



**Pacific Gas and
Electric Company**

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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 (EP) implementing procedures for Diablo Canyon Power Plant, Units 1 and 2.

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

This update does not contain privacy/proprietary information.

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

Sincerely,

Grant C. Gillies
Director, Site Services

baf/1345/A0522550E24

Enclosures

cc: David L. Proulx
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cc/enc: Ellis W. Merschoff (2)

A045

**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 R-2 Rev. 21	No	Release of Airborne Radioactive Materials Initial Assessment

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
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EP G-1	31	Emergency Classification and Emergency Plan Activation
EP G-2	25	Activation and Operation of the Interim Site Emergency Organization
EP G-3	39	Notification of Off-Site Agencies and Emergency Response Organization Personnel
EP G-4	19	Assembly and Accountability
EP G-5	9A	Evacuation of Nonessential Site Personnel
EP R-2*	21	Release of Airborne Radioactive Materials Initial Assessment
EP R-3	8C	Release of Radioactive Liquids
EP R-7	13	Off-Site Transportation Accidents
EP OR-3	6A	Emergency Recovery
EP RB-1	5B	Personnel Dosimetry
EP RB-2	4B	Emergency Exposure Guides
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EP RB-4	4A	Access to and Establishment of Controlled Areas Under Emergency Conditions
EP RB-5	4C	Personnel Decontamination
EP RB-8	16	Instructions for Field Monitoring Teams
EP RB-9	11	Calculation of Release Rate
EP RB-10	9	Protective Action Recommendations
EP RB-11	12	Emergency Offsite Dose Calculations
EP RB-12	6	Plant Vent Iodine and Particulate Sampling During Accident Conditions
EP RB-14	7	Core Damage Assessment Procedure
EP RB-15	11	Post Accident Sampling System
EP EF-1	29	Activation and Operation of the Technical Support Center
EP EF-2	27	Operational Support Center
EP EF-3	22	Activation and Operation of the Emergency Operations Facility
EP EF-4	14	Activation of the Off-Site Emergency Laboratory
EP EF-9	8	Backup Emergency Response Facilities
EP EF-10	5	Joint Media Center Activation and Operation

* Procedure included in this submittal

PACIFIC GAS AND ELECTRIC COMPANY
NUCLEAR POWER GENERATION
DIABLO CANYON POWER PLANT
EMERGENCY PLAN IMPLEMENTING PROCEDURE

NUMBER - EP R-2
REVISION 21
PAGE 1 OF 5
UNITS

TITLE: Release of Airborne Radioactive Materials Initial Assessment

1 AND 2

11/6/02
EFFECTIVE DATE

PROCEDURE CLASSIFICATION: QUALITY RELATED

1. SCOPE

- 1.1 This procedure describes the steps to be taken by on-shift personnel to initially evaluate the off-site consequences of an accidental airborne release that may result in Emergency Plan Activation.
- 1.2 It does not describe the operation of the plant equipment necessary to terminate or minimize the release. This latter subject is covered in the appropriate E, ECA, and FR series Emergency Procedures for the particular release mechanism.

2. DISCUSSION

- 2.1 An accidental airborne release of radioactive materials that may result in site boundary dose rates in excess of the limits specified in the EP G-1 shall require a prompt initial assessment by the operating staff. This initial release rate and dose assessment is performed using either the Plant Process Computer (PPC) program "EPR2," or manually using Section 7 of this procedure.
- 2.2 This procedure shall only be used by Control Room personnel to perform initial accident dose assessments. This procedure shall not be used to evaluate compliance with Technical Specification limits during planned effluent releases conducted as part of normal plant operations. The methodology contained in this procedure is intended to provide a rapid and conservative calculation of the projected off-site doses due to an accidental release of airborne radioactive materials. More advanced methodologies are contained in procedures EP RB-9 and EP RB-11 or the appropriate chemistry procedures.

3. DEFINITIONS

- 3.1 Accidental Release - A release of radioactive material unrelated to any planned effluent release evolutions.
- 3.2 Committed Dose Equivalent (CDE) - The dose to the organs or tissues that would be received from an intake of radioactive material by an individual during the 50 years following the intake.
- 3.3 Committed Effective Dose Equivalent (CEDE) - The sum of the products of the weighting factors applicable to each of the body organs or tissues that are irradiated and the CDE to these organs or tissues.

TITLE: Release of Airborne Radioactive Materials Initial Assessment

- 3.4 Deep Dose Equivalent (DDE) - Dose associated with exposure of the whole body (depth of 1 cm).
- 3.5 Total Effective Dose Equivalent (TEDE) - The sum of the DDE (for external exposure) and CEDE (for internal exposure).
- 3.6 TEDE Rate - The time rate of change of Total Effective Dose Equivalent as a function of immersion and inhalation exposure time.
- 3.7 Thyroid CDE Rate - The time rate of change of Thyroid Committed Dose Equivalent as a function of immersion and inhalation exposure time.

4. RESPONSIBILITIES

- 4.1 Emergency Evaluation Coordinator (EEC) is responsible for performing an initial assessment of an airborne radiological release when directed by the ISEC.
- 4.2 Interim Site Emergency Coordinator (ISEC) is responsible for determining when an assessment is needed and directing the EEC to implement this procedure based on emergency evaluation priorities.

5. PREREQUISITES

- 5.1 Unified Dose Assessment Center (UDAC) is not activated and performing the function of radiological assessment.
- 5.2 Interim Site Emergency Coordinator (ISEC) has determined, based on plant accident conditions or symptoms of an accidental radiological release, that an initial assessment of projected off-site doses has priority over other actions being performed by the EEC.
The following listed symptoms indicate that an airborne release may be occurring from within the RCA as guidance to the ISEC:
 - There is actual or suspected leakage of water, steam, or noncondensable gases from any vessel or piping system containing primary coolant, liquid radwaste, or gaseous radwaste.
 - Damage occurs to a submerged, irradiated fuel assembly with the resultant release of significant quantities of noncondensable gases.
 - Alarms occur on CAMs.
 - A fire occurs involving radioactive materials.
(Refer to EP M-6)
 - Verified alarm on radiation monitors RE-14/14R, RE-28/28R, RE-29, RE-15/15R, or RE-24/24R.
 - A major radioactive material spill occurs.

TITLE: Release of Airborne Radioactive Materials Initial Assessment

UNITS 1 AND 2

6. PRECAUTIONS

- 6.1 Do not use SPDS to obtain RMS readings. Radiological Monitor readings off SPDS may be based on different units of measurement than required as input to the calculations.
- 6.2 If the Main Condenser is available during a SGTR event with a stuck open Safety Relief or 10% Steam Dump to atmosphere, there are two release pathways.
- 6.3 Obtain an independent verification of your calculation whenever time permits to confirm no errors or incorrect assumptions about plant conditions.
- 6.4 Default release rates are extremely conservative and may result in higher classifications or PARs than would be warranted if actual release indications were available.
- 6.5 N-16 will be detected on the MSL Radiation Monitors while at power and may cause a false high off-site dose calculation.
- 6.6 This procedure shall not be used to evaluate compliance to Technical Specifications during planned effluent releases. Such evaluations shall be performed by the Chemistry Department.
- 6.7 Fuel Handling Accident (FHA) in Containment with Equipment Hatch open is a special case. Use the analyzed default dose rates and doses listed in Attachment 10.1 and go directly to EP G-1 for comparison to the Emergency Action Levels (EALs).

7. INSTRUCTIONS

NOTE: This calculation can be performed on the PPC using the turn-on code "EPR2."

7.1 RELEASE RATE CALCULATIONS

- 7.1.1 Obtain a working copy of Attachment 10.1.
- 7.1.2 Determine release source location as Plant Vent, Atmospheric Steam Release, or Unmonitored.

CAUTION: Do NOT use SPDS to obtain radiation monitor readings.

- 7.1.3 Gather and record the required information in accordance with the appropriate section of the form.

NOTE: Plant Vent Extended Range Rad Monitor RE-87 will automatically activate if the Normal Range Gas Monitors RE-14/14R approach their maximum reading.

- 7.1.4 Perform the required calculation to determine the release rate of Total Effluent and record the results in both this Attachment and Attachment 10.2.
- 7.1.5 If it is not possible to calculate a release rate, refer to the DEFAULT RELEASE RATES on Page 3 of Attachment 10.1 and choose the most appropriate value for input to Attachment 10.2. For an FHA in containment with equipment hatch open, use default dose rates and doses from Attachment 10.1 and go directly to EP G-1 for comparison to the EALs.

TITLE: Release of Airborne Radioactive Materials Initial
Assessment

7.2 OFF-SITE DOSE CALCULATIONS

NOTE: Calculations may be performed using the PPC routine "EPR2," or by hand, as follows:

- 7.2.1 Obtain a working copy of Attachment 10.2.
- 7.2.2 Gather and record the required information in accordance with the appropriate section of the form.
NOTE: Plant Process Computer (PPC) Meteorological Data turn on codes are "METP" (Primary Data) and "METB" (Back-up Data).
- 7.2.3 Determine the appropriate activity source term and circle the associated DCF's to be used in Section 4A and 4B.
- 7.2.4 Perform the required calculations to determine the TEDE and THYROID CDE RATES.
- 7.2.5 Project the RELEASE DURATION in hours as input to determining projected doses.
- 7.2.6 If a duration cannot be projected, use the DEFAULT DURATION of 3 hours.
- 7.2.7 Perform the required calculations to determine the TEDE and THYROID CDE at the Site Boundary (800 meters).

7.3 REPORTING THE RESULTS

- 7.3.1 Refer to EP G-1 and compare the results of the above calculations with the Emergency Action Levels.
- 7.3.2 Refer to EP RB-10 and compare the results of the dose calculations with the PAR determination criteria.

7.4 Advise the ISEC of any EAL thresholds that are exceeded based on site boundary dose rates and doses, or the need to revise PARs due to changing conditions.

7.5 CONTINUOUS ACTIONS

- 7.5.1 As directed by the ISEC, continue to perform assessment of airborne releases to support evaluation of EAL status and PARs by repeating the above instructions.
- 7.5.2 Contact Chemistry to request:
 - a. A sample of the radioactive effluent (if possible) and in-plant airborne activity.
 - b. A confirmatory assessment of the site boundary dose rate from the release.

TITLE: Release of Airborne Radioactive Materials Initial
Assessment

8. RECORDS

- 8.1 All checklists generated during activation of the EOF for drills and exercises are non-quality Good Business Records and shall be retained by Emergency Planning Group for three years.
- 8.2 All checklists generated during activation of the EOF for a real event are non-quality records and shall be retained in RMS in accordance with AD10.ID2.

9. APPENDICES

None

10. ATTACHMENTS

- 10.1 ""Release Rate Calculations," 10/31/02
- 10.2 ""Off-Site Dose Calculations," 08/05/94

11. REFERENCES

- 11.1 EP G-1, "Accident Classification and Emergency Plan Activation."
- 11.2 EP G-2, "Activation and Operation of the Interim Site Emergency Organization (Control Room)."
- 11.3 EP RB-9, "Calculation of Release Rate."
- 11.4 EP RB-10, "Protective Action Recommendations."
- 11.5 EP RB-11, "Emergency Off-site Dose Calculations."
- 11.6 EP RB-12, "Mid and High Range Plant Vent Radiation Monitors."
- 11.7 EP M-6, "Fire."
- 11.8 NRS-RES Calculation No. RA 93-12, New Dose Conversion Factors for EP R-2 and RB-11, Validation and Verification, Rev. 1, 12/15/93.
- 11.9 NOS-RECE Calculation No. RA 93-04, EP RB-9, Calculation of Release Rate, Rev. 7 and R-2, Release of Airborne Radioactive Materials, Rev. 12, Validation and Verification, Rev. 0, 4/12/93.
- 11.10 SH&ES Calculation No. EP-94-01, Rev 0, EP R-2, Release of Airborne Radioactive Materials, Rev 17, Validation and Verification.
- 11.11 PG&E Calculation PAM-0-04-517, Rev. 4, 4/6/97 "Steam Generator Narrow Range Level Uncertainty."
- 11.12 PG&E Calculation STA-160, Rev.0, "Estimate of Expected Exposures Associated with a Fuel Handling Accident with Containment Open."

DIABLO CANYON POWER PLANT

EP R-2

ATTACHMENT 10.1

1 AND 2

TITLE: Release Rate Calculations

PLANT VENT RELEASE

1. GENERAL INFORMATION

Date: _____ Time: _____ Assessment No. _____
Assessment By: _____ Unit Releasing _____

2. PLANT VENT FLOW RATE DETERMINATION

A. DIRECT - Plant Vent Flow Rate FR-12 (0-30x10^4 CFM (CFM) = _____ (CFM)

OR

B. ALTERNATE - Operating Ventilation Equipment

(Max No. possible) #Fans (CFM/Fan)

Table with 5 columns: Equipment Name, Quantity, Unit, CFM/Fan, and Total CFM. Rows include FHB Exhaust, Aux Bldg Exhaust, GE/GW Area, Cont. Purge, and Cont. Hydrogen.

Plant Vent Flow Rate = _____ (CFM)

3. RELEASE RATE CALCULATION

CAUTION: Do NOT use SPDS to obtain monitor readings.

A. NOBLE GAS RELEASE RATE

Table with 6 columns: Circle Monitor Used, Reading (Units), Conversion Factor, Plant Vent Flow Rate (CFM), and Noble Gas Release Rate (Ci/sec). Rows for Primary and Backup monitors.

B. TOTAL EFFLUENT RELEASE RATE

NOTE: Refer to Page 3 for criteria in choosing RCS, GAP, or CORE below.

Table with 4 columns: Noble Gas Release Rate (Ci/sec), Conversion Factor, Total Effluent Conversion Factor, and Total Effluent Release Rate (Ci/sec). Rows for RCS, GAP, and CORE.

NOTE: If it is not possible to calculate a release rate, refer to the DEFAULT RELEASE RATES on Page 3 of this attachment.

GO TO ATTACHMENT 10.2

EP R-2 (UNITS 1 AND 2) ATTACHMENT 10.1

TITLE: Release Rate Calculations

1. GENERAL INFORMATION ATMOSPHERIC STEAM RELEASE

Date: _____ Time: _____ Assessment No. _____
Assessment By: _____ Unit Releasing _____

CAUTION: WHEN CRITICAL, N-16 ACTIVITY SEEN BY MSL RAD MONITORS CAUSES INVALID READINGS FOR OFFSITE DOSE. POST-TRIP, RE-7X READING IS VALID IF THE RE-7X MONITOR SHOWED AN INITIAL N-16 RESPONSE, OR RESPONDS TO CHECKSOURCE.

NOTE: If it is not possible to calculate a release rate, refer to the DEFAULT RELEASE RATES on Page 3.

2. STEAM RELEASES - Use this form to calculate steam releases to the atmosphere WHEN NOT critical.

A. Required Information (RUPTURED GENERATOR ONLY)

Table with 8 columns: Check Ruptured S/G, MSL Rad Monitor, Reading (cpm), S/G Lvl Narrow Range, Level (%), S/G Flow Rate, Flow Rate (lbs/hr). Rows for SG 1-4 with associated monitor and level indicators.

B. Alternate Steam Flow Rate (Only if the RUPTURED S/G Flow Rate is otherwise not available)

Table with 4 columns: Valve Type, # Valves Lifted, Capacity (lbs/hr), Flow Rate (lbs/hr). Rows for 10% Steam Dump and Safety Reliefs.

Total Steam Flow Rate (lbs/hr) = [] (lbs/hr)

3. RADIATION MONITOR FACTORS (Determined based on S/G NR Level indication) (Enter in Section 4 below.)

Table with 4 columns: S/G Level Narrow Range, EMPTY < 4%, NORMAL 4% - 96%, FLOODED > 96%. Row for Monitor Factor with values 6.08E-10, 6.75E-10 (DEFAULT), 3.07E-10.

4. RELEASE RATE CALCULATIONS

A. TOTAL EFFLUENT RELEASE RATE (RE-7x)

Table with 4 columns: MSL Monitor Reading (cpm), Flow Rate (lbs/hr), Monitor Factor, Total Effluent Release Rate (Ci/sec). Includes a calculation box with an equals sign.

GO TO ATTACHMENT 10.2

EP R-2 (UNITS 1 AND 2)
ATTACHMENT 10.1

TITLE: Release Rate Calculations

1. SOURCE TERM SELECTION AND DEFAULT RELEASE RATES

NOTE: Use default release rate only if actual data is not available or if the release is not being monitored.

A. Check the accident type which most closely resembles the current event.

Accident Source	Default Release Rate (Ci/sec)	Condition	Source Term
<input type="checkbox"/> LOCA (w/ core melt)	1.74 E+1	RE-30 or 31 >300R/hr	CORE
<input type="checkbox"/> LOCA (w/o core melt)	5.74 E+0	RE-30 or RE-31 <300R/hr RE-30 or RE-31 not on scale	GAP RCS
<input type="checkbox"/> Main Steam Line Break	8.61 E-3		RCS
<input type="checkbox"/> Feedwater Line Break	8.61 E-3		RCS
<input type="checkbox"/> Blackout	8.62 E-1		RCS
<input type="checkbox"/> Locked Rotor	1.57 E-2		GAP
<input type="checkbox"/> FHB Accident	1.45 E+1		GAP
<input type="checkbox"/> Rod Ejection	1.08 E-2		GAP
<input type="checkbox"/> GDT Rupture	4.14 E+1		RCS
<input type="checkbox"/> LHUT Rupture	3.10 E+1		RCS
<input type="checkbox"/> VCT Rupture	8.29 E-2		RCS
<input type="checkbox"/> S/G Tube Rupture	1.65 E+0	NR S/G Level < 4% NR S/G Level 4-96% NR S/G Level > 96%	SG - Empty SG - Normal SG - Flooded
<input type="checkbox"/> Containment FHA Accident with Equip. Hatch Open	S.B. Dose Rates S.B. Doses	TEDE = 13.4 mrem/hr Thy.CDE = 51.4 mrem/hr TEDE = 6.7 mrem Thy. CDE = 25.7 mrem	Go Directly to EP G-1

B. Record the Default Release Rate in Attachment 10.2, Section 4 and use the DCF choice that is listed for the specific accident source above.

GO TO ATTACHMENT 10.2

DIABLO CANYON POWER PLANT

EP R-2

ATTACHMENT 10.2

1 AND 2

TITLE: Off-Site Dose Calculations

1. GENERAL INFORMATION

Date: _____ Time: _____ Assessment No. _____
 Assessment By: _____ Unit Releasing _____

2. METEOROLOGICAL DATA - PPC (Plant Process Computer)

Turn On Codes for Met Data are "METP" (Primary Data) or "METB" (Back-up Data)

Parameter	Reading	Units	DEFAULT
Wind Speed (10 Meter Level)	_____	meters/sec	
Wind Direction (10 Meter Level)	_____	Degrees	
Site Boundary X/Q (0.8 km)	_____	Sec/m ³	5.29E-04

3. DCF Determination - Select the most appropriate source term for the DCF using the criteria in Attachment 10.1. Circle the corresponding DCF in Section 4 below.

4. DOSE CALCULATIONS - (From data calculated using Attachment 10.1)

A. TOTAL EFFECTIVE DOSE EQUIVALENT (TEDE)

Total Effluent or Default Release Rate (Ci/sec)	Site Boundary X/Q (0.8 km) (Sec/m ³)	DCF (circle one)	TEDE Rate (mrem/hr)	Projected Release Duration (hr) (DEFAULT 3 hrs)	TEDE (mrem)
Attachment 10.1	x _____	1.1E + 05 (RCS) 3.0E + 06 (Gap) 1.1E + 07 (Core) 1.1E + 05 (SG-Empty) 4.3E + 04 (SG-Normal) 9.3E + 05 (SG-Flooded)	= <input type="text"/>	x _____	= <input type="text"/>

B. THYROID COMMITTED DOSE EQUIVALENT (CDE) (DO NOT COMPLETE FOR GDT, LHUT, OR VCT RUPTURE)

Total Effluent or Default Release Rate (Ci/sec)	Site Boundary X/Q (0.8 km) (Sec/m ³)	DCF (circle one)	Thyroid CDE Rate (mrem/hr)	Projected Release Duration (hr) (DEFAULT 3 hrs)	Thyroid CDE (mrem)
Attachment 10.1	x _____	1.5E + 06 (RCS) 6.5E + 07 (Gap) 7.7E + 07 (Core) 1.5E + 06 (SG-Empty) 1.5E + 05 (SG-Normal) 1.4E + 07 (SG-Flooded)	= <input type="text"/>	x _____	= <input type="text"/>

5. REPORTING THE RESULTS - (Refer to Section 7.3 of Instructions for details)

- A. Refer to EP G-1 for EAL criteria.
- B. Implement EP RB-10 for PAR criteria