Pacific Gas and Electric Company

Diablo Canyon Power Plant
P.O. Box 56
Avila Beach, CA 93424

800.545.6000

June 19, 2003

PG&E Letter DCL-03-073

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 Units 1 and 2 as indicated in Enclosure 1.

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 contains privacy/proprietary information that has been bracketed in accordance with NRC Generic Letter 81-27. Enclosure 2 provides the location of the privacy/proprietary information.

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

Sincerely,

R. S. Foulon For James E. Tomkins

James E. Tomkins
Director, Site Services

ddm/1345
Enclosures
cc: David H. Jaffe
David L. Proulx
cc/enc: Thomas P. Gwynn
Senior Emergency Preparedness Inspector (RGN-IV/DRS)

A045

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	6A	Emergency Plan Training
OM10.DC1	2A	Emergency Preparedness Drills and Exercises
EP G-1	32	Emergency Classification and Emergency Plan Activation
EP G-2	26	Interim Emergency Response Organization
EP G-3	40	Notification of Off-Site Agencies and Emergency Response Organization Personnel
EP G-4*	**20**	**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	13A	Off-Site Transportation Accidents
EP OR-3	6A	Emergency Recovery
EP RB-1	5B	Personnel Dosimetry
EP RB-2	5	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	16	Instructions for Field Monitoring Teams
EP RB-9*	**11A**	**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*	**7A**	**Core Damage Assessment Procedure**
EP RB-15	11	Post Accident Sampling System
EP EF-1	30	Activation and Operation of the Technical Support Center
EP EF-2	27	Operational Support Center
EP EF-3*	**23**	**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**

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-4, Revision 20	Yes	Assembly and Accountability Page 6 of 8 Attachment 7.2, page 1 of 1.
EP RB-9, Revision 11A	No	Calculation of Release Rate
EP RB-14, Revision 7A	No	Core Damage Assessment Procedure
EP EF-3, Revision 23	Yes	Activation and Operation of the Emergency Operations Facility Attachment 5.6, pages 1, 2, 3, and 5 of 5. Attachment 5.7, page 1 of 1. Attachment 5.8, page 1 of 1. Attachment 5.12, page 1 of 1. Attachment 5.13, page 1 of 1. Attachment 5.17, page 1 of 1.

TITLE: Assembly and Accountability

1 AND 2

05/29/03
EFFECTIVE DATE

PROCEDURE CLASSIFICATION: QUALITY RELATED

SCOPE 1
DISCUSSION 1
DEFINITIONS 2
RESPONSIBILITIES 4
INSTRUCTIONS 5
Initiation of Assembly and Accountability 5
Assembly Areas 6
Accountability 6
Termination of Assembly and Accountability 7
RECORDS 8
ATTACHMENTS 8

1. SCOPE

This procedure describes the process of assembling and accounting for onsite personnel in order to identify any missing individuals within the power block.

For the purposes of this procedure, onsite personnel refers to personnel within the protected area.

2. DISCUSSION

The assembly and accountability process should be initiated by the shift manager, or designee, or the site emergency coordinator any time there may be a need to account for personnel in the power block, or when it is desirable to relocate non-essential personnel outside the power block, or when an emergency is declared.

The assembly and accountability process is activated by sounding the site emergency signal and a public address announcement.

When the assembly and accountability process is activated, personnel are notified to report to assembly areas where they will receive further instructions.

The goal of accountability is to account for all personnel within the power block, for the purpose of identifying the existence of any missing individuals, within 30 minutes. The accountability 30 minute time starts when the announcement to assemble is made or the site emergency signal is sounded, whichever is first.

3. DEFINITIONS

Accountability

The process of determining the location of all individuals by name within the power block.

Accountability Coordinator

The Diablo Canyon Watch Commander or designee.

Accountability List

A list of all individuals within the power block. This list is generated from the Central Alarm Station (CAS) computer.

Assembly

The process of assembling personnel at assigned areas.

Assembly Area

The location where personnel report at the beginning of shift.

Continuous Accountability

Maintaining accountability by name and location of individuals within the power block after initial accountability has been established.

Missing Personnel

Individuals within the power block who can not be accounted for by the accountability process.

Search and Rescue

Locating and recovering missing individuals through systematic walkdowns and entries into accessible plant areas by coordinated team efforts.

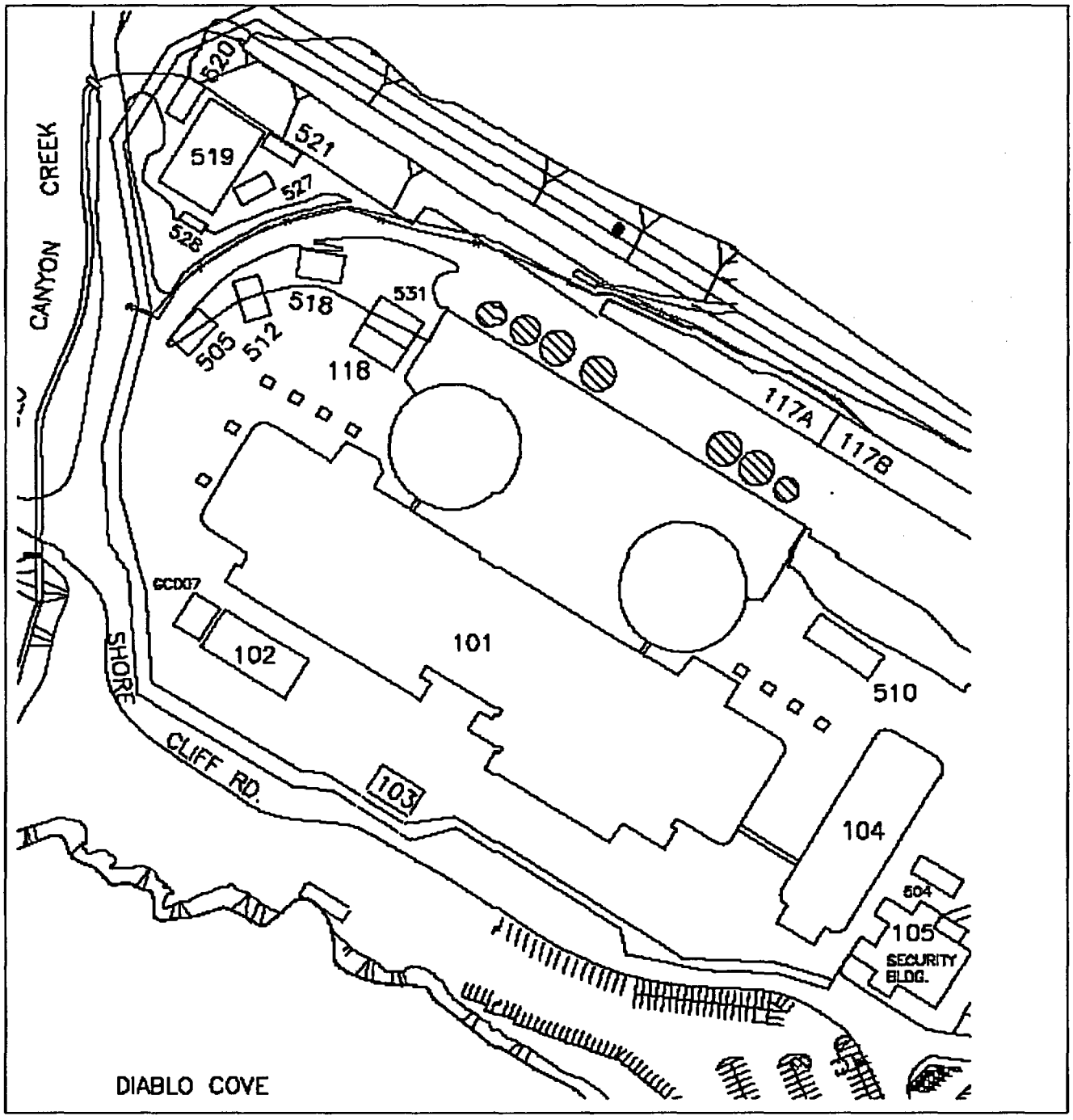
Sweep

Walking through areas to determine if individuals are present.

Power Block

For the purpose of this procedure the power block includes the following areas:

Unit-1 & Unit-2 containment, #101 power block/auxiliary bldg., #117A laundry, #117B radwaste bldg. #118 auxiliary boiler enclosure, RCA.



4. RESPONSIBILITIES

Accountability Coordinator

- Coordinates and maintains the accountability of personnel within the power block.
- Ensures continuous accountability of individuals dispatched to within the power block until relieved.

Emergency Maintenance Coordinator

- Ensures Operations Support Center (OSC) assembly rosters are completed and sent to security, if the OSC is activated.
- Ensures continuous accountability of individuals assigned to their area until relieved.

Security Advisor

- Ensures Technical Support Center (TSC) assembly rosters are completed and sent to security, if the TSC is activated.
- Ensures continuous accountability of individuals assigned to their area until relieved.
- Ensures personnel accountability is performed.
- Provides Site Emergency Coordinator (SEC) with a list of missing personnel.
- Updates the SEC on status of missing personnel.

Operations Support Team Asset Team Leader (OST ATL)

- Ensures assembly rosters are completed and sent to security.
- Ensures continuous accountability of individuals assigned to their area until relieved.

Operations Shift Manager

- Ensures control room assembly rosters are completed and sent to security.
- Ensures continuous accountability of individuals assigned to their area until relieved.
- Recommends protective actions to the Diablo Canyon Watch Commander for security individuals prior to TSC activation.
- Provides protective action instructions to individuals using public address announcements, or communications with supervisors.

Site Emergency Coordinator (SEC)

- Directs assembly, accountability, site access control, and search and rescue of missing personnel.

Radiological Protection 85' Access Control Foreman

- Ensures 85' access assembly rosters are completed and sent to security.
- Ensures continuous accountability of individuals assigned to their area until relieved.

5. INSTRUCTIONS

5.1 Initiation of Assembly and Accountability

5.1.1 The shift manager or site emergency coordinator should initiate the assembly and accountability process when:

- An event presents risk to personnel safety within the power block.
- There is a need to determine if there are any missing persons within the power block.
- There is a declared alert, site area emergency, or general emergency.

5.1.2 To initiate assembly and accountability, shift manager or site emergency coordinator should use the public address system to announce:

Attention all personnel. The assembly and accountability process has been activated.

All non-essential personnel, place all work in a safe condition, leave the power block, and return to your normal desks.

5.1.3 Sound the site emergency signal

5.1.4 Repeat the public address announcement.

Attention all personnel. The assembly and accountability process has been activated.

All non-essential personnel, place all work in a safe condition, leave the power block, and return to your normal desks.

5.1.5 When the site emergency signal has been sounded or when notified by a public address announcement to assemble, all personnel shall immediately:

a. Place work area in a safe condition.

b. Report to assembly areas, the place reported to at the beginning of the shift.

c. Await further instructions.

5.1.6 Personnel located outside the power block should remain outside until the assembly and accountability process has ended, unless directed otherwise by the shift manager or security watch commander.

5.1.7 Personnel engaged in critical operations or emergency response actions should call the control room as soon as possible, to be accounted for, then proceed to assembly areas.

5.1.8 Visitors and non-essential contractors shall exit the power block.

5.2 Assembly Areas

5.2.1 All plant personnel should consider their normal work reporting location (the place reported to at the beginning of shift) as their assigned assembly area.

Examples

- Personnel who report to the administration building #104 on a normal workday, should assemble at their normal reporting area in the admin building when the assembly and accountability process has been initiated.
- Warehouse personnel should report to the warehouse.
- ACRE personnel should report to building #102.
- Operations personnel should report to the control room.

5.2.2 Personnel in the power block who are not able to report to their assembly area due to work in progress, shall immediately notify the control room to ensure they are accounted for.

5.2.3 Personnel working outside the power block, that normally report inside the power block, should remain outside the power block until the assembly and accountability process has terminated.

5.2.4 Non-essential contract personnel should assemble in an area where the public address announcements can be heard to await further instructions.

5.3 Accountability

5.3.1 Assembly Areas in the Power Block

a. Supervisors of personnel assigned to assembly areas within the power block shall ensure:

1. Form 69-13231, Accountability Roster shall be completed with the names of all assembled personnel.
2. Personnel inside the power block that are unable to immediately report to an assembly area, but have made verbal contact, should be considered accounted for and included on the form.
3. Personnel outside the power block that are not able to enter the power block should not be included on the accountability roster.
4. Form 69-13231 should be faxed to the accountability coordinator at [ext. 3115] within approximately 15 minutes of the initiation of the assembly and accountability process.

5.3.2 Assembly Areas outside the Power Block

Personnel assembled outside the power block shall remain outside the power block to wait for further instructions.

5.3.3 Accountability Coordinator

a. Ensure all personnel within the power block are accounted for within 30 minutes of the initiation of the assembly and accountability process, to ascertain the names of any missing persons.

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

c. Initiate Form 69-13230.

d. Assign an officer to the bridge line and FAX machine to receive accountability information from assembly areas within the power block.

e. After receiving accountability forms from the following assembly areas, compare them to the computer generated emergency accountability listing:

- Control Room
- Radiological Access Control 85' Elevation
- Operations Support Team
- Technical Support Center (at Alert or higher)
- Operational Support Center (at Alert or higher)

5.3.4 Missing Personnel

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

a. Attempt to identify the last known location of the person through emergency accountability listing report or alternate security computer command.

b. Conduct sweeps of the following areas as needed:

- Lube Oil and Dirty Lube Oil Storage Room
- Condensate Pump Pit U-1
- Heater Drip Pump (DRP)
- Condensate Pump Pit U-2
- Post LOCA Sample Room U-1
- Post LOCA Sample Room U-2
- 85' AUX Building
- 140' Turbine Bldg

5.4 Termination of Assembly and Accountability

When the necessity to account for individuals within the power block has ended, the shift manager or site emergency coordinator should make a PA announcement to terminate the assembly and accountability process.

6. RECORDS

When used during a drill, Form 69-13231 and Form 69-13230 are good business records and shall be retained by emergency planning for 3 years in accordance with AD10.ID2.

When used during a real event, Form 69-13231 and Form 69-13230 are records of quality assurance and shall be permanently retained in accordance with AD10.ID1.

7. ATTACHMENTS

7.1 Form 69-13230, "Missing Personnel Roster," 03/12/02

7.2 Form 69-13231, "Accountability Roster," 08/01/02

DIABLO CANYON POWER PLANT
EP G-4
ATTACHMENT 7.1

1 AND 2

TITLE: Missing Personnel Roster

1. Record accountability start time:_____

   NOTE: Accountability starts at the activation of the assembly and accountability process by the sounding of the site emergency signal or public address announcement, whichever occurs first.

2. Accountability Completion Time: _____

   NOTE: Accountability is complete when all accountability forms are received, a comparison has been made against the Emergency Accountability Listing report, and individuals that are unaccounted for are identified as missing.

3. Write the name and keycard number of any missing individual below.

4. Notify Security to search for missing personnel.

5. Forward list to the TSC Security Advisor or the ISEC in the control room if the TSC is not manned.

NAME	KEYCARD

DIABLO CANYON POWER PLANT
EP G-4
ATTACHMENT 7.2

1 AND 2

TITLE: Accountability Roster

1. Complete this checklist for accountability of assembly area personnel. Include personnel that may be performing a specific job.
2. FAX this information to the accountability coordinator at ext. [3115 or 545-3115] within 15 minutes.
3. The accountability coordinator can be reached on [bridge phone ext. 2001.]

ASSEMBLY AREA LOCATION _____

NAME	KEYCARD

TITLE: Calculation of Release Rate

1 AND 2

06/03/03
EFFECTIVE DATE

PROCEDURE CLASSIFICATION: QUALITY RELATED

1. SCOPE

1.1 This procedure describes the manual method to determine the release rate of airborne radioactive materials from a plant vent release, main steam line release, or containment leakage.

2. DISCUSSION

2.1 Initial calculations of radiological release rates are performed in the control room in accordance with EP R-2, "Release of Airborne Radioactive Materials" by the emergency evaluation coordinator.

2.2 This procedure provides a manual methodology for performing release rate calculations as a backup to the Emergency Assessment and Response System (EARS) or the Excel application "Quick Dose."

This procedure in conjunction with EP RB-11, "Emergency Off-Site Dose Calculations" can be used to determine projected off-site TEDE and thyroid CDE doses.

3. RESPONSIBILITIES

3.1 Dose assessment personnel perform this procedure when required.

4. INSTRUCTIONS

4.1 To manually calculate Noble Gas and Iodine-131 Equivalent Release Rates for a Plant Vent Release follow the step-by-step instructions given in Attachment 7.1 - Form 69-9260.

4.2 To manually calculate Noble Gas and Iodine-131 Equivalent Release Rates for a Main Steam Line Release follow the step-by-step instructions given in Attachment 7.2 - Form 69-11105.

4.3 To manually calculate Noble Gas and Iodine-131 Equivalent Release Rates for a Containment Leakage Release follow the step-by-step instructions given in Attachment 7.3 - Form 69-10555.

5. RECORDS

All records generated by the utilization of this procedure for an exercise or emergency shall be forwarded the next working day to the supervisor, emergency planning, for review and retention.

6. APPENDICES

6.1 Table 1, Source Term For Various Postulated Accidents

6.2 Figure 1, Plant Vent Noble Gas Monitor Response RE-14/14R, Normal Range

6.3 Figure 2, Plant Vent Noble Gas Monitor Response RE-87, Extended Range

6.4 Figure 3, Plant Vent Gross Gamma Monitor Response RE-29, High Range

6.5 Figures 4.1, I-131 TEDE Correction Factor, and 4.2, I-131 Thyroid CDE Correction Factor (2 pages)

6.6 Figures 5.1, 5.2, and 5.3, Main Steamline Monitor Response RE-71, RE-72, RE-73, RE-74, for Empty, Normal, and Flooded Conditions (3 pages)

6.7 Figures 6.1, Iodine TEDE Conversion Factor, and 6.2, Iodine Thyroid CDE Conversion Factor (2 pages)

6.8 Figure 7, Design Basis Containment Monitor Exposure Rate RE-30 and RE-31

6.9 Figure 8, Design Basis Noble Gas Release Rates

6.10 Figure 9, Design Basis I-131 Equivalent Release Rates

6.11 Accident Summary Sheets

7. ATTACHMENTS

7.1 Form 69-9260, "Noble Gas and I-131 Equivalent Release Rates for a Plant Vent Release," 08/31/94

7.2 Form 69-11105, "Noble Gas and I-131 Equivalent Release Rates for a Steam Release," 08/31/94

7.3 Form 69-10555, "Noble Gas and I-131 Equivalent Release Rates for Containment Leakage," 08/31/94

8. REFERENCES

8.1 Diablo Canyon Power Plant Unit 1 and 2 Emergency Plan.

8.2 EP G-1, "Accident Classification and Emergency Plan Activation."

8.3 EP R-2, "Release of Airborne Radioactive Materials."

8.4 EP RB-11, "Emergency Off-site Dose Calculations."

8.5 EP RB-12, "Plant Vent Iodine and Particulate Sampling During Accident Conditions."

8.6 EP EF-1, "Activation and Operations of the Technical Support Center."

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

8.8 EP EF-6, "Operating Procedures for EARS Stations."

8.9 PG&E, Nuclear Operations Support Calculation RA-93-04, EP RB-9, Calculation of Release Rate, Units 1 and 2, Rev. 7 - Validation and Verification.

8.10 EP RB-14, "Core Damage Assessment Procedure."

8.11 SH&ES Calculation No. EP-94-02, Rev 0, Validation and Verification of EP RB-9, "Calculation of Release Rate," Rev 10, and EP RB-11, "Emergency Offsite Dose Calculations," Rev 11.

8.12 PG&E Calculation PAM-0-04-517, Rev. 4, 4/6/97 "Steam Generator Narrow Range Level Uncertainty."

9. SPONSOR

David Marsh

APPENDIX 6.1

TABLE 1

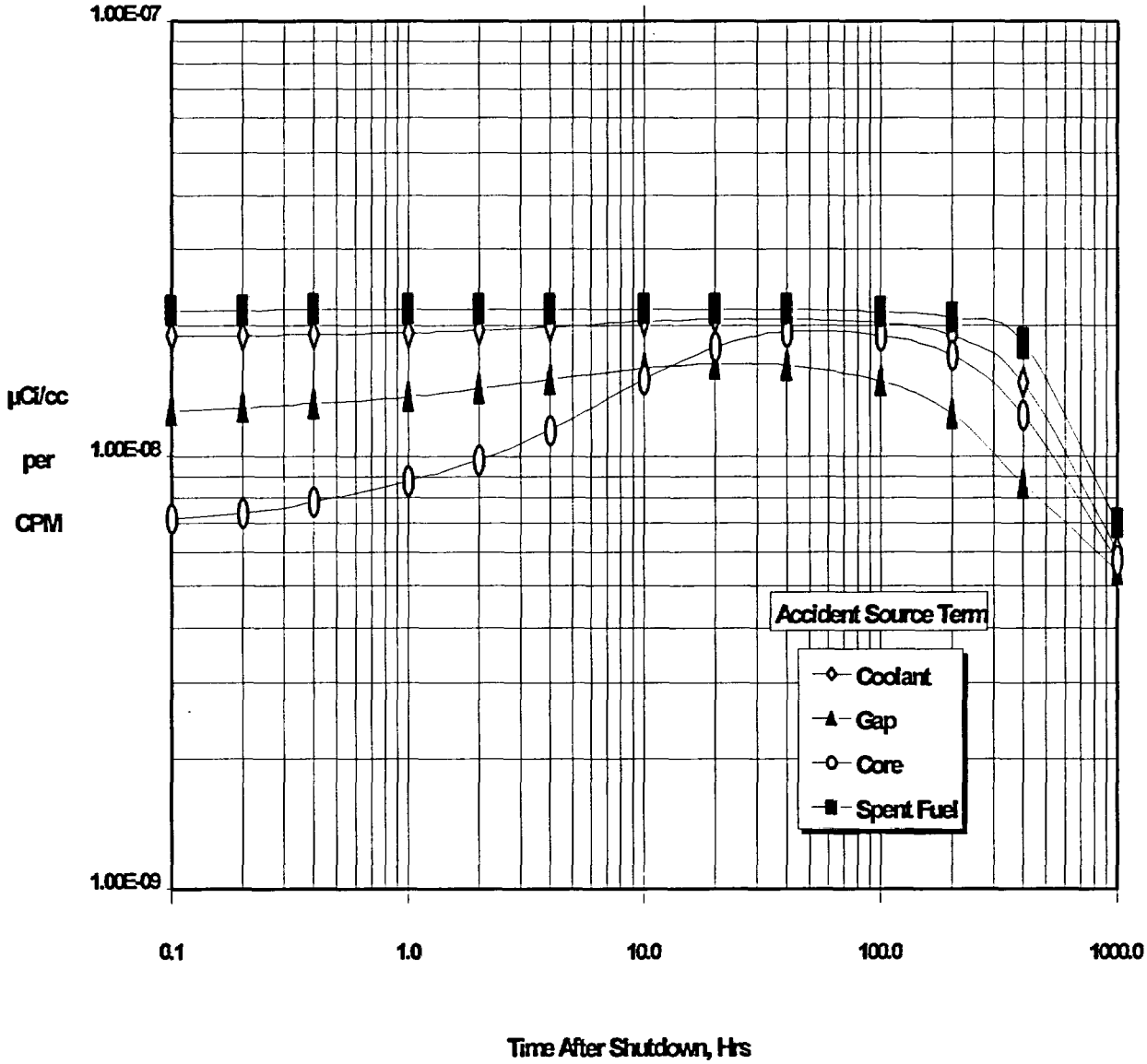
SOURCE TERM FOR VARIOUS POSTULATED ACCIDENTS

		Source Term
1.	Major LOCA with Core Melt - RE-30/31 >300R/hr	Core
2.	Major LOCA (Gap Release) - RE-30/31 >1R/hr, <300R/hr	Gap
3.	Small Break LOCA (No fuel damage) - RE-30/31 <1R/hr	RCS
4.	Blackout	RCS
5.	Major Steamline Break	
6.	Major Feedwater Line Break	RCS
7.	Steam Generator Tube Rupture	RCS
8.	Locked Reactor Coolant Pump (RCP Rotor)	GAP
9.	Control Rod Ejection	GAP
10.	Gas Decay Tank Rupture	GAP - Noble Gas Only
11.	Liquid Holdup Tank Rupture	RCS - Noble Gas Only
12.	Volume Control Tank (VCT) Rupture	RCS - Noble Gas Only
13.	Fuel Handling Accident in Fuel Handling Building (FHB)	Spent Fuel (Highest Assembly Gap)

APPENDIX 6.2

FIGURE 1

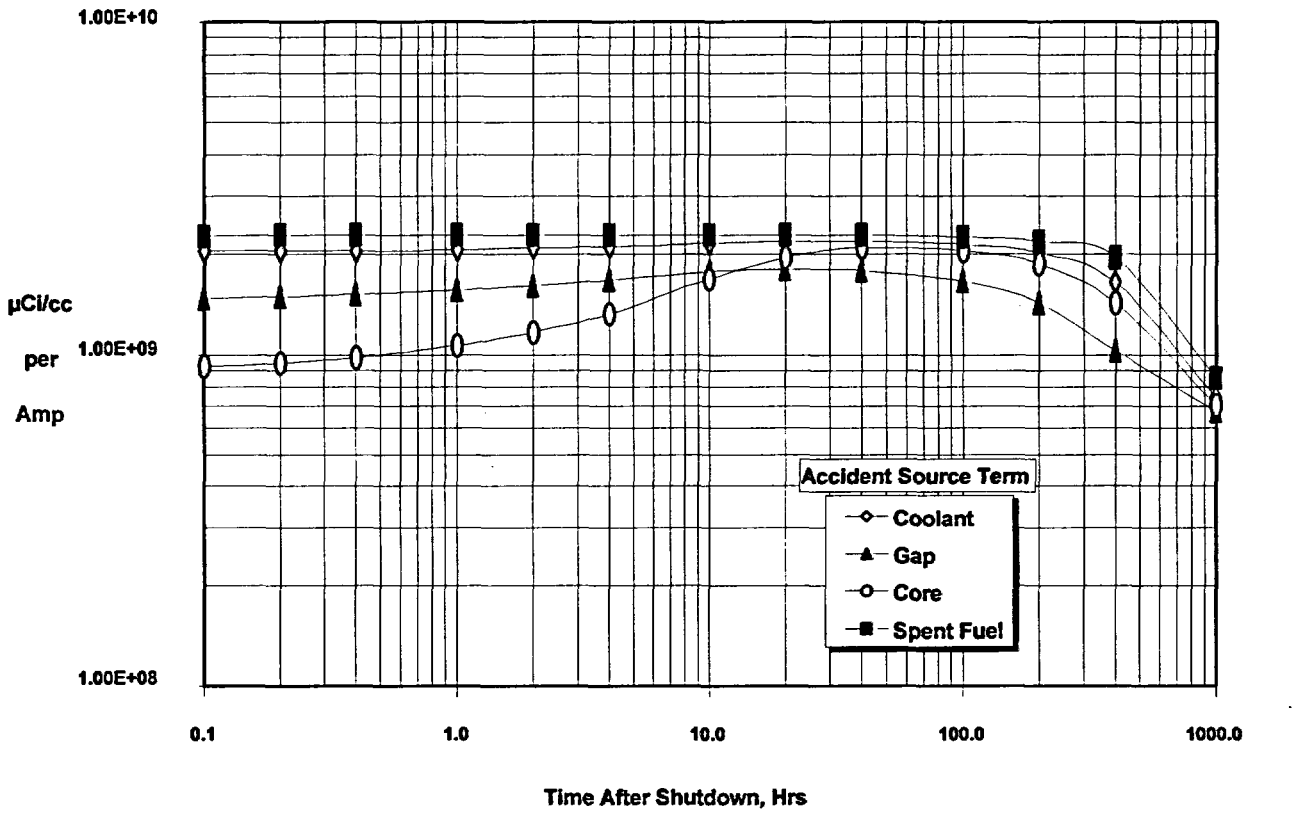
PLANT VENT NOBLE GAS MONITOR RESPONSE RE-14/14R, NORMAL RANGE



APPENDIX 6.3

FIGURE 2

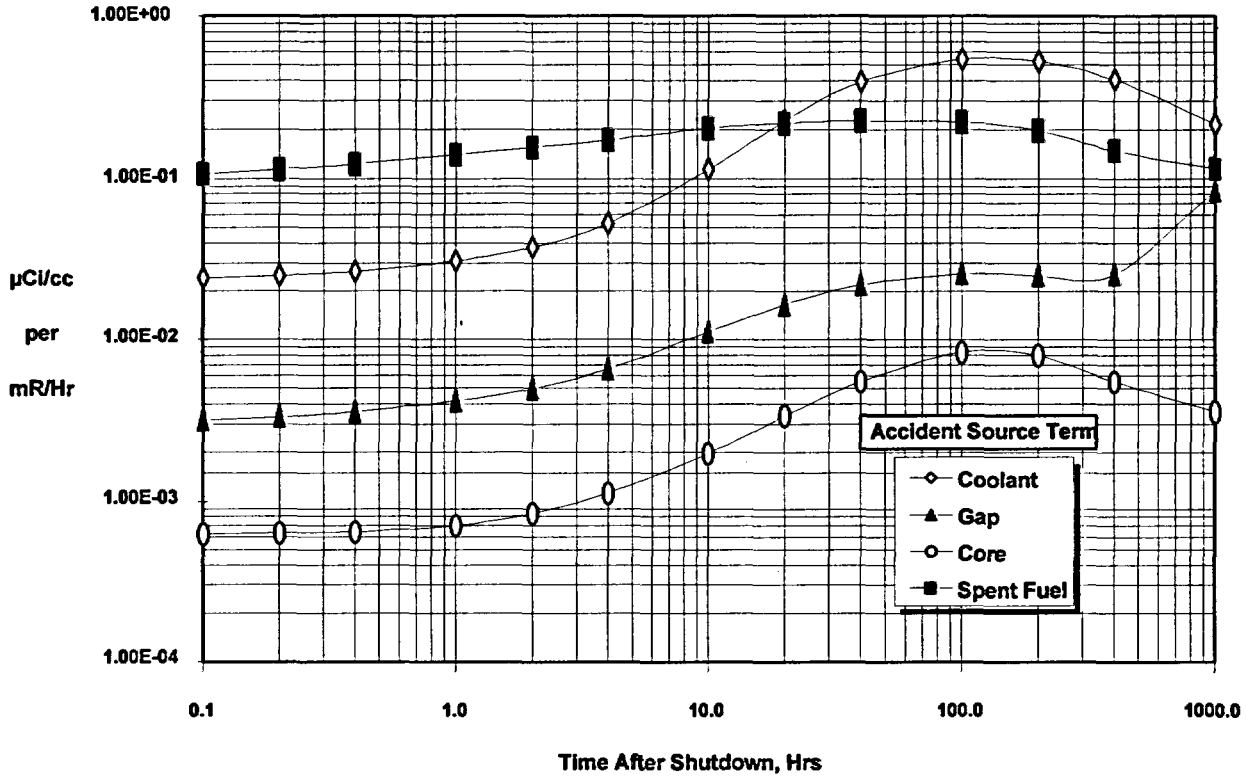
PLANT VENT NOBLE GAS MONITOR RESPONSE RE-87, EXTENDED RANGE



APPENDIX 6.4

FIGURE 3

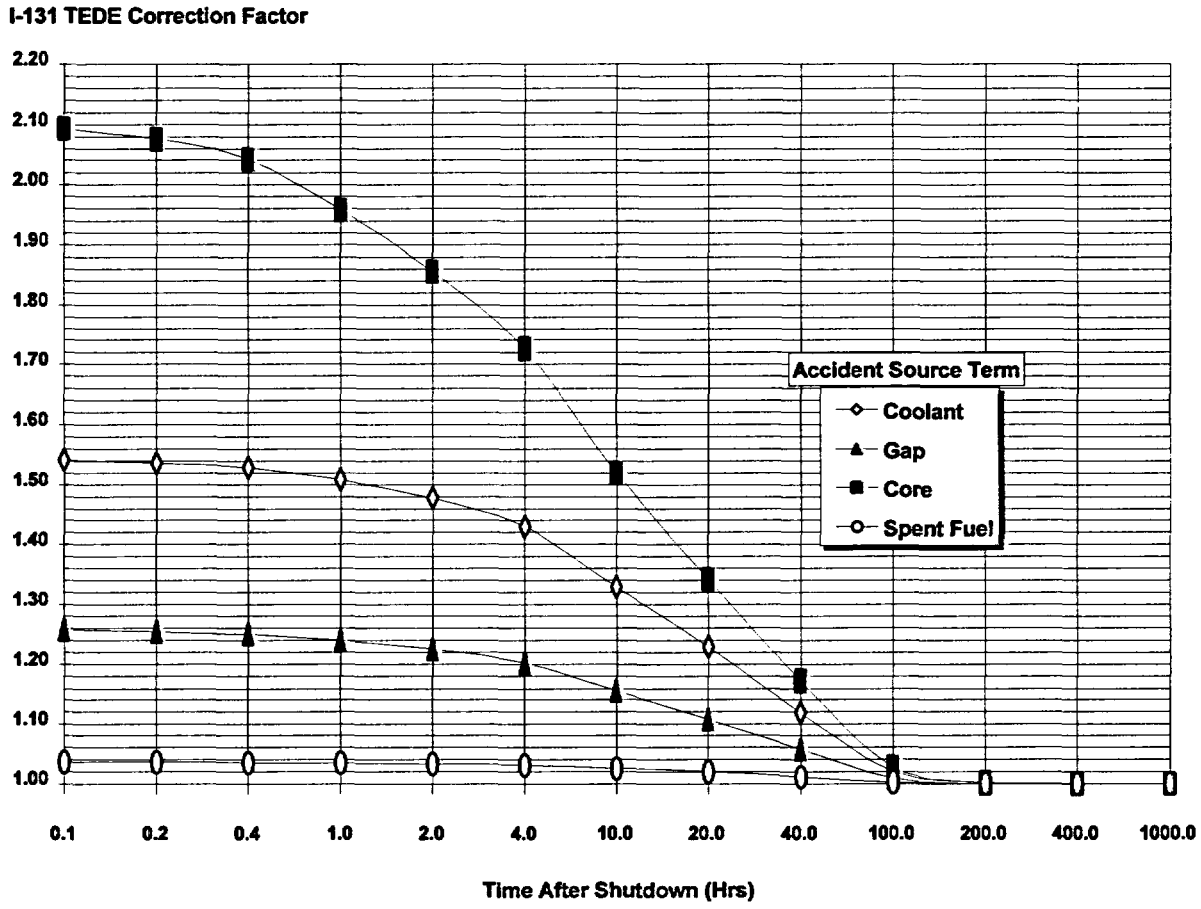
PLANT VENT GROSS GAMMA MONITOR RESPONSE RE-29, HIGH RANGE



APPENDIX 6.5

FIGURE 4.1

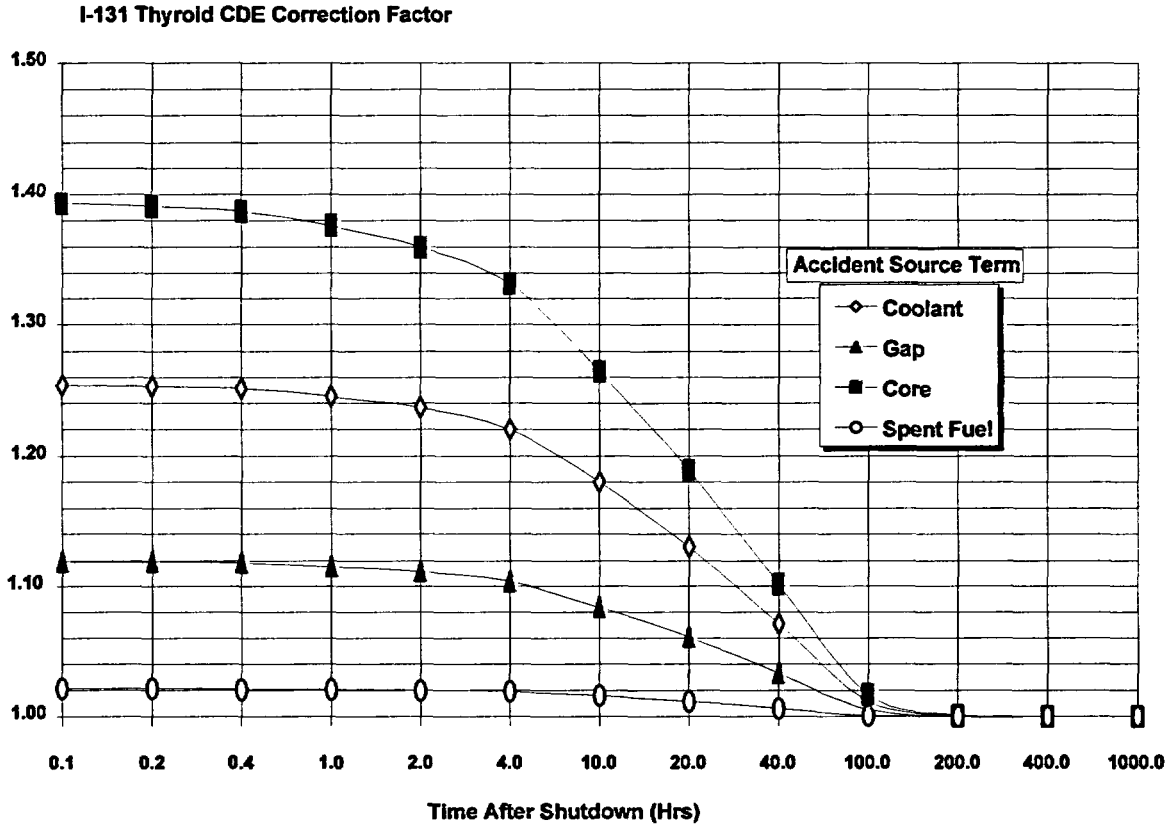
I-131 TEDE CORRECTION FACTOR



APPENDIX 6.5 (Continued)

FIGURE 4.2

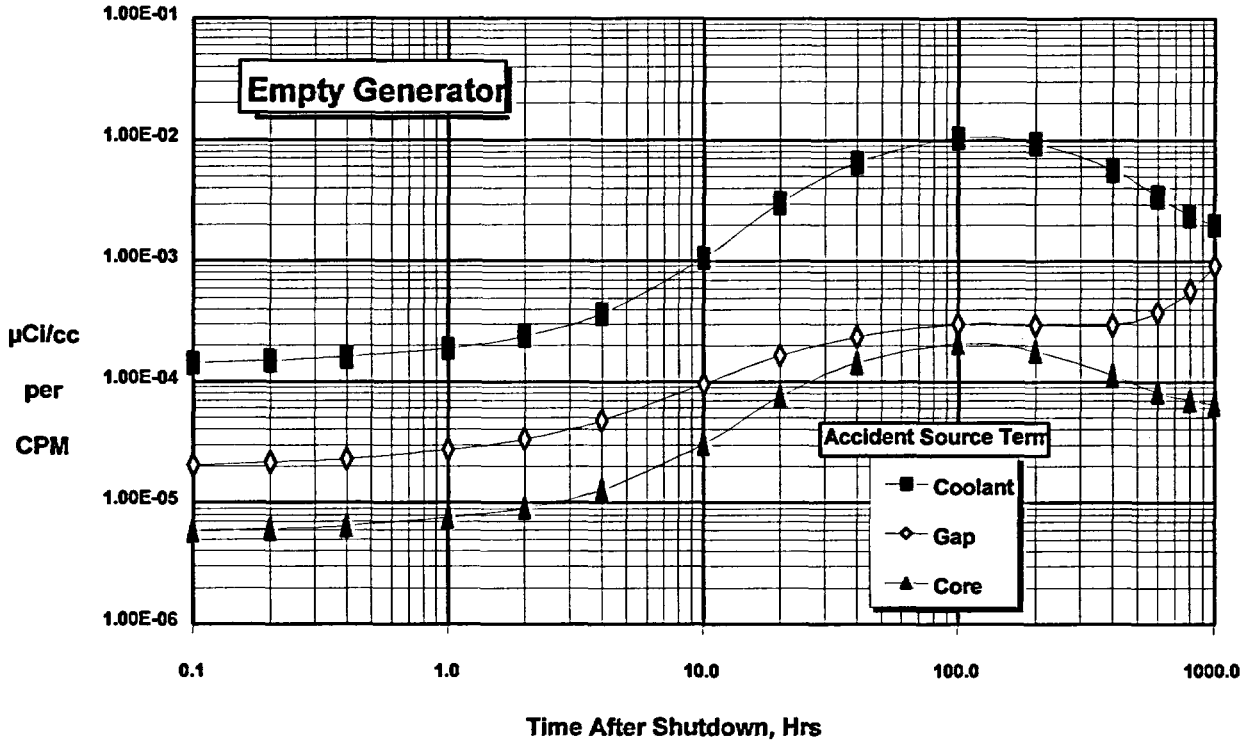
I-131 THYROID CDE CORRECTION FACTOR



APPENDIX 6.6

FIGURE 5.1

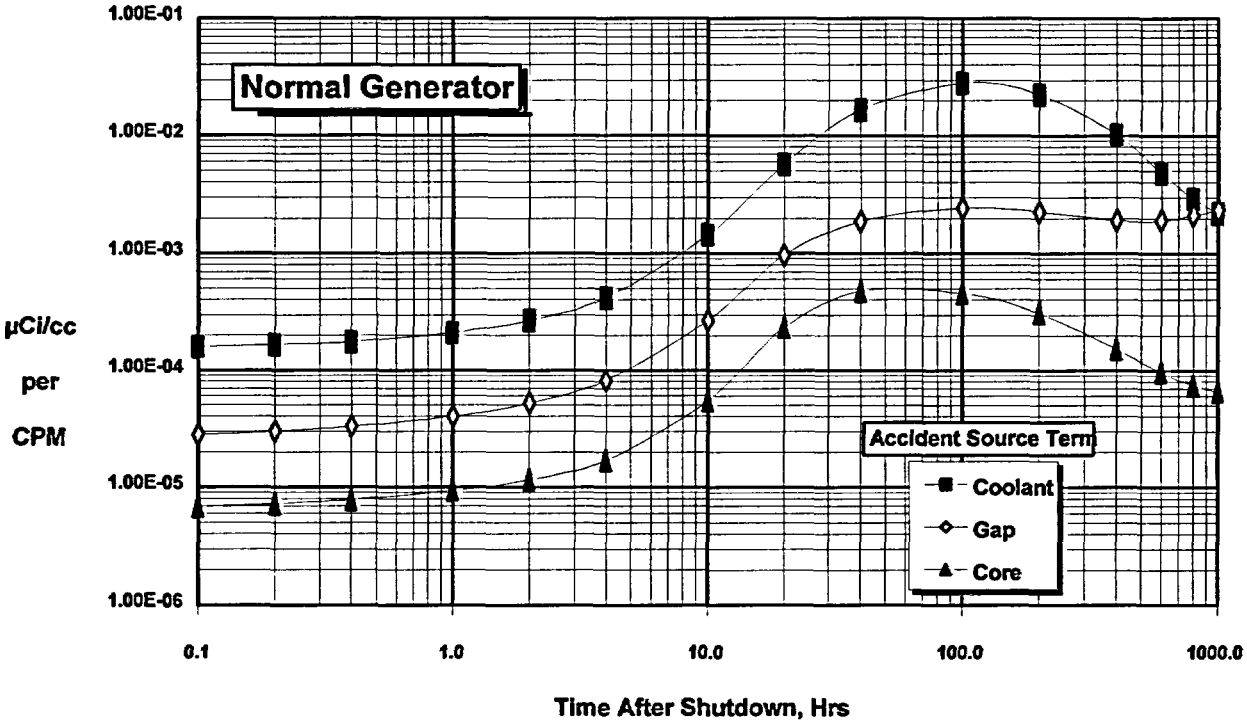
MAIN STEAMLINE MONITOR RESPONSE - EMPTY GENERATOR
RE-71, RE-72, RE-73, RE-74



APPENDIX 6.6

FIGURE 5.2

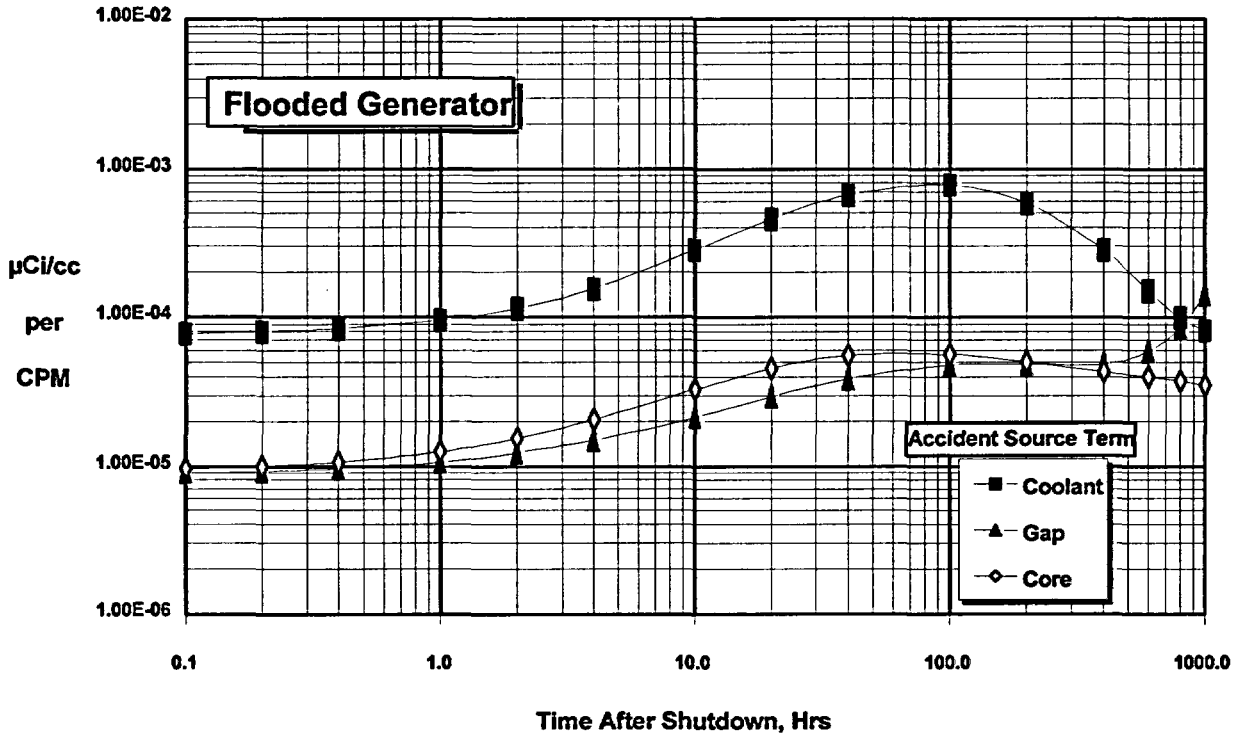
MAIN STEAMLINE MONITOR RESPONSE - NORMAL GENERATOR
RE-71, RE-72, RE-73, RE-74



APPENDIX 6.6 (Continued)

FIGURE 5.3

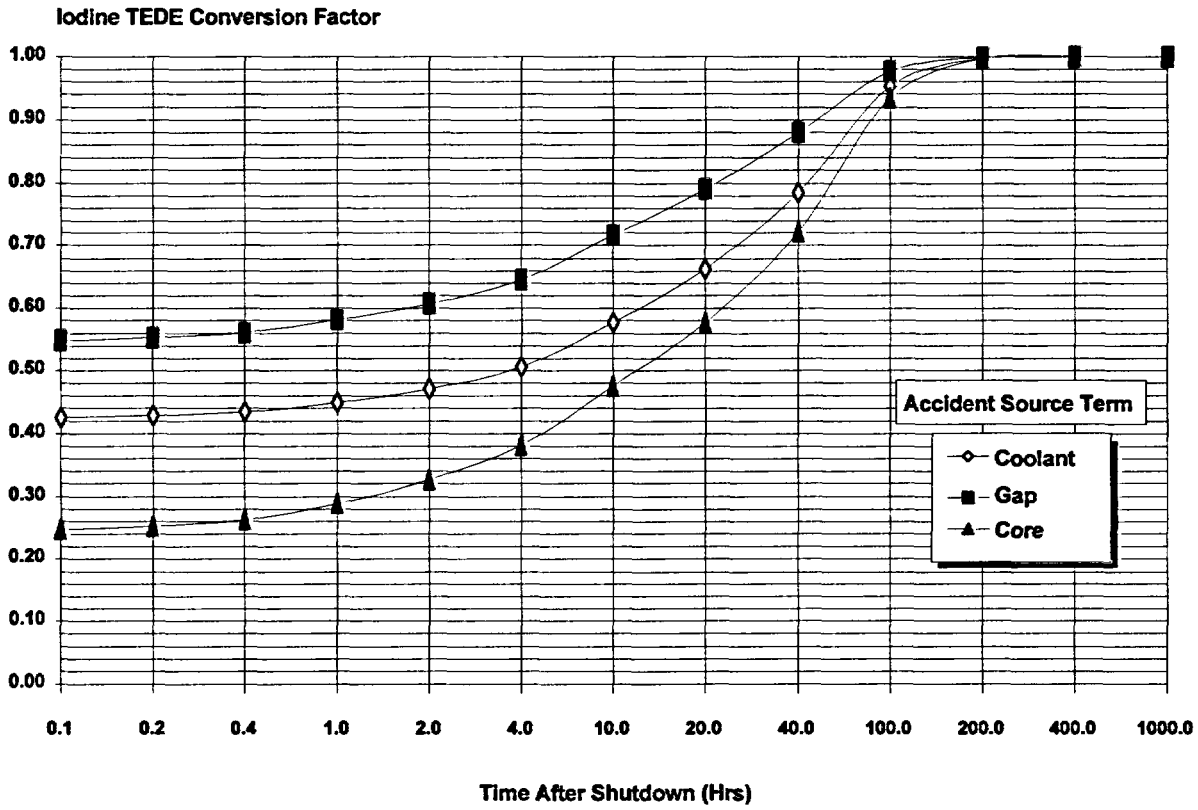
MAIN STEAMLINE MONITOR RESPONSE - FLOODED GENERATOR
RE-71, RE-72, RE-73, RE-74



APPENDIX 6.7

FIGURE 6.1

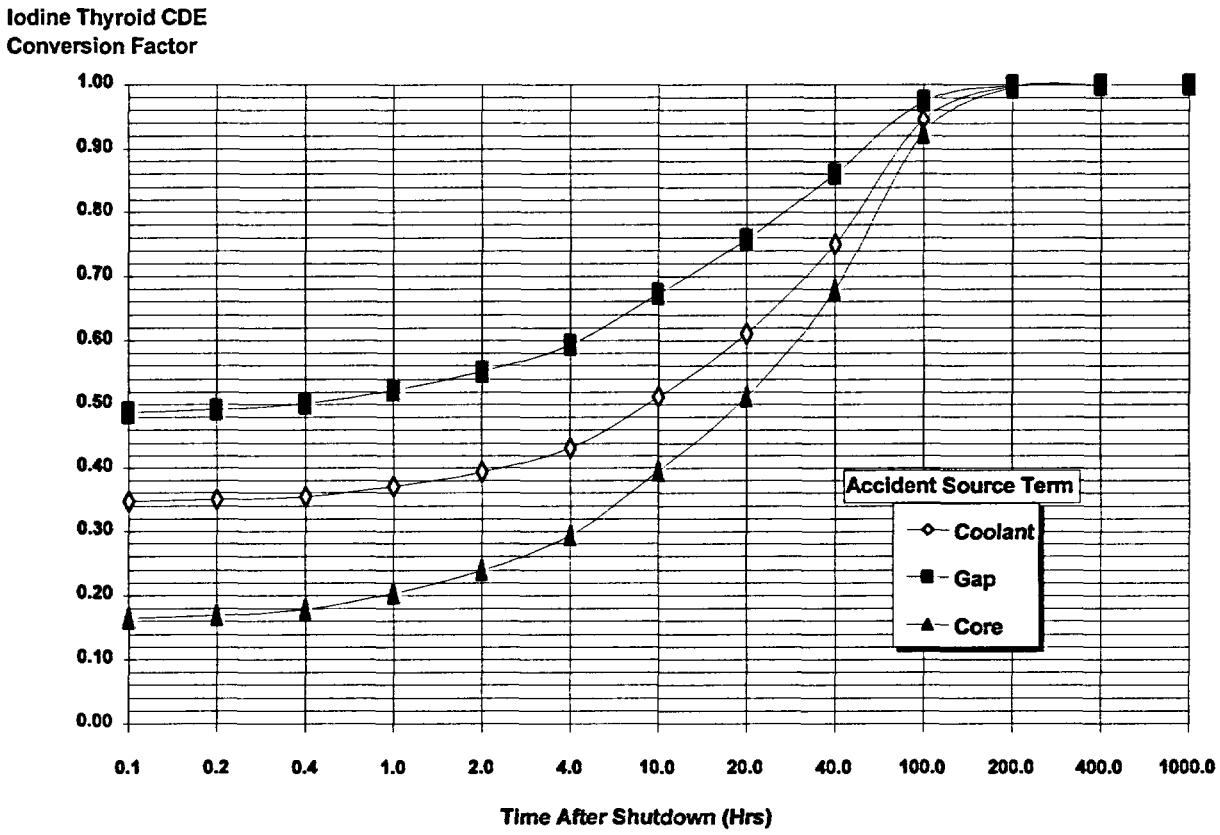
IODINE TEDE CONVERSION FACTOR



APPENDIX 6.7 (Continued)

FIGURE 6.2

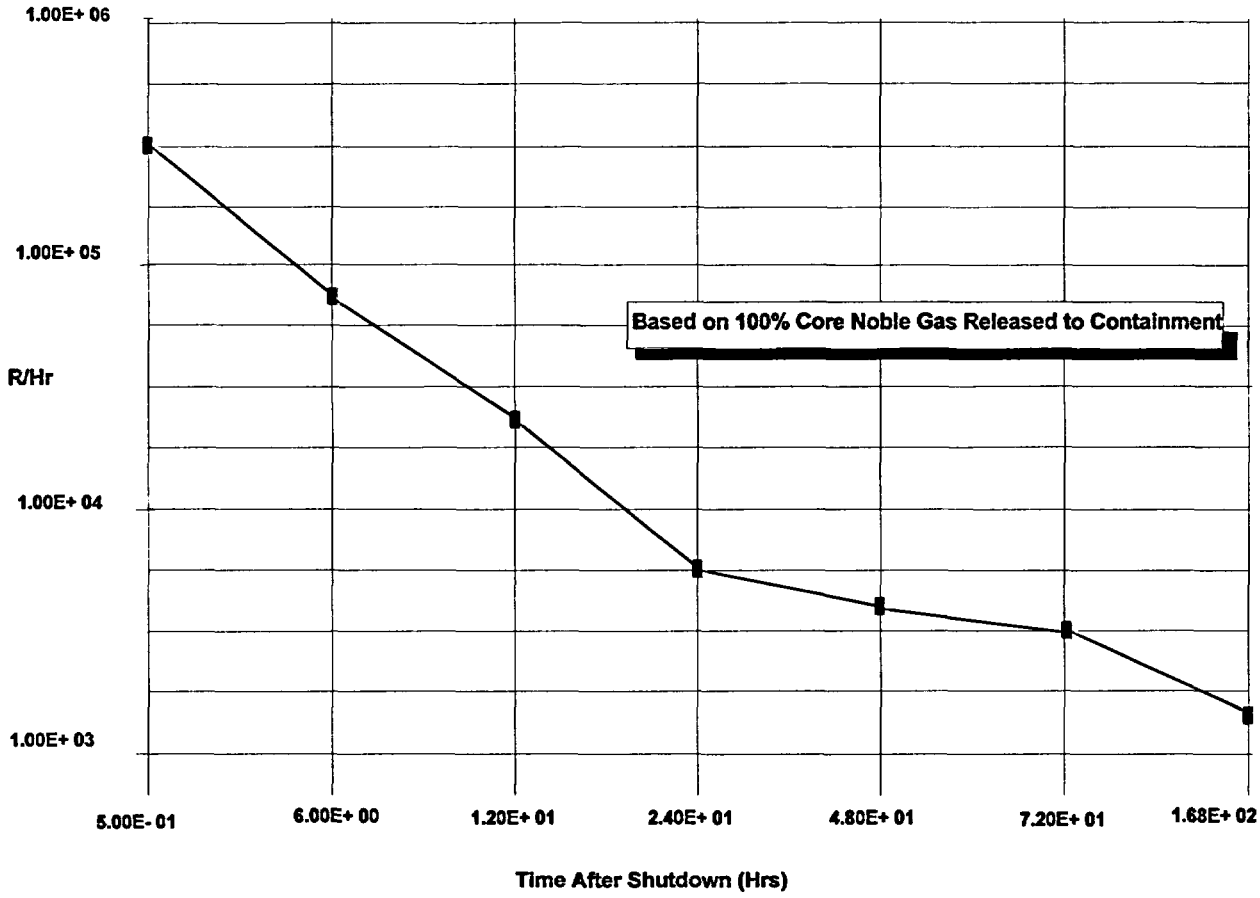
IODINE THYROID CDE CONVERSION FACTOR



APPENDIX 6.8

FIGURE 7

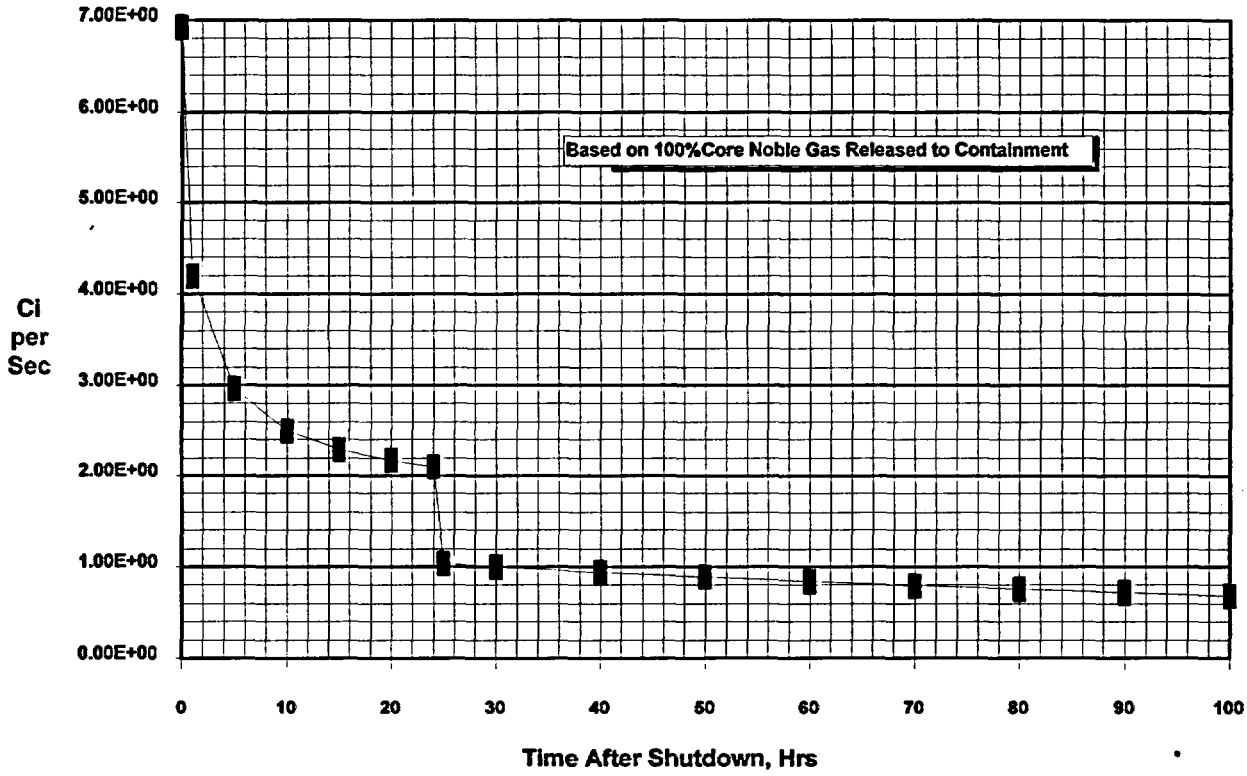
DESIGN BASIS CONTAINMENT MONITOR EXPOSURE RATE RE-30 AND RE-31



APPENDIX 6.9

FIGURE 8

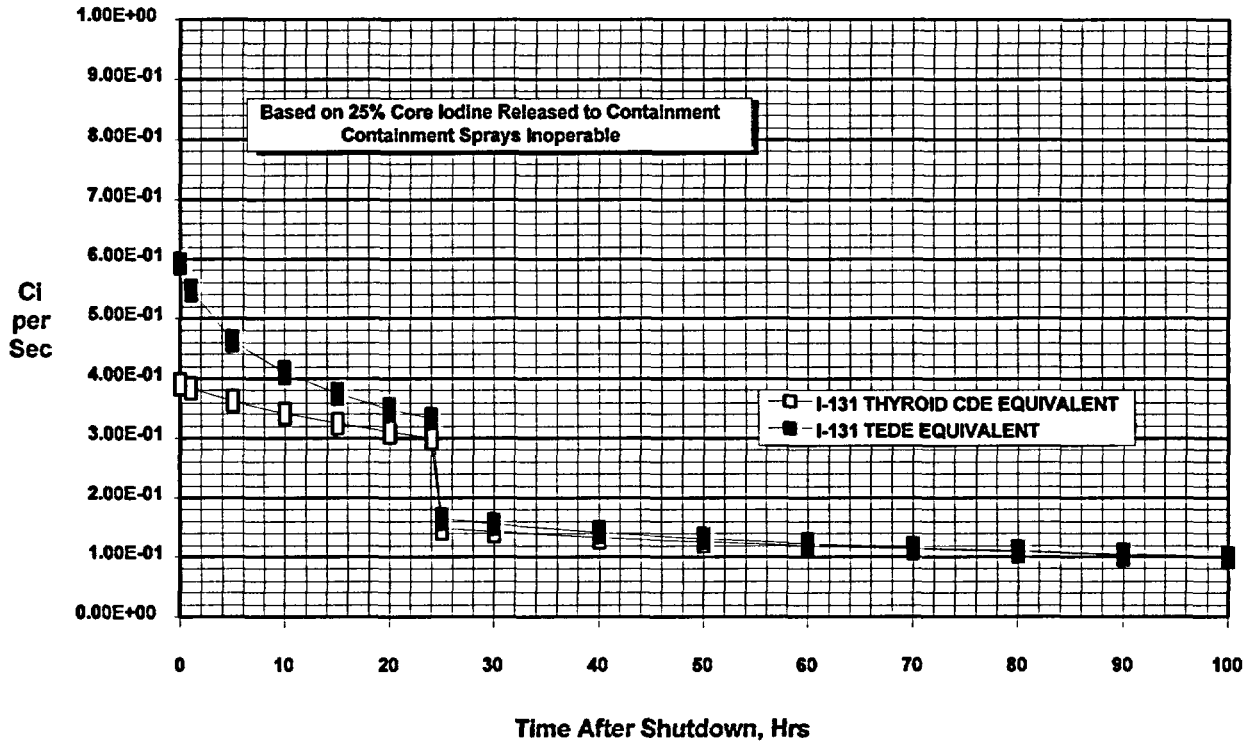
DESIGN BASIS NOBLE GAS RELEASE RATES



APPENDIX 6.10

FIGURE 9

DESIGN BASIS I-131 EQUIVALENT RELEASE RATES



APPENDIX 6.11

ACCIDENT SUMMARY SHEETS

This Appendix contains summary sheets for the various postulated accidents which have been analyzed in the FSAR. These sheets contain both the "design basis" and "expected" case variables which were assumed in the FSAR analyses. The sheets can be used to compare actual measurements with assumed numbers from the FSAR, in order to help evaluate how things are going in relation to predictions, or they can be used as a source of data to supply unavailable numbers in calculations which are performed at the time of the accident.

Two sets of data are included. The "design basis" case is expected to be highly conservative, where every variable is at a worst-case condition. The "expected" case is the best estimated prediction of what might actually occur. When FSAR values are used to make calculations or predictions at the time of the accident, the "design basis" values can be used to provide a quick upper limit result, but as soon as data becomes available which tends to confirm one case or the other, the one which best agrees with the data should be used.

The accident classifications identified in this Appendix are based on the analyzed off-site doses of the activity releases.

NOTE: Do not use these Summary Sheets to classify emergencies. Always refer to EP G-1 to consider all possible EALs.

EP G-1 classifications based on plant conditions other than off-site doses are presented also to illustrate the relatively close and usually conservative declarations that would be made even before dose calculations were performed.

The summary sheets provided are:

A. MAJOR LOCA
B. MAJOR STEAM LINE BREAK
C. MAJOR FEEDWATER LINE BREAK
D. BLACKOUT (OR PLANT COOLDOWN WITH ATMOSPHERIC DUMP)
E. SMALL LOCA
F. TUBE RUPTURE
G. LOCKED ROTOR
H. FUEL HANDLING ACCIDENT IN FUEL HANDLING BUILDING
I. FUEL HANDLING ACCIDENT IN CONTAINMENT
J. ROD EJECTION ACCIDENT
K. GAS DECAY TANK RUPTURE
L. LIQUID HOLDUP TANK RUPTURE
M. VC T RUPTURE

APPENDIX 6.11 (Continued)

SUMMARY SHEET A
MAJOR LOCA

	PARAMETER	FSAR DBA	FSAR EXPECTED
1.	Total Release to Containment Free Volume, Ci		
	a. Xe-133	2.03×10^{8}	1.36×10^{6}
	b. Other Noble Gases	5.73×10^{8}	4.27×10^{5}
	c. I-131	2.21×10^{7}	1.82×10^{5}
	d. Other Iodine	1.90×10^{8}	2.73×10^{5}
	e. Source Term	Core	Gap
	f. Release Assumption	100% of core N.G., 25% of core iodines	100% of gap N.G., 25% of gap iodines
2.	Containment Spray Effectiveness		
	a. Removal half-life (hrs)	0.022	0.0075
	b. Number of operable spray pumps	1	2
3.	Containment Leak Rate (%/day)	0.1 for 1st day, 0.05 after 1st day	0.05 for 1st day, 0.025 after 1st day
4.	Total Release to Environs, First 2 Hours, Ci		
	a. Xe-133	16,840	56
	b. Other Noble Gases	25,930	21
	c. I-131	191	0.05
	d. Other Iodine	1,325	0.08
	e. Release Mechanism	Containment Leakage	Containment Leakage

APPENDIX 6.11 (Continued)

SUMMARY SHEET A
MAJOR LOCA

	PARAMETER	FSAR DBA	FSAR EXPECTED
5.	(x/Q) CL (sec/m^3)		
	a. 800m (site boundary)	$5.29x10^{-4}$	$5.29x10^{-5}$
	b. 10000m (6 mi. LPZ)	$2.20x10^{-5}$	$2.20x10^{-6}$
6.	Whole Body Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	5.6E+00	3.7E-04
	b. Total 10000m dose for 30 days (Rem)	5.7E-01	6.4E-05
7.	Thyroid Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	9.6E+01	1.3E-03
	b. Total 10000m dose for 30 days (Rem)	1.8E+01	9.2E-04
8.	Accident Classification		
	(Based on above Dose):	General Emergency	Unusual Event
	(Based on EP G-1):	Site Area Emergency	Site Area Emergency
9.	Miscellaneous		
	a. Containment-free volume cc	$7.36x10^{10}$	
	b. RCS Coolant Mass (gm)	$2.4x10^{8}$	

10. References

a. FSAR, September 1990, Revision 6, Section 15.5.

b. DCM No. T-15, Radiation Protection, Rev. 0, February 1993, Table 4.6.

APPENDIX 6.11 (Continued)

SUMMARY SHEET B
MAJOR STEAM LINE BREAK

	PARAMETER	FSAR DBA	FSAR EXPECTED
1.	Initial Conditions and Assumptions		
	a. Primary Coolant Activity (μCi/gm)		
	1) Xe-133	270	67.2
	2) I-131	2.6	0.65
	3) Other Iodine	7.9	2.0
	b. Secondary Water Activity (μCi/gm)		
	1) I-131	1.5E-02	4.4E-05
	2) Other Iodines	3.7E-02	9.0E-05
	c. Assumed Fuel Defects (%)	1	0.2
	d. Primary to Secondary Leakage (gpm)	1	0.014
	e. Steam Release, 1st Two Hours (lbs)		
	1) Failed Generator	162,784	
	2) Other generator (atmospheric dump)	393,464	
	f. Total Steam Release During 8-Hour Cooldown (lbs)	1,250,000	
	g. Liquid Release Fraction for Iodine		
	1) Failed Generator	0.1	
	2) Other generators	0.01	
2.	Activity Release to Environs, First 2 Hours (Ci)		
	a. Xe-133	1.2E-03	3.5E-07
	b. Other Noble Gases	1.9E-04	5.2E-08
	c. I-131	1.6E-05	4.4E-09
	d. Other Iodines	1.3E-04	3.6E-08
	e. Source Term	RCS	RCS

APPENDIX 6.11 (Continued)

SUMMARY SHEET B
MAJOR STEAM LINE BREAK

	PARAMETER	FSAR DBA	FSAR EXPECTED
3.	(x/Q) CL (sec/m^3)		
	a. 800m (site boundary)	$5.29x10^{-4}$	$5.29x10^{-5}$
	b. 10000m (6 mi. LPZ)	$2.20x10^{-5}$	$2.20x10^{-6}$
4.	Whole Body Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	1.7E-03	5.4E-07
	b. Total 10000m dose for 30 days (Rem)	2.6E-04	7.8E-08
5.	Thyroid Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	8.8E-02	1.6E-05
	b. Total 10000m dose for 30 days (Rem)	5.3E-02	9.9E-06
6.	Accident Classification		
	(Based on above Dose):	Alert	No Emergency
	(Based on EP G-1):	Unusual Event	Unusual Event
7.	Miscellaneous		
	a. Fluid Mass/Stm Gen (lbs)		
	Water	81,500	
	b. Safety Valve and Steam Dump Valve Capacities (lb/hr/valve)		
	1) S/G safety valve	800,000	
	2) 10% atmospheric dump	380,000	
	3) 35% atmospheric dump	597,000	

8. References

a. FSAR, September 1990, Revision 6, Section 15.5

b. DCM No. T-15, Radiation Protection, Rev. 0, February 1993, Table 4.6-19.

APPENDIX 6.11 (Continued)

SUMMARY SHEET C
MAJOR FEEDWATER LINE BREAK

The release from this accident comes from release of steam by safety valves and/or atmospheric steam dump of steam generator water during cooldown if the condenser is not available. The steam generator water is contaminated if there is tube leakage. The feedwater itself which is released has very little activity in it and is ignored.

This accident is basically the same as a major steamline break and Summary Sheet B can be used.

Note, however, that the steam release will be through relief valves and so the iodine liquid release fraction should be 0.01 for the entire release. This will reduce the thyroid dose somewhat from the steamline break case.

APPENDIX 6.11 (Continued)

SUMMARY SHEET D
BLACKOUT (PLANT COOLDOWN WITH ATMOSPHERIC DUMP)

The release from this accident comes from release of steam by safety valves and/or atmospheric steam dump of steam generator water which is contaminated if there is tube leakage.

This accident is basically the same as a steamline break and Summary Sheet B can be used.

Note, however, that the steam release will be through relief valves and so the iodine liquid release fraction should be 0.01 for the entire release. This will reduce the thyroid dose somewhat from the steamline break case.

APPENDIX 6.11 (Continued)

SUMMARY SHEET E
SMALL LOCA (RELEASE OF COOLANT TO CONTAINMENT)

	PARAMETER	FSAR DBA	FSAR EXPECTED
1.	Initial Coolant Activity (μCi/gm)		
	a. Xe-133	270	45.7
	b. Other Noble Gases	30	5.6
	c. I-131	2.62	0.45
	d. Other Iodine	7.88	1.35
	e. Source Term	RCS	RCS
	f. Fuel Defects (%)	1	0.2
2.	Initial Release to Containment (Ci)		
	a. Xe-133	65,430	16,280
	b. Other Noble Gases	7,950	1,980
	c. I-131	63	16
	d. Other Iodine	193	48
	e. Assumption	100% of Coolant N.G. activity +10% of coolant iodines	100% of Coolant N.G. Activity +10% of coolant iodines
3.	Containment Spray Effectiveness		
	a. Removal Coefficient (hr^{-1})	31	92
	b. Number of operable spray pumps	1	2
4.	Containment Leak Rate (%/day)	0.1 for 1st day, 0.05 after 1st day	0.05 for 1st day, 0.025 after 1st day
5.	(x/Q) CL (sec/m^3)		
	a. 800m (site boundary)	5.29×10^{-4}	5.29×10^{-5}
	b. 10000m (6 mi. LPZ)	2.20×10^{-5}	2.20×10^{-6}

APPENDIX 6.11 (Continued)

SUMMARY SHEET E
SMALL LOCA (RELEASE OF COOLANT TO CONTAINMENT)

	PARAMETER	FSAR DBA	FSAR EXPECTED
6.	Whole Body Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	1.8E-04	4.4E-06
	b. Total 10000m dose for 30 days (Rem)	5.0E-05	1.4E-06
7.	Thyroid Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	2.0E-04	9.0E-07
	b. Total 10000m dose for 30 days (Rem)	3.0E-05	1.0E-07
8.	Accident Classification		
	(Based on above Dose):	Unusual Event	No Emergency
	(Based on EP G-1):	Site Area Emergency	Site Area Emergency
9.	Miscellaneous		
	a. Containment-Free Volume (cc)	7.36×10^{10}	
	b. RCS Coolant Mass (gm)	2.4×10^{8}	
	c. Liquid Release Fraction for Iodine	0.1	
10.	References		
	a. FSAR, Table 15.5-11.		
	b. DCM No. T-15, Radiation Protection, Rev. 0, February 1993, Table 4.6-17.		

APPENDIX 6.11 (Continued)

SUMMARY SHEET F
TUBE RUPTURE

PARAMETER		FSAR DBA	FSAR EXPECTED
1.	Initial Conditions and Assumptions (Pre-accident Iodine Spike Case)		
a.	Primary Coolant Activity (μCi/gm)		
1)	Xe-133	270	67.2
2)	I-131 (equivalent)	60	
3)	I-131	41.4	0.65
4)	Other Iodine	110.4	2.0
b.	Secondary Water Activity (μCi/gm)		
1)	I-131	6.9E-02	4.4E-05
2)	Other Iodines	1.8E-01	9.0E-05
c.	Assumed Fuel Defects (%)	1	0.2
d.	Primary to Secondary Leakage (gpm)		
1)	Pre-existing	1	0.014
2)	Tube Rupture	160	
e.	Steam Release, 1st Two Hours (lbs)		
1)	Failed generator	146,700	31,000
2)	Other generators (atmospheric dump)	445,000	380,000
f.	Total Steam Release During 8 hour Cooldown (lbs)	1,530,000	1,500,000
g.	Liquid Release Fraction for Iodine		
1)	Failed generator	0.01 *(1)	0.01
2)	Other generators	0.01 *(1)	0.01

(1) 0.01 when rupture site is covered 1.0 when covered by less than 12" water

APPENDIX 6.11 (Continued)

SUMMARY SHEET F
TUBE RUPTURE

	PARAMETER	FSAR DBA	FSAR EXPECTED
2.	Total Release to Environs First 2 hours (Ci) (Pre-Accident Iodine Spike)		
	a. Xe-133	2.8E+04	2.4E+03
	b. Other Noble Gases	2.0E+03	2.4E+02
	c. I-131	5.5E+02	1.4E-01
	d. Other Iodines	1.4E+03	6.2E-01
	e. Source Term	RCS	RCS
3.	(x/Q) CL (sec/m^3)		
	a. 800 m (site boundary)	$5.29x10^{-4}$	$5.29x10^{-5}$
	b. 10000m (6 mi. LPZ)	$2.20x10^{-5}$	$2.20x10^{-6}$
4.	Whole Body Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	2.3E-01	7.7E-03
	b. Total 10000m dose for 30 days (Rem)	1.0E-02	3.0E-04
5.	Thyroid Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	1.9E+02	4.3E-03
	b. Total 10000m dose for 30 days (Rem)	8.0E+00	2.0E-04
6.	Accident Classification		
	(Based on above Dose):	General Emergency	Alert
	(Based on EP G-1):	Site Area Emergency	Site Area Emergency

APPENDIX 6.11 (Continued)

SUMMARY SHEET F
TUBE RUPTURE

PARAMETER	FSAR DBA	FSAR EXPECTED
7. Miscellaneous		
a. Fluid Mass/Steam Gen (lbs)		
1) Water	81,500	
b. Safety Valve and Steam Dump Valve Capacities (lbs/hr/valve)		
1) S/G safety valve	800,000	
2) 10% atmospheric dump	380,000	
3) 35% atmospheric dump	597,000	

8. References

a. FSAR, Revision 7, September 1991, Tables 15.5-64 thru 15.5-74.

b. DCM No. T-15, Radiation Protection, Rev. 0, February 1993, Table 4.6-16.

APPENDIX 6.11 (Continued)

SUMMARY SHEET G
LOCKED ROTOR ACCIDENT

	PARAMETER	FSAR DBA	FSAR EXPECTED
1.	Total Release to Environs, 1st Two Hours (Ci)		
	a. Xe-133	2.7E+02	6.3E-06
	b. Other Noble Gases	5.5E+01	9.6E-06
	c. I-131	8.6E-01	8.2E-08
	d. Other Iodines	1.3E+00	2.8E-07
	e. Source Term	Gap	Gap
	f. Assumptions		
	1) Coolant Activity	1% fuel defects +3% of gap activity	0.2% fuel defects +3% of gap activity
	2) Primary to Secondary Leakage (gpm)	1	0.014
	3) Secondary Steam Release, 1st Two Hours (lbs)	520,000	520,000
	4) Total Steam Release During 8 Hour Cooldown (lbs)	1,600,000	1,600,000
2.	(x/Q) CL (sec/m^3)		
	a. 800m (site boundary)	5.29×10^{-4}	5.29×10^{-5}
	b. 1000m (6 mi. LPZ)	2.20×10^{-5}	2.20×10^{-6}
3.	Whole Body Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	1.3E-02	1.6E-05
	b. Total 10000m dose for 30 days (Rem)	1.1E-03	1.2E-06
4.	Thyroid Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	3.0E-01	2.5E-04
	b. Total 10000m dose for 30 days (Rem)	7.2E-02	6.2E-05

APPENDIX 6.11 (Continued)

SUMMARY SHEET G
LOCKED ROTOR ACCIDENT

	PARAMETER	FSAR DBA	FSAR EXPECTED
5.	Accident Classification		
	(Based on above Dose):	Alert	No Emergency
	(Based on EP G-1)	Alert	Alert
6.	Miscellaneous		
	a. Fluid Mass/Steam Gen (lbs)		
	1) Water	81,500	
	b. Safety Valve and Steam Dump Valve Capacity (lbs/hr/valve)		
	1) S/G safety valve	800,000	
	2) 10% atmospheric dump	380,000	
	3) 35% atmospheric dump	597,000	
	c. Liquid Release Fraction for Iodines	0.01	
7.	References		
	a. FSAR, Tables 15.5-41 and 42.		
	b. DCM No. T-15, Radiation Protection, Rev. 0, February 1993, Table 4.6-14.		

APPENDIX 6.11 (Continued)

SUMMARY SHEET H
FUEL HANDLING ACCIDENT IN FUEL HANDLING BLDG

	PARAMETER	FSAR DBA	FSAR EXPECTED
1.	Initial Conditions		
	a. Radial Peaking Factor of Damaged Assembly	1.65	1.26
	b. Elapsed Time Since Reactor Shutdown (hrs)	100	100
	c. Type of Release to Pool	100% of assembly gap activity	100% of assembly gap activity
	d. Bundle Submergence (ft)	26	26
	e. Pool Decontamination Factor for Iodine	100	760
	f. Total Assembly Gap Activity at Time of Accident		
	1) Xe-133	100,000	8,137
	2) Other Noble Gases	4,500	1,500
	3) I-131	52,670	5,282
	4) Other Iodines	7,000	220
	5) Source	Spent Fuel	Spent Fuel
2.	(x/Q) CL (sec/m^3)		
	a. 800m (site boundary)	5.29×10^{-4}	5.29×10^{-5}
	b. 1000m (6 mi. LPZ)	2.20×10^{-5}	2.20×10^{-6}
3.	Total Release to Environs, 1st Two Hours (Ci)		
	a. Xe-133	100,400	523
	b. Other Noble Gases	4,100	101
	c. I-131	80	0.005
	d. Other Iodines	10	0.0002
	e. Source Term	Spent Fuel	Spent Fuel

APPENDIX 6.11 (Continued)

SUMMARY SHEET H
FUEL HANDLING ACCIDENT IN FUEL HANDLING BLDG

	PARAMETER	FSAR DBA	FSAR EXPECTED
4.	Whole Body Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	2.5E+00	1.5E-03
	b. Total 10000m dose for 30 days (Rem)	1.0E-01	6.1E-05
5.	Thyroid Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	2.2E+01	8.2E-05
	b. Total 10000m dose for 30 days (Rem)	9.2E-01	3.4E-06
6.	Accident Classification		
	(Based on above dose):	General Emergency	Alert
	(Based on EP G-1):	Site Area Emergency	Site Area Emergency
7.	Miscellaneous		
	a. Fuel Handling Building Volume (ft^3)	435,000	
	b. Fuel Handling Building Exhaust Rate (cfm)	35,700	35,700
	c. Filter Cleanup Factor	0.10	0.01
8.	References		
	a. FSAR, Tables 15.5-43 through 15.5-47.		
	b. DCM No. T-15, Radiation Protection, Rev. 0, February 1993, Table 4.6-22.		

APPENDIX 6.11 (Continued)

SUMMARY SHEET I
FUEL HANDLING ACCIDENT IN CONTAINMENT

	PARAMETER	FSAR DBA	FSAR EXPECTED
1.	Initial Conditions		
	a. Radial Peaking Factor of Damaged Assembly	1.65	1.26
	b. Elapsed Time Since Reactor Shutdown (hrs)	100	100
	c. Type of Release to Pool	100% of assembly gap activity	100% of assembly gap activity
	d. Bundle Submergence (ft)	26	26
	e. Pool Decontamination Factor for Iodine	100	760
	f. Total Assembly Gap Activity at Time of Accident (Ci)		
	1) Xe-133	100,000	8,137
	2) Other Noble Gases	4,500	1,500
	3) I-131	52,670	5,282
	4) Other Iodines	7,000	220
	5) Source Term	Spent Fuel	Spent Fuel
2.	(x/Q) CL (sec/m^3)		
	a. 800m (site boundary)	$5.29x10^{-4}$	$5.29x10^{-5}$
	b. 1000m (6 mi. LPZ)	$2.20x10^{-5}$	$2.20x10^{-6}$
3.	Total Release to Environs, 1st Two Hours (Ci)		
	a. Xe-133	12,460	38
	b. Other Noble Gases	557	7
	c. I-131	65	0.033
	d. Other Iodines	8.7	0.0013
	e. Source Term	Spent Fuel	Spent Fuel

APPENDIX 6.11 (Continued)

SUMMARY SHEET I
FUEL HANDLING ACCIDENT IN CONTAINMENT

	PARAMETER	FSAR DBA	FSAR EXPECTED
4.	Whole Body Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	3.1E-01	1.0E-04
	b. Total 10000m dose for 30 days (Rem)	1.3E-02	4.0E-06
5.	Thyroid Dose Results		
	a. Total 800 m dose for 1st two hours (Rem)	1.8E+01	6.0E-04
	b. Total 10000m dose for 30 days (Rem)	7.6E-01	3.0E-05
6.	Accident Classification		
	(Based on above Dose):	General Emergency	Alert
	(Based on EP G-1):	Site Area Emergency	Alert
7.	Miscellaneous Activity Release Mechanism	Activity released from cavity to containment atmosphere is confined directly above the cavity water level. It is picked up by the fan coolers and sent out through the containment purge.	
8.	References		
	a. FSAR, Tables 15.5-48 through 15.5-50.		
	b. DCM No. T-15, Radiation Protection, Rev. 0, February 1993, Section 4.6.7.21.		

APPENDIX 6.11 (Continued)

SUMMARY SHEET J
ROD EJECTION ACCIDENT

	PARAMETER	FSAR DBA	FSAR EXPECTED
1.	Total Release to Containment Free Volume (Ci)		
	a. Xe-133	2.01×10^5	1.52×10^5
	b. Other Noble Gases	6.82×10^4	6.22×10^4
	c. I-131	7.32×10^3	7.28×10^3
	d. Other Iodine	1.11×10^4	1.09×10^4
	e. Source Term	Gap	Gap
	f. Release Assumption	Coolant activity (1% defects) plus 10% of core gap activity times a liquid release fraction of either 0.1 (for I) or 1.0 (for N.G.)	Coolant activity (0.2% defects) plus 10% of core gap activity times a liquid release fraction of either 0.1 (for I) or 1.0 (for N.G.)
2.	Containment Spray Effectiveness		
	a. Removal half-life (hrs)	0.022	0.0075
	b. Number of operable spray pumps	1	2
3.	Containment Leak Rate (%/day)	0.1	0.05
4.	(x/Q) CL (sec/m^3)		
	a. 800m (site boundary)	5.29×10^{-4}	5.29×10^{-5}
	b. 1000m (6 mi. LPZ)	2.20×10^{-5}	2.20×10^{-6}
5.	Total Release to Environs, 1st 2 Hours (Ci)		
	a. Xe-133	11.2	5.6
	b. Other Noble Gases	4.1	2.0
	c. I-131	0.0098	0.002
	d. Other Iodine	0.015	0.002
	e. Source Term	Gap	Gap
	f. Release Mechanism	Containment Leakage	Containment Leakage

APPENDIX 6.11 (Continued)

SUMMARY SHEET J
ROD EJECTION ACCIDENT

	PARAMETER	FSAR DBA	FSAR EXPECTED
6.	Whole Body Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	7.3E-04	3.6E-05
	b. Total 1000m dose for 30 days (Rem)	1.3E-04	6.4E-06
7.	Thyroid Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	3.3E-03	3.7E-05
	b. Total 10000m dose for 30 days (Rem)	1.4E-04	1.6E-06
8.	Accident Classification		
	(Based on above Dose):	Unusual Event	No Emergency
	(Based on EP G-1):	Site Area Emergency	Site Area Emergency
9.	Miscellaneous		
	a. Containment free volume (cc)	7.36×10^{10}	
	b. RCS Coolant Mass (gm)	2.4×10^{8}	
10.	References		

a. FSAR, Table 15.5-52.

b. DCM T-15, Radiation Protection, Rev. 0, February 1993, Table 4.6-13.

APPENDIX 6.11 (Continued)

SUMMARY SHEET K
GAS DECAY TANK RUPTURE

	PARAMETER	FSAR DBA	FSAR EXPECTED
1.	Total Release to Environs, 1st Two Hours (Ci)		
	a. Xe-133	65,400	16,300
	b. Other Noble Gases	7,300	2,140
2.	(x/Q) CL (sec/m^3)		
	a. 800m (site boundary)	$5.29x10^{-4}$	$5.29x10^{-5}$
	b. 10000m (6 mi. LPZ)	$2.20x10^{-5}$	$2.20x10^{-6}$
3.	Whole Body Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	2.0E+00	4.4E-02
	b. Total 10000m dose for 30 days (Rem)	8.4E-02	1.8E-03
	NOTE: Thyroid doses are negligible.		
4.	Accident Classification		
	(Based on above Dose):	General Emergency	Site Area Emergency
	(Based on EP G-1):	Alert	Alert
5.	Miscellaneous		
	a. Tank Volume (cc)	$2.18x10^{7}$	
	b. Tank Press (psi)	100	
	c. Volume Released (cc)	$1.48x10^{8}$	
6.	References		
	a. FSAR, Table 15.5-53.		
	b. DCM T-15, Radiation Protection, Rev. 0, February 1993, Table 4.6-23.		

APPENDIX 6.11 (Continued)

SUMMARY SHEET L
LIQUID HOLDUP TANK RUPTURE

	PARAMETER	FSAR DBA	FSAR EXPECTED
1.	Activity in Holdup Tank (Ci)		
	a. Xe-133	51,000	10,200
	b. Other Noble Gases	4,710	930
	c. I-131	492	98.3
	d. Other Iodines	1,086	217
	e. Source Term	RCS	RCS
2.	Cleanup Parameters		
	a. Liquid Release Fraction for Iodines from Tank to Auxiliary Building Atmosphere	10^{-4}	10^{-4}
	b. Charcoal Filter Cleanup Factor	0.1	0.01
	c. Release Duration (hrs)	2	2
3.	Activity Release to Environs, 1st Two Hours (Ci)		
	a. Xe-133	51,000	10,200
	b. Other Noble Gases	4,710	930
	c. I-131	0.00492	9.8E-5
	d. Other Iodines	0.01086	2.17E-4
4.	(x/Q) CL (sec/m^3)		
	a. 800m (site boundary)	$5.29x10^{-4}$	$5.29x10^{-5}$
	b. 10000m (6 mi. LPZ)	$2.20x10^{-5}$	$2.20x10^{-6}$
5.	Whole Body Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	1.4E+00	3.7E-02
	b. Total 10000m dose for 30 days (Rem)	6.0E-02	1.6E-03

APPENDIX 6.11 (Continued)

SUMMARY SHEET L
LIQUID HOLDUP TANK RUPTURE

	PARAMETER	FSAR DBA	FSAR EXPECTED
6.	Thyroid Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	1.9E-03	2.6E-06
	b. Total 10000m dose for 30 days (Rem)	8.0E-05	1.1E-07
7.	Accident Classification		
	(Based on Dose):	Site Area Emergency	Site Area Emergency
	(Based on EP G-1):	Alert	Alert
8.	Miscellaneous		
	a. Tank Volume (cc)	3.03×10^8	
9.	References		
	a. FSAR, Table 15.5-56.		
	b. DCM T-15, Radiation Protection, Rev. 0, February 1993, Table 4.6-24.		

APPENDIX 6.11 (Continued)

SUMMARY SHEET M
VOLUME CONTROL TANK RUPTURE

	PARAMETER	FSAR DBA	FSAR EXPECTED
1.	Activity in VCT (Ci)		
	a. Xe-133	3,330	828
	b. Other Noble Gases	198	42
	c. I-131	12.1	3.0
	d. Other Iodines	35	8.7
	e. Source Term	RCS	RCS
2.	Cleanup Parameters		
	a. Liquid Release Fraction for Iodines from Tank to Auxiliary Building Atmosphere	10^{-4}	10^{-4}
	b. Charcoal Filter Cleanup Factor	0.1	0.01
	c. Release Duration (hrs)	2	2
3.	Activity Release to Environs, 1st Two Hours (Ci)		
	a. Xe-133	3,330	828
	b. Other Noble Gases	198	42
	c. I-131	0.00012	3E-6
	d. Other Iodines	0.00035	9E-6
4.	(x/Q) CL (sec/m^3)		
	a. 800m (site boundary)	$5.29x10^{-4}$	$5.29x10^{-5}$
	b. 1000m (6 mi. LPZ)	$5.20x10^{-5}$	$2.20x10^{-6}$
5.	Whole Body Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	4.7E-01	9.3E-03
	b. Total 10000m dose for 30 days (Rem)	1.9E-02	3.9E-04

APPENDIX 6.11 (Continued)

SUMMARY SHEET M
VOLUME CONTROL TANK RUPTURE

	PARAMETER	FSAR DBA	FSAR EXPECTED
6.	Thyroid Dose Results		
	a. Total 800m dose for 1st two hours (Rem)	3.3E-05	4.4E-08
	b. Total 10000m dose for 30 days (Rem)	1.4E-06	1.8E-09
7.	Accident Classification		
	(Based on Dose):	Site Area Emergency	Alert
	(Based on EP G-1):	Alert	Alert
8.	Miscellaneous		
	a. Tank Volume (cc)	1.1×10^7	
9.	References		
	a. FSAR, Table 15.5-57.		
	b. DCM T-15, Radiation Protection, Rev. 0, February 1993, Table 4.6-25.		

DIABLO CANYON POWER PLANT
EP RB-9
ATTACHMENT 7.1

1 AND 2

TITLE: Noble Gas and I-131 Equivalent Release Rates for a Plant Vent Release

SECTION 1 - GENERAL INFORMATION

1.1 Enter the following information: Unit # _____

Date _____ Time of Readings _____ Calculation # _____

Date _____ Time of Rx S/D _____ Calculation By: _____
(Rx S/D) (name)

1.2 Determine the TIME AFTER RX S/D _____ (Hrs)

Use Table 1 (Appendix 6.1) to determine Probable Source Term (circle one):

CORE GAP RCS SPENT FUEL

SECTION 2 - PLANT VENT FLOW RATE

Flow Rate Indicator FR-12 Operable

2.1 If FR-12 is operable, record below the flow rate reading indicated. Go to Section 2.3.

Plant Vent Flow Rate = _____ cfm
2.1

Flow Rate Indicator FR-12 Inoperable

2.2 a. If FR-12 is not operable, determine the Plant Vent Flow Rate by summing the operating fan flow rates below.

Number of Operating Fans			Fan Exhaust Rate		Pathway Flow Rate
FHB	_____	x	35,750 cfm	=	_____ cfm
Aux Bldg	_____	x	73,500 cfm	=	_____ cfm
Containment Purge	_____	x	55,000 cfm	=	_____ cfm
GE/GW	_____	x	25,000 cfm	=	_____ cfm
Containment H_2	_____	x	300 cfm	=	_____ cfm
Plant Vent Flow Rate = Σ Fan Flow Rates				=	_____ cfm (2.2)

Plant Vent Flow Rate

2.3 Convert "Plant Vent Flow Rate" units:

Plant Vent Flow Rate		Conversion Factor		Plant Vent Flow Rate
_____ cfm (2.1 or 2.2)	x	472 cc/sec/cfm	=	_____ cc/sec (2.3)

EP RB-9 (UNITS 1 AND 2)
ATTACHMENT 7.1

TITLE: Noble Gas and I-131 Equivalent Release Rates for a Plant Vent Release

SECTION 3 - NOBLE GAS RELEASE

Noble Gas Concentration

3.1 a. Record the plant vent radiation "Monitor Reading" from the EARS, ARMS, or RMS panel* in the Control Room (see Note below). Use RE-29 only if the RE-14/14R/87 monitors are unavailable.

b. Calculate the "Noble Gas Concentration" using the Monitor Response Factor from Figure 1, 2, or 3.

* **NOTE:** Monitor Readings from the Control Room RMS Panel read in µCi/cc. If this reading is used in lieu of raw data, enter the value directly in 3.2 below.

Monitor Reading		Monitor Response Factor		Noble Gas Concentration
_____cpm (RE-14/14R)	x	_____µCi/cc/cpm (Figure 1)	=	_____µCi/cc
_____Amps (RE-87)	x	_____µCi/cc/Amps (Figure 2)	=	_____µCi/cc
_____mR/hr (RE-29)	x	_____µCi/cc/mR/hr (Figure 3)	=	_____µCi/cc

Noble Gas Release Rate

3.2 a. Enter below the "Noble Gas Concentration" from Section 3.1 and the "Plant Vent Flow Rate" from Section 2.3.

b. Calculate and record below "Noble Gas Release Rate."

Noble Gas Concentration		Conversion Factor		Plant Vent Flow Rate		Noble Gas Release Rate
_____µCi/cc (3.1)	x	1E-6 Ci/µCi	x	_____cc/sec (2.3)	=	_____Ci/sec (3.2)

EP RB-9 (UNITS 1 AND 2)
ATTACHMENT 7.1

TITLE: Noble Gas and I-131 Equivalent Release Rates for a Plant Vent Release

SECTION 4 - IODINE RELEASE

Iodine Monitors

****

CAUTION: Do not attempt to access RE-24R or RE-87 without authorization from Radiation Protection.

****

4.1 Use the RE-24 or RE-24R iodine monitor (if on scale), or the extended range iodine sampler (RF-87), and go to the corresponding section to calculate the Iodine-131 equivalent release rate.

RE-24,	RE-24R (Normal range monitoring)	Concentration Mode	→Section 5
	RE-24R (High range monitoring)	Count Rate Mode	→Section 6
RF-24R,	RF-87 (High range sampling)		→Section 7

SECTION 5 - RE-24, RE-24R (Normal range monitoring) Concentration Mode

I-131 Release Rate

5.1 a. Calculate the "I-131 Release Rate" using the higher of RE-24 and RE-24R.

I-131 Concentration		Plant Vent Flow Rate		Plateout Correction	Conversion Factor		I-131 Release Rate
_____ µCi/cc	x	_____ cc/sec	x	1.3	x 1E-6 Ci/µCi	=	_____ Ci/sec
RE-24 or RE-24R		2.3					5.1

I-131 Equivalent Release Rate

5.2 a. Calculate the "I-131 TEDE Equivalent Release Rate" and "I-131 Thyroid CDE Equivalent Release Rate" using Figure 4.1 and Figure 4.2 correction factors.

I-131 Release Rate		I-131 TEDE Correction Factor		I-131 TEDE Equivalent Release Rate
_____ Ci/sec	x	_____	=	_____ Ci/sec
5.1		Figure 4.1		5.2.A

I-131 Release Rate		I-131 Thyroid CDE Correction Factor		I-131 Thyroid CDE Equivalent Release Rate
_____ Ci/sec	x	_____	=	_____ Ci/sec
5.1		Figure 4.2		5.2.B

EP RB-9 (UNITS 1 AND 2)
ATTACHMENT 7.1

TITLE: Noble Gas and I-131 Equivalent Release Rates for a Plant Vent Release

SECTION 6 - RE-24R (High range monitoring) Count Rate Mode

Flow Rate Ratio

6.1 a. Calculate "Flow Rate Ratio." Normal flow rate ratio is 1.3E5.

Plant Vent Flow Rate		RE-24R Flow Rate		Flow Rate Ratio		Default Ratio
_____cc/sec	÷	_____cc/sec	=	_____	or	1.3E5
2.3		Local indication		6.1		

I-131 Collection Rate

6.2 a. Record the "CPM Change Rate" as reported by personnel operating the RMS panel. (This data is gathered using EP RB-12 Section 6.1.3)

b. Calculate and record below the "I-131 Collection Rate."

CPM Change Rate		Conversion Factor		I-131 Collection Rate
_____cpm/min	x	1.4E-7 µCi min/cpm sec	=	_____µCi/sec
				6.2

I-131 Release Rate

6.3

I-131 Concentration		Flow Rate Ratio		Plateout Correction		Conversion Factor		I-131 Release Rate
_____µCi/sec	x	_____	x	1.3	x	1E-6 Ci/µCi	=	_____Ci/sec
6.2		6.1						6.3

I-131 Equivalent Release Rate

6.4 a. Calculate the "I-131 TEDE Equivalent Release Rate" and "I-131 Thyroid CDE Equivalent Release Rate" using Figure 4.1 and Figure 4.2 correction factors.

I-131 Release Rate		I-131 TEDE Correction Factor		I-131 TEDE Equivalent Release Rate
_____Ci/sec	÷	_____	=	_____Ci/sec
6.3		Figure 4.1		6.4.A

I-131 Release Rate		I-131 Thyroid CDE Correction Factor		I-131 Thyroid CDE Equivalent Release Rate
_____Ci/sec	x	_____	=	_____Ci/sec
6.4		Figure 4.2		6.4.B

EP RB-9 (UNITS 1 AND 2)
ATTACHMENT 7.1

TITLE: Noble Gas and I-131 Equivalent Release Rates for a Plant Vent Release

SECTION 7 - RF-24R, RF-87 (High range sampling)

I-131 Release Rate

7.1 a. Record below the I-131 Concentration for the RF-24R or RF-87 silver zeolite cartridge determined by EP RB-12, Section 6.2 (RF-24R) or 6.3 (RF-87).

b. Calculate and record "I-131 Release Rate."

I-131 Concentration		Plant Vent Flow Rate		Plateout Correction	Conversion Factor	I-131 Release Rate
_____ µCi/cc	x	_____ cc/sec	x	1.9	x 1E-6 Ci/µCi	= _____ Ci/sec
EP RB-12		2.3				7.1

I-131 Equivalent Release Rate

7.2 a. Calculate the "I-131 TEDE Equivalent Release Rate" and "I-131 Thyroid CDE Equivalent Release Rate" using Figure 4.1 and Figure 4.2 correction factors.

I-131 Release Rate		I-131 TEDE Correction Factor	I-131 TEDE Equivalent Release Rate
_____ Ci/sec	÷	_____	= _____ Ci/sec
7.1		Figure 4.1	7.2.A

I-131 Release Rate		I-131 Thyroid CDE Correction Factor	I-131 Thyroid CDE Equivalent Release Rate
_____ Ci/sec	x	_____	= _____ Ci/sec
7.2		Figure 4.2	7.2.B

DIABLO CANYON POWER PLANT
EP RB-9
ATTACHMENT 7.2 **1 AND 2**

TITLE: Noble Gas and I-131 Equivalent Release Rates for a Steam Release

SECTION 1 - GENERAL INFORMATION

1.1 Enter the following information: Unit # _____

Date _____ Time of Readings _____ Calculation # _____

Date _____ Time of Rx S/D _____ Calculation By: _____
(Rx S/D) (name)

1.2 Determine the TIME AFTER RX S/D _____ (Hrs)

Use Table 1 (Appendix 6.1) to determine appropriate Source Term. (circle one):

CORE GAP RCS SPENT FUEL

1.3 Indicate the faulty steam generator by placing a check mark in a box below. Go to Section 2.1 or 2.2.

Faulted Steam Generator	MSL Radiation Monitor	MSL Flow Rate Indicator	Narrow Range Recorder	10% Steam Dumps	Safety Relief Valves
[ ] SG-1	RE-71	FI-512	LR-517	PCV-19	RV-3,4,5,6,222
[ ] SG-2	RE-72	FI-522	LR-527	PCV-20	RV-7,8,9,10,223
[ ] SG-3	RE-73	FI-532	LR-537	PCV-21	RV-11,12,13,14,224
[ ] SG-4	RE-74	FI-542	LR-547	PCV-22	RV-15,16,17,18,225

SECTION 2 - STEAM FLOW RATE

MSL Flow Rate Indicator Operable

2.1 If the MSL Flow Rate Indicator on the faulty steam generator in Section 1.3 is operable, record below the greater of the reading indicated, or 4E5 lb/hr. Go to Section 2.3.

$$\text{FR-512,522,532,542} = \frac{\text{MSL Flow Rate}^{*}}{2.1} \text{ lb/hr}$$

* If less than 4E5 lb/hr, record and use 4E5 lb/hr.

MSL Flow Rate Indicator Inoperable

2.2 a. If the MSL flow rate indicator on the faulty steam generator in Section 1.3 is not operable, determine and record the "Number of Valves Open" releasing steam. ONLY INCLUDE VALVES OPEN ON THE MSL WITH THE FAULTY STEAM GENERATOR IN SECTION 1.3.

SECTION 2 - STEAM FLOW RATE (Continued)

2.2 b. Calculate the "MSL Flow Rate" by summing the "Valve Flow Rates." Go to Section 2.3.

Number of Valves Open		Flow Rate		Valve Flow Rate
10% Steam Dumps	_____ x	4.0 E5 lb/hr	=	_____ lb/hr
Safety Reliefs	_____ x	8.5 E5 lb/hr	=	_____ lb/hr
	MSL Flow Rate = Σ Valve Flow Rates		=	_____ lb/hr (2.2)

Steam Flow Rate

2.3 Calculate and record the "Steam Flow Rate" using the "MSL Flow Rate," from Section 2.1 or 2.2. Go to Section 3.1 or 3.2.

MSL Flow Rate		Conversion Factor		Steam Flow Rate
_____ lb/hr (2.1 or 2.2)	x	3.1 cc hr/lb sec	=	_____ cc/sec (2.3)

SECTION 3 - ISOTOPIC STEAM ACTIVITY FRACTIONS

Isotopic Steam Activity Fractions - RCS Sample Analysis

NOTE: If RCS Sample is not available, then skip Section 3.1 at this time and proceed with Section 3.2 (Page 4).

3.1 a. Record the date and time the Reactor Coolant System (RCS) sample was collected.

RCS Sample Collection Date and Time: __/__/__, __:__

b. Record in Section 3.1.h below the "RCS Sample Activity Concentrations" for noble gases, iodines, and particulates.

c. Determine the faulty steam generator water level using the Narrow Range Level indication:

Steam Generator Water Level 3.1.c

	[ ] Empty	[ ] Normal	[ ] Flooded
S/G Level Narrow Range	<4%	4% - 96%	≥96%

TITLE: Noble Gas and I-131 Equivalent Release Rates for a Steam Release

SECTION 3 - ISOTOPIC STEAM ACTIVITY FRACTIONS (Continued)

3.1 d. Determine the "Steam Partition Factors" for iodines and particulates using the water level indicated in Section 3.1.c. Record the "Steam Partition Factors" in Section 3.1.h below.

Steam Partition Factors

	Empty	Normal	Flooded
Iodines	0.10	0.01	1.00
Particulates	0.01	0.01	1.00

e. Determine the "Density Correction" using the water level indicated in Section 3.1.c. Record the "Density Correction" below.

Density Correction

	Empty	Normal	Flooded
All	0.056	0.056	1

f. Calculate and record below the "Steam Activity Concentrations" for noble gases, iodines, and particulates by multiplying each "RCS Sample Activity Concentration," times each "Steam Partition Factor" times "Density Correction."

g. Calculate and record below the "Total Steam Activity Concentration" by summing the "Steam Activity Concentrations" for noble gases, iodines, and particulates.

h. Calculate and record below the "Steam Activity Fractions" for noble gases, iodines, and particulates by dividing each "Steam Activity Concentration" by the "Total Steam Activity Concentration." Go to Section 4 or 5.

	RCS Sample Activity Concentration		Steam Partition Factor		Density Correction		(For Section 5.1) Steam Activity Concentration	(For Section 4.2) Steam Activity Fraction
Noble Gases	_____ µCi/cc	x	1.00			=	_____ µCi/cc (a)	_____ a ÷ d
Iodines	_____ µCi/cc	x	_____	x	_____	=	_____ µCi/cc (b)	_____ b ÷ d
Particulates	_____ µCi/cc	x	_____			=	_____ µCi/cc (c)	_____ c ÷ d

Total Steam Activity Concentration = _____ µCi/cc
d = a+b+c

TITLE: Noble Gas and I-131 Equivalent Release Rates for a Steam Release

SECTION 3 - ISOTOPIC STEAM ACTIVITY FRACTIONS (Continued)

Isotopic Steam Activity Fractions - FSAR Design Basis - Use only if RCS Sample is not available

3.2 a. Determine the faulty steam generator water level using the Narrow Range Level indication:

Steam Generator Water Level

	[ ] Empty	[ ] Normal	[ ] Flooded
S/G Level Narrow Range	<4%	4% - 96%	>96%

b. Determine the FSAR "Steam Activity Fractions" for noble gases, iodines, and particulates using the water level indicated in Section 3.2.a. Record the "Steam Activity Fractions" in Section 4.2.c.

FSAR - Steam Activity Fractions

	Empty	Normal	Flooded
Noble Gases	9.96E-01	9.99E-01	9.51E-01
Iodines	3.36E-03	3.37E-04	3.20E-02
Particulates	1.78E-04	1.79E-04	1.70E-02

SECTION 4 - RELEASE RATES - MSL RADIATION MONITORS OPERABLE

NOTE: If there appears to be no net RE-7x indication, but the Control Room verifies that the monitor showed an initial Nitrogen-16 response or currently responds to check-source actuation, the monitor is OPERABLE. In this case the entire "background" reading may be used for this calculation to establish an "upper-bound" release estimate, but the method of Section 5.2 should be used to determine release rate if possible.

MSL Activity Concentrations

4.1 a. Record the "MSL Monitor Reading" for the faulty steam generator indicated in Section 1.3.

b. Calculate and record the "MSL Activity Concentration" using the appropriate "MSL Monitor response from Figure 5.1, 5.2, or 5.3.

MSL Monitor Reading		MSL Monitor Response		Conversion Factor		MSL Activity Concentration
_____	cpm x	_____	µCi/cc/cpm	x 1E-6 Ci/µCi =		_____ Ci/cc
RE-71,72,73,74		Appendix 6.6				4.1

TITLE: Noble Gas and I-131 Equivalent Release Rates for a Steam Release

SECTION 4 - RELEASE RATES - MSL RADIATION MONITORS OPERABLE (Continued)

Isotopic Release Rates

4.2 a. If a RCS sample is available, enter the "Steam Activity Fraction" from Section 3.1. If a RCS sample is not available, enter below the FSAR "Steam Activity Fraction" from Section 3.2.

b. Enter the "MSL Activity Concentration" from Section 4.1 and the "Steam Flow Rate" from Section 2.3.

c. Calculate and record "Isotopic Release Rate" for noble gases, iodines, and particulates. Go to Section 6.1.

	Steam Activity Fraction		MSL Activity Concentration		Steam Flow Rate		Isotopic Release Rate
Noble Gases	_____ (3.1 or 3.2)						_____ Ci/sec (4.2)
Iodines	_____ (3.1 or 3.2)	x	_____ Ci/cc (4.1)	x	_____ cc/sec (2.3)	=	_____ Ci/sec (4.2)
Particulates	_____ (3.1 or 3.2)						_____ Ci/sec (4.2)

SECTION 5-RELEASE RATES-MSL RADIATION MONITORS INOPERABLE-RCS ANALYSIS

RCS Sample Analysis - Known Steam Flow Rates

5.1 a. Calculate and record "Isotopic Release Rate" for noble gases, iodines, and particulates using the "Steam Activity Concentrations" from Section 3.1. Go to Section 6.1.

	Steam Activity Concentration		Steam Flow Rate		Conversion Factor		Isotopic Release Rate
Noble Gases	_____ µCi/cc (3.1)						_____ Ci/sec (5.1)
Iodines	_____ µCi/cc (3.1)	x	_____ cc/sec (2.3)	x	1E-6 Ci/µCi	=	_____ Ci/sec (5.1)
Particulates	_____ µCi/cc (3.1)						_____ Ci/sec (5.1)

EP RB-9 (UNITS 1 AND 2)
ATTACHMENT 7.2

TITLE: Noble Gas and I-131 Equivalent Release Rates for a Steam Release

SECTION 5 - RELEASE RATES - MSL RADIATION MONITORS INOPERABLE - RCS ANALYSIS (Continued)

RCS Sample Analysis - Known Primary to Secondary Leak Rate

5.2 a. Enter the "RCS Sample Activity Concentrations" and "Steam Partition Factors" for noble gases, iodines, and particulates recorded in Section 3.1.h (Page 3).

b. Enter the "Primary to Secondary Leak Rate."

c. Calculate and record "Isotopic Release Rate" for noble gases, iodines, and particulates. Go to Section 6.1.

	RCS Sample Activity Concentration		Steam Partition Factors		Primary to Secondary Leak Rate		Conversion Factor		Isotopic Release Rate
Noble Gases	_____ μCi/cc (3.1)	x	_____					=	_____ Ci/sec (5.2)
Iodines	_____ μCi/cc (3.1)	x	_____	x	_____ gpm	x	6.3E-05 (Ci cc min) / (μCi gal sec)	=	_____ Ci/sec (5.2)
Particulates	_____ μCi/cc (3.1)	x	_____					=	_____ Ci/sec (5.2)

SECTION 6 - NOBLE GAS AND I-131 EQUIVALENT RELEASE RATES

6.1 a. Enter below the "Noble Gases Release Rate" and "Iodine Release Rate" from Section 4.2, 5.1, or 5.2.

b. Determine "Iodine TEDE Conversion Factor" using Figure 6.1 and "Iodine Thyroid CDE Conversion Factor" using Figure 6.2 and record below.

c. Calculate and record "I-131 TEDE Equivalent Release Rate" and "I-131 Thyroid CDE Release Rate."

Enter result of 4.2, 5.1 or 5.2

Noble Gas Release Rate = _____ Ci/sec (6.1)

Iodine Release Rate		Iodine TEDE Conversion Factor	I-131 TEDE Equivalent Release Rate
_____ Ci/sec (4.2, 5.1, or 5.2)	x	_____ (Figure 6.1)	= _____ Ci/sec (6.1)

Iodine Release Rate		Iodine Thyroid CDE Conversion Factor	I-131 Thyroid CDE Equivalent Release Rate
_____ Ci/sec (4.2, 5.1, or 5.2)	x	_____ (Figure 6.2)	= _____ Ci/sec (6.1)

DIABLO CANYON POWER PLANT
EP RB-9
ATTACHMENT 7.3 **1 AND 2**

TITLE: Noble Gas and I-131 Equivalent Release Rates for Containment Leakage

SECTION 1 - GENERAL INFORMATION

1.1 Enter the following information: Unit # _____

Date _____ Time of Readings _____ Calculation # _____

Date _____ Time of Rx S/D _____ Calculation By: _____
(Rx S/D) (name)

1.2 Determine the TIME AFTER RX S/D _____ (Hrs)

Use Table 1 (Appendix 6.1) to determine appropriate Source Term. (circle one):

CORE GAP RCS SPENT FUEL

SECTION 2 - FSAR DESIGN BASIS NOBLE GAS AND I-131 EQUIVALENT RELEASE RATES

Average RE-30 and RE-31 Monitor Reading

2.1 Calculate the "Average Monitor Reading" for RE-30 and RE-31.

NOTE: If RE-30 and RE-31 are INOPERABLE, record the "EQUIVALENT RE-30/31 READING" from EP RB-14, 4.3.3.

RE-30 Monitor Reading		RE-31 Monitor Reading		Average Monitor Reading
(_____R/hr	x	_____R/hr)$^{1/2}$ =		_____R/hr
				2.1

Average Monitor Reading to FSAR Design Basis Exposure Rate Ratio

2.2 Calculate the "Monitor to Design Basis Ratio" using Figure 7.

Average Monitor Reading		FSAR Design Basis Exposure Rate		Monitor to Design Basis Ratio
_____R/hr	÷	_____R/hr =		_____
2.1		Figure 7		2.2

EP RB-9 (UNITS 1 AND 2)
ATTACHMENT 7.3

TITLE: Noble Gas and I-131 Equivalent Release Rates for Containment Leakage

SECTION 2 - FSAR DESIGN BASIS NOBLE GAS AND I-131 EQUIVALENT RELEASE RATES

Noble Gas Release Rate

2.3 Calculate the "Noble Gas Release Rate" using Figure 8.

Monitor to Design Basis Ratio		Design Basis Noble Gas Release Rate		Noble Gas Release Rate
_____	x	_____ Ci/sec	=	_____ Ci/sec
2.2		Figure 8		2.3

I-131 Equivalent Release Rate

2.4 a. Determine the "Design Basis I-131 TEDE and Thyroid CDE Equivalent Release Rate" using Figure 9 and record below.

b. Calculate and record "I-131 TEDE Equivalent Release Rate" and the I-131 Thyroid CDE Equivalent Release Rate.

Monitor to Design Basis Ratio		Design Basis I-131 TEDE Equivalent Release Rate		I-131 TEDE Equivalent Release Rate
_____	x	_____ Ci/sec	=	_____ Ci/sec
2.2		Figure 9		2.4

Monitor to Design Basis Ratio		Design Basis I-131 Thyroid CDE Equivalent Release Rate		I-131 Thyroid CDE Equivalent Release Rate
_____	x	_____ Ci/sec	=	_____ Ci/sec
2.2		Figure 9		2.4

TITLE: Core Damage Assessment Procedure

1 AND 2

05/30/03
EFFECTIVE DATE

PROCEDURE CLASSIFICATION: QUALITY RELATED

1. SCOPE

1.1 This procedure is used to estimate the extent of clad and/or core failure following an emergency situation involving inadequate core cooling. Westinghouse Owner's Group "Post Accident Core Damage Assessment Methodology" was used as a reference for preparing this procedure.

2. DISCUSSION

2.1 Fuel damage resulting in the release of radioactive material can occur following a loss of coolant accident (LOCA) or loss of available heat sinks. These events, if uncorrected, can lead to localized or widespread overheating of the fuel and eventual clad and/or core failure.

2.2 This procedure provides an initial detection of potential core damage and a preliminary and a long-term methodology for assessing core damage.

2.2.1 The initial detection of core damage can be done by measuring the radiation level at a distance of one foot from the center of the letdown line in the letdown heat exchanger room as shown in Attachment 8.3. Should the radiation level exceed 15 R/hr then fuel damage is indicated at the Alert #2 emergency action level.

2.2.2 The preliminary assessment uses parameters such as reactor vessel water level and core temperatures to confirm that conditions exist which can lead to clad and/or core failure. This is quantified through the use of containment hydrogen and area radiation monitor readings.

2.2.3 Long-term methodology uses reactor coolant and containment air sample analysis to determine the extent of clad and/or core failure more accurately. Long-term sampling will require about 30 days.

3. RESPONSIBILITIES

3.1 The Emergency Radiological Advisor (ERA) is responsible for the implementation of this procedure. The preliminary assessment can be initiated while awaiting sample analysis results necessary for the long-term assessment. Refer to Table 1 for recommended sample locations.

4. PRELIMINARY ASSESSMENT (FORM 69-10422)

4.1 GENERAL INFORMATION

Record the information requested.

4.2 INADEQUATE CORE COOLING

4.2.1 Indication of Conditions - Check the appropriate response to the questions.

4.2.2 Evaluation of Conditions - The more boxes checked the greater potential for inadequate core cooling. Proceed to step 4.3 and continue monitoring the situation.

4.3 CONTAINMENT RADIATION LEVELS

If loss of Reactor Coolant is not occurring skip this and the next section and proceed to step 5, LONG TERM ASSESSMENT.

4.3.1 Containment Area Radiation Monitors Operable

a. Record containment area radiation monitor readings, R/hr, in the spaces labeled RE-30 READING and RE-31 READING.

b. Multiply the RE-30 and RE-31 monitor readings. Record the results $(R/Hr)^2$ in the space labeled READINGS PRODUCT.

c. Take the square root of the READINGS PRODUCT and record the result (R/Hr) in the space labeled AVERAGE READING. If only one monitor is operable, use that monitor's reading as the AVERAGE READING.

4.3.2 Containment Area Radiation Monitors Inoperable

a. Obtain exposure rate, R/hr, outside the equipment hatch concrete shield or personnel hatch (outside airlock). Use a portable dose rate instrument capable of measuring radiation fields up to and including 1000R/hr.

b. Record the exposure rate into the space labeled EQUIPMENT or PERSONNEL HATCH READING.

4.3.3 Percent Clad and/or Core Failure Estimate

a. Containment Area Radiation Monitors Operable

1. Obtain the 100% Gap and Core Release exposure rates, R/hr, from Figures 2 and 3. Record these values into the spaces labeled 100% GAP RELEASE AND 100% CORE RELEASE. Use step 4.1.2 time after reactor shutdown.

2. To determine the percent clad failure multiply the AVERAGE READING by 100 and divide the result by the 100% GAP RELEASE. Record the result (%) in the space labeled PERCENT CLAD FAILURE.

3. To determine the percent core failure multiply the AVERAGE READING by 100 and divide the result by the 100% CORE RELEASE. Record the result (%) in the space labeled PERCENT CORE FAILURE.

b. Containment Area Radiation Monitors Inoperable

1. Perform step 4.3.3a.1. above, recording the values in spaces F and H.

2. Obtain the 100% Gap and Core Release exposure rates, R/hr, from Figures 4 or 5 for the location selected in step 4.3.2. Record these values into the spaces labeled 100% GAP RELEASE and 100% CORE RELEASE. Use step 4.1.2 time after reactor shutdown.

3. To determine the percent clad failure multiply the EQUIPMENT HATCH or PERSONNEL HATCH READING from step 4.3.2, by 100 and divide the result by the 100% GAP RELEASE. Record the result (%) in the space labeled PERCENT CLAD FAILURE (G and K).

4. To determine the percent core failure multiply the EQUIPMENT or PERSONNEL HATCH READING from step 4.3.2, by 100 and divide the result by the 100% CORE RELEASE. Record the result (%) in the space labeled PERCENT CORE FAILURE (I and M).

5. If the PERCENT CLAD FAILURE is ≤100%, multiply F x G and enter the result in space N. If the PERCENT CLAD FAILURE is >100%, multiply H x I and enter the result in space N.

4.4 CONTAINMENT HYDROGEN LEVELS

If core failure was indicated in step 4.3, proceed to step 5.0, LONG TERM ASSESSMENT.

4.4.1 Percent Clad Failure Estimate

NOTE 1: Hydrogen levels in containment are only a valid indicator of damage within the first 24 hours of the accident, assuming that the hydrogen recombiners are not operating. If assessment from the area radiation monitors and the H_2 monitors differ, utilize data from Reactor Vessel Level Indication System (RVLIS), etc., to select the most representative assessment. If resolution cannot be obtained, use the highest estimated level of percent clad failure.

NOTE 2: Immediately notify the emergency evaluation and recovery coordinator of any increase in hydrogen reading. An increase requires the starting of the installed hydrogen recombiners in containment. If the hydrogen monitor reading exceeds 3%, evaluate using the hydrogen purge system and obtaining external recombiners. This action should be taken because internal recombiners may become an ignition source if hydrogen concentrations exceeds 4.0%.

a. Record containment hydrogen monitor readings, %, in the spaces labeled CEL-82 READING and CEL-83 READING.

b. Get the monitor readings average and record the result in the space labeled AVERAGE READING. If only one monitor is operable, use that monitor's reading as the AVERAGE READING.

5. LONG TERM ASSESSMENT (FORM 69-10423)

5.1 GENERAL INFORMATION

Record the information requested.

5.2 EMERGENCY CORE COOLING SYSTEM (ECCS) VOLUME INJECTED

5.2.1 Reactor Coolant System (RCS) Sample

a. Use Table 1 to select the RCS sampling location (hot leg or cavity sump) corresponding to step 4.1.2 postulated accident.

b. Request an isotopic analysis of the selected RCS sample.

5.2.2 Density Correction Factor

a. Record the RCS TEMPERATURE, °F, in the space provided.

b. Use Figure 7 and the RCS TEMPERATURE to determine the DENSITY CORRECTION FACTOR. Record this value in the space provided.

5.2.3 Dilution Volume

a. Determine the Refueling Water Storage Tank (RWST) volume, gal, prior to the accident. Record this value in the space labeled PRIOR RWST VOLUME.

b. Obtain the current RWST volume, gal. Record this value in the space labeled CURRENT RWST VOLUME.

c. To determine the RWST volume injected, cc, subtract the CURRENT RWST VOLUME from the PRIOR RWST VOLUME and multiply the result by the CONVERSION FACTOR (3,785 cc/gal). Record this value in the space labeled INJECTED RWST VOLUME.

d. Determine the number of accumulators discharged. Record this number in the space labeled ACCUMULATOR QUANTITY.

e. To determine the accumulator volume injected multiply the number of accumulators discharged by the accumulator volume (4.28E7cc). Record the result, cc, in the space labeled INJECTED ACCUMULATOR VOLUME.

f. To determine the dilution volume, cc, sum the INJECTED RWST VOLUME, INJECTED ACCUMULATOR VOLUME, and the REACTOR COOLANT SYSTEM VOLUME (3.56E8 cc). Record the result in the space labeled DILUTION VOLUME.

5.3 LIQUID INVENTORY

a. Obtain the selected RCS sample analysis results (step 5.2.1) for the specified isotopes (off gases must be included). Record the sample activity concentration, uCi/cc, in the spaces labeled SAMPLE ACTIVITY CONCENTRATION.

b. Record the DENSITY CORRECTION FACTOR (step 5.2.2) and the DILUTION VOLUME (step 5.2.3) into the spaces provided.

c. To determine the liquid inventory, Ci, multiply the SAMPLE ACTIVITY CONCENTRATION, DENSITY CORRECTION FACTOR, DILUTION VOLUME, and the CONVERSION FACTOR (1E-6 Ci/uCi). Record the result in the space labeled LIQUID INVENTORY.

5.4 PRESSURE AND TEMPERATURE CORRECTION FACTOR

5.4.1 Containment Atmosphere Sample

a. Use Table 1 to select the containment atmosphere sampling location corresponding to step 4.1.2 postulated accident.

b. Request an isotopic analysis of the selected sample.

5.4.2 Pressure and Temperature Correction Factor

a. Record the containment atmosphere pressure, psig, and temperature,°R, in the spaces labeled CONTAINMENT ATMOSPHERE PRESSURE and CONTAINMENT ATMOSPHERE TEMPERATURE (psia = psig + 14.7, and °R = °F + 460).

b. Record the containment atmosphere sample pressure, psia, and temperature, °R, in the spaces labeled SAMPLE PRESSURE and SAMPLE TEMPERATURE (psia = psig + 14.7, and °R = °F + 460).

c. Divide the CONTAINMENT ATMOSPHERE PRESSURE by the SAMPLE PRESSURE. Record the result in the space labeled PRESSURE RATIO.

d. Divide the SAMPLE TEMPERATURE by the CONTAINMENT ATMOSPHERE TEMPERATURE. Record the result in the space labeled TEMPERATURE RATIO.

e. To determine the pressure and temperature correction factor multiply the PRESSURE RATIO and the TEMPERATURE RATIO. Record the result in the space labeled PRESSURE TEMPERATURE CORRECTION FACTOR.

5.5 GASEOUS INVENTORY

a. Obtain the selected containment atmospheric sample analysis result (step 5.4.1) for the specified isotopes. Record the activity concentration, uCi/cc, in the spaces labeled SAMPLE ACTIVITY CONCENTRATION.

b. Record the PRESSURE TEMPERATURE CORRECTION FACTOR (step 5.4.2) into the space provided.

c. To determine the gaseous inventory, Ci, multiply the SAMPLE ACTIVITY CONCENTRATION, PRESSURE TEMPERATURE CORRECTION FACTOR, CONTAINMENT VOLUME (7.36E10 cc), and the CONVERSION FACTOR (1E-6 Ci/uCi). Record the result in the space labeled GASEOUS INVENTORY.

5.6 INVENTORY CORRECTION - CONSTANT POWER HISTORY

This section is to be used when the power level has remained relatively constant (within ± 10 percent) for 30 days prior to reactor shutdown. If the power level has not been relatively constant, proceed to section 5.7.

5.6.1 Power Level

a. Determine the average power level (%) for the 4 days prior to reactor shutdown. Record this value into the space labeled POWER $LEVEL_1$.

b. Determine the average power level (%) for the 30 days prior to reactor shutdown. Record this value into the space labeled POWER $LEVEL_2$.

c. Determine the operation time (days) since the previous reactor shutdown. Record this value into the space labeled OPERATION TIME.

d. Determine the average power level (%) for the operation time. Record this value into the space labeled AVERAGE POWER LEVEL.

5.6.2 Power Correction Factor

a. Divide the POWER $LEVEL_1$ (step 5.6.1) by 100 and record the result in the space labeled POWER CORRECTION $FACTOR_1$.

b. Divide the POWER $LEVEL_2$ (step 5.6.1) by 100 and record the result in the space labeled POWER CORRECTION $FACTOR_2$.

c. Obtain the Cs-134 power correction factor from Figure 8. Use step 5.6.1 operation time and average power level. Record the obtained value into the space labeled Cs-134 POWER CORRECTION FACTOR.

5.6.3 Corrected Inventory - Gap

a. To determine the gap corrected inventory multiply the GAP EQUILIBRIUM INVENTORY by the applicable POWER CORRECTION FACTOR ($FACTOR_1$, $FACTOR_2$, OR Cs-134).

b. Record the results, Ci, into the space labeled GAP CORRECTED INVENTORY.

5.6.4 Corrected Inventory - Core

a. To determine the core corrected inventory multiply the CORE EQUILIBRIUM INVENTORY by the applicable POWER CORRECTION FACTOR ($FACTOR_1$, $FACTOR_2$, or Cs-134).

b. Record the results, Ci, into the spaces labeled CORE CORRECTED INVENTORY.

5.7 INVENTORY CORRECTION FOR VARIABLE POWER HISTORY

When the power level has not remained relatively constant for 30 days prior to reactor shutdown, the effects of power changes must be taken into account.

5.7.1 Power Level

a. Determine the operation time (days) since the previous reactor shutdown. Record this value into the space labeled OPERATION TIME.

b. Determine the average power level (%) for the operation time. Record this value into the space labeled AVERAGE POWER LEVEL.

5.7.2 Power Correction Factor

a. Obtain the Cs-134 power correction factor from Figure 8. Use step 5.7.1 operation time and average power level. Record the obtained value into the space labeled Cs-134 POWER CORRECTION FACTOR.

b. Use the following equation to determine the power correction factor for other isotopes.

$$PF_i = \frac{\sum_j P_j\left(1 - e^{-\lambda_i t_{1j}}\right)e^{-\lambda_i t_{2j}}}{RP} \qquad \text{Eq. I}$$

Where:

PF_i = 30 day Power Correction Factor for nuclide i,

P_j = average power level (Mwt) for time t_{1j},

RP = rated power level of the core (Mwt),

RP = 3411 Mwt Unit 1

RP = 3411 Mwt Unit 2

λ_i = decay constant ($days^{-1}$) nuclide i,

t_{1j} = time (days) where power does not vary more than ±10%, and

t_{2j} = time (days) from end of t_{1j} to 30-days.

5.7.3 Gap Corrected Inventory

a. To determine the gap corrected inventory multiply the GAP EQUILIBRIUM INVENTORY by the applicable POWER CORRECTION FACTOR (step 5.7.2).

b. Record the results, Ci, into the spaces labeled GAP CORRECTED INVENTORY.

5.7.4 Core Corrected Inventory

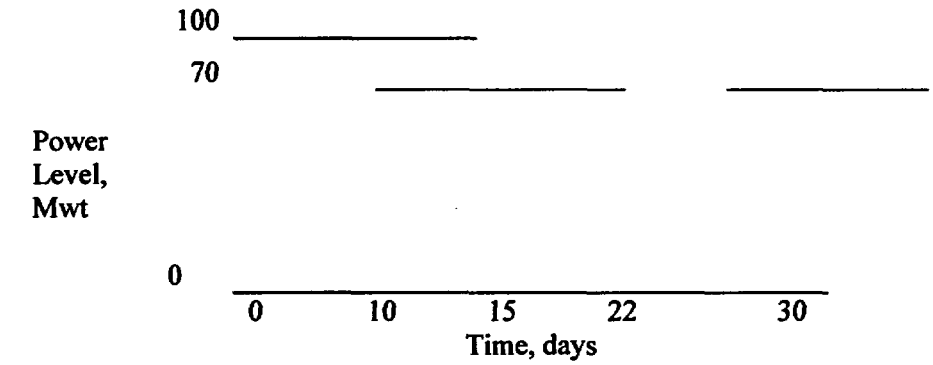
a. To determine the core corrected inventory multiply the CORE EQUILIBRIUM INVENTORY by the applicable POWER CORRECTION FACTOR (step 5.7.2).

b. Record the results, Ci, into the spaces labeled CORE CORRECTED INVENTORY.

5.7.5 Power Correction Factor Sample Calculation:

Unit 1 has operated for the 30 days prior to reactor shutdown with the following power history:

100	Mwt	for	10	days
70	Mwt	for	5	days
0	Mwt	for	7	days
70	Mwt	for	8	days



Unit 1 rated power level = 3411 Mwt

Period 1

P_1 = 100 Mwt, t_{11} = 10 days, t_{21} = 20 days

Period 2

P_2 = 70 Mwt, t_{12} = 5 days, t_{22} = 15 days

Period 3

P_3 = 0.0 Mwt, t_{13} = 7 days, t_{23} = 8 days

Period 4

P_4 = 70 Mwt, t_{14} = 8 days, t_{24} = 0 days

The equation for Nuclide i would be:

$$PF_i = ([100\,(1-e^{-\lambda i\,(10)})e^{-\lambda i\,(20)}] + [70\,(1-e^{-\lambda i\,(5)})e^{-\lambda i\,(15)}] + [0.0\,(1-e^{-\lambda i\,(7)})e^{-\lambda i\,(8)}] + [70\,(1-e^{-\lambda i\,(8)})e^{-\lambda i\,(0)}]) \div 3411$$

5.8 RELEASE PERCENT, IODINE RATIO, AND NOBLE GAS RATIO

5.8.1 Gap Released Percent

a. Obtain the LIQUID INVENTORY, Ci, from step 5.3 and record into the spaces provided.

b. Obtain the GASEOUS INVENTORY, Ci, from step 5.5 and record into the spaces provided.

c. Add the LIQUID INVENTORY and the GASEOUS INVENTORY. Record the result into the space labeled RELEASED INVENTORY.

d. Obtain the CORRECTED INVENTORY from step 5.6.3 or 5.7.3 and record into the spaces provided.

e. To determine the release percent divide the RELEASED INVENTORY by the CORRECTED INVENTORY and multiply the result by 100. Record this value into the spaces labeled RELEASE PERCENT.

5.8.2 Core Release Percent

a. Obtain the LIQUID INVENTORY, Ci, from step 5.3 and record into the spaces provided.

b. Obtain the GASEOUS INVENTORY, Ci, from step 5.5 and record into the spaces provided.

c. Add the LIQUID INVENTORY and the GASEOUS INVENTORY. Record the result into the space labeled RELEASED INVENTORY.

d. Obtain the CORRECTED INVENTORY from step 5.6.4 or 5.7.4 and record into the spaces provided.

e. To determine the release percent divide the RELEASED INVENTORY by the CORRECTED INVENTORY and multiply the result by 100. Record this value into the spaces labeled RELEASE PERCENT.

5.8.3 Iodine Ratio

a. Obtain the I-133 and I-131 RELEASED INVENTORY from step 5.8.1. Record these values, Ci, into the spaces provided.

b. To determine the iodine ratio divide the I-133 RELEASED INVENTORY by the I-131 RELEASED INVENTORY. Record the result into the space labeled IODINE RATIO.

5.8.4 Noble Gas Ratio

a. Obtain the Kr-87 and Xe-133 RELEASED INVENTORY from step 5.8.1. Record these values, Ci, into the spaces provided.

b. To determine the noble gas ratio divide the Kr-87 RELEASED INVENTORY by the Xe-133 RELEASED INVENTORY. Record the result into the space labeled NOBLE GAS RATIO.

5.9 ASSESSMENT WORKSHEET

5.9.1 Assessment Worksheet

a. Obtain the RELEASE PERCENT (step 5.8.1and 5.8.2) for the specified isotopes and mark the applicable Assessment Worksheet box.

b. Obtain the IODINE and NOBLE GAS RATIOS (step 5.8.3 and 5.8.4) and mark the applicable Assessment Worksheet box.

c. Determine damage category base on mark distribution on the Assessment Worksheet.

6. REFERENCES

6.1 Westinghouse Owners Post Accident Core Damage Assessment Methodology.

6.2 PG&E Calculation PAM-0-07-065, Rev. 2, 2/22/97 "Core Exit Temperature Indication Uncertainty".

6.3 PG&E Calculation PAM-0-07-403, "RCS Wide Range Pressure Indication Uncertainty".

7. APPENDICES

7.1 Table 1 Recommended Sample Locations

7.2 Figure 1 Saturation Curve

7.3 Figure 2 Post LOCA Exposure Rate Inside Containment From Noble Gases (RE-30 and RE-31) - Gap Release

7.4 Figure 3 Post LOCA Exposure Rate Inside Containment From Noble Gases (RE-30 and RE-31) - Core Release

7.5 Figure 4 Post LOCA Exposure Rate Outside of Equipment Hatch From Noble Gases - Gap and Core Release

7.6 Figure 5 Post LOCA Exposure Rate Outside of Personnel Hatch From Noble Gases - Gap and Core Release

7.7 Figure 6 Percent H_2 in Containment vs Percent Clad Failure

7.8 Figure 7 Density Correction Factor

7.9 Figure 8 Power Correction Factor for Cs-134

8. ATTACHMENTS

8.1 Form 69-10422, "Preliminary Assessment," 05/30/03

8.2 "Long Term Assessment," 09/19/01

8.3 "Initial Detection of Potential Core Damage," 09/19/01

9. SPONSOR

Alex Taylor

APPENDIX 7.1

TABLE 1

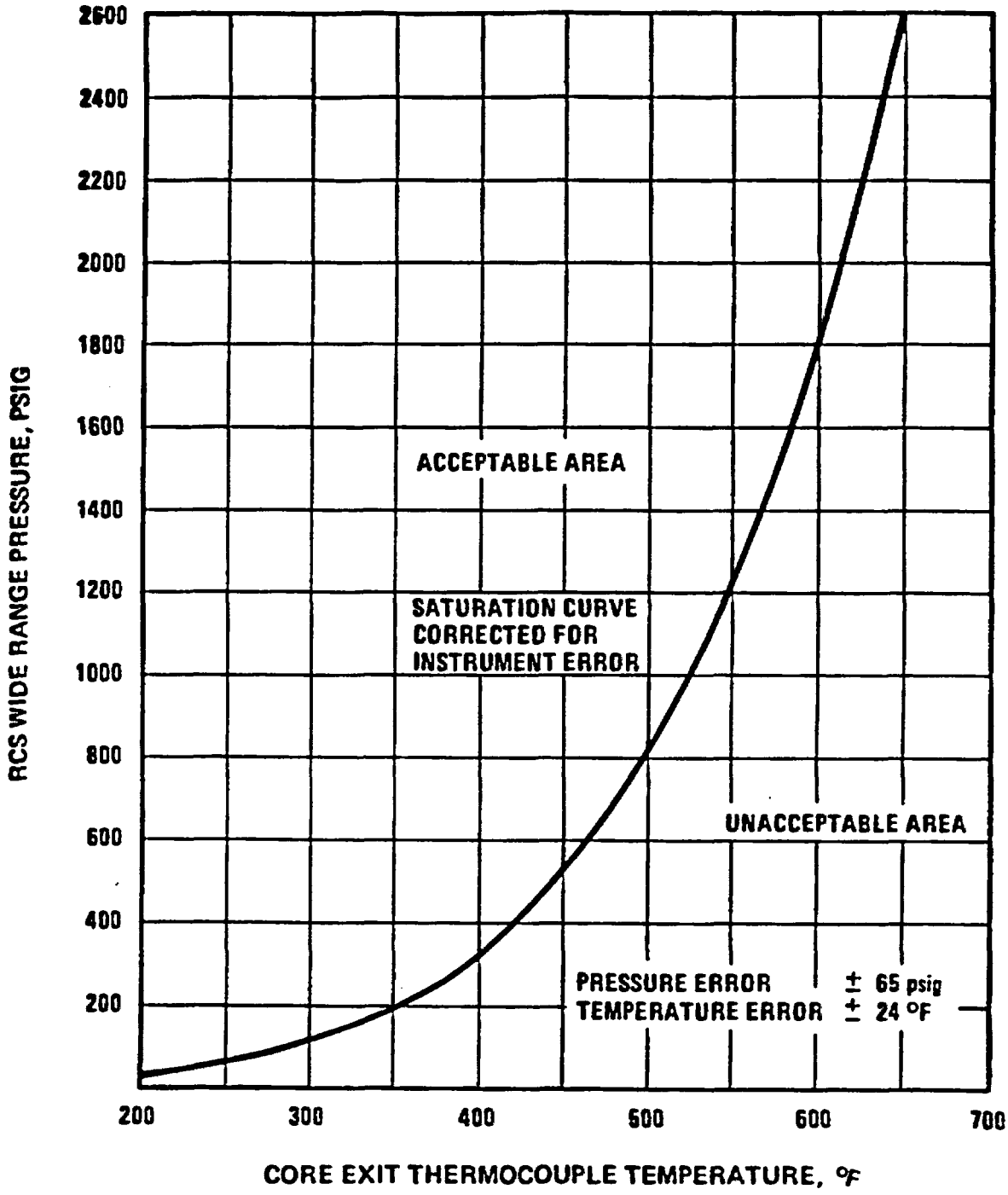
Recommended Sample Locations

Postulated Accident	Sampling Locations
- Small break LOCA	
Reactor Power > 1%	RC Hot Log 1 or 4 (LSP) Containment air (CASP)
Reactor Power < 1%	RC Hot Leg 1 or 4 (LSP)
- Large break LOCA	
Reactor Power > 1%	Reactor Cavity Sump (LSP) Containment air (CASP) RC Hot Leg 1 or 4
Reactor Power < 1%	Reactor Cavity Sump (LSP) Containment air (CASP)
- Steam Line break	RC Hot Leg 1 or 4 (LSP) Containment air (CASP)
- Steam Generator tube rupture	RC Hot Leg 1 or 4 (LSP) Containment air (CASP)
- Indication of significant Containment Sump Inventory	Reactor Cavity Sump (LSP) Containment air (CASP)
- Containment building Radiation Monitor Alarm	Reactor Cavity Sump (LSP) Containment air (CASP)
- Safety injection actuated	RC Hot Leg 1 or 4 (LSP)
- Indication of High Radiation Level in RCS	RC Hot Leg 1 or 4 (LSP)

APPENDIX 7.2

FIGURE 1

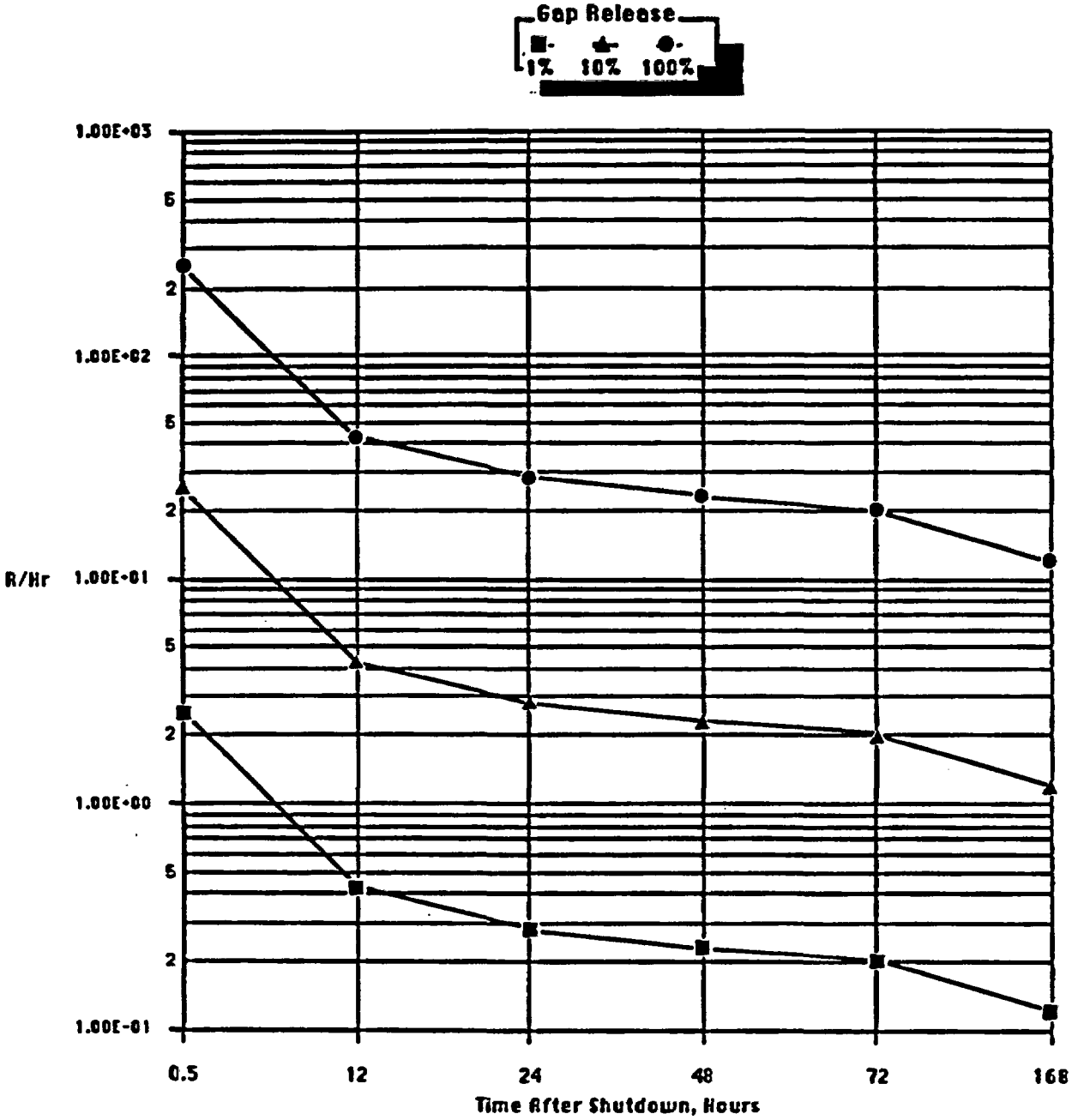
SATURATION CURVE



APPENDIX 7.3

FIGURE 2

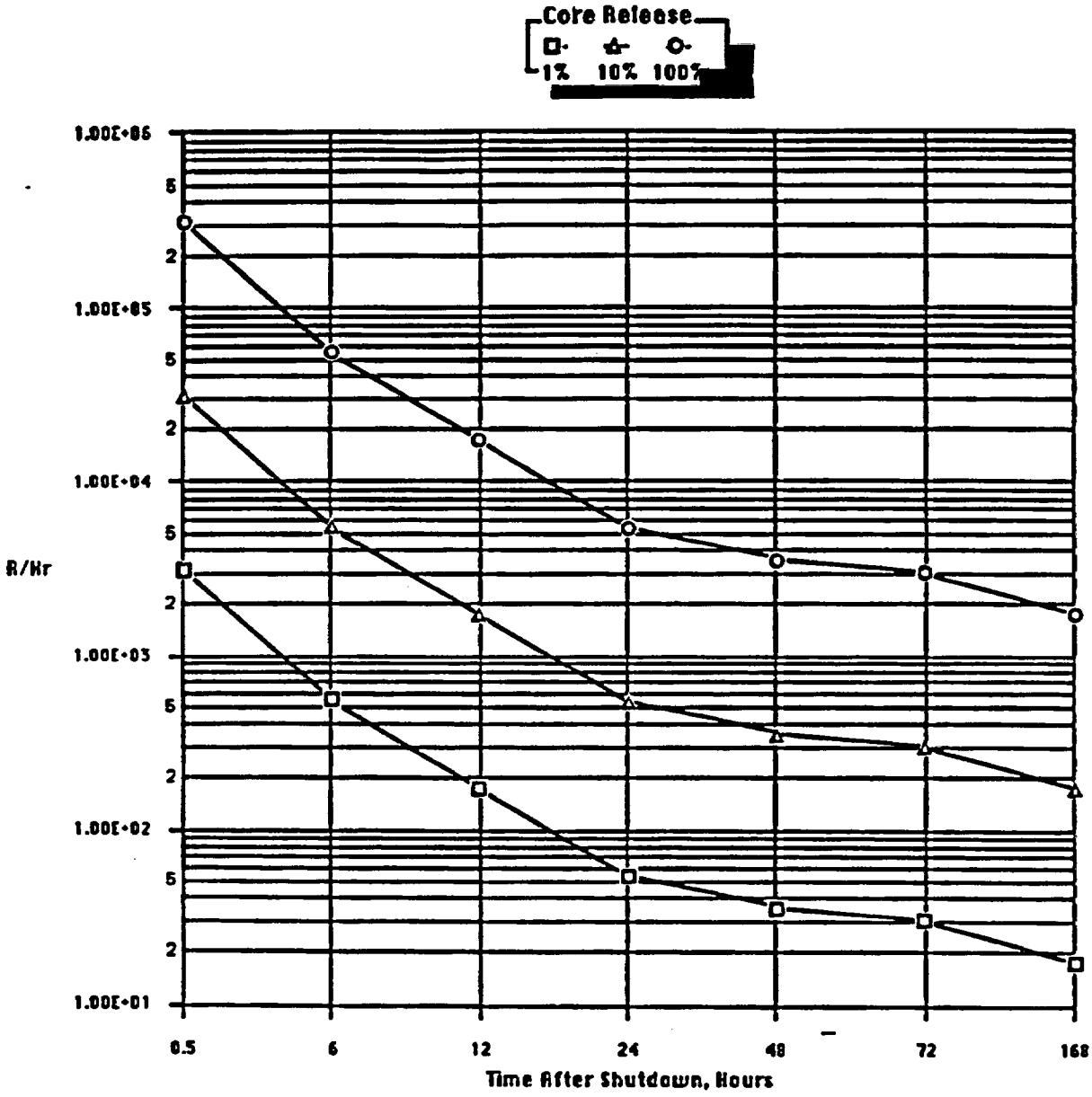
POST LOCA EXPOSURE RATE INSIDE CONTAINMENT FROM NOBLE GASES
(RE-30 AND RE-31) - GAP RELEASE



APPENDIX 7.4

FIGURE 3

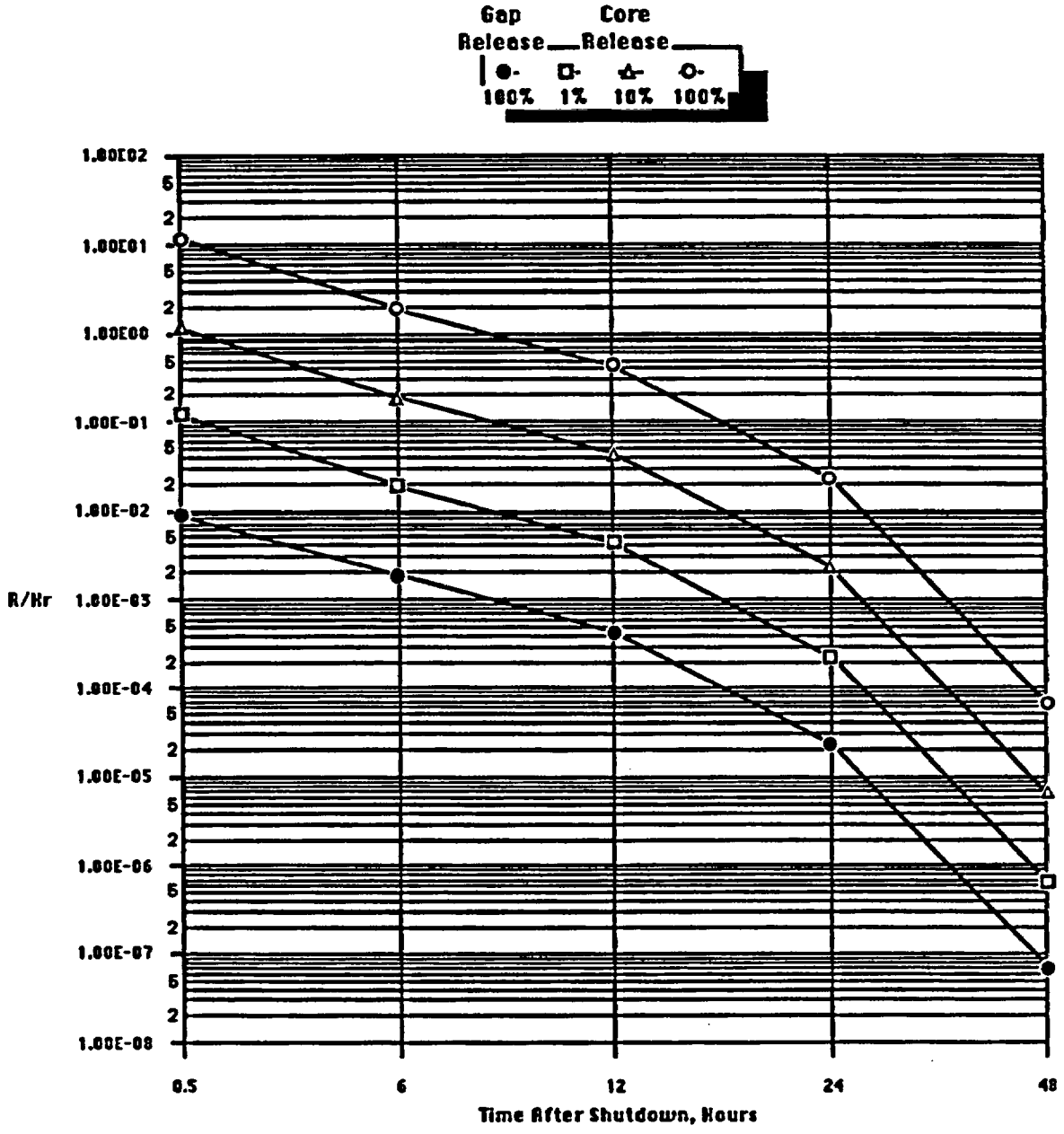
POST LOCA EXPOSURE RATE INSIDE CONTAINMENT FROM NOBLE GASES
(RE-30 AND RE-31) - CORE RELEASE



APPENDIX 7.5

FIGURE 4

POST LOCA EXPOSURE RATE OUTSIDE OF EQUIPMENT HATCH FROM NOBLE GASES - GAP AND CORE RELEASE

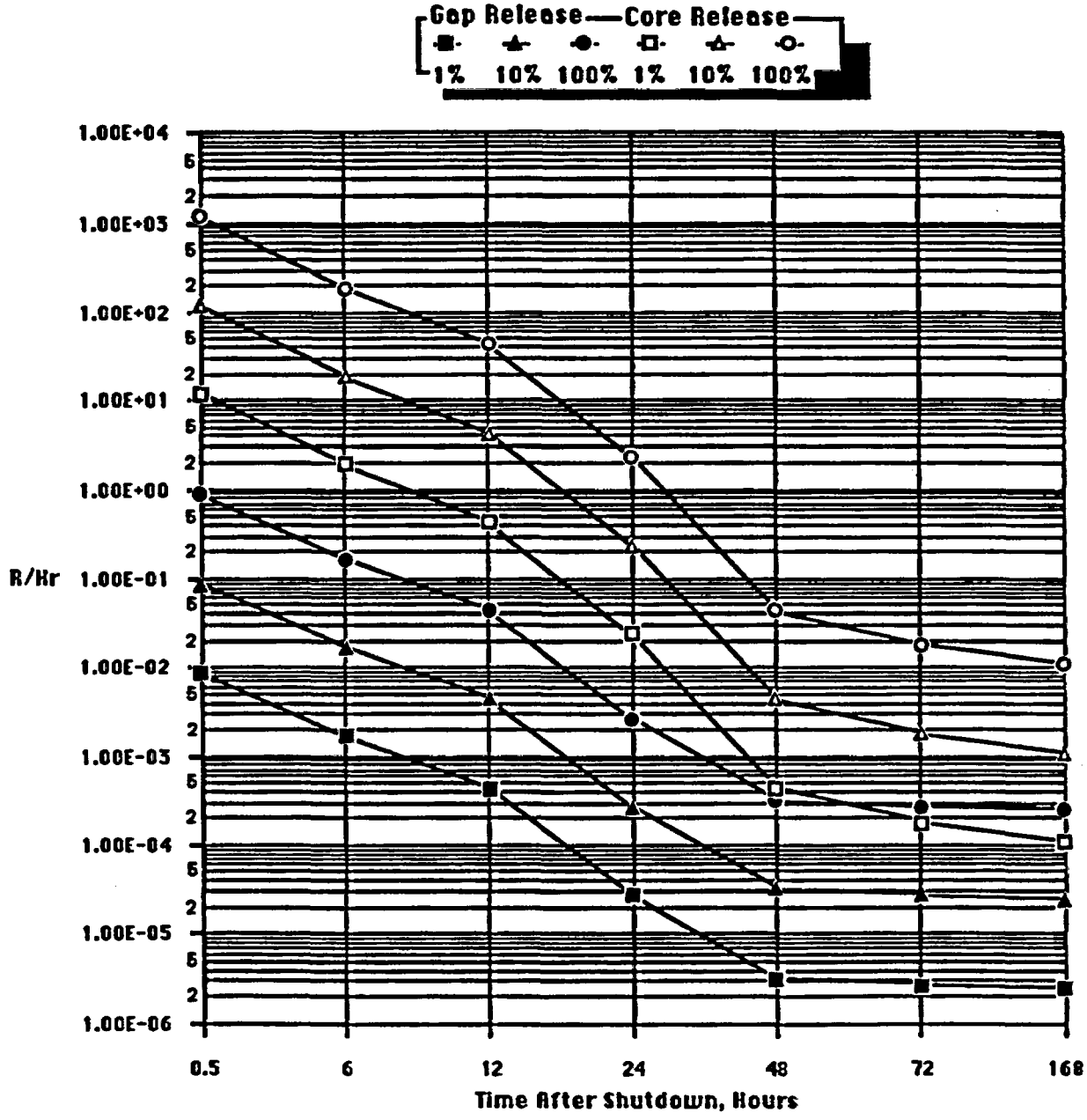


00408204.3Bb 18II

APPENDIX 7.6

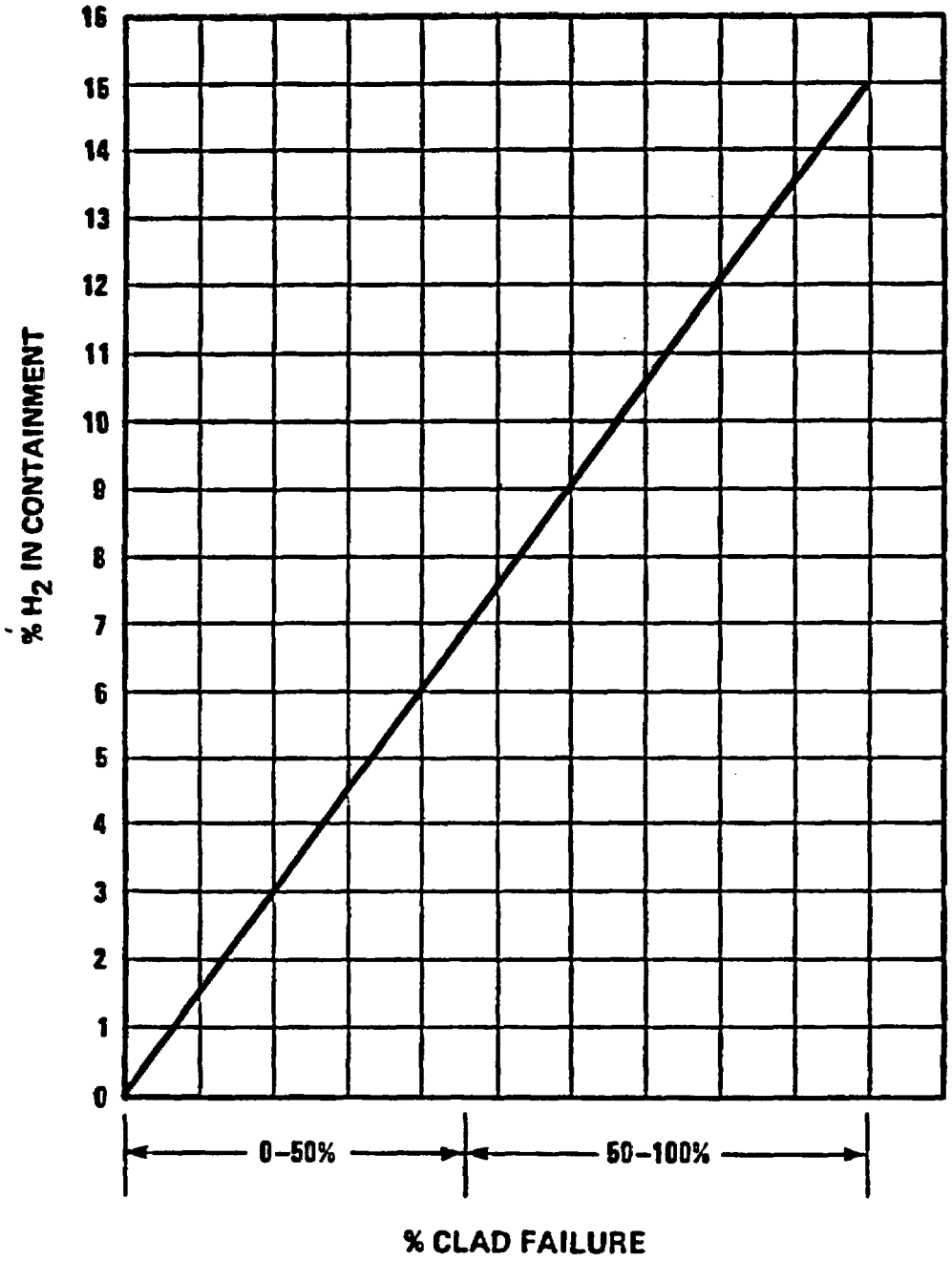
FIGURE 5

POST LOCA EXPOSURE RATE OUTSIDE OF PERSONNEL HATCH FROM NOBLE GASES - GAP AND CORE RELEASE



APPENDIX 7.7

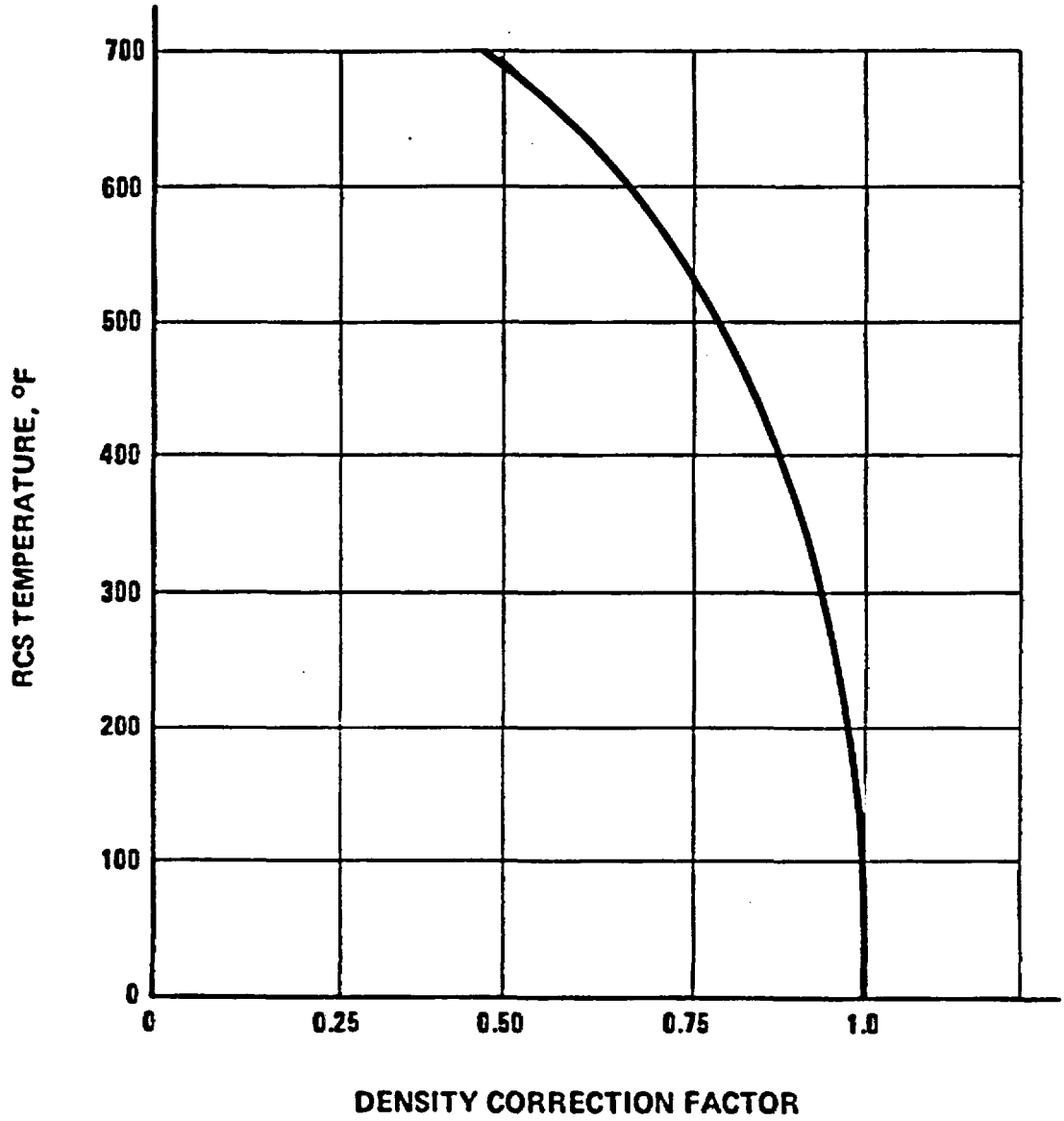
FIGURE 6
PERCENT H2 IN CONTAINMENT VERSUS PERCENT CLAD FAILURE



APPENDIX 7.8

FIGURE 7

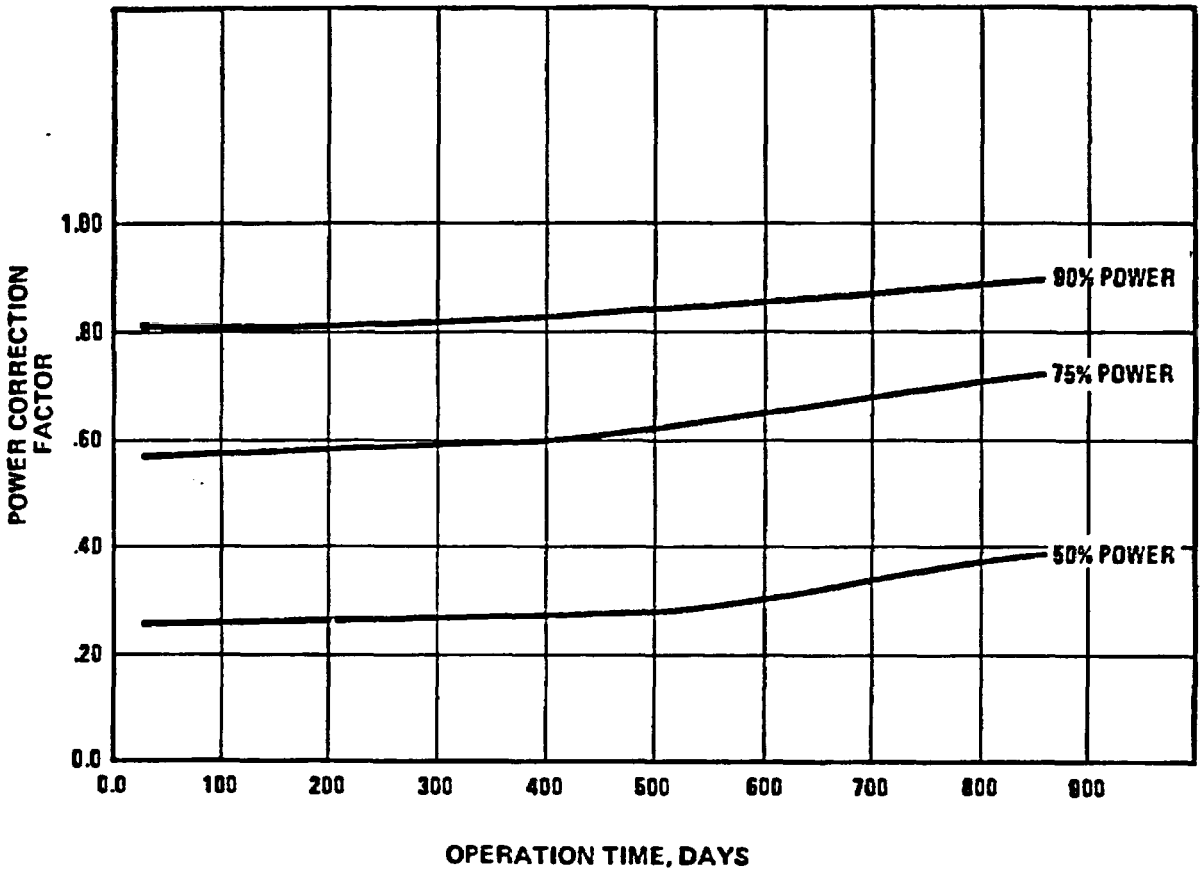
DENSITY CORRECTION FACTOR



APPENDIX 7.9

FIGURE 8

POWER CORRECTION FACTOR FOR CS-134



DIABLO CANYON POWER PLANT
EP RB-14
ATTACHMENT 8.1 **1 AND 2**

TITLE: Preliminary Assessment

PART 4.1 GENERAL INFORMATION

4.1.1 Date _____ Time _____ Unit _____ Calculation # _____

Completed By _____

4.1.2 Time After Reactor Shutdown _____ Hr Postulated Accident _____
Table 1

PART 4.2 INADEQUATE CORE COOLING

4.2.1 INDICATION OF CONDITIONS		Yes	No
a.	Are five or more Core Exit Thermocouples (CETC) temperatures greater than 1,200°F?	[ ]	_____
b.	Can Safety Injection (SI) and/or charging flow to the Reactor Coolant System (RCS) be verified?	_____	[ ]
c.	Can Auxiliary Feed Water (AFW) flow to the steam generators and Component Cooling Water (CCW) and Auxiliary Salt Water (ASW) flow be verified?	_____	[ ]
d.	Are RCS pressure and CETC temperature (T hottest) within the "Acceptable Area" of subcooling as determined by using Figure 1?	_____	[ ]
e.	Are containment area radiation monitor (RE-30 or RE-31) reading greater than 1 R/hr?	[ ]	_____
f.	Is containment pressure greater than 1.3 psig?	[ ]	_____
g.	Is containment temperature greater than 120°F?	[ ]	_____
h.	Is containment hydrogen level as indicated by monitors CEL-82 or CEL-83 up scale?	[ ]	_____

4.2.2 EVALUATION OF CONDITIONS

If any of the boxes (as opposed to line spaces) in step 4.2.1 were checked, proceed to section 4.3.

PART 4.3 CONTAINMENT RADIATION LEVELS

4.3.1 CONTAINMENT AREA RADIATION MONITORS OPERABLE

A RE-30 READING	B RE-31 READING	C READINGS PRODUCT	D AVERAGE READING*
R/hr	R/hr	$(R/hr)^2$	R/hr
		A & B	SQRT (C)

* Use the operable monitor reading as the average reading if only one monitor is operable.

OR

4.3.2 CONTAINMENT AREA RADIATION MONITOR INOPERABLE

E Equipment Hatch Reading*	OR	E Personnel Hatch Reading*
R/hr		R/hr

* Use portable ionization chamber.

4.3.3 PERCENT CLAD AND/OR CORE FAILURE ESTIMATE

4.3.3.a Containment Area Radiation Monitors Operable

F 100% Gap Release*	G Percent Clad Failure	H 100% Core Release*	I Percent Core Failure
R/hr	%	R/hr	%
Figure 2	D/F x 100	Figure 3	D/H x 100
OR K if Monitors inoperable		M if monitors inoperable	

OR

4.3.3.b Containment Area Radiation Monitors Inoperable

J 100% Gap Release*	K Percent Clad Failure	L 100% Core Release*	M Percent Core Failure
R/hr	%	R/hr	%
Figure 4 or 5	E/J x 100	Figure 4 or 5	E/L x 100

N

Equivalent RE-30/31 Reading

F X G OR H x I

*Step 4.1.2 Time After Reactor Shutdown

PART 4.4 CONTAINMENT HYDROGEN LEVEL

If Core Failure was indicated in step 4.3, proceed to step 5.1.

4.4.1 PERCENT CLAD FAILURE ESTIMATE

A CEL-82 READING	B CEL-83 READING	C AVERAGE* READING	D PERCENT CLAD FAILURE
%	%	%	%
		(A + B)/2	Figure 6

*Use the operable monitor reading as the Average Reading if only one monitor is operable

DIABLO CANYON POWER PLANT
EP RB-14
ATTACHMENT 8.2

1 AND 2

TITLE: Long Term Assessment

Pacific Gas and Electric Company
Long-Term Assessment
Diablo Canyon Power Plant Unit Nos. 1 and 2

80-10423 (Rev. 4/99)
Diablo Canyon Power Plant

Page 1 of 8

PART 5.1 GENERAL INFORMATION

5.1.1 Date ___/___/___ Time _____ Unit _____ Calculation # _____

5.1.2 Time After Reactor Shutdown _____ Hr Postulated Accident _____
Table 1

PART 5.2 EMERGENCY CORE COOLING SYSTEM (ECCS) VOLUME INJECTED

5.2.1 REACTOR COOLANT SYSTEM (RCS) SAMPLE*

Check One: Hot Leg 1 _____ Hot Leg 4 _____ Reactor Cavity Sump _____

**Use table 1 and Step 4.1.2 postulated accident to select sampling location.*

5.2.2 DENSITY CORRECTION FACTOR

RCS Temperature	Density Correction Factor
_____ °F	_____ *Figure 7*

5.2.3 DILUTION VOLUME

Prior RWST Volume		Current RWST Volume		Conversion Factor		A Injected RWST Volume
[_____ gal	-	_____ gal]	x	3,785 cc/gal	=	_____ cc

Accumulator Quantity		B Injected Accumulator Volume
_____ Accumulators Injected x 4.28E7 cc	=	_____ cc

C RCS Volume: 3.56 E8 cc

Dilution Volume = _____ cc
A + B + C

EP RB-14 (UNITS 1 AND 2)
ATTACHMENT 8.2

TITLE: Long Term Assessment

Page 2 of 8

PART 5.3 LIQUID INVENTORY

Isotope	A Sample Activity Concentration*	B Density Correction Factor	C Dilution Volume	D Conversion Factor	E Liquid Inventory
Kr-87	_____ µCi/cc				_____ Ci A x B x C x D
Xe-133	_____ µCi/cc				_____ Ci A x B x C x D
I-131	_____ µCi/cc				_____ Ci A x B x C x D
I-133	_____ µCi/cc	_____ 5.2.2	_____ cc 5.2.3	1E-6 Ci/µCi	_____ Ci A x B x C x D
Te-132	_____ µCi/cc				_____ Ci A x B x C x D
Ba-140	_____ µCi/cc				_____ Ci A x B x C x D
La-140	_____ µCi/cc				_____ Ci A x B x C x D
Cs-134	_____ µCi/cc				_____ Ci A x B x C x D

*Includes Off Gases.

PART 5.4 PRESSURE AND TEMPERATURE CORRECTION FACTOR

5.4.1 **CONTAINMENT ATMOSPHERE SAMPLE***

Check One: Containment Air _____ Other _____

*Use Table 1 and Step 4.1.2 postulated accident to select sampling location.

5.4.2 **PRESSURE AND TEMPERATURE CORRECTION FACTOR**

F Containment Atmosphere Pressure	G Sample Pressure	H Sample Temperature	I Containment Atmosphere Temperature
_____ psia psig + 14.7	_____ psia psig + 14.7	_____ °R °F + 460	_____ °R °F + 460

J Pressure Ratio	K Temperature Ratio	L Pressure Temperature Correction Factor
_____ F / G	_____ H / I	_____ J x K

PART 5.5 GASEOUS INVENTORY

Isotope	M Sample Activity Concentration	N Pressure Temperature Correction Factor	O Containment Volume	P Conversion Factor	Q Gaseous Inventory
Kr-87	_____ µCi/cc				_____ Ci M x N x O x P
Xe-133	_____ µCi/cc				_____ Ci M x N x O x P
I-131	_____ µCi/cc	_____ 5.4.2 L	7.36E10 cc	1E-6 Ci/µCi	_____ Ci M x N x O x P
I-133	_____ µCi/cc				_____ Ci M x N x O x P

Page 3 of 8

PART 5.6 INVENTORY CORRECTION—CONSTANT POWER HISTORY

5.6.1 POWER LEVEL*

A Power Level$_1$	B Power Level$_2$	Operation Time	Average Power Level
_____ % *Prior 4 days*	_____ % *Prior 30 days*	_____ days	_____ % *Operation Time*

**Power level within ± 10%, otherwise proceed to Step 5.7.*

5.6.2 POWER CORRECTION FACTOR

C Power Correction Factor$_1$	D Power Correction Factor$_2$	E Cs-134 Power Correction Factor*
_____ *A / 100*	_____ *B / 100*	_____ *Figure 8*

**Use Step 5.6.1 average power level and operation time.*

5.6.3 CORRECTED INVENTORY—GAP

Isotope	F Gap Equilibrium Inventory	G Gap Corrected Inventory
Kr-87	3.9E4 Ci	_____ Ci *C x F*
I-133	5.1E5 Ci	_____ Ci *C x F*
Xe-133	1.3E6 Ci	_____ Ci *D x F*
I-131	8.0E5 Ci	_____ Ci *D x F*

5.6.4 CORRECTED INVENTORY—CORE

Isotope	H Core Equilibrium Inventory	I Core Corrected Inventory
Kr-87	5.9E7 Ci	_____ Ci *C x H*
I-133	1.9E8 Ci	_____ Ci *C x H*
Xe-133	1.9E8 Ci	_____ Ci *D x H*
Te-132	1.4E8 Ci	_____ Ci *D x H*
Ba-140	1.8E8 Ci	_____ Ci *D x H*
La-140	1.8E8 Ci	_____ Ci *D x H*
I-131	9.7E7 Ci	_____ Ci *D x H*
Cs-134	3.1E6 Ci	_____ Ci *E x H*

PART 5.7 INVENTORY CORRECTION—VARIABLE POWER HISTORY

5.7.1 POWER LEVEL

Operation Time	Average Power Level
_____ days	_____ %
	Operation Time

5.7.2 POWER CORRECTION FACTOR

Cs-134
Power Correction Factor*

Figure 8

Use the following equation to determine the power correction factor for other isotopes.

$$PF_i = \frac{\Sigma_j P_j (1-e^{-\lambda_i t_{1j}}) e^{-\lambda_i t_{2j}}}{RP}$$

Where:

- PF_i = 30 day Power Correction Factor for nuclide i.
- P_j = average power level (Mwt) for period t_{1j}.
- λ_i = decay constant (days -1) for nuclide i.
- t_{1j} = time (days) where power does not vary more than ±10% from P_j.
- t_{2j} = time (days) from end of period t_{1j} to time of reactor shutdown.
- RP = rated power level of the core (Mwt).

**Use Step 5.7.1 operation time and average power level.*

EP RB-14 (UNITS 1 AND 2)
ATTACHMENT 8.2

TITLE: Long Term Assessment

Page 5 of 8

Isotope	A λ_i	B t_{1j}	C t_{2j}	D $\lambda_i t_{1j}$	E $\lambda_i t_{2j}$
		____ days	____ days / 30 - B	____ / A x B	____ / A x C
		____ days	____ days / 30 - B	____ / A x B	____ / A x C
____	____ days^{-1}	____ days	____ days / 30 - B	____ / A x B	____ / A x C
		____ days	____ days / 30 - B	____ / A x B	____ / A x C
		____ days	____ days / 30 - B	____ / A x B	____ / A x C
		____ days	____ days / 30 - B	____ / A x B	____ / A x C

F $e^{-\lambda_i t_{1j}}$	G $1 - e^{-\lambda_i t_{1j}}$	H $e^{-\lambda_i t_{2j}}$	I P_j^*	J Correction Factor
EXP [-D]	1 - F	EXP [-E]	____ Mwt	G x H x I
EXP [-D]	1 - F	EXP [-E]	____ Mwt	G x H x I
EXP [-D]	1 - F	EXP [-E]	____ Mwt	G x H x I
EXP [-D]	1 - F	EXP [-E]	____ Mwt	G x H x I
EXP [-D]	1 - F	EXP [-E]	____ Mwt	G x H x I
EXP [-D]	1 - F	EXP [-E]	____ Mwt	G x H x I

Correction Factor Σ = ____

*Power level for period t_{1j}.

Correction Factor		Rated Power Level*		Power Correction Factor
____	÷	____ Mwt	=	____

*Use 3338 Mwt for Unit 1 or 3411 for Unit 2.

Page 6 of 8

5.7.3 **CORRECTED INVENTORY—GAP**

Isotope	Decay Constant	A Power Correction Factor	B Gap Equilibrium Inventory	C Gap Corrected Inventory
Kr-87	1.31E 1 days^{-1}	_____ 5.7.2	3.9E4 Ci	_____ Ci A x B
Xe-133	1.3E-1 days^{-1}	_____ 5.7.2	1.3E6 Ci	_____ Ci A x B
I-131	8.62E-2 days^{-1}	_____ 5.7.2	8.0E5 Ci	_____ Ci A x B
I-133	8.00E-1 days^{-1}	_____ 5.7.2	5.1E5 Ci	_____ Ci A x B

5.7.4 **CORRECTED INVENTORY—CORE**

Isotope	Decay Constant	D Power Correction Factor	E Core Equilibrium Inventory	F Core Corrected Inventory
Kr-87	1.31E 1 days^{-1}	_____ 5.7.2	5.9E7 Ci	_____ Ci D x E
Xe-133	1.3E-1 days^{-1}	_____ 5.7.2	1.9E8 Ci	_____ Ci D x E
Te-132	2.13E-1 days^{-1}	_____ 5.7.2	1.4E8 Ci	_____ Ci D x E
Ba-140	5.42E-2 days^{-1}	_____ 5.7.2	1.8E8 Ci	_____ Ci D x E
La-140	4.1E-1 days^{-1}	_____ 5.7.2	1.8E8 Ci	_____ Ci D x E
I-131	8.62E-2 days^{-1}	_____ 5.7.2	9.7E7 Ci	_____ Ci D x E
I-133	8.00E-1 days^{-1}	_____ 5.7.2	1.9E8 Ci	_____ Ci D x E
Cs-134	9.24E-4 days^{-1}	_____ 5.7.2	3.1E6 Ci	_____ Ci D x E

Page 7 of 8

PART 5.8 RELEASE PERCENT, IODINE RATIO, AND NOBLE GAS RATIO

5.8.1 GAP RELEASE PERCENT

Isotope	A Liquid Inventory	B Gaseous Inventory	C Released Inventory	D Corrected Inventory	E Release Percent
Kr-87	_____ Ci / 5.3	_____ Ci / 5.5	_____ Ci / A + B	_____ Ci / 5.6.3 or 5.7.3	_____ / C / D x 100
Xe-133	_____ Ci / 5.3	_____ Ci / 5.5	_____ Ci / A + B	_____ Ci / 5.6.3 or 5.7.3	_____ / C / D x 100
I-131	_____ Ci / 5.3	_____ Ci / 5.5	_____ Ci / A + B	_____ Ci / 5.6.3 or 5.7.3	_____ / C / D x 100
I-133	_____ Ci / 5.3	_____ Ci / 5.5	_____ Ci / A + B	_____ Ci / 5.6.3 or 5.7.3	_____ / C / D x 100

5.8.2 CORE RELEASE PERCENT

Isotope	A Liquid Inventory	B Gaseous Inventory	C Released Inventory	D Corrected Inventory	E Release Percent
Kr-87	_____ Ci / 5.3	_____ Ci / 5.5	_____ Ci / A + B	_____ Ci / 5.6.4 or 5.7.4	_____ / C / D x 100
Xe-133	_____ Ci / 5.3	_____ Ci / 5.5	_____ Ci / A + B	_____ Ci / 5.6.4 or 5.7.4	_____ / C / D x 100
I-131	_____ Ci / 5.3	_____ Ci / 5.5	_____ Ci / A + B	_____ Ci / 5.6.4 or 5.7.4	_____ / C / D x 100
I-133	_____ Ci / 5.3	_____ Ci / 5.5	_____ Ci / A + B	_____ Ci / 5.6.4 or 5.7.4	_____ / C / D x 100
Te-132	_____ Ci / 5.3	_____ Ci / 5.5	_____ Ci / A + B	_____ Ci / 5.6.4 or 5.7.4	_____ / C / D x 100
Ba-140	_____ Ci / 5.3	_____ Ci / 5.5	_____ Ci / A + B	_____ Ci / 5.6.4 or 5.7.4	_____ / C / D x 100
La-140	_____ Ci / 5.3	_____ Ci / 5.5	_____ Ci / A + B	_____ Ci / 5.6.4 or 5.7.4	_____ / C / D x 100
Cs-134	_____ Ci / 5.3	_____ Ci / 5.5	_____ Ci / A + B	_____ Ci / 5.6.4 or 5.7.4	_____ / C / D x 100

5.8.3 IODINE RATIO

F I-133 Released Inventory	G I-131 Released Inventory	Iodine Ratio
_____ Ci / 5.8.1 C	_____ Ci / 5.8.1 C	_____ / F + G

5.8.4 NOBLE GAS RATIO

H Kr-87 Released Inventory	I Xe-133 Released Inventory	Noble Gas Ratio
_____ Ci / 5.8.1 C	_____ Ci / 5.8.1 C	_____ / H + I

PART 5.9 ASSESSMENT WORKSHEET

5.9.1 ASSESSMENT WORKSHEET

	Clad Failure*			Core Failure*					
				Overheat			Melt		
Isotope	0.12 - 10%	10 - 50%	>50%	0.12 - 10%	10 - 50%	>50%	0.12 - 10%	10 - 50%	>50%
Kr-87									
Xe-133									
I-131									
I-133									
Iodine Ratio**	$\frac{\text{I-133}}{\text{I-131}} < .64$			$.64 \leq \frac{\text{I-133}}{\text{I-131}} < 1.94$			$\frac{\text{I-133}}{\text{I-131}} \geq 1.94$		
Noble Gas Ratio**	$\frac{\text{Kr-87}}{\text{Xe-133}} < .03$			$.03 \leq \frac{\text{Kr-87}}{\text{Xe-133}} < .31$			$\frac{\text{Kr-87}}{\text{Xe-133}} \geq .31$		
Cs-134									
Te-132									
Ba-140									
La-140									

Percent Clad Failure: _____ %

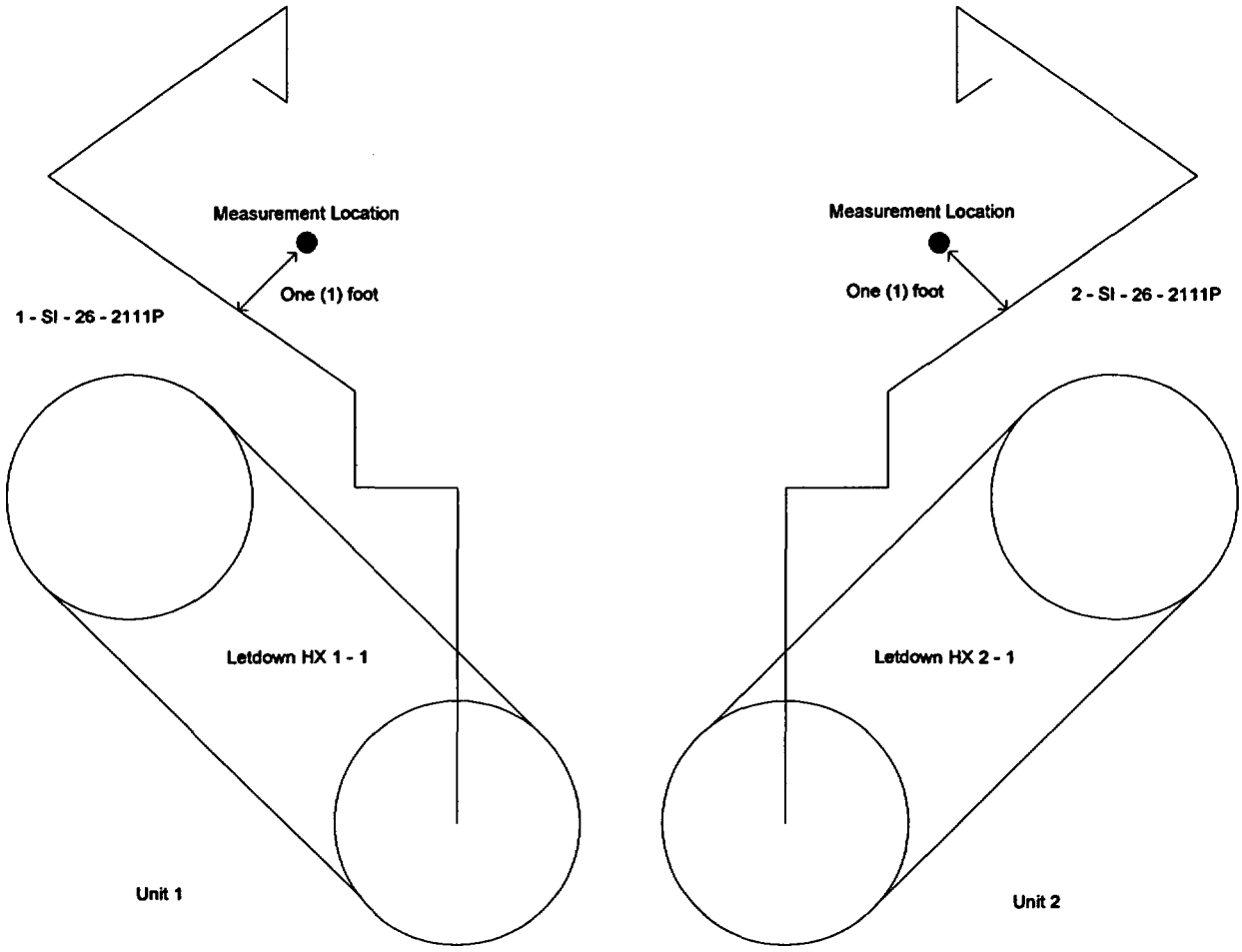
Percent Core Failure: _____ %

Steps 5.8.1 and 5.8.2 Release Percent
**Steps 5.8.3 and 5.8.4 Iodine and Noble Gas Ratios*

DIABLO CANYON POWER PLANT
EP RB-14
ATTACHMENT 8.3

1 AND 2

TITLE: Initial Detection of Potential Core Damage



Measure and record the radiation level one (1) foot from the center of line S1-26-2IIIP. A radiation level equal to or greater than 15 R/hr indicates core damage at the Alert emergency action level.

TITLE: **Activation and Operation of the Emergency Operations Facility**

1 AND 2

05/23/03
EFFECTIVE DATE

PROCEDURE CLASSIFICATION: QUALITY RELATED

1. SCOPE

The scope of this procedure is to provide the Emergency Operations Facility (EOF) staff with checklists to be used as guidance for performing their assigned emergency response positions.

2. RESPONSIBILITIES

2.1 Recovery Manager (RM) is responsible for:

2.1.1 The overall command and control of the emergency response effort,

2.1.2 Developing and approving Protective Action Recommendations (PARs),

2.1.3 Authorizing emergency worker exposures,

2.1.4 Recommending the issuance of potassium iodide (KI) to emergency workers,

2.1.5 Approving news releases,

2.1.6 Developing an accident recovery action plan,

2.1.7 Notifying/updating county, state and NRC on Emergency Action Levels (EALs) and PARs.

2.1.8 Modifying the Emergency Response Organization (ERO), based upon the specific needs for PG&E to mitigate the accident or response to the emergency.

2.2 Advisor to the County is responsible for:

2.2.1 Initial staffing and setup of the EOF,

2.2.2 Assisting the recovery manager,

2.2.3 Managing the EOF staff until the recovery manager arrives,

2.2.4 Interfacing between EOF and San Luis Obispo (SLO) County Sheriff's Watch Command and/or command staff.

2.3 Engineering Liaison is responsible for:

2.3.1 Providing and interpreting technical information on plant systems for the recovery manager.

2.3.2 Interfacing with the Technical Support Center (TSC) engineering advisor.

2.4 Agency Liaison is responsible for:

2.4.1 Generating emergency notifications.

2.4.2 Transmitting emergency notifications.

2.4.3 Facilitating the co-location of NRC representatives upon arrival with their EOF staff counterparts.

2.5 Liaison Assistant

2.5.1 Perform emergency notifications to the county, state, and NRC.

2.6 Radiological Manager is responsible for:

2.6.1 The overall management and coordination of PG&E Unified Dose Assessment Center (UDAC) staff members with other personnel within the UDAC.

2.6.2 The radiation protection of the off-site PG&E emergency workers,

2.6.3 Coordinating field monitoring activities with the UDAC coordinator,

2.6.4 Reviewing dose calculations and field monitoring survey results with the UDAC Coordinator,

2.6.5 Briefing the recovery manager on UDAC PARs,

2.6.6 Making recommendations to the recovery manager on issuing KI and exceeding dose limits for emergency workers,

2.6.7 Formulating PARs with the UDAC coordinator and other UDAC staff based on dose projections, meteorological conditions, or field monitoring data,

2.6.8 Periodically conducting UDAC staff meetings on emergency status, or whenever a significant change of event occurs.

2.7 Emergency Supervising Engineer (ESE) is responsible for:

2.7.1 Directing field sampling activities and locations,

2.7.2 Communicating information between the radiological monitoring director, meteorologist, health physicist, and the radiological manager,

2.7.3 Coordinating dose assessment and monitoring activities,

2.7.4 Trending Radiation Monitor System (RMS),

2.7.5 Formulating PARs based on information received from EARS, TSC radiological advisor and field monitoring teams,

2.7.6 Keeping the radiological monitoring director informed of plant changes that would impact field team activities.

2.8 Radiological Monitoring Director is responsible for:

2.8.1 Communicating information between the UDAC staff and the FMTs, FMT runner, and the Off-site Environmental Laboratory (OEL),

2.8.2 Tracking and recording field data,

2.8.3 Converting FMTs and FMT Runner dosimeter readings to TEDE,

2.8.4 Informing the radiological manager when a FMT member is approaching an administrative dose limit.

2.9 Health Physicist is responsible for:

2.9.1 Reviewing off-site dose projections performed by the TSC, prior to the EOF being activated,

2.9.2 Collecting dose projection input data,

2.9.3 Calculating off-site dose projections, and

2.9.4 Informing the radiological manager of dose calculation results.

2.10 UDAC Meteorologist is responsible for determining current and forecast meteorological information.

2.11 Health Physics Liaison to Congregate Care is responsible for:

2.11.1 Initiating the call-out of congregate care monitors,

2.11.2 Assisting other members of UDAC as necessary.

2.12 Emergency Public Information Manager (EPIM) is responsible for:

2.12.1 Writing news releases and bulletins for recovery manager review and approval,

2.12.2 Coordinating the dissemination of approved news releases and bulletins with the JMC, and

2.12.3 Managing the joint media center in coordination with the county.

2.13 Assistant EPIM is responsible for:

2.13.1 Providing assistance to the EPIM,

2.13.2 Reviewing new releases, and

2.13.3 Assume responsibilities of the EPIM in their absence.

2.14 EPIM Technical Advisor is responsible for:

2.14.1 Ensuring the technical accuracy of news releases.

2.15 The Nuclear Logistics Coordinator is responsible for:

2.15.1 Notifying the director of corporate security or the manager of emergency planning.

2.15.2 Coordinating the schedule and travel arrangements for ERO positions in the San Francisco Bay area.

2.15.3 Keeping the policy chair advised of the status of events.

2.15.4 Keeping the advisor to the county and recovery manager informed of all company liaison activities.

3. INSTRUCTIONS

3.1 Obtain a current copy of the checklist for your assigned Emergency Response Organization (ERO) position.

3.2 Sign your initials on the checklist after each action is performed or reviewed.

3.3 Document important information received or actions taken using log sheets.

4. RECORDS

4.1 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.

4.2 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

5. ATTACHMENTS

5.1 Form 69-20465, "Recovery Manager Checklist," 07/30/02

5.2 Form 69-20466, "Advisor to the County Checklist," 07/30/02

5.3 Form 69-20467, "Radiological Manager Checklist," 07/30/02

5.4 Form 69-20468, "Health Physicist Checklist," 07/30/02

5.5 Form 69-20469, "Emergency Supervising Engineer Checklist," 05/21/03

5.6 Form 69-20470, "Radiological Monitoring Director Checklist," 04/29/02

5.7 Form 69-20471, "UDAC Meteorologist Checklist," 10/30/02

5.8 Form 69-20472, "Engineering Liaison Checklist," 05/21/03

5.9 Form 69-20473, "Agency Liaison Checklist," 08/06/02

5.10 Form 69-20474, "Health Physics Liaison to Congregate Care Checklist," 05/02/03

5.11 Form 69-20475, "Emergency Public Information Manager Checklist," 07/30/02

5.12 Form 69-20476, "EPIM News Release Preparation Checklist," 06/04/01

5.13 Form 69-20477, "Assistant Emergency Public Information Manager Checklist," 08/06/02

5.14 Form 69-20478, "Technical Advisor to the EPIM Checklist," 06/04/01

5.15 Form 69-20479, "Advisor to the County/Recovery Manager Turnover Checklist," 06/14/02

5.16 Form 69-20482, "RM/Advisor to the County Facility PA Announcement Template," 08/06/02

5.17 Form 69-20483, "News Media Notification List," 06/04/01

5.18 Form 69-20484, "Records of News Media Inquiries," 06/04/01

5.19 Form 69-20485, "Nuclear Logistics Coordinator Guidance Checklist," 05/02/03

5.20 Form 69-20486, "Liaison Assistant Checklist," 08/06/02

6. REFERENCES

6.1 DCPP Emergency Plan.

DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.1

1 AND 2

TITLE: Recovery Manager Checklist

Print Name _____ **Date** _____

The steps in this attachment may be performed in any sequence, may be modified, or may be considered N/A at the discretion of the Recovery Manager, unless specifically prohibited.

☐ 1. Sign in on EOF sign-in board.

☐ 2. Use form 69-20479, ***Advisor to the County/Recovery Manager Turnover Sheet,*** to conduct a briefing with the Advisor to the County.

☐ 3. Use form 69-20437, ***ISEC/SEC/RM Turnover Checklist,*** to conduct a briefing with the ISEC and SEC.

☐ 4. Within approximately 60 minutes of the initiation of the ERO notification, the EOF is required to be staffed by the following positions.

NOTE: Qualified individuals not already filling a minimum staff position may fill vacancies.

☐ Advisor to the County	☐ EPIM
☐ Radiological Manager	☐ Technical Advisor to the EPIM
☐ Agency Liaison	☐ Health Physicist
☐ Agency Liaison Assistant	☐ 4 - FMT Members

☐ 5. When minimum staffing is achieved, declare the EOF activated. This may be completed by the Advisor to the County or the Recovery Manager.

NOTE: Prior to making any PA announcements, inform the County EOC Command.

Make a PA announcement (921 on the DIC phone) to declare the EOF activated:

"Attention all personnel. The EOF has been activated."

☐ 6. Direct the Advisor to the County to schedule an initial staff meeting.

☐ 7. When all personnel have completed turnovers and have assumed the responsibilities for their positions, assume responsibility for overall management of Diablo Canyon's emergency response activities.

☐ 8. Make the following announcement over the Public Address system to the entire EOF building:

"This is_____. As Recovery Manager, I am assuming responsibility for overall management of Diablo Canyon's emergency response activities. The EOF is now fully activated and operational (go over current status)."

☐ 9. Direct the Advisor to the County or another staff member to log the time of activation.

NOTE: The following responsibilities transfer from the SEC to the RM:

- emergency classification
- PARs
- approval of emergency worker exposures
- recommendation of KI for off-site PG&E emergency workers
- approval of news releases

Continuing Actions

☐ 1. When notified of the NRC Initial Site Team's Estimated Time of Arrival, determine if the Recovery Manager or Advisor to the County will brief the team. The Initial Site Team will be updated while in transit by Region IV and Bethesda, so prepare a short briefing on current plant status, radiological information, public information, and public impact. The following should attend or participate in the briefing:

- Advisor to the County
- Engineering
- Radiological Manager
- Emergency Public Information Manager
- State Representative if present at the EOC
- County Emergency Services Director or Representative

☐ 2. When EOF Security announces the arrival of the NRC Initial Site Team, brief your NRC Co-locator (NRC Director of Site Operations) 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.

☐ 3. Evaluate plant conditions and escalate emergency classifications when appropriate.

☐ 4. Conduct, or direct the Advisor to the County to conduct, regular plant status briefings using the Public Address system (PA).

☐ 5. Keep informed of school closings, evacuations, relocation centers, sirens, Emergency Alert System (EAS) messages and other pertinent information via the Advisor to the County.

☐ 6. Obtain radiological information from the Radiological Manager and plant status information from the Engineering Liaison.

☐ 7. Review PARs.

☐ 8. Request a briefing from the EPIM on event media coverage.

☐ 9. Review and authorize or direct the Advisor to the County to review and authorize press releases.

☐ 10. Ensure evacuation of non-emergency response personnel from DCPP is coordinated with SLO County.

☐ 11. Authorize administration of KI to PG&E off-site emergency workers, as needed. Coordinate Field Team KI administration with the County Health Officer.

TITLE: Recovery Manager Checklist

☐ 12. Provide, or direct a staff member to provide, periodic updates of off-site activities to the SEC.

☐ 13. Authorize emergency exposures, as needed.

☐ 14. Ensure event updates are periodically announced to EOF/UDAC 2nd Floor over the Public Address.

☐ 15. Conduct, or ensure periodic briefings are conducted with:

- Advisor to the County
- Engineering Liaison
- Radiological Manager
- Emergency Public Information Manager

☐ 16. Upon request from SLO County or Santa Barbara County for PG&E Reception and Care Monitors, direct the Radiological Manager to begin monitor call-out.

Recovery

☐ 1. De-escalate the emergency classification using the guidance in EP OR-3, "Emergency Reentry and Recovery."

☐ 2. Establish a Recovery Organization in accordance with EP OR-3, "Emergency Reentry and Recovery."

DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.2

1 AND 2

TITLE: Advisor to the County Checklist

Print Name _____ **Date** _____

The steps in this attachment may be performed in any sequence, may be modified, or may be considered N/A at the discretion of the Advisor to the County, unless specifically prohibited.

☐ 1. Contact the Sheriff Watch Commander to obtain copies of any event notification and PAR forms.

☐ 2. If necessary, obtain a PAR 1 key for opening the EOF doors.

☐ 3. Sign in on EOF sign-in board.

☐ 4. If it is outside of normal working hours, use the "Fitness-For-Duty Call-Out Form" 69-10448, to perform ERO FFD screening. Use the "Observed Behavior Checklist," Form 69-13222, for ERO personnel that have consumed alcohol within the past 5 hours.

☐ 5. Within approximately 60 minutes of the initiation of the ERO notification, the EOF is required to be staffed by the following positions.

NOTE: Qualified individuals not already filling a minimum staff position may fill vacancies.

☐ Advisor to the County	☐ EPIM
☐ Radiological Manager	☐ Technical Advisor to the EPIM
☐ Agency Liaison	☐ Health Physicist
☐ Agency Liaison Assistant	☐ 4 - FMT Members

☐ 6. When minimum staffing is achieved, declare the EOF activated. This may be completed by the Advisor to the County or the Recovery Manager.

NOTE: Prior to making any PA announcements, inform the County EOC Command.

Make a PA announcement (921 on the DIC phone) to declare the EOF activated:

"Attention all personnel. The EOF has been activated."

☐ 7. Use form 69-20479, ***Advisor to the County/Recovery Manager Turnover Sheet***, to conduct a briefing with the Recovery Manager.

☐ 8. Assume the role of the Diablo Canyon point of contact for SLO County EOC staff.

☐ 9. Request the Site Emergency Coordinator to notify you immediately of changes in plant conditions, EALs, or PARs.

TITLE: Advisor to the County Checklist

☐ 10. When UDAC positions are staffed, organize a tailboard meeting in the Recovery Manager's Office to brief the management staff with the current status of the emergency. The following should attend:

- Radiological Manager
- UDAC Coordinator
- Engineering Liaison
- EPIM

☐ 11. Upon activation of UDAC, notify the Control Room and Site Emergency Coordinator that UDAC will assume the responsibility for generating PARs based on dose.

☐ 12. Advise the Control Room or SEC that notifications to the County will go through the Advisor to the County.

If the Recovery Manager has not arrived at the EOF - Continuing Actions

☐ 1. Phone the Site Emergency Coordinator (SEC).

☐ 2. Upon the arrival of the NRC Initial Site Team, brief NRC Co-locator 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.

☐ 3. Prepare for the arrival of the Recovery Manager by maintaining current status information on the emergency.

☐ 4. Until the Recovery Manager arrives, periodically make PA announcements to brief the EOF staff with the current status of the emergency.

After the Recovery Manager has arrived at the EOF - Continuing Actions

☐ 1. periodically provide status reports to the Recovery Manager on PARs received and implemented by SLO County.

☐ 2. Review and maintain copies of forms faxed to the EOF from the TSC. Develop a sequence of events.

☐ 3. Periodically consult with the Engineering Liaison to determine affected plant systems and plant status.

☐ 4. Periodically consult with the Radiological Manager to determine status on the following:

- Pressure Ion Chamber (PIC) readings
- Off-site dose projections
- FMT activities and assignments
- KI administration or other authorized emergency protective actions

DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.3

1 AND 2

TITLE: Radiological Manager Checklist

1. INITIAL ACTIONS

PRINT NAME _____ DATE _____

☐ 1.1 Sign in on the EOF sign-in board.

☐ 1.2 Notify the Advisor to the County of your arrival.

☐ 1.3 Once UDAC is operational, hold a tailboard briefing with the UDAC Coordinator and Emergency Supervising Engineer to discuss the following:

- radiological release pathway
- source term (coolant, gap, or core)
- expected duration of release
- plant radiation monitor readings
- field monitoring locations & types of samples
- wind speed & direction
- forecasted weather
- assumptions for dose assessment
- PIC readings
- radiological protections for field teams (KI, respirators, PCs)
- SRD correction factors (To be provided to the County Health Officer by UDAC Coordinator)

☐ 1.4 Notify the Radiological Advisor and the Advisor to the County when UDAC is ready to assume the responsibility for off-site dose assessment and field monitoring.

☐ 1.5 Obtain verbal turnover from STA on dose assessment and radiological status.

☐ 1.6 Direct the Emergency Supervising Engineer to ensure EOF, EOC, and JMC habitability surveys are performed as necessary.

☐ 1.7 If dose projections are greater than 100 mrem TEDE for PAZ 8, have the ESE issue dosimetry to the EOF staff and recommend the UDAC Coordinator to issue dosimetry to the EOC.

☐ 1.8 In the absence of the RMD, conduct the initial brief of the Field Monitoring Teams, using the RMD checklist in Form 69-20470, Part 2, FMT Briefing, Sections 5-6.

2. CONTINUING ACTIONS

☐ 2.1 Upon the arrival of the NRC Initial Site Team, brief your NRC Co-locator (NRC Protective Measures Coordinator) 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 Provide periodic status reports to the Recovery Manager (or to the Advisor to the County), on the following:

2.2.1 Off-site monitoring activities

2.2.2 Congregate Care activities

2.2.3 Radiological releases and dose assessment

2.2.4 Meteorological information

2.2.5 Protective Action Recommendations

☐ 2.3 Discuss radiological assessment information with the UDAC Coordinator, as it becomes known. If a release becomes known, immediately inform the Recovery Manager or SEC.

☐ 2.4 Notify the Agency Liaison when a PAR is ready for approval. If time permits, walk with Agency Liaison into the Recovery Manager's office and brief the Recovery Manager (or the Advisor to the County) on the details of the PAR.

☐ 2.5 Provide radiological data to the EPIM.

☐ 2.6 If necessary, provide recommendations to the Recovery Manager on exceeding emergency worker dose limits and issuing KI. Refer to RB-3 for issuing KI. KI for the EOF staff is stored in the file cabinet in the RMD's office.

☐ 2.7 If evacuation of PAZs is anticipated, direct the Health Physics Liaison to Congregate Care to begin Monitor call-out. If no evacuation of PAZs is anticipated, direct the Health Physics Liaison to Congregate Care to call and place Monitors on stand-by.

DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.4

1 AND 2

TITLE: Health Physicist Checklist

1. INITIAL ACTIONS

PRINT NAME _____ DATE _____

- ☐ 1.1 Sign in on the EOF sign-in board.
- ☐ 1.2 Contact the TSC Rad Data Processor to determine plant status and radiological conditions. Ask for a faxed copy of PEP EN-1, PLANT STATUS DATA NEED TO PERFORM EP RB-9 and EARS CALCULATIONS, or complete the PEP EN-1 form by relaying the information via phone.
- ☐ 1.3 Obtain current and forecasted meteorological data from the UDAC Meteorologist.
- ☐ 1.4 Request the TSC Radiological Advisor provide isotopic sample results, when they become known.
- ☐ 1.5 Brief the Emergency Supervising Engineer on the assumptions used for your initial dose projection.
- ☐ 1.6 Notify the Radiological Manager or Emergency Supervising Engineer when you are ready to assume the responsibility for dose assessment.

2. CONTINUING ACTIONS

- ☐ 2.1 Upon the arrival of the NRC Initial Site Team, brief your NRC Co-locator (NRC Dose Assessor and/or HP Specialist) 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 dose projection calculations using EARS. If EARS is unavailable, use Quickdose or perform manual calculations using RB-9 and RB-11. Dose calculation updates should be performed every 15 minutes. However, if plant and MET conditions are remaining constant, projections can be made every 30 minutes.
- ☐ 2.3 Discuss results of dose calculation with the Emergency Supervising Engineer.
- ☐ 2.4 Inform the Emergency Supervising Engineer or Radiological Monitoring Director (RMD) of any plant changes that may impact field team activities.
- ☐ 2.5 Immediately inform the Radiological Manager when initially determining a release is in progress.

TITLE: Health Physicist Checklist

Radiation Monitor Trending

1. Click on WinTrend Icon and select DCPP.ARMSDATA Server. Maximum to full screen.
2. Highlight monitors for first graph **(all must have same units; e.g., cpm)** and then click the "GRAPH" button.
3. Dialog box for trend time appears. Default is back 24 hrs - Click OK.
4. Click 1 minute update button (labeled"1," next to button labeled "5"). Graphs will **not** update if you don't do this.
5. For next group to trend, select Window, then DCPP.ARMSDATA.
6. **Deselect** the monitors highlighted from group 1 and highlight the monitors for group 2. Repeat steps 4 - 6.
7. When all monitors desired are in graphs, midsize all graph windows and go Windows - Tile.
8. To see any graph in detail, just maximize; midsize it to return to tile view.

Which radiation monitors do I select?

Scenario 1:	NO Release in progress, AND NO Indication of any one release path being more likely than another.				
Plant Vent:	RE-14	RE-14R	RE-87		
Secondary:	RE15	RE-15R	RE-23		
Containment:	RE-2	RE-30			

Scenario 2:	NO Release in progress, AND hi-rad on RE-2				
Plant Vent:	RE-14	RE-14R	RE-29	RE-87	
Secondary:	RE-15				
Containment:	RE-2	RE-30	RE-31		

Scenario 3:	RE-14/14R indicate a Plant Vent release has started.				
Plant Vent:	RE-14	RE-14R	RE-29	RE-87	RE-24
Secondary:	None				
Containment:	RE-2	RE-30			
Other:	RE-34*				
* Direct measure of Containment shine:	1. shows potential for false high rdg on RE-29 2. habitability check for PV sampling.				

Scenario 4:	RE-15/15R or RE-23 indicate primary-secondary leakage.			
Plant Vent:	RE-14	RE-14R		
Secondary:	RE-71	RE-72	RE-73	RE-74
Containment:	RE-2			

EP EF-3 (UNITS 1 AND 2)
ATTACHMENT 5.4

TITLE: Health Physicist Checklist

RADIATION MONITORING SYSTEM POWER SOURCES

MONITOR	Name/Description	BUS E	BUS F	BUS G	BUS H	BUS I	BATTERY BACKUP
Plant Vent							
R-14 (LRP)	NR Noble Gas			●			
R-14 (RDU)						●	●
R-14R (LRP)	RNR Noble Gas				●		
R-14R (RDU)						●	●
R-24 (LRP)	NR Iodine			●			
R-24 (RDU)						●	●
R-24R (LRP)	RNR Iodine				●		
R-24R (RDU)						●	●
R-28 (LRP)	NR Particulate			●			
R-28 (RDU)						●	●
R-28R (LRP)	RNR Particulate				●		
R-28R (RDU)						●	●
R-29	PV Gross Gamma				●		●
R-34	PV ALARA (PV skid area)				●		
R-87 (LRP)	Extended Range Noble Gas			●			
Secondary							
R-15 (LRP)	Condenser Air Ejector (CAE)	●					
R-15 (RDU)						●	●
R-15R (LRP)	Redundant CAE	●					
R-15R (RDU)						●	●
R-19	Steam Generator Blowdown Sample Line		●				●
R-23	Steam Generator Blowdown			●			
R-71	Main Steamline #1				●		●
R-72	Main Steamline #2				●		●
R-73	Main Steamline #3				●		●
R-74	Main Steamline #4				●		●

TITLE: Health Physicist Checklist

RADIATION MONITORING SYSTEM POWER SOURCES

MONITOR	Name/Description	BUS E	BUS F	BUS G	BUS H	BUS I	BATTERY BACKUP
Containment							
R-2	Low Range Area				●		●
R-7	Incore Seal Table Room				●		●
R-30	High Range Area				●		●
R-31	High Range Area			●			●
R-44A (LRP)	Containment Purge Exhaust (CPE) - Class 1E Train 'A'			●			
R-44A (RDU)				●			●
R-44B (LRP)	Containment Purge Exhaust (CPE) - Class 1E Train 'B'				●		
R-44B (RDU)					●		●
Fuel Handling Building							
R-58	Spent Fuel Pool Area			●			●
R-59	New Fuel Pit Area				●		●

NOTE 1: LRP = Local Radiation Processor; includes detector and local display.

RDU = Radiation Display Unit; this is the Control Room display.

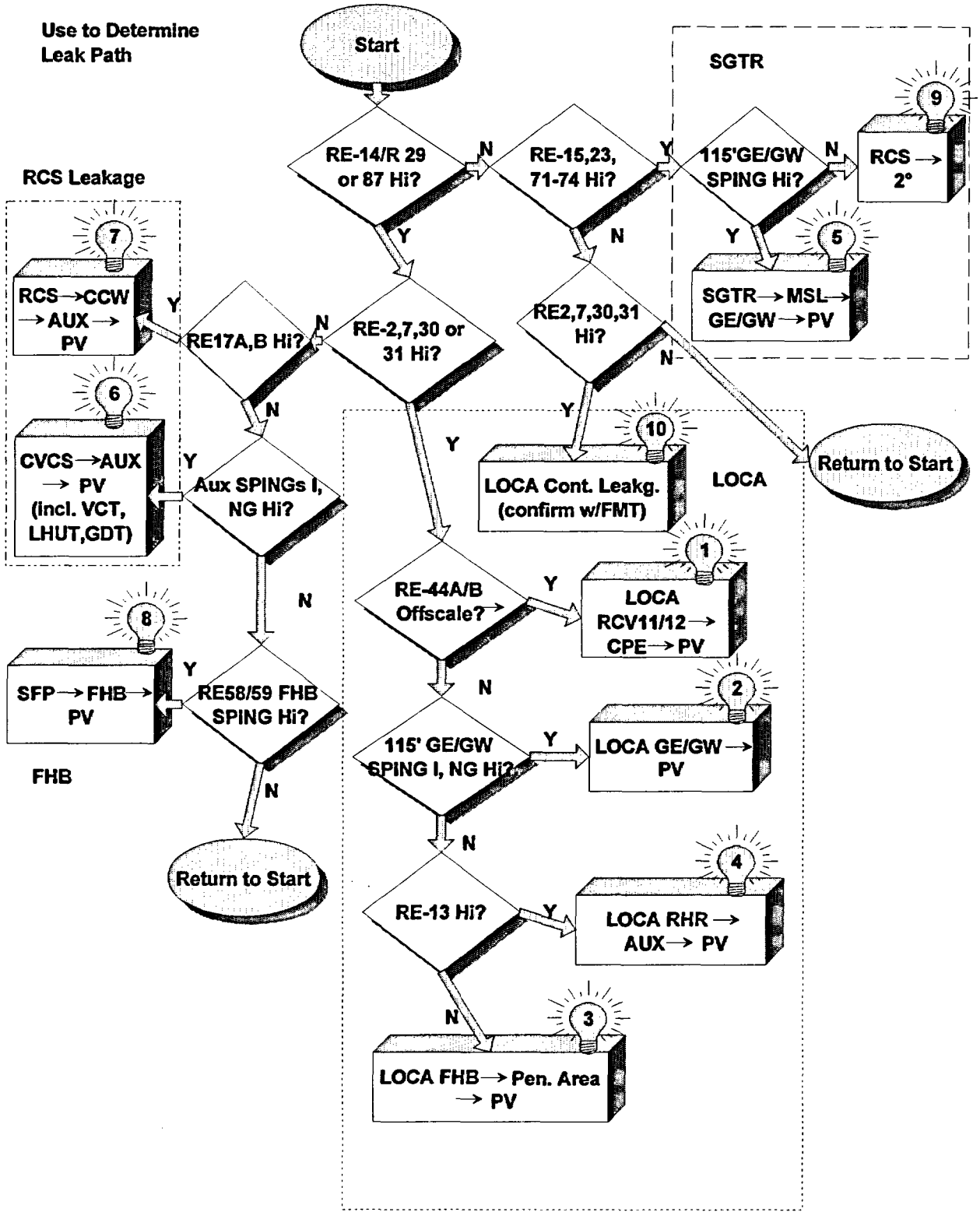
NR = Normal Range

RNR = Redundant Normal Range

NOTE 2: THERE ARE NO UNIT DIFFERENCES ON THIS TABLE

EP EF-3 (UNITS 1 AND 2)
ATTACHMENT 5.4

TITLE: Health Physicist Checklist



DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.5

1 AND 2

TITLE: Emergency Supervising Engineer Checklist

Step	ESE Initial Actions	✓
1	Fill out Fitness For Duty Form (if called out from home)	
2	Sign in on EOF sign in board	
3	Report to the Radiological Manager	
4	Obtain dose projection turnover from the STA Ext: 1224 - use EOF fax for G-2 calcs	
5	To man the 6002 bridge, include the CR Liaison, TSC RX Eng, RDP Plant, and EOF HP	
6	Trend monitors to bound possible release paths if no release is in progress (RE-2,14,&15)	

Step	ESE Continuing Duties	✓
1	Complete applicable parts of the ESE Data Log Sheet (optional) - as needed to facilitate dose projections • each time there is a significant change in status and input data • often enough to facilitate PARs • leave unnecessary portions blank - no comment necessary	
2	Make copies of the ESE Data Log Sheet (optional) and distribute (if used) • this STEP NOT REQUIRED - it is an aid for UDAC discussion of status and input data • suggested distribution is at the bottom of the fact sheet	
3	Discuss the applicable radioactive release information with UDAC (this is a briefing) • agree upon status and input data for all dose assessment programs	
4	Assist the HP with input for EARS/Midas as necessary	
5	Assist UDAC with input for GAUSE and RASCAL as necessary	
6	Review each PG&E generated off-site dose calculation to verify that the dose projection is: • consistent with known radiological data and plant status AND • for 3 HOURS (or less as agreed upon by UDAC based projected termination of release)	
7	SAE ECL based on site boundary 3 hr dose projection? 0.1Rem TEDE 0.5 Rem CDE GE ECL based on site boundary 3 hr dose projection? 1 Rem TEDE 5 Rem CDE	
8	Compare PIC data and FMT data to latest EARS/MIDAS run • rule of thumb: 1.3 E-6 uCi/cc I-131 = 5 Rem CDE $_{thyroid}$ projected 3 hour dose	
9	Discuss EARS/MIDAS output with UDAC PAG = 1 Rem TEDE 5 Rem CDE • get concurrence for next PAR input	
10	Verify that the Agency Liaison has all input necessary for the next PAR	
11	Perform EOF radiological habitability surveys as needed	
12	Obtain permission for KI for field teams and ERO personnel - PAG: 25 Rem CDE	
13	Determine the current TEDE and CDE Dose Correction Factors - see EARS TEDE plot • ensure RMD communicates Dose Correction Factors (DCFs) to Field Monitoring Teams	

	Source Term	TEDE DCF No KI	TEDE DCF With KI	THY. DCF No KI	THY. DCF With KI	
	CORE	13	5	162	16	
	GAP	24	3	515	52	
	DB RCS	3	1	40	4	
	SG Normal	1	1	4	0.4	
	SG Empty	3	1	40	4	
	SG Flooded	15	2	285	29	

EP EF-3 (UNITS 1 AND 2)
ATTACHMENT 5.5

TITLE: Emergency Supervising Engineer Checklist

ESE Data Log Sheet (Optional)

Emergency Supervising Engineer's Name	Initials	Date

Emergency Classification	Alert	SAE	GE	declared at:	:	
		(circle one)				
Reactor power:	:	%	(or) shutdown			
Start of Release:	:					

ESE Fact Sheet time:	:
working on PAR #:	
Next PAR due:	:

EARS run number:	

Source Term:	Core: %
	Gap: %
	Coolant (circle if applicable)

Release Pathway: (fill in values or circle as applicable) min. 4E5 lbm/hr gpm x 500 = lbm/hr	**Atmos. Steam Dumping ...** • Safety: #1 #2 #3 #4 #5 • 10% dump: _____ % Open (or) Shut • FM 5_ 2: _____ lbm/hr • Pri⌫Sec: _____ gpm _____ lbm/hr S/G level: flooded normal empty
Note: This data is for EARS / Quickdose input use "0" ctmt spray pumps for RHR seal leakage into aux bldg regardless of how many are actually running	**Plant Vent...** • Aux bldg fan: E-1 E-2 • FHB fan: E-4 E-5 E-6 • FM 12: _____ cfm • Ge/Gw: On Off (unfiltered) Charcoal filters: Yes No Ctmt Spray pumps: 0 1 2 **Containment Leakage**

Radiation Monitors: (fill in the applicable values)	RM-71	cpm	:
	RM-72	cpm	:
	RM-73	cpm	:
	RM-74	cpm	:
	RM-15/15R	cpm	:
	RM-19	cpm	:
	RM-23	cpm	:
	RM-14/14R (NG)	uCi/cc	:
	RM-87 (NG-High)		:
	RM-24/24R (Iod)	uCi/cc	:
	RM-28/28R(Part)	uCi/cc	:
	RM-29 (NG-Altrnt)	mr/hr	:
	RM-34	mr/hr	:
	RM-44A/44B	cpm	:
	RM-30	R/hr	:
	RM-31	R/hr	:
	RM-2	mr/hr	:
	RM-7	mr/hr	:

Wind direction	(wind is from) °
Wind Speed	m/sec x 2.2 = mph
Vert. Stability	A B C D E F G (1 2 3 4 5 6 7)
Hor. Stability	A B C D E F G (1 2 3 4 5 6 7)
Precipitation	Yes No

PICs:	Shooting Range	mr/hr
		mr/hr
		mr/hr
		mr/hr

Team	Location	KI ?		Iodine (uCi/cc)	GA (mr/hr)	TEDE DCF: / CDE DCF: / Comments:
Alpha		Yes	No			
Bravo		Yes	No			
Charlie		Yes	No			
Runner		Yes	No			
UDAC	EOF	Yes	No			

PAGs:	Evacuation/Shelter: 1 Rem TEDE 5 Rem CDE	Administer KI: 25 Rem CDE

Copies to: Health Physicist (HP)
Radiological Monitoring Director (RMD)
UDAC table (3)
UDAC Coordinator
Radiological Manager (RM)

Radiation Monitor Trending

1. Click on WinTrend icon and select DCPP.HP9DRILL Server. Maximize to full screen.
2. Highlight monitors for first graph **(all must have same units; e.g., cpm)** and then click the "GRAPH" button.
3. Dialog box for trend time appears. Default is back 24 hrs - Click OK
4. Click 1-minute update button (labeled "1," next to button labeled "5"). Graphs will **not** update if you don't do this.
5. For next group to trend, select Window, then HP9DRILL.
6. **Deselect** the monitors highlighted from group 1 and highlight the monitors for group 2. Repeat steps 4 - 6.
7. When all monitors desired are in graphs, midsize all graph windows and go Windows - Tile.
8. To see any graph in detail, just maximize; midsize it to return to the view.

Which radiation monitors do I select?

Scenario 1:	NO Release in progress, AND NO Indication of any one release path being more likely than another.				
Plant Vent:	RE-14	RE-14R	RE-87		
Secondary:	RE15	RE-15R	RE-23		
Containment:	RE-2	RE-30			

Scenario 2:	NO Release in progress, AND hi-rad on RE-2			
Plant Vent:	RE-14	RE-14R	RE-29	RE-87
Secondary:	RE-15			
Containment:	RE-2	RE-30	RE-31	

Scenario 3:	RE-14/14R indicate a Plant Vent release has started.				
Plant Vent:	RE-14	RE-14R	RE-29	RE-87	RE-24
Secondary:	None				
Containment:	RE-2	RE-30			
Other:	RE-34*				
* Direct measure of Containment shine:			1. shows potential for false high rdg on RE-29 2. habitability check for PV sampling.		

Scenario 4:	RE-15/15R or RE-23 indicate primary-secondary leakage.			
Plant Vent:	RE-14	RE-14R		
Secondary:	RE-71	RE-72	RE-73	RE-74
Containment:	RE-2			

RADIATION MONITORING SYSTEM POWER SOURCES

MONITOR	Name/Description	BUS E	BUS F	BUS G	BUS H	BUS I	BATTERY BACKUP
Plant Vent							
R-14 (LRP)	NR Noble Gas			●			
R-14 (RDU)						●	●
R-14R (LRP)	RNR Noble Gas				●		
R-14R (RDU)						●	●
R-24 (LRP)	NR Iodine			●			
R-24 (RDU)						●	●
R-24R (LRP)	RNR Iodine				●		
R-24R (RDU)						●	●
R-28 (LRP)	NR Particulate			●			
R-28 (RDU)						●	●
R-28R (LRP)	RNR Particulate				●		
R-28R (RDU)						●	●
R-29	PV Gross Gamma				●		●
R-34	PV ALARA (PV skid area)				●		
R-87 (LRP)	Extended Range Noble Gas			●			
Secondary							
R-15 (LRP)	Condenser Air Ejector (CAE)	●					
R-15 (RDU)						●	●
R-15R (LRP)	Redundant CAE	●					
R-15R (RDU)						●	●
R-19	Steam Generator Blowdown Sample Line		●				●
R-23	Steam Generator Blowdown			●			
R-71	Main Steamline #1				●		●
R-72	Main Steamline #2				●		●
R-73	Main Steamline #3				●		●
R-74	Main Steamline #4				●		●

RADIATION MONITORING SYSTEM POWER SOURCES

MONITOR	Name/Description	BUS E	BUS F	BUS G	BUS H	BUS I	BATTERY BACKUP
Containment							
R-2	Low Range Area				●		●
R-7	Incore Seal Table Room				●		●
R-30	High Range Area				●		●
R-31	High Range Area			●			●
R-44A (LRP)	Containment Purge Exhaust (CPE) - Class 1E Train 'A'			●			
R-44A (RDU)				●			●
R-44B (LRP)	Containment Purge Exhaust (CPE) - Class 1E Train 'B'				●		
R-44B (RDU)					●		●
Fuel Handling Building							
R-58	Spent Fuel Pool Area			●			●
R-59	New Fuel Pit Area				●		●

NOTE 1: LRP = Local Radiation Processor; includes detector and local display.

RDU = Radiation Display Unit; this is the Control Room display.

NR = Normal Range

RNR = Redundant Normal Range

NOTE 2: THERE ARE NO UNIT DIFFERENCES ON THIS TABLE.

DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.6

1 AND 2

TITLE: Radiological Monitoring Director Checklist

RMD Checklist - Part 1 - Monitoring Preparation

1	RMD Name		Date	

	Time	ARRIVAL AT EOF
2		Sign in on the Recovery Manager's activation board
		Obtain the RMD binder from the cabinet by the stairs
		Complete an FFD form (only if called out)
		Synchronize watch with UDAC digital wall clock

	Time	DETERMINE CONDITIONS
3		Contact ESE/Rad Manager - complete RMD Checklist - Part 2 – FMT Briefing, Sections 1-3
		Contact meteorologist (or use the PPC) - complete RMD Checklist - Part 2 – FMT Briefing, Section 4

	Time	INITIAL FMT BRIEFING
4		RMD conduct briefing at EOF.
		Complete RMD Checklist Part 2 - FMT Briefing, Sections 5-6 during the briefing
		Provide copy of RMD Checklist Part 2 - FMT Briefing to each FMT before departure.

	Time	EOF / EOC RADIOLOGICAL PROTECTION		
5		Complete County Exposure Tracking Sheet and submit copy to EWEC via the UDAC Coordinator		
		Set up the air sampler but do not turn it on until plume arrives at the EOF / EOC		
		Check the operability of the frisker and dose rate meter		
		Check KI supply in RMD office	Expires:	Quantity:

	Time	PREP FOR CONTROL OF FMT
6		Turn on or verify on - HP Radio (OP K-9) and County Brown Net Radio
		Initiate RMD Checklist - Part 3 - FMT Control and RMD Checklist - Part 4 – Team Data
		Establish phone contact with the TSC Radio Operator (545-3252)
		Establish face contact with the county and state UDAC agencies working outside the RMD office
		Establish phone contact with the EWEC Desk (781-4452 or 781-4454)
		Discuss monitoring locations, DCF, and desired samples with ESE or Rad Manager

	Time	ESTABLISH FMT RADIO / CELL PHONE CONTACT	Alpha			Bravo			Charlie		
			HP	Brown	Cell	HP	Brown	Cell	HP	Brown	Cell
7		Check PG&E Team communication									
		Check County Team communication									
		Verify all have TLD and SRD									
	NA	Record Team cell phone number >>									

	Time	DEPLOY FMT
8		Deploy FMTs as needed and specify preferred route if applicable
		Update RMD and UDAC status boards with team locations

>>>>>> GO TO the RMD Checklist - PART 3 – FMT CONTROL

EP EF-3 (UNITS 1 AND 2)
ATTACHMENT 5.6

TITLE: Radiological Monitoring Director Checklist

RMD Checklist – Part 2 – FMT BRIEFING

1	RMD NAME		PAGER	(545-4666)( )	DATE	

2	EVENT CLASS	TIME ENTERED	REASON
	Unusual Event		
	Alert		
	Site Area Emergency		
	General Emergency		

3	UNIT 1				UNIT 2		
	Reactor Power		Rx S/D Time		Reactor Power		Rx S/D Time
	Release Start Time				Release Start Time		
	Release Source				Release Source		

4	WIND FROM	SPEED (m/s x 2.2 = mph)	TIME	EXPECTED CHANGES

5	FMT MEMBERS (circle Team Leader on each team and verbally designate to all)												
		TEAM ALPHA				TEAM BRAVO				TEAM CHARLIE			
	Team Member	Name	Pager	Current Dose	Avail Dose	Name	Pager	Current Dose	Avail Dose	Name	Pager	Current Dose	Avail Dose
	PG&E												
	PG&E												
	County			NA	1250			NA	1250			NA	1250
	County			NA	1250			NA	1250			NA	1250
		Available Dose Team A				Available Dose Team B				Available Dose Team C			
	Runner												
	Alert or Higher – TEDE Dose Limit – PG&E is 4500 mR minus Current – County is 1250 mR												

EP EF-3 (UNITS 1 AND 2)
ATTACHMENT 5.6

TITLE: Radiological Monitoring Director Checklist

	CHECK ☑		FMT BRIEFING QUESTIONS	BRIEF START TIME		BRIEF END TIME	
	YES	NO					
			Did at least 4 technicians sign in on the activation board? (If NO, do it NOW)				
			Did all PG&E personnel complete an FFD form (only required when called out)? (If NO, do it prior to leaving)				
			Does anyone have an allergy to shellfish or KI? (If YES, replace member or use for low dose areas)				
			Is everyone Respirator Qualified? (If NO, replace member or use for low dose areas)				
			Are there any Declared Pregnancies or other reasons to limit dose? (If YES, exclude member and replace)				
	CHECK ☑		FMT BRIEFING POINTS				
6			Follow EP RB-8/SOP HP-3 for deployment preparations & checklists–Be Prompt & report in when immediately ready				
			Check communications with RMD on Channel 8 (PG&E Repeater), Channel 11 (County), and Cell Phones NOTE: County FMT's use Channel 1 for County Brown Net.				
			Check car to car radio communications with each other using Channel 7 (PG&E Local)				
			Comm Protocol – Ch 8 first, then Ch 11, then Cell, if lose all comm, leave plume, if you get paged with				
			When "All Team" announcements received, acknowledge in order, Team A, then Team B, then Team C				
			PG&E and County should take separate vehicles for redundancy and in case Team needs to split				
			PG&E and County work as a team, redundant samples are not required and only one set of paperwork is needed				
			Read KI procedure and complete forms after reporting ready to deploy, check expiration of KI				
			Turn Back Value is 500 mRem/hr unless told otherwise				
			County personnel should cover their probes prior to going into the field				
			Protective Clothing – wear coveralls, keep remainder ready in the vehicle including respirators				
			While traveling, keep meters on. Report any increase in count rate or dose rate immediately. Never Drive while wearing a respirator.				
			At each assigned monitoring location, report ground count rate and area dose rate immediately when arriving				
			Set up and take one air sample at each location upon arrival unless told otherwise, remain ready to take air samples at all times				
			Immediately report to EOF when dose rate or count rate starts increasing, then start air sample				
			Remember to use ALARA, Three-Way Communication, Self Checking				
			Safety Issues – Be Careful Driving, especially during an evacuation. Does anyone have any safety issues?				
			Synchronize Team watches with RMD (which has already been synchronized with the UDAC wall clock)				
	END OF BRIEFING - BE SAFE			EOF RMD 545-6264		TSC Radio 545-3252	

EP EF-3 (UNITS 1 AND 2)
ATTACHMENT 5.6

TITLE: Radiological Monitoring Director Checklist

RMD Checklist – Part 3 – FMT CONTROL

1	RMD Name		Date	

2	WHEN TO BRIEF THE TEAMS	WHAT TO BRIEF THE TEAMS ON
	• Initial • Hourly if no changes • When the wind changes appreciably • Major change in plant status • Event classification change • When release starts or stops • Order to take KI • When a PAZ is evacuated • Turn back values change	• Event Status • Plant Status • Changes in Radiological Conditions • Release information • Wind direction and speed Announce END OF UPDATE when complete

3	TIME FMT BRIEFINGS CONDUCTED									

4	WHEN RELEASE STARTS
	Determine Source Term and Dose Correction Factor (DCF) from the ESE or Rad Manager
	Coordinate with Rad Manager for PG&E FMT and CHO for County FMT for KI approval if needed
	Update FMTs when the release started and an estimated plume arrival time in their area
	Track FMT dose using RMD Checklist – Part 4 Team Data

5	MONITOR EVENT PROGRESS	
	Approximately every 15 minutes **during a release**, discuss the following with ESE or Rad Manager:	
	• Plume direction • Preferred monitoring locations • Area evacuation status	• Current Dose Correction Factor • Status of Issuing KI to the FMT
	Monitor PIC readings downwind using the Intranet PPC	
	Monitor On Site FMT radio reports and relay pertinent information to the ESE or Rad Manager	
	Record pertinent information on the RMD Checklist or RMD Log	

6	WHEN FIELD MONITORING TEAMS REPORT DATA
	Teams will need to be in low dose area for sample counting – may need to move if in plume
	Record sample or SRD data on RMD Checklist - Part 4 – Team Data for the respective team
	Provide data to the ESE or Rad Manager
	Provide copies of data to the State and County
	Determine if EARS and FMT data correlates (first set of data and periodically thereafter)
	Record IPZ samples when reported on the RMD log

7	Time	SHIFT TURNOVER – OFF GOING RMD
		Copy RMD checklist and supporting paperwork for On-Coming RMD
		Provide turnover to the On-Coming RMD using the checklist and supporting paperwork
		Notify Rad Manager and ESE that you are being relieved
		Determine from the Rad Manager or ESE when you start your next shift
		Original RMD checklist and supporting paperwork saved for record retention

8	Time	SHIFT TURNOVER – ON COMING RMD
		Notify Rad Manager and ESE that you are the new RMD
		Contact FMTs and inform them of the turnover

EP EF-3 (UNITS 1 AND 2)
ATTACHMENT 5.6

TITLE: Radiological Monitoring Director Checklist

RMD Checklist - Part 4 - TEAM (ALPHA / BRAVO / CHARLIE / RUNNER) DATA (circle team)

1

RMD NAME		DATE	
Turn Back Dose Rate	(mR)	Team Cell Phone Number	

2 FMT Location Status – (update RMD and UDAC status boards when moving)

Location	Sent	Arrived	Location	Sent	Arrived	Location	Sent	Arrived

3 Field Monitoring Activities

Monitor Location	Time	Ground net cpm	Sky Shine net cpm	Dose Rate mR/hr WO / WC	Smear dpm / 100 cm²	Air ft³	Particulate * net cpm	Particulate * uCi/ml	Iodine ** net cpm	Iodine ** uCi/ml	Informed ESE	Informed State
				/								
				/								
				/								
				/								
				/								
				/								

* Particulate uCi/ml = (1.6E-10) * (net cpm) / Air ft³ ** Iodine uCi/ml = (5.6E-09) * (net cpm) / Air ft³

*If Particulate >3.0 E-9, County Personnel to leave or wear respirators

4 Individual Team Member Dose Tracking using SRD

Names>>>									<<<Names
Time	Dose	Total	Dose	Total	Dose	Total	Dose	Total	Limiting SRD

- Record highest on scale dosimeter reading for each team member – Limiting SRD is the highest of all team members
- If SRD is re-zeroed, circle Total and add to further Totals in that column
- Notify EWEC when County personnel reach 250mR / 500 mR / 750 mR / 1000 mR / 1250 mR (781-4452 or 781-4454)

5 Dose Correction Factors In Use

Time										
Source										
DCF										

6 Corrected Team Limiting Dose using DCF below

Team Available Dose	(mR)	Time KI Ordered		Time KI Taken	

Time	Team Limiting SRD (mR)	TEDE DCF	TEDE Dose (mR)	Thyroid DCF	Thyroid Dose (mR)

7 Self Reading Dosimeter Dose Conversion Factors (DCF)

Source Term	TEDE DCF		Thyroid DCF	
	No KI	With KI	No KI	With KI
RCS	3	1	40	4
GAP	24	3	515	52
CORE	13	5	162	16
SG Normal	1	1	4	0.4
SG Empty	3	1	40	4
SG Flooded	15	2	285	29

DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.7

1 AND 2

TITLE: UDAC Meteorologist Checklist

1. INITIAL ACTIONS

PRINT NAME _____ DATE _____

☐ 1.1 Sign in on the EOF sign-in board.

☐ 1.2 Activate the Meteorology data terminals located in UDAC.

☐ 1.3 Contact the General Office Meteorologist (5AM-3PM) and unit supervisor (all times) and coordinate all meteorological activities.

1.3.1 Unit supervisor activates the General Office Meteorological support unit.

☐ 1.4 Contact the National Weather Forecast Office (NOAA) and obtain local and regional forecasts

- Monterey 1-831-656-1717 (back-up)
- Oxnard 1-805-988-6618 (primary)
- Portland 1-503-326-3720 (back-up)

☐ 1.5 Obtain supplementary climate and meteorological information from the following sources:

1.5.1 PG&E Forecast Office 1-415-973-3224 or 3223.

2. CONTINUING ACTIONS

☐ 2.1 Brief Radiological Manager and UDAC staff on current and forecast weather conditions.

☐ 2.2 Provide meteorological updates to the Health Physicist at least every 15 minutes.

☐ 2.3 Maintain meteorological sections of status boards in UDAC and the EOC Command Room.

☐ 2.4 Periodically brief the following or as conditions change:

- Recovery Manager
- County Emergency Services Director

DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.8

1 AND 2

TITLE: Engineering Liaison Checklist

1. INITIAL ACTIONS

PRINT NAME _____ DATE _____

- ☐ 1.1 Sign in on the EOF sign-in board.
- ☐ 1.2 If, necessary turn-on the PPC & SPDS computer terminals.
- ☐ 1.3 Notify the Advisor to the County of your arrival.
- ☐ 1.4 Prepare for a Recovery Manager staff meeting by maintaining current information on plant status and efforts to recover the plant.
- ☐ 1.5 Contact the TSC Engineering Advisor [x3495] & obtain current plant status information
- ☐ 1.6 Collect copies of plant status forms faxed to the EOF & review to determine a sequence of events (forms are faxed to the UDAC to the County Clerk for distribution)

  1.6.1 EP G-3, PLANT STATUS FORM

- ☐ 1.7 If time permits, dial into the Engineering Bridge [x6002] to listen for real time plant parameters.
- ☐ 1.8 Establish contact with INPO. Advise the Recovery Manager if INPO support in the EOF is recommended.

2. CONTINUING ACTIONS

- ☐ 2.1 Upon the arrival of the NRC Initial Site Team, brief your NRC Co-locator (NRC Reactor Safety Coordinator) 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 As time permits, keep a chronological Log for documenting the time of events & important actions taken.
- ☐ 2.3 Monitor current plant parameters using the PPC, SPDS, Plant Status Emergency Forms, and information communicated on the Engineering Bridge.
- ☐ 2.4 When requested by the Recovery Manager or the TSC Engineering Advisor, contact additional engineering NPG personnel to provide specific technical expertise.
- ☐ 2.5 Update INPO representative with major developments.

DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.9

1 AND 2

TITLE: Agency Liaison Checklist

1. INITIAL ACTIONS

PRINT NAME _____ DATE _____

- ☐ 1.1 Sign in on the EOF sign-in board.
- ☐ 1.2 Notify the Advisor to the County of your arrival.
- ☐ 1.3 Review all emergency notifications that have been issued to SLO County.
- ☐ 1.4 Notify the UDAC Clerk that you are to immediately receive copies of all emergency notifications received by fax.
- ☐ 1.5 Establish contact with either the Control Room or the TSC Liaison Advisor.
- ☐ 1.6 Establish who has responsibility for ensuring completion of notification form distribution.
  - ☐ 1.6.1 CR
  - ☐ 1.6.2 TSC
  - ☐ 1.6.3 EOF
- ☐ 1.7 Determine if SLO County Sheriff Watch Commander or EOC is receiving notification.
  - ☐ 1.7.1 SLO County Sheriff Watch Commander – Call.
  - ☐ 1.7.2 EOC – Call Advisor to the County and get speaker telecom with EOC.

2. CONTINUING ACTIONS

- ☐ 2.1 Route emergency notification forms to the Recovery Manager for approval of DCPP PAR.
- ☐ 2.2 Ensure DCPP emergency notification form is routed to the UDAC coordinator for concurrence.
- ☐ 2.3 Ensure follow-up emergency notifications are issued approximately every 45 minutes.
- ☐ 2.4 Maintain contact with the Advisor to the County, UDAC Coordinator, UDAC Clerk to track emergency notifications.
- ☐ 2.5 Periodically check with the UDAC Clerk and UDAC fax machine for notifications and PARs received by UDAC.
- ☐ 2.6 Make the following notifications:
  - County
  - State OES
  - NRC
- ☐ 2.7 PHONE emergency notification information to the County (unless otherwise directed by the Advisor to the County), State OES, NRC.

  NOTE: 15 minute time limit for classification level or PAR changes to the County and State, otherwise approximately 45 minute updates to each.
- ☐ 2.8 Send emergency notifications to the State OES until they are present at the EOF.

  Send emergency notifications to the NRC throughout the event.

DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.10

1 AND 2

TITLE: Health Physics Liaison to Congregate Care Checklist

1. INITIAL ACTIONS

PRINT NAME _____ DATE _____

- ☐ 1.1 Sign in on the Recovery Manager's sign-in board.
- ☐ 1.2 When directed by the Radiological Manager, notify reception and care monitors to standby or activate. Reception and care monitors are listed in the NERC.
- ☐ 1.3 Contact site C&RP personnel to ensure transport of Portable Portal Monitoring equipment to Congregate Care Centers.
- ☐ 1.4 Dispatch reception and care monitors as directed by the Radiological Manager.
- ☐ 1.5 Provide assistance to other UDAC staff as necessary.
- ☐ 1.6 Provide assistance to JMC staff if requested.

DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.11

1 AND 2

TITLE: Emergency Public Information Manager Checklist

NOTIFICATION OF UNUSUAL EVENT

PRINT NAME _____ DATE _____

NOTE: The San Luis Obispo County JMC will not be activated for a Notification of Unusual Event.

- ☐ 1. Receive event notification from the Control Room
- ☐ 2. If the notification occurs outside of normal working hours, provide information to the Shift Supervisor regarding your current and long term Fitness for Duty including any consumption of alcohol during the previous five hours.
- ☐ 3. Determine from the Control Room the following information:
  - a. Emergency classification.
  - b. Plant status information.
  - c. Nature of any protective action recommendations made to the county.
  - d. Potential for plant release of radioactive materials.
  - e. Special instructions from the Interim Site Emergency Coordinator for the departmental emergency response effort.
- ☐ 4. Notify the Company News Department of the emergency response effort.
- ☐ 5. Prepare or direct the preparation of news releases and/or standby statements from the information provided by the Interim Site Emergency Coordinator (ISEC).
- ☐ 6. Periodically distribute approved news releases. See Form 69-20476, "EPIM News Release Preparation Checklist."
- ☐ 7. Determine if news media notice of the Notification of Unusual Event needs to be disseminated beyond San Luis Obispo County or Humboldt County, as appropriate.

TITLE: Emergency Public Information Manager Checklist

ALERT, SITE AREA EMERGENCY, OR GENERAL EMERGENCY

IN ADDITION TO COMPLETING ACTIONS IDENTIFIED FOR UNUSUAL EVENT,

- ☐ 1. Receive event notification from the Control room.
- ☐ 2. Proceed immediately to the EOF. Enroute contact the SF News Department to advise them of the emergency.
- ☐ 3. If after hours, complete a Fitness for Duty form (available at the top of the stairs at the EOF) and give it to the Advisor to the County.
- ☐ 4. Sign in on the Recovery Manager's sign in board. Notify the Recovery Manager (or Advisor to the County if the Recovery Manager has not arrived at the EOF) of your arrival.
- ☐ 5. Go to EPIM office and turn on all computers and printers.
- ☐ 6. Obtain faxed copy of the DCPP Event Notification Form from the fax machine in the EPIM's office. Confer with the ISEC, Advisor to the County or the TA, SEC, RM or the RMs designated alternates, if necessary, to clarify any questions about the content of the event notification form. (If the Event Notification Form is not in the fax machine check with the Advisor to the county or the RM).
- ☐ 7. Prepare and distribute to the media an initial news release based upon the information contained in the DCPP Event Notification Form. Use the fax group lists 06,07,08 on the SEND fax machine in the EPIM's office.
- ☐ 8. Ensure that the initial news release has been forwarded to the county Public Information Coordinator within two hours after declaration of an event classified as an "Alert" or higher emergency classification.
- ☐ 9. Determine assignments of additional News Department personnel and Technical Advisors.
- ☐ 10. Prepare or direct the preparation of news releases and/or standby statements from the information provided by the Interim Site Emergency Coordinator (ISEC), Site Emergency Coordinator (SEC) or Recovery Manager (RM) or their designated alternates. Coordinate all company news releases with the Technical Advisor to the Emergency Public Information Manager and county Public Information Manager, if available, before issuing.
- ☐ 11. Receive release approval from SEC/RM(or the RMs alternate) for ALL news releases. If you have difficulties contacting the SEC for news release/bulletin approval, go to the Advisor to the County for help. Directions for using the news templates and E-mail service are posted on the computers. Fax and E-Mail news releases to the JMC and other facilities.
- ☐ 12. Periodically distribute approved news releases. See Form 69-20476, "EPIM News Release Preparation Checklist."
- ☐ 13. Log all news media inquiries on Form 69-20484, "Record of News Media Inquiries," or delegate to EOF Clerical Assistant.
- ☐ 14. Ensure continuous 24-hour emergency response operations.
- ☐ 15. Monitor Emergency Alert System (EAS) broadcasts.

ALERT, SITE AREA EMERGENCY, OR GENERAL EMERGENCY (continued)

☐ 16. Log all incoming and outgoing communications related to the emergency response effort and maintain a written record of emergency response activities using the "Emergency Communications and Activities Log Sheet," or delegate to Clerical Assistant.

NOTE 1: Completed log sheets should be forwarded to Emergency Planning, DCPP, 119/2/247 for permanent retention.

NOTE 2: If evacuation is ordered by competent authority, include a statement in the next news release that instructs evacuees to keep any lodging/travel receipts to streamline the compensation process if they prove eligible.

☐ 17. As events develop, provide the JMC Director/JMC Manager with (RM approved) bulletin-form printed information or telephone updates limited to event developments that occur between news releases or to answer event-related questions from the media at the JMC.

☐ 18. When requested by the Recovery Manager, provide a briefing summary of news events that includes at a minimum:

a. JMC status

b. Questions from the media

c. Numbers and summary of press releases issued

d. Any interview requests

☐ 19. Upon the arrival of the NRC Initial Site Team, brief your NRC Co-locator (NRC Public Affairs Coordinator) 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.

☐ 20. When requested by the JMC Director, coordinate with the EOF Radiological Manager to provide knowledgeable health physics personnel to go to the JMC and provide information regarding radiological conditions.

☐ 21. Request authorization from the Site Emergency Coordinator and Recovery Manager for any news media visits to the plant site.

☐ 22. Coordinate all SEC approved news media visits to the plant site.

☐ 23. Upon direction by the Recovery Manager, deactivate the news department emergency response effort.

DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.12 **1 AND 2**

TITLE: EPIM News Release Preparation Checklist

☐ 1. When notified, use templates to assemble information from the event notification form for initial news release . All releases shall be numbered beginning with #1 and dated properly.

☐ 2. Include basic information about the incident which may include: whether there have been any injuries, releases of radioactive materials, what is being done to solve the problem, that further information will be made available as soon as possible and where to call for further information.

NOTE: All subsequent news releases, after initial declaration of emergency classification, may include:

a. Chronological history of event.

b. Brief summary of what is being done to control or end the emergency.

c. Update on any radiological releases.

d. As events in an emergency quickly develop, the use of approved bulletins may be appropriate to update the media between scheduled news releases. Bulletins should be limited to confirmed event developments and must have at least verbal approval from the Recovery Manager. Bulletins should be numbered sequentially and dated. The EOF copy should be initialed by the EPIM before release.

☐ 3. Get approval of all news releases and bulletins by appropriate authorities. **(SITE EMERGENCY COORDINATOR , RECOVERY MANAGER or the RMs designated alternates – have them sign and time the original EOF copy to be retained at EOF, clean copy sent to JMC)**

☐ 4. After receiving approval, contact wire services (AP and UPI) and local media, beginning with radio and television and then print outlets (Group dial #07, 08, then 06). Phone and FAX numbers for all media are also available in Attachment 5.20.

☐ 5. Prepare next news release or bulletin as soon as first news release is completed and distributed. Include sequence of events and any new information that is available. News releases should be distributed to: (delegate this task to EPIM Clerical Assistant)

a. Recovery Manager/Advisor to the County

b. County Public Information Officer (PIO) at the JMC

c. County Public Information Manager at EOC command

d. County Public Information Coordinator at the EOC PIO room.

e. Joint Media Center

f. EOF Radiological Manager

g. UDAC

h. San Francisco News Department

NOTE: Coordinate all subsequent news releases with the County PIM before issuing to the media. Distribution to media of approved news releases will also be made in San Francisco at the San Francisco Media Center.

☐ 6. Update Diablo status telephone line [805/546-5292.]

☐ 7. Post all news releases and bulletins in the EPIM Office.

DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.13

1 AND 2

TITLE: Assistant Emergency Public Information Manager Checklist

This position is filled by a second Emergency Public Information Manager upon arrival at the Emergency Operations Facility in San Luis Obispo.

PRINT NAME _____ DATE _____

- ☐ 1. Receive notification from the plant that the EOF/JMC is to be activated.
- ☐ 2. Proceed to the EOF complete a Fitness for Duty form.
- ☐ 3. Upon arrival at the EOF, inform the Emergency Public Information Manager and Advisor to the County of your presence.
- ☐ 4. Sign in on the Recovery Managers sign-in board.
- ☐ 5. Assist the Emergency Public Information Manager in the preparation of news releases and bulletins, or proceed to the JMC to serve as JMC Director if directed by EPIM.
- ☐ 6. Operate the E-Mail computer system at the Emergency Operations Facility.
- ☐ 7. Act as a liaison between the EPIM and the county PIM regarding press releases.
- ☐ 8. Log all incoming and outgoing communications related to the emergency response effort and maintain a written record of emergency response activities.

  NOTE: Completed log sheets should be forwarded to Emergency Planning, DCPP, 119/2/247, for permanent retention.
- ☐ 9. Monitor Emergency Alert System stations.
- ☐ 10. Update Diablo status telephone line [805/546-5292] number as needed.

DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.14

1 AND 2

TITLE: Technical Advisor to the EPIM Checklist

PRINT NAME _____ DATE _____

- ☐ 1. Receive event notification from the plant that the EOF/JMC is to be activated.
- ☐ 2. Proceed to the EOF.

AT EOF

- ☐ 1. Upon arrival at the EOF, inform the Emergency Public Information Manager and Advisor to the County of your presence.
- ☐ 2. Receive directions from the EPIM on whether to report to the JMC or stay at EOF.
- ☐ 3. If staying at the EOF sign in on the Recovery Managers sign-in board.
- ☐ 4. Assist the Emergency Public Information Manager to ensure the technical accuracy of news releases and statements.
- ☐ 5. Clarify technical information for county public information personnel if requested.
- ☐ 6. Log all incoming and outgoing communications related to the emergency response effort and maintain a written record of emergency response activities.

AT JMC

- ☐ 1. Sign in on sign-in board.
- ☐ 2. Assist the JMC Director or EPIM to ensure news release information is correct.
- ☐ 3. Clarify technical information for county public information personnel, if requested.
- ☐ 4. Log all communications and maintain a written record of emergency response activities.

  NOTE: Completed log sheets should be forwarded Emergency Planning, DCPP, 119/2/247 for permanent retention.

DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.15

1 AND 2

TITLE: Advisor to the County/Recovery Manager Turnover Checklist

Advisor to the County: _____ / / _____ : _____
Name Date Time

Status of EOF Activation ☐ UDAC staffed ☐ Field Teams dispatched ☐ OEL dispatched

Event Classification ☐ NUE ☐ Alert ☐ SAE ☐ GE

PAZs Evacuated ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ 11 ☐ 12

PAZs Sheltered ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ 11 ☐ 12

School & Road Closures: _____

Earthquake

http://wwwnpg/ep/News/ **CLICK** Earthquake Map **CLICK** Geosciences

Site Evacuation ☐ Completed ☐ In-progress ☐ North ☐ South

Release of Radioactive Material ☐ No release ☐ Imminent ☐ In-progress ☐ Terminated

Off-site dose at site boundary TEDE _____ mrem Thyroid CDE _____ mrem

Meteorological Data: Wind Speed _____ mph Direction _____ ☐ rain predicted ☐ rain occurring

Field monitoring teams locations: _____

KI issued to field monitoring teams ☐ Yes ☐ No

Status Plant Systems & Vital Equipment:

Unit 1 % power _____ ☐ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4 ☐ Mode 5 ☐ Mode 6

Unit 2 % power _____ ☐ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4 ☐ Mode 5 ☐ Mode 6

Off-site power available ☐ 230 kV ☐ 500 kV

	Unit 1			Unit 2		
Vital Bus	☐ Bus F	☐ Bus G	☐ Bus H	☐ Bus F	☐ Bus G	☐ Bus H
D/G	1-3	1-2	1-1	1-3	2-1	2-2
SI	1		2	1		2
RHR		1	2		1	2
CCP	1	2		1	2	
PDP		3			3	
AFW	3		2	3		2
ASW	1	2		1	2	
CCW	1	2	3	1	2	3
Containment Spray		1	2		1	2
CFCU	1&2	3&5	4	1&2	3&5	4

Summary of events: _____

DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.16

1 AND 2

TITLE: RM/Advisor to the County Facility PA Announcement Template

TIME OF ANNOUNCEMENT _____

ATTENTION EOF PERSONNEL

[ ] THIS IS A DRILL. [ ] THIS IS AN EMERGENCY ANNOUNCEMENT.

THIS IS _____ **, I AM THE**

[ ] RECOVERY MANAGER.

[ ] ADVISOR TO THE COUNTY

THE PLANT IS CURRENTLY IN:

[ ] AN ALERT [ ] A SITE AREA EMERGENCY [ ] A GENERAL EMERGENCY

THIS EMERGENCY ACTION LEVEL IS BASED UPON: (STATE THE CONDITIONS)

_____

_____

_____

_____

_____

INVOLVING: [ ] UNIT NO. 1 [ ] UNIT NO. 2 [ ] UNITS 1 and 2

[ ] OTHER _____

THE FOLLOWING ACTIONS HAVE BEEN TAKEN TO MITIGATE THE EVENT:

_____

_____

_____

_____

_____

THE FOLLOWING RECOMMENDATIONS HAVE BEEN MADE TO THE COUNTY:

_____

_____

_____

_____

_____

[ ] THIS IS A DRILL

[ ] THIS HAS BEEN AN EMERGENCY ANNOUNCEMENT

DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.17

1 AND 2

TITLE: News Media Notification List

ORGANIZATION	TELEPHONE	FAX
Associated Press (AP)		
San Francisco	(415)621-7432	(415)552-9430
Los Angeles Area	(213)626-1200	(213)346-0200
United Press International (UPI)		
Los Angeles Area	(213)580-9898	(213)580-9880
San Luis Obispo Telegram Tribune	(805)781-7800	(805)781-7905
Five Cities Times - Press Recorder	(805)489-4206	(805)473-0571
Santa Maria Times	(805)925-2691	(805)928-5657
KSBY -TV	(805)597-8400	(805)597-8520
KCOY - TV	(805)543-4223 or (805)925-1200	(805)543-4818 (805)349-9965
KEYT - TV	(805)882-3933	(805)882-3931
KVEC - TV	(805)543-8830	(805)781-2568
KKJL - TV	(805)543-9400	(805)543-0787
KUHL - AM	(805)922-7727	(805)349-0265
KSMA - AM	(805)925-2582	(805)928-1544
KPRL - AM	(805)238-1230	(805)238-5332
KKJG - FM	(805)781-2750	(805)781-2758
Business Wire		
San Francisco Area	(415)986-4422	(415)788-5335
Boston Area	(617)236-4266	(617)236-7740
Los Angeles Area	(310)820-9473	(310)820-7363
New York Area	1-(800)221-2462	(212)893-5335

DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.18

1 AND 2

TITLE: Records of News Media Inquiries

Date	Time	Name	Organization	Remarks

DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.19

1 AND 2

TITLE: Nuclear Logistics Coordinator Guidance Checklist

PRINT NAME _____ DATE _____

☐ 1. Sign in on the Recovery Manager's sign-in board.

☐ 2. Notify the Chief Pilot or Aircraft Pilots of Bay Area personnel that need to be flown to San Luis Obispo County.

☐ 3. Contact the Bay Area Recovery Manager and Near Site Meteorologist to coordinate travel arrangements with the Corporate Pilot.

☐ 4. Contact the Director of Corporate Security to advise of the situation.

a) The initial notification may be very brief consisting of known information at the time.
Example: "The Emergency Operations Facility has been activated at the Alert level."

b) If the Director of Corporate Security is not available, contact the Manager of Corporate Emergency Planning. If the Manager of Corporate Emergency Planning is not available, call the PG&E Call Center to contact the On-Call Corporate Security Representative.

NOTE: The Director of Corporate Security is responsible to notify the Policy Group Chair, who determines what additional notifications are required and if other emergency centers need to be activated, including:

- Company Emergency Operations Center (EOC,)
- Operations Coordination Center (OCC,)
- External Communications Coordination Center (EXCCC)

NOTE: If the Company EOC is not activated, the Policy Group Chair will provide a General Office contact to be the primary interface with the plant emergency staff.

☐ 5. Contact the Highway Patrol to ensure that travel by Bay Area personnel to the Emergency Operations Facility (EOF) will not be impeded by traffic.

☐ 6. Alert the following personnel:

- Law Department
- Safety, Health and Claims
- Corporate Insurance

☐ 7. Notify another NLC to report to the General Office, if the Policy Group Chair, or designee, wants an NPG Coordinator at the Company EOC or EXCCC.

****

CAUTION: All public information **shall** be authorized by the ISEC, SEC, or RM prior to release from the Joint Media Center and the Internal/External Communications Group in the Company EOC or the EXCCC.

****

☐ 8. Coordinate information requests related to corporate communications, insurance coverage, and general liability problems during the emergency.

Do not provide information to media personnel.

☐ 9. Update the Advisor to the County and Recovery Manager of all Company liaison activities.

☐ 10. Update the Policy Group Chair, or designee, and the EXCCC (if activated) of at least every classification change of:

- Timeline of events (especially during initial call).
- Current plant status (both units).
- If a radioactive release is in progress and which direction it is going.
- Site evacuation details.
- Personnel accountability status.
- Frequency of RM/EOF briefings.
- Command and Control of the event (has the RM taken charge).

☐ 11. Obtain information from the Policy Group Chair, or designee, regarding:

- Status of and potential impact to the electric grid.
- Status of and potential impact to Path 15.
- Government interest in the event.
- Press interest in the event.
- Desired update frequency.
- Any additional information needs.

☐ 12. Communicate with the pilot regarding:

- Wind direction.
- Any radioactive release in progress.
- Location of Company plane.
- Estimated arrival times of Bay Area personnel.
- Landing location - SLO, Paso Robles, or Santa Maria.
- Transport alternatives (helicopter, etc.).

DIABLO CANYON POWER PLANT
EP EF-3
ATTACHMENT 5.20

1 AND 2

TITLE: Liaison Assistant Checklist

Liaison Assistant - County/State, and NRC

PRINT NAME _____ DATE _____

1. INITIAL ACTIONS

☐ 1.1 Sign in on the Assembly and Accountability Checklist form as applicable.

☐ 1.2 Sign in on the EOF sign-in board.

2. CONTINUING ACTIONS

☐ 2.1 Make the following notifications per EP G-3:

- SLO County Sheriff Watch Commander
- State Warning Center
- NRC
- INPO

☐ 2.2 PHONE emergency notification information to the SLO County EOC, State OES.

NOTE: 15 minute time limit for classification level or PAR changes to the County and State, otherwise updates should be made approximately every 45 minutes.

☐ 2.3 Send emergency notification information to the NRC. Update notifications should be made approximately every 45 minutes throughout the event.

☐ 2.4 Send emergency notifications to the NRC throughout the event.

☐ 2.2 Ensure notifications are completed and signed off.

☐ 2.3 Retain past notification forms and plant status forms.

4. SIGNOFF

Event terminated _____ or turnover given _____

Signature _____ Date/Time _____