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10CFR50, Appendix E

August 14, 2001

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

Subject: Limerick Generating Station, Units 1 & 2
Facility Operating License Nos. NPF-39 and NPF-85
NRC Docket Nos. 50-352 and 50-353

ERP-400, Revision 13, "Chemistry Sampling and Analysis Team"
ERP-800, Appendix 2, Revision 1, "Maintenance Team Activation"

Dear Sir/Madam:

Enclosed are the subject Emergency Response Procedures (ERPs) for Limerick Generating Station (LGS), Units 1 and 2. These procedures are required to be submitted within thirty (30) days of their revision in accordance with 10CFR50, Appendix E, and 10CFR50.4.

Also, enclosed is a copy of a computer generated report index identifying the latest revisions of the LGS ERPs.

If you have any questions or require additional information, please do not hesitate to contact us.

Very truly yours,



M. P. Gallagher
Director - Licensing
Mid-Atlantic Regional Operating Group

Attachments

cc: H. J. Miller, Administrator, Region I, USNRC (2 copies)
A. L. Burritt, USNRC Senior Resident Inspector, LGS

A045

ATTACHMENT 1

LIMERICK GENERATING STATION, UNITS 1 & 2

**Docket Nos. 50-352
50-353**

**License Nos. NPF-39
NPF-85**

EMERGENCY RESPONSE PROCEDURES

**ERP-400, "Chemistry Sampling and Analysis Team"
Revision 13**

**ERP-800, Appendix 2, "Maintenance Team Activation"
Revision 1**

7/24/01

PECO ENERGY COMPANY
LIMERICK GENERATING STATION
EMERGENCY RESPONSE PROCEDURE

ERP-400 CHEMISTRY SAMPLING AND ANALYSIS TEAM

1.0 RESPONSIBILITIES

- 1.1 Emergency Director directs Chemistry Sampling and Analysis Team Leader to activate the team.
- 1.2 Chemistry Sampling and Analysis Team Leader direct team's activation and operation.
 - 1.2.1 Determine sample location AND type.
 - 1.2.2 Obtains permission to sample.
- 1.3 Chemistry Sampling and Analysis Group Leader coordinates group members' activities.
 - 1.3.1 Coordinates sampling
 - 1.3.2 Provides Group Member briefings
 - 1.3.3 Coordinates plant system lineups with Control Room.
- 1.4 Chemistry Sampling and Analysis Group members obtain AND analyze chemistry samples.
- 1.5 Health Physics Technician provides radiological assessment of task
- 1.6 Shift Chemist will assume role of Chemistry Sampling and Analysis Team Leader until relieved.

2.0 INITIAL ACTIONS

- 2.1 Emergency Director shall:
 - 2.1.1 Direct the Chemistry Sampling and Analysis Team Leader to:
 - 2.1.1.1 Collect samples
 - 2.1.1.2 Analyze samples
 - 2.1.1.3 Use offsite support groups for analysis

- 2.2 Chemistry Sampling and Analysis Team Leader shall:
- 2.2.1 Activate the Chemistry Sampling and Analysis Team in accordance with Appendix ERP-400-9.
 - 2.2.2 Report to or contact the Chemistry Lab AND verify habitability of Chemistry Lab if needed based on the event.
 - 2.2.2.1 CH-908, Determination of Toxic Gas Concentrations
 - 2.2.2.2 IF degraded habitability,
THEN:
 - A. Minimize Analysis time spent there
 - B. Employ protective measures
 - C. Consider off-site analysis
 - 2.2.2.3. IF not habitable,
THEN establish Chemistry area at Chemistry Support Staff Office.
 - 2.2.3 Report to TSC AND obtain briefing from Emergency Director:
 - 2.2.3.1 Emergency situation
 - 2.2.3.2 Priority of group activation AND immediate response
 - 2.2.3.3 Potential OR existing radiological conditions.
 - 2.2.3.4 Sampling/Analysis requirements
 - 2.2.4 Notify the EP Coordinator of any administrative supply deficiencies AND team readiness.
 - 2.2.5 Document actions by initiating Log Book.
 - 2.2.6 Assign Group Leader.
 - 2.2.7 Direct Group Leader to initiate appropriate sections of ERP-400.
 - 2.2.8 Determine sampling and analysis tasks by discussing situation with Emergency Director.
 - 2.2.9 Direct in-plant/on-site sampling as needed. Consider performing analysis of release to determine isotopic mix for input into dose model.

- 2.2.10 IF RECW is not available for cooling PASS,
THEN obtain Emergency Directors approval to lineup
the following
AND direct Chemistry Sampling Analysis Group
Leader to coordinate lineup:
- 2.2.10.1 Lineup ESW to RECW Heat Exchanger per
procedure S11.8A if SW is not
available.
- 2.2.10.2 Restart RECW system per procedure
S13.1.A.
- 2.2.11 For each sampling/analysis requirement identified,
perform the following:
- 2.2.11.1 Request Technical Support Team Leader
determine whether sample source is
isolated.
- 2.2.11.2 IF sample source is isolated,
THEN obtain Emergency Director
approval to defeat isolation.
- 2.2.11.3 Discuss with Health Physics Team
Leader:
- A. radiological conditions
- B. sample and analysis tasks
- C. Health Physics coverage
- D. Emergency Dose Extensions or
Emergency Exposure
Authorizations
- 2.2.11.4 Brief the Group Leader on sample
AND analysis requirements.
- 2.2.11.5 Perform Task Specific Actions as per
the appropriate
Appendices/Procedures.
- 2.2.11.6 Direct Group Leader to sample/analyze
using appropriate
Appendices/procedures.
- 2.3 Chemistry Sampling and Analysis Group Leader shall:
- 2.3.1 Assemble Chemistry Sampling and Analysis Group
members.
- 2.3.2 Document actions by initiating Log Book.

2.3.3 Ensure designated ERO perform accountability per 2.5.2.

2.3.3.1 IF security computer fails,
THEN ensure a list of facility personnel names and slot/badge numbers is made available to security.

NOTE: <u>IF</u> EMERGENCY CHEMISTRY FIELD OFFICE BECOMES UNINHABITABLE, <u>THEN</u> EVACUATE TO CHEMISTRY OFFICE <u>AND</u> NOTIFY TEAM LEADER.

2.3.4 Direct Group member(s) set up Chemistry Labs for emergency per steps 2.5.1 and 2.5.2.

2.3.5 IF personnel facial hair would hinder face mask seal,
THEN direct group member(s) to shave.

2.3.6 Obtain briefing from Chemistry Sampling and Analysis Team Leader on emergency situation.

2.3.7 Obtain PASS Keys from Key Cabinets

2.3.8 Direct group member(s) perform Appendix ERP-400-3, Inventory Check of Chemistry Emergency Cabinet and the Post Accident Sample Preparation Station

2.3.9 IF area dose rates are acceptable,
THEN direct inventory of PASS Cabinet
AND area

2.3.9.1 Appendix ERP-400-2, Pass Inventory Check

2.3.10 Direct Group Members to prepare sampling equipment per appropriate appendices/procedures.

2.3.11 Direct Group Members to prepare:

2.3.11.1 Sample Preparation Station

2.3.11.2 Counting Room

2.3.11.3 Analysis Instrumentation

2.3.12 WHEN Team Leader provides sample briefing
THEN perform the following for each
sampling/analysis task identified:

- 2.3.12.1 Take actions required by appropriate
appendices/procedures.
- A. Appendix ERP-400-4 Operation
of Post Accident Sampling
System (PASS).
 - B. Appendix ERP-400-5
Retrieving/Changing Sample
Filters/Cartridges and
Obtaining Gas Samples From The
Containment Leak Detector
 - C. Appendix ERP-400-6 Obtaining
Reactor Water/Radwaste Samples
From Sample Sinks
 - D. Appendix ERP-400-7 Obtaining
Cooling Tower Blowdown Water
Samples
 - E. Appendix ERP-400-8 Obtaining
samples from the North Vent
Wide Range Gas Monitor (WRGM)
 - F. ERP-410 Preparation and
Handling of Highly Radioactive
Samples.
- 2.3.12.2 IF sample point isolated
THEN contact Control Room to defeat
isolation.
- 2.3.12.3 Brief Group members on:
- A. Communications equipment and
channel
 - B. Eye protection
 - C. Type of sample(s) to be
collected
 - D. Number of group members for
sampling, preparation and
analysis
 - E. Location of sample points
 - F. Suggested routes to be taken
 - G. Sample transport technique

- H. Projected amount of time required to collect and transport to sample
 - I. Review of the procedures to be followed for sample collection, handling preparation and analysis
 - J. Special tools and equipment required for sample handling and/or collection
 - K. Proper completion of Data Sheets
- 2.3.13 Dispatch chemistry team to the OSC for briefing and notify OSC Director of their task and approximate arrival time.
- 2.3.13.1 IF HP coverage is required
THEN dispatch group members to OSC
OR other designated location for:
 - A. HP briefing
 - B. HP escort
- 2.3.14 Assign Group member(s) to assist in maintaining
- 2.3.14.1 Accountability Log Sheets
 - 2.3.14.2 Sampling and Analysis Log Sheets
 - 2.3.14.3 Plant status record log keeping
 - 2.3.14.4 Other required duties
- 2.4 Health Physics Technician shall for each sampling task:
- 2.4.1 Perform pre-job briefing with Chemistry technicians to discuss:
 - 2.4.1.1 RWP requirements
 - 2.4.1.2 Sample routes
 - 2.4.1.3 Review sampling procedure
 - 2.4.1.4 Stay times and abort criteria
 - 2.4.2 Provide HP coverage

- 2.4.3 Document survey results per applicable Data Sheet
 - 2.4.3.1 Initial sample contact dose rate
 - 2.4.3.2 Shielded dose rate
- 2.5 Chemistry Sampling and Analysis Group Members shall:
 - 2.5.1 Set up Chemistry Lab for emergency
 - 2.5.1.1 Secure front entrance
 - 2.5.1.2 Set up Control point
 - A. Table
 - B. Frisker
 - C. Hot sample area on table
 - D. Air analysis Data Sheets (CH-251)
 - E. Smear Analysis Data Sheets (CH-251)
 - F. Gloves (cotton liners)
 - G. Dosimetry bags
 - H. "Hot" trash bags
 - I. Tweezers
 - J. Pens and markers
 - K. Step off pad (relocated by HP)
 - 2.5.2 Perform accountability as below:
 - 2.5.2.1 Card in upon entrance and card out upon exit of assigned assemble area using accountability card readers.
 - 2.5.2.2 In the event of a security computer failure the Security Team Leader will request manual accountability per ERP-400, Appendix 10.

- 2.5.3 Perform inventory checks
 - 2.5.3.1 Routing Inventory Check of the Chemistry Emergency Cabinet and Post Accident Sample Preparation Station.

NOTE: INVENTORY OF PASS CABINET AND AREA: ONLY DONE IF DOSE RATES ARE ACCEPTABLE.
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- 2.5.3.2 Appendix ERP-400-2 Inventory Check of PASS Cabinet and Area.
- 2.5.4 Assemble for pre-job briefing
- 2.5.5 Assemble sampling equipment using Special Equipment List/applicable procedures.
 - 2.5.5.1 Label sample containers
- 2.5.6 IF approaching Administrative Exposure Guidelines, THEN inform Group Leader.
- 2.5.7 Ensure Hot Lab AND Sample Preparation Station are ready for sample receipt.
- 2.5.8 IF directed by Group Leader THEN report to OSC OR other designated HP location.
 - 2.5.8.1 HP briefing
 - 2.5.8.2 HP escort
- 2.5.9 Obtain/handle/analyze samples as directed by Group Leader in accordance with appropriate appendices/procedures.

3.0 CONTINUING ACTIONS

NOTE: FOLLOW UP ACTIONS ARE REPEATED WHERE APPLICABLE AT THE COMPLETION OF SPECIFIC SAMPLING/ANALYSIS ACTIVITIES.

- 3.1 Chemistry Sampling and Analysis Team Leader shall:
 - 3.1.1 Confer with Emergency Director AND Technical Support Team Leader concerning additional sampling requirements.
 - 3.1.2 WHEN additional sampling requirements are known, THEN take actions required by appropriate appendices/procedures.

- 3.1.3 Periodically brief Group Leader
 - 3.1.3.1 Plant status
 - 3.1.3.2 Radiological problem areas
 - 3.1.3.3 Proposed actions
- 3.1.4 Remain aware of group activities
 - 3.1.4.1 Group members exposure status
 - 3.1.4.2 Facility habitability
 - 3.1.4.3 PASS operations
 - 3.1.4.4 Sampling
AND analysis status
- 3.1.5 IF on-site analysis capabilities are impacting accident assessment,
THEN refer to ERP-410 for off-site analysis instructions.
- 3.1.6 WHEN analysis results are obtained,
THEN report analysis results to:
 - 3.1.6.1 Emergency Director
 - 3.1.6.2 Dose Assessment Coordinator
 - 3.1.6.3 Health Physics Team Leader
 - 3.1.6.4 IF EOF activated
THEN report analysis results to EOF
Dose-Assessment Team Leader.
- 3.1.7 IF additional personnel support required,
THEN:
 - 3.1.7.1 Activate Chemistry Sampling and Analysis Team per Appendix ERP-400-9
 - 3.1.7.2 Request Emergency Director's approval for contract personnel
- 3.1.8 IF Emergency Dose Extension or Emergency Exposure Authorization for team members is required,
THEN consult and follow guidance of Health Physics Team Leader.
- 3.1.9 WHEN Emergency Director determines Chemistry Sampling and Analysis Team is no longer required,
THEN direct Group Leader secure Group activities.

- 3.2 Chemistry Sampling and Analysis Group Leader shall:
- 3.2.1 Obtain completed Data Sheets
 - 3.2.2 Assign a sample number to each sample received AND record number on Appendix ERP-400-1, Sample and Analysis Log Sheet (Ref 6.4.5)
 - 3.2.3 Report results to Team Leader AND determine preparation/analysis per ERP-410.
 - 3.2.3.1 Brief Group members/HP on preparation/analysis requirements.
 - 3.2.4 Confer with Team Leader on additional sampling requirements/sample preparation/analyses.
 - 3.2.5 WHEN additional sampling/analysis requirements are known, THEN take actions required by appropriate appendices/procedures.
 - 3.2.6 Ensure Data Sheets properly completed AND filed.
 - 3.2.7 Ensure all equipment AND keys are properly re-located.
 - 3.2.8 IF isolation were defeated THEN contact Control Room to return systems to normal.
 - 3.2.9 Maintain files on each sample
 - 3.2.9.1 Sample data sheet
 - 3.2.9.2 Analysis data sheet
 - 3.2.9.3 Sample and Analysis Log sheets
 - 3.2.10 Track personnel exposure
 - 3.2.10.1 IF normal administrative guidelines might be exceeded, THEN request Team Leader obtain authorization for emergency dose extension.
 - 3.2.11 Periodically brief Group members
 - 3.2.11.1 Plant Status
 - 3.2.11.2 Radiological conditions
 - 3.2.11.3 Emergency levels

- 3.2.12 IF additional personnel are required,
THEN request additional personnel from Team Leader.
- 3.2.13 WHEN Chemistry Sampling and Analysis Team Leader directs securing Group activities
THEN:
 - 3.2.13.1 Consolidate sampling
AND analysis documents
 - 3.2.13.2 Direct Group members return equipment to proper storage locations
 - 3.2.13.3 Direct Group members return to routine duties.
- 3.3 Chemistry Sampling and Analysis Group Members shall:
 - 3.3.1 Complete Data Sheets
AND provide sample debriefing to Group Leader.
 - 3.3.1.1 Prepare samples for analysis per ERP-410.
 - 3.3.2 Return sampling equipment
AND keys to appropriate locations.
 - 3.3.3 Obtain/handle/analyze followup sample per assigned procedures.
 - 3.3.4 Stand by for assignments.
 - 3.3.5 WHEN directed by Group Leader
THEN:
 - 3.3.5.1 Complete sampling
AND analysis task
 - 3.3.5.2 Return equipment to proper storage locations
 - 3.3.5.3 Return to routine duties
- 3.4 Health Physics Technician shall:
 - 3.4.1 Provide continuing HP coverage
 - 3.4.2 Confer with Chemistry Sampling and Analysis Group Leader on:
 - 3.4.2.1 Storage/disposal of sample(s)
 - 3.4.2.2 Disposal method for contaminated materials.

4.0 FINAL CONDITIONS

- 4.1 Emergency is terminated and plant conditions stabilized or as directed by the CSATL.
- 4.2 The Chemistry Sampling and Analysis Group Leader shall:
 - 4.2.1 Direct team members to discontinue sampling and complete and turn in all samples, analyses and data sheets.
 - 4.2.2 Direct restoration of facilities and equipment to normal status.
 - 4.2.3 Organize and prepare records for transfer
 - 4.2.4 Re-assign Group members to non-emergency duties.

5.0 APPENDICES

- 5.1 Appendix ERP-400-1, Sample and Analysis Logsheet
- 5.2 Appendix ERP-400-2, PASS Inventory Check
- 5.3 Appendix ERP-400-3, Emergency Cabinet, Hood Inventory Check
- 5.4 Appendix ERP-400-4, Operation of Post Accident Sampling System (PASS)
- 5.5 Appendix ERP-400-5, Retrieving/Changing Sample Filters/Cartridges and Obtaining Gas Samples From The Containment Leak Detector
- 5.6 Appendix ERP-400-6, Obtaining Reactor Water/Radwaste Samples From Sample Sinks
- 5.7 Appendix ERP-400-7, Obtaining Cooling Tower Blowdown Water Samples
- 5.8 Appendix ERP-400-8, Obtaining Samples From The North Vent Wide Range Gas Monitor (WRGM)
- 5.9 Appendix ERP-400-9, Chemistry Sampling and Analysis Team Activation
- 5.10 Appendix ERP-400-10, Facility Accountability Log

6.0 SUPPORTING INFORMATION

6.1 Purpose

6.1.1 Provide guidelines for activation and conduct of operation for Chemistry Sampling and Analysis Team.

6.2 Criteria for Use

6.2.1 Implemented at Alert
OR higher emergency classification.

6.2.2 Implemented at Emergency Directors discretion.

6.2.3 This procedure may be used to obtain/analyze samples from the drywell and suppression pool for H₂/O₂ analyses as directed by T-102.

6.3 Special Equipment

None

6.4 References

6.4.1 Limerick Generating Station Emergency Plan

6.4.2 NUREG 0654

6.4.3 ERP-410, Preparation and Handling of Highly Radioactive Samples

6.4.4 ERP-650, Entry for Emergency Repair and Operations

6.4.5 LGS UFSAR 11.5.5.4.3, AR Number A0412127
evaluation number 50.

6.4.6 LGS, EP A/R A0004445, QE #Q0004016

6.4.7 6.4.7 CH-908, Determination of Toxic Gas Concentrations.

6.4.8 CH-910, Operation of the Post Accident Sampling System (Pass)

6.5 Commitment Annotation

None

APPENDIX ERP-400-1
CHEMISTRY SAMPLING SUMMARY
(Page 2 of 2)

CHEMISTRY SAMPLING

SAMPLES	GROSS B μCi/cc	IODINE μCi/cc	GASEOUS μCi/cc	TIME
REACTOR WATER				
SUPPRESSION POOL WATER				
DRYWELL AIR				
NORTH STACK				
SOUTH STACK (1)				
SOUTH STACK (2)				

SAMPLING PRIORITIES

COMMENTS

APPENDIX ERP-400-2
PASS INVENTORY CHECK
(Page 1 of 1)

NOTE: IF THE QUANTITY OF ANY OF THE ITEMS IS FOUND TO BE LESS THAN THE REQUIRED NUMBER, THEN NOTE NUMBER AVAILABLE AND NOTIFY CHEMISTRY SAMPLING AND ANALYSIS GROUP LEADER AND INITIATE PROCESS FOR RESTOCKING THE PASS SUPPLIES.

ITEM	# REQUIRED	APPROPRIATE NUMBER FOUND	
		YES	NO
Silver Zeolite Cartridges	20		
Small Bottle of Demin Water (1 liter) (Refill quarterly)	1		
Gas Vial Cask	3		
Large Volume Cask	1		
Small Volume Cask	1		
Dissolved Gas Sample Needles	10		
5 ml Dissolved Gas Syringe	3		
Dissolved Gas Septums	10		
Velcro Tape	1		
Scissors	1		
10 ml Syringes with Luer Lock Fittings	2		
Offgas Type Sampling Needles	5		
Liquid Needles	10		
Nuts for Liquid Needles	5		
Iodine/Filter Cartridge Assembly Spare	1		
Needle Removal Tool (Liquid)	2		
Needle Removal Tool (Gas)	2		
Gas Vial Sample Tube	1		
Flashlight (functional)	1		
Flexible Mirror	1		

APPENDIX ERP-400-3
ROUTINE INVENTORY CHECK OF THE CHEMISTRY EMERGENCY CABINET
AND THE POST-ACCIDENT SAMPLE PREPARATION STATION

PART I: CHEMISTRY CABINET

A.	<u>Items</u> LIQUID GRAB SAMPLE BAG	<u>Recommended</u> <u>Quantity</u>	<u>Actual</u> <u>QUANTITY</u>
1.	Leather carrying bag	1	_____
2.	1 Liter plastic sample bottle (pre-labeled)	2	_____
3.	Tongs	1	_____
4.	4 oz. plastic sample bottle, syringe hole predrilled, septum installed and pre-labeled	5	_____
5.	Plastic bags	5	_____
6.	Tape	1	_____
7.	Flashlight with batteries (Check for operability)	1	_____
B.	<u>CONTAINMENT LEAK DETECTOR BAG</u>		
1.	Cartridge holder assembly	1	_____
2.	Plastic bags	5	_____
3.	47 mm particulate filters (0.45 micron)	10	_____
4.	14.4 ml gas vials with rubber septums installed and pre-labeled	5	_____
5.	Extra labels	5	_____
6.	Silver Zeolite Cartridges (GY-130) (Must be stored in heat sealed plastic bags)	3	_____
7.	Tape	1	_____
8.	Flashlight with batteries (check for operability)	1	_____
9.	Gas Sampling apparatus (check ball valve and mininert valve for operability, replace septum if necessary)	2	_____

APPENDIX ERP-400-3
ROUTINE INVENTORY CHECK OF THE CHEMISTRY EMERGENCY CABINET
AND THE POST-ACCIDENT SAMPLE PREPARATION STATION

<u>Items</u>	<u>Recommended Quantity</u>	<u>Actual QUANTITY</u>
10. Extra septums for mininert	5	_____
11. Septum removal tool	1	_____
12. 1.0 ml gas microsyringe	2	_____
13. Syringe needles	4	_____
C. <u>GAS DETECTOR BAG</u>		
1. Gas detector pump	2	_____
2. *Chlorine Low Range Tube (No. 8La) Expiration date _____	5 tubes	_____
3. *Ammonia Low Range tube (No. 3L) Expiration date _____	5 tubes	_____
4. **Ethylene Oxide Low Range Tube (No. 163L) Expiration date _____	5 tubes	_____
5. *Formaldehyde Low range Tube (No. 91L) Expiration date _____	5 tubes	_____
6. *Vinyl Chloride Low Range Tube (No. 131L) Expiration date _____	10 tubes	_____
7. **Phosgene Tube (No. 16) Expiration date _____	5 tubes	_____

* Tubes are to be refrigerated in the Lab

** Tubes are to be stored below 30 Degrees F. in the Lab Freezer.

APPENDIX ERP-400-3
ROUTINE INVENTORY CHECK OF THE CHEMISTRY EMERGENCY CABINET
AND THE POST-ACCIDENT SAMPLE PREPARATION STATION

PART II: POST-ACCIDENT SAMPLE PREPARATION STATION

<u>Items</u>	<u>Recommended</u>	<u>Actual</u>
<u>QUANTITY</u>	<u>Quantity</u>	
A. <u>REAGENTS AND STANDARDS</u>		
1. 0.01 N nitric acid	100 ml	_____
2. Boron Standard * Expiration date _____	20 ml	_____
3. Demin water	500 ml	_____
4. Chloride standard * Expiration date _____	50 ml	_____
5. Reference electrode filling solution 810007	20 ml	_____
6. Orion pH electrode storage solution 91001 *	20 ml	_____
7. pH buffer solution; 4, 7 and 10	50 ml ea.	_____
* pH buffer solutions, Boron standards and Chloride standards need not be in cabinet but must be available in the lab.		
B. <u>ELECTRODES</u>		
1. pH electrodes-Orion 8103	2	_____
C. <u>GAS PURGE SLEEVE</u>		
1. Charcoal sleeve	1	_____
2. Silver Zeolite sleeve	1	_____
D. <u>SYRINGES (PRESSURE LOK)</u>		
1. 0.1 ml	15	_____
2. 1.0 ml	15	_____
3. 10 ml	15	_____
4. Needles	30	_____

APPENDIX ERP-400-3
ROUTINE INVENTORY CHECK OF THE CHEMISTRY EMERGENCY CABINET
AND THE POST-ACCIDENT SAMPLE PREPARATION STATION

<u>Items</u>	<u>Recommended Quantity</u>	<u>Actual QUANTITY</u>
E. <u>MISCELLANEOUS</u>		
1. Orion pH meter	1	_____
2. Quick Disconnect fittings and hoses	3	_____
3. Plastic beakers, 30 ml	20	_____
4. Sample handling tongs	2	_____
5. Sample Cups	20	_____
6. Sample vial crimper	1	_____
7. Gas dilution vials with septums	20	_____
8. Liquid dilution vials with septums	20	_____
9. Plastic sample bags	20	_____
10. Beta goggles	1	_____
11. Absorbant towels	1 pkg	_____
12. Sample vial labels	1 pkg	_____
13. 50 ml graduated cylinder	1	_____
14. 250 ml beaker	4	_____

Post-Accident Sample Prep Station
 Inventory Performed:

Satisfactory _____
 Unsatisfactory _____

Notify Chemistry Supervision of any missing items and place orders to replenish stock.

 Initials / Date

APPENDIX ERP-400-4
OPERATION OF POST ACCIDENT SAMPLING SYSTEM (PASS) (Ref. 6.12)
(Page 1 of 13)

1.0 TASK SPECIFIC ACTIONS-IMMEDIATE

1.1 Chemistry Sampling and Analysis Team Leader shall:

1.1.1 Confer with Emergency Director to determine which PASS sample(s) are required.

1.1.1.1 Drywell Atmosphere

A. Upper Drywell 291' El

B. Lower Drywell 242' El

1.1.1.2 Suppression Pool Atmosphere

A. 222' El-250 Deg Azimuth from North

B. 222' El-70 Deg Azimuth from North

1.1.1.3 Secondary Containment Atmosphere

1.1.1.4 Primary Coolant Jet Pump

NOTE:	REACTOR COOLANT SAMPLES SHOULD BE OBTAINED FROM THE JET PUMP SAMPLE POINT WHEN THE REACTOR IS AT PRESSURE. AT LOW (<1%) POWER REACTOR WATER LEVEL SHOULD BE RAISED TO AT LEAST 80" TO ENSURE A REPRESENTATIVE JET PUMP SAMPLE. (REF: 6.13, 6.15)
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1.1.1.5 RHR (Ref: 6.13)

A. "A" RHR

B. "B" RHR

APPENDIX ERP-400-4
OPERATION OF POST ACCIDENT SAMPLING SYSTEM (PASS) (Ref. 6.12)
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RHR MODE	SYS. OP. TIME	SOURCE
LPCI	30 mins.	Supp. Pool
Cont. Spray Cooling		Supp. Pool
Supp. Pool Cooling		Supp. Pool
Shutdown Cooling	30 mins.	Rx Coolant
Steam Condensing		Rx Steam
Fuel Pool Cooling		Fuel Pool

1.1.2 Request Technical Support Team Leader to determine:

1.1.2.1 Whether sample source is isolated.
(Ref: 6.14)

SAMPLE	GROUP ISOLATION	ISOLATION SIGNALS
D/W or S/P Atmosphere	VIC	.Hi D/W Pressure .Lo-Lo Rx Level .Refuel Floor HVAC Hi-Rad .RX Encl. HVAC Hi-Rad
A or B RHR	IIB	.Lo Rx Level .Hi D/W Pressure
Primary Coolant Jet Pump	NONE	None
Secondary Cont. Atmosphere	NONE	None

1.1.2.2 Whether RECW is in service with ESW or SW lined up (for jet pump or RHR liquid samples only).

1.1.3 IF sample source is isolated
THEN obtain Emergency Directors approval to reset or bypass isolation as needed.

1.1.4 IF Emergency Director approves resetting/bypassing isolation,
THEN notify Group Leader to coordinate system lineup with Control Room per CH-910.

APPENDIX ERP-400-4
OPERATION OF POST ACCIDENT SAMPLING SYSTEM (PASS) (Ref. 6.12)
(Page 3 of 13)

- 1.1.5 Review Plant Radiation Level Status Board information.
- 1.1.6 Discuss with Health Physics Team Leader:
 - 1.1.6.1 Radiological conditions
 - 1.1.6.2 Sample and analysis tasks
 - 1.1.6.3 Health Physics coverage
 - 1.1.6.4 Emergency Dose Extension or Emergency Exposure Authorizations.
 - 1.1.6.5 Evacuation of Room 307 due to PASS vent exhausts (UNIT 1 ONLY)
- 1.1.7 Determine analysis requirements
- 1.1.8 IF iodine/particulate sample is desired,
THEN obtain containment atmosphere hydrogen concentration from Control Room
OR Containment Parameter Status Boards.
 - 1.1.8.1 IF greater than or equal to 4%
THEN CP-100 cartridge in lieu of GY-130.
 - 1.1.8.2 IF less than 4%
THEN GY-130 cartridge.

APPENDIX ERP-400-4
 OPERATION OF POST ACCIDENT SAMPLING SYSTEM (PASS) (Ref. 6.12)
 (Page 4 of 13)

NOTE: SAMPLE LIMITS: 40 MR/HR
 OR 400 UCI. THIS IS THE MAXIMUM ACTIVITY FOR SHELF 3 COUNTING
 GEOMETRY. IT IS PREFERABLE TO USE SHELF 1 OR 2. SAMPLE SHOULD
 BE NO MORE THAN 0.5 MR/HR FOR SHELF 1 OR 5 MR/HR FOR SHELF 2.

NOTE: MINIMUM SAMPLING TIME IS ONE SECOND.

1.1.9 IF iodine/particulate sample is desired
 THEN perform 1.1.9.1 and 1.1.9.2
 OR 1.1.9.3.

1.1.9.1 Determine maximum sampling time by using
 the following equation:

$$\frac{1 \text{ min.}}{3000 \text{ cc}} \times \frac{\text{cc}}{(\quad) \text{ uCi}} \times 400 \text{ uCi} = \text{Min.}$$

PASS flow-rate
 $\frac{1}{\text{Sampling Concentration}}$
Maximum Activity
Maximum Sampling Time

NOTE: SAMPLE CONCENTRATION (UCI/CC) MAY BE DETERMINED FROM KNOWN
 CONDITIONS SUCH AS POST-LOCA RAD MONITOR READINGS OR PREVIOUS
 PASS SAMPLE CONCENTRATIONS. IF THIS IS INITIAL PASS SAMPLE OR IF
 CONDITIONS ARE UNKNOWN, THEN USE ESTIMATED SAMPLE TIMES IN STEP
 1.1.9.3.

1.1.9.2 Determine recommended sampling time:

$$\frac{1}{80} \times \frac{\quad}{\quad} = \quad \text{Min.}$$

$\frac{1}{80}$
x
Maximum Sampling Time from 1.1.9.1
=
Recommended Sampling Time

APPENDIX ERP-400-4
OPERATION OF POST ACCIDENT SAMPLING SYSTEM (PASS) (Ref. 6.12)
(Page 5 of 13)

1.1.9.3 Use table below for estimating sample times based on elapsed time from accident. (Ref 6.16, 6.17)

ACCIDENT TYPE	SAMPLE LOCATION	SAMPLE TIME (SECS)				
		2 HRS	8 HRS	1 DAY	4 DAYS	30 DAYS
*LOCA	Primary Containment	1	1	1	1	1
LOCA	Reactor Enclosure	2	3	3	5	13
<p>* Dose Rates on the 1st cartridge may be initially too high for counting purposes. If this happens ratio the dose rates on cartridges 1 and 2 and count cartridge 2. Multiply counting results on cartridge 2 by the ratio.</p> $\frac{(\text{dose rate 1})}{(\text{dose rate 2})}$						

- 1.1.10 Report Maximum
AND Recommended sampling time to Group Leader.
- 1.1.11 IF a large volume liquid sample is required
AND an outside route taken,
THEN request Maintenance Team Leader provide means of transporting a Large Volume Cask.
- 1.1.12 Brief Group Leader on sample
AND analysis requirements.
- 1.1.13 Direct Group Leader to coordinate collection
AND analysis of sample.
- 1.2. Chemistry Sampling and Analysis Group Leader shall:
 - 1.2.1 WHEN Team Leader notifies of sample and analysis requirements,
THEN assign Group Members to:
 - 1.2.1.1 Assemble sampling equipment
 - 1.2.1.2 Prepare Sample Preparation Station
 - 1.2.1.3 Prepare analysis instrumentation

APPENDIX ERP-400-4
OPERATION OF POST ACCIDENT SAMPLING SYSTEM (PASS) (Ref. 6.12)
(Page 6 of 13)

- 1.2.2 IF a particulate/iodine cartridge sample is to be obtained
THEN:
 - 1.2.2.1 Contact Team Leader for estimated sampling time
AND record.
 - 1.2.2.2 Verify less than 4% hydrogen atmosphere.
(Dry Well Indicator AI-57-*51 on MCR panel *OS205 or Suppression Pool Indicator AI-57-*88 on MCR panel *OS206).
- 1.2.3 IF required
THEN request Control Room line-up Per CH-110.
- 1.2.4 Brief the Chemistry Sampling and Analysis Group Members as per ERP-400, step 2.3.12.3, including the following:
 - 1.2.4.1 Type of cartridge to use for sampling iodine
 - 1.2.4.2 Precautions for operating the PASS
- 1.2.5 IF HP coverage is required,
THEN dispatch group members to OSC,
OR other designated location for:
 - 1.2.5.1 HP briefing
 - 1.2.5.2 HP escort
- 1.3 Health Physics Technician shall:
 - 1.3.1 Provide HP coverage/support as per ERP-400, section 2.4.
- 1.4 Chemistry Sampling and Analysis Group Members shall:
 - 1.4.1 Assemble for a pre-job briefing.
 - 1.4.2 Perform steps 2.5.3 through 2.5.7 of ERP-400 as applicable for PASS sampling.

APPENDIX ERP-400-4
OPERATION OF POST ACCIDENT SAMPLING SYSTEM (PASS)
(Page 7 of 13)

* WARNING *
* DO NOT USE ELEVATORS *

- 1.4.3 WHEN Group Leader
 AND HP briefing are completed,
 THEN report to the Post Accident Sample Station.

NOTE: THE INDICATOR FOR AREA RADIATION DETECTOR RE-30-*69 (RE-507) IS ON THE CONTROL PANEL AND ITS READINGS SHOULD BE NOTED.
--

- 1.4.4 WHEN HP completes survey of sampling location
 THEN obtain sample per CH-910. Use data sheets in
 Appendix ERP-400-3 in place of those in CH-910.
- 1.4.5 WHEN HP completes transfer container survey
 THEN return sample(s) to Hot Lab.
 - 1.4.5.1 Unless otherwise directed, retrace initial
 route taken.
 - 1.4.5.2 Maintain ALARA concepts during handling
 AND storage.
- 1.4.6 WHEN sample(s) positioned in the Hot Lab
 OR other appropriately shielded storage location,
 THEN notify Group Leader:
 - 1.4.6.1 Sample collection completed
 - 1.4.6.2 Sample status

2.0 TASK SPECIFIC ACTIONS - FOLLOW-UP - Performed as per ERP-400,
 Section 3.0.

3.0 ATTACHMENTS

- 3.1 Data Sheet A 14.4 ml Gas Sample
- 3.2 Data Sheet B Iodine Particulate Sample
- 3.3 Data Sheet C Small Volume Liquid Sample
- 3.4 Data Sheet D Monitoring Total Dissolved Gas/Obtaining a Dissolved
 Gas Sample/Obtaining a Large Volume Liquid Sample.

APPENDIX ERP-400-4
OPERATION OF POST ACCIDENT SAMPLING SYSTEM (PASS) (Ref. 6.12)
(Page 8 of 13)

4.0 SUPPORTING INFORMATION

4.1 Planned radiation exposures shall be controlled per ERP-660 Entry for Emergency Repair and Operations.

5.0 SPECIAL EQUIPMENT - as per CH-910

6.0 REFERENCES

- 6.1 M-102 - General Arrangement Plan at El. 217'-0"
- 6.2 M-30 P&ID
- 6.3 M-42 P&ID
- 6.4 M-51 P&ID
- 6.5 M-57 P&ID
- 6.6 D24-Z001-K001, Vol. I & II, GEK83344, Operations and Maintenance Instructions - PASS, Vol. I & II
- 6.7 A-107 - Architectural Floor Plan at Elevation 217' -0".
- 6.8 NUREG 0737
- 6.9 INPO Good Practice EP-809
- 6.10 ERP-650 Entry for Emergency Repair and Operations
- 6.11 Response to NRC Inspection Report 50-353/8932. M.J. McCormick to NRC, March 30, 1990.
- 6.12 UFSAR 1.13.2
- 6.13 UFSAR 11.5.5.1.1
- 6.14 UFSAR 11.5.5.3
- 6.15 LGS SER 9.3.2
- 6.16 UFSAR Table 15.6-14, Table 15.6-15
- 6.17 UFSAR Table 6.2-14, Table 6.2-1

APPENDIX ERP-400-4
DATA SHEET A 14.4 ML GAS SAMPLE
(Page 9 of 13)

DESIRED ANALYSIS

- A. _____
- B. _____
- C. _____

SAMPLE #

- 1. Sample Source _____ Date _____ Time _____
- 2. Sample Flow _____ FI-30-*15 (FI-725) SLPM
- 3. Flush Duration _____ Min.
- 4. Absolute Pressure of Vial (P1) _____ PI-30-*04 (PI-708) PSIA
- 5. Final Sample Pressure (P2) _____ PI-30-*04 (PI-708) PSIA
- 6. Sample Temperature _____ TI-30-*16 (TI-724) F
- 7. Calculate Sample Volume (ML) Corrected to STP
 Vol @ STP = $\frac{(P2-P1) (14.4 \text{ ml}) (492 \text{ deg. R})}{(T + 460 \text{ deg. R}) (14.7 \text{ PSIA})}$
 = _____ ml @ STP
- 8. Initial Contact Dose Rate _____ mR

Name _____

APPENDIX ERP-400-4
DATA SHEET C SMALL VOLUME LIQUID SAMPLE
(Page 11 of 13)

DESIRED ANALYSIS

- A. _____
- B. _____
- C. _____
- D. _____
- E. _____

SAMPLE #

- 1. Sample Source _____ Date/Time _____
- 2. Sample Flow _____ FI-30-*48 (FI-664) gpm
- 3. Flush Time _____ Minutes
- 4. Sample Flow _____ FI-30-*48 (FI-664) gpm
- 5. Pressure _____ PI-30-*49 (PI-661) psig
- 6. Temperature _____ TI-30-*50 (TI-660) F
- 7. Conductivity CI-30-*51 (CI-663)
(_____ reading) (x 10) (_____ scale) = _____ micromhos/cm
- 8. Radiation _____ RI-30-*58 (RI-665) mR/hr
- 9. Initial contact Dose Rate _____ mR
- 10. Shielded Dose Rate _____ mR

Name _____

APPENDIX ERP-400-4
DATA SHEET D FOR MONITORING TOTAL DISSOLVED GAS/OBTAINING
A DISSOLVED GAS SAMPLE/OBTAINING A LARGE VOLUME LIQUID SAMPLE
 (Page 12 of 13)

DESIRED ANALYSIS

SAMPLE #

- A. _____
- B. _____
- C. _____
- D. _____
- E. _____

1. Sample Source _____ Date Time _____
2. Sample Flow _____ FI-30-*48 (FI-664) gpm
3. Flush Time _____ Minutes
4. Sample Flow _____ FI-30-*48 (FI-664) gpm
5. Pressure _____ PI-30-*49 (PI-661) psig
6. Conductivity CI-30-*51 (CI-663)
 (_____ reading) (x 10) (_scale) = _____ micromhos/cm
7. Radiation _____ RI-30-*58 (RI-665) mR/hr
8. Initial Pressure PO _____ PI-30-*34 (PI-662) PSIA
- 9.

	P1 PI-30-*34 (PI-662) PSIA	delta P PSIA
CYCLE 1		N/A
CYCLE 2		
CYCLE 3		
CYCLE 4		

10. Final P1 = PF = _____ PSIA
11. Temperature _____ TI-30-*50 (TI-660) F
12. Vapor Pressure of Water (PV) = _____ PSIA
 (from CH-910 Appendix 3, Table 1)

APPENDIX ERP-400-4
DATA SHEET D FOR MONITORING TOTAL DISSOLVED GAS/OBTAINING
A DISSOLVED GAS SAMPLE/OBTAINING A LARGE VOLUME LIQUID SAMPLE
(Page 13 of 13)

- 13. CT _____ Scc/kg (from step 59)
- 14. If sample taken, fraction of sample H₂ = _____
(from gas chromatograph) = NH
- 15. If sample taken, fraction of sample O₂ = _____
(from gas chromatograph) = NO
- 16. Liquid Sample Contact Dose _____ mR
- 17. Gas Sample contact Dose _____ mR
- 18. CO₂ = Concentration of O₂ = (5.43 x NO X PF) - (0.81 x PO)
- 19. CO₂ = _____ Scc/Kg
- 20. CH₂ = Concentration of H₂ = 4.98 x NH x PF
- 21. CH₂ = _____ Scc/Kg

Name _____

APPENDIX ERP-400-5
RETRIEVING/CHANGING SAMPLE FILTERS/CARTRIDGES
AND OBTAINING GAS SAMPLES FROM THE CONTAINMENT LEAK DETECTOR
(Page 1 of 5)

1.0 TASK SPECIFIC ACTIONS-IMMEDIATE

1.1 Chemistry Sampling and Analysis Team Leader Shall:

- 1.1.1 Perform duties as per ERP-400, step 2.2.10, as applicable for Containment Leak Detector Samples.
- 1.1.2 Determine estimated sampling time for particulate/charcoal (zeolite) cartridge AND brief Chemistry Sampling and Analysis Group Leader on sampling and Analysis requirements.

1.2 Chemistry Sampling and Analysis Group Leader shall:

- 1.2.1 WHEN Team Leader notifies of sample and analysis requirements
THEN assign Group Members to:
 - 1.2.1.1 Assemble sample equipment
 - 1.2.1.2 Prepare sample Preparation Station
 - 1.2.1.3 Prepare analysis instrumentation
- 1.2.2 Obtain containment atmosphere hydrogen concentration from Control Room,
OR Containment Parameter Status Board (TSC).
 - 1.2.2.1 IF greater than or equal to 4%
THEN use CP-100 cartridge in lieu of GY-130 cartridge.
- 1.2.3 Contact Shift Operations and request system line up so that the selected sample can be taken from the desired sample point.
- 1.2.4 IF the Containment Leak Detector is isolated (Group VI: HI D/W PRESS (1.68 psig), LO-LO Rx Level (-38"), REFUEL FLOOR HVAC HI RAD (2 mR/Hr) OR RX ENC. HVAC HI RAD (1.34 mR/Hr),
THEN shift operations may defeat the signal by placing jumpers across the following contacts:

DO NOT DEFEAT ISOLATION OF HIGH DRYWELL PRESSURE WHEN DRYWELL PRESSURE IS GREATER THAN 5 PSIG.

<u>VALVE</u>	<u>PANEL</u>	<u>TERMINALS</u>	<u>RELAY</u>
SV-26-*90A,C K101C	*0C609	HHH8-13 to HHH8-14	B21H-(T4-M4)
SV-26-*90B,D K120B	*0C611	HHH2-18 to HHH2-19	B21H-(T4-M4)

APPENDIX ERP-400-5
RETRIEVING/CHANGING SAMPLE FILTERS/CARTRIDGES
AND OBTAINING GAS SAMPLES FROM THE CONTAINMENT LEAK DETECTOR
(Page 3 of 5)

1.4.6 WHEN sample(s) positioned in the Hot Lab
OR other appropriately shielded storage location
THEN notify Group Leader:

1.4.6.1 Sample collection completed

1.4.6.2 Sample status

2.0 TASK SPECIFIC ACTIONS - FOLLOW-UP - Performed as per ERP-400
section 3.0.

3.0 ATTACHMENTS

3.1 ERP-400-4, Data Sheet A

3.2 ERP-400-4, Data Sheet B

4.0 SUPPORTING INFORMATION

4.1 None

5.0 SPECIAL EQUIPMENT - As per CH-1015

6.0 REFERENCES

6.1 M-102

6.2 M-104

6.3 M-26 P&ID

6.4 E-519

APPENDIX ERP-400-5
DATA SHEET A - CONTAINMENT LEAK DETECTOR
PARTICULATE/IODINE GRAB SAMPLE
(Page 4 of 5)

ESTIMATED SAMPLING TIME: _____

DATE: _____

TIME: _____

TIME-1: _____

FLOW: _____ CFM

TIME-2: _____

INITIAL CONTACT DOSE RATE: _____

SHIELDED DOSE RATE: _____

ANALYSIS REQUIRED: _____

Name _____

APPENDIX ERP-400-5
DATA SHEET B - CONTAINMENT LEAK DETECTOR
PARTICULATE - GRAB SAMPLE
(Page 5 of 5)

DATE: _____

TIME: _____

VOLUME: _____

INITIAL CONTACT DOSE RATE: _____

SHIELDED DOSE RATE: _____

ANALYSIS REQUIRED: _____

Name _____

APPENDIX ERP-400-6
OBTAINING REACTOR WATER/RADWASTE SAMPLES FROM SAMPLE SINKS
(Page 1 of 6)

1.0 TASK SPECIFIC ACTIONS - IMMEDIATE

1.1 Chemistry Sampling and Analysis Team Leader shall:

1.1.1 Determine Sampling Point:

1.1.1.1 Reactor Water Clean-up Filter
Demineralizer Inlet

1.1.1.2 Reactor Water Recirculation Inlet

1.1.1.3 Main Steam from Reactor

1.1.1.4 Radwaste sample point from P&ID M-23,
Processing Sample.

1.1.2 Check with Shift Operations whether a sample can be
taken from the desired sample station and sample point.

1.1.3 IF the Reactor Water Clean Up Filter Demin Inlet sample
point is to be used

THEN contact the control room to determine if a Group
III isolation signal is present.

APPENDIX ERP-400-6
OBTAINING REACTOR WATER/RADWASTE SAMPLES FROM SAMPLE SINKS
(Page 2 of 6)

1.2.3.1 IF Group III isolation signal is present
THEN request Shift Operations to defeat
the appropriate trip signal by placing a
jumper across the following contacts:

NOTE: SHIFT APPROVAL IS REQUIRED FOR THIS STEP.

VALVE	PANEL	RELAY	CONTACTS	ISOLATION SIGNAL
HV-44-*F001	*0C622	B21H-K40A	T1-M1	SLCS Initiation (I/B)
HV-44-*F004	*0C623	B21H-K40B	T1-M1	SLCS Initiation (O/B)
HV-44-*F004	*0C623	B21H-K42	T1-M1	Non-Regen HX (O/B) Outlet High Temp
HV-44-*F001	*0C609	B21H-K3A	T1-M2	-38" Vessel Level (I/B)
HV-44-*F004	*0C609	B21H-K3C	T1-M2	-38" Vessel Level (O/B)

* WARNING *
* DO NOT DEFEAT THE ISOLATION OF HIGH RWCU DIFFERENTIAL FLOW, *
* HIGH AREA TEMPERATURE OR HIGH DIFFERENTIAL TEMPERATURE ON *
* ROOM VENTILATION AS THIS INDICATES A LEAK IN THE SYSTEM. *

1.2.3.2 Have Operations reset the Inboard and/or
Outboard Isolation Logic per GP-8.

1.2.4 IF the Reactor Water Recirculation Inlet sample line
has been isolated.
THEN contact the Control Room and request shift
operations to defeat the isolation signal by placing
jumpers across the following contacts:

NOTE: SHIFT APPROVAL IS REQUIRED FOR THIS STEP.

VALVE	PANEL	RELAY	CONTACTS	ISOLATION SIGNALS
HV-43-*F019	*0C622	B21H-K23A (T2-M2)	+CCC8-10 TO CCC8-11	Main Steam Line High Radiation and/or - 38" Vessel Level
HV-43-*F020	*0C623	B21H-K23D (T2-M2)	BBB6-2 TO DDD2-5	Main Steam Line High Radiation and/or - 38" Vessel Level
+ Jumper will open valve once installed. If switch control is required, jumper relay contacts.				

APPENDIX ERP-400-6
OBTAINING REACTOR WATER/RADWASTE SAMPLES FROM SAMPLE SINKS
(Page 3 of 6)

1.2.5 IF the Main Steam From Reactor sample point has been isolated (Group I),
THEN contact the Control Room and request Shift Operations to defeat the isolated signal by placing jumpers across the following contacts:

NOTE: SHIFT APPROVAL IS REQUIRED FOR THIS STEP.

VALVE	PANEL	RELAY	CONTACTS	ISOLATION SIGNAL
HV-41-*F084	*0C622	B21H-K23A (T3-M3)	+CCC8-15 TO CCC8-16	-38" Vessel Level and/or Main Steam Line High Radiation
HV-41-*F085	*0C623	B21H-K23D (T3-M3)	+AAA5-2 TO DDD2-10	-38" Vessel Level and/or Main Steam Line High Radiation
+Jumper will open valve once installed. If switch control is required, jumper relay contacts.				

1.2.6 Brief Group members as per ERP-400, step 2.3.12.3.

1.2.7 IF HP coverage is required,
THEN dispatch group members to OSC
OR other designated location for:

1.2.7.1 HP briefing

1.2.7.2 HP escort

1.3 Health Physics Technician shall provide HP coverage as per ERP-400, Section 2.4

1.4 Chemistry Sampling and Analysis Group Members shall:

1.4.1 Assemble for pre-job briefing.

1.4.2 Perform ERP-400, steps 2.4.3 through 2.5.7 as applicable.

* WARNING *
* DO NOT USE ELEVATORS *

APPENDIX ERP-400-6
OBTAINING REACTOR WATER/RADWASTE SAMPLES FROM SAMPLE SINKS
(Page 4 of 6)

1.4.3 Proceed to Reactor Enclosure Sample Station
OR Radwaste Sample Sink as appropriate for intended
sample.

*
* WARNING *
*
* SAMPLE TONGS OR OTHER REMOTE HANDLING TOOLS SHOULD BE USED FOR SAMPLE *
* COLLECTION *

1.4.4 WHEN HP completes survey of sampling location
THEN obtain sample in accordance with CH-1050/CH-1053.

1.4.4.1 IF sample flow can not be established
THEN exit
AND consult Group Leader.

1.4.4.2 Obtain 2 oz. sample in 4 oz. bottle.

A. IF activity is extreme
THEN collect smaller volume.

1.4.4.3 WHEN sample is obtained,
THEN quickly seal with lid.

1.4.4.4 Have HP take Initial Contact Dose Rate
AND record on Appendix ERP-400-5 Data
Sheet.

1.4.4.5 Place in transport container.

1.4.4.6 Have HP take Shielded Dose Rate
AND record on Appendix ERP-400-5 Data
Sheet.

1.4.5 Transport sample back to Hot Lab.

1.4.6 WHEN sample(s) positioned in the Hot Lab
OR other appropriately shielded storage location
THEN notify Group Leader:

1.4.6.1 Sample collection completed

1.4.6.2 Sample status

APPENDIX ERP-400-6
OBTAINING REACTOR WATER/RADWASTE SAMPLES FROM SAMPLE SINKS
(Page 5 of 6)

2.0 TASK SPECIFIC ACTIONS - FOLLOW-UP - Performed as per ERP-400,
Section 3.0.

3.0 ATTACHMENTS

3.1 Appendix ERP-400-5, Data Sheet

4.0 SUPPORT INFORMATION

None

5.0 SPECIAL EQUIPMENT

5.1 4 oz. sample bottle with lid

5.2 Tongs or remote tooling for holding the sample bottle during
sampling.

5.3 Sample transport container.

6.0 REFERENCES

6.1 M-23 P&ID

6.2 M-102

6.3 M-103

6.4 GP-8

6.5 M-100

6.6 M-102

APPENDIX ERP-400-6
DATA SHEET - REACTOR WATER/RADWASTE GRAB SAMPLE
(Page 6 of 6)

DATE: _____

TIME: _____

SAMPLE LOCATION:

UNIT 1 Reactor Enclosure Sample Station _____

UNIT 2 Reactor Enclosure Sample Station _____

Radwaste Sample Sink _____

SAMPLE POINT:

- 1. REACTOR WATER CLEAN UP FILTER DEMIN INLET _____
- 2. REACTOR WATER RECIRCULATION INLET _____
- 3. MAIN STEAM FROM REACTOR _____
- 4. RADWASTE (SPECIFY POINT) _____

VOLUME: _____

INITIAL CONTACT DOSE RATE _____

SHIELDED DOSE RATE _____

ANALYSIS REQUIRED: _____

Name _____

APPENDIX ERP-400-7
COOLING TOWER BLOWDOWN WATER SAMPLES
(Page 1 of 4)

1.0 TASK SPECIFIC ACTIONS - IMMEDIATE

- 1.1 Chemistry Sampling and Analysis Team Leader shall:
 - 1.1.1 Perform duties as per ERP-400, step 2.2.10 as applicable for cooling tower blowdown water samples.
- 1.2 Chemistry Sampling and Analysis Group Leader shall:
 - 1.2.1 WHEN Team Leader notifies of sample and analysis requirements,
THEN assign Group Members to:
 - 1.2.1.1 Assemble sampling equipment
 - 1.2.1.2 Prepare sample preparation station
 - 1.2.1.3 Prepare analysis instrumentation
 - 1.2.2 Brief Group members as per ERP-4--, Step 2.3.12.3.
 - 1.2.3 IF HP coverage is required,
THEN dispatch group members to OSC
OR other designated location for:
 - 1.2.3.1 HP briefing
 - 1.2.3.2 HP escort
- 1.3 Health Physics Technician shall provide Hp coverage/support as per ERP-400, section 2.4.
- 1.4 Chemistry Sampling and Analysis Group Members shall:
 - 1.4.1 Assemble for pre-job briefing.
 - 1.4.2 Perform ERP-400, steps 2.5.3 through 2.5.7 as applicable.

*
* WARNING *
*
* DO NOT USE ELEVATORS *

- 1.4.3 WHEN briefings are complete
THEN report to Holding Pond Structure.
- 1.4.4 IF HP escort is assigned,
THEN wait until area survey completed before sampling.

APPENDIX ERP-400-7
COOLING TOWER BLOWDOWN WATER SAMPLES
(Page 2 of 4)

- 1.4.5 Obtain samples in accordance with CH-1069.
- 1.4.5.1 IF sample pump was just started,
THEN purge line for 90 minutes maximum, as
conditions allow
AND notify group leader of delay.
- 1.4.6 IF effluent to river sample is required,
THEN obtain a one liter grab sample in accordance with
CH-1069.
- 1.4.6.1 IF flow cannot be established,
THEN contact Group Leader.
- 1.4.6.2 Survey sample bottle
AND record initial contact dose rate on
Appendix ERP-400-6 Data Sheet.
- 1.4.6.3 Place sample bottle in plastic bag
AND tape shut.
- 1.4.6.4 IF sample pump switch position was changed
THEN contact Group Leader to determine
where pump should be left on for composite
sampling.
- 1.4.7 IF effluent to river composite sample is required
THEN obtain one liter sample in accordance with CH-
1069.

NOTE:	IN THE EVENT THAT COMPOSITE SAMPLER PUMP IS NOT IN OPERATION, CONTACT GROUP LEADER TO DETERMINE WHETHER COMPOSITE SAMPLE IS APPROPRIATE.
-------	--

- 1.4.7.1 Survey sample bottle
AND record Initial Contact Dose Rate on
Appendix ERP-400-6 Data Sheet.
- 1.4.7.2 Place sample bottle in plastic bag
AND tape shut.
- 1.4.7.3 IF composite sampling is to continue,
THEN leave sample pump switch on.
IF NOT, place switch in OFF position.
- 1.4.8 IF Unit 1 or Unit 2 cooling tower blowdown sample is
required,
THEN obtain one liter sample in accordance with CH-
1064.

APPENDIX ERP-400-7
COOLING TOWER BLOWDOWN WATER SAMPLES
(Page 3 of 4)

- 1.4.8.1 Survey sample bottle
AND record Initial contact Dose Rate on
Appendix ERP-400-6 Data Sheet.
- 1.4.8.2 Place sample bottle in plastic bag
AND tape shut.
- 1.4.9 Complete ERP-400-6 Data Sheet.
- 1.4.10 Transport sample back to Hot Lab.
- 1.4.11 WHEN sample(s) positioned in the Hot Lab,
OR other appropriately shielded storage location
THEN notify group leader.
 - 1.4.11.1 Sample collection completed
 - 1.4.11.2 Sample status
- 2.0 TASK SPECIFIC ACTION - FOLLOW UP - Performed as per ERP-400, section
3.0
- 3.0 ATTACHMENTS
 - 3.1 Appendix ERP-400-6, Data Sheet
- 4.0 SUPPORTING INFORMATION

None
- 5.0 SPECIAL EQUIPMENT - as per CH-1069
- 6.0 REFERENCES
 - 6.1 M-09 P&ID
 - 6.2 M-68 P&ID

APPENDIX ERP-400-7
COOLING TOWER BLOWDOWN WATER SAMPLES
(Page 4 of 4)

DATE: _____

TIME: _____

SAMPLE LOCATION: _____

TYPE OF SAMPLE: _____

VOLUME: _____

INITIAL CONTACT DOSE RATE: _____

ANALYSIS REQUIRED: _____

Name _____

APPENDIX ERP-400-8
NORTH VENT WIDE RANGE GAS MONITOR (WRGM)
(Page 1 of 6)

1.0 TASK SPECIFIC ACTIONS - IMMEDIATE

1.1 Chemistry Sampling and Analysis Team Leader shall:

- 1.1.1 WHEN discussions with Emergency Director are completed, THEN determine whether North Vent WRGM sample(s) is required.
- 1.1.2 Determine sample type:
 - 1.1.2.1 Local Particulate/Iodine
 - 1.1.2.2 Remote Particulate/Iodine
 - 1.1.2.3 Gas Grab Sample
 - 1.1.2.4 Alternate Samples
- 1.1.3 Contact Dose Assessment Coordinator to verify sample point is not isolated.
- 1.1.4 Direct Chemistry Sampling and Analysis Group Leader to prepare for obtaining sample.
- 1.1.5 Discuss with Health Physics Team Leader:
 - 1.1.5.1 Radiological conditions
 - 1.1.5.2 Samples to be taken
 - 1.1.5.3 Health Physics coverage requirements
 - 1.1.5.4 Exposure authorization requirements
- 1.1.6 Obtain reading from North Stack Instrument Room ARM channel 60.
 - 1.1.6.1 IF reading is ≥ 5 R/hr, THEN evaluate sampling requirements prior to proceeding.
 - 1.1.6.2 IF exposure exceeding administrative limits is expected THEN consult Health Physics Team Leader.
- 1.1.7 Determine analysis requirements.

APPENDIX ERP-400-8
 NORTH VENT WIDE RANGE GAS MONITOR (WRGM)
 (Page 2 of 6)

NOTE: SAMPLE LIMITS: 40 MR/HR OR 400 UCI. THIS IS THE MAXIMUM ACTIVITY FOR SHELF 3 COUNTING GEOMETRY. IT IS PREFERABLE TO USE SHELF 1 OR 2. SAMPLE SHOULD BE NOT MORE THAN 0.5 MR/HR IN ORDER TO USE SHELF 1 OR NO MORE THAN 5 MR/HR FOR SHELF 2.

1.1.8 IF iodine/particulate sample is desired
THEN:

1.1.8.1 Determine maximum sampling time by using the following equation:

$$\frac{1}{(\quad)*CFM} \times \frac{1 \text{ ft}^3}{2.83P4 \text{ cc}} \times \frac{\text{cc}}{(\quad)\text{uCi}} \times 400 \text{ uCi} = \left(\frac{\quad}{\quad} \right) \text{ MINS.}$$

SAMPLE FLOW RATE X CONVERSION FACTOR X $\frac{1}{\text{SAMPLE CONCENTRATION}}$ X MAXIMUM ACTIVITY = MAXIMUM SAMPLING TIME

* = 2.0 CFM (Low Range)
 * = 0.06 CRM (High Range)

NOTE: SAMPLE CONCENTRATION (UCI/CC) MAY BE DETERMINED FROM MCR PANEL 00C691 PER PROCEDURE CH-1015.1 STEP 8.10.

1.1.8.2 Determine recommended sampling time:

$$\frac{1}{80} \times \frac{1}{80} \times \frac{\text{MAXIMUM SAMPLING TIME FROM 1.1.8.1}}{\quad} = \frac{\text{RECOMMENDED SAMPLING TIME}}{\quad} \text{ MIN.}$$

1.1.9 Report Maximum AND Recommended Sampling Time to Group Leader.

1.1.10 Brief Group Leader on sample AND analysis requirements.

1.1.11 Direct Group Leader to coordinate collection AND analysis sample.

1.1.12 IF Alternate Sample(s) is selected,
THEN notify Shift Supervision that low
AND mid/high range pumps will be disengaged.

APPENDIX ERP-400-8
NORTH VENT WIDE RANGE GAS MONITOR (WRGM)
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- 1.2 Chemistry Sampling and Analysis Group Leader shall:
- 1.2.1 WHEN Team Leader specifies sample to be taken
THEN assign Group Members to assemble sampling equipment.
 - 1.2.2 Assign Group Members to prepare Chemistry Lab for sample receipt.
 - 1.2.3 Obtain estimated sample duration time from Team Leader.
 - 1.2.4. Ensure WRGM particulate filter
AND iodine cartridge are adequate,
AND properly installed.
 - 1.2.5 Brief Sampling Squad.
 - 1.2.6 Contact Team Leader to verify sample point is not isolated.
 - 1.2.7 IF HP coverage is required,
THEN dispatch group members to HP briefing.
 - 1.2.8 Dispatch Group Members to obtain sample.
 - 1.2.9 Provide Team Leader status update.
 - 1.2.9.1 Lab condition
 - 1.2.9.2 Sampling progress
- 1.3 Chemistry Sampling and Analysis Group Members shall:
- 1.3.1 Obtain the following equipment:
 - 1.3.1.1 3 evacuated offgas vials (if required)
 - 1.3.1.2 Small screwdriver
 - 1.3.2 Assemble for pre-job briefing with Group Leader.
 - 1.3.3 IF approaching Administrative Exposure guidelines
THEN inform Group Leader.
 - 1.3.4 Ensure Hot Lab is ready for sample receipt.
 - 1.3.5 IF directed by Group Leader,
THEN report to HP briefing location.
 - 1.3.6 WHEN briefing(s) are completed,
THEN report to designated location(s).

APPENDIX ERP-400-8
NORTH VENT WIDE RANGE GAS MONITOR (WRGM)
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1.3.7 Obtain samples in accordance with CH-1015.1. Use data sheets in Appendix ERP-400-7 in place of those in CH-1015.1.

1.4 Health Physics Technician shall provide HP coverage/support as per ERP-400 section 2.4.

2.0 TASK SPECIFIC ACTIONS - FOLLOW-UP - Performed as per ERP-400, section 3.0 including:

2.1 Chemistry Sampling and Analysis Team Leader shall:

2.1.1 IF notified alternate sample has been obtained, THEN notify Shift Supervision:

2.1.1.1 Alternate sampling completed.

2.1.1.2 WRGM is in AUTO position.

3.0 ATTACHMENTS

None

4.0 SUPPORTING INFORMATION

None

5.0 SPECIAL EQUIPMENT

5.1 Small Screwdriver

5.2 3 evacuated offgas vials

5.3 As specified in CH-1015.1

6.0 REFERENCES

6.1 M-26 P&ID

6.2 Response to NRC Inspection Report 50-353/89-32 M. J. McCormick to NRC 3/30/90

APPENDIX ERP-400-8
NORTH VENT WIDE RANGE GAS MONITOR (WRGM)
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SAMPLE #

FOR OBTAINING REMOTE PARTICULATE/IODINE SAMPLE

Channel number: _____ (1, 2 or 3)
Conc. _____ MicroCuries/cc
Range Selection _____ (Low or Mid/High)
Estimated Sampling Time _____

LOW RANGE	A-2 MID/HIGH RANGE
Time-1 _____ Time-2 _____ Sample Flow _____ (CFM) Stack Flow _____ (CFM) Initial Contact _____ Dose Rate ___ mR/hr	Time-1 _____ Time-2 _____ Sample Flow _____ (CFM) Stack Flow _____ (CFM) Initial Contact _____ Dose Rate ___ mR/hr

FOR OBTAINING LOCAL PARTICULATE/IODINE SAMPLE

Estimated Sampling Time _____

LOW RANGE	MID/HIGH RANGE
Time-1 _____ Time-2 _____ Sample Flow _____ (CFM) Stack Flow _____ (CFM) Initial Contact _____ Dose Rate ___ mR/hr	Time-1 _____ Time-2 _____ Sample Flow _____ (CFM) Stack Flow _____ (CFM) Initial Contact _____ Dose Rate ___ mR/hr

FOR OBTAINING A GAS GRAB SAMPLE

Time _____
Vol. _____ cc
Initial Contact Dose Rate _____ mR/hr

NAME: _____

APPENDIX ERP-400-8
NORTH VENT WIDE RANGE GAS MONITOR (WRGM)
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ALTERNATE SAMPLING

Estimated Sampling Time _____

PARTICULATE

Location _____
Rack No. 01S908 _____
Start Date/Time _____
Stop Date/Time _____
Vent Flow Rate _____ CFM
Initials _____
Date _____

IODINE

Location _____
Rack No. 01S908 _____
Start Date/Time _____
Stop Date/Time _____
Vent Flow Rate _____ CFM
Initials _____
Date _____

NOBLE GAS GRAB SAMPLE

Vol. _____ CC
Initial Contact Dose Rate _____ mR/hr
Initials _____
Date/Time _____

NOTE: CHECK CALIBRATION STICKER FOR EXACT FLOW RATE OF SAMPLE PUMP.

NAME: _____

APPENDIX ERP-400-9
CHEMISTRY SAMPLING AND ANALYSIS TEAM ACTIVATION
(Page 1 of 1)

1.0 IF contacted by pager,
THEN respond to code as follows:

1.1 Call autodialer at 1-800-MAGENTA (1-800-624-3682)

NOTE: PAGER CODES ARE AS FOLLOWS:

6611 - CALL IN PAGER TEST
6622 - CALL IN AND RESPOND DRILL
6633 - CALL IN EMERGENCY

1.2 IF autodialer is busy,
THEN callback autodialer after a short wait.

1.3 IF autodialer does not provide prompts,
THEN call LGS ASPEN,
AND enter "4#",
AND follow prompts.

2.0 IF contacted by autodialer callout,
THEN follow prompts
AND respond as required.

3.0 Any additional resources should be obtained via the normal work process.

NOTE:

The 60 minute Chem/Radio Chem -RC Technician Requirement contained in the Emergency Plan, Exhibit 3-7 is satisfied by the on-call Chemistry Team Leader position

NOTE: CALL BACKS TO AUTODIALER MUST BE PERFORMED DURING NORMAL WORKING HOURS AS WELL AS OFF HOURS.

Effective Date: _____

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MES/mes

MAINTENANCE TEAM ACTIVATION

1.0 IF contacted by pager,
THEN respond to code as follows:

1.1 Call autodialer at 1-800-MAGENTA (1-800-624-3682)

NOTE: PAGER CODES ARE AS FOLLOWS:

6611 - CALL IN PAGE TEST
6622 - CALL IN AND RESPOND DRILL
6633 - CALL IN EMERGENCY

NOTE: Any additional required resources should be obtained via the normal work control process.

NOTE: The "Mechanical Maintenance (1)" and "Electrical Maintenance (2)" requirements under the "Repair/Corrective Action" heading in Emergency Plan Exhibit 3-7 are satisfied by the on-call OSC Director, Maintenance Team Leader, and Maintenance I&C Supervisor positions.

1.2 IF autodialer is busy,
THEN callback autodialer after a short wait.

1.3 IF autodialer does not provide prompts,
THEN call LGS ASPEN,
AND enter "4#",
AND follow prompts.

2.0 IF contacted by autodialer callout,
THEN follow prompts,
AND respond as required.

ATTACHMENT 2

LIMERICK GENERATING STATION, UNITS 1 & 2

**Docket Nos. 50-352
50-353**

**License Nos. NPF-39
NPF-85**

EMERGENCY RESPONSE PROCEDURES

REPORT INDEX

PROCEDURE INDEX REPORT:

FAC	DOC TYPE	PROC TYPE	PROCEDURE NUMBER	CURR REV NBR	TITLE	EFFECTIVE DATE	RESP GROUP	SYSTEM NBR
LG	PROC	ERP	ERP-C-1000	0006	EMERGENCY OPERATIONS FACILITY (EOF) ACTIVATION/DEACTIVATION	06/25/01		
LG	PROC	ERP	ERP-C-1000-1	0004	EOF ACTIVATION CHECKLIST	06/25/01		
LG	PROC	ERP	ERP-C-1000-2	0003	EOF DEACTIVATION CHECKLIST	04/21/99		
LG	PROC	ERP	ERP-C-1000-3	0000	EOF BUSINESS HOURS FIRST RESPONDER CHECKLIST	04/21/99		
LG	PROC	ERP	ERP-C-1000-4	0000	EOF AFTER HOURS FIRST RESPONDER CHECKLIST	04/21/99		
LG	PROC	ERP	ERP-C-1000-5	0000	MINIMUM STAFFING POSITIONS NECESSARY TO ACTIVATE THE EOF	06/25/01		
LG	PROC	ERP	ERP-C-1100	0003	EOF STAFF AUGMENTATION INCORPORATED INTO ERP-C-1250	09/14/94		
LG	PROC	ERP	ERP-C-1200	0011	EMERGENCY RESPONSE MANAGER	06/25/01	LWE	
LG	PROC	ERP	ERP-C-1200-1	0000	EMERGENCY RESPONSE MANAGER TURNOVER/BRIEFING FORM	09/14/94		
LG	PROC	ERP	ERP-C-1200-2	0000	PROTECTIVE ACTION RECOMMENDATION WORKSHEET CANCELLED	10/24/95		
LG	PROC	ERP	ERP-C-1200-3	0000	ERM PAR DELIVERY CHECKLIST	04/03/00		
LG	PROC	ERP	ERP-C-1200-4	0000	MINIMUM STAFFING POSITIONS NECESSARY TO ACTIVATE THE EOF	03/30/01		
LG	PROC	ERP	ERP-C-1210	0002	ASSISTANT EMERGENCY RESPONSE MANAGER (AERM) CANCELLED	10/24/95		
LG	PROC	ERP	ERP-C-1250	0004	EMERGENCY PREPAREDNESS COORDINATOR/EOF	06/25/01		
LG	PROC	ERP	ERP-C-1250-1	0000	EMERGENCY POWER INSTRUCTIONS	09/14/94		
LG	PROC	ERP	ERP-C-1250-2	0002	EMERGENCY PREPAREDNESS COORDINATOR INSTRUCTIONS FOR ASPEN BACKUP NOTIFICATION SYSTEM	05/11/01		
LG	PROC	ERP	ERP-C-1250-3	0000	EMERGENCY PREPAREDNESS COORDINATOR INSTRUCTIONS TO STOP STAFFING	09/14/94		
LG	PROC	ERP	ERP-C-1250-4	0000	EMERGENCY PREPAREDNESS COORDINATOR INSTRUCTIONS FOR SYSTEM RESET	09/14/94		
LG	PROC	ERP	ERP-C-1300	0010	EMERGENCY OPERATIONS FACILITY (EOF) DOSE ASSESSMENT TEAM LEADER	08/29/00		
LG	PROC	ERP	ERP-C-1300-1	0004	DOSE ASSESSMENT TEAM LEADER (DATL) INITIAL ACTIONS	06/25/01		
LG	PROC	ERP	ERP-C-1300-2	0000	DOSE ASSESSMENT TURNOVER LIST	09/23/94		
LG	PROC	ERP	ERP-C-1300-3	0004	PROTECTIVE ACTION RECOMMENDATION WORKSHEET	03/30/01		
LG	PROC	ERP	ERP-C-1300-4	0000	OFFSITE SAMPLE ANALYSIS REQUESTS	09/23/94		
LG	PROC	ERP	ERP-C-1300-5	0001	DETERMINATION OF PROTECTIVE ACTION RECOMMENDATIONS (PARS)	11/02/98		
LG	PROC	ERP	ERP-C-1300-6	0002	DOSE ASSESSMENT GROUP MEMBER (DAGM) INITIAL ACTIONS	06/25/01		
LG	PROC	ERP	ERP-C-1300-7	0000	OBTAINING EPDS MET/RAD DATA	03/26/97		
LG	PROC	ERP	ERP-C-1300-8	0000	USE OF MODE A/MODE B CDM	03/26/97		
LG	PROC	ERP	ERP-C-1300-9	0001	OBTAINING MET DATA FROM NATIONAL WEATHER SERVICE	09/12/97		
LG	PROC	ERP	ERP-C-1310	0003	EMERGENCY OPERATIONS FACILITY (EOF) DOSE ASSESSMENT GROUP CANCELLED	03/26/97		
LG	PROC	ERP	ERP-C-1310-1	0000	DOSE ASSESSMENT GROUP LEADER INITIAL ACTIONS CANCELLED	03/26/97		
LG	PROC	ERP	ERP-C-1310-2	0000	OBTAINING MET DATA FROM NATIONAL WEATHER SERVICE CANCELLED	03/26/97		
LG	PROC	ERP	ERP-C-1310-3	0000	OBTAINING EPDS MET/RAD DATA CANCELLED	03/26/97		
LG	PROC	ERP	ERP-C-1310-4	0000	USE OF MODE A / MODE B OF CDM CANCELLED	03/26/97		
LG	PROC	ERP	ERP-C-1320	0007	EMERGENCY OPERATIONS FACILITY (EOF) FIELD SURVEY GROUP LEADER	08/29/00		
LG	PROC	ERP	ERP-C-1320-1	0002	FIELD SURVEY GROUP LEADER INITIAL ACTIONS	04/10/98		
LG	PROC	ERP	ERP-C-1320-2	0001	FIELD SURVEY GROUP LEADER TURNOVER SHEET	03/26/97		
LG	PROC	ERP	ERP-C-1320-3	0002	FIELD SURVEY GROUP LEADER DATA SHEET	08/29/00		
LG	PROC	ERP	ERP-C-1400	0005	ENGINEERING SUPPORT TEAM	06/25/01		

PROCEDURE INDEX REPORT:

FAC	DOC TYPE	PROC TYPE	PROCEDURE NUMBER	CURR REV NBR	TITLE	EFFECTIVE DATE	RESP GROUP	SYSTEM NBR
LG	PROC	ERP	ERP-C-1400-1	0002	ENGINEERING SUPPORT TEAM CHECKLIST	11/02/98		
LG	PROC	ERP	ERP-C-1410	0002	CORE DAMAGE ASSESSMENT	09/09/98		
LG	PROC	ERP	ERP-C-1410-1	0000	RADIOLOGICAL DATA	09/14/94		
LG	PROC	ERP	ERP-C-1410-2	0001	HYDROGEN CONCENTRATION DATA	09/09/98		
LG	PROC	ERP	ERP-C-1410-3	0001	CONTAINMENT RADIATION MONITOR DATA	09/09/98		
LG	PROC	ERP	ERP-C-1410-4	0000	METAL WATER REACTION CANCELLED	09/09/98		
LG	PROC	ERP	ERP-C-1410-5	0002	PERCENT OF FUEL INVENTORY AIRBORNE IN THE CONTAINMENT VS. APPROXIMATE SOURCE AND DAMAGE ESTIMATE	06/01/01		
LG	PROC	ERP	ERP-C-1410-6	0002	PROCEDURES FOR ESTIMATING FUEL DAMAGE BASED ON MEASURED I-131 AND XE-133 CONCENTRATIONS	06/25/01		
LG	PROC	ERP	ERP-C-1500	0006	LOGISTIC SUPPORT TEAM	04/14/00		
LG	PROC	ERP	ERP-C-1500-1	0001	MESSAGE AND INFORMATION INSTRUCTIONS	10/24/95		
LG	PROC	ERP	ERP-C-1500-2	0001	HELICOPTER LANDING INFORMATION	10/24/95		
LG	PROC	ERP	ERP-C-1900	0004	RECOVERY PHASE IMPLEMENTATION	11/02/98		
LG	PROC	ERP	ERP-C-1900-1	0000	RECOVERY PHASE IMPLEMENTATION FLOW CHART	06/28/93		
LG	PROC	ERP	ERP-C-1900-2	0002	PEACH BOTTOM ATOMIC POWER STATION RECOVERY ACCEPTANCE CHECKLIST	04/02/98		
LG	PROC	ERP	ERP-C-1900-3	0002	LIMERICK GENERATING STATION RECOVERY ACCEPTANCE CHECKLIST	04/02/98		
LG	PROC	ERP	ERP-C-1900-4	0002	RECOVERY PLAN OUTLINE	04/02/98		
LG	PROC	ERP	ERP-C-1900-5	0002	ASSESSMENT CONSIDERATIONS	12/28/99		
LG	PROC	ERP	ERP-101	0011	CLASSIFICATION OF EMERGENCIES	09/14/99	LWE	
LG	PROC	ERP	ERP-101 BASES	0002	LGS EAL TECHNICAL BASIS MANUAL	07/24/01		
LG	PROC	ERP	ERP-106	0003	WRITTEN SUMMARY NOTIFICATION	11/22/95	LWE	
LG	PROC	ERP	ERP-110	0033	EMERGENCY NOTIFICATION	06/12/01	LWE	
LG	PROC	ERP	ERP-120	0006	STATION EVACUATIONS	11/14/97	LWE	
LG	PROC	ERP	ERP-140	0009	STAFFING AUGMENTATION	02/03/98	LWE	
LG	PROC	ERP	ERP-200	0014	EMERGENCY DIRECTOR (ED) RESPONSE	03/27/01	LWE	
LG	PROC	ERP	ERP-200-1 APP	0011	EMERGENCY NOTIFICATION MESSAGE FORM	03/27/01	LWE	
LG	PROC	ERP	ERP-200-2 APP	0000	DOSE ASSESSMENT DATA SHEET	06/20/00		
LG	PROC	ERP	ERP-230	0014	OPERATIONS SUPPORT CENTER (OSC) DIRECTOR	04/14/00	LWE	
LG	PROC	ERP	ERP-230 APPENDIX 1	0000	OSC - EMERGENCY COMMUNICATIONS EQUIPMENT CHECK LIST	04/14/00		
LG	PROC	ERP	ERP-230 APPENDIX 2	0000	OSC DIRECTOR ACTIVATION CHECK-OFF LIST	04/14/00		
LG	PROC	ERP	ERP-230 APPENDIX 3	0000	OPERATIONS SUPPORT CENTER FACILITY ACCOUNTABILITY LOG	04/14/00		
LG	PROC	ERP	ERP-230 APPENDIX 4	0000	OSC DIRECTOR ACTIVATION	04/14/00		
LG	PROC	ERP	ERP-300	0022	TSC/MCR DOSE ASSESSMENT TEAM	04/03/00	LWE	
LG	PROC	ERP	ERP-300 APPENDIX 1	0000	DOSE ASSESSMENT TEAM ACTIVATION	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 2	0000	DOSE ASSESSMENT TEAM CHECK-OFF LIST	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 3	0001	TURNOVER OF DOSE ASSESSMENT RESPONSIBILITIES	06/19/00		
LG	PROC	ERP	ERP-300 APPENDIX 4	0000	DOSE ASSESSMENT DATA SHEET	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 5	0000	USE OF MESOREM, JR, AUTO MODE A	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 6	0000	OBTAINING RADIOLOGICAL DATA	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 7	0000	OBTAINING MET DATA FROM PLANT MONITORING SYSTEM (PMS)	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 8	0000	OBTAINING METEOROLOGICAL DATA FROM NATIONAL WEATHER SERVICE	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 9	0001	PROTECTIVE ACTION WORKSHEET	06/19/00		
LG	PROC	ERP	ERP-300 APPENDIX 10	0000	USE OF NORTH STACK DOSE RATE TO ESTIMATE RELEASE SOURCE TERM	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 11	0000	OPERATION OF IBM PS/2 MODEL L40SX	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 12	0000	LIMERICK LIQUID RELEASE DOSE CALCULATIONS	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 13	0000	DOSE ASSESSMENT SELF-CHECK	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 14	0000	STABILITY CLASS DETERMINATION	04/03/00		
LG	PROC	ERP	ERP-316	0000	OPERATION OF THE DOSE ASSESSMENT COMPUTER (CM-4)	06/20/00		

PROCEDURE INDEX REPORT:

FAC	DOC TYPE	PROC TYPE	PROCEDURE NUMBER	CURR REV NBR	TITLE	EFFECTIVE DATE	RESP GROUP	SYSTEM NBR
LG	PROC	ERP	ERP-326	0000	SHIFT DOSE ASSESSMENT PERSONNEL (SDAP)	06/20/00		
LG	PROC	ERP	ERP-330	0000	USE OF NORTH STACK-DOSE RATE TO ESTIMATE RELEASE SOURCE TERM CANCELLED INCORPORATED INTOERP-300 APP.10	11/14/94	LWE	
LG	PROC	ERP	ERP-340	0008	FIELD SURVEY GROUP	06/20/00	LWE	
LG	PROC	ERP	ERP-350	0003	RADIOACTIVE LIQUID RELEASE CANCELLED	11/10/94	LWE	
LG	PROC	ERP	ERP-360	0003	ADJUSTMENT OF WIDE RANGE GAS MONITOR CONVERSION FACTORS	10/18/99	LWE	
LG	PROC	ERP	ERP-370	0001	USE OF RMMS FOR DOSE ASSESSMENT CANCELLED	11/10/94	LWE	
LG	PROC	ERP	ERP-400	0013	CHEMISTRY SAMPLING AND ANALYSIS TEAM	07/24/01	LWE	
LG	PROC	ERP	ERP-410	0002	SAMPLE PREPARATION AND HANDLING OF HIGHLY RADIOACTIVE LIQUID SAMPLES	09/28/98	LWE	
LG	PROC	ERP	ERP-420	0002	SAMPLE PREPARATION AND HANDLING OF HIGHLY RADIOACTIVE PARTICULATE FILTERS AND IODINE CARTRIDGES	09/28/98	LWE	
LG	PROC	ERP	ERP-430	0002	SAMPLE PREPARATION AND HANDLING OF HIGHLY RADIOACTIVE GAS SAMPLES	09/28/98	LWE	
LG	PROC	ERP	ERP-440	0002	OFF-SITE ANALYSIS OF HIGH ACTIVITY SAMPLES	03/29/95	LWE	
LG	PROC	ERP	ERP-500	0016	SECURITY TEAM	04/14/00	LWE	
LG	PROC	ERP	ERP-500 APPENDIX 1	0000	SECURITY TEAM ACTIVATION	04/14/00		
LG	PROC	ERP	ERP-500 APPENDIX 2	0000	SECURITY TEAM STAFFING GUIDELINES	04/14/00		
LG	PROC	ERP	ERP-500 APPENDIX 3	0000	STAFFING FOR SITE EVACUATION	04/14/00		
LG	PROC	ERP	ERP-500 APPENDIX 4	0000	SECURITY EVACUATION GUIDANCE	04/14/00		
LG	PROC	ERP	ERP-500 APPENDIX 5	0000	SECURITY TEAM LEADER CHECK-OFF LIST	04/14/00		
LG	PROC	ERP	ERP-500 APPENDIX 6	0000	EMERGENCY ASSEMBLY AREAS	04/14/00		
LG	PROC	ERP	ERP-500 APPENDIX 7	0000	FACILITY ACCOUNTABILITY LOG TECHNICAL SUPPORT CENTER	04/14/00		
LG	PROC	ERP	ERP-600	0012	HEALTH PHYSICS TEAM	05/19/98	LWE	
LG	PROC	ERP	ERP-620	0002	PLANT SURVEY GROUP CANCELLED - NO REPLACEMENT	05/02/95	LWE	
LG	PROC	ERP	ERP-630	0003	VEHICLE AND EVACUEE CONTROL GROUP	03/29/95	LWE	
LG	PROC	ERP	ERP-640	0008	EMERGENCY RESPONSE FACILITY HABITABILITY	04/17/99	LWE	
LG	PROC	ERP	ERP-650	0010	ENTRY FOR EMERGENCY REPAIR AND OPERATIONS	06/20/00	LWE	
LG	PROC	ERP	ERP-660	0006	DISTRIBUTION OF THYROID BLOCKING TABLETS	04/17/99	LWE	
LG	PROC	ERP	ERP-700	0016	TECHNICAL SUPPORT TEAM	02/15/01	LWE	
LG	PROC	ERP	ERP-800	0020	MAINTENANCE TEAM	12/15/00	LWE	
LG	PROC	ERP	ERP-800 APPENDIX 1	0000	TASK BRIEFING/DEBRIEFING SHEET	04/14/00		
LG	PROC	ERP	ERP-800 APPENDIX 2	0001	MAINTENANCE TEAM ACTIVATION	07/24/01		
LG	PROC	ERP	ERP-800 APPENDIX 3	0001	TECHNICAL SUPPORT CENTER ACTIVATION	12/15/00		
LG	PROC	ERP	ERP-800 APPENDIX 4	0001	OFFSITE SIRENS ACTIVATION (REF. 6.5.1)	12/15/00		

** END OF REPORT **