ERPIP NO.: 5.0/REV. 1
DATE: March 1, 1981

EXHIBIT 5.0-5

BALTIMORE GAS AND ELECTRIC COMPANY

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE PLAN IMPLEMENTATION PROCEDURES

APPROVAL AND REVISION SHEET

SUBMITTED: E. T. REIMER
Plant Health Physicist

REVIEWED: N. L. MILLIS
General Supervisor-Radiation Safety

POSRC: 80-184

APPROVED: L. B. RUSSELL
Plant Superintendent
Calvert Cliffs Nuclear Power Plant

11/28/80 Revision 0
Date Effective Date: December 15, 1980

POSRC Annual Review Sheet *Update only in Master, Control Room, S. Service Bldg., and Farm Demo. Bldg. Copies). Required yearly.

POSRC #	SIGNATURE	POSRC #	SIGNATURE

Revision Record:

REV. NO.	DATE	POSRC #	SIGNATURE	REV. NO.	DATE	POSRC #	SIGNATURE
1	3/18/81	81-49	LB Russell				
2	9/9/81	81-117	LB Russell				
3	10/2/81	81-126	LB Russell				
4	10/20/81	81-139	LB Russell				
5	11/11/81	81-142	LB Russell				

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LIST OF EFFECTIVE PAGES

ERPIP PAGE	REV.	ERPIP PAGE	REV.
i	4	1.0-8	4
ii	5	1.0-9	4
iii	5	1.0-10	4
iv	4	1.0-11	5
v	4	1.0-12	5
vi	5	1.0-13	5
vii	5	2.0-1	1
viii	5	2.0-2	1
ix	5	2.0-3	3
x	4	2.0-4	3
xi	4	2.0-5	3
xii	4	2.0-6	3
xiii	4	2.0-7	2
1.0-1	1	2.0-8	2
1.0-2	1	2.0-9	2
1.0-3	2	2.0-10	3
1.0-4	4	2.0-11	2
1.0-5	4	2.0-12	2
1.0-6	4	2.0-13	2
1.0-7	4	2.0-14	2

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ERPIP PAGE	REV.	ERPIP PAGE	REV.
2.0-15	2	3.1-11	3
2.0-16	2	3.1-12	3
2.0-17	5	3.1-13	3
2.0-18	5	3.1-14	3
2.0-19	2	3.1-15	3
2.0-20	3	3.1-16	3
2.0-21	3	3.2-1	3
2.0-22	3	3.2-2	3
2.0-23	3	3.2-3	2
3.0-1	2	3.2-4	2
3.1-1	3	3.2-5	2
3.1-2	3	3.2-6	2
3.1-3	3	3.2-7	2
3.1-4	3	3.2-8	2
3.1-5	3	3.2-9	2
3.1-6	3	3.3-1	3
3.1-7	3	3.3-2	3
3.1-8	3	3.3-3	3
3.1-9	3	3.4-1	3
3.1-10	3	3.4-2	3

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ERPIP PAGE	REV.	ERPIP PAGE	REV.
3.4-3	5	3.7-1	5
3.5-1	5	3.7-2	5
3.5-2	3	3.8-1	4
3.5-3	3	3.8-2	4
3.5-4	3	3.8-3	5
3.6-1	3	3.9-1	3
3.6-2	5	3.9-2	4
3.6-3	5	3.9-3	5
3.6-4	5	3.10-1	3
3.6-5	3	3.10-2	4
3.6-6	3	3.10-3	5
3.6-7	5	4.0-1	1
3.6-8	2	4.1-0	4
3.6-9	2	4.1.1-1	5
3.6-10	2	4.1.1-2	5
3.6-11	2	4.1.1-3	5
3.6-12	3	4.1.1-4	5
3.6-13	3	4.1.2-1	3
3.6-14	3	4.1.2-2	5
3.6-15	2	4.1.2-3	5

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ERPIP PAGE	REV.	ERPIP PAGE	REV.
4.1.2-4	3	4.1.6-2	1
4.1.2-5	3	4.1.7-1	1
4.1.2-6	3	4.1.7-2	2
4.1.2-7	3	4.1.8-1	2
4.1.3-1	4	4.1.8-2	1
4.1.3-2	5	4.1.9-1	2
4.1.4-1	5	4.1.9-2	1
4.1.4-2	5	4.1.10-1	2
4.1.4-3	5	4.1.10-2	1
4.1.5-1	5	4.1.11-1	1
4.1.5-2	5	4.1.11-2	1
4.1.5-3	5	4.1.12-1	1
4.1.5-4	5	4.1.12-2	2
4.1.5-5	5	4.1.12-3	2
4.1.5-6	5	4.1.12-4	2
4.1.5-7	5	4.1.12-5	2
4.1.5-8	5	4.1.12-6	2
4.1.5-9	5	4.1.13-1	2
4.1.5-10	4	4.1.13-2	5
4.1.6-1	1	4.1.14-1	4

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ERPIP PAGE	REV.	ERPIP PAGE	REV.
4.1.14-2	2	4.1.18-4	2
4.1.14-3	5	4.1.19-1	1
4.1.15-1	4	4.1.19-2	1
4.1.15-2	5	4.1.20-1	2
4.1.15-3	5	4.1.20-2	2
4.1.15-4	5	4.1.21-1	4
4.1.15-5	5	4.1.21-2	5
4.1.15-6	5	4.1.21-3	5
4.1.15-7	5	4.1.21-4	5
4.1.15-8	2	4.1.22-1	1
4.1.16-1	3	4.1.22-2	1
4.1.16-2	3	4.1.23-1	4
4.1.16-3	3	4.1.23-2	2
4.1.17-1	2	4.1.24-1	5
4.1.17-2	2	4.1.25-1	4
4.1.17-3	4	4.1.25-2	4
4.1.17-4	4	4.1.25-3	4
4.1.18-1	2	4.1.25-4	4
4.1.18-2	1	4.1.25-5	1
4.1.18-3	2	4.1.25-6	1

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ERPIP PAGE	REV.	ERPIP PAGE	REV.
4.1.25-7	1	4.2.1-1	2
4.1.25-8	1	4.2.1-2	1
4.1.25-9	4	4.3-0	4
4.1.25-10	4	4.3-1	2
4.1.25-11	4	4.3.1-1	4
4.2-1	4	4.3.1-2	4
4.2-2	4	4.3.1-3	3
4.2-3	4	4.3.1-4	3
4.2-4	5	4.3.1-5	3
4.2-5	4	4.3.1-6	3
4.2-6	3	4.3.1-7	4
4.2-7	4	4.3.1-8	4
4.2-8	3	4.3.1-9	4
4.2-9	3	4.3.1-10	4
4.2-10	3	4.3.1.1-1	2
4.2-11	5	4.3.1.1-2	3
4.2-12	5	4.3.1.1-3	5
4.2-13	3	4.3.1.1-4	5
4.2-14	3	4.3.1.1-5	2
4.2-15	3	4.3.1.1-6	4

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ERPIP PAGE	REV.	ERPIP PAGE	REV.
4.3.1.1-7	5	4.4.1-7	2
4.3.2-1	2	4.4.1-8	5
4.3.2-2	2	4.4.1-9	5
4.3.2-3	2	4.4.2-1	1
4.3.2-4	2	4.4.2-2	3
4.3.2-5	2	4.4.2-3	2
4.3.2-6	1	4.4.2-4	2
4.3.2-7	1	4.4.2-5	3
4.3.3-1	2	4.4.2-6	2
4.3.3-2	3	4.4.3-1	4
4.3.4-1	2	4.4.3-2	2
4.3.4-2	2	4.4.3-3	4
4.3.4-3	2	4.4.3-4	2
4.4-1	5	4.4.3-5	2
4.4.1-1	2	4.4.3-6	1
4.4.1-2	2	4.4.3-7	3
4.4.1-3	3	4.4.3-8	4
4.4.1-4	3	4.4.3-9	4
4.4.1-5	3	4.4.4-1	1
4.4.1-6	3	4.4.4-2	2

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ERPIP PAGE	REV.	ERPIP PAGE	REV.
4.4.4-3	1	4.4.7.1-4	2
4.4.4-4	1	4.4.7.1-5	2
4.4.5-1	2	4.4.7.1-6	1
4.4.5-2	3	4.4.7.1-7	2
4.4.5-3	3	4.4.7.2-1	5
4.4.5-4	2	4.4.7.3-1	4
4.4.5-5	2	4.4.7.3-2	4
4.4.5-6	1	4.4.7.3-3	4
4.4.5-7	4	4.4.7.3-4	4
4.4.5-8	2	4.4.7.3-5	4
4.4.5-9	2	4.4.7.3-6	4
4.4.6-1	2	4.4.7.3-7	4
4.4.6-2	2	4.4.7.3-8	4
4.4.6-3	2	4.4.7.3-9	4
4.4.6-4	2	4.4.7.3-10	4
4.4.6-5	2	4.4.7.3-11	4
4.4.7-1	1	4.4.7.3-12	4
4.4.7.1-1	2	4.4.7.3-13	4
4.4.7.1-2	2	4.4.7.4-1	4
4.4.7.1-3	2	4.4.7.4-2	4

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ERPIP PAGE	REV.	ERPIP PAGE	REV.
4.4.7.4-3	4	4.5.1-4	2
4.4.7.4-4	4	4.5.1-5	4
4.4.7.4-5	4	4.5.1.1-1	4
4.4.7.4-6	4	4.5.1.2-1	1
4.4.7.4-7	4	4.5.1.2-2	4
4.4.7.4-8	4	4.5.1.2-3	2
4.4.7.4-9	4	4.5.1.3-1	4
4.4.7.4-10	4	4.5.1.3-2	4
4.4.8-1	1	4.5.2-1	4
4.4.8-2	1	4.5.2-2	4
4.4.8-3	1	4.5.2-3	2
4.4.8.1-1	2	4.5.2-4	2
4.4.8.1-2	2	4.5.2-5	2
4.4.8.1-3	2	4.5.2-6	2
4.4.8.1-4	2	4.5.3-1	2
4.4.8.1-5	2	4.5.3-2	2
4.5-1	4	4.5.3-3	5
4.5.1-1	2	4.5.3-4	5
4.5.1-2	2	4.5.3-5	2
4.5.1-3	2	4.5.3-6	2

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ERPIP PAGE	REV.	ERPIP PAGE	REV.
4.5.4-1	2	4.6.1-1	2
4.5.4.1-1	5	4.6.1-2	2
4.5.4.1-2	5	4.6.1-3	2
4.5.4.2-1	5	4.6.1-4	2
4.5.4.2-2	2	4.6.1-5	2
4.5.5-1	2	4.6.1-6	2
4.5.5-2	2	4.6.1-7	2
4.5.5-3	2	4.6.2-1	2
4.5.5-4	2	4.6.2-2	2
4.5.6-1	2	4.6.2-3	2
4.5.6-2	3	4.6.2-4	2
4.5.6-3	2	4.6.2-5	1
4.5.6-4	2	4.6.2-6	2
4.5.6-5	2	4.6.3-1	1
4.5.6-6	2	4.6.3-2	2
4.5.6-7	2	4.6.3-3	2
4.5.6-8	2	4.6.3-4	4
4.5.6-9	2	4.6.3-5	4
4.5.6-10	2	4.6.4-1	2
4.6-1	4	4.6.4-2	2

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ERPIP PAGE	REV.	ERPIP PAGE	REV.
4.6.4-3	2	4.8.1-10	4
4.6.4-4	2	4.8.1-11	4
4.6.4-5	2	4.8.1-12	4
4.6.4-6	2	4.8.1-13	4
4.6.4-7	2	4.8.1-14	4
4.6.4-8	2	4.8.1-15	4
4.7-1	3	4.8.1-16	4
4.8-0	4	4.8.1-17	5
4.8-1	2	4.9-1	3
4.8-2	2	4.9-2	2
4.8-3	2	4.9.1-1	2
4.8.1-1	2	4.9.1-2	2
4.8.1-2	5	4.9.1-3	2
4.8.1-3	5	4.9.2-1	2
4.8.1-4	4	4.9.2-2	2
4.8.1-5	4	4.9.2-3	2
4.8.1-6	5	4.9.2-4	2
4.8.1-7	4	4.10-1	2
4.8.1-8	4	4.10-2	2
4.8.1-9	4	5.0-1	2

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ERPIP PAGE	REV.	ERPIP PAGE	REV.
5.0-2	2	5.1-10	2
5.0-3	5	5.1-11	2
5.0-4	5	5.1-12	2
5.0-5	5	5.1-13	2
5.0-6	2	5.1-14	2
5.0-7	2	5.1-15	4
5.0-8	2	5.1-16	4
5.0-9	2	5.1-17	4
5.0-10	2	5.1-18	4
5.0-11	2	5.1-19	4
5.0-12	2	5.2-1	1
5.1-1	2	5.2-2	2
5.1-2	2	5.2-3	2
5.1-3	2	5.3-1	2
5.1-4	2	5.3-2	2
5.1-5	2	5.3-3	2
5.1-6	2	5.3-4	1
5.1-7	2	5.3-5	2
5.1-8	2	5.3-6	2
5.1-9	2	5.4-1	5

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ERPIP PAGE	REV.	ERPIP PAGE	REV.
5.4-2	5	5.4-22	5
5.4-3	5	5.4-23	5
5.4-4	5	5.4-24	5
5.4-5	5	5.4-25	5
5.4-6	5	5.4-26	5
5.4-7	5	5.4-27	5
5.4-8	5	5.5-1	5
5.4-9	5	5.5-2	1
5.4-10	5	5.5-3	4
5.4-11	5	5.5-4	4
5.4-12	5	5.5-5	4
5.4-13	5	5.5-6	1
5.4-14	5	A.1-0*	5
5.4-15	5	A.1-1*	5
5.4-16	5	A.1-2*	5
5.4-17	5	A.1-3*	5
5.4-18	5	A.1-4*	5
5.4-19	5	A.1-5*	5
5.4-20	5	A.1-6*	5
5.4-21	5	A.1-7*	5

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ERPIP PAGE	REV.	ERPIP PAGE	REV.
A.1-8*	5	A.3.1-5*	4
A.1-9*	5	A.3.2-1*	5
A.1-10*	5	A.4-1*	2
A.1-11*	5	A.4-2*	2
A.1-12*	5	A.5-1*	2
A.1-13*	5	A.5-2*	2
A.1-14*	5	A.5-3*	5
A.1-15*	5	A.5-4*	2
A.1-16*	5	A.5-5*	2
A.1-17*	5	A.5-6*	2
A.1-18*	5	B.1-1	4
A.1-19*	5	B.1-2	2
A.1-20*	5	B.1-3	2
A.1-21*	5	B.1-4	2
A.1-22*	5	B.1-5	2
A.2-1*	1	B.1-6	2
A.3.1-1*	2	B.1-7	2
A.3.1-2*	5	B.1-8	2
A.3.1-3*	5	B.1-9	2
A.3.1-4*	5	B.1-10	4

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ERPIP PAGE	REV.	ERPIP PAGE	REV.
B.1-11	4	B.1-31	4
B.1-12	2	B.1-32	4
B.1-13	2	B.1-33	4
B.1-14	4	B.1-34	4
B.1-15	4	B.2-0	4
B.1-16	2	B.2-1	5
B.1-17	2	B.2-2	1
B.1-18	2	B.2-3	1
B.1-19	2	B.2-4	1
B.1-20	2	B.2-5	1
B.1-21	2	B.2-6	1
B.1-22	4	B.2-7	1
B.1-23	4	B.2-8	1
B.1-24	2	B.2-9	1
B.1-25	2	B.2-10	1
B.1-26	4	B.2-11	1
B.1-27	4	B.2-12	4
B.1-28	4	B.2-13	4
B.1-29	4	B.2-14	4
B.1-30	4	B.2-15	4

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ERPIP PAGE	REV.	ERPIP PAGE	REV.
B.2-16	4	B.2-36	4
B.2-17	4	B.2-37	4
B.2-18	4	B.2-38	4
B.2-19	4	B.2-39	4
B.2-20	4	B.2-40	4
B.2-21	4	B.2-41	4
B.2-22	4	B.2-42	4
B.2-23	4	B.2-43	4
B.2-24	4	B.2-44	4
B.2-25	4	B.2-45	4
B.2-26	4	B.2-46	4
B.2-27	4	B.2-47	4
B.2-28	4	B.2-48	4
B.2-29	4	B.2-49	4
B.2-30	4	B.2-50	4
B.2-31	4	B.2-51	4
B.2-32	4	B.2-52	4
B.2-33	4	B.2-53	4
B.2-34	4	B.2-54	4
B.2-35	4	B.2-55	4

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ERPIP PAGE	REV.	ERPIP PAGE	REV.
B.2-56	4	B.3-7	5
B.2-57	4	C-1	5
B.2-58	4	C.1-1	2
B.2-59	4	C.1-2	4
B.2-60	4	C.1-3	2
B.2-61	4	C.1-4	4
B.2-62	4	C.1-5	2
B.2-63	4	C.1-6	2
B.2-64	4	C.1-7	2
B.2-65	4	C.1-8	2
B.2-66	4	C.1-9	2
B.2-67	4	C.1-10	2
B.3-0	5	C.1-11	2
B.3-1	5	C.1-12	3
B.3-2	2	C.1-13	3
B.3-3A	1	C.1-14	2
B.3-3B	2	C.1-15	2
B.3-4	2	C.1-16	2
B.3-5	5	C.1-17	2
B.3-6	5	C.1-18	2

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ERPIP PAGE	REV.	ERPIP PAGE	REV.
C.1-19	2	C.3-12	2
C.1-20	2	C.3-13	2
C.1-21	2	D.1-1	2
C.2-1	2	D.1-2	2
C.2-2	2	D.2-1	2
C.2-3	2	D.2-2	1
C.2-4	1	D.3-1	2
C.2-5	1	D.3-2	1
C.2-6	2		
C.3-1	2		
C.3-2	2		
C.3-3	1		
C.3-4	2		
C.3-5	2		
C.3-6	2		
C.3-7	2		
C.3-8	2		
C.3-9	2		
C.3-10	2		
C.3-11	2		

NOTE: (*) Included only in ECC and key emergency response personnel copies.

ERPIP MANUAL CONTENTS

PROCEDURE OR SECTION

ERPIP MANUAL CONTENTS

PROCEDURE OR SECTION

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PROCEDURE OR SECTION

CALVERT CLIFFS NUCLEAR POWER PLANT
EMERGENCY RESPONSE PLAN
IMPLEMENTATION PROCEDURES

LIST OF EXHIBITS

LIST OF FIGURES FOR APPENDICES

1.4 ABBREVIATIONS AND ACRONYMS

AAL	-	Assembly Area Leader
AAMTL	-	Assembly Area Monitoring Team Leader
AECC	-	Alternate Emergency Control Center
ALARA	-	As Low As Reasonably Achievable
ANSI	-	American National Standards Institute
AOP	-	Abnormal Operating Procedures
ASD		Administrative Services Director
BG&E	-	Baltimore Gas and Electric Company
CAS	-	Central Alarm Station
CCNPP	-	Calvert Cliffs Nuclear Power Plant
CETS	-	Chemical Engineering and Test Section
CFR	-	Code of Federal Regulations
DRCAACC-		Division of Radiation Controls, Accident Assessment Command Center
DTL	-	Dosimetry Team Leader
EAL	-	Emergency Action Level
ECC	-	Emergency Control Center
ECCMTL	-	Emergency Control Center Monitoring Team Leader
ECCS	-	Emergency Core Cooling System
ECOM	-	Emergency Communicator
EFADT	-	Emergency First Aid and Decontamination Team
EFADTL	-	Emergency First Aid and Decontamination Team Leader
EFT	-	Emergency Fire Team
EFTL	-	Emergency Fire Team Leader
EOC	-	Emergency Operations Center
EOP	-	Emergency Operating Procedures
EPA	-	Environmental Protection Agency
EPZ	-	Emergency Planning Zone
ERDCT	-	Emergency Repair and Damage Control Team

ERDCTL - Emergency Repair and Damage Control Team Leader
ERET - Emergency Reentry Team
ERETL - Emergency Reentry Team Leader
ERMT - Emergency Reentry Monitoring Team
ERMTL - Emergency Reentry Monitoring Team Leader
ERP - Emergency Response Plan
ERPIP - Emergency Response Plan Implementation Procedures
ERRTL - Emergency Recovery and Restoration Team Leader
ERT - Emergency Radiation Team
ESC - Environmental Services Coordinator
EST - Emergency Security Team
ESTL - Emergency Security Team Leader
EWP - Emergency Work Permit

GAMTL - Gate and Access Monitoring Team Leader

LNG - Liquid Natural Gas
LOCA - Loss of Coolant Accident
LRMTL - Liquid Release Monitoring Team Leader

MCCC - Media Communication Center Coordinator

NRC - Nuclear Regulatory Commission

OFMTL - Offsite Monitoring Team Leader
OLR - Offsite Liaison Representative
ONMTL - Onsite Monitoring Team Leader
OSC - Operational Support Center
OSCD - Operational Support Center Director

PAG - Protective Action Guideline
PASA - Post Accident Sampling Apparatus
PASCA - Post Accident Reactor Coolant Sample Collection Apparatus
PS - Plant Superintendent

RAD - Radiological Assessment Director
RCP - Rad-Chem Procedure
RPD - Radiation Protection Director
SAS - Secondary Alarm Station
SCBA - Self Contained Breathing Apparatus
SEC - Site Emergency Coordinator
SS - Shift Supervisor

TSC - Technical Support Center
TSCD - Technical Support Center Director
USCG - United States Coast Guard

1.5 TABS

The controlled copies of this manual are indexed with color coded tabs to facilitate use in emergencies.

Red Tabs - include those tabs which preceed portions of the manual which may be required for immediate action or within the first hour after an event is reported to the Control Room.

Yellow Tabs - are used to denote the Key Personnel Checklists. These checklists are used to assure that appropriate actions are addressed by responsible qualified personnel and that the status of actions may be properly maintained.

Blue Tabs - preceed those ERPIPs normally utilized by emergency response members subsequent to the initial classificiation of an emergency.

White Tabs - preface those sections which provide reference information or emergency preparedness data.

2. Requests assistance from and coordinates activities of other BG&E Company Departments as required.
3. Provides additional personnel and technical assistance from offsite Company sources as required by the Site Emergency Coordinator to cope with the emergency.
4. Providing emergency equipment and supplies as directed by the SEC.

2.2.16.4 Principal Working Relationships:

1. Media Communication Center Coordinator
2. BG&E Department Managers
3. Site Emergency Coordinator
4. BG&E Offsite Emergency Organization members

2.2.17 Recovery Manager

2.2.17.1 Reports to:

BG&E President

2.2.17.2 Basic Functions:

The Recovery Manager (Vice President - Supply), upon arrival on site after a Site Emergency or a General Emergency class has been declared, will formally relieve the SEC of overall command and control of the emergency organization.

2.2.17.3 Primary Responsibilities:

1. Coordinates interface activities between BG&E corporate management and CCNPP emergency response organization.
2. Interface with high level officials from the State, Federal, local agencies and other assisting groups or companies as necessary to aid the Site Emergency Coordinator's emergency response.
3. Prime spokesperson for BG&E at the Media Communications Center.
4. Overall command and control of BG&E emergency organization during Site and General Emergencies.

2.2.17.4 Principal Working Relationships:

1. BG&E President

2. Vice President - Engineering & Construction
3. Plant Superintendent
4. Site Emergency Coordinator
5. Media Communications Center Coordinator
6. State, Federal and local emergency response officials.
7. Officials from other support groups and companies.

4.1.3 If results show operating plus earthquake stresses are less than allowable limits, continue plant operation.

Operation Continued: _____ / _____
Initial Time

4.1.4 If results show operating basis earthquake conditions exceeded (0.08g horizontal acceleration and/or 0.05g vertical acceleration) evaluate plant status and determine whether to continue plant operation. Exceeding operating basis earthquake limits indicates that an Alert condition exists.

Evaluated to _____ Continue _____ Shutdown:

_____ / _____
Initial Time

4.1.5 If results show Shutdown Earthquake limits have been exceeded (0.15g horizontal acceleration and/or 0.10g vertical acceleration) take all actions necessary to effect a plant cooldown to a cold shutdown. Exceeding safe shutdown earthquake limits indicates that a site emergency condition exists.

Cold Shutdown Initiated: _____ / _____
Initial Time

4.2 Log the event and the emergency action taken.

Recorded in Control Room Log: _____ / _____
Initial Time

4.3 Implement ERPIP 3.1, steps 2.0 through 6.0.

4.4 As desired, contact University of Deleware for further Seismic Information. (See App A.3.2 for phone nos.)

5.0 Floods

5.1 Shut intake structure watertight door (IS-2).

5.2 If plant safety is in jeopardy, place the plant in hot shutdown.

Plant in hot shutdown: _____ / _____
Initial Time

5.3 Implement ERPIP 3.1, steps 2.0 through 6.0.

TITLE: IMMEDIATE ACTION - PERSONNEL INJURY

RESPONSIBLE INDIVIDUAL: SITE EMERGENCY COORDINATOR/(SEC)
RADIATION PROTECTION DIRECTOR (RPD)
(For Alert, Site Emergency or General Emergency)

SEC

1.0 If the First Aid and Decontamination Team is activated to provide assistance.

Sound a 5 second burst of the emergency alarm.

Notify all personnel over P.A. System:

a. "A PERSONNEL INJURY EXISTS."

b. "EMERGENCY FIRST AID AND DECONTAMINATION TEAM REPORT TO (Location of Accident)."

If a drill, state "THIS IS A DRILL."

Repeat this step again.

Emergency Alarm Sounded and Message Announced and repeated: _____ / _____
Initials Time

2.0 Establish communications with the Emergency First Aid/Decontamination Team at the scene of the accident.

- NOTE -

In absence of the Emergency First Aid/Decontamination Team Leader (EFADTL), the SEC/RPD will assume the EFADTL immediate action responsibilities or assign the shift Rad-Chem Technician to this function.

SEC/RPD

3.0 Define the nature and extent of injuries, as follows:

Number of individuals _____

Whether or not radioactively contaminated. _____

Extent of injuries, if known. _____

4.0 Medical Doctor's Assistance Required:

Yes ( ) No ( ) _____ / _____
Initials Time

Emergency Transportation to Hospital Required:

Yes ( ) No ( ) _____ / _____
Initials Time

Make an ALERTING telephone call to Calvert Memorial Hospital and relay the information above (535-4000).

5.0 Call for ambulance if needed (911)

_____ / _____
Initials Time

5.1 If the patient cannot be moved, contact the Calvert Cliffs Physician Assistant and local rescue service for onsite rescue assistance (Phone Nos. in Appendix A.4).

Physician Assistance Contacted:

_____ / _____
Initials Time

6.0 IF HOSPITAL ASSISTANCE IS NOT REQUIRED, SKIP SECTION 7.0

- NOTE -

Stress to Calvert Memorial Hospital whether THERE IS RADIOACTIVE CONTAMINATION OR THERE IS NO RADIOACTIVE CONTAMINATION involved. Calvert Memorial Hospital will automatically activate their Radiation Emergency Area if they assume radioactive contamination is involved with injuries.

Alerting Call Made:

_____ / _____
Initials Time

7.0 Complete the actions under Step 7.1 if NO Radioactive Contamination is present with injuries OR complete the actions under Step 7.2 if Radioactive Contamination IS present with injuries.

7.1 Personnel Injury With No Radioactive Contamination

7.1.1 Notify Security that rescue service personnel and vehicle will require immediate entry into Protected Area and should be directed to (location of injury).

Security Notified:

_____ / _____
Initials Time

7.1.2 Direct Security or ERT member to issue dosimeters (TLDs and SRDs)

TITLE: IMMEDIATE ACTION-RADIOLOCICAL EVENT

RESPONSIBLE INDIVIDUALS: SITE EMERGENCY COORDINATOR (SEC)
RADIOLOGICAL ASSESSMENT DIRECTOR (RAD)

SEC

1.0 On receiving a report or an alarm of an unplanned radioactivity release, record the following on EXHIBIT 3.6-A, RADIOLOGICAL ASSESSMENT FORM, PART A. (Initially take readings every 15 minutes to establish trends)

a. Estimated start and duration time.

b. Trends (increasing, stable, or decreasing).

c. Indicating monitors and radiation levels.

- NOTE -

If duration is unknown, assume it is 1 hour.

2.0 Review EMERGENCY ACTION LEVELS ERPIP 3.1, EXHIBIT 3.1-B Category I (Radioactivity Release) p. 3.1-6.

3.0 If Category I (Radioactivity Release) EAL has been met or exceeded, assume the role of SEC and implement the appropriate procedure:

( ) ERPIP 3.7 UNUSUAL EVENT

( ) ERPIP 3.8 ALERT

( ) ERPIP 3.9 SITE EMERGENCY

( ) ERPIP 3.10 GENERAL EMERGENCY

ERPIP 3.___ Initiated, DO NOT Continue This Procedure ( )

EAL NOT Met or Exceeded: GO TO Step 4.0. ( )

_____ / _____
Initials Time

4.0 If an EAL has not been met or exceeded, but conditions on EXHIBIT 3.6-B, UNPLANNED RADIATION AND RADIOLOGICAL EVENT CONDITIONS have been met, declare a RADIOLOGICAL EVENT CONDITION.

Radiological Event Declared:

_____ / _____
Initials Time

4.1 Sound a 5 second burst of the emergency alarm.

Notify all personnel over P.A. System:

a. "RADIOLOGICAL EVENT CONDITION EXISTS."

b. Give specific protective actions and instructions to essential emergency response personnel.

If a drill, state "THIS IS A DRILL."

Repeat this step again.

Emergency Alarm Sounded and Message Announced and Repeated.

_____ / _____
Initials Time

4.2 Direct the RAD to report to the Control Room to implement ERPIP 4.1.15, Radiological Assessment Director Checklist or EXHIBIT 3.6-A, Part B as appropriate.

- NOTE -

Interim RAD implements only EXHIBIT 3.6-A, Part B.

RAD Directed to Report.

_____ / _____
Initials Time

4.3 Determine and record wind direction and wind speed on EXHIBIT 3.6-A, Part A, Item 4.0.

Brief RAD on affected monitor locations and readings upon his arrival at Control Room.

RAD Briefed:

_____ / _____
Initials Time

RAD

4.4 Review EXHIBIT 3.6-A, RADIOLOGICAL ASSESSMENT FORM, PART B.

4.4.1 Direct the performance of gamma exposure rate measurements downwind - first at the protected area fence - then in the calculated plume location at the Site Boundary (or as close to the Site Boundary as possible) to confirm Alert or higher emergency class conditions. Determine centerline of plume (location of highest exposure rate).

- NOTE -

Repeat measurements every hour if release conditions are stable for confirmation of release activity and projected dose. Repeat measurements every half-hour if main vent radio-gas monitors tend to increase by 25% or more.

4.4.2 Have survey results radioed to the Control Room, as obtained.

_____ / _____
Initials Time

4.4.3 Assign additional qualified Offsite Monitoring Team Members to assess events, as personnel are available.

4.4.4 Compute the projected whole body dose at the site boundary as directed on EXHIBIT 3.6-A, Part B, using EXHIBITS 3.6-C thru 3.6-J. Projected W.B. Dose at Site Boundary Completed:

_____ / _____
Initials Time

4.4.5 Advise the SEC whether or not an EAL has been met or exceeded and recommend protective actions for the Population-at-Risk.

_____ / _____
Initials Time

SEC

4.5 If an EAL has been met or exceeded, implement ERPIP 3.7 thru 3.10 as appropriate.

Do not continue this procedure.

ERPIP 3.__ Initiated

_____ / _____
Initials Time

4.6 If an EAL has not been met or exceeded, terminate this procedure.

4.7 Review CCI 118 for (non-emergency) reporting requirements. Call in the primary or alternate RAD if releases of radioactive materials have exceeded 25% Technical Specification limits.

EXHIBIT 3.6-A

RADIOLOGICAL ASSESSMENT FORM
OFFSITE RELEASE AND DOSE CALCULATION

PART A (OPERATIONS)

INITIAL DATA

1.0 Event Start: Date_____ Time_____

2.0 Estimated Event Duration (Minutes)_____

3.0 Off Normal Radiation Indications (monitor or exposure rate measurement) Initially take readings every 15 minutes to establish trends.

- NOTE -

If release conditions are stable - repeat measurements every hour for confirmation of release activity and projected dose.

If main vent radio-gas monitor increases by 25% or more - repeat measurements every half hour.

3.1 Main Vent Radiation Levels (cpm)

Unit 1	Unit 2	Time Read

3.2 Area Radiation Monitors (R/h)

Monitor No.	R/h @ time	R/h @ time	R/h @ time

4.0 Wind Direction : _____

Wind Speed : _____ mph x (.45) = _____ m/s.

Δ T at 200' : ____ ^{o} F.

EXHIBIT 3.6-A

RADIOLOGICAL ASSESSMENT FORM

OFFSITE RELEASE AND DOSE CALCULATION

PART B (RAD)

1.0 CALCULATING DOSE RATES

IF INDICATION IS (TO CALCULATE)	USE
U1 & U2 MAIN VENT MONITORS ONSCALE	
1. Estimated Dose Rate using average annual meteorology (Site Boundary or T.S. Limit)	1. EXHIBIT 3.6-C thru 3.6-F
2. Calculated Dose Rate (Site Boundary)	2. EXHIBIT 3.6-G&H
AREA RADIATION MONITOR ONSCALE & MAIN VENT MONITOR OFFSCALE	
1. Calculated Dose Rate (Site Boundary)	1. EXHIBIT 3.6-G & I
2. Measured Dose Rate (Inplant)	2. Monitor Reading
PORTABLE RADIATION MONITOR ONSCALE & MAIN VENT AND AREA MONITOR OFFSCALE	
1. Calculated Dose Rate (Site Boundary)	1. EXHIBIT 3.6-G & I
2. Measured Dose Rate (Inplant)	2. Monitor Reading
3. Measured Dose Rate (Site Boundary or Protected Area Fence)	3. ERPIP 4.3.1 & 4.3.2

2.0 INITIAL CLASSIFICATION

NOTE - For initial classification prior to augmentation (only), suggest Emergency Classification by Shift Supervisor if duration is estimated to last 1 hour and dose rates below are met or exceeded and conditions are met.

EMERGENCY CLASSIFICATION USING DOSE RATES (mrem/h)

DOSE RATE LOCATION MEASURED	UNUSUAL EVENT	ALERT	SITE EMERGENCY	GENERAL EMERGENCY
Inplant		≥ 100		
Protected Area Fence			≥ 500	≥ 1000*
Site Boundary		≥ 0.5	≥ 250	≥ 1000

3.0 Refer to Protective Action Guidelines, ERPIP Exhibit 4.5.6-D, F for recommendations to the state and counties.

*Combined with an actual or potential degradation of Two of the Three following boundaries: (a) nuclear fuel, (b) reactor coolant system, or (c) Containment Building.

EXHIBIT 3.6-8

UNPLANNED RADIATION & RADIOLOGICAL EVENT CONDITIONS

RADIOLOGICAL EVENT CRITERIA

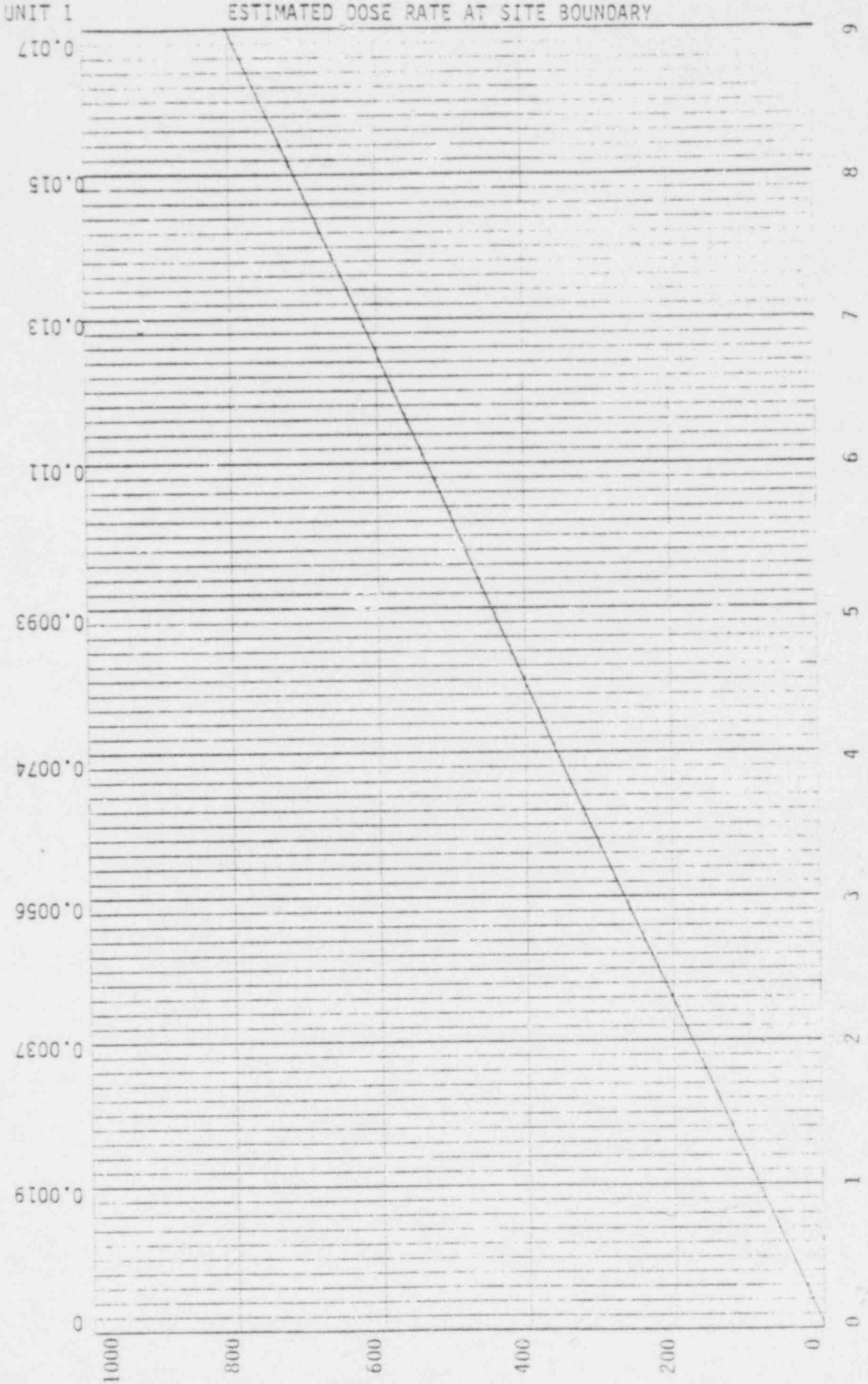
	GENERAL	SPECIFIC
	(Events to assess condition. If evaluation indicates, declare Radiological Event.)	
1.	Unplanned or uncontrolled Radiation Monitor Alarm	-Area radiation monitor alarm -Containment radiation monitor alarm -Ventilation monitor alarm
2.	Unplanned or uncontrolled Radiation field	General field of ≥ 100 mR/h unplanned in a local area General Field of ≥ 100 mR/h unplanned beyond the confines of a room or work area
3.	Unplanned or uncontrolled Airborne Radioactivity	≥ 10^{-9} uCi/cm^3 unevaluated within the confines of a room or work area ≥ 10^{-9} uCi/cm^3 unevaluated beyond the confines of a room or work area
4.	Loose Surface Contamination	≥ 10,000 dpm/100 cm^2 beta-gamma in an unposted area beyond the confines of the Controlled Area ≥ 1,000 dpm/100 cm^2 alpha in an unposted area beyond the confines of the Controlled Area
5.	Spill	Any large or uncontrolled spill of Reactor Coolant

-NOTE-

After initial alarm requiring declaration of a Radiological Event Condition, subsequent alarms occurring on the same monitor and recurring over a period of hours or days do not constitute a Radiological Event Condition when monitor indications observed are within 25% of the initial alarm indications.

EXHIBIT 3.6-C

UNIT 1 ESTIMATED DOSE RATE AT SITE BOUNDARY



Key: 1.86 E-3 mrem/h per % T.S.L.; 885 cpm = 10% T.S.L.

TITLE: IMMEDIATE ACTION-UNUSUAL EVENT

RESPONSIBLE INDIVIDUAL: SITE EMERGENCY COORDINATOR (SEC)

1.0 If determined by SEC and/or assistance from emergency personnel is required:

Sound a 5 second burst of the emergency alarm.

Notify personnel over P.A. System:

a. "AN UNUSUAL EVENT EXISTS."

b. (If a Radiological Event exists) "Radiological Assessment Director Report to the Control Room."

c. Give specific information of emergency condition.

If a drill, state "THIS IS A DRILL".

Repeat this step again.

Emergency Alarm Sounded and Message Announced and Repeated: _____ / _____
Initials Time

2.0 If Radiological Event exists, direct RAD to implement ERPIP 3.6, Section 4.2 thru 4.5.

3.0 Establish communications with personnel at the scene of the accident or location from which the event is being monitored if applicable.

4.0 Ensure that the INITIAL NOTIFICATION CHECKLIST, EXHIBIT 3.1-A is properly completed, carefully considered and is communicated per ERPIP 4.2 within 15 minutes after the declaration of the UNUSUAL EVENT.

Telephone Numbers and Communications Channels are in ERPIP Appendix A.

Follow-up communications shall be made periodically after initial notification until termination of the emergency.

Notifications Initiated: _____ / _____
Initials Time

- NOTE -

When an limiting condition of operation has been exceeded and the reactor is required to be placed in a lower mode of operation, the declaration of an Unusual Event is required when the mode change is effected rather than when load reduction is commenced.

5.0 Notify appropriate CCNPP staff for assistance if needed per Appendix A.1, Table 1. Recall primary or alternate RPD and RAD if Radiological Event exists.

Personnel Notified: _____ / _____
Initials Time

Notify primary or alternate SEC and the Plant Superintendent (see App.A.1 for phone numbers).

Personnel Notified: _____ / _____
Initials Time

6.0 Implement ERPIP 4.1.2, SEC Checklist (check as appropriate):

ERPIP 4.1.2 implemented ( ) _____ / _____
Initials Time

7.0 If an uncontrolled radiation release has occured or may occur, direct primary or alternate RPD and RAD to implement ERPIP 4.1.5 and 4.1.15 respectively.

RPD/RAD directed: _____ / _____
Initials Time

8.0 Continue to evaluate the situation to determine if reclassification is necessary in accordance with ERPIP 3.1, Exhibit 3.1-B EMERGENCY ACTION LEVELS.

9.0 Reclassify as determined by repeated assessments or terminate and contact emergency personnel to inform them of emergency termination (check as appropriate):

Reclassified to Alert ( )
Site Emergency ( )
General Emergency ( )
Terminated ( ) _____ / _____
Initials Time

10.0 If emergency is terminated, consider recommending to offsite agencies to announce "All clear" via Emergency Broadcast System."

Agencies Contacted ( ) Yes
( ) No _____ / _____
Initials Time

12.0 Reclassify (upgrade or downgrade) as determined by repeated assessments or terminate and notify emergency personnel of changes. (check as appropriate):

Reclassified to Unusual Event ( )

Site Emergency ( )

General Emergency ( )

Terminated ( )

_____ / _____
Initials Time

13.0 If emergency is terminated, consider recommending to offsite agencies to announce "All clear over Emergency Broadcast System."

Agencies contacted ( ) Yes
( ) No

_____ / _____
Initials Time

13.0 Notify the Institute of Nuclear Power Operations (INPO) and American Nuclear Insurers (ANI) of emergency classification and event and request assistance if required. (See Appendix A.3 for phone numbers) check as appropriate:

INPO Notified ( )

ANI Notified ( )

_____ / _____
Initials Time

14.0 Reclassify (upgrade or downgrade) as determined by repeated assessments or terminate and notify emergency personnel of changes. Check as appropriate:

Reclassifed to Unusual Event ( )

Alert ( )

General Emergency ( )

Terminated ( )

_____ / _____
Initials Time

15.0 If emergency is terminated, consider recommending to offsite agencies to announce "All clear over Emergency Broadcast System."

Agencies contacted ( ) Yes
( ) No

_____ / _____
Initials Time

6.0 Notify the Institute of Nuclear Power Operations (INPO) and American Nuclear Insurers (ANI) of Emergency classification and request assistance if required. (See Appendix A.3 for Phone Nos).

Notifications have been made (check as appropriate):

INPO Notified ( )

ANI Notified ( )

_____ / _____
Initials Time

7.0 Reclassify (upgrade or downgrade) as determined by repeated assessments or terminate and notify emergency personnel of changes.

Check as appropriate:

Reclassified to Unusual Event ( )

Alert ( )

Site Emergency ( )

Terminated ( )

_____ / _____
Initials Time

8.0 If emergency is terminated, consider recommending to offsite agencies to announce "All clear over Emergency Broadcast System."

Agencies contacted ( ) Yes
( ) No

_____ / _____
Initials Time

TITLE: PLANT SUPERINTENDENT

1.0 RESPONSIBLE INDIVIDUAL

The Plant Superintendent is responsible to the Site Emergency Coordinator for supervising Control Room operations, Shift Supervisor, TSCD and OSCD and reporting plant parameters to SEC, RAD and RPD.

2.0 CONDITIONS AND PREREQUISITES

Report of an Emergency Condition by the Shift Supervisor.

3.0 ACTIONS AND LIMITATIONS

3.1 After augmentation of onsite Emergency Organization by the following primary or alternate Key Personnel, report the plant parameters to the SEC, RAD and RPD per EXHIBIT 4.1.1-A. (Use forms in App.B.3 as needed)

3.2 After activation of the TSC, have the TSCD report those parameters available from the TSC.

EXHIBIT 4.1.1-A

CONTROL ROOM/TECHNICAL SUPPORT CENTER PLANT PARAMETER REPORTS*

Parameter	Report Data To: SEC	RAD	RPD	Frequency	Reports (Forms for reporting Plant Parameter is included in App.B.3)
Meteorology					
Delta T (200'-30')	X	X		15 minutes	
Wind Direction at 200'	X	X	X	15 minutes	
Wind Direction Variation	X	X		15 minutes	
Plant Radiation Monitors					
Main Vent Monitors (U-1 & U-2)	X	X	X	Initially & Changes	
Area Ventilation Monitors (all)	X	X	X	Initially & Changes	
Area Monitors (all)	X	X	X	Initially & Changes	
CNTMT Low Range Monitors (U-1 & U-2)	X	X		Initially & Changes	
CNTMT High Range Monitors (U-1 & U-2)	X	X		Initially & Changes	
CVCS Gross (F.F.) Monitor (affected unit)	X	X	X	Initially & Changes	
CVCS Analyzer (F.F.) Monitor (affected unit)	X	X	X	Initially & Changes	
Liquid Waste Discharge Monitor	X	X	X	Initially & Changes	
Reactor Coolant System					
Subcooled Margin	X	X		As requested	
T_h and T_{ave}	X	X		As requested	
Reactor Coolant Pressure	X	X		As requested	
Forced or Natural Circulation	X			As requested	
Heatup or Cooldown Rate	X	X		As requested	
Leak Rate	X	X		As requested	
CVCS Injection Quantity (gallons)	X	X	X	As requested	
CVCS Injection Start/Stop Times	X	X		As requested	

*Required after Augmentation of Primary or Alternate Key Emergency Response Individual

EXHIBIT 4.1.1-A (Continued)

CONTROL ROOM/TECHNICAL SUPPORT CENTER PLANT PARAMETER REPORTS*

Parameter	Report Data To: SEC	RAD	RPD	Frequency	Reports (See App.B.3 for Plant Parameter Reporting Form.)
Reactor Coolant Analysis Results					
Total Activity	X	X		When completed	
Total Gas Activity	X	X		When completed	
Iodine-131 Dose Equivalent	X	X		When completed	
Boron	X			When completed	
Chloride	X			When completed	
Containment					
Pressure	X	X		Initially & Changes	
Temperature	X	X		Initially & Changes	
Structural Integrity	X	X		Initially & Changes	
% Hydrogen & Oxygen (from TSC)	X	X		When completed	
Activity	X	X		When completed	
Structural Integrity	X	X		When completed	
In Plant Area Survey Results					
Exposure Rates	X		X	When completed	
Airborne Activity	X	X	X	When completed	

*Required after Augmentation of Primary or Alternate Key Emergency Response Individual

EXHIBIT 4.1.1-A (Continued)

CONTROL ROOM/TECHNICAL SUPPORT CENTER PLANT PARAMETER REPORTS*

Parameter	Report Data To:			Frequency	Reports
	SEC	RAD	RPD		(See App.B.3 for Plant Parameter Reporting Form.)
Applicable EOP's					
EOP #	X			As requested	
Time Initiated	X			As requested	
Status of Unaffected Unit	X			As requested	
OSC					
Personnel Shortages	X		X	As shortages occur	
Reentry Planned into Controlled Area	X		X	Prior to entry	
Personnel Exposure Status	X		X	Subsequent to entry	

*Required after Augmentation of Primary or Alternate Key Emergency Response Individual

TITLE: SITE EMERGENCY COORDINATOR CHECKLIST

1.0 RESPONSIBLE INDIVIDUAL

The Site Emergency Coordinator (SEC) is responsible for the command of the onsite emergency organization including onsite and offsite emergency teams and the safety of all plant personnel and equipment, and for all actions necessary to mitigate the consequences of any emergency condition at CCNPP. The Shift Supervisor (SS) is the interim SEC until relieved by the designated SEC.

-CAUTION-

ON RECEIPT OF A REPORT OF AN EMERGENCY CONDITION OR EMERGENCY ALARM, ERPIP 3.1, INITIAL ACTIONS, SHOULD BE PERFORMED FIRST.

2.0 CONDITIONS AND PREREQUISITES

Receipt by the Shift Supervisor of a report of an Emergency Condition and after completing ERPIP 3.1, Initial Actions.

3.0 ACTIONS AND LIMITATIONS

(In the Control Room or the Emergency Control Center)

-NOTE-

Checklists are to be used as determined by the SEC. Spaces for initials and times are to be utilized, as necessary, to clarify the status.
All pertinent action and communications should be recorded in normal operating logs.

3.1 Ensure Implementation of ERPIP 3.1, Immediate Actions and Emergency Action Levels, to classify the event.
ERPIP 3.1 Implemented: _____ / _____
Initials Time

3.2 Implement ERPIPs 3.2 through 3.10 as directed by ERPIP 3.1.
ERPIPs 3._ Implemented: _____ / _____
Initials Time

-NOTE-

Ensure appropriate (nondelegatable) decisions (i.e. classification of emergencies, making the decision to make initial notifications and recommending protective actions are made and ensure release or evacuation

of site personnel is per ERPIP 4.5.1. Record pertinent actions and data on EXHIBIT 5.2.-A, EMERGENCY ACTIONS FORM.

3.3 Activate emergency teams listed on EXHIBIT 4.1.2-A, EMERGENCY TEAM ACTIVATION FORM, as necessary.

Emergency Teams activated: _____ / _____
Initials Time

-NOTE-

Recall purchasing and stores personnel if additional equipment or supplies are needed. See Appendix A.1 Table 1 for phone numbers.

3.4 Direct the Radiation Protection Director (RPD) and the Radiological Assessment Director (RAD) to initiate ERPIP sections 4.3.1 and 4.3.2 if an actual or projected gaseous radioactive release has occurred or suspected to have occurred.

ERPIP 4.3.1 & 4.3.2 Initiated: _____ / _____
Initials Time

-NOTE-

The Shift Supervisor, in the capacity of interim SEC, must initiate immediate action procedures, (ERPIP 3.1-3.10) as necessary.

3.5 Implement or direct implementation of additional ERPIP sections, as appropriate, in accordance with EXHIBIT 4.1.2-B, ERPIP IMPLEMENTATION FORM.

3.6 Activate emergency facilities listed on EXHIBIT 4.1.2-C, EMERGENCY FACILITIES ACTIVATION FORM, as necessary.

3.7 Make all notifications using EXHIBIT 3.1-A to offsite EOCs on initial upgraded or downgraded emergency classification.

3.8 Move to AECC (Farm Demo Bldg) upon declaration of site emergency if appropriate.

3.9 Coordinate operations with the Operational Support Center (OSC), as required, to augment operations staff.

3.10 Provide the Technical Support Center (TSC) with technical support information concerning plant conditions, as necessary.

-NOTE-

In order to ensure open lines on the paging system during an emergency situation, whenever the TSC is activated, lines 4 and 5 shall be reserved for communications between the TSC, OSC, Control Room and ECC.

3.11 Consult RAD prior to making recommendations to offsite agencies, as required per ERPIP 4.5.6

3.12 For General Emergencies review Exhibit 4.5.6-F for plume exposure EPZ evacuation recommendations.

3.13 Implement ERPIP 4.9, Recovery, if the conditions of the Recovery Checklist have been met. ERPIP 4.9 Implemented.

_____ / _____
Initials Time

-CAUTION-

EVEN IF PROJECTED OR MEASURED DOSES IN AREAS ADJACENT TO THE PLUME DO NOT REQUIRE EVACUATION, BECAUSE OF POSSIBLE WIND SHIFTS AND UNCERTAINTIES, CAREFULLY EVALUATE THE USE OF MEDIA WARNINGS AND PRECAUTIONARY EVACUATIONS IN THESE AREAS.

3.14 Recontact onsite and offsite emergency personnel previously contacted and inform them that emergency is terminated.

-CAUTION-

1. WHEN ASSUMING A KEY PERSONNEL POSITION, REQUEST A BRIEFING ON THE EMERGENCY AND EMERGENCY ACTIONS STATUS FROM THE PREVIOUS POSITION HOLDER.

_____ / _____
Initials Time

2. WHEN RELINQUISHING A KEY PERSONNEL POSITION, BRIEF YOUR SUCCESSOR ON THE EMERGENCY AND EMERGENCY ACTIONS STATUS.
BRIEFING GIVEN:

_____ / _____
Initials Time

3. NOTIFY ALL APPROPRIATE PERSONNEL OF YOUR NAME, THE KEY PERSONNEL POSITION YOU ARE ASSUMING, AND THE NAME OF THE PERSON YOU REPLACE.
APPROPRIATE PERSONNEL NOTIFIED

_____ / _____
Initials Time

3.15 Continuously evaluate plant conditions to ensure compliance with technical specification criteria, AOP & EOP implementation criteria, and to make recommendations to the Plant Superintendent to reclassify the emergency, as necessary.

EXHIBIT 4.1.2-A

EMERGENCY TEAM ACTIVATION FORM (SEE NOTE)

Radiation Protection Director, Radiological Assessment Director and Emergency Radiation Teams (See note below).

Activated: _____ / _____
Initials Time

Emergency Fire Team Leader Activated: _____ / _____
Initials Time

Emergency First Aid and Decontamination Team Leader

Activated: _____ / _____
Initials Time

Emergency Security Team Leader Activated: _____ / _____
Initials Time

Emergency Reentry Team Leader Activated: _____ / _____
Initials Time

Emergency Repair and Damage Control Team Leader

Activated: _____ / _____
Initials Time

Emergency Recovery and Restoration Team Leader

Activated: _____ / _____
Initials Time

-NOTE-

1. For Alert, Site or General Emergency classes, all emergency response positions and teams must be activated.

2. For a Radiological Event (ERPIP 3.6) the RPD, RAD, and OFMTL must be activated, as a minimum.

TITLE: TECHNICAL SUPPORT CENTER DIRECTOR CHECKLIST

1.0 RESPONSIBLE INDIVIDUAL

The Technical Support Center Director (TSCD) is responsible to the Site Emergency Coordinator to analyze the current and projected plant status and to provide technical support in the event of an accident.

2.0 CONDITIONS AND PREREQUISITES

2.1 Declaration of an Alert, Site Emergency or General Emergency.

2.2 As directed by the Site Emergency Coordinator.

3.0 ACTIONS AND LIMITATIONS

(In the Technical Support Center at CCNPP on the 55' elevation of the Log and Test Instrument Room.)

-NOTE-

1. WHEN ASSUMING A KEY PERSONNEL POSITION, REQUEST A BRIEFING ON THE EMERGENCY AND EMERGENCY ACTIONS STATUS FROM THE PREVIOUS POSITION HOLDER.
2. WHEN RELINQUISHING A KEY PERSONNEL POSITION, BRIEF YOUR SUCCESSOR ON THE EMERGENCY AND EMERGENCY ACTIONS STATUS.

   BRIEFING GIVEN: _____ / _____
   Initials Time
3. NOTIFY ALL APPROPRIATE PERSONNEL OF YOUR NAME, THE KEY PERSONNEL POSITION YOU ARE ASSUMING, AND THE NAME OF THE PERSON YOU REPLACE.

   APPROPRIATE PERSONNEL NOTIFIED: _____ / _____
   Initials Time

-NOTE-

4. Checklists are to be used as determined by the TSCD. Spaces for initials and times are to be utilized, as necessary, to clarify the status.

3.1 Upon declaration of an Alert, Site Emergency or General Emergency, the TSCD reports to the Technical Support Center.

3.2 Activate the Technical Support Center.

TSC Activated: _____ / _____
Initials Time

3.2.1 While the TSC is being activated establish communications as per ERPIP 4.2, Section 5.0.

3.2.2 Request support personnel from OSD as required.

3.3 Record all pertinent actions on EXHIBIT 5.2-A, EMERGENCY ACTIONS FORM.

3.4 Analyze mechanical, electrical, and instrument and control problems and determine alternate solutions.

3.5 Analyze thermohydraulic and thermodynamic problems and develop problem resolutions.

3.6 Assist in the development of Emergency Response Plan Implementation Procedures, Operating Procedures, etc., as necessary, for conducting emergency operations.

3.7 Analyze conditions and develop guidance for the Site Emergency Coordinator and operations personnel on protection of the core.

3.8 Resolve questions concerning Operating License requirements with the designated NRC representative.

TITLE: OPERATIONAL SUPPORT CENTER DIRECTOR CHECKLIST

1.0 RESPONSIBLE INDIVIDUAL

The Onsite Operational Support Center Director (OSCD) is responsible to control the activities of the operators, health physics personnel and technicians and to restrict access to those personnel as directed by the Site Emergency Coordinator or Plant Superintendent.

2.0 CONDITIONS AND PREREQUISITES

2.1 Declaration of an Alert, Site Emergency or General Emergency.

2.2 As directed by the Site Emergency Coordinator.

3.0 ACTIONS AND LIMITATIONS

(In the Operational Support Center South Service Building Outage Planning Room.)

-NOTE-

Checklists are to be used as determined by the OSCD. Spaces for initials and times are to be utilized, as necessary, to clarify the status.

3.1 Activate the Operational Support Center when directed by SEC.

OSC Activated: _____ / _____
Initials Time

-NOTE-

Evacuation to alternate OSC is appropriate if radiological conditions warrent.

3.2 Direct the activities of operators, health physics personnel and technicians reporting to the OSC. (Complete EXHIBIT # 1.4-A as appropriate)

3.3 Control access to plant areas by restricting access to only those personnel specifically requested by the SEC. Coordinate access control of personnel to the plant with the Emergency Security Team Leader.

3.4 Assure that emergency response personnel check out with OSCD before leaving OSC to access other plant areas.

3.5 Utilize the C&P Telephone and the plant page system to summon personnel as requested by the SEC. When directed by the SEC, move OSC to the Farm Demonstration Building Area (primary OSC uninhabitable).

-CAUTION-

1. WHEN ASSUMING A KEY PERSONNEL POSITION, REQUEST A BRIEFING ON THE EMERGENCY AND EMERGENCY ACTIONS STATUS FROM THE PREVIOUS POSITION HOLDER.
2. WHEN RELINQUISHING A KEY PERSONNEL POSITION, BRIEF YOUR SUCCESSOR ON THE EMERGENCY AND EMERGENCY ACTIONS STATUS.

BRIEFING GIVEN: _____ / _____
Initials Time

3. NOTIFY ALL APPROPRIATE PERSONNEL OF YOUR NAME, THE KEY PERSONNEL POSITION YOU ARE ASSUMING, AND THE NAME OF THE PERSON YOU REPLACE.

APPROPRIATE PERSONNEL NOTIFIED: _____ / _____
Initials Time

EXHIBIT 4.1.4-A

EMERGENCY TEAM ACTIVATION

Team Activated:	Time	Initials
Emergency Fire Team:	_____	_____
Emergency First Aid and Decontamination Team:	_____	_____
Emergency Security Team:	_____	_____
Emergency Reentry Team:	_____	_____
Emergency Reentry Monitoring Team:	_____	_____
Emergency Repair and Damage Control Team:	_____	_____
Emergency Recovery and Restoration Team:	_____	_____
OFFSITE Monitoring Team:	_____	_____
ONSITE Monitoring Team:	_____	_____
Liquid Release Monitoring Team:	_____	_____
Dosimetry Team:	_____	_____

TITLE: RADIATION PROTECTION DIRECTOR CHECKLIST

1.0 RESPONSIBLE INDIVIDUAL

The Radiation Protection Director (RPD) is responsible to the Site Emergency Coordinator (SEC) for:

1.1 Performance of radiation surveys inplant and onsite (ERPIP 4.3.2).

1.2 Obtaining appropriate liquid and gaseous samples for radioanalysis, including post-accident sampling of containment atmosphere and reactor coolant (ERPIP 4.3.3, 4.4.7.2, 4.4.7.3).

1.3 Establishing controlled access areas to contain or limit the spread of contamination (ERPIP 4.5.2).

1.4 Prescribing protective equipment and clothing to personnel (ERPIP 4.5.3, 4.5.4.1).

1.5 Establishing and posting radiation and contamination (controlled) area boundary requirements (ERPIP 4.3.2).

1.6 Personnel monitoring and exposure evaluation (ERPIP 4.3.4, 4.5.5).

1.7 Providing qualified personnel to be members of the Emergency Reentry Team (ERPIP 4.8).

1.8 Directing the activities of the Emergency Reentry Team during the initial emergency reentry (ERPIP 4.8, 4.8.1).

1.9 Directing the activities of Emergency First Aid and Decontamination Team during Alert, Site Emergency and General Emergency.

2.0 CONDITIONS AND PREREQUISITES

2.1 Declaration of an Alert, Site Emergency or General Emergency

2.2 Detection of a Radiological Event (per ERPIP 3.6)

2.3 As directed by the Site Emergency Coordinator

3.0 ACTIONS AND LIMITATIONS

(In Emergency Control Center or Radiation Safety Laboratory, if appropriate.)

-NOTE-

Checklists are to be used as determined by the RPD. Spaces for initials and times are to be utilized for initial actions, as necessary, to clarify the status. Utilize EXHIBIT 5.2-A, Emergency Actions Form, to document all repetitive actions taken.

3.1 Announce to the other emergency workers your name and that you are the RPD.

- NOTE -

3.1.1 When assuming a key personnel position, request a briefing on the emergency and emergency actions status from the previous position holder and document the turnover time and procedure status.

3.1.2 When relinquishing a key personnel position, brief your successor on the emergency and emergency actions status.

3.1.3 Notify all appropriate personnel of your name, the key personnel position you are assuming, and the name of the person you replace.

3.2 Receive briefing from SEC on existing plant or site conditions and record the Emergency Action Level (EAL) classification below (write "none" if no EAL has been met):

EAL Classification:

Received Briefing: _____ / _____
Initials Time

3.3 Use EXHIBIT 4.1.5-A, ERT ACTIVATION PRIORITY & ASSEMBLY FORM to determine which Emergency Radiation Teams must be activated (in the order listed on the form) and to record the data.

Emergency Radiation Teams Recorded on EXHIBIT 4.1.5-A:

_____ / _____
Initials Time

-NOTE-

All Emergency Radiation Teams must be activated for Alerts, Site Emergencies and General Emergencies. For a Radiological Event (ERPIP 3.6), the Offsite Monitoring Teams (activated by the Radiological Assessment Director) and Onsite Monitoring Teams must be activated, and others as necessary.

3.4 Ensure that the required Emergency Radiation Team members are notified as identified in Appendix A.1, Emergency Organization Members and Telephone Numbers, and enter data on EXHIBIT 4.1.5-A.

Teams Members Notified and Data Recorded on EXHIBIT 4.1.5-A:

_____ / _____
Initials Time

-NOTE-

The Emergency Radiation Team Leaders may be delegated the responsibility to notify their respective team members.

3.5 Require the Emergency Radiation Team members to assemble at a designated assembly area.

3.5.1 Report the availability of the teams to the SEC. Emergency Radiation Teams Availability Reported to SEC: _____/_____ Initials Time

3.5.2 Record the assembly area and accountability information on EXHIBIT 4.1.5-A.

-NOTE-

Assembly Area during a Site or General Emergency is the Operational Support Center. In order to ensure open lines on the page during an emergency situation, wherever the Technical Support Center is activated, lines 4 and 5 shall be reserved for communications between the Technical Support Center, Operational Support Center, Control Room, and Emergency Control Center.

Accountability Recorded: _____/_____ Initials Time

3.6 Have the ECC Monitoring Team Leader implement ERPIP 4.3.4 and use the Emergency Monitoring Kit to evaluate the need to evacuate the ECC and the Radiation Safety Laboratory.

Possible Evacuation evaluated and ERPIP 4.3.4 Implemented: _____/_____ Initials Time

-NOTE-

Have periodical re-evaluation of evacuation possibilities when radiological conditions warrant.

3.7 Brief Emergency Radiation Team Members on the following (as appropriate):

Anti C's

Respiratory Requirements

Areas to Check

Plant Conditions

Expected Dose Rates

Planned Stay Time/Total Dose Precautions

Proper Dosimetry

Procedures to be Used

Other Specific Instructions (List Here)

_____

_____

_____

_____

Emergency Radiation Team Members

Briefed: _____/_____
Initials Time

3.8 Brief ERT members on emergency exposure criteria in accordance with ERPIP 4.6.1 whenever potentially high exposure levels may exist (known or unknown).

ERT Members Briefed: _____/_____
Initials Time

-NOTE-

The emergency exposure criteria described in ERPIP 4.6.1 delineate the following areas: (1) recommended personnel, (2) planned doses for lifesaving actions, and (3) planned doses for facility protection actions. All other exposures, must be maintained in accordance with RCP 3-300 series procedures.

3.9 Ensure each team member is equipped with the following proper protective clothing and equipment:

-NOTE-

Equipment requirements will vary depending on individual assignments. Unnecessary use of protective equipment should be avoided.

3.9.1 Protective Clothing Requirements

_____Hood

_____Coveralls (1, 2 pair)

_____Paper Suit

_____Cotton Gloves

_____Rubber Gloves

_____Rubber Overshoes

_____Plastic Shoecovers

_____Plastic Pants

_____Other _____

3.9.2 Respiratory Protective Device

_____MSA with Particulate Filter

_____SCBA Type: _____

_____3M Back Pack

_____3M Economy Hood

_____3M Soft Cap

_____Other _____

3.9.3 Personnel Monitoring and Survey Instrumentation

_____TLD and SRD

_____High Range SRD (0-5R, 0-10R, 0-100R, 0-200R)

_____Special (RCP 3-303-4.5)

_____Gamma Exposure Rate Meter (0.1 R/h to 20 KR/h)

_____Neutron REM-Ball

_____Neutron Dosimeter

_____Alarming Dosimeter (0-200R)

_____Portable Air Samplers (4 h power supply - minimum)

Team Members Equipped: _____ / _____
Initials Time

-NOTE-

Assign tasks to the Emergency Radiation Teams in accordance with the priority list EXHIBIT 4.1.5-A. Record all assigned tasks on EXHIBIT 5.2-A, EMERGENCY ACTIONS FORM.

3.10 If the nature of gaseous release indicates the potential for significant levels of iodine (greater than 40 MPC-h of exposure is possible), consider immediate administration of radioprotective drugs to all affected onsite emergency personnel in accordance with ERPIP 4.5.4.1 if adequate respiratory protection devices are not available.

3.11 If a release of airborne radioactivity is detected, immediately dispatch at least one Onsite Monitoring Team in accordance with ERPIP 4.3.2.

ERPIP 4.3.2 Initiated: _____ / _____
Initials Time

-NOTE-

If a release of radioactivity is detected, the only delay allowed for the Onsite Monitoring Teams is an operational check of exposure rate meters which should take 2 minutes at most.

3.12 Have radiation surveys performed in Assembly Areas and around the Protected Area Fence.

3.12.1 Record results on EXHIBIT 5.2-A, EMERGENCY ACTIONS FORM.

3.12.2 Notify SEC of the results.

Surveys Performed and Results Reported to SEC: _____ / _____
Initials Time

3.13 Establish control points as necessary in accordance with ERPIP 4.5, Protective Actions.

3.13.1 Record access control point locations on EXHIBIT 5.2-A.

3.13.2 Report results to the SEC.

Access Control Points Established and SEC Notified: _____ / _____
Initials Time

3.14 Have gaseous and air particulate samples analyzed per ERPIP 4.3.2.

3.14.1 Record results on EXHIBIT 5.2-A.

3.14.2 Notify SEC of the results.

Samples Analyzed & Results Reported to SEC: _____ / _____
Initials Time

3.15 Notify RAD of air sampling results obtained inplant and onsite.

_____ / _____
Initials Time

3.16 Restrict access into Auxiliary Building or other potential high Radiation Areas by unauthorized or unprepared individuals to hazardous radiation environment.

3.16.1 Establish positive access control by instituting the use of Emergency Work Permits (ERPIP 4.8.1) for all Controlled Area entries during the occurrence, emergency and recovery phases of the accident.

Positive Access Control Established _____/_____
Initials Time

3.17 When notified by one of the following: (check one)

( ) Control Room
( ) TSC
( ) RAD
( ) R 202 Alarm (on 1C07 or 2C07 board)

Have the LRMT and REMT members prepare to perform Post-Accident Reactor Coolant Sampling per ERPIP 4.4.7.3.

3.17.1 Commence monitoring per ERPIP 4.4.7.3 requirements.

- CAUTION -

Review App. B.2, pages B.2-7 through B.2-11, "POST Accident Radiation Doses (Aux. Bldg.)," Area Monitor (R/h) Alarms and other available information to determine accessible and appropriate routes to ingress/egress R/C Sampling Room.

3.17.2 Report analysis results to SEC, RAD & TSC immediately. (Initial mR/h at 1 ft. from RCS sample to be reported immediately after obtained).

Reported Results to ( ) SEC
( ) RAD
( ) TSC

_____/_____
Initials Time

3.18 Consult with the RAD and the SEC and implement the following as necessary:

3.18.1 Have liquid effluent samples collected, analyzed per ERPIP 4.3.3.

Results Recorded on EXHIBIT 5.2-A and Reported to SEC:

_____/_____
Initials Time

-NOTE-

If the discharge concentration of Gross Beta and/or Tritium is greater than the intake concentration by a factor 10, the RPD, as directed by

the SEC shall:

1. Warn persons away from the Circulating Water discharge.

   Persons Warned: _____ / _____
   Initials Time

2. Notify the Maryland Department of Health and Mental Hygiene.

   Maryland Department of Health & Mental Hygiene Notified:

   _____ / _____
   Initials Time

3. As necessary, contact the Maryland Marine Police (see Appendix A.4) and request assistance in evacuation of portions of Chesapeake Bay.

   Marine Police Contacted: _____ / _____
   Initials Time

4. Notify the Chief Environmental Engineer at BG&E to commence an intensive monitoring program.

   BG&E Chief Env. Engr. Notified: _____ / _____
   Initials Time

5. Institute measures to determine the source of contamination and mitigate releases.

   Measures to Determine Sources & Mitigate Releases Implemented:

   _____ / _____
   Initials Time

6. Monitor releases and review EALs in EXHIBIT 3.1-B to determine need for Emergency classification.

   If EALs have been met or are being approached, confer with the SEC to determine appropriate actions.

3.18.2 Have Containment Atmosphere sampled per ERPIP 4.4.7.2.

Results Recorded on EXHIBIT 5.2-A and Reported to SEC:

_____ / _____
Initials Time

3.18.3 Have RCS Samples taken per ERPIP 4.4.7.3.

Results Recorded on EXHIBIT 5.2-A and Reported to SEC and RAD:

_____ / _____
Initials Time

-NOTE-

Repeat RCS Sampling on a routine basis (every hour) as necessary, to determine activity levels and trends.

3.19 Determine the inplant and onsite projected exposure durations by obtaining expected time for continuous release from Control Room and notify the SEC and RAD.

SEC and RAD Notified of Projected Exposure Duration and results Recorded on EXHIBIT 5.2-A:

_____ / _____
Initials Time

3.20 Direct the repetition of radiological surveys and RCS, Circ Water, and Containment Samples as necessary to determine release projected dose trends at the Protected Area Fence, Site Boundary or into Bay.

-NOTE-

It is important to obtain confirmation data and to determine trends. Record all results, both positive and negative, on EXHIBIT 5.2-A as determined, and report them to the SEC as described above.

Projected Dose Trends Determined and Results Reported to SEC and RAD:

_____ / _____
Initials Time

EXHIBIT 4.1.5-A
ERT ACTIVATION PRIORITY & ASSEMBLY FORM

Priority	ERT	Notified (if Yes)	Assembly Point	Accountability of Teams and Members
1.	Offsite Monitoring Team*, # (2 individuals/team)			
2.	Onsite Monitoring Team # (2 individuals/team-add to when manpower becomes available)			
3.	Assembly Area Monitoring Team			
4.	Gate and Access Monitoring Team			
5.	ECC Monitoring Team (May initially be combined with Assembly Area Monitoring Team)			
6.	Liquid Release Monitoring Team			
7.	Emergency F/A and Decontamination Team			
8.	Emergency Reentry Monitoring Team			
9.	Dosimetry Team			

*Activated by the Radiological Assessment Director (ERPIP 4.1.15)

Mandatory activation for Unusual Event or higher emergency classes if radiological event occurred (ERPIP 3.6). Negative findings are important to identify.

-CAUTION-

INDIVIDUALS SHALL NOT BE ASSIGNED TO PERFORM TASKS OF A TEAM UNLESS ALL ASSEMBLED TEAMS HIGHER ON THE LIST ARE MANNED BY ASSIGNED TEAM MEMBERS (NOT INTERIM MEMBERS). UPON FULL AUGMENTATION, ALL EMERGENCY TEAMS MUST BE ACTIVATED AND PREPARED TO PERFORM THEIR ASSIGNED RESPONSIBILITIES.

TITLE: EMERGENCY REENTRY MONITORING TEAM LEADER CHECKLIST

1.0 RESPONSIBLE INDIVIDUAL

The ERMTL is responsible to the RPD to monitor all areas to be accessed by the Emergency Reentry Team and to maintain personnel exposure records for team members.

2.0 CONDITIONS AND PREREQUISITES

As directed by the RPD.

3.0 ACTIONS AND LIMITATIONS

(With Emergency Reentry Team)

-NOTE-

When assuming a key personnel position, request a briefing on the emergency and emergency actions status from the previous position holder. When relinquishing a key personnel position, brief your successor on the emergency and emergency actions status. Notify all appropriate personnel of your name, the key personnel position you are assuming, and the name of the person you replace.

3.1 During an Alert, Site Emergency or General Emergency have ERMT members report to the Operational Support (or as designated by ERMTL) and implement ERPIP 4.8.1.

-NOTE-

Checklists are to be used as determined by the ERMTL. Spaces for initials and times are to be utilized, as necessary, to clarify the status.

3.2 Assure that ERET members are fully briefed to expected exposure rates, stay times, other hazards, and ERPIP 4.6.1.

ERET MEMBERS BRIEFED:

3.3 Assure all ERET members use protective clothing, dosimeters, respiratory devices (ERPIP 4.5.3) and protective devices as suggested by the RPD.

-NOTES-

1. If entering an area of radiation exposure greater than 10 R/h, assure ERET is equipped with appropriate high range self-reading dosimeters and teletectors as a minimum and that no entries are permitted into areas of exposure greater than 100 R/h without express approval of SEC.

2. Assure TLDs are worn if highly radioactive sources are to be handled.
3. Plastic hoods are worn if entering highly contaminated areas.

3.4 Remain aware of locations of all ERET members in high radiation areas.

3.5 Monitor all areas prior to ERET entry.

3.6 Communicate with the RPD, or withdraw from high radiation areas if exposure rates or stay times approach limits set for reentry operations.

EXPOSURE RATES: _____ R/h

RPD CONTACTED: _____ / _____
Initials Time

3.7 Ensure self-monitoring of or monitor all ERET members upon completion of reentry operations.

3.8 Suggest implementation of decontamination procedures (ERPIP 4.5.5) as necessary to the RPD.

DECONTAMINATION SUGGESTED: _____ / _____
Initials Time

3.9 Communicate recorded doses to the RPD.

RPD CONTACTED: _____ / _____
Initials Time

DATE: November 11, 1981

EXHIBIT 4.1.14-A DOSIMETRY ISSUE LOG

EMERGENCY PERSONNEL ENTRY
INTO
PLANT SITE OR CONTROLLED AREA

ISSUE ON ENTRY						
TLD	DATE	TIME	ZERO	SRD		
			0-.2R	0-5R	0-50R	0-200R

RECORD ON LEAVING							
NAME (Print)	NAME (Signature)	DATE	TIME	SRD READING			
				0-.2R	0-5R	0-50R	0-200R

TITLE: RADIOLOGICAL ASSESSMENT DIRECTOR CHECKLIST

1.0 RESPONSIBLE INDIVIDUAL

The Radiological Assessment Director (RAD) is responsible to the Site Emergency Coordinator (SEC) for:

1.1 Assessing, mapping and coordinating the calculations of all radiological data to accurately depict offsite radiation dose projections.

1.2 Monitoring the Plume and Ingestion Exposure Pathways to determine the appropriate protective actions to be implemented for the protection of the Population-at-Risk.

1.3 Determining appropriate downwind locations for exposure rate and air sample surveys of the projected plume.

1.4 Dispatching the Offsite Monitoring Teams to selected downwind locations.

1.5 Assuring air sampling survey effectiveness.

1.6 Reassigning the Offsite Monitoring Teams, as necessary.

1.7 Coordinating Environmental Monitoring efforts with Emergency Services Coordinator (ESC).

2.0 CONDITIONS AND PREREQUISITES

2.1 Declaration of an Alert, Site Emergency or a General Emergency.

2.2 Suspicion or recognition of an uncontrolled release of radioactive material (A Radiological Event, ERPIP 3.6).

2.3 As directed by the SEC.

3.0 ACTIONS AND LIMITATIONS

(In Emergency Control Center)

-NOTE-

Checklists are to be used as determined by the RAD. Spaces for initials and times are to be utilized for initial actions as necessary to help clarify the status. Appropriate repetitive actions and information is to be recorded on EXHIBIT 5.2-A, EMERGENCY ACTIONS FORM.

3.1 Announce to the other emergency workers your name and that you are the RAD.

Announced: _____ / _____
Initials Time

-NOTE-

When assuming a key personnel position, request a briefing on the emergency and emergency actions status from the previous position holder and document the turnover time and procedure status on Exhibit 5.2-A. When relinquishing a key personnel position, brief your successor on the emergency and emergency actions status.

3.1.1 Notify all appropriate personnel of your name, the key personnel position you are assuming, and the name of the person you replace.

3.2 Receive briefing from SEC on existing plant or site conditions, record the Emergency Action Level classification below (if classified).

Briefing Received: _____ / _____
EAL Classification: _____ Initials Time

3.3 Implement appropriate sections of ERPIP 3.6, Radiological Event, and/or ERPIP 4.4, Assessment Actions, as necessary.

ERPIP 3.6 or ERPIP 4.4 Initiated:
(circle one) _____ / _____
Initials Time

3.4 Obtain wind direction data from the Control Room strip chart and estimate wind direction and average band width as recorded over the last 15 to 60 minutes.

Average Band Width (in degrees): _____
Wind Direction From: _____
Wind Data Recorded: _____ / _____
Initials Time

3.5 Obtain from RPD the following plant or onsite dose rate and air sampling survey results to estimate radioiodine released from plant for offsite dose projections.

Location Area	Time of Sample (h)	Dose Rate (R/h)	Charcoal Air Sample (uCi/cm^3)	Ag Zeolite Air Sample (uCi/cm^3)	Particulate Air Sample (uCi/cm^3)

3.6 When conditions dictate ensure that Offsite Monitoring Team (OFMT) members have been activated and assembled in the Assembly Area (Operational Support Center, if Site or General Emergency).

Offsite Monitoring Team Members Assembled: _____ / _____
Initials Time

-NOTE-

1. For a Radiological Event involving airborne releases the Offsite Monitoring Teams must be activated. The Offsite Monitoring Team will receive the highest priority of the ERTs for activation, manning and being dispatched.

2 For a Radiological event actually or potentially involving a release to the environment, RAD is to notify the Environmental Services Coordinator (ESC) (See Appendix A.1 Table 1 for phone number).

ESC Notified _____ / _____
Initials Time

3.7 Brief OFMT members on the following (as appropriate):

-NOTE-

Briefing may be performed by RPD.

Anti C's
Respiratory Requirements
Areas to Check
Plant Conditions
Expected Exposure Rates
Planned Stay Time/Total Dose Precautions
Emergency Personnel Radiation Exposures (ERPIP 4.6.1)
Proper Dosimetry
Procedures to be Used: _____
Other (Specific Information list here)

_____

_____

_____

Offsite Team Members Briefed: _____ / _____
Initials Time

-NOTE-

Ensure each team member is equipped with the appropriate equipment.

3.8 If the nature of gaseous release indicates the potential for significant levels of iodine (greater than 40 MPC-h of exposure), consider immediate administration of radioprotective drugs to all OFMT members prior to field dispatching in accordance with ERPIP 4.5.4.1, if adequate respiratory protection devices are not available.

3.9 Initiate ERPIP 4.3.1 and dispatch at least one OFMT to survey affected EPZ sectors and zones in accordance with ERPIP 4.3.1.

ERPIP 4.3.1 Initiated and OFMT Dispatched: _____ / _____
Initials Time

-NOTE-

Document all OFMT data received on EXHIBIT 4.1.15-A, RAD OFFSITE MONITORING FORM.

3.10 When release is directed over the Bay towards Dorchester County (within the 10 mile EPZ), request the SEC to provide helicopter assistance from the BG&E dispatcher (use the radiotelephone, frequency 153.605 mhz, and Call Sign KVD 795).

-NOTE-

If company helicopter is unavailable request a helicopter by contacting the Calvert County Emergency Communication Control Center (See Appendix A.5 for Phone No.).

3.10.1 Have the helicopter directed to land at a preselected appropriate landing point at or near the site and at a specified time to pick up OFMT members for aerial monitoring.

Location: _____

Estimated Time of Arrival (ETA): _____

Helicopter Landing Location and ETA Specified:

_____ / _____
Initials Time

-NOTE-

The helicopter should report to helipad near Visitor's Center if radiation levels permit. The helicopter may be considered for monitoring radiological releases from the plant when ground vehicles are unable to accomplish the task. Helicopters should be used minimally for near ground surveys (because of reduced accuracy) unless accessibility by other vehicles is restricted. Minimum

elevation should be 100 feet above ground level. See ERPIP 4.2.1 for communication to and from helicopter.

3.10.2 Determine location of required offsite aerial surveys.

Locations: _____

_____

_____

Locations Determined: _____ / _____
Initials Time

-NOTE-

Describe locations to be surveyed in terms of elevation (in feet) above ground level and specific distance from the site (in miles).

3.10.3 Brief an additional Offsite Monitoring Team (OFMT) of the helicopter landing location, the time, and on present plume conditions.

Additional Survey Team Briefed: _____ / _____
Initials Time

3.10.4 Direct the OFMT to obtain an Emergency Monitoring Kit (Mobile), radio suitable for use from helicopter (special radio), and to meet the helicopter, establish radio contact with the ECC and initiate survey.

3.10.5 Brief team on required survey locations.

Helicopter Survey Team Briefed and Dispatched:

_____ / _____
Initials Time

-NOTE-

Required surveys should be (as a minimum):

1) Cross-plume measurement to establish plume centerline and plume width.
2) Dorchester County (Western populated section within the 10 mile EPZ).
3) Perform ERPIP 4.4.1 Procedure 3.4 every 15 minutes when plant main vent monitor is off scale or inoperable and release is directed through main vent.
4) Specific points defined by RAD.

3.11 Log all data received from all OFMTs on EXHIBIT 4.1.15-A, RAD OFFSITE MONITORING FORM, and keep SEC posted on specific dose rates.

Indicate additional SEC Notifications on EXHIBIT 4.1.15-A.

-NOTE-

Plot field measurement data and projected doses, as calculated, for determination of the projected versus actual dose correlation and for revision of projections.

3.12 Determine the offsite projected exposure durations by obtaining expected radiological release times from the Control Room for continuous radiation release and notify the SEC.

Data Recorded on EXHIBIT 5.2-A and the SEC Notified:

_____ / _____
Initials Time

3.13 Have Environmental Services Coordinator (ESC) provide confirmatory offsite data (e.g. Environmental TLDs, etc.) to the RAD at intervals determined by projected dose rate estimates and offsite exposure duration estimates which exceed 100 mrem dose. Record all data on EXHIBIT 5.2-A.

ESC Contacted:

_____ / _____
Initials Time

-NOTE-

1. The Environmental TLDs should be replaced by the ESC and processed at four hour intervals, when necessary (see ERPIP 4.3.2), and the confirmatory doses provided to the RAD. TLD data should be required from specific Sectors/Zones within the plume exposure pathway as a priority over other areas.

2. If Radiologically advisable and with the cooperation of ESC, instruct OFMTL to have his members collect and replace Environmental TLD's at designated Environmental Radiation Monitoring Sample Points. (See Exhibits 4.1.25 - C and D). Collected TLD's are to be delivered to CETS Mobile Unit for processing.

3.14 When directed by the SEC, communicate directly with the Calvert County EOC and report projected offsite dose information to them (Follow-Up Communications).

-NOTE-

After EOC has notified the plant that Division of Radiation Control (DRC) has been activated, follow-up communications will be provided

to the 10 mi EPZ Counties, MCDDPA EOC and DRC.

Dose Information Reported To Calvert EOC and Communication Recorded on EXHIBIT 5.2-A: _____ / _____
Initials Time

-NOTE-

Obtain confirmatory dose and exposure rate data throughout sufficient areas in the plume sector/zones to re-evaluate plume characteristics and actual doses received in area. Include SRDs, TLDs, field surveys, trends, etc. Document data on EXHIBIT 5.2-A and EXHIBIT 4.1.15-A, as appropriate.

3.15 Implement ERPIP Appendix C.1, C.2, and C.3, assessment goals for Immediate Response, as necessary to obtain: a more accurate assessment of severity; of the quantities, balances and major release pathways associated with various plant conditions; of dispersion of fission products in the environment; and on dose projection including the back-calculation of the fission product source based on field measured exposure rates or air concentrations.

ERPIP Appendix C.1, C.2, and C.3 Implemented (circle as appropriate): _____ / _____
Initials Time

3.16 Advise the SEC on the habitability of the ECC (or Alt ECC) and actions to be taken with non-CCNPP personnel working on the area. Should the area be 0.5 mR/hr actual or projected, individuals without personnel dosimetry should be dismissed, asked to return to normal off-site work locations, or, if habitable, move to the "other" emergency control center.

3.17 Advise the SEC on recommended protective actions to the population-at-risk (ERPIP 4.4.8 and 4.5.6).

Protective Action: None Recommended

Recommended

Location (Sector/Zone): _____ Action: _____

_____ _____

_____ _____

_____ / _____
Initials Time

EXHIBIT 4.1.15-A

RAD OFFSITE MONITORING FORM

Date: _____ Name: _____

INITIALS/TIME	TEAM LEADER/NO.	LOCATION	EXPOSURE RATE (Shielded)	SEC NOTIFIED ( )

ASSEMBLY AREA LEADER CHECKLIST

1.0 RESPONSIBLE INDIVIDUAL

The Assembly Area Leader (AAL) is responsible for the following:

1.1 Account for all personnel designated to report to the assembly area.

1.2 Report accountability status to South Gate Security within 30 minutes of an announced assembly.

1.3 Complete and sign accountability forms.

1.4 Provide liaison between the assembly area personnel and the SEC when an unsafe condition or accident is identified or discovered.

1.5 When directed by the SEC, assist Security in the search for missing personnel.

2.0 CONDITIONS AND PREREQUISITES

2.1 SEC has instructed plant personnel to report to their designated assembly areas.

3.0 ACTIONS AND LIMITATIONS

(At the designated assembly area per SEC instructions.)

-CAUTION-

NOTIFY ALL APPROPRIATE PERSONNEL OF YOUR NAME, THE KEY PERSONNEL POSITION YOU ARE ASSUMING, AND THE NAME OF THE PERSON YOU REPLACE.

APPROPRIATE PERSONNEL NOTIFIED: _____ / _____
Initials Time

-NOTE-

1. All personnel (except SEC, RPD, RAD, TSCD and OSCD) should report to their assembly area for accountability when directed by SEC.

2. Checklists are to be used as determined by the AAL. Spaces for initials and times are to be utilized, as necessary to clarify the status.

3. The Control Room may announce a sequential release of assembly areas.

3.1 Reporting Directly to Designated Assembly Area.

3.1.1 When plant personnel have been instructed to report to their designated assembly area, immediately proceed to your assigned assembly area. (See Appendix A.1, Table 2 for Assembly Areas)
Designated Assembly Area: _____

_____ _____
Name Time

3.1.2 Initiate personnel accountability and hold all personnel at the assembly area until directed by the SEC. Log all unaccounted personnel on the EMERGENCY ACCOUNTABILITY FORM., EXHIBIT 4.1.21-A.

-NOTE-

When emergency centers and teams are activated by SEC, ensure that emergency response personnel (See App. A.1 Table 1 for names) from your assembly area, report to the OSC (Outage Planning Room). Team members will be dispatched from there by the OSCD as required.

3.1.3 Ensure all SEC instructions are promptly relayed to the assembly area personnel.
Further Instruction (if applicable): _____
_____
_____
_____
Assembly Area Personnel Briefed:

_____ /
Initials Time

3.1.4 Ensure proper completion of the EMERGENCY ACCOUNTABILITY FORM, EXHIBIT 4.1.21-A.

3.1.5 Notify South Gate Security of the accountability results within thirty (30) minutes using the plant telephone system.
ESTL Notified: _____ /
Initials Time

-NOTE-

The ESTL will notify the SEC of these results.

Avoid unnecessary use of communications equipment.

3.1.6 Ensure EMERGENCY ACCOUNTABILITY FORM is given to Security at South Gate or Perimeter Control Point immediately.

Log Given to Security: _____/_____
Initials Time

3.1.7 Notify the Radiation Protection Director (RPD) at the ECC if an Assembly Area Monitoring Team Leader (AAMTL) fails to monitor your area within 30 minutes if a Radiological Event has occurred.

RPD Notified: _____/_____
Initials Time

3.1.8 When directed by the SEC, personnel should evacuate the site via their assigned route and the perimeter control point. Record the alternate assembly area on the EMERGENCY ACCOUNTABILITY FORM, EXHIBIT 4.1.21-A.

Alternate Assembly Area: _____

_____

Recorded on EXHIBIT 4.1.21-A: (if applicable)

_____/_____
Initials Time

3.2 Evacuation via the Perimeter Control Point

3.2.1 All personnel being evacuated should proceed through the Security Guard House area in an orderly manner (allowing for radiation monitoring by Gate and Access Monitoring Team (GAMT) or portal monitor if operating) to the plant parking lot.

3.2.2 Upon release, personnel are to leave the site via the perimeter control point.

3.2.3 Security will be responsible for accountability at the perimeter control point.

3.2.4 Security shall notify the ECC/SEC of the accountability results immediately using a radio-telephone.

ECC/SEC Notified: _____/_____
Initials Time

3.2.5 All personnel shall have been monitored, as necessary, prior to release from the perimeter control point.

EXHIBIT 4.1.21-A

EMERGENCY ACCOUNTABILITY FORM

Assembly Area _____

Initials/Date _____

The following personnel have not reported to me within an estimated reasonable time.

	NAME	*POSSIBLE LAST LOCATION
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		

*If Unknown, write "UK"

ACCOUNTABILITY INCOMPLETE

NOTIFIED ESTL (South Gate) _____ / _____

Assembly Area Leader Time

ACCOUNTABILITY COMPLETE

NOTIFIED ESTL (South Gate) _____ / _____

Assembly Area Leader Time

When completed, report accountability within 30 minutes to ESTL and immediately thereafter, transmit this sheet to Security (South Gate or Perimeter Control Point).

-NOTE-

This Section Has Been Deleted

- CAUTION-

IN ORDER TO ENSURE OPEN LINES ON THE PAGING SYSTEM DURING AN EMERGENCY SITUATION, WHENEVER THE TECHNICAL SUPPORT CENTER IS ACTIVATED, LINES 4 AND 5 SHALL BE RESERVED FOR COMMUNICATIONS BETWEEN THE TECHNICAL SUPPORT CENTER, OPERATIONAL SUPPORT CENTER, CONTROL ROOM, AND EMERGENCY CONTROL CENTER.

4.2 FOLLOW-UP COMMUNICATIONS (BEFORE DRCAAC ACTIVATION)

Follow-Up Communications are made to allow time for the mobilization of the appropriate units required to assist the plant staff in mitigating the consequences of the emergency conditions. Follow-up communications switches from the ECC to the EOC when the EOC is manned.

- NOTE -

The following steps should be completed at the ECC by the designated SEC, the Emergency Communicator, or an interim Emergency Communicator as directed by the SEC.

Actions required for Follow-Up Communications include:

4.2.1 Record communications data on the FOLLOW-UP COMMUNICATIONS CHECKLIST, EXHIBIT 4.2-A.

4.2.2 Refer to Appendices A.3 and A.5, as necessary to determine the telephone numbers of agencies and centers.

4.2.3 Contact the agencies and centers in the order shown on the Follow-Up Communications Checklist, circle each acronym as called, and communicate the information, document the call on EXHIBIT 4.2-C, EMERGENCY COMMUNICATION FORM.

4.2.4 Record all questions asked that augment the information on the FOLLOW-UP COMMUNICATIONS CHECKLIST EXHIBIT 4.2-A.

Questions Recorded: _____ / _____
Initials Time

4.2.5 Obtain answers from responsible sources and record all answers to questions from Step 4.2.6 on the FOLLOW-UP COMMUNICATIONS CHECKLIST, EXHIBIT 4.2-A.

Answers Recorded: _____/_____
Initials Time

4.2.6 Transmit answers as directed by SEC.

Answers Transmitted: _____/_____
Initials Time

4.3 FOLLOW-UP COMMUNICATIONS (AFTER DRCAAC ACTIVATION)

This section is identical to section 4.2 EXCEPT communication with the (Maryland Department of Health and Mental Hygiene) DRCAACC is now possible.

5.0 COMMUNICATIONS FROM THE TECHNICAL SUPPORT CENTER DIRECTOR/OPERATIONAL SUPPORT CENTER DIRECTOR

5.1 The Technical Support Center Director (TSCD) is responsible for all communications made from the Technical Support Center (TSC) and the Operational Support Center Director (OSCD) is responsible for all the communications made from the Operational Support Center (OSC).

- NOTE -

In order to ensure open lines on the page during an emergency situation, whenever the Technical Support Center is activated, lines 4 and 5 shall be reserved for communications between the Technical Support Center, Operational Support Center, Control Room, and Emergency Control Center.

Establish communications with the Emergency Control Center and Control Room with the following communication lines.

5.1.1 C & P Telephone _____/_____
Initials Time

5.1.2 Dedicated Telephone _____/_____
Initials Time

5.1.3 Data Link (TSC only) _____/_____
Initials Time

- NOTE -

The preferred method of communication is the use of dedicated phones to contact county EOC's and State Civil Defense from the control room, TSC or ECC.

EXHIBIT 4.2-B

EMERGENCY MESSAGE FORM

DATE: __/__/__

TIME: _____

TYPE OF RECEPTION: ( ) RADIO
(check one) ( ) DEDICATED PHONE
( ) _____

FROM: ( ) SEC
( ) RAD
( ) TSC
( ) RPD
( ) CR
( ) _____

TO: ( ) SEC
( ) RAD
( ) TSC
( ) RPD
( ) CR
( ) _____

(Distribute copies of this form to Personnel checked. Maintain white copy for file.)

MESSAGE: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____
Communicator Signature

EXHIBIT 4.2-C

EMERGENCY COMMUNICATION FORM

Date of Initial Communications: _____

LOG NO.	Time of Call	FROM	TO	REMARKS

-NOTE-

Complete this form when time permits using communication information logged on Exhibit 3.1-A, 4.2-A, and 4.2-B.

Instrument Types Established: _____ / _____
Initials Time

3.6 If directed to use a Beta radiation detector (E-520 with shield open), proceed as follows:

3.6.1 Traverse a 10ft by 10ft ground area slowly holding the detector horizontally with open window facing down and approximately 6 inches above the ground. Determine the average gross beta-gamma reading over a survey period of three minutes. Record the results on EXHIBIT 4.3.1.1-B.

Beta-Gamma Gross Exposure Rate Recorded: _____ / _____
Initials Time

3.6.2 Measure the background beta-gamma exposure rate by closing the detector shield and averaging over a one-minute period. Position the detector as shown in EXHIBIT 4.3.1.1-C. Record the results on EXHIBIT 4.3.1.1-B.

Beta-Gamma Background Recorded: _____ / _____
Initials Time

3.6.3 Determine the net Beta exposure rate by subtracting background exposure rate from gross exposure rate. Record results on EXHIBIT 4.3.1.1-B.

Net Beta exposure Rate Recorded: _____ / _____
Initials Time

- CAUTION -

RECORD INSTRUMENT METER READING ONLY. DO NOT APPLY BETA CORRECTION FACTOR.

3.7 If directed to use a Gamma radiation detector (SPA-3 with MS-2), proceed as follows:

3.7.1 Traverse the survey area slowly while monitoring an area of approximately 10ft by 10ft. Make three one-minute counts holding the instrument probe horizontally at a distance of approximately 6 inches above the ground. Record the three Gross Gamma Counts and time on EXHIBIT 4.3.1.1-B.

Gross Gamma Counts Recorded: _____ / _____
Initials Time

3.7.2 Perform a one-minute background count by positioning the detector (active area) on lead bricks. Position the detector on the central portion of the lead bricks in order to shield the detector from the ground as shown in EXHIBIT 4.3.1.1-C. Record the results and time on EXHIBIT 4.3.1.1-B.

Gamma Background Recorded: _____ / _____
Initials Time

3.7.3 Determine the net Gamma counts per minute by subtracting the background counts per minute (3.7.2 above) from the gross counts per minute (3.7.1 above). Record the results on EXHIBIT 4.3.1.1-B.

Net Gamma Counts Per Minute Recorded: _____ / _____
Initials Time

3.8 Report as appropriate to initial directive, the net exposure rate (mR/h) for beta, and or net counts per minute (CPM) for gamma and the specific associated location to the RAD.

Survey Data Reported: _____ / _____
Initials Time

3.9 Repeat steps 3.5, 3.6, and 3.7 until RAD directs that this operation be secured.

Directed to Secure Operation: _____ / _____
Initials Time

3.10 Request further instructions from RAD.

Further Instructions Requested: _____ / _____
Initials Time

- CAUTION -

IF RELIEVED BY A NEW OFMT MEMBER, FULLY BRIEF THE MEMBER ON THE STATUS OF THE SURVEYS.

EXHIBIT 4.3.1.1-A
MONITORING TEAM ACTION FORM

Action Taken/Date	Time / Name	Findings

EXHIBIT 4.3.1.1-B

GROUND DEPOSITION SURVEY FORM

E-520
SERIAL NUMBER _____

Survey Location	Time/Date of Survey	GROSS Beta-Gamma (mR/h) (OPEN WINDOW)	BACKGROUND GAMMA (mR/h) (CLOSED WINDOW)	NET BETA (mR/h)	RAD NOTIFIED TIME / NAME

MS-2/SPA-3
SERIAL NUMBER _____

Survey Location	Time/Date of Survey	GROSS Gamma (cpm)	- BACKGROUND GAMMA (cpm)	= NET GAMMA (cpm)	RAD NOTIFIED TIME / NAME

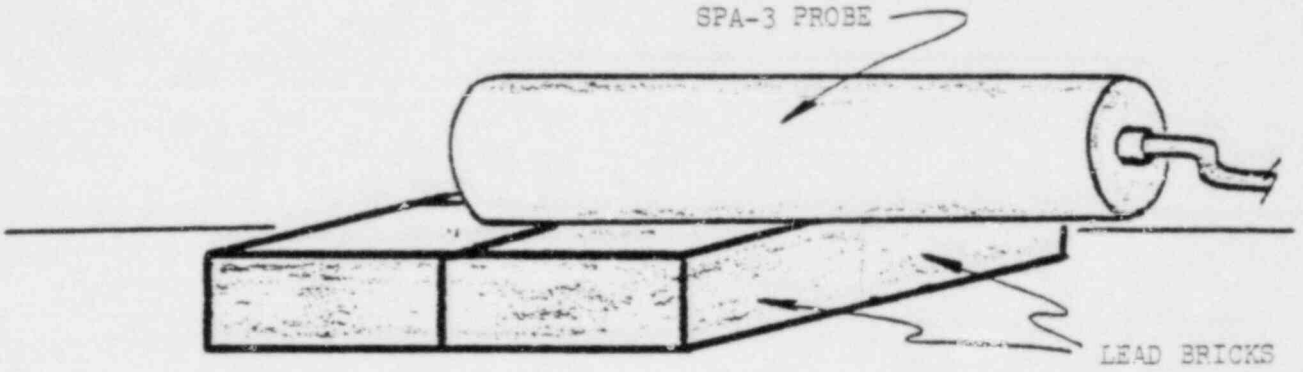
		GROSS	BKGRND	NET (cpm)	

		GROSS	BKGRND	NET (cpm)	

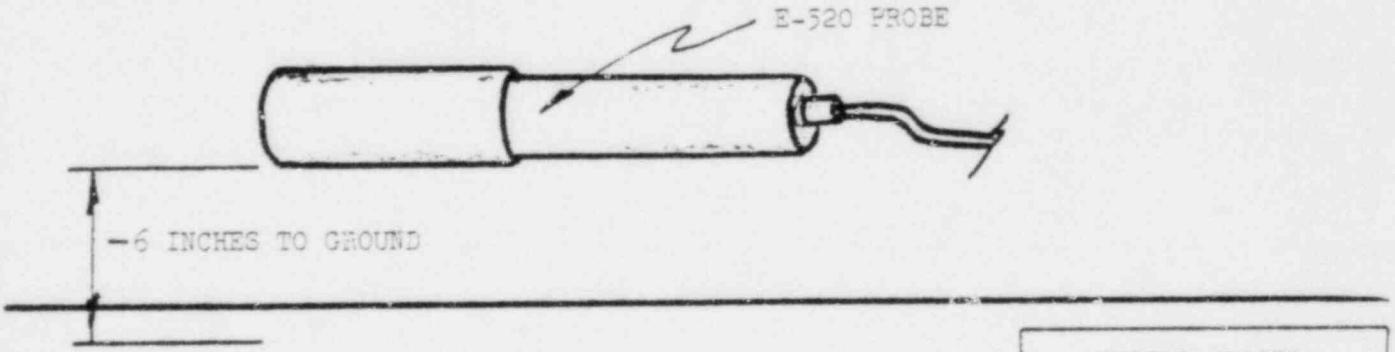
		GROSS	BKGRND	NET (cpm)	

EXHIBIT 4.3.1.1-C

BACKGROUND MEASUREMENT GEOMETRY



FOR GAMMA



SHIELD CLOSED
(FOR BACKGROUND)

SHIELD OPEN
(FOR BETA MEASUREMENT)

FOR BETA

TITLE: ASSESSMENT ACTIONS

-CONTENTS-

-NOTE-

Appendix B.3, p.5, includes a Calculation Form to be used as necessary for calculations.

EXHIBIT 4.4.1-B, continued

Part B

QUICK DOSE ESTIMATE BASED ON STATION VENT MONITOR AND METEOROLOGICAL TOWER DIRECTION READINGS

Step 3. Circle the conversion factor below that corresponds to the band width.

Band Width Divisions	or	Band Width Degrees	Stability Class	Conversion Factor
2-1/2		75	A	2×10^{-5}
2		60	B	1×10^{-4}
1-1/2		45	C	2×10^{-4}
1		30	D	5×10^{-4}
1/2		15	E	2×10^{-3}
1/4		7-1/2	F	6×10^{-3}
1/6		5	G	3×10^{-2}

Step 4. Multiply the sum of the vent monitor reading in Step 1 by the circled conversion factor in Step 3. This value represents the projected whole body exposure rate (mrem/h) at the site boundary. Conversion factor _____ times monitor reading ___ = ____ mrem/h.

Step 5. This procedure if applicable must be repeated every 15 minutes while the emergency condition exists.

EXHIBIT 4.4.1-C

QUICK DOSE ESTIMATE BASED ON STATION VENT MONITOR, NO METEOROLOGICAL DATA READILY AVAILABLE

Step 1. Record the combined station vent monitor readings for U-1 and U-2 (U1-RE-5415 and U2-RE-5415) and note whether monitor readings (over the last five minutes) appear to be increasing, decreasing or staying about the same.

U-1 Vent Monitor Reading ____ Counts per minute @ ____ time

U-2 Vent Monitor Reading ____ Counts per minute @ ____ time

Sum of Readings ____ Counts per minute @ ____ time

Check as appropriate:

	U-1	U-2
increasing	___	___
holding steady	___	___
decreasing	___	___

Step 2. Estimate the Atmospheric Stability Conditions based on the conditions listed below:

	Sunny Day	Cloudy Day	Cloudy Day	Clear Night
light wind or calm ($\leq$ 4m/s) =($\leq$ 9.8 mph)	B	C	E	F
moderately strong wind ($\geq$ 4m/s) = ($\geq$ 9.8 mph)	C	C	D	D

Step 3. Circle the conversion factor below that corresponds to the estimated atmospheric stability conditions.

Condition	Conversion Factor
B	1×10^{-4}
C	2×10^{-4}
D	5×10^{-4}
E	2×10^{-3}
F	6×10^{-3}

Step 4. Multiply the sum of the monitor readings in Step 1 by the circled conversion factor in Step 3. This value represents the projected whole body dose rate (mrem/h) at the site boundary.

Conversion Factor ____ x monitor reading ____ = ____ mrem/h

Step 5. This procedure if applicable must be repeated every 15 minutes while the emergency condition exists.

EXHIBIT 4.4.1-D

QUICK DOSE ESTIMATE BASED ON INPLANT DIRECT RADIATION READINGS AND METEOROLOGICAL DATA

-NOTE-

This procedure assumes that a release is taking place through the station vent.

Step 1. Determine the sum of the main vent exposure rates (R/h) at a location about 10 meters (30 ft) from the station vent exhaust duct, and note trend in radiation level.

U-1 Monitor Reading _____ R/h @ _____ time

U-2 Monitor Reading _____ R/h @ _____ time

Total Exposure Rate (U-1 + U-2) = _____ R/h

Check as appropriate:	U-1	U-2
exposure rate increasing	____	____
holding steady	____	____
decreasing	____	____

Step 2. Determine Meteorological Stability Class (by method in EXHIBIT 4.4.1-A if possible; otherwise by method in EXHIBIT 4.4.1-B or C).

Stability Class _____ @ _____ time

Circle appropriate conversion factor listed below:

Stability Class	Conversion Factor
A	1
B	6
C	10
D	30
E	90
F	300
G	1,000

Step 3. Multiply appropriate conversion factor (Step 2) by main vent exposure rate (Step 1).

Product is projected site boundary dose rate in mrem/h.

Conversion Factor ____ x monitor reading in R/h ____ = ____ mrem/h.

Step 4. This procedure if applicable must be repeated every 15 minutes while the

ERPIP NO.: 4.4.7.2 / REV. 5
DATE: November 11, 1981

TITLE: POST ACCIDENT CONTAINMENT ATMOSPHERE SAMPLING AND ANALYSIS

This Section has been deleted

attached to the mask itself.

3.3.8 Take care to insure that regulators are not damaged while working in confined areas.

3.3.9 Use glove boxes, hoods, contamination containment devices or other engineering controls whenever practical to eliminate or minimize the need for respiratory equipment.

3.3.10 Refer to RCP 3-805 for specific adjustments to be made on flow rates for respirator maintenance.

3.4 Documentation

3.4.1 Fill out Form RCP 3-805-1 whenever a respirator is used.

3.4.2 Fill out Form RCP 3-805-2 if an individual is exposed to 0.1 MPC or greater airborne activity.

EXHIBIT 4.5.3-A

GUIDANCE FOR RESPIRATORY PROTECTION

Consider Particulate and Iodine separately in mixed airborne fields and select respiratory protection to meet the most restrictive case. Table 6.9.1 of the Technical Specifications shall also be used as a guide.

(C_i/MPC_i)	Recommended (2)	Acceptable (2)
A. Particulate		
< 1/10	No respirator	Use respirator if other conditions warrant.
≥ 1/10 but 10	Cartridge or cannister with PF (1) = 100	No respirator but record MPC-h < 10 h/wk.
≥ 10 but 100	Atmosphere - supplying Respirator PF = 1000	Cartridge or cannister and record MPC-h < 10 h/wk.
≥ 100	Atmosphere-supplying Respirator and record MPC-h < 10 h/wk.	- -
B. Iodine		
< 1/10	No respirator	Use respirator if other conditions warrant.
≥ 1/10 but 10	Filter cartridge (PF=1) and record MPC-h< 10 h wk.	No respirator but record MPC-h < 10 h/wk.
≥ 10 but 100	Atmosphere-supplying respirator PF = 1000	Filter cartridge PF = 1, record MPC-h ≤10 h/wk
≥ 100	Atmosphere-supplying respirator. PF = 1000 record MPC-h < 10 h /wk.	- -

(1) PF = protection factor

(2) Form RCP 3-805-1 is to be filled out whenever a respirator is issued.

(3) A log will be kept to ensure that no individual normally exceeds 10 MPC-h/wk. airborne exposure. Form RCP 3-805-2 is to be filled out if an individual is exposed to 0.1 MPC or greater airborne activity.

TITLE: ONSITE ADMINISTRATION OF RADIOPROTECTIVE DRUGS

1.0 RESPONSIBLE INDIVIDUAL

1.1 The Radiation Protection Director and/or Radiological Assessment Director are responsible to evaluate need for administration of radioprotective drugs to "high risk" onsite emergency personnel.

1.2 The Calvert Cliffs Physician Assistant or the Plant Health Physicist is responsible for dispensing the radioprotective drugs for use in an emergency.

2.0 CONDITIONS AND PREREQUISITES

A release of gaseous radioactive materials from which any onsite individual is expected to receive thyroid dose greater than 0.9 rem (40 MPC-h for $\sum \frac{C\ Iodine}{MPC\ Iodine}$) from airborne radioiodine.

3.0 ACTIONS AND LIMITATIONS

-NOTE-

If the nature of the gaseous release indicates the potential for significant levels of iodine consider immediate administration of radioprotective drugs to Offsite Monitoring Teams prior to survey initiation.

3.1 Remove personnel from areas of high radioiodine concentration (as advisable considering personnel and plant safety) and/or consider making stable iodine as a thyroid blocking agent available for proper administration.

3.2 If a thyroid blocking agent is to be administered, assure that single doses consisting of: (1st Priority) 2 or 3 drops (or 100 mg) of Saturated Solution of Potassium Iodide (SSKI) in a glass of water, or (2nd Priority) 1 tablet (130 mg) are administered to affected individuals as soon as possible.

-NOTE-

Administration of SSKI is preferably done within two hours of exposure; however, if this time is impractical, administration beyond two hours will still reduce the biological half life of the radioiodine. Approximately 300 doses of SSKI are located in the Controlled Area First Aid Room at El. 69' of the Auxiliary Building. Approximately 5000 doses are located in the Service Building Medical Office.

3.3 Consult the BG&E Medical Director (phone no. in Appendix A.3) for

EXHIBIT 4.5.4.1-1

RADIOPROTECTIVE DRUG ADMINISTRATION RECORD

DATE	TIME	ADMINISTERED TO	Emp. CONTROL #	DRUG	DOSE	COMMENTS

DISPENSED BY: (Signature)

TITLE: OFFSITE ADMINISTRATION OF RADIOPROTECTIVE DRUGS (NON BG&E)

1.0 RESPONSIBLE INDIVIDUAL

The Site Emergency Coordinator, as advised by the Radiation Assessment Director, is responsible to inform State and local authorities that they may consider the use of radioprotective drugs.

2.0 CONDITIONS AND PREREQUISITES

2.1 Conditions exist as indicated in steps 3.1 through 3.4.

2.2 Procedure implemented as directed by SEC.

-NOTE-

Radioprotective drugs indicated to be of possible value by CCNPP SEC, RPD, and RAD may be:

Made accessible by CMH Administrators
Dispersed as directed by BG&E Medical Director
Administered by Public Health Officials
Continued as determined by Public Health Officials

3.0 ACTIONS AND LIMITATIONS

_____ / _____
action initiator date

3.1 If the projected thyroid dose to "high-risk" emergency personnel is greater than projected doses to thyroid as described in EXHIBIT 4.5.6-D, inform State and local agencies so they may consider prompt administration of blocking agents.

Informed: _____ / _____
Initials Time

-NOTE-

"High-risk" emergency personnel includes police officers, firemen, physicians, nurses, ambulance drivers, paramedical personnel and radiation monitoring personnel who respond to the emergency.

3.2 If the projected thyroid dose to offsite personnel is approaching but less than 10 rem, inform State and local Health authorities that they may consider instructing people to remain indoors and await further instructions.

Informed: _____ / _____
Initials Time

3.3 If the projected thyroid dose to persons offsite is greater than 10 rem, inform State and local health authorities so they may consider administration of stable iodine as a thyroid blocking agent.

Informed: _____ / _____
Initials Time

-NOTE-

A stock of approximately 5,000 doses of standard solution of potassium iodide, (SSKI), is maintained at the pharmacy at Calvert Memorial Hospital in Prince Frederick, Maryland for local support services' emergency team workers.

3.4 If the projected thyroid dose to persons offsite is expected to be greater than 30 rem, inform State and local health authorities so they may consider administration of a single dose of stable iodine to each affected individual if he is not evacuated.

Informed: _____ / _____
Initials Time

TITLE: EMERGENCY WORK PERMITS AND EXPOSURE CONTROL

1.0 RESPONSIBLE INDIVIDUALS AND OBJECTIVES

The Radiation Protection Director is responsible to the Site Emergency Coordinator to ensure that this procedure is appropriately implemented and acts as the Emergency Reentry Monitoring Team Leader for initial entry and all subsequent entries until radiological conditions are defined and posted.

The Emergency Reentry Monitoring Team Leader/Member is responsible to the Radiation Protection Director for the preparation of Emergency Work Permit (EWP).

Emergency workers and team leaders are responsible to the Site Emergency Coordinator for ensuring that emergency worker exposures are maintained within the guidelines of this procedure and ALARA to the extent possible.

2.0 CONDITIONS AND PREREQUISITES

2.1 As directed by the SEC following declaration of Alert, Site Emergency, or General Emergency.

2.2 EF PIP 4.6.1 provides guidelines on "Emergency Personnel Radiation Exposures."

3.0 ACTIONS AND LIMITATION

3.1 PRIOR TO AUGMENTATION OF SITE'S SHIFT EMERGENCY ORGANIZATION (i.e. PRIOR TO ARRIVAL OF RPD)

3.1.1 LIFESAVING (RESCUE) MISSIONS - under plant accident conditions with suspected abnormally high exposure rates (> 10 R/h) and/or airborne activity.

- CAUTION -

THIS GUIDELINE APPLIES TO THE REMOVAL OF INJURED PERSONS IF THE SAVING OF LIFE IS POSSIBLE, OR ENTRY TO PREVENT CONDITIONS THAT, IF LEFT UNCORRECTED, COULD LEAD TO DAMAGE OR RELEASES THAT WOULD PROBABLY INJURE NUMBERS OF PEOPLE ON OR OFF SITE.

IT MAY BE NECESSARY TO LIMIT DRASTICALLY AN EXTENSIVE RESCUE ATTEMPTS OR FIRST AID ACTIONS TO THE MORIBUND. DOSE ESTIMATES OF OVER 2000 RAD FOR EXTERNAL RADIATION OR OVER 2000 R/h FOR SKIN CONTAMINATION WOULD INDICATE THAT LITTLE COULD BE OFFERED TO SUCH CASUALTIES.

3.1.1.1 Entry to be made under pre-approved Emergency Work Permit, EWP#001 shown in EXHIBIT 4.8.1-B for life saving missions when radiological conditions are unknown. When conditions are known the ERMTL shall prepare a new EWP prior to the entry. (See Section 3.1.1.4 for exception).

3.1.1.2 Ensure that all entry personnel are wearing the proper protective equipment and personnel dosimetry. Complete EXHIBIT 4.8.1-H. Obtain from Emergency Reentry Equipment Locker located at the 69' Elevation, Auxiliary Building.

- CAUTION -

DONNING OF PROTECTIVE CLOTHING AND EQUIPMENT SHOULD NOT INTERFERE WITH IMMEDIATE LIFE-SAVING (RESCUE) EFFORTS BY FIRST REPORTING PERSONNEL. PROPERLY EQUIPPED TEAM MEMBERS WHEN AVAILABLE SHOULD PROMPTLY RELIEVE FIRST REPORTING PERSONNEL.

3.1.1.2.1 Clothing requirements may be notified by Interim RPD based on suspected conditions.

3.1.1.3 Obtain authorization from the interim RPD and SEC when exposures are expected to exceed the limits set forth in 10 CFR 20 (>3 rem/qtr).

- NOTE -

Guidelines for exposure control in excess of 3 rem/qtr are found in ERPIP 4.6.1 for lifesaving cases.

3.1.1.4 The SEC may, at his discretion and as conditions warrant, defer requirements for an EWP, or portions thereof, prior to entry into a radiation area and give his authorization verbally.

3.1.1.4.1 An EWP shall be completed by the ERMTL for a verbally

authorized entry, as time permits, after the entry.

3.1.1.5 Entry shall be made such that radiation exposures are maintained as low as possible commensurate with radiation levels and lifesaving task.

3.1.1.5.1 Preplanned exposure limit for entry personnel shall be set prior to entry.

3.1.1.5.2 The maximum preplanned emergency personnel radiation exposure limit shall not exceed 100 rad. (ERPIP 4.6.1)

3.1.1.6 Entry personnel must be supervised and escorted by a ERMT member.

3.1.2 ACCIDENT MITIGATION OR PLANT SAVING MISSION - under plant accident conditions with suspected abnormally high exposure rates (10R/h) and/or airborne activity.

- CAUTION -

THIS GUIDELINE APPLIES TO ENTRIES WHERE IT IS NECESSARY TO ENTER A HAZARDOUS AREA TO PROTECT THE FACILITY, ELIMINATE FURTHER ESCAPE OF EFFLUENTS, OR TO CONTROL FIRES.

3.1.2.1 Entry to be made under pre-approved Emergency Work Permit, EWP#002 shown in EXHIBIT 4.8.1-C, for Accident Mitigation or Plant Saving Missions when radiological conditions are unknown. When conditions are known the ERMTL shall prepare a new EWP prior to the entry (See Section 3.1.2.4 for exception).

3.1.2.2 Ensure that all entry personnel are wearing the proper protection equipment and personnel dosimetry. Complete EXHIBIT 4.8.1-H. Obtain from Emergency Reentry Equipment Locker located at the 69' Elevation, Auxiliary Building.

3.1.2.2.1 Clothing requirements may be modified by the Interim RPD based on suspected conditions.

3.1.2.3 Obtain authorization from the Interim RPD and SEC when exposures are expected to exceed the limits set forth in 10CFR20 (>3 rem/qtr).

- NOTE -

Guidelines for exposure control in excess of 3 rem/qtr are found in ERPIP 4.6.1 for facility protection actions.

3.1.2.4 The SEC may, at his discretion and as conditions warrant, defer requirements for an EWP, or portions thereof, prior to entry into a radiation area and give his authorization verbally.

3.1.2.4.1 An EWP shall be completed by the ERMTL for a verbally authorized entry, as time permits, after the entry.

3.1.2.5 Entry shall be made such that radiation exposures are maintained as low as possible commensurate with radiation levels and facility saving task.

3.1.2.5.1 Preplanned exposure limit for entry personnel shall be set prior to entry.

3.1.2.5.2 The maximum preplanned emergency personnel radiation exposure limit shall not exceed 25 rad (see ERPIP 4.6.1).

3.1.2.6 Entry personnel are to be supervised and escorted by ERMT member.

3.1.3 Other RE-ENTRY MISSIONS

3.1.3.1 Post Accident Reactor Coolant Sampling - See EWP #003, EXHIBIT 4.8.1-D.

3.1.3.2 Post Accident Reactor Coolant Analysis - See EWP #004, EXHIBIT 4.8.1-E.

3.1.3.3 Post Accident Containment Sampling & Analysis - See EWP #005, EXHIBIT 4.8.1-F.

3.2 UPON AUGMENTATION OF SITE'S SHIFT EMERGENCY ORGANIZATION

3.2.1 Members of the Dosimetry Team, as designated by the Team Leader, shall perform the following actions:

3.2.1.1 Set up a dosimetry area in the Operational Support Center (or where designated by the Team Leader) containing the following items:

A supply of TLDs

A supply of Self Reading Pocket Dosimeters

A supply of the dosimetry forms including:

RCP 3-301-1 Weekly Dosimetry Record

RCP 3-302-3 Visitors Dosimetry Check

Sheet In/Out
RCP 3-705-1 Access Control Card
A supply of pencils and/or pens

3.2.1.2 Complete personnel dosimetry forms and issue proper dosimetry at the Operational Support center for incoming personnel in accordance with RCP 3-302, Exhibit 4.8.1-G and Exhibit 4.8.1-H, as time permits.

3.2.1.3 The RPD may at his direction and as conditions warrant, defer requirements of RCP 3-302, or portions thereof, prior to specific individual's entry into a radiation area and give his authorization verbally. In this event, the exposure limitations of EXHIBIT 4.8.1-G apply.

3.2.1.4 Place TLD's in various areas outside the Protected Area, as specified by the Team Leader.

- NOTE -

The RPD may utilize other available personnel for this function. The DT then would be required to supply TLDs to those persons.

3.2.1.4.1 Record location of TLD(s) on EXHIBIT 4.8.1-I.

3.2.1.4.2 Periodically replace TLDs per team Leader's direction and record readings obtained from TLDs on 4.8.1-I.

3.2.1.5 Collect all "Access Control Cards, "RCP 3-705-1, and all TLDs for exiting personnel for processing, as directed by the Team Leader.

3.2.1.6 Record any and all additional dosimetry on RCP 3-705-1 for each person entering the radiation area.

3.2.2 Members of the Emergency Reentry monitoring Team, as designated by the Team Leader, shall perform the following:

3.2.2.1 Report to the Operational Support Center (or where designated by the Team Leader).

3.2.2.2 Established positive access control to prevent entry of unprepared and unauthorized individuals into hazardous radiation environments.

3.2.2.3 Obtain and complete Emergency Work Permits (i.e. EWP, EXHIBIT 4.8.1-A) prior to allowing personnel to enter a radiation area in accordance with RCP 3-603.

- NOTE -

1. EWPs vice RWPs or SWPs are to be used during the Occurrrence, Emergency and Recovery Phases of the accident. RWP and SWP requirements will be reestablished upon entry into the Restoration Phase of the accident.
2. Preapproved EWP #003, #004, #005 are included as EXHIBITS 4.8.1-D, E & F for Post Accident Reactor Coolant Sampling and Containment Atmospheric Sampling.

3.2.2.4 Require the wearing of high range dosimeters when:

3.2.2.4.1 Entering a radiation field greater than or equal to 10R/h.

3.2.2.4.2 Entering a radiation field of unknown intensities.

3.2.2.5 Require the use of SCBA or iodine-absorbing cartridges, when available, to reduce the intake of iodine if conditions are unknown or if iodine release on site has developed.

- NOTE -

PF for iodine-absorbing cartridges is 1.

3.2.2.6 Direct entry personnel to obtain dosimeters (W.B. TLD, Special dosimetry & SRD's) from the Dosimetry Team in accordance with RCP 3-303 requirements.

3.2.2.7 Obtain authorization for the RWP from the RPD and SEC when exposures are expected to exceed the limits setforth in 10 CFR 20 (> 3 rem/qtr).

- NOTE -

Guidelines for exposure control in excess of 3 rem/qtr may be found in ERPIP 4.6.1.

3.2.2.8 The SEC may, at his discretion and as conditions warrant, defer requirements, for an EWP or portions thereof,prior to entry into a radiation area and give his authorization verbally.

3.2.2.8.1 An Emergency Work Permit shall be completed by the ERMT for a verbally authorized entry, as time permits, after the entry.

- NOTE-

Any person that has received a whole body dose totaling greater than or equal to 5 rem by TLD for the year shall not be permitted to enter a controlled radiation area without approval of the Site

EXHIBIT 4.8.1-I

TLD LOCATION AND LOG SHEET				
TLD Location	TLD#	Time/Date Placed	Time/Date Retrieved	Reading

Signature

EXHIBIT 5.0-A, Continued

S: Personnel Emergency medical procedures and available assistance lists have been reviewed and recent changes have been incorporated in
(1) Plant Hospital Procedure Manuals,
(2) Appendix B of ERP,
(3) ERPIP, as applicable (1st and 3rd quarters)

_____
ERP Coordinator

S: ERPIP reviewed for technical content and accuracy, i.e., sampling methods, protective measures, significant levels (2nd and 4th quarters)

_____
Gen. Supv.-Rad. Safety

S: Discrepancies noted from previous drills reviewed and corrections to ERPIP initiated (2nd and 4th quarters)

_____
Training Coordinator

A: Letters of assistance in ERP from outside agencies verified by phone (3rd quarter).(Complete Exhibit 5.0-C)

_____
ERP Coordinator

A: Review annual exercise critiques/evaluations by Federal and State observers and revise ERP and ERPIP as necessary.

_____
ERP Coordinator

A: ERP submitted to POSRC for annual review (1st quarter).

_____
ERP Coordinator

A: ERPIP has been completely reviewed during previous year and is accurate for use during following time period (Max. 4 quarters).
(Complete Exhibit 5.0-D)

_____
ERP Coordinator

Exercises

A: Scenarios of annual exercises reviewed for inclusion of all events listed in ERPIP 5.5.

_____
ERP Coordinator

EXHIBIT 5.0-A, Continued

A: Scenario for next annual exercise reviewed to assure significant differences from previous annual scenario. — ERP Coordinator

Training and Drills

M: Emergency Security drills have been completed. — Training Coordinator

M: Communications drill with state and local governments within the plume exposure pathway Emergency Planning Zone have been completed. — Training Coordinator

Q: Personnel Emergency Team assignments in Appendix A.1 are up-to-date.
Remarks: — Training Coordinator

Q: Emergency Organization Key Personnel (i.e., SS, SEC, etc.) have received update training. — Training Coordinator

Q: Verified awareness of construction/contractor personnel with respect to their on-site emergency procedures (review training records versus personnel responsibilities). — Training Coordinator

Q: Emergency Fire Team (fire brigade) drills have been completed. — Training Coordinator

Q: Drills involving Emergency Teams and Support personnel have been completed. — Training Coordinator

Q: Emergency Health Physics drills have been completed (at a minimum semi-annually). — Training Coordinator

Q: Communications drill with federal emergency response organizations and state within the

EXHIBIT 5.0-A, Continued

ingestion pathway.	Training Coordinator
S: Technical Support Center Activation Drills have been completed.	Training Coordinator
A: Scenario for next annual exercise developed.	Training Coordinator
A: Personnel Emergency Medical drills have been completed.	Training Coordinator
A: Shift Technical Advisor has received update emergency training.	Training Coordinator
A: Communications drill between the nuclear facility, State and local emergency operations centers and field assessment teams.	Training Coordinator
A: Emergency First Aid and Decontamination Team has received update training.	Training Coordinator
A: Emergency Repair and Damage Control Team has received update training.	Training Coordinator
A: Training conducted within past year to ensure preparedness of local support agencies (2nd quarter).	Tr. Coord./Med. Ass't.

Maintenance and Communications

W: Tests of all dedicated phone lines in Emergency Centers.	ERP Coordinator
M: Communication test with State and local governments within the plume exposure pathway Emergency Planning Zone have been completed.	ERP Coordinator

EXHIBIT 5.0-A, Continued

Q:Communication tests with Federal emergency response organizations and States within the ingestion pathway have been completed.	ERP Coordinator
Q:All Radiac and emergency equipment are within required calibration per RCP's.	Supv.-Rad Support
Q:Phone listings for outside agencies and key personnel verified/updated, Appendix A.2 thru A.5 (1st and 3rd quarters). See Exhibit 5.0-B.	ERP Coordinator
A:All listed phone numbers (rotary file in control room) audited and verified (4th quarter). Complete Exhibit 5.0-B.	ERP Coordinator
A:Communication tests between the facility, State and local emergency operations centers (i.e., Farm Demo Building, Guard House, and Service building) and field assessment teams have been completed.	ERP Coordinator

Inspection and Inventories

M:Respiratory Protection Equipment inspected and inventoried.	Supv.-Rad Support
Q:All equipment listed in Equipment Checklists of Appendix B.1 inspected and inventoried.	ERP Coordinator
S:All Emergency Equipment primary and reserve batteries have been changed out.	Supv.-Rad Support
S:Emergency Medical Equipment inventoried, inspected, replaced, replenished or resterilized as necessary or after use in an emergency.	Physician

TITLE: TRAINING

1.0 OBJECTIVES AND RESPONSIBILITIES

1.1 The primary objectives of the Calvert Cliffs Nuclear Power Plant Emergency Response Plan Training Program are to:

1.1.1 Familiarize appropriate individuals with the Emergency Response Plan and related implementation procedures.

1.1.2 Instruct individuals in their specific roles in order to assure effective assistance during an emergency.

1.1.3 Provide refresher training to familiarize personnel with their present duties and responsibilities.

1.2 Individuals responsible for assuring training objectives are met include:

1.2.1 General Supervisor-Training and Technical Support - is responsible to the Manager-NPD for the overall administrative responsibility for ERP training at CCNPP. Periodic training exercises must be approved by the General Supervisor-Training and Technical Support or a person designated by him, prior to implementation.

1.2.2 The Emergency Response Plan Coordinator - is responsible to the General Supervisor of Radiation Safety for the development, periodic review and distribution of CCNPP ERP and ERPIP. The Emergency Response Plan Coordinator (ERPC) will ensure by review and approved of the content of all ERP training and lesson plans that ERP training and awareness of significant ERP changes are provided to those who may be called on to assist in an emergency and that all areas of ERP training are adequate.

1.2.3 The Supervisor Training - when requested by the ERPC will schedule training sessions, maintain records to document ERP training, qualifications and significant ERP changes, and assist in the preparation of training materials, and conduct emergency response training utilizing qualified instructors from CCNPP Training Unit or others as necessary.

1.2.4 Emergency Organization Key Personnel - are responsible for the training of personnel under their direction during an emergency and

for ensuring that required skills are maintained.

1.2.5 Plant Emergency Personnel - have the responsibility to ensure they become generally familiar with the ERP and specifically familiar with their authority and responsibilities as written in the ERPIPs.

2.0 TRAINING SCOPE

2.1 Individuals having emergency assignments shall be trained in the use of all equipment and functions that may be necessary during an emergency. Training shall be accomplished by formal instruction and by conducting periodic drills. Practical training exercises will be used as a means of training the emergency personnel and alternates along with providing a means of assessing their proficiency and the adequacy of the training lessons.

2.2 Offsite organizations shall be trained with respect to the organization's interface with the licensee's emergency plan and in specialized radiological training, as required.

2.3 Drills and exercises involving varying numbers of personnel and organizations shall be used to provide practical training for all emergency personnel.

2.4 Lesson plans shall be developed (outline or detail) for both formal training and drill instruction.

2.5 All emergency personnel and alternates will be required to satisfactorily demonstrate a comprehensive working knowledge of their working procedures.

3.0 TRAINING SCHEDULES

3.1 The Training Coordinator will utilize the Calvert Cliffs Training Memoranda (CCTM) for scheduling of ERP training sessions at the CCNPP. ERP Training at the CCNPP will extend throughout the year. Emergency organization personnel will participate in annual training sessions oriented toward specific roles within the ERPIP. Drills and exercises shall be administered throughout the year at random intervals to ensure plant and staff readiness for emergency situations and to maximize participation of individuals assigned specific responsibilities. ERPIP NO. 5.5 further delineates the requirements for the implementation of the exercise, test and drill program.

3.2 Training sessions will be determined by the number of appropriate personnel available to attend a session without disrupting the normal shift routine of the plant. Individuals failing to participate in the training session assigned for

them must attend a repeat training session.

3.2.1 Emergency Organization Key Personnel are required to update their training every three months.

3.2.2 Emergency Team members and support personnel are required to participate in emergency training refresher courses every six months.

3.2.3 Retraining and refresher courses must contain the same (or updated) scope and contents as the original training but may be of lesser duration.

3.2.4 Annually, the ERPC with assistance from the Training Coordinator will review the emergency personnel qualification and refresher training records for the previous year. The ERPC will utilize this information to delete or add to the overall complement of Calvert Cliffs personnel assigned specific emergency responsibilities.

4.0 TRAINING DOCUMENTATION

The Training Coordinator shall maintain a record of personnel participation in accordance with CCI-601, Calvert Cliffs Training Memoranda.

4.1 CCTM's will be maintained as documentation of personnel participation in a training session.

4.2 The practical training exercises will be critiqued and a record maintained along with the training records for all emergency personnel and alternates.

4.3 Drill Reports will be maintained as a permanent record of individual and outside agency participation in the ERP Training Exercises.

4.4 Records of Drill Scenarios and the annual review by Training Coordinator will be submitted for the Plant Superintendent's review then maintained as a permanent record by the Training Coordinator.

4.5 Checklists and forms utilized during training and drills pertaining to actions taken shall be maintained as records and shall be reviewed as training tools.

5.0 GENERAL ORIENTATION

Each individual on site, other than escorted personnel, will be required to satisfactorily demonstrate initial orientation on:

5.1 Scope and content of the Emergency Response Plan and the Implementation

Procedures.

5.2 Information concerning notification methods and communications equipment used in the event of an emergency.

5.3 Basic principles of radiological safety including:

5.3.1 "Effects of Radiation"

5.3.2 "Theory and Use of Radiation Detection Devices"

5.3.3 "The Use of Protective Clothing, Equipment and Devices

6.0 INSTRUCTOR TRAINING AND QUALIFICATION

Responsibilities for Emergency Response Plan training are as specified in Section 1.2 of this procedure. Instructors of the Emergency Response Plan and Implementing Procedures are properly trained and qualified prior to conducting training sessions.

6.1 The ERPC shall be considered as a qualified instructor based on continuous awareness of emergency planning regulations and CCNPP, ERP & ERPIP development.

6.2 The Training Coordinator and emergency planning instructors will receive instruction from the ERPC for initial qualification and subsequent update.

6.3 The specialists or consultants as approved by the ERPC (as qualified) may be utilized for ERP or ERPIP training.

6.4 The Emergency Organization Key Personnel are to be trained and qualified by either the ERPC, the Training Coordinator, or in specific areas by specialists or consultants approved by the ERPC.

6.5 General Orientation Training for visiting or non-regular personnel is provided by the Training Coordinator.

7.0 EMERGENCY RESPONSE TRAINING CONTENT

This section identifies the required content for training of Emergency Response Organization Key Personnel. The Supervisor-Training (NPD) will ensure that appropriate lesson plans are developed, updated and approved by the ERPC. Exhibit 5.4-A summarizes in matrix form the emergency procedures training and the supplementry materials training required for each Emergency Response Organization Key Person. Personnel assigned to the following ERP positions shall be responsible for learning the listed training objectives.

7.1 Shift Supervisor

7.1.1 Objectives:

(1) Initial recognition, identification and classification of actual or potential emergency threats.

(2) Initial notification of offsite support groups and the Plant Superintendent.

(3) Familiarization with the Emergency Organization and the general format of the ERP and ERPIP

7.1.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 3.0 to and including ERPIP 3.10, all the immediate action procedures.

(3) ERPIP 4.1.2, Site Emergency Coordinator Checklist

(4) ERPIP 4.2, Notification

(5) ERPIP 4.3, Radiological Surveys (general familiarization)

(6) ERPIP A.1 to and including ERPIP A.5, red tabbed appendicies pertaining to onsite and offsite emergency response support groups.

7.1.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERPIP Manual, basic familiarization including all sections.

(2) ERP 3.2.2.1, Site Emergency Coordinator

(3) ERP 3.2.2, Plant Staff Emergency Assignments

(4) ERP 3.5, Local Services Support

(5) ERP 5.1.1, Control Room

7.2 Site Emergency Coordinator

7.2.1 Objectives:

(1) Supervision of Emergency Organization personnel.

(2) Interpretation of plant and field data and how it relates to emergencies and their classification.

(3) Methods used for estimating radiation doses.

(4) A general understanding of all aspects of the ERPIP and the actions/responsibilities of offsite support groups and agencies.

(5) Initial notification of and follow-up communications with offsite and onsite emergency support groups.

7.2.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 3.0 to and including ERPIP 3.10, all the immediate action procedures

(3) ERPIP 4.1.2, Site Emergency Coordinator Checklist

(4) ERPIP 4.2, Notification

(5) ERPIP 4.3, Radiological Surveys (general familiarization)

(6) ERPIP 4.4, Assessment Actions (general familiarization)

(7) ERPIP 4.5, Protective Actions (general familiarization)

(8) ERPIP 4.6.1, Emergency Personnel Radiation Exposures

(9) ERPIP 5.2, Records

(10) ERPIP A.1 to and including ERPIP A.5, red tabbed appendices pertaining to onsite and offsite emergency response support groups

7.2.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERPIP Manual, basic familiarization including all sections

(2) State of Maryland's Radiological Emergency Response Plan (RERP) Appendix 1 to Annex Q

(3) Local emergency plans for counties within 10 mile Exposure EPZ (i.e, St. Marys, Dorchester, and Calvert Counties)

(4) State of Maryland's Ingestion EPZ plan for area within 50 mile radius of CCNPP

(5) ERP 3.2.1.1, Site Emergency Coordinator

(6) ERP 3.2.2, Plant Staff Emergency Assignments

(7) ERP 3.3, Augmentation of Onsite Emergency Organization

(8) ERP 4.4.2, Criteria for Requesting Outside Assistance

(9) ERP 5.0, Emergency Facilities and Equipment

7.3 Technical Support Center Director

7.3.1 Objectives:

(1) Supervision of personnel assigned to the Technical Support Center.

(2) Knowledge of thermohydraulic and thermodynamic problem analysis and problem resolution development.

(3) Interaction with the SEC and the NRC representatives when determining recommended mitigating actions.

7.3.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.3, Technical Support Center Director Checklist

(3) ERPIP 4.6.1, Emergency Personnel Radiation Exposures

(4) ERPIP A.1 thru A.5

7.3.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERP 3.2.2.3, Technical Support Organization

(2) ERP 5.2.1, Technical Support Center

(3) ERP 5.3, Communication Network

(4) ERPIP Manual (format familiarization)

7.4 Operational Support Center Director

7.4.1 Objectives:

(1) Supervision of operational support personnel assigned or reporting to the Operational Support Center.

(2) Interaction with the SEC in controlling plant and area personnel access.

7.4.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.4, Operational Support Center Director Checklist

(3) ERPIP 4.6.1, Emergency Personnel Radiation Exposures

(4) ERPIP A.1 thru A.5

7.4.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERP 3.2.2.4, Operational Support Center Director

(2) ERP 5.2.2, Onsite Operational Support Center

(3) ERP 5.3, Communication Network

(4) ERPIP Manual (format familiarization)

7.5 Radiation Protection Director

7.5.1 Objectives:

(1) Supervision of emergency personnel assigned to the RPD for onsite radiation surveys, sampling and analyses.

(2) Interaction with the SEC for implementing onsite radiation controls.

(3) Coordination with PS to support onsite recovery actions.

7.5.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.5, Radiation Protection Director Checklist

(3) ERPIP 4.1.7, Onsite Monitoring Team Leader Checklist

(4) ERPIP 4.3, Radiological Surveys

(5) ERPIP 4.4, Assessment Actions

(6) ERPIP 4.5, Protective Actions

(7) ERPIP 4.6.1, Emergency Personnel Radiation Exposures

(8) ERPIP A.1, Emergency Teams

7.5.3 Procedures and references suggested for general familiarization training and qualification include:

(1) CCI-400, Calvert Cliffs Radiation Safety Manual (general review)

(2) RCP-3 Manual (general review)

(3) ERPIP Manual (format familiarization)

(4) ERP 3.2.5.2, Emergency Radiation Teams

(5) ERP 4.2, Assessment Actions

(6) ERP 4.4, Protective Actions

(7) ERP 5.3, Communication Network

7.6 Radiological Assessment Director

7.6.1 Objectives:

(1) Supervision of emergency personnel assigned to the RAD for radiological assessment and offsite monitoring.

(2) Interaction with the SEC for proper coordination of radiological assessment and protective action recommendations.

7.6.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 3.1, Initial Actions

(3) ERPIP 3.6, Immediate Action-Radiological Event

(4) ERPIP 4.1.6, Offsite Monitoring Team Leader Checklist

(5) ERPIP 4.1.15, Radiological Assessment Director Checklist

(6) ERPIP 4.3, Radiological Surveys

(7) ERPIP 4.4, Assessment Actions

(8) ERPIP 4.5, Protective Actions

(9) ERPIP 4.6.1, Emergency Personnel Radiation Exposures

(10) ERPIP Appendix C, Assessment

- NOTE -

The Interim RAD, as per ERP 3.2.2.5.2, will only be responsible for ERPIP 3.6 methodology of radiological assessment.

7.6.3 Procedures and references suggested for general familiarization training and qualification include:

(1) CCI-400, Calvert Cliffs Radiation Safety Manual (general review)

(2) RCP-3 Manual (general review)

(3) ERPIP Manual (format familiarization)

(4) ERP 3.2.2.5, Emergency Radiation Teams

(5) ERP 4.2, Assessment Actions

(6) ERP 4.4, Protective Actions

(7) ERP 5.3, Communication Network

(8) ERP Appendix G, Assessment Methodology

7.7 Offsite Monitoring Team Leader

7.7.1 Objectives:

(1) Supervision of emergency personnel assigned to the OFMT as directed by the RAD.

(2) Interaction with the RAD to ensure prompt and effective coordination of offsite radiological monitoring.

7.7.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.6, Offsite Monitoring Team Leader Checklist

(3) ERPIP 4.3, Radiological Surveys

(4) ERPIP 4.5.3, Respiratory Protection

(5) ERPIP 4.6.1, Emergency Personnel Radiation Exposures

(6) ERPIP 5.3, Emergency Equipment

(7) ERPIP Appendices A.1 and B.1

(8) ERPIP 5.1 Communications

7.7.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERPIP Manual (format familiarization)

(2) ERP 3.2.5.2, Emergency Radiation Teams

(3) ERP 5.3, Communication Network

7.8 Onsite Monitoring Team Leader

7.8.1 Objectives:

(1) Supervision of emergency personnel assigned to the ONMT as directed by the RPD.

(2) Interaction with the RPD to ensure prompt and effective coordination of onsite and in-plant radiation surveys, sampling, analysis and controls.

7.8.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.7, Onsite Monitoring Team Leader Checklist

(3) ERPIP 4.3, Radiological Surveys

(4) ERPIP 4.4.7.2, Post-Accident Containment Atmosphere Sampling and Analysis

(5) ERPIP 4.4.7.3, Post-Accident Reactor Coolant Sampling and Analysis

(6) ERPIP 4.6.1, Emergency Personnel Radiation Exposures

(7) ERPIP 5.3, Emergency Equipment

(8) ERPIP Appendices A.1 and B.1

7.8.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.5.3, Respiratory Protection

(3) ERPIP Manual (format familiarization)

(4) ERP 3.2.5.2, Emergency Radiation Teams

(5) ERP 5.3, Communications Network

(6) ERP 5.4.1, Onsite Systems and Equipment

7.9 Liquid Release Monitoring Team Leader

7.9.1 Objectives:

(1) Supervision of emergency personnel assigned to the LRMT as directed by the RPD.

(2) Interaction with the RPD during emergencies to monitor liquid releases and analyze liquid sampler.

7.9.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.8, Liquid Release Monitoring Team Leader Checklist

(3) ERPIP 4.3.3, Liquid Effluent Activity Sampling and Analysis

(4) ERPIP 4.4.7.2, Post-Accident Containment Atmosphere Sampling and Analysis

(5) ERPIP 4.4.7.3, Post-Accident Reactor Coolant Sampling and Analysis

(6) ERPIP 4.6.1, Emergency Personnel Radiation Exposures

7.9.3 Procedures and references suggested for general familiarization

training and qualification include:

(1) ERPIP 5.3, Emergency Equipment

(2) ERP 3.2.5.2, Emergency Radiation Teams

(3) ERP 4.2.1.6, Means for Post Accident Sampling and Analyses of Reactor and Containment Conditions

(4) ERP 4.4.1.6, Waterborne Radioactive Releases

(5) ERP 5.3, Communications Network

7.10 Assembly Area Monitoring Team Leader

7.10.1 Objectives:

(1) Supervision of emergency personnel assigned to the AAMT as directed by the RPD.

(2) Interaction with the RPD during emergencies to minimize personnel exposure and prevent unnecessary spread of contamination.

7.10.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.9, Assembly Area Monitoring Team Leader Checklist

(3) ERPIP 4.3.4, Personnel Contamination Monitoring

(4) ERPIP 4.5.1, Onsite Personnel Protection, Accountability and Evacuation

(5) ERPIP 4.5.1.1, Alert: Protection, Accountability and Evacuation

(6) ERPIP 4.5.1.2, Site Emergency: Protection, Accountability and Evacuation

(7) ERPIP 4.5.1.3, General Emergency: Protection, Accountability and Evacuation

(8) Appendix A, A.1 Table 2 Assembly Areas

7.10.3 Procedures and references suggested for general familarization training and qualification include:

(1) ERPIP 5.3, Emergency Equipment

(2) ERP 3.2.2.5.8, Assembly Area Leader

7.11 Gate and Access Monitoring Team Leader

7.11.1 Objectives:

(1) Interaction with the RPD during emergencies to prevent unnecessary spread of contamination.

(2) Coordinating an emergency response effort for access personnel and/or vehicles monitoring.

7.11.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.10, Gate and Access Monitoring Team Leader Checklist

(3) ERPIP 4.3.4, Personnel Contamination Monitoring

(4) ERPIP 4.5.2, Access Control

7.11.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERPIP 5.3, Emergency Equipment

(2) ERPIP Appendix D.3, Traffic Control

7.12 Emergency Control Center Monitoring Team Leader

7.12.1 Objectives:

(1) Monitoring emergency personnel in and near the ECC at the direction of the RPD.

(2) Interfacing with the SEC, RPD and emergency personnel in the ECC under emergency conditions.

7.12.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.11, ECC Monitoring Team Leader Checklist

(3) ERPIP 4.3.4, Personnel Contamination Monitoring

(4) ERPIP 4.5.3, Respiratory Protection

7.12.3 Procedures and references suggested for general familiarization training and qualification iclude:

(1) ERPIP 5.3, Emergency Equipment

(2) ERP 5.1.2, Emergency Control Center

7.13 Emergency First Aid and Decontamination Team Leader

7.13.1 Objectives:

(1) Supervision of emergency personnel assigned to the EFADT at the direction of the RPD.

(2) Interaction with the RPD, Sec and emergency personnel assigned to the EFADT.

(3) In-depth knowledge of first aid and decontamination methodology including satisfactory completion of the American Red Cross Multi-Media First Aid course (includes requalification every three years) and American Heart Association CPR.

7.13.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.12, Emergency First Aid and Decontamination Team Leader Checklist

(3) ERPIP 4.5, Protective Actions

(4) ERPIP 4.6, Aid to Affected Personnel

(5) ERPIP 4.6.1, Emergency Personnel Radiation Exposures

(6) RCP 3-309, Bioassays

(7) RCP 3-606, Personnel Contamination Assessment and Decontamination

(8) American Red Cross Multi-Media First Aid Course

(9) American Heart Association - Basic Cardiac Life Support (CPR)

7.13.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERPIP 5.3, Emergency Equipment

(2) ERP 4.5, Aid to Affected Personnel

7.14 Emergency Reentry Monitoring Team Leader (ERMTL) training includes:

7.14.1 Objectives:

(1) Supervision of emergency personnel assigned to the ERMTL at the direction of the RPD.

(2) Interaction with the Emergency Reentry Team Leader (ERTL),

the RPD and the ERMT members to ensure effective monitoring of areas to be accessed by the ERT.

7.14.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.13, Emergency Reentry Monitoring Team Leader Checklist

(3) ERPIP 4.3.4, Personnel Contamination Monitoring

(4) ERPIP 4.5.3, Respiratory Protection

(5) ERPIP 4.6.1, Emergency Personnel Radiation Exposure

7.14.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERPIP 4.3.4, Personnel Contamination Monitoring

(2) ERPIP 4.5.3, Respiratory Protection

(3) ERPIP 4.6.1, Emergency Personnel Radiation Exposure

7.15 Dosimetry Team Leader

7.15.1 Objectives:

(1) Supervision of emergency personnel assigned to the DTL.

(2) Interaction with the RPD during emergencies described as a Radiological Event to maintain personnel exposure records and to ensure appropriate Radiation Control procedures are followed (RCP 3-301 through RCP 3-310).

7.15.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.14, Dosimetry Team Leader Checklist

(3) ERPIP 4.5.2, Access Control

(4) ERPIP 4.5.3, Respiratory Protection

(5) ERPIP 4.5.5, Personnel Decontamination

(6) ERPIP 4.6.1, Emergency Personnel Radiation Exposure

(7) RCP 3-301, Personnel Exposure Control

(8) RCP 3-302, Requirements for Wearing TLDs

(9) RCP 3-303, Reading and Reissue of TLDs

(10) RCP 3-304, Requirements for Usage of SRDs

(11) RCP 3-305, Source and Drift Check of SRDs

(12) RCP 3-306, Determination of Neutron Exposure

(13) RCP 3-307, Use of Computer Dosimetry Program

(14) RCP 3-308, Requirements for Use of Personal Alarm Dosimeters

(15) RCP 3-309, Bioassays

(16) RCP 3-310, Personnel Dosimetry Quality Assurance

7.15.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERPIP 5.3, Emergency Equipment

(2) ERP 5.3, Communications Network

7.16 Emergency Fire Team Leader

7.16.1 Objectives:

(1) Supervision of emergency personnel assigned to the EFT.

(2) Identification of fire hazards and the types of fires that occur in the plant.

(3) The proper use of available fire fighting equipment and the correct method of fighting each type of fire.

(4) Coordination of any outside fire fighting organization called in to assist in fighting the fire.

7.16.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 3.3, Fire Emergency

(3) ERPIP 4.1.16, Emergency Fire Team Leader Checklist

(4) ERPIP 4.6.1, Emergency Personnel Radiation Exposures

(5) ERPIP 4.5.3, Respiratory Protection

(6) ERPIP 4.7, Emergency Fire Fighting

7.16.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERPIP 5.1 Communications

(2) ERPIP Appendix A.4, Police, Fire and Medical Emergency Telephone Numbers

(3) ERPIP Appendix A.1

(4) ERP 4.4.1.7, Fires

(5) ERP 4.4.1.8, Explosions

(6) ERP 4.4.1.9, Toxic Atmosphere Release Incident

(7) ERP Appendix C, Site Fire Plan

7.17 Emergency Security Team Leader

7.17.1 Objectives:

(1) Supervision of emergency security personnel assigned to the EST.

(2) Assistance with access/egress control and personnel accountability during emergencies.

(3) Maintain plant security and assist in communications with State and local law enforcement agencies.

7.17.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.17, Emergency Security Team Leader Checklist

(3) ERPIP 4.5.1, Onsite Personnel Protection, Accountability and Evacuation

(4) ERPIP 4.5.1.1, Alert: Protection, Accountability and Evacuation

(5) ERPIP 4.5.1.2, Site Emergency: Protection, Accountability and Evacuation

(6) ERPIP 4.5.1.3, General Emergency: Protection, Accountability and Evacuation

(7) ERPIP 4.5.2, Access Control

(8) ERPIP 4.6.1, Emergency Personnel Radiation Exposures

(9) ERPIP 4.10, Security

(10) ERPIP Appendix B.2, Maps and Charts

(11) ERPIP Appendix D.1, Security Alarms

(12) ERPIP Appendix D.2, Arrest and Detention

(13) ERPIP Appendix D.3, Traffic Control

7.17.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERPIP 5.1, Communications

(2) ERPIP 5.3, Emergency Equipment

(3) ERPIP Appendix A.4, Police, Fire and Medical Emergency Telephone Numbers.

(4) RCP 3-613, Controlled Area Access Control

(5) ERP 6.1.1.7, Emergency Security Team

7.18 Emergency Reentry Team Leader

7.18.1 Objectives:

(1) Supervision of emergency personnel assigned to the ERET as directed by the RPD or the SEC if the RPD isn't available.

(2) Determining optimum access routes to and from the incident areas.

(3) Directing searches for unaccountable personnel and coordinating the rescue of injured or trapped personnel in potentially hazardous areas.

7.18.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.18, Emergency Reentry Team Leader Checklist

(3) ERPIP 4.5.3, Respiratory Protection

(4) ERPIP 5.3, Emergency Equipment

(5) ERPIP 4.6.1, Emergency Personnel Radiation Exposures

(6) ERPIP 4.8, Reentry

(7) ERPIP Appendix B.1, Equipment Checklists

(8) ERPIP Appendix B.2, Maps and Charts

7.18.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERPIP 5.1, Communication

7.19 Emergency Repair and Damage Control Team Leader

7.19.1 Objectives:

(1) Supervision of emergency personnel assigned to the ERDCT as

directed by the SEC.

(2) Assessment of equipment damage and implementation of emergency repairs.

7.19.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.19, Emergency Repair and Damage Control Team Leader Checklist

(3) ERPIP 4.5.3, Respiratory Protection

(4) ERPIP 4.6.1, Emergency Personnel Radiation Exposures

(5) ERPIP 5.1, Communication

(6) ERPIP 5.3, Emergency Equipment

(7) ERPIP Appendix B.1, Equipment Checklists

7.19.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERPIP 5.0, Supplemental Procedures

(2) ERPIP Appendix B.2, Maps and Charts

(3) ERP 3.2.2.5.10, Emergency Repair and Damage Control Team

7.20 Emergency Recovery and Restoration Team Leader

7.20.1 Objectives:

(1) Supervision of emergency personnel assigned to the ERRT as directed by the SEC.

(2) Evaluating conditions and criteria necessary for the resumption of normal activities following termination of the emergency condition.

7.20.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.20, Emergency Recovery and Restoration Team Leader Checklist

(3) ERPIP 4.9, Recovery

(4) ERPIP 5.1, Communication

(5) ERPIP 5.3, Emergency Equipment

7.20.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERP 5.0, Emergency Facilities and Equipment

7.21 Assembly Area Leader

7.21.1 Objectives:

(1) Accountability of personnel designated to report to the assembly area.

(2) Interaction with the SEC and the AAMTL (when required) for personnel accountability.

(3) Interface with Security to assist in the search for unaccounted personnel as directed by the SEC.

7.21.2 Specific procedures and references required for emergency training and qualification includes:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.9, Assembly Area Monitoring Team Leader Checklist

(3) ERPIP 4.1.21, Assembly Area Leader Checklist

(4) ERPIP 4.5.1, Onsite Personnel Protection, Accountability and Evacuation

(5) ERPIP 4.5.1.1, Alert: Protection, Accountability and Evacuation

(6) ERPIP 4.5.1.2, Site Emergency: Protection, Accountability and Evacuation

(7) ERPIP 4.5.1.3, General Emergency: Protection, Accountability and Evacuation

(8) ERPIP Appendix A.1, Table 2, Assembly area leaders.

(9) ERPIP Appendix B.2, Maps and Charts

7.21.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERPIP 5.1, Communication

(2) ERP 3.2.2.5.8, Assembly Area Leader

7.22 Emergency Communicator

7.22.1 Objectives:

(1) Proficient emergency communications and ECC recordkeeping as directed by the SEC.

(2) Communications interfacing with onsite and offsite emergency groups and support agencies.

7.22.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.22, Emergency Communicator Checklist

(3) ERPIP 4.2, Notifications

(4) ERPIP 5.1, Communications

(5) ERPIP Appendix A (telephone number lists for emergency personnel and support groups)

7.22.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERP 3.3, Augmentation of Onsite Emergency Organization

(2) ERP 3.6, Coordination with Participating Governmental Agencies

(3) ERP 5.3, Communication Network

7.23 Administrative Services Director

7.23.1 Objectives:

(1) Interaction with the SEC to provide additional personnel and technical assistance from offsite sources.

(2) Proper notification and communication with appropriate offsite sources.

7.23.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.23, Emergency Services Director Checklist

7.23.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 5.3, Emergency Equipment

(3) ERP 5.3, Communication Network

7.24 Environmental Services Coordinator

7.24.1 Objectives:

(1) Interaction with Environmental Engineering and the Chemical Engineering and Test (CETS) representatives.

(2) Proficiency in the compilation and analyses of environmental data at CCNPP.

7.24.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 4.1.25, Environmental Services Coordinator Checklist

(3) ERPIP 4.3, Radiological Surveys

(4) ERPIP 4.4, Assessment Actions

7.24.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERP 4.2, Assessment Actions

(2) ERP 5.4.1, Onsite Systems and Equipment

(3) ERP 5.4.2, Facilities and Equipment for Offsite Monitoring

(4) ERP Appendix G, Method for Determining the Magnitude of Radioactive Material Release and Potential Offsite Exposures

7.25 Recovery Manager

7.25.1 Objectives:

(1) Supervision of the Recovery Organization (RM) and implementation of the recovery effort to return the plant to preemergency conditions.

(2) Responsibilities to the BG&E Chief Executive Officer for coordinating the recovery effort.

7.25.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERP 7.2, Recovery

7.25.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERPIP Manual

(2) Emergency Response Plan

(4) State of Maryland Radiological Emergency Plan (Appendix 1 to Annex Q)

7.26 Offsite Liaison Representatives

7.26.1 Objectives:

(1) Interfacing with State and local agencies as directed by the SEC.

(2) In-depth knowledge of the plant and site and experience in operations.

7.26.2 Specific procedures and references required for emergency training and qualification include:

(1) ERPIP 2.0, Emergency Organization

(2) ERPIP 3, Immediate Actions

(3) ERPIP 4.2, Notifications

(4) ERPIP 5.1, Communications

(5) ERPIP Appendix B.2, Maps and Charts

7.26.3 Procedures and references suggested for general familiarization training and qualification include:

(1) ERPIP Manual

(2) ERP Manual

(3) State of Maryland Radiological Emergency Plan (Appendix 1 to Annex Q)

(4) SOP's for County assigned to

EXHIBIT 5.4-A: REQUIRED PROCEDURE TRAINING MATRIX FOR EMERGENCY RESPONSE ORGANIZATION KEY PERSONNEL

ERPIP	ISS	ISEC	TSCD	OSCD	IRPD	RAD	OPMTL	ONMTL	LRMTL	AAMTL	GAMTL	ECCMTL	EFADTL	ERMTL	DTL	EFTL	ESTL	ERETL	ERDCTL	ERRTL	AAL	ECOM	ASD	MCCC	ESC	IRM	OLR
2.0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3.0	X	X																									X
3.1	X	X				X																					X
3.2	X	X																									X
3.3	X	X														X											X
3.4	X	X																									X
3.5	X	X																									X
3.6	X	X				X																					X
3.7	X	X		X																							X
3.8	X	X																									X
3.9	X	X																									X
3.10	X	X																									X
4.0																											
4.1.0																											
4.1.1																											
4.1.2	X	X																									
4.1.3			X																								
4.1.4				X																							
4.1.5					X																						
4.1.6						X	X																				
4.1.7					X			X																			
4.1.8									X																		
4.1.9										X																	
4.1.10											X												X				
4.1.11												X															
4.1.12													X														

EXHIBIT 5.4-A cont't

ERPIP	SS	SEC	TSCD	OSCD	RPD	RAD	OFMTL	ONMTL	LRMTL	AAMTL	GAMTL	ECCMTL	EFADTL	ERMTL	DTL	EFTL	ESTL	ERETL	ERDCTL	ERRTL	AAL	ECOM	RSD	ESC	RM	DLR
4.1.13														X												
4.1.14															X											
4.1.15						X																				
4.1.16																X										
4.1.17																	X									
4.1.18																		X								
4.1.19																			X							
4.1.20																				X						
4.1.21																					X					
4.1.22																						X				
4.1.23																							X			
4.1.24																										
4.1.25																								X		
4.2	X	X																			X	X				X
4.3.1	X	X			X	X	X	X																X		
4.3.2	X	X			X	X	X	X																X		
4.3.3	X	X			X	X	X	X	X															X		
4.3.4	X	X			X	X	X	X		X	X	X		X										X		
4.4.1		X			X	X																		X		
4.4.2		X			X	X																		X		
4.4.3		X			X	X																		X		
4.4.4		X			X	X																		X		
4.4.5		X			X	X																		X		
4.4.6		X			X	X																		X		
4.4.7		X			X	X		X	X															X		
4.4.8		X			X	X																		X		
4.5.1		X			X	X				X			X				X				X					
4.5.2		X			X	X					X		X		X		X									

EXHIBIT 5.4-A con't

ERPIP	ISS	ISEC	TSCD	OSCD	RPD	RAD	OPMTL	ONMTL	LRMTL	AAMTL	SAMTL	ECCMTL	EFADTL	ERMTL	DTL	EFTL	ESTL	ERETL	ERDCTL	ERRTL	RAL	ECOM	RSD
4.5.3		X			X	X						X	X	X	X	X		X	X				
4.5.4		X			X	X							X										
4.5.5		X			X	X							X		X								
4.5.6		X			X	X							X										
4.6.1		X	X	X	X	X	X	X	X				X	X	X	X		X	X				
4.6.2													X										
4.6.3													X										
4.6.4													X										
4.7	X	X														X							
4.8	X	X																X					
4.9	X	X																		X			
4.10	X	X															X						
5.1							X												X	X		X	
5.2		X																					
5.3							X	X										X	X	X			
A.1	X	X	X	X	X			X													X	X	
A.2	X	X	X	X																		X	
A.3	X	X	X	X																		X	
A.4	X	X	X	X																		X	
A.5	X	X	X	X																		X	
B.1							X	X										X	X				
B.2										X							X	X			X		X
C.1						X																	
C.2						X																	
C.3						X																	

EXHIBIT 5.4-A cont'd

ERPIP	SS	SEC	TSCD	OSCD	RPD	RAD	OPMTL	ONMTL	LRMTL	AAMTL	GAMTL	ECCMTL	EFADTL	ERMTL	DTL	EFTL	ESTL	ERETL	ERDCTL	ERRTL	AAL	ECOM	ASD	MCCC	ESC	IRM	IDLR
D.1																	X										
D.2																	X										
D.3																	X										
RCP																											
3-301															X												
3-302															X												
3-303															X												
3-304															X												
3-305															X												
3-306															X												
3-307															X												
3-308															X												
3-309													X		X												
3-310															X												
3-696													X														

TITLE: EXERCISES, TESTS AND DRILLS

1.0 RESPONSIBLE INDIVIDUALS

The Supervisor-Training is responsible for the development of scenario, scheduling, conducting and critiquing drills and exercises and reporting results and recommendations to the Plant Superintendent and ERP Coordinator.

The ERP Coordinator is responsible for reviewing drill, exercise, and scenarios for content and accuracy. Each Emergency Organization member is independently responsible for those actions delegated to him by the ERPIP Manual.

2.0 CONDITIONS AND PREREQUISITES

2.1 Advance planning is required to conduct a successful exercise.

2.2 Agreement between onsite and offsite agencies in level of participation, date and time.

2.3 Preparation of a scenario for the exercise to be performed.

2.4 Prior to conducting any emergency drill or exercise the ERP Coordinator must obtain written approval from the Plant Superintendent.

3.0 ACTIONS AND LIMITATIONS

3.1 Conduct exercises at least annually (every 12 months plus or minus 3 months) for each of the following situations:

3.1.1 LNG Emergency

3.1.2 Fire Emergency

3.1.3 Natural Event

3.1.4 Personnel Injury (with CMH participation)

3.1.5 Radiological Event

3.1.6 Unusual Event

3.1.7 Alert Condition

3.1.8 Site Emergency

3.1.9 General Emergency

- NOTE-

One exercise may be a combination of several of the exercises listed in 3.1.1 through 3.1.9 and may therefore fulfill the annual requirement for several exercises. Exercises may be announced or unannounced, and should simulate a variety of possible emergencies that could occur. An actual emergency event is sufficient to fulfill the annual exercise for that event.

Joint Exercises and training involving Federal, State and local response organizations will be performed within a 5 year period of program acceptance and repeated at 5 year maximum intervals.

Drills and exercises shall be scheduled on various shifts and during random times of the day and night. They shall not be scheduled for the convience of workers nor shall be terminated for the convience of workers.

- CAUTION -

ALL ACTIONS TO ALTER PLANT CONDITIONS MUST BE SIMULATED, UNLESS AUTHORIZED OTHERWISE IN WRITING BY THE PLANT SUPERINTENDENT. THE SHIFT SUPERVISOR MAY TERMINATE THE DRILL WHENEVER HE FEELS ACTUAL CONDITIONS WARRANT SUCH ACTION.

3.2 Conduct:

3.2.1 Communication tests with State and local governments within the plume exposure pathway Emergency Planning Zone, monthly.

3.2.2 Communication tests with Federal emergency response organizations and States within the ingestion pathway, quarterly.

3.2.3 Communication tests between the facility, State and local emergency operations centers and field assessment teams, annually

- NOTE -

Communication test shall include the aspect of understanding the content of messages and may be combined with exercises.

3.3 Conduct:

3.3.1 Fire drills in accordance with CCNPP technical specification.

3.3.2 Medical emergency drills involving a simulated contaminated individual which contains provisions for participation by the local support services agencies (i.e., ambulance and offsite medical treatment facility), annually. The offsite portion of the medical emergency drill may be performed as part of the required annual exercise.

3.3.3 Drills involving the Emergency Radiation Teams, quarterly. These drills shall include plant environs and radiological monitoring with provision for collection and analysis of all sample media (e.g., water,

TITLE: ADDITIONAL FORMS

-CONTENTS-

TABLE B.3-1

EMERGENCY COMMUNICATION FORM

Date of Initial Communication: _____

LOG NO.	Time of Call	FROM	TO	REMARKS

-NOTE-

Complete this form when time permits using communication information logged on Exhibit 3.1-A, 4.2-A, and 4.2-B.

TABLE B.3-2 COMMUNICATION CHECK LOG

CAR USED _____ (2) DATE _____

CHECK POINT NUMBER (4)	GUARD HOUSE (1) (3)	FARM BLDG (1)
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		

NOTES: (1) Satisfactory or Unsatisfactory Communications Check

(2) Use different car each time (week)

(3) Notify RS&C Eng if unsatisfactory

(4) Check 1 or 2 previously hard to get points

_____
Initials / Date

TABLE B.3-4

EMERGENCY COMMUNICATIONS CHECK FORM

Date Performed: _____ By _____

Time of Call	Agency/Center (3)	Line #	Station # (1)	RC (2)	Persons Contacted

(1) Use a different station each week

(2) Returned call

(3) Notify C & P through Ann Edwards Extension 4928 if unsatisfactory

CALCULATION FORM FOR ERPIP # _____*

ERPIP Step #	

* Indicate ERPIP number for which calculations are being performed, in the space provided. Show the specific Step number in the column provided, for each calculation. Seperate calculations by drawing a line after each Step and place the time, date and initials on the line.

DATE: November 11, 1981

CR/TSC - PLANT PARAMETER REPORT FORM

METEOROLOGICAL / CONTAINMENT

TIME	ΔT (200'-30')	Wind Direction at 200	Wind Direction Variation	Wind Speed	Pressure	Temp	Structural Integrity	% H_2	[illegible]	Activity

Meteorological: every 15 minutes. Containment: [illegible]

REACTOR COOLANT SYSTEM

AS REQUESTED

TIME	Subcooling Margin	T_h	T_c	Pressure	Forced or Natural Circ.	Heatup or Cooldown Rate	Leak Rate	CVCS [illegible] Flow (gpm)	[illegible]

REACTOR COOLANT ANALYSIS RESULTS / O.S.C.

Reactor coolant analysis results: WHEN COMPLETED. O.S.C.: [illegible]

TIME	Total Activity	Total Gas Activity	I-131 Dose Equiv.	Boron	Chlorine	Personnel Sustained	Team in Controlled Area	[illegible]

[illegible]

Report [illegible] to:

1. RAC
2. RAC [illegible]
3. [illegible]

PLANT RADIATION MONITORS

INITIALLY & CHANGES

TIME	MAIN VENT U-1 [2]	MAIN VENT U-2 [2]	[illegible] RE-4752 [2]	WASTE GAS RE-1191 [2]	CNTMT PURGE EXH. RE-5251 [2]	ECCS & RM EXH. RE-5406 [2]	[illegible] RE-5410 [2]	FUEL POOL RE-5412 [2]	[illegible] RE-5407 [2]	[illegible] [2]

	PLANT RADIATION MONITORS						IN-PLANT AREA SURVEY RESULTS			
	INITIALLY & CHANGES						WHEN COMPLETE		AS REQUIRED	
TIME	CNTMT LOW RANGE U-1 [1]	CNTMT LOW RANGE U-2 [1]	CNTMT HIGH RANGE U-1 [1]	CNTMT HIGH RANGE U-2 [1]	CVCS GROSS KFF MONITOR [2]	CVCS ANAL. KF MONITOR [2]	EXPOSURE RATES [3]	AIRBORNE ACTIVITY [2]	E.D.T. [illegible] [2]	STATUS [illegible] [2]

	①	②	③	④	⑤	⑥	⑦	⑧
TIME								

LEGEND*

REPORT DATA TO:
1. RAD
2. RAD + RPD
3. RPD

ALL DATA REPORTED TO JEC.

* REPORT [illegible] UPPER & LOWER [illegible]

TITLE: ASSESSMENT AIDS FOR IMMEDIATE RESPONSE

-CONTENTS-

-NOTE-

Appendix B.3, p.5, includes a Calculation Form to be used as necessary for calculations.