar
 - c. Push stick
 - d. Transport dolly
 - e. 2 inch Ag zeolite cartridges
 - f. 47mm filters

NOTE: The next item may be kept in the TSC.

 - g. Carrier cask for RF-24R

NOTE: The next item may be kept in the I&C Training Lab.

 - h. Spare RF-24R cartridge 'holder/plug' assembly

5. PRECAUTIONS

- 5.1 The RF-87A/B Carrier Cask, Modified Carrier Cask, and RF-24R carrier cask are heavy, 96 lbs and 55 lbs and 47 lbs respectively. When lifting or moving these items be especially careful to know the proper lifting techniques to avoid back strain.
- 5.2 The exposure levels on the route map, Figure 1 (Attachment 11.4) are from the Design Shielding Review with Reg. Guide 1.97 limits as inputs. When collecting samples using the transport dolly move as expeditiously as possible and assume these exposure rates do exist.

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6. INSTRUCTIONS

6.1 Method For Plant Vent Mid-to-High Range Iodine (I-131) Monitoring Using RE-24R

NOTE 1: This part of the procedure requires a Chemistry Supervisor to be in the Control Room at the PV's RNR's RDU. It also requires Chemistry personnel to make at least one trip to the Plant Vent Skid Room in order to reactivate the RNR skid.

NOTE 2: All key pad entries involving "DISP OP," "?," "DISP" must include the program mode key switch going from "ENTER DATA" position to the "RUN" position after the entry, then back to "ENTER DATA."

6.1.1 Plant Vent Redundant Normal Range (RNR) Skid - Reactivation

- a. Chemistry person in Control Room obtains keys from Shift Foreman to operate PV's RNR's RDU.
- b. Insert keys into the RDU, ensuring the Local Power keylock switch is in the "ON" position and turn the program mode keylock switch to the "ENTER DATA" position.
- c. Key in on the keypad:
 1. "DISP OP"
 2. "3"
 3. "DISP"

and read the raw countrate on RE-24R's cartridge, (RF-24R). (The analog output to an EARS reading may be sufficient.)

- d. Read RE-34's recorder, (RR-34), on the PAM panel and report this reading along with RE-24R's raw countrate to the Site Chemistry Coordinator (SCC).

NOTE 1: RE-34 indicates the dose rate in the area of the PV skid room.

NOTE 2: The highest reading from RE-24R occurs at 1E7 cpm. If the raw countrate on RE-24R is greater than 5E6 the SCC may also want to request a cartridge change out.

NOTE 3: The following balance of steps apply to personnel going to the plant vent skid room.

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- e. Obtain a dose rate meter to check radiation levels enroute to and at the PV skid room.
- f. Obtain a set of keys from the Chemistry Foreman's office to operate the RNR skid's LRP panel in the event local operation of the skid pump is necessary.
- g. Proceed expeditiously to the PV skid room (85' level - "L" area) upon receiving instructions from the SCC.
- h. Check RE-34's remote readout (just outside the door) prior to entering the PV skid room.
- i. Approach the termination enclosure (Panel BTR-P14) at the end of the LRP on the NR skid in the PV skid room.
- j. Turn the switch labeled "RE-87/SS" from the "RE87 Norm-OFF" position to the "ER Calib'n-ON" position. This overrides the PVER switchover and removes isolation of the RNR skid.
- k. Ensure the Control Mode keylock switch is in the "CR PNL" position.
- l. Call Chemistry personnel at the Control Room PV RNR RDU to report the RNR skid is back in service but with the sample pump still turned off. Inquire as to whether the iodine cartridge or particulate filter need to be changed out at this time.
- m. Go to Section 6.1.4, if the cartridge and or filter need to be changed out, OTHERWISE Continue.
- n. Report to the SCC and leave the PV skid room.

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6.1.2 Mid Level Iodine "μCi/cc" Monitoring From the Control Room

NOTE: The information determined here supports Section 5 of EP RB-9.

- a. Inform the SCC when the PV RNR skid has been reactivated.
- b. Go to Section 6.1.3 for "CPM" monitoring if the last "μCi/cc" RE-24R reading is greater than 2.0E-4 μCi/cc, OTHERWISE Continue.
- c. Key in on the RDU keypad:
 1. "CH"
 2. "2"
 3. "FUNC"
 4. "13"
 5. "DISP"and record from the left most LED (RE-28R's) the time in minutes the RE-24R existing cartridge sampled. Assume this is the same for particulates.
- d. Start the RNR skid pump by depressing the "Skid Pump" button (after OK from PV skid room if cartridge and/or filter had to be changed out).
- e. Key in on the keypad: (Only if the cartridge RE-24R was changed out.)
 1. "CH"
 2. "2"
 3. "FUNC"
 4. "13"
 5. "DATA"
 6. "0"
 7. "0"
 8. "0"
 9. "EXP"
 10. "0"
 11. "0"
 12. "ENTR"

This restarts the iodine timer.

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f. Key in on the keypad: (Only if the filter RF-28R is changed out.)

1. "CH"
2. "0"
3. "FUNC"
4. "13"
5. "DATA"
6. "0"
7. "0"
8. "0"
9. "EXP"
10. "0"
11. "0"
12. "ENTR"

This restarts the particulate timer.

- g. Return the keylock switch for program mode back to "RUN".
- h. Wait at least 20 minutes, then record RE-24R's and RE-28R's $\mu\text{Ci/cc}$ reading.
- i. Key in on the keypad:

1. "DISP OP"
2. "3"
3. "DISP"

and record the raw counts per minute reading RE-24R from the left most LED (RE-28R's).

j. Key in on the keypad:

1. "DISP OP"
2. "3"
3. "DISP"

and record the sample flowrate reading from the left most particulate LED (RE-28's).

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k. Depress the "skid pump" button to stop the sample flow through the cartridge and filter then wait until the SCC clears for another cycling of the sample flow pump.

l. Inform the SCC of the time sampled by RF-24R/28R and the $\mu\text{Ci/cc}$ and raw countrate readings on RE-24R and $\mu\text{Ci/cc}$ reading on RE-28R.

NOTE 1: This information coupled with that from the TSC enables the SCC to decide whether this method can be utilized and/or whether the existing cartridge can still be used.

NOTE 2: Again, if the raw countrate on RE-24R is approaching (or exceeds) $1\text{E}7$ cpm or the last ' $\mu\text{Ci/cc}$ ' readout on RE-24R is near $2\text{E-}4$ $\mu\text{Ci/cc}$, then the cartridge needs to be changed out.

m. Go to Section 6.1.3 for "CPM" readings if the SCC decides or RE-24R indicates that the sample pump cycling time needs to be shorter than 20 minutes. OTHERWISE Continue.

n. Go to Section 6.1.4 if the SCC decides or RE-24R indicates the cartridge needs to be changed out. OTHERWISE Continue.

o. Return to Step c. if the SCC gives the clearance for another cycling of the sample pump.

6.1.3 High Level Iodine "CPM" Monitoring From the Control Room (RE-24R Only)

NOTE 1: The information determined here supports Section 6.0 of EP RB-9.

NOTE 2: Arriving at this point from 6.1.2 or 6.1.4 finds:

- i.) the sample pump is already off.
- ii.) interest is only on iodines (RE-24R)
- iii.) microprocessor derived " $\mu\text{Ci/cc}$ " values are no longer relevant.

a. Key in on the keypad:

1. "DISP OP"
2. "3"
3. "DISP"

and record a raw countrate in "cpm" on RE-24R from the left most LED (particulate) for an incremental countrate determination.

b. Immediately depress "Skid Pump" button to start the sample flow and record a beginning time toward an incremental time determination (after OK from PV skid room if the RF-24R cartridge was changed out).

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- c. Key in on the keypad:
 1. "DISP OP"
 2. "12"
 3. "DISP"and record the sample flowrate (cfm) reading of RE-24R from the left most LED (RE-28R's).
- d. Allow to run for a time recommended by the TSC, anywhere between 1 and 20 minutes while continually observing the flowrate at LED.
- e. Depress the "Skid Pump" button switch to stop the sample pump and record the increment ending time after running for an arbitrary length of time around the value recommended by the TSC's Rad. Data Processor.
- f. Key in on the keypad:
 1. "DISP OP"
 2. "3"
 3. "DISP"and record this increment's ending raw countrate in "cpm" on RE-24R from the left most LED (particulate channel).
- g. Divide the difference in raw countrate readings between a. and f. by the difference in incremental time readings between b. and e. This gives the "cpm/min" value, CR (see Form 69-13226).
- h. Call the Rad. Data Processor in the TSC and report the result of g. in "cpm/min" for a "1 min" time interval on the EP RB-9 Section 6.0 Data Sheet.
- i. Repeat Steps a. through h. until:
 1. the "DISP OP", "3", "DISP" reading indicates 1E7 cpm, or
 2. the time intervals between the increments become too short to manage, or
 3. the SCC instructs the changeout of the cartridge.
- j. Go to Section 6.1.4 if the SCC decides or RE-24R indicates the cartridge needs to be changed out.
- k. Terminate the "RE-24R" Method portion of this procedure and go to the instructional steps under 6.2 or 6.3 if the incremental time intervals are too short to manage, or if directed by the SCC.
- l. Ensure the "Skid Pump" button switch was last depressed to stop by checking the skid pump light being off.

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6.1.4 Plant Vent Redundant Normal Range (RNR) Skid RE-24R's Cartridge
(RF-24R) Changeout

NOTE 1: Arriving here from 6.1.1 skip over to Step d.

NOTE 2: Arriving here from 6.1.3 skip Step e.

- a. Obtain a hand-held dose rate meter to check radiation levels enroute to the PV skid room. (Applies only to RP escort for Chemistry personnel changing out RF-24R cartridge and/or RF-28R filter).
- b. Obtain from the Control Room an advance reading of RE-34.
- c. Proceed to PV skid room.
- d. Changeout existing RE-24R's cartridge (i.e., RF-24R):
 1. Loosen the wing-bolts which secure the cartridge 'holder/lead plug' combination down at RE-24(R)s shielded "pig."
 2. Rotate the 'holder/plug' until the four slotted retaining ears clear the studs with the wing-bolts.

NOTE: The 'holder/plug' is heavy and its O-ring makes a tight seal. It is difficult to pull out. Also loosened wing-bolts should be aligned parallel to the plug's edge so they won't snag on the 'holder/plug' and break off. If any wing-bolts are broken, replace with spares kept in Chemistry P.V. locker.

3. Firmly pull and support the 'holder/plug' out of the "pig."
4. Place the entire 'holder/plug' assembly on the slotted support platform.
5. Unscrew the cartridge holder end cap.
6. Dispose of the cartridge as directed by supervision.
7. Install cartridge into the holder end cap taking particular care to ensure that the airflow 'arrow' is lined up in the direction of flow (same direction as the cartridge that was just removed). The arrow should be pointed toward the handle of the holder.
8. Screw the holder end cap back onto the threaded 'plug' until just snug. The Molykote 55 lubricant may be needed for coating the O-rings.

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9. Slide the entire iodine 'holder/plug' back into RE-24(R)'s "pig" taking care that the O-ring seal is not damaged.
 10. Rotate the 'holder/plug' until the slots in the four retaining ears engage the studs.
 11. Tighten the wing-bolts finger tight.
 12. Inform Control Room of cartridge changeout and return to the procedure step that initiated this changeout.
- e. Changeout existing RE-28R's filter (i.e., RF-28R) - (OPTIONAL):
1. Loosen the wing-bolts which secure the cartridge 'holder/lead plug' combination down at RE-28(R)s shield pig.
 2. Rotate the 'holder/plug' until the four slotted retaining ears clear the studs with the wing-bolts.
- NOTE:** The 'holder/plug' is heavy and its O-ring makes a tight seal. It is difficult to pull out.
3. Firmly pull and support the entire particulate 'holder/plug' out of the "pig."
 4. Place the entire 'holder/plug' assembly on the support slotted platform.
 5. Unscrew the holder end cap taking care that the two concentric spacer rings holding the filter do not drop.
 6. Dispose of the filter as directed by supervision.
 7. Place a new filter paper on top of the grid face of the smaller spacer ring.
 8. Slide outer (or larger) spacer ring over the smaller ring.
 9. Screw the end cap back onto the threaded 'plug' until snug, taking care not to bump the two spacer rings or filter paper off-center. The Molykote 55 lubricant may be needed for coating the O-rings.
 10. Slide the entire 'holder/plug' back into RE-28(R)'s "pig." Take care that the O-ring seal is not damaged.
 11. Rotate the 'holder/plug' until the slots of the four retaining ears engage the studs.
 12. Tighten the wing-bolts finger tight.
 13. Inform Control Room of filter changeout.
- f. Leave PV skid room and report to the SCC.

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6.2 Method For Plant Vent High Range Iodine and Particulate Sampling Using RF-87A and RF-87B Filters

6.2.1 Plant Vent Extended Range (PVER) Skid Sampling - Initial Collection

NOTE: All actions described in this section are performed manually. This includes the switching to the redundant RF-87B filter (or RF-87A filter) and vice-versa.

- a. Obtain from the Control Room and record the time of the NR to ER switchover (i.e., activation of RE-87's sample pump).
- b. Obtain from the Control Room and record the reading of RE-34 (ALARA area monitor of the plant vent skid room). Communicates this to the Site Radiation Protection Coordinator.
- c. Obtain a dose rate survey meter to keep track of dose rates.
- d. Obtain a set of keys from Chemistry Foreman's office to operate the NR (and RNR) skid's LRP panel.
- e. Obtain any special instructions and controls from the Site Chemistry Coordinator and the Site Radiation Protection Coordinator.
- f. Proceed expeditiously to the plant vent skid room (85' level - "L" area) upon receiving instructions from the Site Chemistry Coordinator and the Site Radiation Protection Coordinator.

NOTE 1: Check RE-34's remote readout just outside PV skid room.

NOTE 2: If the PVER skid is unavailable then proceed to subsection 6.3 of the Instructions to use RF-24R.

- g. Insert a key in the NR skid's LRP panel Control Mode switch and turn to Local in order to operate the pump and filter switches locally. (Refer to Figure 2 of Attachment 11.5)

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h. Record:

1. the time
2. RE-87 reading
3. sample flowrate

The latter can be obtained from either the Hastings flow meter LCD inside the Hoffman termination enclosure on the PVER skid or by:

1. Inserting other key in program mode switch and turning to ENTER DATA
2. Key in "DISP OP" on keypad
3. Key in "11" on keypad
4. Key in "DISP" on keypad
5. View from RE-28's LED (left most, data is in < units of liters/min).

i. At the NR skid's LRP panel push the RF-87B filter button switch if the sample is being collected via RF-87A or push the RF-87A filter button switch if the sample is being collected via RF-87B. This transfers the RE-87 pump on the PVER skid to stop collection on one filter cartridge and to start collection on the other filter cartridge (i.e., RF-87A vs. RF-87B).

j. Check that:

1. The ER/RC-87 pump light is on,
2. The previous Filter used (A or B) light goes off,
3. The selected Filter (A or B) light comes on.

k. Mate the desired RF-87A (or B) filter carrier cask up to its respective filter holder on the PVER skid.

l. Lift the pin on the rear of the filter holder.

m. Screw in the extractor bar through the carrier cask and into the threads of the filter ingot of the desired RF-87A (or B) filter holder.

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- n. Push down on the filter holder's orange handle located on the top rear of the filter holder. The top of the filter holder will pop up and release the filter ingot.
 - o. Using the extractor bar, transfer the filter ingot from the filter holder into the carrier cask.
 - p. Push the retaining pin (on front of carrier cask) into the slot of the ingot to hold the ingot in place while transporting.
 - q. Unscrew the extractor bar and place beside RF-87B's (or A's) filter holder.
 - r. Survey the carrier cask with the hand-held meter. The dose rate should be less than 0.4 R/hr at 1 foot from contact. If greater, inform the Site Chemistry Coordinator and obtain further instructions.
 - s. If the dose rate is less than 0.4 R/hr, lift the carrier cask and place in the transport dolly.
 - t. Unlock the dolly (if it is locked).
 - u. Proceed to the TSC with the dolly and cask along the route shown in Figure 1 (Attachment 11.4).
 - v. Unload the cask into the TSC's transfer cage with the restrained end pointing outward.
 - w. Transfer all initial sample collection data onto Form 69-13224.
 - x. For radionuclide analysis instructions proceed to Step 6.2.3 (unless directed otherwise by the Site Chemistry Coordinator).
- 6.2.2 Plant Vent Extended Range (PVER) Skid Sampling - Continued Collection
- a. Obtain, in the TSC, the extra ingot, a fresh 1" silver zeolite cartridge, particulate filter and new O-rings.
 - b. Install the new silver zeolite filter cartridge into the ingot receptacle with the particulate filter on top, taking care that the smaller of the two O-rings is inserted first and that the other larger O-ring is inserted last.
 - c. Slide the fresh ingot assembly into the empty carrier cask and reinsert the retaining pin.
 - d. Proceed back to the plant vent skid room with the carrier cask in the transport dolly.

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- e. Check RE-34's local readout (just outside door) for exposure rate.
- f. Mate the carrier cask up to the desired RF-87A's (or B's) filter holder.
- g. Screw the extractor bar into the ingot of the carrier cask and lift the cask's retainer pin.
- h. Push the ingot back into the desired RF-87A's (or B's) filter holder.
- i. Restore the pin in the rear of the filter holder (may have to jostle the ingot until the pin drops into the ingot).
- j. Pull up on the filter holder's orange handle to seal and secure the ingot into the desired RF-87A's (or B's) flow path.
- k. Unscrew and withdraw the extractor bar.
- l. Record the time and step up to the NR skid's LRP.
- m. Push the RF-87A's (or B's) filter button switch and record the sample flowrate in cc/min. from the Hastings flow meter's LCD inside the Hoffman termination enclosure of the PVER skid, or key in "DISP OP," "11", "DISP" on the NR skid's LRP keypad and read RE-28's (left most) LED display for RE-87's flowrate (in liters/min).
- n. Check that RF-87B's (or A's) filter light goes out and that RF-87A's (or B's) light comes on again.
- o. Mate the RF-87B (or A) filter carrier cask up to its filter holder.
- p. Lift the pin on the top rear of the filter holder.
- q. Screw the extractor bar through the carrier cask and into the threads of the filter ingot of the RF-87B (or A) filter holder.
- r. Push down on the filter holder's orange handle on the top rear of RF-87B's (or A's) filter holder.
- s. Using the extractor bar transfer the filter ingot from the filter holder into the carrier cask.
- t. Push the carrier cask's pin (on front of cask) into the slot of the ingot to hold ingot in place while transporting.
- u. Unscrew the extractor bar and place beside RF-87A's (or B's) filter holder.

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- v. Survey the carrier cask with the hand-held meter. The dose rate should be less than 0.4 R/hr at 1 foot from contact. If greater, inform the Site Chemistry Coordinator and obtain further instructions.
- w. Lift RF-87B's (or A's) carrier cask and place in the transport dolly.
- x. Proceed to the TSC with the dolly and cask along the route shown in Figure 1 (Attachment 11.4).
- y. Unload the cask into the TSC's transfer cage with the restrained end pointing outward.
- z. Transfer any sample collection data onto Form 69-13224.
- aa. For radionuclide analysis instructions proceed to Step 6.2.3 unless directed otherwise by the Site Chemistry Coordinator to repeat the instructions of 6.2.2.

6.2.3 TSC Analysis of the RF-87's Sample Cartridge

- a. Mate the carrier cask up flush against the modified carrier cask which already resides in the transfer cage ensuring that the unrestrained end meets the unrestrained end of the modified carrier cask.
- b. Ensure the small shield plug is in the top of the modified carrier cask.
- c. Lift the carrier cask's retaining pin.
- d. Using the TSC's extractor bar or the push stick, push the ingot into the modified carrier cask.

NOTE: The cask might have to be rotated slightly to facilitate ingot transfer.

- e. Insert the ingot retaining pin into the modified carrier cask.
- f. Lift the carrier cask out of the transfer cage and give it to the personnel retrieving the samples from the PV Skid Room along with the extra ingot, cartridge, filter and O-rings.
- g. Lift the modified carrier cask out of the transfer cage and set it on the floor leaving the large shield plug aside.
- h. Place the TSC's survey meter: first, in contact centered on top of the modified carrier cask; then one foot above it after lifting (temporarily) the small shield plug.
- i. Record the readings and replace the small shield plug.

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- j. Select the best collimating aperture out of the five from the following table based on the contact exposure reading or the 1 foot above (with the small shield plug removed) exposure reading.

<u>Open Cask (small plug removed) 1' above Reading</u>	<u>Closed Cask (small plug in place) Contact Reading</u>	<u>Use Collimating Aperture, "d"</u>
less than 32 mR/hr	less than to 2.0 mR/hr	3/4"
32 mR/hr to 640 mR/hr	2.0 mR/hr to 45 mR/hr	1/4"
640 mR/hr to 8 R/hr	45 mR/hr to 560 mR/hr	1/8"
8 R/hr to 200 R/hr	560 mR/hr to 14 R/hr	1/16"
greater than 200 R/hr	greater than 14 R/hr	1/32"

- k. Remove the lead plug (same size as a collimating aperture but without the hole) from the center of the GE detector's shield doors.
- l. Insert the collimating aperture selected from Step j. into the vacated hole in the GE detector shield doors.

CAUTION: The modified carrier cask weighs approximately 55 lbs and may require 2 TSC personnel to provide the lifting.

- m. Lift the modified carrier cask containing the ingot with the hot cartridge and place on top of the GE detector shield doors.

CAUTION: Steps n through o must be performed quickly and at arms length away from the body and face, since the highly radioactive sample cartridge is momentarily exposed while only partially shielded.

- n. Remove the small shield plug and flip the modified carrier cask upside down and over the collimating aperture.
- o. Place the large shield plug in the bottom cavity of the modified carrier cask.
- p. **If** the collimating aperture is out of range based on the Canberra's count rate meter or dead time meter, then lift the modified carrier cask off of the collimating aperture and place to one side of the GE detector's shield doors. Immediately, reselect the next larger or smaller aperture, replace the modified carrier cask over it and continue.
- q. Commence the radionuclide analysis using the Canberra System as per procedures CAP B-53 and CAP B-53:I.

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- r. For each cartridge sampled, enter the following data as inputs in the Canberra program as extracted from Sample Collection Data:
1. Sample Description (from Form 69-13224)
(i.e., RF-87A or B, Cartridge #, etc.)
 2. Sample start date/time (from Form 69-13224)
 3. Sample stop date/time (from Form 69-13224)
 4. Sample flowrate, F(lpm) (from Form 69-13224)
 5. Collection factor (includes plate-out and cartridge retention combined) CF depending on sample flowrate, from the following table:

<u>Sample Flowrate</u>	<u>Collection Factor, CF</u>
nearest to 1 lpm	0.724
nearest to 0.79 lpm	0.678
nearest to 0.51 lpm	0.568
nearest to 0.41 lpm	0.508

6. Collimating aperture Geometry Code used, (i.e., "d").

CAUTION: High noble gas concentrations trapped in the cartridge may interfere with the resolution of iodine peaks. The cartridge may require a reverse purge using air or nitrogen. A minimum purge volume of 18 liters is needed to reduce the entrained gas concentration.

- s. All results concerning high range iodine and particulate concentrations as determined by this procedure should be reviewed by the Site Chemistry Coordinator and should be communicated as soon as possible to the ERA's staff in the TSC.
- t. At the end of the Canberra analysis remove the large shield plug, flip modified carrier cask over, restore small shield plug, and lift modified carrier cask off and onto the floor near the shielded radioactive sample storage pig at the Northeast entrance area of the TSC lab.
- u. Lift the pin retaining the ingot.

TITLE: Plant Vent Iodine and Particulate Sampling During
Accident Conditions

CAUTION: Steps v through z expose the iodine cartridge momentarily. This may cause a very High Radiation Area. Good ALARA practices are important.

- v. Using the extractor bar or the push stick, push the ingot out of the modified carrier cask.
- w. Lift the ingot to the edge of the shielded sample storage pig.
- x. Using the push stick, push the iodine cartridge and particulate filter out of the ingot (even the O-rings) and into an opened pre-labeled bag that is in the radioactive sample storage pig. Then cover the sample storage pig.
- y. Return the modified carrier cask to the transfer cage with the unrestrained end pointing outward.
- z. Wipe the push stick and ingot clean; check the wipe for contamination, set the ingot (this becomes the extra ingot) aside with new O-rings, cartridge, and filter for use by the personnel collecting the samples.
- aa. Report to the Site Chemistry Coordinator for continued instructions.

6.3 Method For Plant Vent High Range Iodine Sampling Using RF-24R Cartridge

6.3.1 RF-24R - Initial Collection

NOTE: Arrival here is either external because of RF-87A&B being un-available (i.e., RE-87 pump O.O.S., Bus "G" down, SCC preferred selection, etc.) or internal from instructional Step 6.1.3.

- a. Obtain from Control Room or SCC (or TSC Rad. Data Processor) and record on Form 69-13225 the following:
 - 1. Time of NR to ER "switchover" (i.e., isolation of NR and RNR skids) or time RNR skid pump was last shut off (if arriving here from Step 6.1).
 - 2. Last known sample flowrate through RNR skid.
 - 3. Estimate of time RE-24R began viewing this last increased level of iodine or time RNR skid pump was last cycled on (if arriving here from Step 6.1).
 - 4. Cartridge # (if arriving here from Step 6.1) otherwise write cartridge #0.
 - 5. Reading of RE-34 (As read on RR-34 on PAM panel.)

TITLE: Plant Vent Iodine and Particulate Sampling During
Accident Conditions

- b. Obtain dose rate meter to check radiation levels enroute to and at the PV skid room.
- c. Obtain a set of keys from the Chemistry Foreman's office to operate the RNR skid's LRP panel.
- d. Obtain any special instructions, precautions, or controls from the SCC and SRPC.
- e. Proceed expeditiously to the PV skid room (85' level -- "L" area) upon receiving clearance from the SCC.
- f. Check RE-34's remote readout (just outside the door) prior to entering the PV skid room.

NOTE: The next two steps apply to arriving here externally wherein the RNR skid has not yet been un-isolated and the NR to ER "switchover" has not been over-ridden. They do not apply to arriving here from Step 6.1.

- g. Approach the termination enclosure (Panel BTR-P14) at the end of the LRP on the NR skid in the PV skid room. (Applies only if arrival here is not from Step 6.1).
- h. Turn the switch labeled "RE-87/SS" from "RE87 Norm-OFF" position to the "ER Calib'n- ON" position. This overrides the PVER switchover and removes isolation of the RNR skid. (Applies only if arrival here is not from Step 6.1.)
- i. Insert a key in the RNR skid's LRP panel Control Mode keyswitch and turn it to LOCAL in order to operate the skid locally.
- j. Insert the other key in the RNR skid's LRP panel program mode keyswitch and turn it to ENTER DATA in order to key in for sample flowrate readings.

NOTE: The spare RF-24R cartridge "holder/shield plug" assembly may not be available in the PV skid room. In this case, the one kept in the I&C Training Lab must be retrieved before proceeding with the next step.

- k. Fit the spare RF-24R cartridge "holder/plug" assembly with a fresh 2" Ag-Zeolite iodine cartridge and lay beside RE-24R.
- l. Loosen the four wing bolts retaining the existing "holder/plug" assembly in RE-24R's detection chamber on the RNR skid.
- m. Rotate the "holder/plug" assembly counterclockwise in RE-24R's detection chamber until the slotted ears clear the wing bolts.

TITLE: Plant Vent Iodine and Particulate Sampling During
Accident Conditions

NOTE: The RF-24R carrier cask used in the next step may be stored in the TSC lab instead of the PV skid room. In this case, it must be retrieved before proceeding with the next step.

- n. Pull the entire "holder/plug" assembly containing the existing RF-24R iodine cartridge out of RE-24R's detection chamber and place it, very quickly, in the RF-24R carrier cask (which is sitting in the transport dolly).
- o. Slide the spare RF-24R "holder/plug" assembly containing the fresh iodine cartridge into RE-24R's chamber and turn clockwise until the slotted ears engage the wing bolts.
- p. Tighten the wing bolts with fingers only.
- q. Push the "skid pump" button on the RNR LRP panel to start the skid's sample pump.
- r. Record the start/sample time on Form 69-13225 for this, the next sequential cartridge number (which will be cartridge #1 if arrival here is not from Step 6.1).
- s. Key in on the RNR LRP keypad the following:
 1. "DISP OP"
 2. "12"
 3. "DISP"

This gives the RNR skid sample flowrate (cfm) displayed in the left most LED (i.e., the RE-28R - particulate window).
- t. Read and record the beginning sample flowrate on Form 69-13225 for this new sampling cartridge.
- u. Proceed to the TSC Lab with the dolly and cask along the route shown in Figure 1 (Attachment 11.4).
- v. Unload the cask with RF-24R to the TSC counting personnel.
- w. Go to Step 6.3.2 but wait for Continued Collection directions from the SCC.

TITLE: Plant Vent Iodine and Particulate Sampling During
Accident Conditions

6.3.2 RF-24R - Continued Collection

a. Proceed expeditiously to the PV skid room with the spare RF-24R "holder/plug" assembly containing the fresh Ag-Zeolite iodine cartridge furnished by TSC personnel, **if the SCC directs that sample collection be continued.**

b. Check RE-34's remote readout prior to entering the PV skid room.

NOTE: The keys were left in the RNR's LRP panel with LOCAL control and ENTER DATA program mode still selected; the skid's sample pump still running; and the left most LED (RE-28R window) still reading skid sample flowrate.

c. Read and record the ending sample flowrate on the Form 69-13225 (from the previous trip to the PV skid room) relating to the existing RF-24R in RE-24R's chamber.

d. Push the "skid pump" button on the RNR LRP panel to stop the skid's sample pump.

e. Record the stop/sample time on the same Form 69-13225 relating to the cartridge still in RE-24R's chamber.

f. Remove the spare RF-24R "holder/plug" assembly (containing the fresh iodine cartridge) from the RF-24R carrier cask (in the transport dolly) and lay beside RE-24R.

g. Loosen the four wing bolts retaining the existing "holder/plug" assembly in RE-24R's chamber.

h. Rotate the "holder/plug" assembly counterclockwise in RE-24R's chamber so the slotted ears clear the wing bolts.

i. Pull the entire "holder/plug" assembly containing the spent RF-24R iodine cartridge out of RE-24R's chamber and quickly place it in the RF-24R carrier cask.

j. Slide the spare RF-24R "holder/plug" assembly containing the new iodine cartridge into RE-24R's chamber and turn clockwise until the slotted ears engage the wing bolts.

TITLE: Plant Vent Iodine and Particulate Sampling During
Accident Conditions

- k. Tighten the wing bolts with fingers only.
- l. Push the "skid pump" button on the RNR LRP panel to start the skid's sample pump.
- m. Read and record on a new Form 69-13225 the beginning sample flowrate for this new cartridge from the RNR's LRP left most LED (RE-28R - particulate window.)
- n. Record the sample/start time on this new Form 69-13225 for this sequentially next cartridge (now in RE-24R).
- o. Return to the TSC Lab with the dolly, cask containing the spent RF-24R, and data sheets for turnover to TSC personnel and await SCC directions to return to Step a. and continue collection.

6.3.3 TSC Analysis of the RF-24R Sample Cartridge

- a. Obtain from the Site Chemistry Coordinator (or PV sampling personnel) for each cartridge the following RF-24R sample information:
 - 1. Sample collection start date/time.
 - 2. Sample collection stop date/time.
 - 3. Sample collection flowrates (default = 2.0 CFM)
- b. Using the hand-held survey meter, obtain a **contact** dose rate measurement at the bottom of the carrier cask (opposite of the side with the handle) with the small lead shield plug in place.
- c. Transfer this information onto Form 69-13225.
- d. Select the initial collimating aperture based on the reading obtained from Step c. above using the following table:

<u>Contact Reading of the Bottom of the Hand-held Pig</u>	<u>Use Collimating Aperture, "d"</u>
less than 0.2 mR/hr	3/4"
0.2 mR/hr to 2 mR/hr	1/4"
2 mR/hr to 22 mR/hr	1/8"
22 mR/hr to 220 mR/hr	1/16"
greater than 220 mR/hr	1/32"

- e. Remove the lead plug (same size as a collimating aperture but without the hole) from the center of the GE detector's shield door.
- f. Insert the collimating aperture selected from Step d. into the vacated hole of the GE detector's shield doors.

TITLE: Plant Vent Iodine and Particulate Sampling During
Accident Conditions

CAUTION: Steps g thru k can cause a Very High Radiation Exposure. Keep the exposed cavity on the bottom of RF-24R carrier cask pointed away from the body and extremities.

- g. Lift the RF-24R carrier cask containing RF-24R and its entire "holder/lead plug" assembly out of the transport dolly and up on the GE detector's shield doors.
- h. Leave behind (in the dolly) the small shield plug covering the bottom cavity of the RF-24R carrier cask.
- i. Quickly but carefully, place the RF-24R carrier cask with "holder/lead plug" assembly cavity side down and centered, on top of the collimating aperture on the GE detector's shield doors.
- j. If the collimating aperture is out of range based on the Canberra's count rate meter or dead time meter reading on RF-24R, lift the carrier cask off of the aperture and place to one side on the GE detector's shield doors. Immediately, reselect the next larger or smaller aperture. Replace the carrier cask with RF-24R centered over the new aperture then continue.
- k. Commence the radionuclide analysis using the Canberra System as per procedures CAP B-53 and CAP B-53:I.
- l. For each cartridge sampled, enter the following data as inputs in the Canberra program as extracted from the Sample Collection Data:
 - 1. Sample Description (from Form 69-13225) (i.e., cartridge #, etc.)
 - 2. Sample start date/time (from Form 69-13225)
 - 3. Sample stop date/time (from Form 69-13225)
 - 4. Sample flowrate (CFM) (from Form 69-13225) (e.g., default 2.0 cfm)
 - 5. Sample collection factor, 0.92 (includes plate-out and cartridge retention factors combined) depending on the sample flowrate.
 - 6. Collimating aperture Geometry code used (i.e., "d").

TITLE: Plant Vent Iodine and Particulate Sampling During
Accident Conditions

CAUTION: High noble gas concentrations trapped in the cartridge may interfere with the resolution of iodine peaks. The cartridge may require a reverse purge using air or nitrogen. A minimum purge volume of 18 liters is needed to reduce the entrained gas concentration.

- m. All results concerning the high range iodine concentrations as determined by this procedure should be reviewed by the Site Chemistry Coordinator and should be communicated as soon as possible (not more than 10 minutes after the start of analysis) to the ERA's staff in the TSC.

CAUTION: Steps n. thru t. can cause Very High Radiation Exposure. Keep the exposed cavity of the hand-held pig pointed away from the body and extremities.

- n. At the end of the Canberra Analysis perform the following:
 - 1. Lift the RF-24R carrier cask with the "holder/lead plug" assembly off the GE detector's aperture and shield doors and place back in the transport dolly down over the small shield plug.
 - 2. Rotate carefully counterclockwise the RF-24R "holder/lead plug" assembly by its handle in the carrier cask until the protruding lug of the "holder/lead plug's" end cap engages the slot in the small shield plug in the transport dolly.
 - 3. Continue to rotate counterclockwise after the engagement until the "holder/lead plug's" end cap is loosened allowing easy removal of RF-24R.
- o. Open the top of the radioactive sample storage pig at the Northeast entrance area of the TSC Lab.
- p. Lift quickly the RF-24R "holder/lead plug" assembly out of the RF-24R carrier cask and transport dolly and place on the edge of the storage pig with the "holder's end cap" facing out and upward (but away from your face).
- q. Grasp the RF-24R "holder end cap" with the RF-24R cartridge holder cap grip/removal tool keeping a handle's distance away from the end cap.

TITLE: Plant Vent Iodine and Particulate Sampling During
Accident Conditions

- r. Rotate counterclockwise with the handle until the "holder end cap" and RF-24R are free of the lead plug assembly.
- s. Using the push stick, push the RF-24R cartridge out of the "holder end cap" and down into the storage pig.
- t. Replace cover over the storage pig.
- u. Wipe all tools and the RF-24R "holder end cap" assembly, decontaminating if necessary.
- v. Reassemble the RF-24R "holder/lead plug" assembly with a fresh cartridge placed in the end cap and turn over along with the transport dolly to the personnel collecting samples.
- w. Report to the SCC with the sample analysis results and for continued instructions.

7. ACCEPTANCE CRITERIA

Satisfactory performance of data collection by procedural steps.

8. REFERENCES

- 8.1 Regulatory Guide 1.97, "Instrumentation for Light - Water Cooled Nuclear Power Plants to Access Plant and Environs Conditions During and Following an Accident."
- 8.2 Regulatory Guide 1.4, "Assumptions Used for Evaluating the Potential Radiological Consequences of a Loss of Coolant Accident for Pressurized Water Reactors."
- 8.3 NUREG-0737, "Clarification of TMI Action Plan Requirements."
- 8.4 General Design Criteria 19.
- 8.5 Diablo Canyon Power Plant Unit 1 and 2 Emergency Plan.
- 8.6 CAP B-53, "Gamma Spectroscopy System Equipment (Canberra ProCount)."
- 8.7 CAP B-53:I, "Gamma Spectroscopy System (ProCount Technician Software Operation)."
- 8.8 CAP E-19, "Plant Vent Radioactive Effluent Sampling."
- 8.9 EP EF-1, "Activation and Operation of the Technical Support Center (TSC)."
- 8.10 EP G-1, "Accident Classification and Emergency Plan Activation."
- 8.11 EP RB-2, "Release of Airborne Radioactive Materials."
- 8.12 EP RB-9, "Calculation of Release Rate."
- 8.13 Regulatory and Technical Basis and recommended response to AR A0489282 and A0489299, Henry Fong, 2/29/2000.

**TITLE: Plant Vent Iodine and Particulate Sampling During
Accident Conditions**

9. RECORDS

Data Sheets and records will be maintained in the Records Management System (RMS) in accordance with AD10.ID1.

10. APPENDICES

10.1 Figure 3, RE-87 Response Curve

10.2 Figure 4 and Figure 5, RE-29 Response Curves

11. ATTACHMENTS

11.1 Form 69-13224, "RF-87A or B Sample Collection Data Sheet," 05/13/93

11.2 Form 69-13226, "RE-24R/RE-28R Monitor Data Sheet," 10/07/93

11.3 Form 69-13225, "RF-24R Sample Collection Data Sheet," 11/25/93

11.4 "Figure 1, Route Map," 08/22/00

11.5 "Figure 2, NR/PVER LRP/RDU Panel of Button Switches and Keypad," 08/22/00

11.6 "Figure 6, Plant Vent Radiation Monitor Ranges," 08/22/00

11.7 "Figure 7, Source of Power to Sampling Skids," 08/22/00

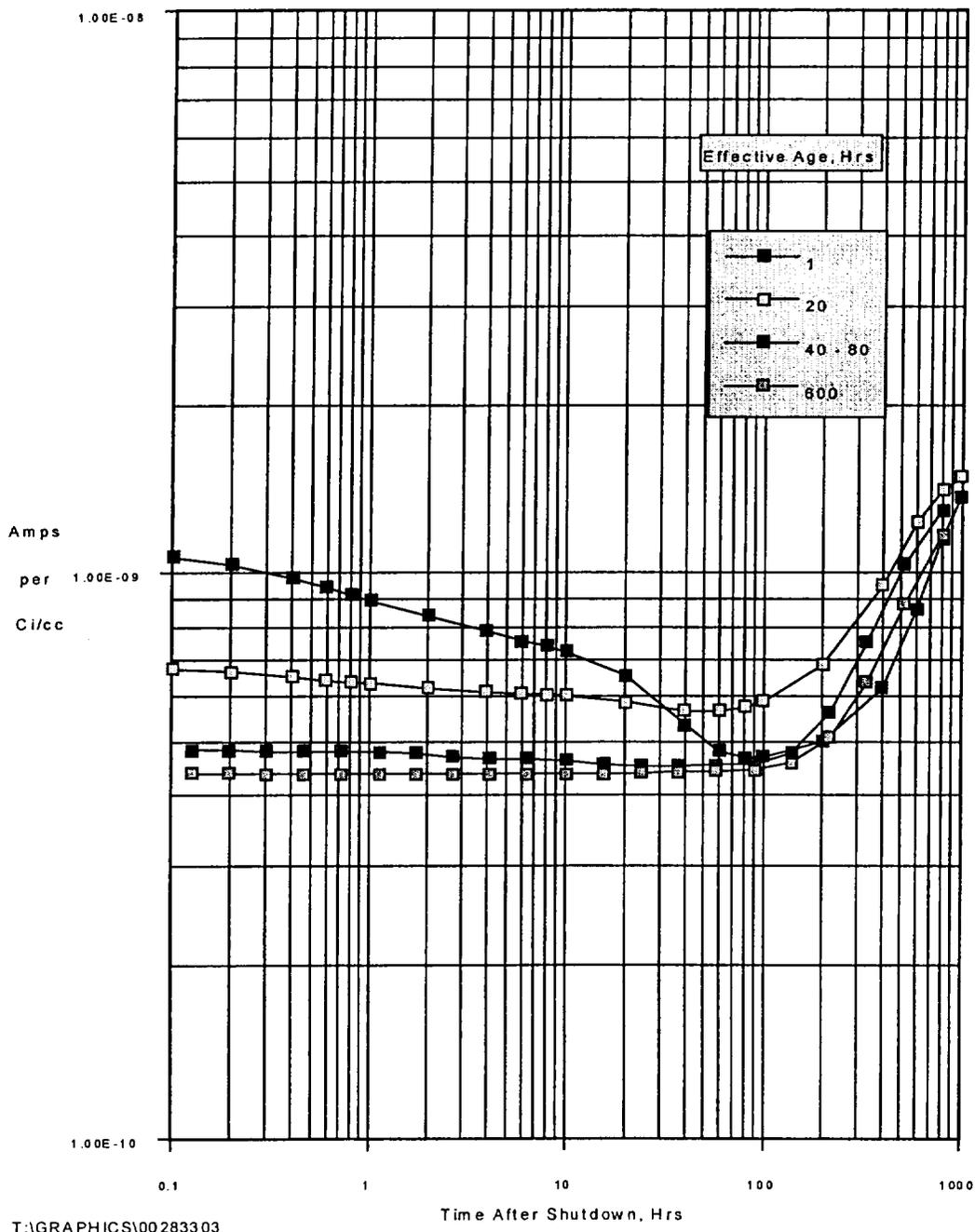
12. SPONSOR

Keith Bieze

TITLE: Plant Vent Iodine and Particulate Sampling During
 Accident Conditions

APPENDIX 10.1

FIGURE 3, RE-87 RESPONSE CURVE

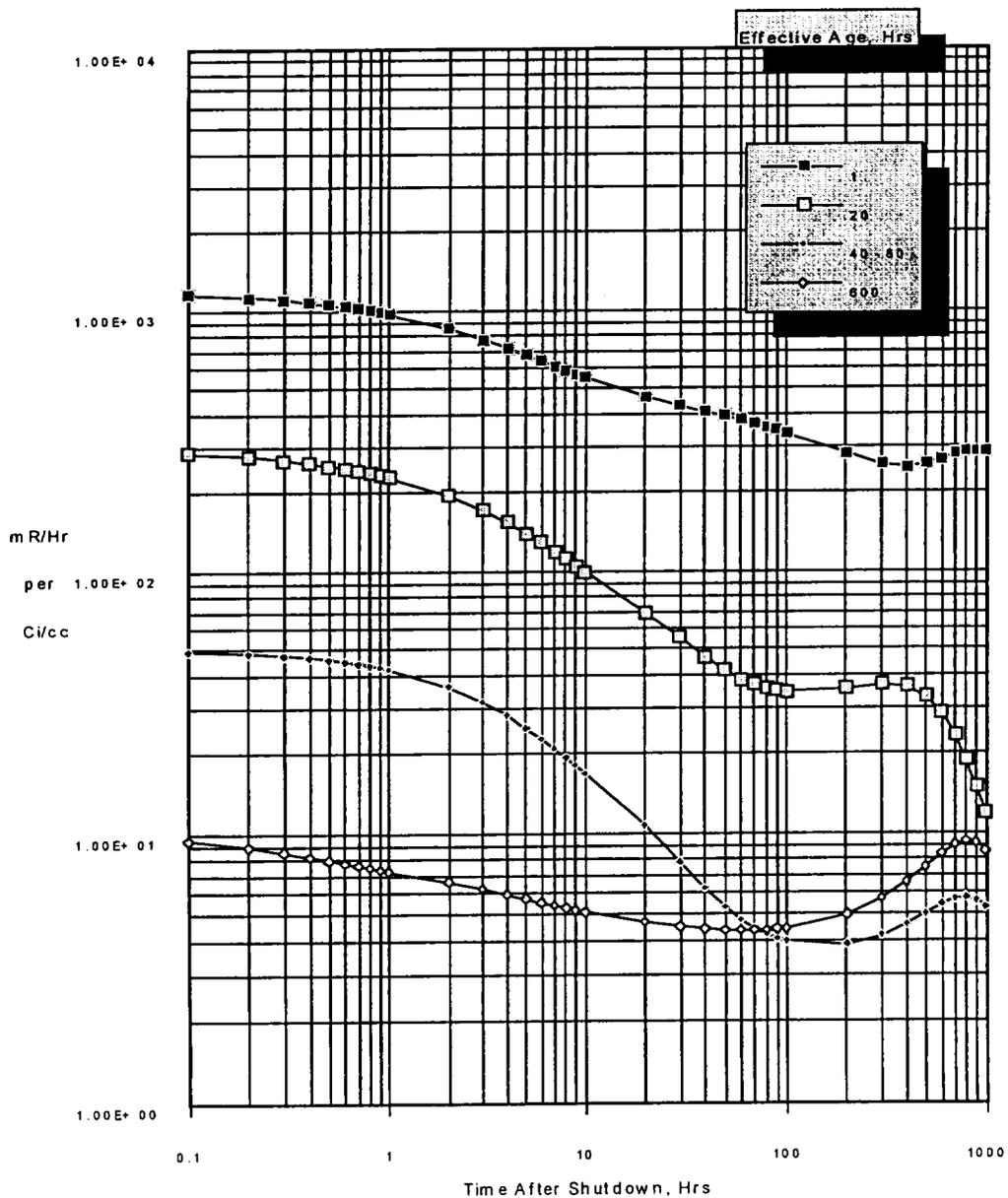


TITLE: Plant Vent Iodine and Particulate Sampling During
 Accident Conditions

APPENDIX 10.2

FIGURE 4 AND FIGURE 5, RE-29 RESPONSE CURVES

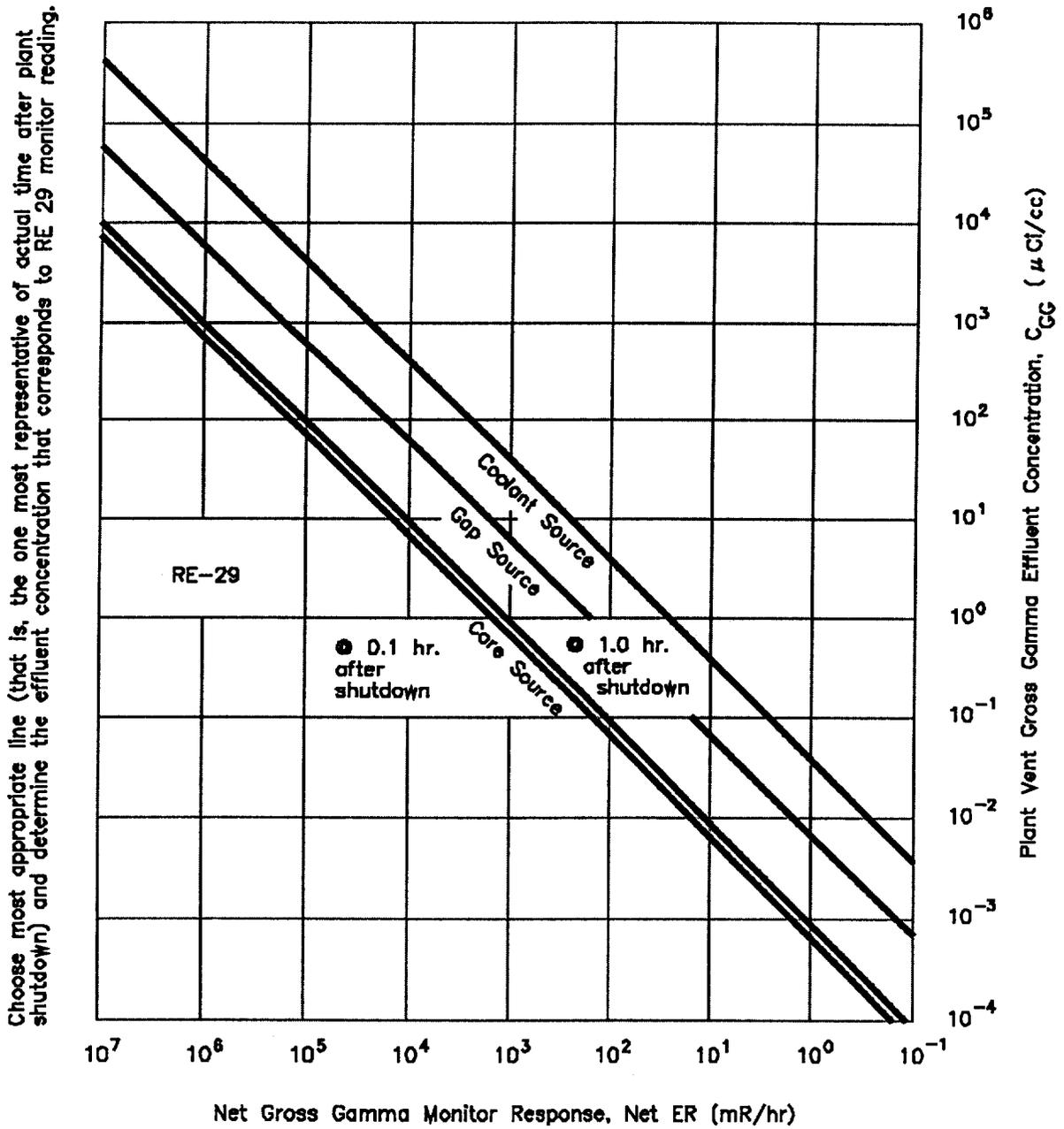
FIGURE 4



TITLE: Plant Vent Iodine and Particulate Sampling During
 Accident Conditions

APPENDIX 10.2 (Continued)

FIGURE 5



DIABLO CANYON POWER PLANT
EP RB-12

1 AND 2

TITLE: RF-87A or B Sample Collection Data Sheet

Unit No.: _____ Performed by: _____

Date/Time NR Switched over to PVER: _____ / _____

Initial RE-34 Reading (near time of switch): _____ mR/hr

Initial RE-87 Reading (near time of switch): _____ μ Ci/cc

Initial RF-87 Sample Flowrate: _____ lpm or cc/min (circle one)

Initial Sampling Started with RF-87A or RF-87B (circle one)

Cartridge No.: _____ RF-87A or RF-87B (circle one)

Sample Flowrate: _____ lpm (1000 cc/min equals 1 lpm)

Filter Collection Start Date/Time: _____ / _____

Filter Collection Stop Date/Time: _____ / _____

Cask Dose Rate: _____ Method Used: A or B (circle one)

Method A: Contact Dose Rate Reading of Closed Cask (small lead plug in place)

Method B: 1 foot Dose Rate Reading of Open Cask (small lead plug removed)

Cartridge No.: _____ RF-87A or RF-87B (circle one)

Sample Flowrate: _____ lpm (1000 cc/min equals 1 lpm)

Filter Collection Start Date/Time: _____ / _____

Filter Collection Stop Date/Time: _____ / _____

Cask Dose Rate: _____ Method Used: A or B (circle one)

Method A: Contact Dose Rate Reading of Closed Cask (small lead plug in place)

Method B: 1 foot Dose Rate Reading of Open Cask (small lead plug removed)

Reviewed By: _____ Date: _____

Site Chemistry Coordinator or designee

DIABLO CANYON POWER PLANT
EP RB-12

1 AND 2

TITLE: RE-24R/RE-28R Monitor Data Sheet

Unit No.: _____

Date/Time NR to PVER Switchover _____ / _____

Initial RE-34 Reading _____ mR/hr (i.e., near switchover)

Initial RE-14R Reading _____ μ Ci/cc (i.e., near switchover)

Initial RE-87 Reading (if available) _____ μ Ci/cc (i.e., near switchover)

Previous sample flowrate (if available) _____ cfm (i.e., near switchover)

Previous RE-24R reading _____ μ Ci/cc (prior to but near switchover)

Previous RE-28R reading _____ μ Ci/cc (prior to but near switchover)

Initial Raw Countrate Reading by RE-24R (prior to but near switchover)
(i.e., "DISP OP", "3", "DISP" _____ cpm
(if applicable)

Cartridge # _____ Iteration # on this cartridge _____
(if applicable)

- a. RE-24R Start CPM _____ cpm
("DISP OP", "3", "DISP")
 - b. Skid pump start time _____ : _____
(hr) : (min)
 - c. RE-24R reading in μ Ci/cc _____
(if applicable)
 - d. Sample Flowrate _____ cfm
 - e. Skid pump stop time _____ : _____
(hr) : (min)
 - f. RE-24R Stop CPM _____ cpm
("DISP OP", "3", "DISP")
 - g. $CR = \frac{\{f.\} - \{a.\}}{\{e.\} - \{b.\}} =$ _____ cpm/min
 - h. RE-34 Reading _____ mR/hr
- RE-28R reading in μ Ci/cc _____ (if applicable)
- Filter # _____

Cartridge # _____ Iteration # on this cartridge _____
(if applicable)

- a. RE-24R Start CPM _____ cpm
("DISP OP", "3", "DISP")
 - b. Skid pump start time _____ : _____
(hr) : (min)
 - c. RE-24R reading in μ Ci/cc _____
(if applicable)
 - d. Sample Flowrate _____ cfm
 - e. Skid pump stop time _____ : _____
(hr) : (min)
 - f. RE-24R Stop CPM _____ cpm
("DISP OP", "3", "DISP")
 - g. $CR = \frac{\{f.\} - \{a.\}}{\{e.\} - \{b.\}} =$ _____ cpm/min
 - h. RE-34 Reading _____ mR/hr
- RE-28R reading in μ Ci/cc _____ (if applicable)
- Filter # _____

DIABLO CANYON POWER PLANT
EP RB-12

1 AND 2

TITLE: RF-24R Sample Collection Data Sheet

Unit No. _____ Performed by: _____

Initial RE-34 Dose Rate Reading: _____ Date/Time: _____ / _____

NR to PVER Switchover: Date/Time _____ / _____

Increase in iodine activity prior to switchover: Date/Time _____ / _____

Cartridge No.: _____ RE-34 _____

1. Begin Sample Flow: _____ cfm 2. End Sample Flow: _____ cfm

Filter Collection Start Date/Time: _____ / _____

Filter Collection Stop Date/Time: _____ / _____

Average Sample Flowrate = $\frac{\{1.\} + \{2.\}}{2}$ = _____ cfm (default value equals 2.0 cfm)

Cask dose rate (bottom side) _____

Cartridge No.: _____ RE-34 _____

1. Begin Sample Flow: _____ cfm 2. End Sample Flow: _____ cfm

Filter Collection Start Date/Time: _____ / _____

Filter Collection Stop Date/Time: _____ / _____

Average Sample Flowrate = $\frac{\{1.\} + \{2.\}}{2}$ = _____ cfm (default value equals 2.0 cfm)

Cask dose rate (bottom side) _____

Cartridge No.: _____ RE-34 _____

1. Begin Sample Flow: _____ cfm 2. End Sample Flow: _____ cfm

Filter Collection Start Date/Time: _____ / _____

Filter Collection Stop Date/Time: _____ / _____

Average Sample Flowrate = $\frac{\{1.\} + \{2.\}}{2}$ = _____ cfm (default value equals 2.0 cfm)

Cask dose rate (bottom side) _____

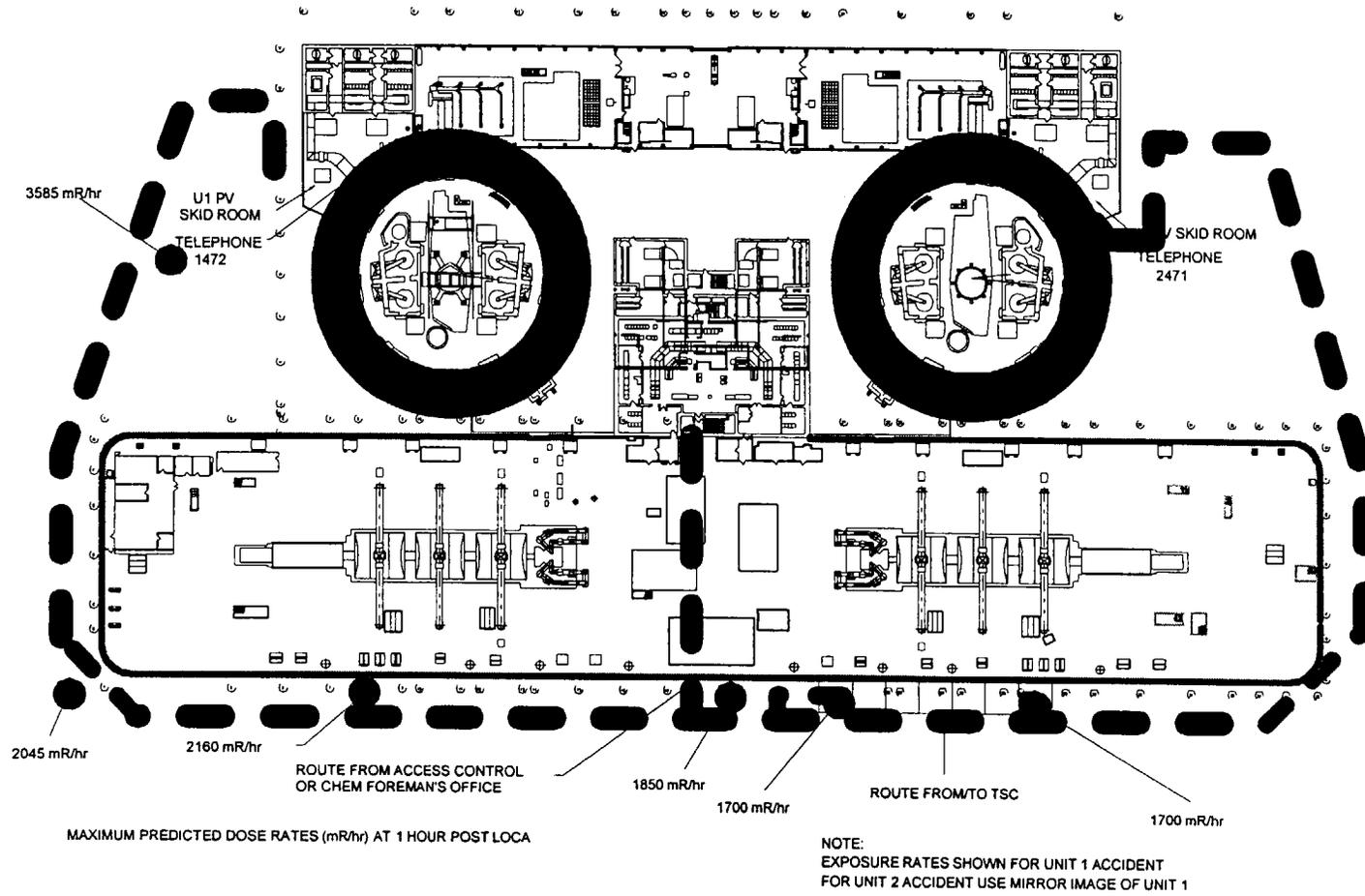
Reviewed By: _____ Date: _____

Site Chemistry Coordinator or designee

DIABLO CANYON POWER PLANT
EP RB-12
Attachment 11.4

1 AND 2

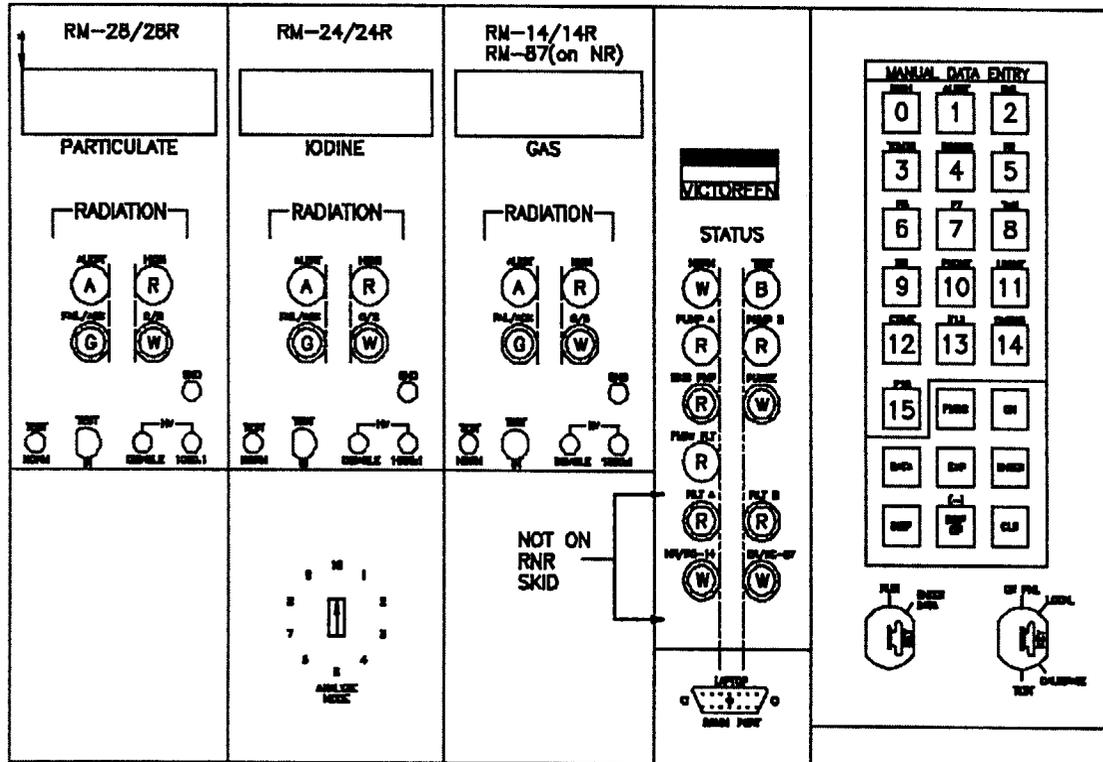
TITLE: Figure 1, Route Map



DIABLO CANYON POWER PLANT
EP RB-12
Attachment 11.5

1 AND 2

TITLE: Figure 2, NR/PVER LRP/RDU Panel of Button Switches and Keypad

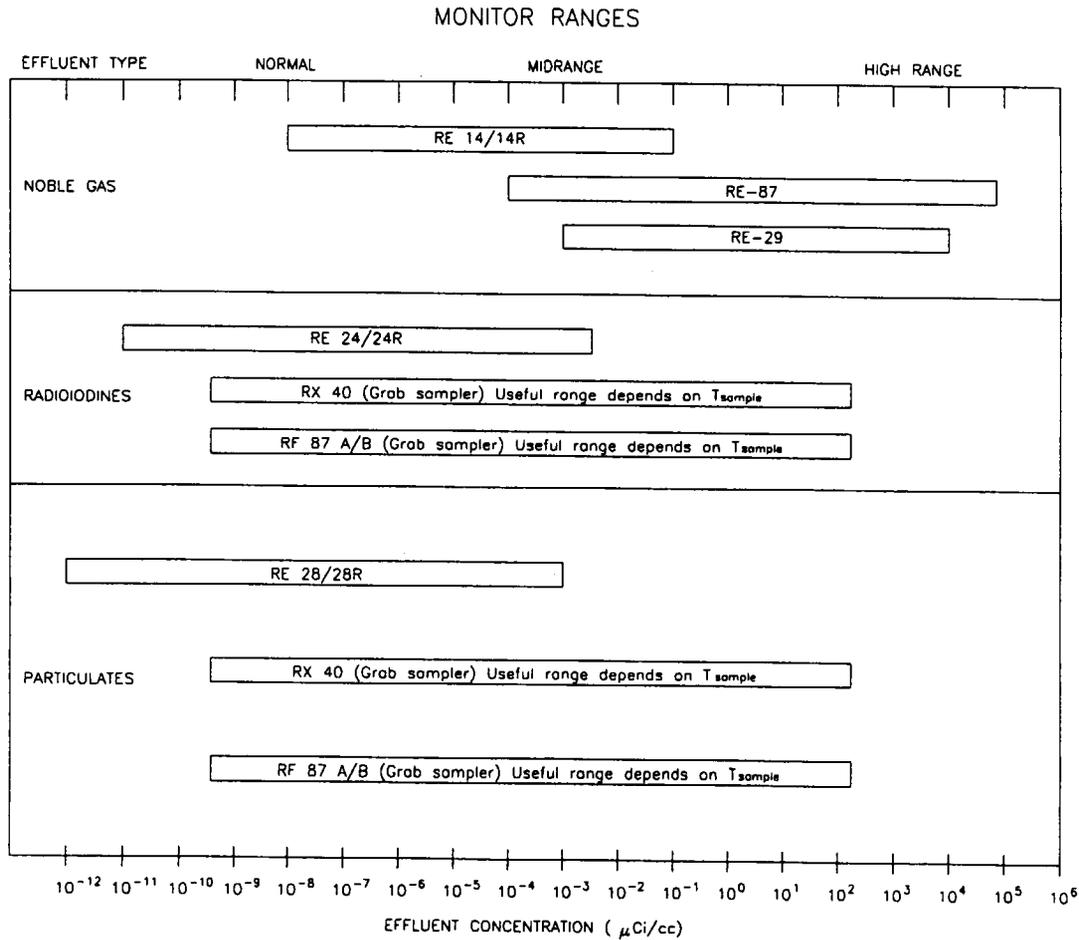


• NOTE: ALL PERIPHERAL INFORMATION ON: CHANNELS, FUNCTIONS, AND DATA ARE READ IN THE LEFT MOST LED (NAMELY THE 'PARTICULATE' WINDOW)

DIABLO CANYON POWER PLANT
EP RB-12
Attachment 11.6

1 AND 2

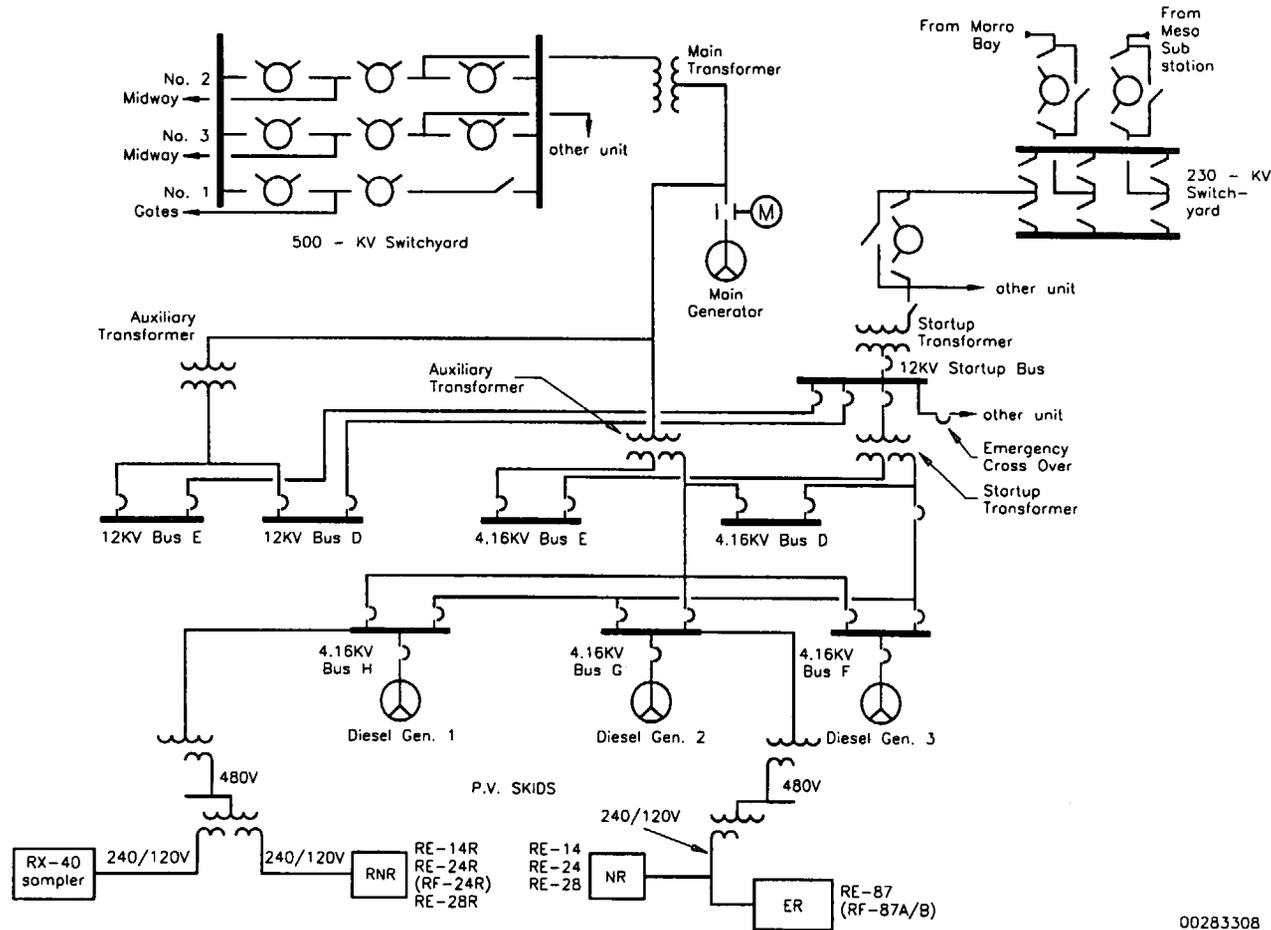
TITLE: Figure 6, Plant Vent Radiation Monitor Ranges



DIABLO CANYON POWER PLANT
EP RB-12
Attachment 11.7

1 AND 2

TITLE: Figure 7, Source of Power to Sampling Skids



00283308

*** ISSUED FOR USE BY: _____ DATE: _____ EXPIRES: _____ ***
PACIFIC GAS AND ELECTRIC COMPANY NUMBER EP EF-2
NUCLEAR POWER GENERATION REVISION 24
DIABLO CANYON POWER PLANT PAGE 1 OF 4
EMERGENCY PLAN IMPLEMENTING PROCEDURE UNITS

TITLE: Activation and Operation of the Operational Support Center

1 AND 2

9.21.00

EFFECTIVE DATE

PROCEDURE CLASSIFICATION: QUALITY RELATED

1. SCOPE

This procedure describes the activation and operation of the Operational Support Center (OSC).

2. DISCUSSION

2.1 Location and Description

The OSC provides a place separate from the Control Room and Technical Support Center where designated support personnel assemble and receive specific assignments. The 119' OCC and OWCC location in the Turbine Building, Medical Facility, and 85' Access Control are designated as the primary OSC. Access to the Radiological Controls Area (RCA) will be through an established access control area as designated by the Site Radiation Protection Coordinator. At the Alert, medical personnel use the medical facility as an assembly area. Medical personnel assemble in the 119' OCC and OWCC area at SAE and GE. These areas contain a variety of immediately available emergency support equipment.

2.2 OSC Functions

2.2.1 A staging area for personnel assigned to one of the following tasks:

- a. Emergency maintenance, assessment, repair and damage control
- b. Fire fighting, search and rescue and medical assistance
- c. Post-accident sampling and radiological assessment

2.2.2 Emergency response equipment storage

2.2.3 Personnel decontamination facility

2.3 Minimum Staffing

The minimum OSC staffing required to perform OSC functions per the DCPD Emergency Plan, is shown in Attachment 6.1. Vacancies may be filled by other qualified individuals not already filling a minimum staff position.

2.4 Activation of OSC

The OSC is considered activated when all processes required for the OSC are fully operational. Fully operational means that the person assigned to a position has taken over the responsibility for those duties.

**TITLE: Activation and Operation of the Operational Support
Center**

3. RESPONSIBILITIES

- 3.1 Emergency Maintenance Coordinator**
 - 3.1.1 Directs activities of OSC personnel.**
 - 3.1.2 Develops, in cooperation with the SEC/Maintenance Logistics Advisor, a repair plan to recover from the emergency.**
 - 3.1.3 Fabricates and sets up any special equipment necessary at the direction of the SEC/Maintenance Logistics Advisor.**
 - 3.1.4 Coordinates the movement and accountability of maintenance teams.**
 - 3.1.5 Provides OSC status updates to the TSC.**
 - 3.1.6 Maintains proper records and logs.**
- 3.2 Maintenance Coordinators (Mechanical, Technical, and Electrical Maintenance)**
 - 3.2.1 Plan and coordinate resources to conduct assessment, maintenance, repair or installation of special equipment.**
 - 3.2.2 Provide team status updates to the OSC Access Supervisor.**
 - 3.2.3 Maintain proper records and logs.**
- 3.3 OSC Access Supervisor**
 - 3.3.1 Controls plant access and ensures personnel entering a potentially hazardous plant area are informed of:**
 - a. plant status.**
 - b. potential hazards.**
 - c. safety and radiation protection provisions.**
 - d. appropriate protective equipment required.**
 - 3.3.2 Maintains accountability of and communicates with personnel dispatched from the OSC.**
 - 3.3.3 Briefs dispatched response teams on plant conditions and emergency classification changes.**
 - 3.3.4 Assists the Control Room and OSC in communicating with response teams.**
 - 3.3.5 Maintains proper records and logs.**
- 3.4 Site Radiation Protection Coordinator**
 - 3.4.1 Provides personnel exposure monitoring and record keeping.**
 - 3.4.2 Directs surveys and establishes radiation or contamination control area boundaries.**
 - 3.4.3 Determines radiological protection requirements for RCA access.**

**TITLE: Activation and Operation of the Operational Support
Center**

- 3.4.4 Determines when an emergency exposure authorization is required and provides justification to the SEC/RM.
- 3.4.5 Informs the Radiological Advisor, Emergency Maintenance Coordinator and the OSC Access Supervisor of team activities.
- 3.4.6 Coordinates with the OSC Access Supervisor to brief radiological conditions to personnel dispatched into affected plant areas.
- 3.4.7 Maintains proper records and logs.

3.5 Site Chemistry Coordinator

- 3.5.1 Directs sampling and radio-chemical and chemical analysis.
- 3.5.2 Informs the Radiological Advisor and Emergency Maintenance Coordinator of actions and findings.
- 3.5.3 Coordinates personnel dispatched for sampling or analysis with the Site Radiation Protection Coordinator and OSC Access Supervisor.
- 3.5.4 Maintains proper records and logs.

3.6 Operations Coordinator

- 3.6.1 Coordinates Operation's response outside the Control Room.

4. INSTRUCTIONS

- 4.1 Activate OSC per the appropriate attachment listed in Section 6.0.
- 4.2 At the discretion of the Emergency Maintenance Coordinator, Site Radiation Protection Coordinator or their discipline Maintenance Coordinator, maintenance teams may be directed to don protective clothing and prepare respiratory protection prior to actual team or task assignment.
- 4.3 The representative from Operations Department coordinates with their organizations to provide general OSC support (under the direction of the Emergency Maintenance Coordinator).

5. RECORDS

- 5.1 All attachments, logs, checklists and records, whether completed or not, will be collected in each facility and turned over to Emergency Planning for compilation, retention and filing.
- 5.2 Drill and Exercise records will be retained for five years.
- 5.3 Emergency event records will be retained as plant lifetime records.

6. ATTACHMENTS

- 6.1 "OSC Organization," 03/09/00
- 6.2 "Emergency Maintenance Coordinator Checklist," 08/17/00
- 6.3 "Team Predeparture Checklist," 02/18/00

**PACIFIC GAS AND ELECTRIC COMPANY
DIABLO CANYON POWER PLANT**

NUMBER EP EF-2
REVISION 24
PAGE 4 OF 4
UNITS 1 AND 2

TITLE: Activation and Operation of the Operational Support
Center

- 6.4 "OSC Access Supervisor Checklist," 02/18/00
- 6.5 "Site Radiation Protection Coordinator Checklist," 02/18/00
- 6.6 "Site Chemistry Coordinator Checklist," 04/19/00
- 6.7 "Maintenance/Operations Coordinators Checklist," 02/18/00
- 6.8 "OSC Telephone Numbers," 02/18/00
- 6.9 "Maintenance Team Exposure Tracking Sheet," 10/01/98
- 6.10 "OPS Team Dispatch Decision Tree," 08/27/96

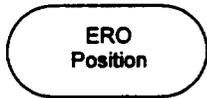
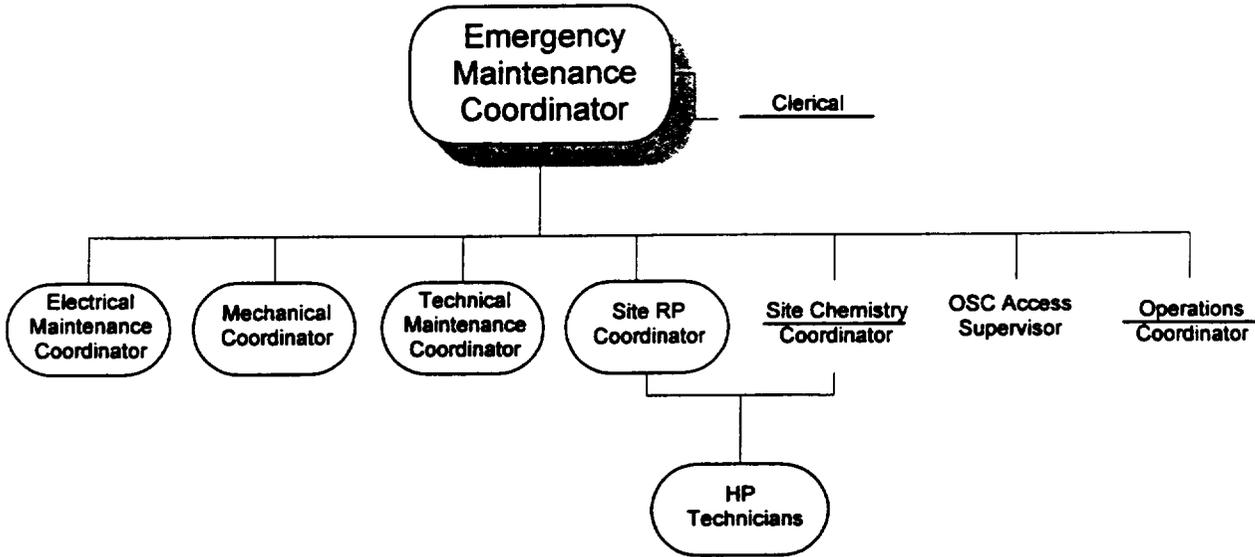
7. REFERENCES

- 7.1 DCPD Emergency Plan.

DIABLO CANYON POWER PLANT
EP EF-2
ATTACHMENT 6.1

1 AND 2

TITLE: OSC Organization



Positions within ovals are the minimum staff positions required for facility activation

DIABLO CANYON POWER PLANT
 EP EF-2
 ATTACHMENT 6.2

1 AND 2

TITLE: Emergency Maintenance Coordinator Checklist

ACTIONS		INITIAL
1. INITIAL ACTIONS		
PRINT NAME _____		INITIALS _____ DATE _____
NOTE: The minimum staffing level is based on the assumption the on-site notification process has been completed and other OSC positions will be filled shortly.		
1.1	Sign in on the Assembly and Accountability Checklist form as applicable.	_____
1.2	Sign in on the OSC sign-in board.	_____
1.3	Direct one of the Maintenance/Operations Coordinators to act as the OSC Designated Assembly Area Supervisor (DAAS) and complete OSC accountability using the Assembly Area packet.	LOG
1.4	Determine minimum staffing status of the OSC. Vacancies may be filled by other qualified individuals not already filling a minimum staff position. If assistance is required, notify the TSC Administrative Advisor.	
1.4.1	When minimum staffing is achieved, declare the OSC activated and notify:	
	a. Control Room	_____
	b. SEC/TSC Maintenance Logistics Advisor	_____
1.4.2	Additional OSC Staffing:	
	a. Mechanical, Electrical and Technical Maintenance personnel, the number required to support anticipated activities, must be called in from off-site or their assembly area.	LOG
	b. Clerical support will be called in by the TSC Administrative Advisor.	LOG
1.5	Establish communications with:	
1.5.1	Maintenance Logistics Advisor and obtain permission to waive administrative controls for emergency maintenance from the Site Emergency Coordinator.	LOG

EP EF-2 (UNITS 1 AND 2)
ATTACHMENT 6.2

TITLE: Emergency Maintenance Coordinator Checklist

ACTIONS	INITIAL
2. CONTINUOUS ACTIONS	
2.1 If plant conditions warrant, direct the SRPC to establish periodic OSC radiological habitability surveys.	LOG
2.1.1 Notify the TSC Radiological Advisor of this action.	LOG
NOTE 1: All dispatched teams will have an "OSC Predeparture Authorization Checklist" in process.	
NOTE 2: Any team ill-prepared or ill-equipped will be denied departure permission by the OSC Access Supervisor and sent back for further instructions.	
2.2 If a team must be dispatched without an SWP, permission from the SEC must be obtained.	LOG
2.3 If the SRPC determines the need for an emergency exposure authorization, refer to EP RB-2 for instructions and guidance on evaluating alternatives and providing support.	LOG
2.4 When a response team is required, direct the appropriate Maintenance Coordinator and SRPC to brief the team prior to dispatch.	LOG
NOTE: Refer to Attachment 6.10 for operator dispatch.	
2.5 Log and communicate to the TSC Maintenance Logistics Advisor the following information:	
2.5.1 Significant accident mitigation	LOG
2.5.2 Problem evaluation and team assignment	LOG
2.5.3 Team dispatch times	LOG
2.5.4 Update team status	LOG
2.5.5 Team return time and results	LOG
2.6 Perform periodic briefings to OSC staff.	LOG
2.7 If OSC evacuation is necessary, transfer operations to the alternate OSC, refer to EP EF-9, "Activation of Backup Emergency Response Facilities."	
2.8 Direct clerical assistants to:	
2.8.1 Coordinate with the TSC Administrative Advisor to develop a 24 hour shift schedule.	
2.8.2 Update OSC status boards.	
2.8.3 Assist in maintaining the EMC log.	
2.9 Maintain a log of significant communications and decisions.	

DIABLO CANYON POWER PLANT
EP EF-2
ATTACHMENT 6.3

1 AND 2

TITLE: Team Predeparture Checklist

TEAM NUMBER _____ Date: _____ Time: _____

Maintenance Coordinator

1) Team: Mech Elect OPS Chem RP Tech Maint Sec **Priority:** High Med Low

2) Members:	Name	Pager	Name	Pager
	_____	_____	_____	_____
	Name	Pager	Name	Pager
	_____	_____	_____	_____
	Name	Pager	Name	Pager
	_____	_____	_____	_____

3) Pager or Radio:

4) Work Location: Aux Turb Cont **Other:** _____

5) Unit 1 2 **Purpose:** _____

6) Tailboard Conducted: Yes No

Radiation Protection Coordinator

7) Rad brief needed? Yes No SWP # _____ N/A

OSC Access Supervisor

8) Verify Steps 1 - 8 Are Complete

9) Team Communications Established

10) EMC Notified of Team Dispatch

11) JOBSITE Phone # _____

Team Debrief

12) Mission Status: _____

13) EMC Notified of Team Return & Status _____
OSC Access Supervisor Signature

14) Rad Protection Debrief _____
RP Coordinator Signature

15) Technical Debrief _____
Maintenance Coordinator Signature

16) Team Return Time/Date _____
OSC Access Supervisor Signature

DIABLO CANYON POWER PLANT
EP EF-2
ATTACHMENT 6.4

1 AND 2

TITLE: OSC Access Supervisor Checklist

ACTIONS		INITIAL
1. INITIAL ACTIONS		
	PRINT NAME _____ INITIALS _____ DATE _____	
1.1	Sign in on the Assembly and Accountability Checklist form as applicable.	_____
1.2	Sign in on the OSC sign-in board.	_____
1.3	IMMEDIATELY upon arrival determine if teams were dispatched into the RCA. Provide this information to the EMC, SRPC and the OSC (DAAS) Designated Assembly Area Supervisor (OSC designated Maintenance Coordinator).	LOG
1.3.1	Verify with Maintenance, Operations, Chemistry and Radiation Protection Coordinators.	
1.3.2	Contact Security (Watch Commander).	
1.3.3	Contact the Medical Facility (# _____).	
1.3.4	Provide available information to the EMC and the SRPC.	
2. CONTINUOUS ACTIONS		
NOTE: Any team ill-prepared or ill-equipped will be denied departure permission by the OSC Access Supervisor and sent back for further instructions.		
2.1	For each team, review the "Team Predeparture Checklist" for completeness, provide a briefing for communications, and authorize departure.	LOG
NOTE: Refer to Attachment 6.10 for operator dispatch.		
2.2	Maintain team accountability:	
2.2.1	Log all team departures and returns.	LOG
2.2.2	Inform the EMC of team departures and returns.	LOG
2.3	Maintain communications with all teams.	
2.3.1	Inform response teams of changes in emergency classification or plant conditions.	LOG
2.3.2	Periodically update the EMC of team status.	LOG
2.3.3	Periodically update the SRPC on team exposure status and radiological problems, dose rates encountered.	LOG
2.4	Maintain a log of significant communications and decisions.	
2.5	Ensure returning teams report to the SRPC to receive a debriefing on radiological conditions, personnel exposure, and other hazards or problems encountered.	

DIABLO CANYON POWER PLANT
 EP EF-2
 ATTACHMENT 6.5

1 AND 2

TITLE: Site Radiation Protection Coordinator Checklist

ACTIONS		INITIAL
1. INITIAL ACTIONS		
	PRINT NAME _____	INITIALS _____ DATE _____
1.1	Sign in on the Assembly and Accountability Checklist form as applicable.	_____
1.2	Sign in on the OSC sign-in board.	_____
1.3	IMMEDIATELY upon arrival, coordinate with the SCC to determine if additional Technicians must be called in.	_____
1.4	Establish communications with the TSC Radiological Advisor:	_____
1.5	Obtain a computer printout record of current calendar year exposure for personnel who may be dispatched from the OSC.	_____
2. CONTINUOUS ACTIONS		
2.1	Upon the arrival of the NRC Initial Site Team, the NRC Co-locator (NRC HP Specialist) may come to the OSC. Upon arrival, brief him on the emergency developments, mitigating actions, and current activities. Ensure the NRC Co-locator is familiar with telephone use, information flow, and has copies of the same documents used for your position.	_____
2.2	Perform a predeparture analysis of the anticipated TEDE and determine if any identified team member requires an emergency exposure authorization prior to dispatch.	_____
2.2.1	If any team member may exceed the Federal Limit Calendar Year exposure criteria of 5 rem TEDE, an emergency exposure authorization is required for that individual.	_____
2.2.2	Refer to EP RB-2, "Emergency Exposure Guides," for further instructions while continuing in this procedure.	_____

EP EF-2 (UNITS 1 AND 2)
ATTACHMENT 6.5

TITLE: Site Radiation Protection Coordinator Checklist

ACTIONS	INITIAL
2.3 Brief teams prior to departure, including: NOTE: Refer to Attachment 6.10 for operator dispatch.	
2.3.1 Prepare an SWP prior to entry if time permits, although a verbal SWP is permissible. Perform verbal SWP, to be followed up by the written SWP, in accordance with EP RB-4.	LOG
2.3.2 Brief teams on the radiological conditions they will encounter and discuss travel routes.	LOG
2.3.3 Determine the requirements for personnel dosimetry in accordance with EP RB-1, "Personnel Dosimetry."	
2.3.4 When a team has been briefed on the radiological hazards, validate their predeparture checklist and direct them to the OSC Access Supervisor.	LOG
2.4 Initiate "Team Predeparture Checklist" for C&RP Personnel who are not part of a maintenance team.	LOG
2.5 If plant conditions warrant, recommend periodic OSC radiological habitability surveys to the EMC.	LOG
2.5.1 When the EMC directs, establish periodic radiological habitability surveys as required.	LOG
2.6 Continuously track personnel emergency exposure and maintain records to determine when individual limits are being approached. Attachment 6.9 may be used to track exposures. NOTE: Attachment 6.9 DCFs were developed for Field Monitoring Teams and DO NOT take credit for respiratory protection or other protective measures. If such protective measures are taken, DCF are not appropriate for in-plant use. All radiation protection measures in addition to DCFs should be taken in consideration for mitigating the emergency response.	LOG
2.7 If high airborne radio iodine conditions are present, coordinate the administration of Thyroid Blocking (KI) as directed by the TSC Radiological Advisor and in accordance with EP RB-3, "Stable Iodine Thyroid Blocking."	
2.8 If any returning team personnel require decontamination and the normal access control decon facilities are not available, refer to EP RB-5, "Personnel Decontamination," for alternate locations during emergencies.	_____
2.9 Provide a radiological debriefing of returning teams including exposures, radiological conditions and other hazards or problems encountered.	LOG
2.10 Maintain a log of significant communications and decisions.	

DIABLO CANYON POWER PLANT
 EP EF-2
 ATTACHMENT 6.6

1 AND 2

TITLE: Site Chemistry Coordinator Checklist

ACTIONS		INITIAL
1. INITIAL ACTIONS		
	PRINT NAME _____	INITIALS _____ DATE _____
1.1	Sign in on the Assembly and Accountability Checklist form as applicable.	_____
1.2	Sign in on the OSC sign-in board.	_____
1.3	IMMEDIATELY upon arrival, if the SRPC has not arrived, determine if additional Technicians must be called in.	_____
1.4	Establish communications with the TSC Radiological Advisor:	_____
1.5	Obtain a record of current calendar year exposures for Chemistry personnel who may be dispatched from the OSC.	_____
2. CONTINUOUS ACTIONS		
2.1	Coordinate with the TSC Radiological Advisor to determine plant chemistry sampling requirements.	LOG
2.2	Supervise radiochemical and chemical analysis.	LOG
2.3	Perform a predeparture analysis of the anticipated TEDE and determine if any identified team member requires an emergency exposure authorization prior to dispatch.	_____
2.3.1	If any team member may exceed the Federal Limit Calendar Year exposure criteria of 5 rem TEDE, an emergency exposure authorization is required for that individual.	_____
2.3.2	Notify the SRPC to refer to EP RB-2, "Emergency Exposure Guides," for further instructions while continuing with the team briefing.	_____

EP EF-2 (UNITS 1 AND 2)
ATTACHMENT 6.6TITLE: Site Chemistry Coordinator Checklist

ACTIONS		INITIAL
NOTE: If necessary, an emergency exposure authorization of 5 rem TEDE may be obtained from the RM/SEC to permit sampling activity to proceed. Any individual who receives an emergency exposure shall be relieved of further emergency response duties and a replacement obtained.		
2.4	Brief personnel dispatched for sampling or analysis.	LOG
2.5	If PASS is activated, make the necessary arrangements per EP RB-15, "Post-Accident Sampling System."	LOG
2.6	Keep the EMC informed of actions and findings.	LOG
2.7	Maintain proper records and logs.	

DIABLO CANYON POWER PLANT
 EP EF-2
 ATTACHMENT 6.7

1 AND 2

TITLE: Maintenance/Operations Coordinators Checklist

ACTIONS		INITIAL
1. INITIAL ACTIONS		
	PRINT NAME _____	INITIALS _____ DATE _____
1.1	When the first Maintenance Coordinator arrives at the OSC, assume the responsibility of the OSC (DAAS) Designated Assembly Area Supervisor.	_____
1.2	Sign in on the Assembly and Accountability Checklist form as applicable.	_____
1.3	Sign in on the OSC sign-in board.	_____
1.4	Determine the anticipated tasks, staffing and equipment requirements.	
	NOTE: During normal working hours maintenance personnel are assembled in the Learning Services Center. To obtain needed personnel from this facility, coordinate with Access Supervisor. During off-normal working hours personnel must be called in from home.	
1.4.1	Report staffing requirements to the EMC.	
1.4.2	Maintenance personnel should be staged on the mezzanine deck below the OSC.	
2. CONTINUOUS ACTIONS		
2.1	When assigned a task by the EMC, coordinate maintenance team dispatch with the Access Supervisor.	LOG
	NOTE: Refer to Attachment 6.10 for operator dispatch.	
2.2	Maintain a log of activities.	

DIABLO CANYON POWER PLANT
EP EF-2
ATTACHMENT 6.8

1 AND **2**

TITLE: OSC Telephone Numbers

Emergency Maintenance Coordinator	x2605/2609
Mechanical Maintenance Coordinator	x2606
Electrical Maintenance Coordinator	x3689
Technical Maintenance Coordinator	x2608
Operations Coordinator	x2677
Site Rad Protection Coordinator	x2663
Site Chemistry Coordinator	x2664
OSC Access Supervisor	x2696/2660
Emergency Conference Line	x2609

**DIABLO CANYON POWER PLANT
EP EF-2
ATTACHMENT 6.9**

1 AND 2

TITLE: Maintenance Team Exposure Tracking Sheet

Source Term	TEDE DCF	Thyroid CDE DCF (KI taken prior to exposure)	Thyroid CDE DCF (KI not taken)
RCS Coolant	3	5	43
Fuel Rod Gap	25	53	530
Core Melt	22	16	160
SGTR- (empty)	60	140	1400
SGTR (normal)	12	26	260
SGTR (flooded)	110	250	2500

Use the tables above and below to convert PIC readings to Dose.

NOTE: Attachment 6.9 DCFs were developed for Field Monitoring Teams and DO NOT take credit for respiratory protection or other protective measures. If such protective measures are taken, DCF are not appropriate for in-plant use. All radiation protection measures in addition to DCFs should be taken in consideration for mitigating the emergency response.

- 1) Obtain the source term from the Radiological Data Processor - Dose Assessment in the TSC.
- 2) Record the time and readings for both the high and low range PICs.
- 3) Multiply by the dose conversion factors (DCFs). If the source term changes, use the new DCF multiplier.
- 4) If a PIC is re-zeroed, circle the last TEDE and Thyroid CDE values and add the circled values to determine the Cumulative TEDE and Thyroid CDE.
- 5) Refer to EP RB-2 for emergency worker PAGs.

Name of Individual:								
	Only use highest onscale PIC reading.		See table above.			Only necessary when PIC is re-zeroed.		
Time Reported	Low Range PIC (mR)	High Range PIC* (Roentgen)	TEDE DCF	Thyroid CDE DCF	TEDE (mrem)	Thyroid CDE (mrem)	Cumulative TEDE (mrem)	Cumulative Thyroid CDE (mrem)

Name of Individual:								
	Only use highest onscale PIC reading.		See table above.			Only necessary when PIC is re-zeroed.		
Time Reported	Low Range PIC (mR)	High Range PIC* (Roentgen)	TEDE DCF	Thyroid CDE DCF	TEDE (mrem)	Thyroid CDE (mrem)	Cumulative TEDE (mrem)	Cumulative Thyroid CDE (mrem)

EP EF-2 (UNITS 1 AND 2)
ATTACHMENT 6.9

TITLE: Maintenance Team Exposure Tracking Sheet

Name of Individual:								
	Only use highest onscale PIC reading.		See table above.			Only necessary when PIC is re-zeroed.		
Time Reported	Low Range PIC (mR)	High Range PIC* (Roentgen)	TEDE DCF	Thyroid CDE DCF	TEDE (mrem)	Thyroid CDE (mrem)	Cumulative TEDE (mrem)	Cumulative Thyroid CDE (mrem)

Name of Individual:								
	Only use highest onscale PIC reading.		See table above.			Only necessary when PIC is re-zeroed.		
Time Reported	Low Range PIC (mR)	High Range PIC* (Roentgen)	TEDE DCF	Thyroid CDE DCF	TEDE (mrem)	Thyroid CDE (mrem)	Cumulative TEDE (mrem)	Cumulative Thyroid CDE (mrem)

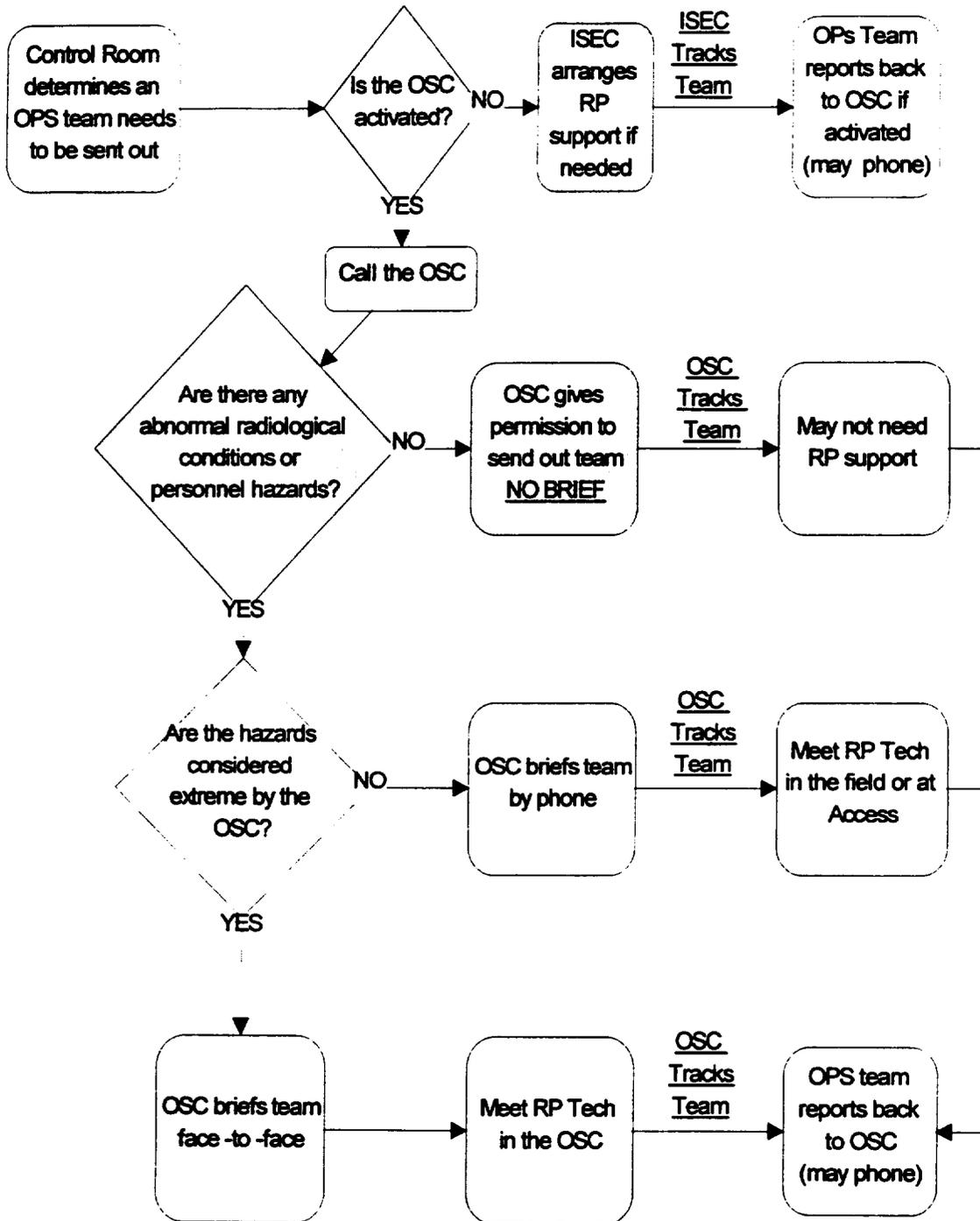
Name of Individual:								
	Only use highest onscale PIC reading.		See table above.			Only necessary when PIC is re-zeroed.		
Time Reported	Low Range PIC (mR)	High Range PIC* (Roentgen)	TEDE DCF	Thyroid CDE DCF	TEDE (mrem)	Thyroid CDE (mrem)	Cumulative TEDE (mrem)	Cumulative Thyroid CDE (mrem)

NOTE: the high range PIC reading must be multiplied by 1,000 to convert from Roentgen to mR.

DIABLO CANYON POWER PLANT
EP EF-2
ATTACHMENT 6.10

1 AND 2

TITLE: OPS Team Dispatch Decision Tree



TITLE: Backup Emergency Response Facilities

1 AND 2

9.21.00

EFFECTIVE DATE

PROCEDURE CLASSIFICATION: QUALITY RELATED

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1. SCOPE

1.1 This procedure describes on-site backup Emergency Response Facilities (ERFs) available if a primary ERF cannot be activated or becomes uninhabitable.

2. DISCUSSION

2.1 Designated on-site ERFs and their backup facilities include the following:

ERF Function	Primary Facility	First Backup	Second Backup
Control Room	Control Room	Hot S/D Panel (SM/SFM); TSC (SM, STA, CRA)	(None)
TSC	TSC	Control Room (Min. Staff.); TM/Trng. Bldg. (Supp.)	Hot S/D Panel (Min. Staff.); EOF (Support)
OSC	119' OCC/OWCC Area Turbine Bldg.	140' Turbine Building - Northeast Corner	Administration Building Room 215
Maint. Pool (OSC)	119' OCC/OWCC Area Turbine Bldg.	140' Turbine Building - Northeast Corner	Canyon Rm/Trng Bldg
N.O. Pool (CR/OSC)	Control Room	OPs Ready Room	119' Turbine Building Ofc/Cyn Rm
Acc Cont/RPTs (OSC)	85' Access Control	140' Access Control	TSC Lab

TITLE: Backup Emergency Response Facilities

2.2 The functions of each backup facility are the same as for the corresponding primary facility. Listed below are available systems in the backup facilities corresponding to the primary ERF. Note that these systems are a description at the time of this procedure revision and are NOT required to be in place by this procedure.

Control Room Function	Primary Facility	First Backup		Second Backup
		S/D Panel (SM/SFM)	TSC (SM, STA, CRA)	(None)
Plant inst/controls	Yes	Yes (limited)	---	---
RoIm phones	Yes	Yes (limited, #s differ)	Yes (#s differ)	---
Black Net phone	Yes	---	Yes	---
PPC	Yes	---	Yes	---
LAN/WAN computer	Yes	---	Yes	---
SPDS	Yes	---	Yes	---
LAN/WAN printer	Yes	---	Yes	---
Radio transmitter	Yes	Yes (operations frequency only)	Yes	---
Plant P.A.	Yes	Yes	Yes	---
Copier	Yes	---	Yes	---
Fax	Yes	---	Yes	---
Rad. survey instruments	Yes	---	Yes	---

TITLE: Backup Emergency Response Facilities

TSC Function	Primary Facility	First Backup		Second Backup	
		CR (Mgmt.)	I&C/Trng. (Support)	S/D Panel (Mgmt.)	EOF (Support)
RoIm Phones	Yes	Yes (#s differ)	Yes (#s differ)	Yes (limited)	Yes (#s differ)
Black Net Phones	Yes	Yes	---	---	Yes
EARS computer	Yes	Yes	Yes (Trng.)	---	Yes
LAN/WAN computers	Yes	Yes	Yes	---	Yes
LAN/WAN printer	Yes	Yes	Yes	---	Yes
Radio transmitter	Yes	Yes	---	Yes, (operations frequency only)	Yes
Plant PA	Yes	Yes	---	Yes	---
ERDS computer	Yes	---	---	---	---
SPDS	Yes	Yes	---	---	Yes
PPC	Yes	Yes	---	---	---
Plant manual & drawings	Yes	Yes	Yes (Trng.)	---	Yes
Microfiche/film & readers	Yes	---	---	---	---
Copier	Yes	Yes	Yes	---	Yes
Fax	Yes	Yes	---	---	Yes
Rad. survey instruments	Yes	Yes	---	---	Yes
Office supplies	Yes	Yes (limited)	Yes	---	Yes

TITLE: Backup Emergency Response Facilities

OSC Function	Primary Facility	First Backup	Second Backup
Systems	119' OCC/OWCC Area Turbine Bldg	140' Turbine Building (northeast corner)	Administration Building Room 215
RoIm Phones	Yes	Yes	Yes (different #s)
LAN/WAN computers	Yes	Yes	Yes
LAN/WAN printer	Yes	Yes	Yes
Copier	Yes	Yes	Yes
Rad. survey instruments	Yes	---	---

Access Control Function	Primary Facility	First Backup	Second Backup
Systems	85' Access Control	140' Access Control	TSC Lab
CPDS/ACAS computer	Yes	(wiring in place)	---
PCs/PICs/Alarming dosimetry/PCMs	Yes	---	---

3. DEFINITIONS

3.1 Habitability - a facility is deemed habitable when its occupants may perform their intended functions within (including, as applicable, access and exit) without undue risk from toxic, flammable, explosive, radiological or other hazards. Given the large potential variances in plant emergency risk and necessary facility occupancy times to respond appropriately, absolute numerical limits for these hazards are not pre-specified in this procedure. See RESPONSIBILITIES below for determination of habitability and relocation.

4. RESPONSIBILITIES

4.1 The Site Emergency Coordinator (SEC) shall, in general, determine relocation necessary for onsite ERFs. If time permits and the EOF is activated with the Recovery manager present, the SEC should obtain the RM's consent. However, in cases of rapidly escalating or highly dangerous or potentially dangerous conditions, the lead supervisor in each facility may order evacuation prior to receiving SEC/RM authorization.

TITLE: Backup Emergency Response Facilities

- 4.2 The lead supervisor for each ERF who may determine habitability for that facility (subject to Section 5.2 below) is listed below:

ERF	Lead Supervisor
Control Room	Interim SEC/Emerg. Ops Coord.
TSC	Site Emergency Coordinator
OSC	Emergency Maintenance Coordinator
Access Control	RP Coordinator

5. **INSTRUCTIONS**

- 5.1 A backup ERF shall be activated when an ERF is determined uninhabitable or otherwise may not start up or continue operations. See Section 2.1 above for the recommended succession of ERFs.
- 5.2 An ERF shall be declared uninhabitable by the following:
- 5.2.1 The Recovery Manager (EOF is activated and time permits).
 - 5.2.2 The SEC or ISEC (EOF not activated or time does not permit RM consent).
 - 5.2.3 The ERF lead supervisor (time does not permit SEC/ISEC consent). See Section 4.2 above.
- 5.3 The backup ERF shall be activated using the references listed below.
- 5.3.1 Backup Control Room: OP AP-8A
 - 5.3.2 Backup TSC: Attachment 7.1
 - 5.3.3 Backup OSC: Attachment 7.2
 - 5.3.4 Backup Access Control: Attachment 7.3

6. **RECORDS**

- 6.1 Checklists completed due to use of this procedure in a drill or actual event shall be forwarded to the Emergency Planning Supervisor for entry into Records Management System.

7. **ATTACHMENTS**

- 7.1 "Backup TSC Activation," 08/17/00
- 7.2 "Backup OSC Activation," 08/17/00
- 7.3 "Backup Access Control Activation," 08/17/00

DIABLO CANYON POWER PLANT
EP EF-9
ATTACHMENT 7.1

1 AND 2

TITLE: Backup TSC Activation

INSTRUCTIONS:

NOTE 1: Use this attachment in conjunction with EP EF-1.

NOTE 2: The TSC first backup facility is the Control Room for the minimum staff personnel and other appropriate facilities for the TSC support staff. The second backup is the Hot Shutdown Panel for the minimum staff personnel and the EOF for the TSC support staff. Circumstances may dictate using these out of order, or utilizing different facilities. In such a case, as much of the following instructions should be implemented as possible.

1. _____ If time permits and the EOF is activated with the RM present, obtain SEC or RM consent for TSC relocation.
2. _____ Declare the TSC evacuation and relocation to the TSC staff using the plant PA. Notify the EOF if activated. Notify the Control Room and, if activated, the OSC. Post the abandoned facility entrances with signs indicating the uninhabitable status and facility relocation.
3. _____ Direct the minimum TSC staffing per EP EF-1 to the Control Room, Hot Shutdown Panel, or other appropriate facility, plus other essential personnel appropriate to the event response.
4. _____ Direct TSC support staff to relocate to other appropriate facilities. Consider taking the survey instruments from the TSC.
5. _____ When the backup TSC facility is operational, notify the Control Room and, as appropriate, the OSC and EOF. Make a plant PA announcement if possible. Direct notification of the County, State and NRC.

Completed By: _____
Site Emergency Coordinator

Date: _____

DIABLO CANYON POWER PLANT
EP EF-9
ATTACHMENT 7.2

1 AND 2

TITLE: Backup OSC Activation

INSTRUCTIONS:

NOTE 1: Use this attachment in conjunction with EP EF-2.

NOTE 2: The OSC first backup facility is the office on the north end of the Turbine Building (140' elevation) and the second is the Administration Building Room 215. Circumstances may dictate using these out of order, or utilizing a different facility, such as the 85' Machine Shop. In such a case, as much of the following instructions should be implemented as possible.

1. _____ If time permits, obtain SEC or ISEC consent for OSC relocation.
2. _____ Declare the OSC evacuation and relocation to the OSC staff. Notify the Control Room and, if available, the SEC. Request the CR or TSC to make a PA announcement of the OSC relocation. Post the abandoned facility entrances with signs indicating the uninhabitable status and facility relocation.
3. _____ Direct at least the minimum OSC staffing per EP EF-2 to the 140' Turbine Building (northeast corner), the Administration Building Room 215 or other appropriate facility. Consider taking the survey instruments and supplies from the 119' OCC/OWCC Area in Turbine Building.
4. _____ Direct any extra OSC staffing to the Administration Building Room 215, Training Building or other appropriate facility.
5. _____ When the backup OSC facility is operational, notify the Control Room and, if activated, the TSC.

Completed By: _____ Date: _____
Emergency Maintenance Coordinator

DIABLO CANYON POWER PLANT
EP EF-9
ATTACHMENT 7.3

1 AND 2

TITLE: Backup Access Control Activation

INSTRUCTIONS:

NOTE 1: Use this attachment in conjunction with EP EF-2.

NOTE 2: The 85' Access Control first backup facility is the 140' Access Control and the second is the TSC Lab. Circumstances may dictate using these out of order, or utilizing a different facility. In such a case, as much of the following instructions should be implemented as possible.

1. _____ If time permits, obtain SEC or ISEC consent for Access Control relocation.
2. _____ Declare the Access Control evacuation and relocation to the Access Control staff. Notify the Control Room and, if available, the SEC. Request the CR or TSC to make a PA announcement of the Access Control relocation. Post the abandoned facility entrances with signs indicating the uninhabitable status and facility relocation.
3. _____ Direct at least the minimum Access Control staffing to the 140' Access Control, the TSC Lab, or other appropriate facility.
4. _____ When the backup Access Control is operational, notify the Control Room and, if activated, the TSC and OSC.

Completed By: _____
RP Coordinator

Date: _____

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