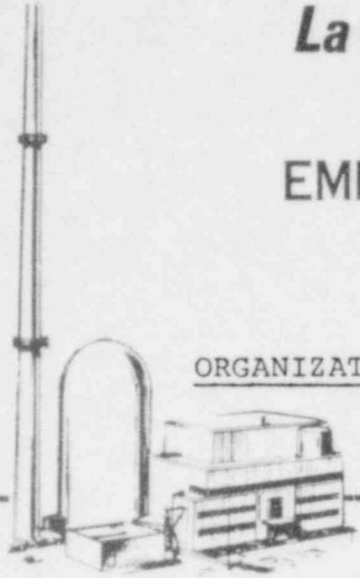

La Crosse Boiling Water Reactor
LACBWR

EMERGENCY PLAN PROCEDURE

Page 0.1
EPP-2

ORGANIZATION AND OPERATIONS DURING EMERGENCIES

DAIRYLAND POWER

Record and Control of Initial Issue, Revisions & Periodic Reviews

Issue	Prepared By or Periodic Rev. By Signature Date	Operations Supv. Review Signature Date	QA Supervisor Review Signature Date	Health & Safety Review** Signature Date	Appv'd & Issued* Effective Date of Issue
0	J.D. Parkyn 4/29/81	B. Boyd 4/30/81	Robert Allen for H.A. Towsley 4/30/81	B. Ribury 4/29/81	4/30/81 R. Shimshak
1	J.D. Parkyn 5/8/81	L. Kelley 5/8/81	H.A. Towsley 8 May 81	B. Ribury 5/8/81	5/8/81 J.D. Parkyn
2	H. Goodman 10/14/81	B. Boyd 10/14/81	H.A. Towsley 15 Oct 81	B. Ribury 10/15/81	J.D. Parkyn 10/15/81
3	P.W. Shafer 12-23-81	B. Boyd 1/28/82	Robert Allen 1-29-82	Paul W. Shafer 6 Jan 82	1/29/82 R. Shimshak
4	J.D. Parkyn 2/25/82	for L. Kelley 2/25/82	Robert Allen 2-26-82	Paul W. Shafer 2/25/82	Voided on 2/26/82 RWS
4	Paul W. Shafer 3/6/82	B. Boyd 3/10/82	Robert Allen 3-10-82	Paul W. Shafer 3/8/82	J.D. Parkyn 3/17/82
5	Paul W. Shafer 4/12/82	B. Boyd 4/26/82	Robert Allen 4-28-82	B. Ribury 6-1-82	Voided on 6/29/82 RWS
5	~~H. Goodman~~ Paul W. Shafer 7/1/82	B. Boyd 7/1/82	Robert Allen 7-1-82	[illegible] 7-1-82	7/1/82 R. Shimshak
6	H. Goodman	B. Boyd 7/29/82	Robert Allen 7-28-82	B. Ribury 7/29/82	J.D. Parkyn 7/30/82
7	B. Ribury 8/30/82	B. Boyd 8/31/82	Robert Allen 8-31-82	[illegible] 8/30/82	J.D. Parkyn 8/31/82

HSP EPP **H&S Supv. or Rad. Prot. Engineer *LACBWR Plant Superintendent

LACBWR

EMERGENCY PLAN PROCEDURE

ORGANIZATION AND OPERATIONS DURING EMERGENCIES

Issue Notice No. 7 Dated 8/31/82

INSTRUCTIONS

Remove Old Page No.	Insert New Page No.	Description Of and Reason for Change
Remove and discard Pages 0.1, 0.2 and 12 through 63 Issue 4, 5 & 6.	Insert Pages 0.1, 0.2 and 12 through 65. Issue 7	Change made to comply with NRC recommendations of 10/29/81 I&E Report 50-409/81-13

PAGE SCHEDULE

No.	Issue	No.	Issue	No.	Issue	No.	Issue
0.1	7	16	7	33	7	50	7
0.2	7	17	7	34	7	51	7
1	4	18	7	35	7	52	7
2	4	19	7	36	7	53	7
3	4	20	7	37	7	54	7
4	6	21	7	38	7	55	7
5	4	22	7	39	7	56	7
6	5	23	7	40	7	57	7
7	4	24	7	41	7	58	7
8	6	25	7	42	7	59	7
9	6	26	7	43	7	60	7
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11	5	28	7	45	7	62	7
12	7	29	7	46	7	63	7
13	7	30	7	47	7	64	7
14	7	31	7	48	7	65	7
15	7	32	7	49	7		

This issue shall not become effective unless accompanied by a new cover sheet properly signed off in the appropriate review/approval columns.

4.4.4 The Genoa 3 Duty Shift Supervisor will evacuate personnel not needed to safely reduce facility operation. If expected personnel exposure exceeds 5 rems whole body exposure or 25 rems thyroid exposure, the ECD shall require total evacuation of Genoa 3.

4.4.5 The warehouse personnel will also evacuate upon command.

4.4.6 If during normal office workday, switchboard operator should switch phone PABX to Control Room and bring visitor's record to Evacuation Point.

4.4.7 The CAS operator shall run a LIC, I, OTI listing. The Security Supervisor/Sargeant will ensure the printout is brought to the evacuation point. The Security Supervisor/Sargeant shall account for all personnel onsite by the following outline:

(1) The Control Room will notify him of all vital crew members' accountability.

(2) The computer listing will be checked against personnel present at the Evacuation Point to ensure all LACBWR personnel are accounted for.

(3) A member of the administrative technical staff present in the Administration Building will report on all personnel in the building being present at the Evacuation Point. The Security Supervisor/Sargeant will designate this person.

(4) The visitor log will be used to account for all personnel in LACBWR not listed in (2).

(5) A member of the Genoa 3 staff assigned by the Security Supervisor/Sargeant will account for these people.

(6) The Resident Inspector will account for all individuals onsite under NRC jurisdiction not accounted for in (2), (3), or (4).

(7) A member of the DPC staff housed in the Annex will account for Annex personnel.

(8) A member of the Warehouse Staff assigned by the Security Supervisor/Sargeant will account for these people.

(9) Report to the ECD.

____
(Security Supervisor/Sargeant)

Any re-entry to evacuated areas shall be by direction of the ECD in accordance with re-entry procedure, Section 4.7.

4.4.8 The security director/Duty Sargeant will assign a person, health physics department preferably, to perform contamination surveys on all individuals as soon as possible after their arrival at the evacuation point.

(1) The person(s) performing the decontamination will complete the "Evacuation Point Personnel Decontamination Log."

(2) Segregate all persons contaminated in excess of 200 cpm over background as measured with an open-window G-M (Thyac) or an HP-210 probe equipped count-rate meter.

(3) Perform immediate decontamination on all persons having contamination in excess of 1 Rad/hour. Refer to EPP-12, "Personnel Decontamination Procedure." Persons assisting in the decontamination efforts will wear as a minimum coveralls, gloves and safety glasses or face shield.

NOTE: Personnel having the greatest amount of contamination shall be deconned first.

(4) If skin contamination is in excess of 200 cpm above background, decon using water and soap. <u>Do not</u> use the sinks or showers that do not drain to the radioactive drain system. Wash and rinse over a radioactive waste drum designated for that purpose. If decontamination cannot be effectively performed by washing <u>over</u> the radioactive waste drum, stand in a waste collection trough and decon using sponges, soap and water.

(5) Towels used for drying shall be surveyed and either set aside for reuse or bagged as radioactive material.

(6) If it is necessary to remove a person's clothing because of contamination, the person can wear a set of disposable coveralls. It may be that the radioactivity deposited on the clothing is short-lived so that a person's clothing could be returned to him/her following a resurvey after a short period of time.

(7) Report results of contamination survey and the decontamination efforts to the RAD as soon as the results become available.

4.4.9 The CAS operator will assist the Shift Supervisor in communications and notification. An automatic dialer to accelerate notification of primary LACBWR emergency response personnel is located in the CAS. To notify key individuals carrying pagers, use buttons 1A and 2A on the automatic dialer or call 783-8466 and 637-2860. When the beeping (wailing for 637-2860) stops, the CAS operator should clearly state: "REPORT TO YOUR RESPONSE STATION," repeat message twice more, and then cancel the call.

4.4.10 Notify the Vernon County Sheriff via (637-2123) or (637-2910) or (637-2992) or NAWAS, Wisconsin Warning Center 1 via NAWAS or (266-3232), and Wisconsin Warning Center 3 via NAWAS or (372-3251) that a site area emergency is being declared and the offsite agencies should be placed in a standby basis. The message should state: "This is (Caller's Identification) calling from La Crosse Boiling Water Reactor. A site emergency has been declared at LACBWR. We recommend that you initiate your Emergency Reponse Plan as soon as possible. The Site Emergency is ..... (brief narrative description of the event) ....."

____
(STA or Duty Shift Supervisor)

4.4.11 Activate the Technical Support Center by calling personnel listed on the Technical Support Center roster (Appendix B).

__________ (ERD)	__________ (RAD)
__________ (OPD)	__________ (PPC)

4.4.12 Activate the Emergency Operations Facility by calling the personnel listed on the EOF roster (Appendix C).

Persons Contacted

__________ (ECD)	__________ (IFRAD)	__________ (ODCTS)
__________ (RAD)	__________ (TC)	
__________ (OPD)	__________ (TC)	

4.4.13 Notify the USNRC via the ENS network (red phone).

____
(ERD or Duty Shift Supervisor)

4.4.14 Activate the Joint News Center by contacting the Public Information Director listed in Appendix E.

____
(ERD)

4.4.15 Once the Technical Support Center has been activated, establish liaison between the Control Room and TSC.

____
(ERD)

4.4.16 Augment the staff as needed in accordance with Appendix G.

4.4.17 Once the EOF has been activated and the Cooperative Manager in overall charge of the emergency has arrived in the EOF, the Cooperative Manager will call the Shift Supervisor at the plant and assume the Emergency Control Director role.

________________________ ________________________________
(Duty Shift Supervisor) (ECD)

ECD Transferred To	Step in the Procedure Complete at Transfer
________________	____________________
Time/Date	____________________ (Duty Shift Supv.)
________________	

Once the EOF has been transferred from the Duty Shift Supervisor to the Cooperative Manager, the TSC Staff and/or the Control Room will communicate with the EOF staff and provide the incident details, known radiological releases, if applicable, sample results if taken, time of event, and current status. The telephone numbers for the EOF are listed in Appendix F. Keep the EOF notified of changes of plant condition. The ECD will now contact the Joint News Center and establish communications.

4.4.18 The ECD shall in conjunction with Cooperative RAD determine areas in and around the facility to be surveyed to determine the extent of radiological release and contamination (EPP-6, 7, and 8). Any indication that dose rates or contamination rates at the site boundary downwind may exceed 1 Rem whole body or 5 Rem to the thyroid shall cause the ECD to escalate the emergency status to that of General Emergency and evaluate offsite doses (EPP-8). Actual dose predictions to offsite areas shall be calculated using EPP-5 under direction of Health and Safety personnel. These calculations should be double-checked. Control Room personnel will furnish meteorological data as required until such time as this function is remoted. The Vernon County Sheriff shall be furnished with meteorological conditions and dose projections where appropriate by the ECD.

____
(RAD and ECD)

4.4.19 Notify INPO of the site area emergency status at (404)953-0904, as time permits.

____
(ECD)

4.4.20 Notify American Nuclear Insurers of the Site Area Emergency status at (203) 677-7305.

____
(ECD)

4.4.21 Escalate Emergency Response by turning to General Emergency EAL Section 4.5, or de-escalate to Alert by turning to Section 4.6.4, or deactivate emergency plan by turning to Section 4.6.10.

____
(ECD)

4.5 GENERAL EMERGENCY

4.5.1 Evacuate all onsite personnel except Operational crew, oncrew Health Physics Technician, Shift Technical Advisor, CAS Operator, and TSC personnel to either the Evacuation Point at Genoa 1, the lunchroom or lockerroom, or St. Charles School at the discretion of the Duty Shift Supervisor. (Use the St. Charles School if radiological conditions are such that the Genoa 1 power plant is not habitable or will not be habitable, and offsite evacuation of nonessential personnel is required. Contact school by calling Rev. Schute at 689-2646.) The Security Supervisor/Sargeant on duty will account for all onsite personnel and notify the Control Room. The normal exit pathway through the Administrative Building will remain open for egress.

(1) Announce - "A site area emergency exists - all personnel evacuate to Genoa 1 (or "lunchroom" or "offsite to St. Charles School") immediately." Then push the Reactor Building Evacuation Siren and Outside and Turbine Building Siren start and allow siren to sound for 30 seconds. Repeat announcement and siren two more times.

NOTE: FOR DRILLS ONLY - Shortly before initiating the drill, contact the G-3 Shift Supervisor or Plant Superintendent at 689-2335 and the Sheriff's Office at 637-2123, and the Genoa Lock and Dam No. 8 at 689-2625 to notify them of the forthcoming drill, and the fact that the siren will sound, and what if any action is required on their part. The first announcement should be preceded by the words, "This is a Drill," then the emergency announcement should be followed by, "This is a Drill."

____
(Duty Shift Supervisor)

4.5.2 Notify any additional personnel the Duty Shift Supervisor wants to retain to go to the lunchroom OSC adjacent to the Control Room.

4.5.3 If Genoa-1 or the St. Charles School OSC is to be used for the evacuation point, the Security Supervisor/Sargeant on duty at the P.A. Access Control Point will bring the Visitor's Log, any available dosimeters, the Sheriff's Band two-way radio, the LACBWR truck, and the Evacuation Point Emergency Keyring (G-1 only) to the activated assembly point; and shall select Channel 88 or 76 and activate the FM radio in the LACBWR truck for backup communications with the Control Room.

4.5.4 The Genoa 3 Duty Shift Supervisor will evacuate personnel not needed to safely reduce facility operation. If expected personnel exposure exceeds 5 Rems whole body exposure or 25 Rems thyroid exposure, the ECD shall require total evacuation of Genoa 3.

4.5.5 The warehouse personnel will also evacuate upon command.

4.5.6 If during normal office workday, switchboard operator should switch phone PABX to Control Room and bring visitors' record to Evacuation Point.

4.5.7 The CAS operator shall run a LIC, I, OTI listing. The Security Supervisor/Sargeant will ensure the printout is brought to the evacuation point. The Security Supervisor/Sargeant shall account for all personnel onsite by the following outline:

(1) The Control Room will notify him of all vital crew members accountability.

(2) The computer listing will be checked against personnel present at the Evacuation Point to ensure all LACBWR personnel are accounted for.

(3) A member of the administrative technical staff present in the Administration Building will report on all personnel in that building being present at the Evacuation Point. The Security Supervisor/Sargeant will designate this person.

(4) The visitors' log will be used to account for all personnel in LACBWR not listed in (2).

(5) A member of the G-3 staff assigned by the Security Supervisor/Sargeant will account for these people.

(6) A member of the warehouse staff assigned by Security Supervisor/Sargeant will account for their people.

(7) The Resident Inspector will account for all individuals onsite by NRC jurisdiction not accounted for in (2), (3), or (4).

(8) A member of the DPC staff housed in the Annex will account for Annex people. A member of the warehouse staff will account for warehouse people.

(9) Report to the ECD.

____
(Security Supervisor/Sargeant)

Any re-entry to evacuated areas shall be by direction of the ECD in accordance with re-entry procedure, Section 4.7.

4.5.8 The security director/Duty Sargeant will assign a person, health physics department preferably, to perform contamination surveys on all individuals as soon as possible after their arrival at the evacuation point.

(1) The person(s) performing the decontamination will complete the "Evacuation Point Personnel Decontamination Log."

(2) Segregate all persons contaminated in excess of 200 cpm over background as measured with an open-window G-M (Thyac) or an HP-210 probe equipped count-rate meter.

(3) Perform immediate decontamination on all persons having contamination in excess of 1 Rad/hour. Refer to EPP-12, "Personnel Decontamination Procedure." Persons assisting in the decontamination efforts will wear as a minimum coveralls, gloves and safety glasses or face shield.

NOTE: Personnel having the greatest amount of contamination shall be deconned first.

(4) If skin contamination is in excess of 200 cpm above background, decon using water and soap. Do not use the sinks or showers that do not drain to the radioactive drain system. Wash and rinse over a radioactive waste drum designated for that purpose. If decontamination cannot be effectively performed by washing over the radioactive waste drum, stand in a waste collection trough and decon using sponges, soap and water.

(5) Towels used for drying shall be surveyed and either set aside for reuse or bagged as radioactive material.

(6) If it is necessary to remove a person's clothing because of contamination, the person can wear a set of disposable coveralls. It may be that the radioactivity deposited on the clothing is short-lived so that a person's clothing could be returned to him/her following a resurvey after a short period of time.

(7) Report results of contamination survey and the decontamination effort to the RAD as soon as the results become available.

4.5.9 The CAS operator will assist the Shift Supervisor in communication and notification. An automatic dialer to accelerate notification of primary LACBWR emergency response personnel is located in the CAS. To notify key individuals carrying pagers, use buttons 1A and 2A on automatic dialer or call 783-8466 and 637-2860. When the beeping (wailing for 637-2860) stops, the CAS operator should clearly state: "REPORT TO YOUR RESPONSE STATION," repeat message twice more, and then cancel the call.

4.5.10 Notify the Vernon County Sheriff via (637-2123) or (637-2910) or (637-2992) or NAWAS and Wisconsin Warning Center 1 via NAWAS or (266-3232) and Wisconsin Warning Center 3 via NAWAS or (372-3251) that a general emergency is being declared and that the offsite agencies should be activated. The message should state: "This is (Caller's Identification) calling from the La Crosse Boiling Water Reactor. A General Emergency has been declared at LACBWR. Immediate notification of the public is warranted. Assistance from your agency is requested immediately and we recommend that you implement your Emergency Response Plan immediately. The General Emergency is ..... (brief narrative description of the event) ....."

____
(STA or Duty Shift Supervisor)

4.5.11 Have the Health Physics Technician begin calculating offsite dose estimates as per EPP-5.

____
(Duty Shift Supervisor)

4.5.12 Activate the Technical Support Center by calling personnel listed on the Technical Support Center roster (Appendix B).

____________ (ERD)	____________ (OPD)	____________ (RAD)
____________ (PPC)		

4.5.13 Activate the Emergency Operations Facility by calling personnel listed in the EOF roster (Appendix C). Transfer Operational Control of the emergency to the Emergency Control Director upon his reaching the EOF. The number at the EOF is 8-284 or 8-343. (See Section 4.4.16.)

Persons Contacted:

____________ (ECD)	____________ (OPD)	____________ (RAD)

________ (IFRAD)	________ (TC)	________ (TC)	________ (ODCTS)

4.5.14 Notify the USNRC via the ENS network (red phone).

____________________ (ECD)

4.5.15 Activate the Joint News Center by contacting a person listed in Appendix E.

____________________ (ECD)

4.5.16 The Health Physics Technician shall perform offsite exposure estimates using the methology of EPP-5. If the calculations result in estimated offsite dose for the duration of the release which exceed the following guidelines, the RAD or the Cooperative RAD shall verify the calculations. The Cooperative RAD will report the off-site dose caluclation to the ECD. The ECD shall contact the Vernon County Sheriff and make the recommendation for Protective Action outlined below for the zone towards which the wind is blowing. If on a border, include the adjacent zone.

PROJECTED DOSE (REM) TO THE THE POPULATION	RECOMMENDED ACTIONS(a)	COMMENTS
Whole Body < 1	No planned protective actions (b). State may issue an advisory to seek shelter and await further instructions. Monitor environmental radiation levels	Previously recommended protective actions may be reconsidered or terminated.
Whole Body 1 to < 5 Thyroid 5 to < 25	Seek shelter as a minimum. Consider evacuation. Evacuate unless constraints make it impractical. Monitor environmental radiation levels. Control access.	If contraints exist, special consideration should be given for evacuation of children and pregnant women.

Whole Body 5 and Above	Conduct mandatory evacuation. Monitor environmental radiation levels and adjust area for mandatory evacuation based on these levels. Control access.	Seeking shelter would be an alternative if evacuation were not immediately possible.

(a) These actions are recommended for planning purposes. Protective action decisions at the time of the indicent must be taken into consideration.

(b) At the time of the incident, officials may implement low-impact protective actions in keeping with the principle of maintaining radiation exposures as low as reasonably achievable.

4.5.17 Augment the staff as needed in accordance with Appendix G.

4.5.18 Contact the NRC on the HP hotline (SS-4 Network). Call Region III at Ext. 23; if no answer (off-hours), call Bethesda, Maryland at Ext. 22. No dial tone or ringing will be heard. Keep an open line until NRC terminates if operational conditions permit.

4.5.19 Once the EOF has been activated, contact the EOF staff and provide the incident details, known radiological releases, if applicable, sample results if taken, time of event, and current status. Keep the EOF Staff notified of changes of plant condition. The ECD will now contact the Joint News Center and establish communications. The EOF Staff reporting to the EOF will call in additional individuals listed in Appendix C as needed.

ECD Transferred To	Step in the Procedure Complete at Transfer
______________	______________
Time/Date	______________
______________	

____
(Duty Shift Supervisor)

____
(Emergency Control Director)

4.5.20 The ECD shall in conjunction with the Cooperative RAD determine areas in and around the facility to be surveyed to determine the extent of radiological release and contamination (EPP-6, 7, and 8). Control Room personnel will furnish meteorological data as required until such time as this function is remoted. The county emergency operations center shall be furnished, via the Vernon County Sheriff, with meteorological conditions and continuing dose projections by the EOF Staff.

____

4.5.21 The Joint News Center shall function (EPP-16) to act as liaison with news media. The county emergency operations center (Vernon County Sheriff) shall be the liaison with offsite governmental agencies. The ECD shall keep both centers appraised of all developments and changes in plant status, particularly those which may potentially effect offsite doses. Additional communication capabilities are outlined in EPP-3. All information released to the public shall have been cleared through the ECD by the PID.

4.5.22 The ECD shall contact any personnel required for augmentation of available staff as he determines to be necessary. Resources by area of expertise are listed in Section 4.7. The ECD has DPC management approval to augment resources as needed to bring the reactor to a stable condition and minimize offsite impact. The ECD may augment staff and material through the EMMPD.

4.5.23 Notify INPO of the general emergency status at (404)953-0904, as time permits.

4.5.24 Notify American Nuclear Insurers of the general emergency status at (203) 677-7305.

____

4.5.25 Once the condition which caused activating the Emergency Plan has been stabilized, initial recovery and re-entry of evacuated site area may be made for assessment or mitigation per Section 4.7.

4.5.26 If appropriate, de-escalate to Site Area Emergency by turning to Section 4.6.1, or to Alert by turning to Section 4.6.4, or to Unusual Event by turning to Section 4.6.9.

____
(ECD)

4.6 DE-ESCALATION OF EMERGENCY ACTION LEVELS AND DEACTIVATION

4.6.1 When the activating condition has been resolved, the general emergency status shall be either de-escalated or terminated. Notify Wisconsin Warning Centers 1 and 3 and Vernon County Sheriff of the action.

____
(ECD)

4.6.2 Notify the USNRC via the ENS network (red phone).

____
(ECD)

4.6.3 Notify INPO and ANI as time permits that emergency status has been reduced.

____
(ECD)

4.6.4 When the activating condition has been resolved, the site area emergency status shall be either de-escalated or terminated. Notify the Vernon County Sheriff's Office and Wisconsin Warning Centers 1 and 3 of the action.

____
(ECD)

4.6.5 Notify the USNRC via the ENS network (red phone).

____
(ECD)

4.6.6 The EOF will deactivate the Joint News Center.

____
(ECD)

4.6.7 Notify INPO and ANI.

____
(ECD)

4.6.8 Deactivate the Emergency Operations Facility after providing a verbal closeout to any public officials present, and upon direction of the ECD.

____
(ECD)

4.6.9 Once the condition which required alert status has been resolved, close out Emergency Plan activation or de-escalate to Unusual Event Status. If closeout is indicated:

(1) Notify the Vernon County Sheriff's Department and Wisconsin Warning Center.

____
(ERD)

(2) Notify the USNRC.

____
(ERD)

(3) Notify the Shift Technical Advisor.

____
(ERD)

(4) Remove the Standby Status of the Emergency Operations Facility if applicable.

____
(ERD)

(5) Notify INPO and ANI.

____
(ERD)

(6) Deactivate the OSC if applicable.

____
(ERD)

(7) Deactivate the Technical Support Center.

____
(ERD)

4.6.10 Deactivate the Emergency Plan and notify the NRC and Superintendent (if appropriate).

____

____________________Duty Shift Supervisor

____________________Date

4.6.11 Provide written summary of emergency events to appropriate organizations as outlined in the Emergency Plan.

(1) Alert - Written summary to ERD and offsite agencies within eight (8) hours of closeout or class reduction.

(2) Site Area Emergency - Written summary to ECD and offsite agencies within eight (8) hours of closeout or class reduction.

(3) General Emergency - Written summary to ECD and offsite agencies within eight (8) hours of closeout or class reduction.

4.7 RECOVERY AND RE-ENTRY

4.7.1 After the initial preplanned emergency actions have alleviated the emergency situation, additional actions may be necessary to effect the most complete recovery possible. All recovery actions will be preplanned and all actions will be documented. Affected areas will be roped off and posted with warning signs indicating radiation levels or other hazards. Every reasonable effort should be made to limit radiation exposure. However, the exposure levels justifiable will depend on the specific circumstances, taking into account risk versus benefit factors in the particular situation.

4.7.2 Section 4.8 indicates resources which can be utilized during the recovery and re-entry phases of an emergency at LACBWR. The Emergency Control Director will have the authority and responsibility to manage the overall re-entry and recovery operation. He has the authority to request offsite support and assistance from other utilities, consultants, INPO, etc.

4.7.3 The initial return to the plant after a site area evacuation will be made by a re-entry team composed of at least two members. The team will consist of at least one member of the LACBWR Health and Safety Department and one member of the LACBWR Operations Department. More than two persons may be used in the party if it can result in the saving of human life or reduction of injury. The decision to re-enter shall be made by the Emergency Control Director and the following prerequisites should be considered:

(1) protective clothing,

(2) respiratory protective equipment,

(3) personnel monitoring TLD badges and dosimeters,

(4) radiation monitoring instrumentation,

(5) communication with the Emergency Control Team or with the Control Room, preferably both, and

(6) if available, the conditions inside the plant should be determined from the in-plant radiation monitoring instrumentation.

4.7.4 Planned exposure(1) to the whole body and/or specific organs should not exceed the following recommendations of the National Council on Radiation Protection and Measurements (NCRP-39), and U. S. EPA, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," (EPA-52011-75-001, Revision 1).

Organ	Protective Or Corrective Actions	Lifesaving Actions
Whole Body	25 Rems	75 Rems
Hands and Forearms (including whole body component)	100 Rems	300 Rems
Thyroid	125 Rems	No Limit(2)

- All reasonable measures must be taken to control contamination and internal exposures, utilizing the best available respiratory protection and protective clothing.
- Persons performing emergency activities should be familiar with exposure consequences.
- Women capable of reproduction should not take part in actions requiring emergency exposures.
- Retrospective doses shall be evaluated on an individual case basis.
- Other things being equal, volunteers above the age of 45 should be selected.

(1) Authorization for volunteers to receive these recommended exposures is a nondelegatable responsibility of the Emergency Control Director.

(2) Thyroid exposure should be minimized to the extent feasible by the use of respirators and/or thyroid prophylaxis (administration of stable iodine salts). However, no upper limit is specified for life saving action since the complete loss of the thyroid may be considered an acceptable risk for saving life.

4.7.5 Re-entry after an area evacuation will be by decision of the LACBWR Health and Safety representative on duty at the time. No one should re-enter an area until approval is given by a qualified person. Special monitoring equipment, in addition to that in the emergency boxes, is kept in the Waste Treatment Building and in the Change Room to assist in evaluation of re-entries. The in-plant monitoring equipment should also be used when possible.

4.7.6 Once the potential of escalating an event has passed, steps should be started to recover from the incident. Guidelines and responsibilities for recovery are outlined below:

(1) There must be assurance that the problem which caused the emergency is solved and that this same incident cannot immediately reoccur.

(2) The general occupancy areas must be free of significant contamination and radiation and high radiation areas properly defined and posted.

(3) Airborne radioactivity must be eliminated or controlled within 10CFR20 limits.

(4) Access to the area must be controlled and exposures of personnel documented. Exposure for recovery should be limited to 10CFR20 limits.

(5) The LACBWR Operations Review Committee under the Emergency Control Director is responsible for evaluating recovery advisability.

(6) Plant records and other essential information necessary for evaluating the emergency must be available.

(7) All major recovery steps will be performed in accordance with written procedures. These procedures will be prepared under the supervision of the Onsite Emergency Response Director, by qualified LACBWR staff members, or outside consultants. They will be reviewed by the Operations Review Committee and approved by the Emergency Control Director.

4.7.7 When the recovery operation has been completed and the plant has been returned to an operable condition, the Emergency Control Director is responsible for authorizing the return to normal operation.

If the emergency shutdown resulted from a safety limit being exceeded, reactor operation will not be resumed until authorized by the NRC. A complete analysis of the situation will be made, together with recommendations for preventing a reoccurrence. This report shall be submitted to the DPC General Manager, the Safety Review Committee, and the NRC. The plant will be restarted only when:

(1) the conditions causing the emergency are returned to normal,

(2) the cause of the emergency is understood,

(3) restoration, repair, and testing are complete as required,

(4) no unreviewed safety questions exist,

(5) all conditions of the License and Technical Specifications are satisfied, and

(6) all required approvals have been received.

4.8 RESOURCES

4.8.1 Resources are available to supplement staff in emergency situations. Backup capabilities from DPC staff and outside entities are outlined in this section. EPP-3 lists numbers and messages for several of these contacts.

4.8.2 Upon initiation of any emergency response, specific plant groups, departments, or individuals have general responsiblity to take actions. These assignments are described in Table 4.2. Listed first is the group available for first response onsite at all times. Listed next are others available for assistance based on their availability for response.

TABLE 4.1

EMERGENCY RESPONSE CAPABILITIES DURING OPERATIONAL CONDITIONS 1-3

EMERGENCY RESPONSE FUNCTION	NORMAL POSITION	ON-SHIFT	REMAINING PERSONNEL RESIDING NEAR APPLICABLE EMERGENCY RESPONSE FACILITY (PLANT OR EOF) 30 MIN	60 MIN	TOTAL	30 MIN	60 MIN	TOTAL
Plant Operations	Shift Supervisor (SRO)	1						
	Reactor Operators	1						
	Plant Operators	2						
Emergency Control	Shift Supervisor	1						
	Asst. General Manager - Power or Alternates		4		4		1	1
Notification - Communications	Security Guard	1						
	Supervisor, Technicians and Specialists trained in Emergency Communications		5	3	8	1	2	3
Radiological Activities In-Plant Surveys On-Site Surveys Off-Site Surveys Dose Assessment Radiation Protection Radiological Assessment	Health Physics Technicians	1*						
	Radiation Protection Eng. Rad. Prot. Eng. Specialist Health & Safety Supervisor Health Physics Technicians Environmental Engineer Sr Environmental Biologist Air Quality Analyst Director, Environ. Affairs		7*	5*	12*	2	2	4

*Operators are also trained to perform surveys and can be used for augmentation if necessary. There are generally 20 operations personnel not on-duty at anytime.

TABLE 4.1

EMERGENCY RESPONSE CAPABILITIES DURING OPERATIONAL CONDITIONS 1-3

EMERGENCY RESPONSE FUNCTION	NORMAL POSITION	ON-SHIFT	REMAINING PERSONNEL RESIDING NEAR APPLICABLE EMERGENCY RESPONSE FACILITY (PLANT OR EOF)			PLANNED INITIAL RESPONSE TEAM (AS NEEDED)		
			30 MIN	60 MIN	TOTAL	30 MIN	60 MIN	TOTAL
Technical Support	Shift Technical Advisor	1						
	Plant Superintendent Operations Supervisor Asst. to Operations Sup. Shift Supervisors Reactor Engineer Operations Engineer Electrical Engineer Mechanical Engineer Technical Support Enginner Engineer Assistant Engineering Specialist Director Power Production Director Power Engineering		9	5	14	1	2	3
Repair and Corrective Actions	Operators and Shift Supervisor	(See Plant Oper)						
	Instrument & Elec. Supv. Mech. Maint. Supv. Maintenance Mechanics Instrument Technicians Electricians		10**	10**	20**	2	3	5
Firefighting		Fire Brigade per Tech. Specs.	Local Support					

**Includes Instrument Technicians who may be augmenting in communicator function.

TABLE 4.1

EMERGENCY RESPONSE CAPABILITIES DURING OPERATIONAL CONDITIONS 1-3

EMERGENCY RESPONSE FUNCTION	NORMAL POSITION	ON-SHIFT	REMAINING PERSONNEL RESIDING NEAR APPLICABLE EMERGENCY RESPONSE FACILITY (PLANT OR EOF)			PLANNED INITIAL RESPONSE TEAM (AS NEEDED)		
			30 MIN	60 MIN	TOTAL	30 MIN	60 MIN	TOTAL
Rescue Operations and First-Aid		On-Shift Personnel						
Site Access Control and Personnel Accountability		Per Security Plan	Local Support					
Total		7	28	20	48	6	10	16

TABLE 4.2

Headquarters Personnel	Area of Capabilities
Director of Environmental Affairs and Staff	Environmental Monitoring and Dose Assessment.
Assistant General Manager - Power Group	Technical Support for Planning and Recovery Operations, Special Equipment and Supplies Procurement, Notification of Government Agencies.
Director of Information and Marketing	Notification of Government Agencies Public Affairs, and News Media. Confirmation Release to News Media.
Transportation Supervisor and/ or Construction Superintendent	Special Vehicle Use.
Manager of Insurance and Contracts	Insurance Needs.

4.8.3 The offsite non-DPC support agencies having specific expertise in various areas are listed in this section.

4.8.3.1 Sheriff's Office - Vernon County

The Vernon County Sheriff's Department Headquarters is located in Viroqua, Wisconsin, twenty (20) miles from the plant site. The department will cooperate in any emergency situation brought to its attention.

The County Sheriff is responsible for providing local public support in the area of public notification, evaucation, emergency assistance, and crowd and traffic control. The Sheriff's Office has 24-hour response capability. He is responsible for notifying the following agencies:

- Surrounding County LLEA's.
- Vernon County Civil Defense Director.
- Wisconsin Division of Emergency Government.
- Minnesota Officials, including Houston County, Minnesota Sheriff's Department, Caledonia, Minnesota.
- Allamakee County, Iowa Sheriff's Department, if required.

The County Sheriff is also responsible for followup notification of the population-at-risk within the 5-mile radius of the 45° sector of the potential plume pathway.

4.8.3.2 Tri-State Ambulance

An agreement has been made with Tri-State Ambulance located in both Viroqua and La Crosse, Wisconsin, to provide DPC with ambulance service and in-route life support treatment for persons with radiological and non-radiological injuries resulting from an emergency at LACBWR.

4.8.3.3 U. S. Army Corps of Engineers

An agreement has been made with the U. S. Army Corps of Engineers, through the St. Paul District for Lockmasters, to provide assistance in controlling area river traffic at Lock & Dam Nos. 7, 8, and 9 during an emergency at LACBWR. Lock and Dam No. 8 will provide small craft, emergency shelter, medical first aid, and telephone communications.

4.8.3.4 United States Coast Guard (USCG)

By agreement, the U. S. Coast Guard will be responsible for controlling river traffic using their craft and communications. Craft can be provided from Davenport, Iowa, and Hastings, Minnesota. Response time depends on craft location and river conditions.

4.8.3.5 Genoa Fire Department

The Genoa Fire Department, by agreement is responsible for providing rescue and firefighting support to LACBWR during emergencies. Upon request by the Genoa Fire Chief, all fire departments of Vernon County can be coordinated and directed by the Fire Services Director for the Vernon County Civil Defense Organization to support the Genoa Fire Department during an emergency at LACBWR.

4.8.3.6 La Crosse Lutheran Hospital - Gundersen Clinic
Vernon Memorial Hospital - Viroqua, Wisconsin

Arrangements have been made with the La Crosse Lutheran Hospital to provide DPC with medical treatment for radiological and non-radiological injuries incurred during an emergency at LACBWR. The Vernon Memorial Hospital in Viroqua is nomally considered the backup hospital for medical treatment for radiological and non-radiological injuries incurred during an emergency at LACBWR.

4.8.3.7 U. S. Nuclear Regulatory Commission

The role of the NRC during a radiological emergency is to verify that emergency plans and procedures have been implemented, assure that the public health and safety are protected, and conduct investigative activities associated with the incident. The NRC will assist in coordinating federal response resources and will provide DPC, state and local agencies with advisory assistance associated with assessing and mitigating hazards to the public.

4.8.3.8 U. S. Department of Energy

The Department of Energy has prepared a Federal Radiological Monitoring and Assessment Plan and an Interagency Radiological Assistance Plan. Under the provisions of these plans, the Department of Energy, upon request from the State of Wisconsin Division of Emergency Government, will dispatch radiological teams to assist local and state agencies with monitoring and provide technical guidance. These teams are intended to be advisory, and will not assume control from local authorities who are present.

4.8.3.9 Burlington Northern Railroad

An agreement with Burlington Northern Railroad stipulates that they will control rail traffic passing the site during an emergency when the Chief Dispatcher in Cicero, Illinois, is notified by telephone. The La Crosse Assistant Road Superintendent or Train Telegraph Operator can be used as alternate contacts.

4.8.3.10 Modern Crane Service

Modern Crane Service, by Letter of Agreement, will provide a crane with a boom of 150 feet, as well as other necessary equipment and services during an emergency.

4.8.3.11 Grant County and Sauk County, WI., Sheriff's Helicopter Service

The Vernon County Sheriff, upon request by DPC, can notify the Sheriffs of Grant and Sauk Counties to dispatch their helicopters which are equipped with sirens and loud speakers to notify sportspersons and tourists on the Mississippi River and on the Federal Wildlife Refuge Islands and backwaters within the plume exposure pathway EPZ.

4.8.3.12 State of Minnesota

The Minnesota Division of Emergency Services, administers the State of Minnesota Radiation Emegency Plan. The State Civil Defense Director located in St. Paul is responsible for activating the Minnesota Plan and for providing the assistance it details. The State Division of Emergency Services maintains a 24-hour duty officer for continuous response capability.

4.8.3.13 State of Iowa

The Office of Disaster Services administers the State of Iowa Radiation Incident Response Plan and has continuous respone capability. The State Civil Defense Director located in Des Moines is responsible for activating the Iowa Plan and providing the assistance it details.

4.8.3.14 State of Wisconsin

The Wisconsin Department of Local Affairs and Development, Division of Emergency Government administers the State of Wisconsin Radiological Emergency Response Plan. The Division of Emergency Government has continuous response capability. The Regional Director at Madison is responsible for activating the Wisconsin Plan and providing the assistance detailed within it. This support includes the following:

- Alerting appropriate state agencies.
- Providing a radiological response team.
- Operating the state emergency communications control center.

- Informing appropriate government agencies and adjacent counties and states.
- Assisting local authorities through the State Highway Patrol.
- Coordinating state mutual aid.

4.8.4 Additional specific physical resources both DPC and non-DPC owned are listed in this section.

4.8.4.1 Radiological Monitors and Dose Measuring Devices

- Environmental Direct Radiation Monitoring - TLD's

  Thirty-eight environmental TLD's, with capability of detecting both beta and gamma radiation dose equivalents, are located at specific locations at distances from LACBWR ranging from 1 to 23 miles. TLD's beyond 5 miles are considered to be background environmental radiation dose equivalent monitors.

- Five Air Monitoring Stations

  At least five air monitoring stations are in operation as part of the Environmental Survey Program. Each contains a particulate filter and charcoal cartridge which could be analyzed with portable survey points around LACBWR and are capable of measuring radioiodine concentrations of 10^{-7} µCi/cc and lower. An EPP gives the relationships between radionuclides and the resulting dose levels for comparison to projections. All stations have Ag Zeolite cartridges in desicant bags which would be inserted in the air sampler to replace charcoal cartridges during an emergency.

  LACBWR has the capability of placing a portable air sampler at a spot within the plume which can then have its media removed to the laboratory for isotopic analysis. In addition, a variety of offsite samples are analyzed by an outside contractor in La Crosse at the University. Those facilities would normally be available for use during emergency assessment situations.

4.8.4.2 Meteorological Monitors

Various meteorological parameters can be monitored from the Control Room. These parameters include: (1) barometric pressure, (2) ambient temperature ground level, (3) differential temperature between the top of the stack and the ten meter tower, (4) wind speed and direction at top of the stack, and (5) relative humidity.

The site meteorological data also includes data on wind speed and wind direction at the 10-meter height. This data is currently available in the office annex. This data is available to the Emergency Operations Facility.

Meteorological data is available from the Alma Wisconsin Energy Center of Dairyland Power Cooperative.

Meteorological data is also available at the Rochester, Minnesota, U. S. Weather Bureau.

4.8.4.3 Offsite Laboratory Facilities

The Univeristy of Wisconsin-La Crosse Nuclear Radiation Center, located in Cowley Hall will serve as an offsite laboratory. Also, available will be the Dairyland Power Cooperative laboratory located in the Service Center Building on East Avenue in La Crosse.

The University of Wisconsin-La Crosse laboratory has the capability to analyze environmental samples for gross alpha, gross beta, gross gamma, as well as isotopic identification. The capability also exists for the analysis of iodine in milk. Analysis can be provided on a 24-hour immediate notification basis.

The University of Wisconsin-La Crosse Radiation Center has two multi-channel analyzers with Sodium Iodide and Germanium detectors, liquid scintillation counters, thin window proportional counters, alpha spectrometer, Geiger-Mueller counters, and single channel analyzers to determine the radioactivity content of multiple environmental samples.

A letter of agreement to have access and use of their facility has been provided to Dairyland Power Cooperative by the University of Wisconsin-La Crosse.

The Dairyland Power Cooperative Environmental Laboratory will have the capability of analyzing environmental samples for gross beta and gross alpha content. This laboratory will be available on a 24-hour basis.

4.8.4.4 Protective Facilities and Equipment

The OSC at G-1 is able to accommodate all personnel present onsite at any given time. There are approximately 70 workers at LACBWR and 80 at Genoa 3 present during the day shift. The OSC is equipped with a telephone. It also has a first aid kit.

The St. Charles School in Genoa, Wisconsin, by agreement with DPC, will be used as the offsite evacuation point in the event that radiological conditions make onsite evacuation points not habitable. The school has the capability of accommodating 150 people. It is equipped with a telephone.

Also, located at the OSC is an emergency equipment kit, which contains protective equipment, radiological monitoring equipment, and emergency supplies.

4.8.4.5 Damage Control Equipment

Numerous DPC vehicles and a variety of heavy equipment are available onsite for use. This equipment is maintained by the adjoining coal plant (Genoa 3 unit) and the Alma Dock Corporation. Equipment includes bulldozers, mobile cranes, tugboats, forklifts, winches, welding equipment, chain falls, etc. All DPC heavy equipment normally present at the Cooperative's Office is available at the site within two hours.

4.8.5 This section lists various technical consultants with which DPC has worked previously, along with INPO.

4.8.5.1 Institute of Nuclear Power Operations (INPO) is an industry group which maintains a list of available staff and equipment from other nuclear power plants. DPC has a mutual assistance agreement with INPO to coordinate outside assistance from other utilities.

4.8.5.2 Nuclear Energy Services (NES) has acted as the principal consultant to DPC or LACBWR. They have numerous personnel familiar with plant layout and design and have reference drawings, etc.

5.0 RECORDS

The checklists maintained in the Control Room and the EOF shall be maintained in accordance with ACP-18.1.

APPENDIX A

EMERGENCY MANPOWER NOTIFICATION

EMERGENCY CLASSIFICATION APPLICABILITY - Unusual Event Only

PLANT SUPERINTENDENT	HOME PHONE	PLANT EXTENSION	BEEPER
John D. Parkyn------------------			
George S. Boyd------------------			
Larry W. Kelley-----------------			
Off-Duty Shift Supervisor-------			

RADIOLOGICAL PROTECTION*

Paul W. Shafer------------------			
Bruce R. Zibung-----------------			
Larry L. Nelson-----------------			

* If unusual event involves significant unmonitored release of radioactivity, degradation of plant gaseous effluent monitors, or significant personnel contamination as defined in ACP 17.1.

APPENDIX B

EMERGENCY MANPOWER TECHNICAL SUPPORT CENTER

EMERGENCY CLASSIFICATION APPLICABILITY: Alert, Site Area Emergency, General Emergency

EMERGENCY BEEPER-------------------,

ONSITE EMERGENCY RESPONSE DIRECTOR (1 Person Required)

HOME PHONE PLANT EXTENSION

John D. Parkyn--------------------
Dr. Seymour J. Raffety------------
George S. Boyd--------------------
Larry W. Kelley-------------------

ONSITE OPERATIONS PARAMETERS DIRECTOR (1 Person Required)

George S. Boyd--------------------
Larry W. Kelley-------------------
Marc A. Polsean-------------------
Off-Duty Shift Supervisor---------

ONSITE RADIOLOGICAL ASSESSMENT DIRECTOR (1 Person Required)

Bruce R. Zibung-------------------
Paul W. Shafer--------------------
Larry L. Nelson-------------------
Off-Duty Senior HP Technician*-----

*Does not include HP Technicians nor (OJT) HP Technicians

PLANT PARAMETERS COMMUNICATOR (1 Person Required)

Dick Acker
Larry Mitchell----------------
Paul Hess---------------------
D. Flottmeyer-----------------
G. Gentry---------------------

APPENDIX C

EMERGENCY MANPOWER/EMERGENCY OPERATIONS FACILITY

EMERGENCY CLASSIFICATION APPLICABILITY

Site Area Emergency, General Emergency

EMERGENCY CONTROL DIRECTOR (1 Person Required)

HOME PHONE   PLANT EXTENSION

James W. Taylor-------------------
Thomas A. Steele------------------
James Sherwood--------------------
Paul Finner-----------------------

COOPERATIVE OPERATIONS PARAMETERS DIRECTOR (1 Person Required)

Lynne S. Goodman----------------
Robert M. Brimer-------------
Hugh A. Towsley--------------
Off-Duty Shift Supervisor------

COOPERATIVE RADIOLOGICAL ASSESSMENT DIRECTOR (1 Person Required)

Thomas A. Steele-----------------
Paul W. Shafer-------------------
Bruce R. Zibung-------------------

IN-FIELD RADIOLOGICAL ASSESSMENT DIRECTOR (1 Person Required)

Paul W. Shafer-------------------
George Johnston-------------------

TECHNICAL COMMUNICATORS (2 Persons Required)

Robert Wery-----------------------
Glenn Tullius---------------------
Paul Sampson---------------------
Don Egge-------------------------

OFFSITE DOSE CALCULATIONS & TRAJECTORY SPECIALIST (1 Person Req.'d)

Eric Hennen---------------------
Dan Weiss------------------------

APPENDIX D

SUPPLEMENTAL EMERGENCY MANPOWER
EMERGENCY OPERATIONS FACILITY SUPPORT STAFF

EMERGENCY CLASSIFICATION APPLICABILITY

General Emergency if necessary

COOPERATIVE EMERGENCY COMMUNICATIONS DIRECTOR

	HOME PHONE	PLANT EXTENSION
Charles Sans Crainte--------------		
Kenneth Adams----------------------		

COOPERATIVE EMERGENCY SUPPORT DIRECTOR

	HOME PHONE	PLANT EXTENSION
Paul Finner-----------------------		
Dan Crady------------------------		

APPENDIX E

EMERGENCY MANPOWER
JOINT PUBLIC INFORMATION CENTER

EMERGENCY CLASSIFICATION APPLICABILITY

Site Area Emergency, General Emergency

EMERGENCY PUBLIC INFORMATION DIRECTOR

	HOME PHONE	PLANT EXTENSION
Ronald Marose-------------------		
Keith Kuehn-------------------		
Peter Delwiche---------------		

EMERGENCY TECHNICAL INFORMATION SPECIALIST

Dr. Seymour J. Raffety------------

Contact the EOF for alternate.

APPENDIX F

KEY COMMUNICATIONS LIST

DAIRYLAND POWER COOPERATIVE

1. LACBWR TSC--------------------------

Microwave:

2. LACBWR CONTROL ROOM-----------------

Microwave:

DPC System Radio

3. EOF (LA CROSSE)---------------------

Ext.
(Speaker Phone)
Ext.
(Operations
Communicator)
Ext. (HP
Communicator)

Microwave:

(Unlisted No.)

DPC System Radio
Both In/Out on Both:

3

4. GENOA 1 OPERATIONS SUPPORT AREA------PABX Ext.

DPC System Radio

5. GENOA 3 SUPERINTENDENT-------------

Microwave:

DPC System Radio

6. LOCKER ROOM OPERATIONS SUPPORT
CENTER--------------------------------PABX Ext.

KEY COMMUNICATIONS LIST - (Cont'd)

6. VERNON COUNTY EMERGENCY GOVERNMENT (EOC) - (Viroqua, Wisconsin)

   a.

   b.

   c. NAWAS

   d. Sheriff's Radio From Control Room

7. STATE OF WISCONSIN DIVISION OF EMERGENCY GOVERNMENT

   a. WI. DEG (Madison)---------------

   b. WI. DEG (Tomah)----------------- (Radef)

   NAWAS
   Relay From Sheriff's Radio

8. STATE OF MINNESOTA DIVISION OF EMERGENCY SERVICES

   a. MN. DES (St. Paul)--------------- (Radef)
   (Patch In Through WI DEG & NAWAS)

   b. MN. DES & HOUSTON COUNTY EMERGENCY GOVERNMENT EOC (Caledonia, Mn)----

   Relay On Sheriff's Radio
   Point To Point From
   Viroqua to Caledonia

9. U. S. NUCLEAR REGULATORY COMMISSION

   a. NRC RED PHONE---ENS

   b. NRC HP HOTLINE

10. JPIC (Stoddard Elmentary School)-----

KEY COMMUNICATIONS LIST - (Cont'd)

11. INPO-------------------------------------

12. LOCK AND DAM NO. 8-------------------

13. LA CROSSE LUTHERAN HOSPITAL EMERGENCY-----

14. VERNON MEMORIAL HOSPITAL EMERGENCY

a.

b.

15. TRI-STATE AMBULANCE SERVICE

a.

b. (Relay From Viroqua)

c. (Relay From De Soto)

16. ST. CHARLES CATHOLIC SCHOOL (Genoa Site Personnel Offsite Evacuation Point)

a.

b.

17. AMERICAN NUCLEAR INSURERS----------

APPENDIX G

LACBWR PERSONNEL AVAILABLE FOR STAFF AUGMENTATION
(Refer to LACBWR Phone List)

It may be necessary under emergency conditions to augment the LACBWR staff onsite. Activation and augmentation of the Emergency Operations Facility and the Technical Support Center are covered separately in EPP-2.

SUPPORT FOR OPERATIONS (Including Firefighting Rescue and First Aid)

Senior Reactor Licensed Management Personnel

Larry Kelley
Marc Polsean
George Boyd
Roger Christians
Lynne Goodman
John Parkyn
Jeff Gallaher
Richard Cota
Paul Moon
Gary Whynaucht

Operators

Mike Johnsen
Steve Buck
Gerald Dunnum
Tony Startz
Paul Crandall
Gregory Holmstadt
Randy Thorson
Mike Wilchinski
Gerald Gadow
Dale Croonquist
Ed Moore
Duane Stalsberg
Timothy Krueger
Jon Crusan
Galen Schneberger
Dan Johnson
Ron Pennebecker
Mark Gindt
Robin DeClute

RADIOLOGICAL SUPPORT (Inplant Surveys, Offsite Surveys, and Dose Assessment Assistance)

Fred Schroeder
Al Hansen
Mark Holmes
John Papierniak
Bill Montalvo
Jeanette Gaynor
Larry Nelson
Bruce Zibung
Paul Shafer

TECHNICAL SUPPORT

S. Raffety
R. Brimer
D. Rybarik
H. Towsley
R. Odegard
P. Sampson

SYSTEM REPAIRS

I&E Supervisor: W. Nowicki

Electrical: R. Gardner
R. Weise
E. Yeoman
D. Olson

Instrumentation: L. Mitchell
P. Hess
D. Flottmeyer
G. Gentry

Mechanical Maintenance Supervisor: P. Gray

Mechanical: John Tischer
Edmund Wolf
Reay Ross
Al Twinde
Jim Lintelman
Dave Carroll
Rodney Bolstad
Duane Froh
Michael Bina
John Russ

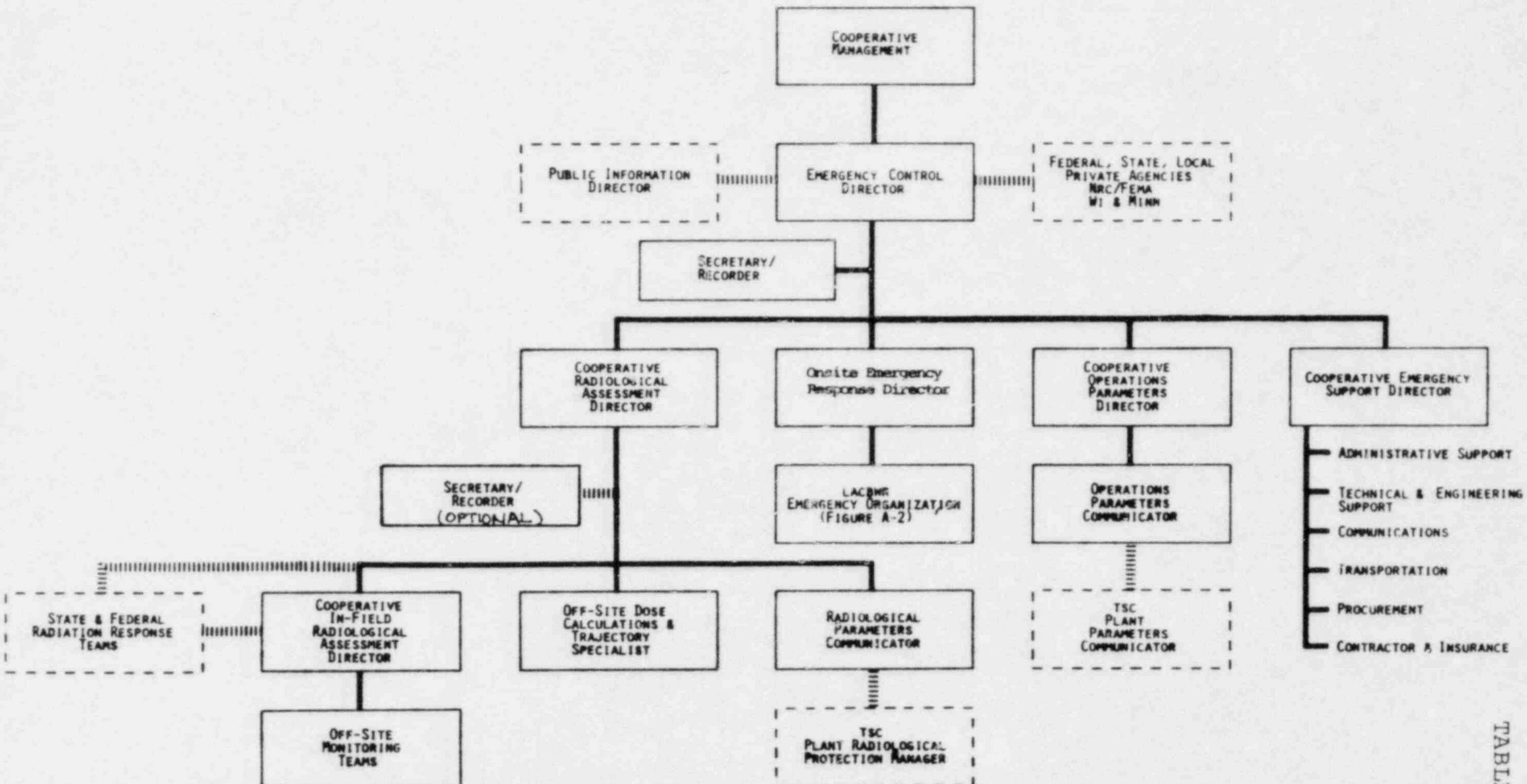
SITE SECURITY (Also Communications)

Contact the Security Sargeant and use any or all of the Shift Guard Force as required. The Security Sargeant can call in additional off-duty personnel as needed.

Gerald Joseph
John Parkyn

DPC EMERGENCY RESPONSE ORGANIZATION

FIGURE A-1



____________ Organization Control

IIIIIIIIIIII Interface/Communications

LACBWR EMERGENCY ORGANIZATION

FIGURE A-2

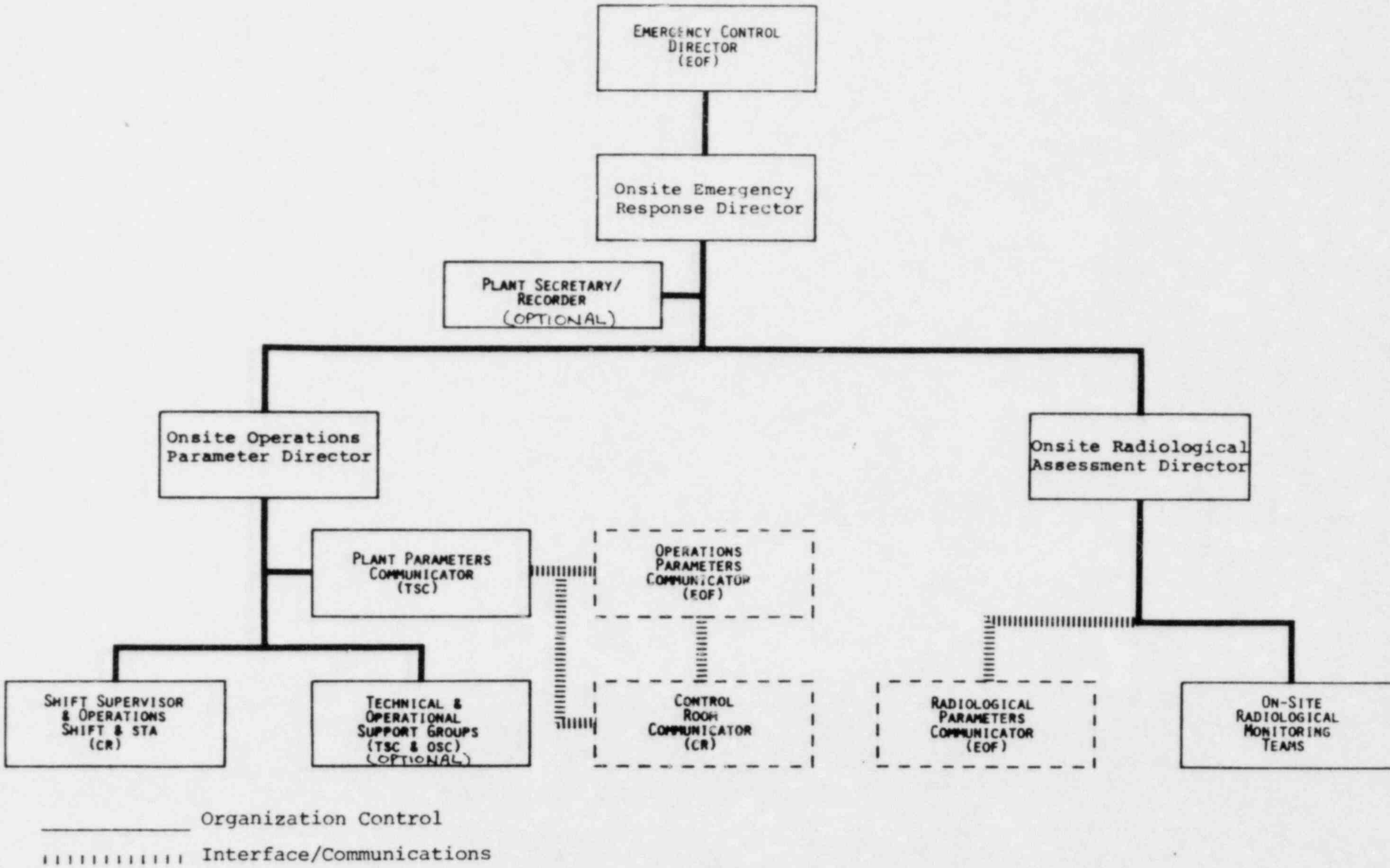


TABLE 3
DAIRYLAND POWER COOPERATIVE
COMMUNICATIONS DISPATCH

DATE: __________ TIME: __________ INITIALS: ________ MESSAGE #* __________

TO/FROM: (Circle One)

_____ US NRC (Region III)
_____ US NRC R.A.P.
_____ US NRC (Bethesda)
_____ Vernon Co. EOC (Viroqua)
_____ State of WI EOC (Tomah)
_____ State of WI EOC (Madison)
_____ State of WI R.A.P.
_____ Houston County EOC (Caledonia)
_____ State of MN EOC (Rochester)
_____ State of MN EOC (St. Paul)
_____ State of MN R.A.P.
_____ JPIC
_____ FEMA
_____ Other __________________

FROM/TO: (Circle One)

_____ EOF (Emergency Control Director

_____ EOF (Radiological Assessment Director)

MESSAGE:

____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____

________________________________ ________________________________
Originators Name ECD Reviewed & Approved (If Req'd)

*1. Use Rad # if originated by Rad Communicator.
2. Use Opd # if originated by Opd Communicator.
3. Use Secretary's initial # if originated by secretary.
4. Use TSC # if originated by TSC Plant Parameters Communicator.
5. Use CR # if originated by Control Room.

OPD

TABLE 4
DAIRYLAND POWER COOPERATIVE
EMERGENCY OPERATIONS FACILITY/TECHNICAL SUPPORT CENTER
REACTOR OPERATIONS PARAMETERS
COMMUNICATIONS

DATE: __________ MESSAGE # __________
TIME: __________
INITIALS: __________

TO/FROM:	____	TSC	FROM/TO:	____	EOF
(Circle	____	CONTROL ROOM	(Circle	____	TSC
One)	____	OSC - 2 (Genoa 1)	One)	____	CONTROL ROOM
	____	EOF		____	OSC - 2 (Genoa 1)

MESSAGE:

1. Reactor Water Level _____in. (Safety Channels 1, 2, 3) _____ (Wide Range)
2. Reactor Pressure _____ psig.
3. Reactor Temperature _____°F.
4. Containment Building Isolated: _____YES _____NO
5. Emergency Systems in Operation:
   a. Shutdown Condenser _____YES _____NO
   b. ECCS _____YES _____NO
   c. ACS _____YES _____NO
   d. 1A Diesel/Generator _____YES _____NO
   e. 1B Diesel/Generator _____YES _____NO
   f. HPSW _____YES _____NO
   g. ESWSS _____YES _____NO
6. Containment Building Pressure _____psig Temp._____°F. Level_____ Inches
7. High Range C. B. Rad. Monitors (A) _____ R/hr (B) _____ R/hr
   Fuel Clad Degradation Indication:

HRCB Rad Monitor	Fuel Degradation
10^1 - 10^2 R/hr	0%
10^3 - 10^4 R/hr	$\sim$ 1%
10^4 - 10^5 R/hr	$\simeq$ 10%
10^5 - 10^6 R/hr	$\simeq$100%

8. Other significant Reactor Operations Parameters.
   ____
   ____
   ____
   ____
9. Current Emergency Classification Status:

_____ Unusual Event _____ Site Area Emergency
_____ Alert _____ General Emergency

______________________ ______________________
Originators Name Received By

RAD

TABLE 5
DAIRYLAND POWER COOPERATIVE
EMERGENCY OPERATIONS FACILITY/TECHNICAL SUPPORT CENTER
INPLANT RADIOLOGICAL PARAMETERS
COMMUNICATIONS

DATE: ________ MESSAGE # ________
TIME: ________
INITIALS: ________

TO/FROM: (Circle One)
____ TSC
____ CONTROL ROOM
____ OSC - 2 (Genoa 1)
____ EOF
____ OTHER________

FROM/TO: (Circle One)
____ EOF
____ TSC
____ CONTROL ROOM
____ OSC - 2 (Genoa 1)
____ OTHER________

MESSAGE:

1. Low Range ARM's (0-10^4 mR/hr) ____mR/hr ave. ____ mR/hr max # ______
2. ARM 7 (0-10^5 mR/hr) ____mR/hr
3. ARM 8 (0-10^5 mR/hr) ____mR/hr
4. H.R.C.B.A.R.M. (0-10^8 R/hr) A ____ R/hr B ____ R/hr
5. Perimeter ARM
   OSC 2 (Genoa 1) ___mR/hr G-3 ___mR/hr

Release Information to Calculated Offsite Doses (Complete 6A + 6B and 7)

6. STACK AIR MONITOR - Stack Blower Flow Rate:
   ____ 0 cc/sec ____ 1.65×10^7 cc/sec ____ 3.3×10^7 cc/sec
   A. SPING-4
      1. β Part ____ μCi
      2. α Part ____ μCi
      3. I-131 ____ μCi
      5. LR Noble Gas ____ μCi/cc
      7. MR Noble Gas ____ μCi/cc
      9. HR Noble Gas ____ μCi/cc

   (To obtain source term in Ci/sec mutiply the μCi/cc x cc/sec ÷ 10^6 μCi/Ci)

   B. TRACER LAB
      1. Immed. Part ___cpm 2. Delay Part ___ cpm 3. Noble Gas ____cpm
7. Meteorological Information: Type of Release ___None ___Ground ___Elevated
   WS ____ mph @ ____ m ΔT (100-10m) ____°F
   WD ____ ° @ ____ m

---

8. Containment Building Air Monitor
   A. SPING-3
      1. β Part ___ μCi
      2. α Part ___ μCi
      3. I-131 ___ μCi
      5. LR Noble Gas ____ μCi/cc
      7. MR Noble Gas ____ μCi/cc
   B. TRACER LAB
      1. Immed. Part ___cpm 2. Delay Part ____ cpm 3. Noble Gas ___ cpm
9. Tunnel Mon. ___ cpm
10. Forced Circulation Pump Cub. Monitor ___cpm.
11. Liquid Waste Monitor ___cpm.
12. Additional Portable Radiological Surveys;

    ____
    ____
    ____
    ____

13. Current Emergency Classification:
    _____ Unusual Event
    _____ Alert
    _____ Site Area Emergency
    _____ General Emergency

________________ Originator

________________ Received By

IRAD

TABLE 6
DAIRYLAND POWER COOPERATIVE
EMERGENCY OPERATIONS FACILITY
INFIELD RADIOLOGICAL ASSESSMENT TEAMS
ASSESSMENT PARAMETERS RADIO COMMUNICATIONS

DATE: ________ MESSAGE # ________
TIME: ________
INITIALS: ________

TO/FROM: (Circle One)
____ Field RAP Team 1
____ Field RAP Team 2
____ Field RAP Team 3
____ EOF
____ Other________

FROM/TO: (Circle One)
____ EOF
____ Field Rap Team 1
____ Field Rap Team 2
____ Field Rap Team 3
____ Other________

MESSAGE:

Direct Survey Information to Compare w/Calculated Offsite NG Doses

1. Location ________________ Sector ________
   Distance from LACBWR ________mi.
2. Direct Immersion Dose Equivalent Rates ______mR/hr ______mRad/hr
3. Ground direct radiation readings:
   _____cpm β _____cpm oc

4. Permanent Environmental Air Sampler Charcoal Cartridge changed to Ag-Zeolite _____YES _____NO Filter Paper Chan_ed _____YES _____NO
   a. ______mR/hr β ______mR/hr δ
   b. Flow rate _____cfm.
   c. Total Flow _____cf.
   d. Filter gross beta counts ______cpm.
   e. Cartridge gross beta counts _____cpm.

Analyzed Information to Compare w/Calculat. Offsite I-131 Dose Equivalent

   f. NaI(Tl) or Germanium MCA analysis results ________________
      Total SpA ________ μCi/cc, Isotopes:
      ____
      ____
      ____

5. Portable Radeco - DC Air Sample Taken ____YES ____NO ____CHARCOAL ____AgZeolite
   a. Flow rate ________lpm
   b. Total sample time _______min.
   c. Total sample flow _______lpm x ______min. x 10^3 = _____cc
   d. Filter gross beta counts _____cpm
   e. Cartridge gross beta counts ______cpm

Analyzed Information to Compare w/Calculat. Offsite I-131 Dose Equivalent

   f. NaI(Tl) or Germanium MCA analysis results:
      Total SpA ________ μCi/cc, Isotopes:
      ____
      ____
      ____

6. Vegetation Sample Taken _____YES _____NO
7. Surface Soil Sample Taken ______YES ______NO
8. Surface Water Sample Taken ______YES ______NO
9. Milk Sample Taken ______YES ______NO
10. Weather Conditions ________________
11. Other significant items:
    ____
    ____
    ____
    ____

________________ ________________
Originators Name Received By

TABLE 7

SURVEYOR ________ DATE/TIME ________

EVACUATION POINT
PERSONNEL CONTAMINATION LOG

INST & SER# ________

NAME	CPM > BKG INITIAL SURVEY	CPM < BKG FOLLOWING DECON

EMERGENCY OPERATIONS FACILITY EMERGENCY CONTROL DIRECTOR'S ACTIVATION CHECKLIST

INITIALS

_______ All telephones and headsets hooked up properly and tested to be operational.

_______ Communications forms available and distributed to appropriate EOF personnel.

_______ Synchronize the wall clock and watches.

_______ Procedure Book and Worksheet notebook in front of ECD and OPD and turned to Site Area Emergency of EPP-2.

_______ All personnel are present in EOF and ready to go.

_______ Offsite dose computer (TI-99) is working and ready to compute.

_______ Maps and charts are in place.

_______ Secretary is instructed that gold copy of communication forms are to be placed on bulletin board outside EOF.

_______ EOF "Authorized Personnel Only" sign is on the door.

_______ EOF "Name Tags" in place on table.

_______ Proper "Emergency Status" sign afixed to board behind ECD.

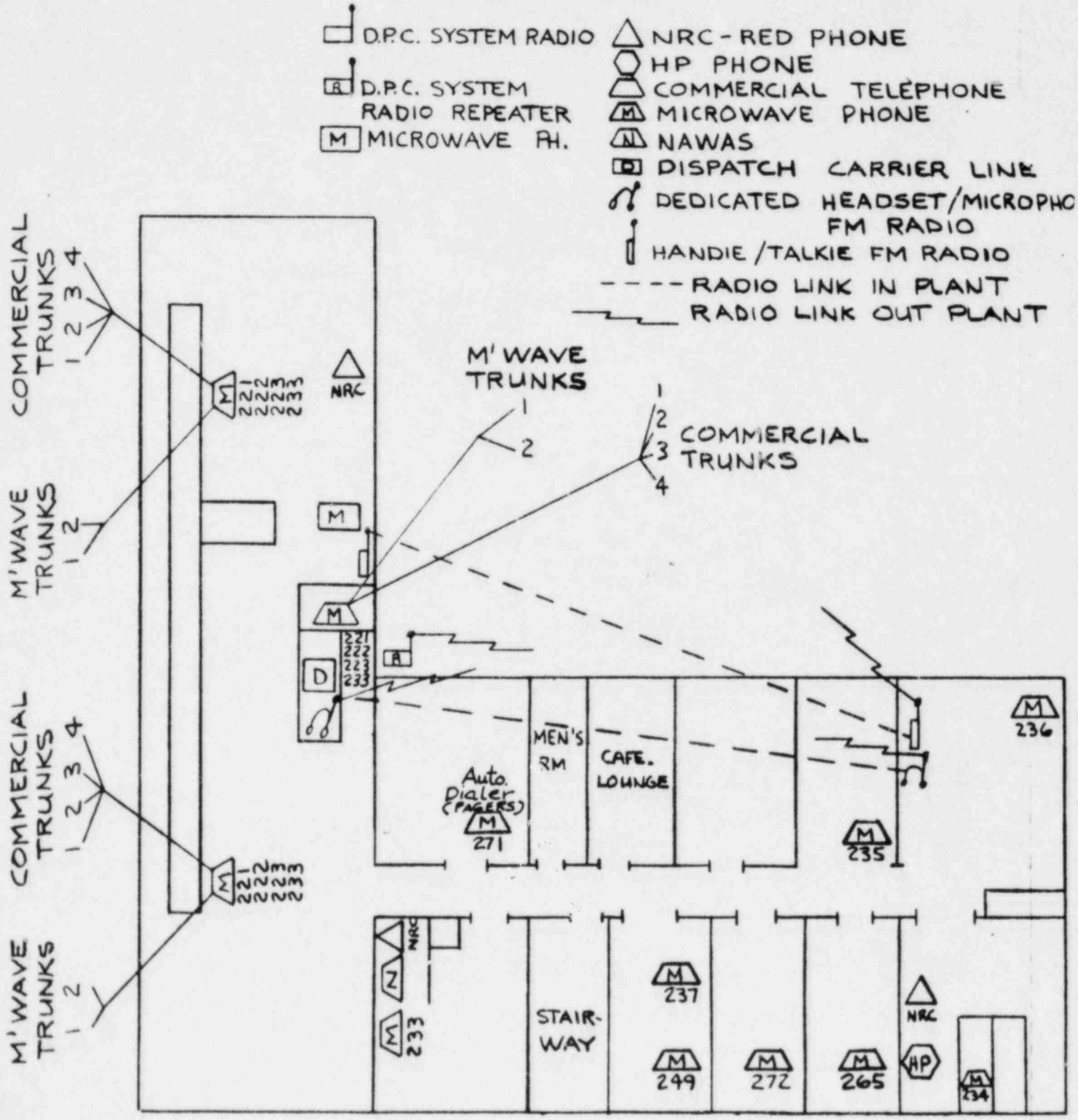
_______ Determine what phone numbers to use at TSC and Control Room to establish three-way OPD and two-way RAD communications. Enter on Communications Network Forms and place in front of communicators and on board behind ECD.

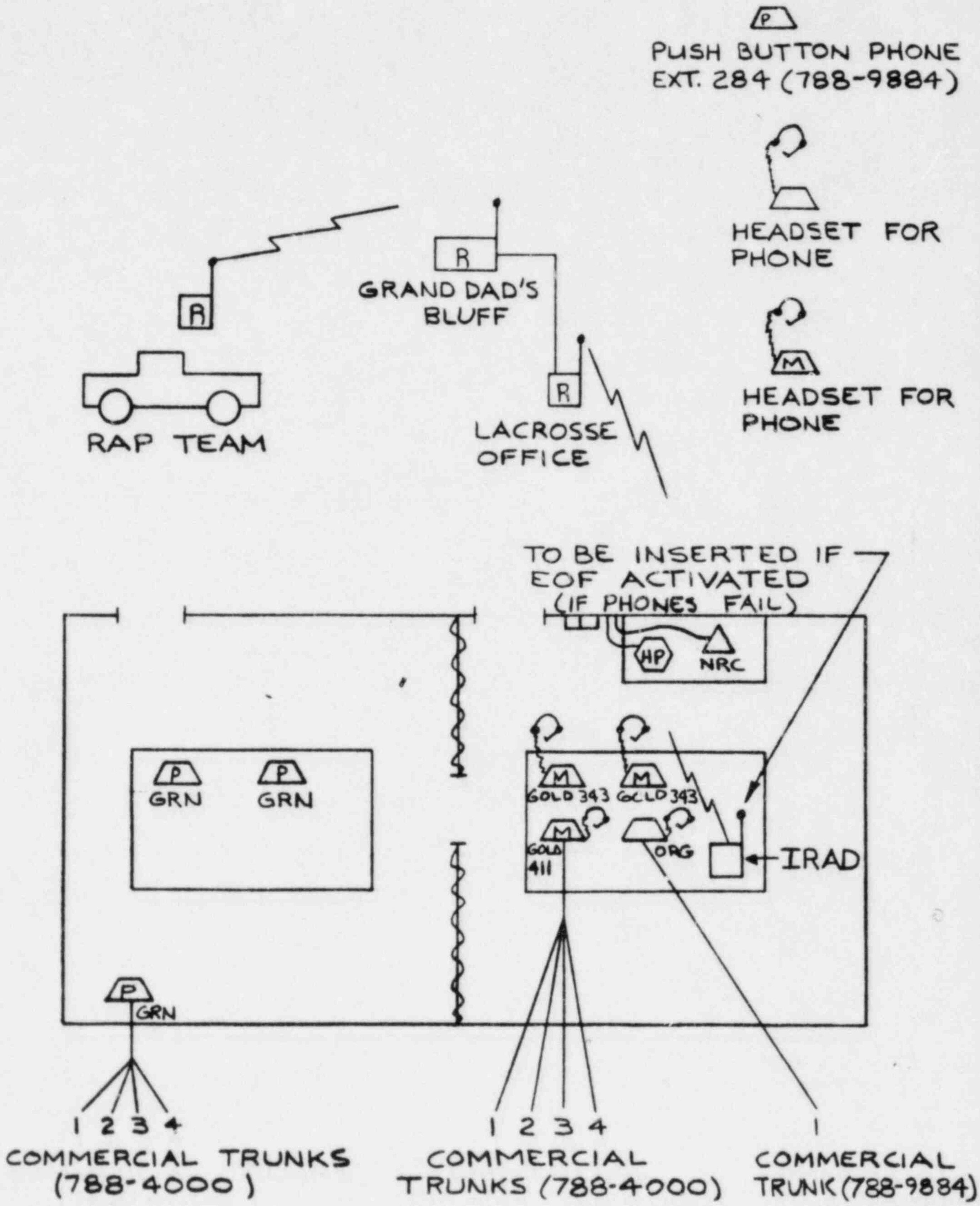
_______ ECD contacts Shift Supervisor and receives status report and where in procedure EPP-2 to begin.

_______ ECD assumes overall management control of Emergency Situation at LACBWR.

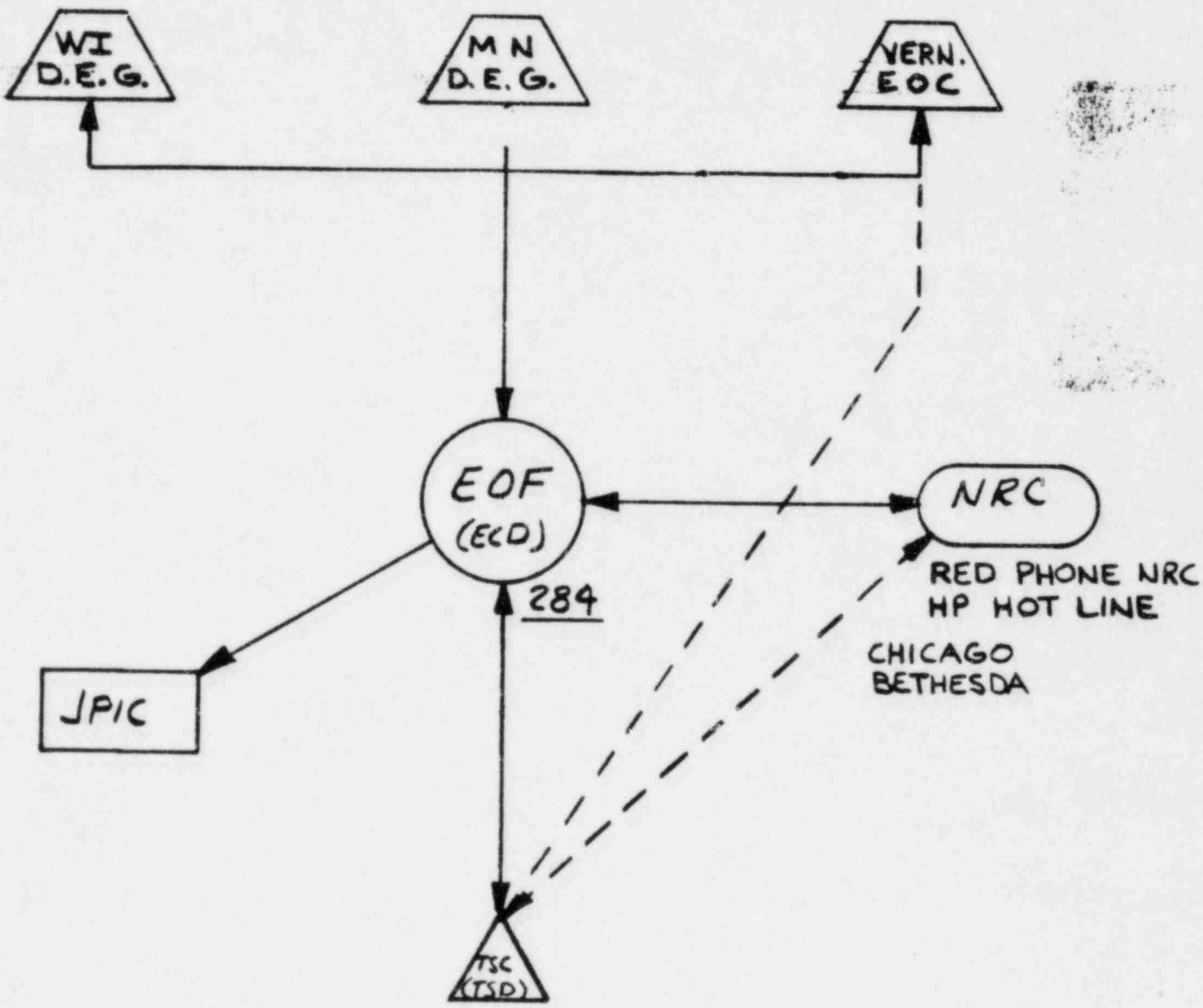
_______ Communications networks with plant established.

_______ Follow EPP-2 from here.

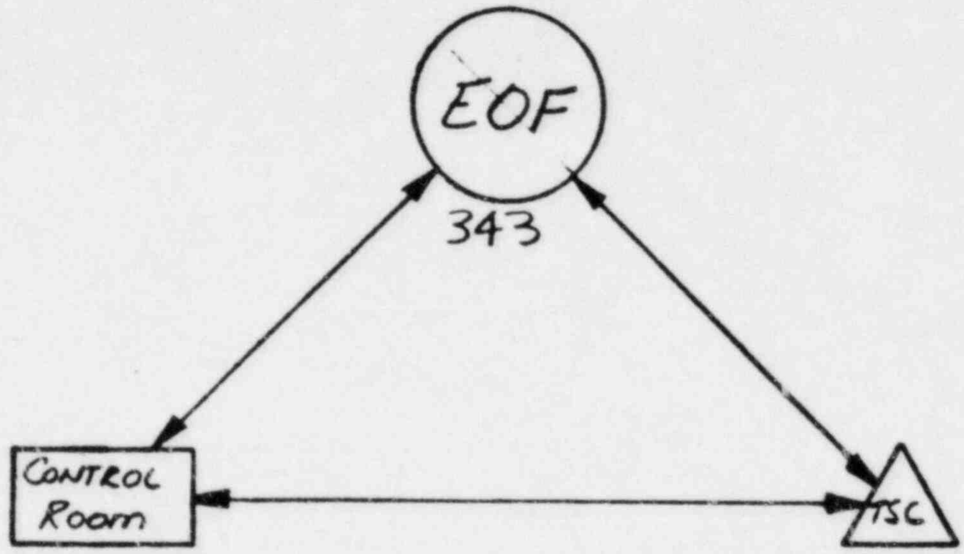

D.P.C. SYSTEM RADIO
D.P.C. SYSTEM RADIO REPEATER
MICROWAVE PH.
NRC-RED PHONE
HP PHONE
COMMERCIAL TELEPHONE
MICROWAVE PHONE
NAWAS
DISPATCH CARRIER LINE
DEDICATED HEADSET/MICROPHO
FM RADIO
HANDIE/TALKIE FM RADIO
RADIO LINK IN PLANT
RADIO LINK OUT PLANT
COMMERCIAL TRUNKS
M'WAVE TRUNKS
NRC
MEN'S RM
CAFE. LOUNGE
Auto. Dialer (PAGERS)
271
236
235
STAIR-WAY
233
237
249
272
265
234
HP


P
PUSH BUTTON PHONE
EXT. 284 (788-9884)
HEADSET FOR
PHONE
M
HEADSET FOR
PHONE
R
GRAND DAD'S
BLUFF
R
RAP TEAM
R
LACROSSE
OFFICE
TO BE INSERTED IF
EOF ACTIVATED
(IF PHONES FAIL)
HP
NRC
P
GRN
P
GRN
M
GOLD 343
M
GOLD 343
M
GOLD
411
ORG
IRAD
P
GRN
1 2 3 4
COMMERCIAL TRUNKS
(788-4000)
1 2 3 4
COMMERCIAL
TRUNKS (788-4000)
1
COMMERCIAL
TRUNK (788-9884)

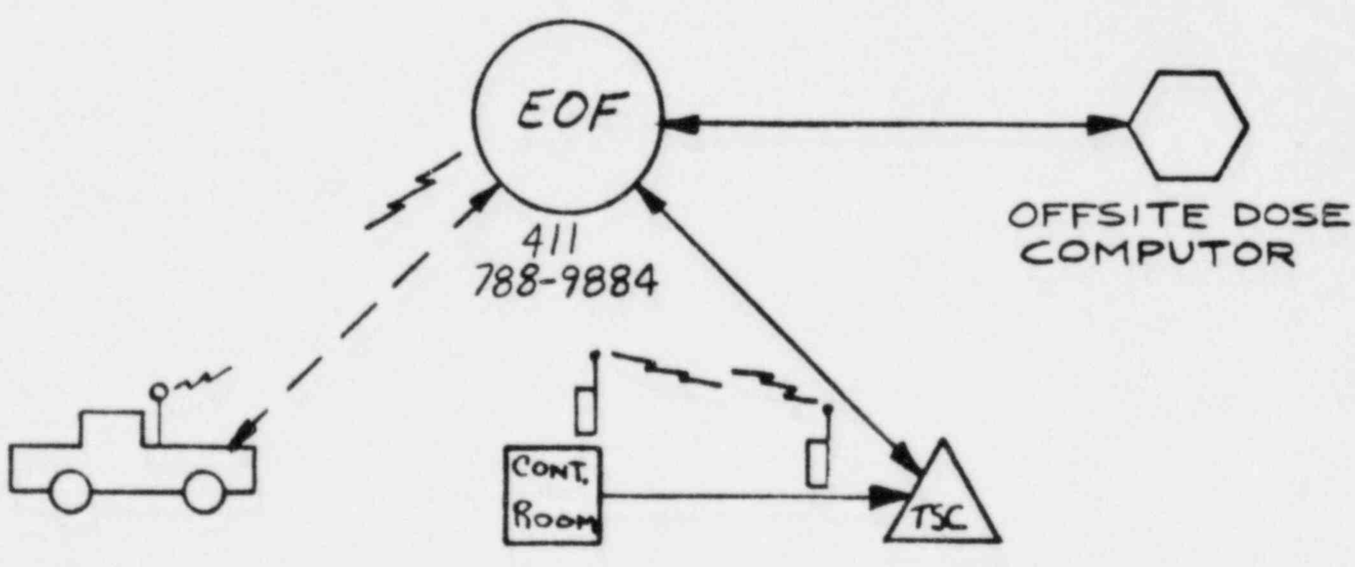
EMERGENCY CONTROL COMMUNICATIONS



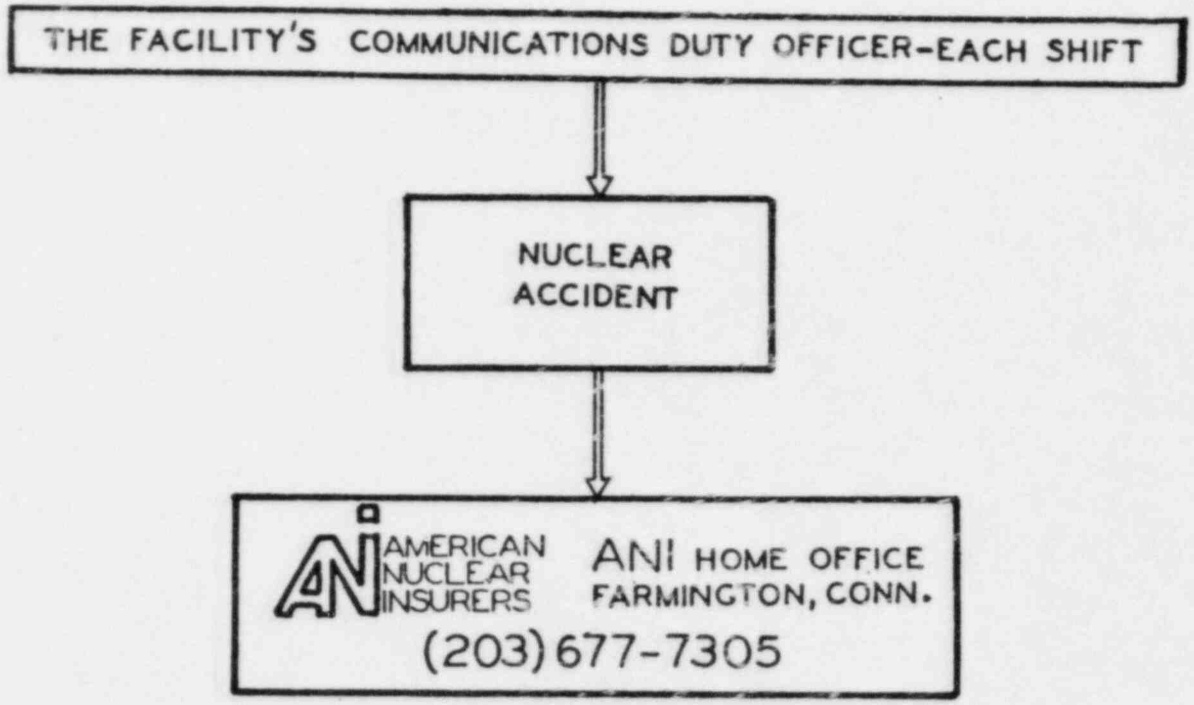
OPERATIONS COMMUNICATIONS



RADIOLOGICAL COMMUNICATIONS



Accident Notification Procedures for ANI Insureds



NOTIFICATION NOTES

--- NOTIFY ANI AS SOON AS POSSIBLE AFTER DECLARATION OF A NUCLEAR ALERT, SITE AREA EMERGENCY, OR GENERAL EMERGENCY.

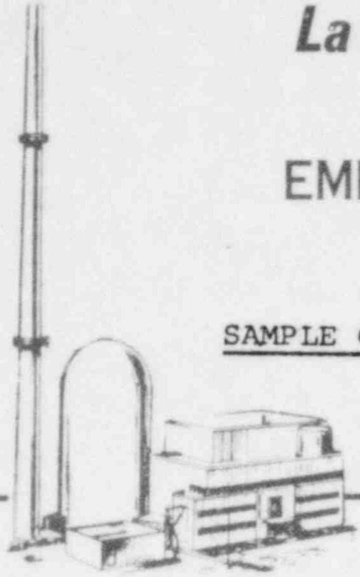
--- 24 HOUR TELEPHONE COVERAGE PROVIDED FOR NUCLEAR ACCIDENT NOTIFICATION.

--- REFER TO ANI INFORMATION BULLETIN 5B (81) FOR DESCRIPTION OF EMERGENCY CLAIMS ASSISTANCE AND ACCIDENT REPORTING INFORMATION REQUIREMENTS.

--- IN ADDITION TO NOTIFICATION TO ANI, PROMPTLY NOTIFY YOUR COMPANY'S INSURANCE DEPARTMENT.

BITS O' NEWS

FROM INFORMATION SERVICES,
DAIRYLAND POWER COOPERATIVE



La Crosse Boiling Water Reactor
LACBWR

EMERGENCY PLAN PROCEDURE

SAMPLE COLLECTION AND ANALYSIS DURING EMERGENCIES

DAIRYLAND POWER

Record and Control of Initial Issue, Revisions & Periodic Reviews					
Issue	Prepared By or Periodic Rev. By Signature Date	Operations Supv. Review Signature Date	QA Supervisor Review Signature Date	Health & Safety Review** Signature Date	Appv'd & Issued* Effective Date of Issue
0	[signature] 4/24/81	R. Cota FOR G. Boyd 4/24/81	[signature] 4/24/81	[signature] 4/24/81	J. O. Parkyn 4/24/81
1	[signature] 9/2/82	[signature] for 9/3/82	[signature] 9-2-82	[signature] 9/2/82	J. O. Parkyn 9/3/82

 **H&S Supv. or Rad. Prot. Engineer *LACBWR Plant Superintendent

LACBWR

EMERGENCY PLAN PROCEDURE

SAMPLE COLLECTION AND ANALYSIS DURING EMERGENCIES

Issue Notice No. 1 Dated 9/3/82

INSTRUCTIONS

Remove Old Page No.	Insert New Page No.	Description Of and Reason for Change
Remove and destroy all pages of EPP-6, Issue 0.	Insert all pages of EPP-6, Issue 1.	Procedural update to incorporate new sampling procedures during accident condition (major revision - hence no change lines).

PAGE SCHEDULE

No.	Issue	No.	Issue	No.	Issue
0.1	1	10	1	21	1
0.2	1	11	1	22	1
1	1	12	1	23	1
2	1	13	1	24	1
3	1	14	1	25	1
4	1	15	1	26	1
5	1	16	1	27	1
6	1	17	1	28	1
7	1	18	1	29	1
8	1	19	1	30	1
9	1	20	1		

This issue shall not become effective unless accompanied by a new cover sheet properly signed off in the appropriate review/approval columns.

LACBWR

EMERGENCY PLAN PROCEDURE

SAMPLE COLLECTION AND ANALYSIS DURING EMERGENCIES

1.0 PURPOSE

This procedure describes the methods to be used to obtain primary system, plant effluent, and containment atmospheric samples during emergencies with personnel radiation exposure maintained ALARA. Subsequently, it describes the methods to be used to obtain meaningful results during periods of potential high radiation and contamination of samples.

2.0 APPLICABILITY

This procedure applies during any emergency declared at LACBWR and may be referenced during any other situation as applicable.

3.0 REFERENCES

3.1 NUREG-0737, "Clarification of TMI Action Plan Requirements," Items II.B.3, II.F.1, II.F.2, III.A.1.1, III.A.1.2, III.D.1.1 and III.D.3.3, November 1980.

3.2 NUREG-0654/FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Section I, November 1980.

3.3 NUREG-0771, "Regulatory Impact of Nuclear Reactor Accident Source Term Assumptions," June 1981.

3.4 General Electric Company Radiation Source Report No. 22A2703R, Revision 5, July, 1978.

3.5 EPA-520/1-75-001, "Manual of Protective Actions Guides and Protective Actions for Nuclear Incidents, September, 1975, (Revision 1, June, 1980).

3.6 NES, Inc. Technical Report 81A0687, September 1980, and NES, Inc. Technical Report 5101-817, A. Levine to P. Shafer, August 1982.

3.7 IAEA Safety Series Report No. 32, "Planning for the Handling of Radiation Accidents," November, 1969.

3.8 IAEA Technical Report No. 152, "Evaluation of Radiation Emergencies and Accidents," March, 1974.

3.9 DPC ND6600 Computer Program "R-LOCA," November, 1980.

3.10 NRC Regulatory Guide 1.3, "Assumptions Used for Evaluating the Potential Radiological Consequences of a Loss of Coolant Accident for BWRs."

3.11 LACBWR Safeguards Report, ACNP-65544, August, 1967.

3.12 HSP-05.3, "Colorimetric Cl^- Determination."

3.13 HSP-05.5, "Turbidity Cl^- Determination."

3.14 HSP-05.10, "Dissolved Oxygen Determination."

3.15 HSP-05.19, "Colorimetric Boron Determination in Water."

3.16 LACBWR Operating Manual, Volume II:

Section 6.5, "Containment Atmosphere Sampling Operations"
Section 6.6, "Stack Gas Sampling Operations"
Section 6.7, "Reactor Coolant Sampling Operations"

4.0 PREREQUISITES

4.1 Prior to any entry to the Radiological Restricted areas or their proximity during emergencies, calculations shall be made to determine the maximum allowable staytime in such areas.

4.2 Comparisons must be made between the results of Step 4.1 and the known transit and sampling times required for the stay times in various areas around the plant:

(1) From Radioanalytical Chemistry Lab to No. 3 FWH Area, East Turbine Building Wall = ~20 seconds each way.

(2) From Radioanalytical Chemistry Lab to Reactor Building Grade Floor Primary Sample Sink = ~50 seconds each way.

(3) From Radioanalytical Chemistry Lab to Decay Heat Blowdown Line Drain Valve in Turbine Building Tunnel = ~30 seconds each way.

(4) From Radioanalytical Chemistry Lab to Integrated Leak Rate Test Connection in Electrical Penetration Room = ~20 seconds each way.

(5) From Southwest Protected Area Access Gate Near Genoa No. 3 Plant Crib House to Reactor Building Air Connection Outside 1B Emergency Generator Room = ~30 seconds each way.

(6) From Control Room to Radioanalytical Chemistry Lab via Change Room = ~45 seconds each way.

(7) From Control Room to Radioanalytical Chemistry Lab via Emergency Door to Turbine Floor = ~30 seconds each way.

(8) From Stack Monitor Room at Emergency Airlock to Radioanalytical Chemistry Lab in Security Administrative Building via direct route = ~45 seconds each way; around north side of Waste Treatment Building = ~55 seconds each way; around south side of stack and Reactor Building to Southwest Protected Area Gate = ~60 seconds each way.

4.3 In addition to the transit times considered in the previous step, sample collection times shall be considered prior to entry into the effected area. Examples of acceptable sampling times to obtain representative samples and still minimize radiation and airborne exposures are as follows:

(1) SPING-4 Stack Effluent Particulate and Charcoal Cartridge Changes: Three minutes including data collection and installation of new filter plus cartridge ~ 10 minutes.

(2) Primary Coolant Samples via the Reactor Coolant Post Accident Sample System (PASS): Five minutes including purging of lines and demineralized water dilution at least 2/1 ratio demin H_2O to coolant.

(3) Primary Water Samples via Decay Heat Blowdown Line Drain in Turbine Building: (a) Blowdown In Progress = ~ 1 minute draining to a portable waste water container, (b) Blowdown Line Isolated = ~ 10 minutes purging to the hotwell or 20-minute draining to the sump.

(4) Stack effluent particulate, iodine, and noble gas sample via the stack atmospheric PASS ≈ 5 minutes at 7.3 scfm.

(5) Containment Building atmospheric sample via PASS including sample purge time ≃ 5 minutes @ ≈ 200 cc/min.

4.4 The sum of the times and resulting exposures of Steps 4.2 and 4.3 shall be made prior to entry with the realization that some additional exposure will result during analysis of the samples. Total exposures shall not exceed the limits of General Design Criteria 19, Appendix A, 10CFR50 (i.e. 5 Rem whole body, 75 Rem extremity).

5.0 IN-PLANT AIRBORNE SAMPLE COLLECTION AND ANALYSIS DURING ACCIDENTS

5.1 The majority of radionuclides which will be emitted from the reactor system during an accident involving failed reactor fuel would be iodines and noble gases. Therefore, each air sample taken must include the use of a charcoal filter cartridge which will allow for radioiodine adsorption.

According to TMI criteria, it is estimated that 100% noble gases, 25% radioiodines, and 1% of particulates are expected to be released from the fuel after significant fuel degradation following a LOCA.

(At all times, a filter paper should be used in front of cartridge to reduce particulates in cartridge and trap particulate forms of iodine. Moisture affects iodine retention in cartridges. A simple method to reduce this is to put two cartridges in series. Under normal conditions, the first cartridge affords complete iodine removal. The presence of iodine in the second cartridge is indicative of problems and indicates a second sample should be taken.)

5.2 Since the noble gases released constitute an external dose hazard, the iodine releases are the most restrictive inhalation problem. I^{131} has the most restrictive MPC and, therefore, must be determined regardless of the other analysis capabilities.

5.3 Obtain a representative air sample (10 minutes or less) of known volume in the occupied area. Air sample pumps are stored in the Control Room, the Radio-Environmental Lab, the Turbine Building, and at the evacuation point.

5.4 If a multi-channel analyzer is available and accessible in the Radioanalytical Chemistry Lab, the Radio-Environmental Lab, or moved to the G-1 Evacuation Point; it will be used to analyze the airborne sample filters and cartridges for all the potential isotopes provided time permits.

5.5 As a backup to the multi-channel analyzers, a single channel analyzer detector system consisting of an Eberline Model MS-1 miniscaler, an SPA-3 detector, and lead shield is located in the CAS Room adjacent to the Control Room if time or access limitations prohibit the use of the multi-channel analyzers of the preceding step. Determine the I^{131} concentration as follows:

5.5.1 If a TEDA charcoal cartridge is used to collect radioiodines, noble gases will have to be purged to reduce Compton and annihilation radiation effects on SCA iodine analysis. If Ag-Zeolite is used, purging will not be necessary. If the dose rates at 1 cm from the cartridge are $\leq$ 100 R/hr, proceed to next step.

5.5.2 Insert the charcoal cartridge in the pig containing the SPA detector with the collection side (inlet side) facing the detector. Place on the middle shelf (3rd of 5).

5.5.3 Set the potentiometers to the following scale values:

High Voltage--------3.60
Threshold-----------6.26
Window--------------0.20

Ensure the window switch is on (upward "in" position), the power switch is on (located on the back), and the test switch is off (to the right).

5.5.4 Using a Ba-133 check source, check the instrument response using a 1-minute count.

5.5.5 Count the sample for one minute using the appropriate "timed" switch positions. Record the counts.

5.5.6 Adjust the "threshold" pot to 6.60 and recount the sample.

5.5.7 Subtract the value obtained in the second count (Step 5.5.4) from the counts obtained the first time (Step 5.5.3).

5.5.8 If the result of the preceding step is positive, multiply the net counts/minute by 4.154×10^{-5} μCi/cpm to obtain the μCi in the sample.

5.5.9 Divide the μCi by the sample volume of Step 5.3 to obtain the air concentration. The maximum permissible concentration (MPC) for a 40-hour week for I^{131} without respiratory protection in a restricted area is 9×10^{-9} μCi/cc.

5.5.10 If the results in Step 5.5.5 are negative, noble gases (e.g. Kr^{87}, Xe^{138}, etc.) may be entrained on the charcoal cartridge. Use a SCBA spare air bottle at low flow rate to purge the cartridge of noble gases for at least 15 seconds by blowing air into the inlet side of the cartridge.

5.5.11 Attempt to repeat Step 5.5.1 through 5.5.5 to obtain a positive net count per minute value.

5.5.12 If negative results are still obtained, assume 10% of the gross count rate in Step 5.5.3 are net I^{131} counts per minute and complete Steps 5.5.6 and 5.5.7.

5.5.13 The sample may be held for decay of the short-lived noble gases (e.g. Xe^{138}, Kr^{87}, etc.) in 2 or 3 hours or analyzed on a multichannel analyzer when available.

5.5.14 A battery pack is available for the MS-1 miniscaler and will allow approximately 6-8 hours continuous operation.

6.0 RADIOACTIVE EFFLUENT SAMPLE COLLECTION AND ANALYSIS DURING ACCIDENTS

6.1 Offgas System Releases

6.1.1 Provisions should be made to route the gases through the radioactive offgas system gas storage tanks if possible. This will provide indication of releases via the following monitors:

(1) SPING-3 (particulate, I-131, low-range noble gas) Stack Monitor.

(2) SPING-4 (particulate, I-131, extended range noble gases) Post Accident Stack Monitor.

(3) Containment Building Gas Monitor.

(4) Eberline Offgas Storage Tank Discharge Monitor.

(5) Victoreen Fuel Integrity Monitor.

(6) Tracerlab 10-Minute Holdup Tank Monitor.

[By referring to the latest monitor calibration documents in the Health & Safety Supervisor's Office near the Technical Support Center or by referring to the SPING-3 or SPING-4 printout, a release rate (Ci/sec) can be determined.]

6.2 Stack Releases [Offgas, Ventilation Exhaust, and Dilution Exhaust]

6.2.1 The SPING-3 and SPING-4* have the capability of sampling the following isokinetically; and the CT-2 readout in Control Room has the capability to detect the following corresponding activity ranges:

Channel No.	Type of Activity	Range of Channel	
01	β Particulate	6.3 E-12 to 2.4 E-06 μCi/cc (corresponds to 0.00003 μCi to 8.64 μCi for 60-min. sample @ 60 lpm)	
02	α Particulate	-	
03	I-131^Δ	1.4 E-11 to 4.0 E-06 μCi/cc (corresponds to 0.0001 μCi to 14.0 μCi for 60-min. sample @ 60 lpm)	
04	I-131 Background	-	
		Kr-85	Xe-133
05	Low Range Noble Gas	7.8 E-08 to 2.9 E-02 μCi/cc	1.1 E-07 to 4.3 E-02 μCi/cc
06	Radiation Area Monitor	-	-
07	Mid-Range Noble Gas	1.3 E-02 to 2.5 E04 μCi/cc	9.2 E-04 to 1.8 E03 μCi/cc
08	Noble Gas Background	-	-
09 (ON SPING-4 ONLY)	High Range Noble Gas	3.7 E-01 to 5.2 E05 μCi/cc	1.0 E-01 to 1.4 E05 μCi/cc

*Approximate SPING-3/4 release concentrations related to fuel degradation conditions are listed in Attachment A.

^Δ If no significant noble gas influence is due to entrainment in cartridge or flow-through piping at concentrations in excess of approximately 1.0 x 10^0 μCi/cc or ambient background, radiation is < 100 mr/hr.

6.2.2 Obtaining Sample Filters from the SPING-3 Stack Sampling System

6.2.2.1 If the particulate or I-131 channels reach saturation (see upper limits of Section 6.2.1), filter paper and iodine cartridge will have to be retrieved, taken to the laboratory and analyzed for total activity. The RAD will notify HP Technician to attempt to change the filter paper and/or cartridge in Chamber No. 1 and/or Chamber No. 2 of the SPING-4. The HP Technician will don proper protective clothing and respirator and will proceed to the east side of the Containment Building and measure γ dose rates at contact with the containment wall. If the dose rates are less than 200 mR/hr, proceed to the stack shack.

6.2.2.2 Open the door to the shack, measure the γ dose rates in direct line of sight with the Personnel Emergency Hatch, which may act as a radiation collimator from containment. If the dose rates are > 1 R/hr, return to the Control Room and contact RAD.

6.2.2.3 If the dose rates are < 1 R/hr, turn off the SPING's pump locally, remove the sample chamber plug on Chamber No. 1 and/or Chamber No. 2 and check the radiation levels of filter and/or cartridge while in place if practical. If the filter and/or cartridge read > 3R/hr at 1 cm, use tongs and place the filters into plastic bags and then into a shielded carrying case.

6.2.2.4 Bring the filter and/or cartridge to the lab for sample preparation.

6.2.2.5 Place filter and/or cartridge behind Pb bricks inside lab hood. Measure γ dose rates at 1 cm from filter and/or cartridge. If the dose rates are < 4 mR/hr at 1 cm, the cartridge/filter will be sealed in a plastic bag, and counted directly on the Ge(Li) detector at 10 cm extended geometry. If the dose rates are ≥ 4 mR/hr at 1 cm, then cartridge/filter will have to be disassembled.

6.2.2.5 (a) If the cartridge needs to be disassembled, perform the following:

(1) Using a cutter, open up the upstream face of the cartridge and remove the retaining filter paper exposing the charcoal/Ag Zeolite granules.

(2) Remove a small aliquot of charcoal/ Ag Zeolite granules and place them into a preweighed planchet.

(3) Determine the dose rate of the planchet containing the granules. If < 4 mR/hr at 1 cm, continue with next step. If $\geq$ 4 mrem, remove some of the charcoal granules until a dose rate of < 4 mrem/hr is obtained.

(4) Weigh the planchet and granules to determine the weight of the charcoal.

Weight of Charcoal (AgZ) and Planchet-------------_________g
Weight of Planchet---------_________g

Weight of Charcoal (AgZ)---_________g

(5) Place planchet and granules inside a sealed platic bag. Label bag as radioactive materials.

(6) Determine I-131, I-133, and other radioiodines specific activities in µCi/g by counting the sample on a Ge(Li) detection system.

(7) Multiply the μCi/g for each isotope by the total quantity of charcoal/AgZ granules inside the cartridge as below:

FOR CHARCOAL

_______μCi/g I-131 x 26.4 g(a) = _______μCi I-131
_______μCi/g I-133 x 26.4 g(a) = _______μCi I-133
_______μCi/g I-___ x 26.4 g(a) = _______μCi I-___

FOR AG-ZEOLITE

_______μCi/g I-131 x 70.0 g(b) = _______μCi I-131
_______μCi/g I-133 x 70.0 g(b) = _______μCi I-133
_______μCi/g I-___ x 70.0 g(b) = _______μCi I-___

(a) Based on average weight of charcoal inside standard TEDA charcoal cartriges.

(b) Based on information supplied by Radeco on GY-130 AgZeolite cartridge.

(8) Divide the total μCi by the total flow (lpm x minutes x 10^3 = _____cc)* to obtain μCi/cc of the radioiodine isotopes.

*Multiply by 28.32 if cfm if used to obtain lpm.

6.2.2.5 (b) If the filter paper needs to be disassembled, perform the following:

(1) Cut a 1-cm diameter piece of filter paper with scissor.

(2) Put the 1-cm filter piece on planchet. Place planchet in sealed plastic bag.

(3) Determine dose rates of planchet containing 1-cm diameter filter piece. If < 4 mR/hr at 1 cm, continue to next step. If > 4 mrem/hr, cut the filter into a smaller section until a dose rate of < 4 mrem/hr is obtained.

(4) Determine the particulate radionuclide specific activities in $\mu Ci/cm^2$ by counting the filter on a Ge(Li) detection system.

(5) Multiply the $\mu Ci/cm^2$ for each radionuclide by the total cm^2 of the filter paper to arrive at actual μCi on the filter paper.

	Radionuclide		
________ $\mu Ci/cm^2$	____________	x 22.1 =	________ μCi
________ $\mu Ci/cm^2$	____________	x 22.1 =	________ μCi
________ $\mu Ci/cm^2$	____________	x 22.1 =	________ μCi

(6) Divide the total μCi/ by the total sample flow (lpm x minutes x 10^3 = ________ cc)* to obtain $\mu Ci/cc$ of particulate radionuclides.

*Multiply by 28.32 if cfm is used to obtain lpm.

6.2.2.6 Calculate offsite dose equivalents for I-131 as per EPP-5. Report results to Shift Supervisor or RAD.

6.2.2.7 Remove samples from laboratory to reduce background and store in suitable location.

6.2.3 If the CT-2 is inoperable, the channel activities can be obtained by dailing the appropriate channel on the face of the SPING-3 in the stack shack. If the SPING-3 is inaccessible, inoperable or the particulate/I-131 channels are full scale, the SPING-4 post-accident and backup stack monitor located on the Turbine Building mezzanine floor, which monitors iodine particulate and extended range noble gases isokinetically from the stack, or the stack atmospheric PASS can be used to obtain a near isokinetic sample of the stack particulates, iodine, and noble gases. [The noble gases are obtained from the stack PASS by insertion of a syringe needle into the flexible hose connection downstream of the filter/ cartridge holder as the particulate/iodine sample is being collected, and withdrawing 10 cc of gas from line and injecting the 10 cc of gas into an evacuated offgas vial. This vial can be analyzed in normal offgas geometries or at an extended shelf.] [Refer to Section 9.0.]

6.3 Liquid Effluent Sampling During Accident Conditions

6.3.1 Under potential accident conditions, no discharge of radioactive liquid will be allowed. Only after the situation has been evaluated and the necessity to discharge liquid effluents deemed necessary by the ECD shall discharge be allowed.

7.0 SAMPLING OF REACTOR PRIMARY COOLANT DURING ACCIDENT CONDITIONS

7.1 During accident conditions, the Reactor Coolant PASS (located in the No. 3 FWH Area) will be the normal sampling location.

7.2 When it has been determined that a sample is to be taken, the HP Technician and one person to assist him shall:

(1) Review the LACBWR Operating Manual Procedure (Volume II, Section 6.7) for operating the Reactor Coolant PASS System.

(2) When confident with the operating procedure, they shall proceed to the Radio-Chemical Lab and obtain the following equipment:

(a) One high-range survey meter - preferrably a meter with extended probe capability.

(b) A shielded transfer container.

(c) Extension tongs.

(d) A FM walkie-talkie.

(3) Establish a shielded area, using lead bricks, inside the laboratory hood. This shall be of sufficient size to reduce the possible high radiation levels of the sample.

(4) Ensure the transfer route is cleared of any obstacle.

(5) Ensure the ND6600, spectrophotometer and turbidity meter are operating properly.

7.3 After the Health Physics Technician is confident all preparations for drawing a sample are complete, he shall report to the Onsite Radiological Assessment Director (RAD).

7.4 The HP Technician and Assistant shall don at least the following protective clothing and dosimetry:

(1) Coveralls
(2) Cloth and rubber gloves
(3) Rubber boots
(4) Cloth hood
(5) A 0-5 R dosimeter, Xetex 415A electronic dosimeter
(6) One extremity TLD to be worn on the finger expected to be closest to the sample cylinder
(7) One TLD to be worn on the whole body
(8) Respiratory protection - optional depending on conditions

7.5 The Health Physics Technician shall then report to the RAD that they are prepared to sample the primary coolant.

7.6 After consultation with the Emergency Response Director (ERD), the RAD shall direct the HP Technician to obtain a primary coolant sample.

7.7 The Health Physics Technician and Assistant will take the equipment obtained in Step 7.2.2 to the No. 3 FWH Area and perform the following:**

(1) Measure the area dose rate. Roll-in a Pb blanket or other suitable shadow shield to shield the Operator at the operating dilution flow near control PASS control panel if deemed necessary by RAD and ERD.

(2) Ensure the 10-cc sample container is in place.

<u>NOTE</u>: A 300-cc sample container is available.

(3) Place shielded transfer cask under the sample container. Crack open lid of Pb shielded transfer cask to at least off center by 5 inches. (This can be done by loosening the three gray bolts on the lid and rotating the lid off center on the red rotational bolt.) Back the transfer cask underneath the reactor coolant PASS cylinder with the 3-foot T-handle in the extended position to reduce whole body dose. (This will also prepare the loaded transfer cask to be pulled out of the No. 3 FWH area with minimal delays for turning, thus reducing whole body dose.)

**A comparison of cylinder dose rates at 10-cm with approximate fuel degradation is listed in Attachment B.

7.8 The Health Physics Technician shall contact the RAD to inform them that they are about to establish flow in the reactor coolant PASS system.

7.9 Following the operating procedure for the reactor coolant PASS system, establish flow into the system.

NOTE: Constantly measure the piping dose rate.

7.10 Increase the dilution ratio until a piping dose rate of less than 30 R/hr at 10 cm is obtained.

NOTE: The maximum dilution rate has been determined to be about 10/1, at which point dilution water pressure would cut off flow of reactor coolant with the reactor water pressure at less than approximately 60 psig. A dose rate of 30 R/hr at 10 cm would correspond to approximately 1000 R/hr at 1 cm from the cylinder. Refer to Attachment B.

7.11 Secure the sample system and obtain a final dose rate on the sample container. If less than 30 R/hr at 10 cm, proceed to Step 7.12. If not perform, Step 7.9 through Step 7.11 again.

7.12 The Assistant shall grasp the sample container with the extended tongs.

7.13 The HP Technician will quickly disconnect the sample container from the system and then back off a safe distance.*

*Worst case dose equivalents are found in a technical study, Reference 3.6 and Addenda I and II.

7.14 With the extension tongs, lower the sample container into the shielded transfer cask. Lift the 3-foot T-handle and pull the transfer cask out of the No. 3 FWH area. If practical, assistant will measure dose rates to persons pulling cask. Move cask to the lab, locating the cask near hood.

7.15 Using the extension tongs, place the sample container behind the lead shield in the laboratory hood.

7.16 Measure the dose rate levels in the laboratory. Make sure extremity dosimeters are worn on the finger expected to be closest to the sample.

7.17 Utilizing the mirror placed onto the back of the lab hood, and utilizing lab tongs if practical, place the sample depressurization line and valve with valve closed onto one end of quick disconnect of the sample cylinder. Place far end of depressurization line inside bucket of water and secure in place. Gently, crack open depressurization valve to bleed off cylinder pressure. Close valve. Place closed second valve with rubber septum onto other end of the sample cylinder using mirror and tongs if practical. Move depressurization line out of bucket of water and attach to hook at 3 feet above lab hood shelf. Gently crack open the depressurization valve. Next open the sample valve on other end of cylinder.

7.18 The following analysis will have to be performed on the sample:

(1) pH
(2) Chlorides
(3) Gamma scan
(4) Boron - If it has been injected into the primary system.

7.19 To obtain a gamma scan of the sample:

NOTE: If sample container has lower dose, it may be counted on the GeLi using the extended geometry and Job Stream.PASSPP.

(1) Insert Tungsten shielded 5 ml syringe into depressurization line through rubber septum, and withdraw $\simeq$ 0.1 ml of coolant.

(2) Dilute this with 1000 ml of water in poly bottle. Place cap on bottle. Shake the bottle to mix the sample with dilution water.

(3) Measure bottle dose rate if $<$ 4 mrem/hr at 4 inches. Proceed to Step (4). If $>$ 4 mrem/hr at 4 inches, dilute sample with an additional 1000 ml of water.

(4) Transfer 10 ml of the diluted sample into a 10-cc vial.

(5) Place the vial on No. 1 GeLi on the extension.

(6) Count the sample using Job Stream.VEXT.

(7) Report results to RAD.

7.20 The RAD can compare coolant isotopic concentrations with Attachment C to obtain approximate fuel degradation conditions.

7.21 To obtain a Cl^- result:

(1) Insert the Tungsten shielded syringe into depressurization line through rubber septum and withdraw 0.1 ml of coolant.

(2) Dilute to 25 ml of water. Measure dose rate of sample.

(3) Follow procedure HSP-05.5 to complete analysis.

NOTE: There is now a dilution factor of 250 which must be considered in the final result.

7.22 Obtain a pH on the coolant sample:

(1) Insert the Tungsten shielded syringe into depressurization line through rubber septum and withdraw ~ 0.1 ml of coolant.

(2) Place one drop of coolant onto a piece of pH indicating paper, which would have a indicated range between 4.0 and 7.0.

(3) Compare color results for pH.

7.23 To obtain a boron concentration if required: (Only performed if boron has been injected into reactor. Check this with OPD.)

(1) Insert Tungsten shielded syringe into depressurization line through rubber septum and withdraw ~ 0.1 ml of coolant.

(2) Dilute to 100 ml of water.

(3) Proceed with HSP-05.19 to complete the analysis.

NOTE: A dilution factor is 1000 for this analysis.

8.0 SAMPLING OF THE CONTAINMENT BUILDING ATMOSPHERE DURING ACCIDENT CONDITIONS

8.1 During accident conditions, the Containment Building atmosphere PASS (located in the No. 3 FWH Area) will be the normal sampling location.

8.2 When it has been determined that a sample is to be taken, the HP Technician and one person to assist him shall:

(1) Review the LACBWR Operating Manual Procedure (Volume II, Section 6.5) for operating the Containment Building atmosphere PASS System.

(2) When confident with the operating procedure, they shall proceed to the Radio-Chemical Lab and obtain the following equipment:

(a) One high-range survey meter - preferrably a meter with extended probe capability.

(b) A shielded transfer container (even with partial shielding capability).

(c) Extension tongs.

(d) A FM walkie-talkie.

(3) Establish a shielded area, using lead bricks, inside the laboratory hood. This shall be of sufficient size to reduce the possible high radiation levels of the sample.

(4) Ensure the transfer route is cleared of any obstacle.

(5) Ensure the ND6600 is operating properly.

8.3 After the Health Physics Technician is confident all preparations for drawing a sample are complete, he shall report to the Onsite Radiological Assessment Director (RAD).

8.4 The HP Technician and Assistant shall don at least the following protective clothing and dosimetry:

(1) Coveralls
(2) Cloth and rubber gloves
(3) Rubber boots
(4) Cloth hood
(5) A 0-5 R dosimeter, Xetex 415A electronic dosimeter
(6) One extremity TLD to be worn on the finger expected to be closest to the cylinder
(7) One TLD to be worn on the whole body
(8) Respiratory protection - optional depending on conditions

8.5 The Health Physics Technician shall then report to the RAD that they are prepared to sample the Containment Building atmosphere.

8.6 After consultation with the Emergency Response Director (ERD), the RAD shall direct the HP Technician to obtain a Containment Building atmosphere sample.

8.7 The Health Physics Technician and Assistant will take the equipment obtained in Step 8.2.2 to the No. 3 FWH Area and perform the following:*

(1) Measure the area dose rate. Roll-in a Pb blanket or other suitable shadow shield to shield the Operator at the operating dilution flow near control PASS control panel if deemed necessary by RAD and ERD.

(2) Ensure the 300-cc sample container is in place with valves opened.

(3) Place shielded transfer cask under the sample container. Crack open lid of Pb shielded transfer cask to at least off center by 5 inches. (This can be done by loosening the three gray bolts on the lid and rotating the lid off center on the red rotational bolt.) Back the transfer cask underneath the reactor coolant PASS cylinder with the 3-foot T-handle in the extended position to reduce whole body dose. (This will also prepare the loaded transfer cask to be pulled out of the No. 3 FWH area with minimal delays for turning, thus reducing whold body dose.)

*A table comparing Containment Building atmospheric activity concentrations, HRCBARM readings, 300-cc cylinder dose rates at 10 cm, and estimated fuel degradation is found in Attachment D.

8.8 The Health Physics Technician shall contact the RAD to inform them that they are about to establish flow in the Containment Building atmosphere PASS system.

8.9 Following the operating procedure for the Containment Building atmosphere PASS system, establish flow into the system.

NOTE: Constantly measure the piping dose rate.

8.10 Secure the sample system and obtain a final dose rate on the sample container.

8.11 The Assistant shall grasp the sample container with the extended tongs.

8.12 The HP Technician will quickly disconnect the sample container from the system and then back off a safe distance.

8.13 With the extension tongs, lower the sample container into the shielded transfer cask. Lift the 3-foot T-handle and pull the transfer cask out of the No. 3 FWH area. If practical, assistant will measure dose rates to persons pulling cask. Move cask to the lab, locating the cask near hood.

8.14 Using the extension tongs, place the sample container behind the lead shield in the laboratory hood.

8.15 Measure the dose rate levels in the laboratory.

8.16 If the sample container has a dose rate of < 4 mrem/hr, it can be counted directly on the GeLi using Job Stream.PASGAS.

8.17 If the sample cylinder has a dose rate > 4.0 mrem/hr at 10 cm, dilution of the containment atmospheric sample will have to be done.

8.17.1 Connect am evacuated 5-liter marinelli with appropriate valves, fittings, and pressure gauge to the quick disconnect at one end of the 300 cc sample cylinder behind the Pb bricks inside the lab hood. Crack open the valve on connected end of 300 cc cylinder. Slowly open corresponding valve on the 5-liter marinelli and equalize pressure between cylinder and marinelli. [The 300 cc cylinder has been calculated to contain $\approx$ 1,360 cc of gas at 14.7 psig if containment has reached design basis pressure of 52 psig.] Observe marinelli pressure which should be at 0 psig.

8.18 Place shielded 10-cc offgas syringe (designed to transfer gases) into septum at available marinelli port. Open port valve. Draw out 10 cc sample of gas as you would with a normal offgas or sipping sample. Transfer to 10-cc evacuated vial.

8.19 Determine vial dose rate at 10 cm and if ≤ 4 mR/hr, count on GeLi contact geometry; if > 4 mR/hr, count on extended geometry.

8.20 Report results to RAD.

9.0 SAMPLING THE STACK GAS DURING ACCIDENT CONDITIONS

9.1 During accident conditions, Stack Gas Coolant PASS (located in the No. 3 FWH Area) will be the normal sampling location.

9.2 When it has been determined that a sample is to be taken, the HP Technician and one person to assist him shall:

(1) Review the LACBWR Operating Manual Procedure (Volume II, Section 6.6) for operating the Stack Gas PASS System.

(2) When confident with the operating procedure, they shall proceed to the Radio-Chemical Lab and obtain the following equipment:

(a) One high-range survey meter - preferrably a meter with extended probe capability.

(b) A shielded transfer container.

(c) Extension tongs.

(d) A FM walkie-talkie.

(3) Establish a shielded area, using lead bricks, inside the laboratory hood. This shall be of sufficient size to reduce the possible high radiation levels of the sample.

(4) Ensure the transfer route is cleared of any obstacle.

(5) Ensure the ND6600 is operating properly.

9.3 After the Health Physics Technician is confident all preparation for drawing a sample is complete, he shall report to the Onsite Radiological Assessment Director (RAD).

9.4 The HP Technician and Assistant shall don at least the following protective clothing and dosimetry:

(1) Coveralls
(2) Cloth and rubber gloves
(3) Rubber boots
(4) Cloth hood
(5) A 0-5 R dosimeter, Xetex 415A electronic dosimeter
(6) One extremity TLD to be worn on the finger expected to be closest to source.
(7) One TLD to be worn on the whole body
(8) Respiratory protection - optional depending on conditions

9.5 The Health Physics Technician shall then report to the RAD that they are prepared to sample the stack gas.

9.6 After consultation with the Emergency Response Director (ERD), the RAD shall direct the HP Technician to obtain a stack gas sample.

9.7 The Health Physics Technician and Assistant will take the equipment obtained in Step 9.2.2 to the No. 3 FWH Area and perform the following:

(1) Measure the area dose rate. Roll-in a Pb blanket or other suitable shadow shield to shield the Operator at the operating dilution flow near control PASS control panel if deemed necessary by RAD and ERD.

(2) Ensure the sample container is in place.

(3) Place shielded transfer cask under the sample container. Crack open lid of Pb shielded transfer cask to at least off center by 5 inches. (This can be done by loosening the three gray bolts on the lid and rotating the lid off center on the red rotational bolt.) Back the transfer cask underneath the reactor coolant PASS cylinder with the 3-foot T-handle in the extended position to reduce whole body dose. (This will also prepare the loaded transfer cask to be pulled out of the No. 3 FWH area with minimal delays for turning, thus reducing whold body dose.)

9.8 The Health Physics Technician shall contact the RAD to inform them that they are about to establish flow in the stack gas PASS system.

9.9 Following the operating procedure for the stack gas PASS system, establish flow into the system.

NOTE: Constantly measure the piping dose rate.

9.10 Read the flow rate and allow flow to run for 1 minute.

9.11 After 1 minute, secure the sample system and obtain a final dose rate on the sample container.

9.12 The Assistant shall grasp the sample container with the extended tongs.

9.13 The HP Technician will quickly disconnect the sample container from the system and then back off a safe distance.

9.14 With the extension tongs, lower the sample container into the shielded transfer cask. Lift the 3-foot T-handle and pull the transfer cask out of the No. 3 FWH area. If practical, assistant will measure dose rates to persons pulling cask. Move cask to the lab, locating the cask near hood.

9.15 Using the extension tongs, place the sample container behind the lead shield in the laboratory hood.

9.16 Measure the dose rate evels in the laboratory.

9.17 Disassemble the sample container and place the particulate filter and charcoal filter into sealed separate bags.

9.18 Measure the dose rate of each filter. If the dose rates are $\leq$ 4.0 mrem/hr at 10 cm, count directly on GeLi.

9.19 If the dose rates are > 4.0 mrem/hr at 10 cm, filter or cartridge disassembly may be necessary. Follow Section 6.2.2.5 to complete this. Count on GeLi extended geometry if necessary to minimize dead time.

ATTACHMENT A

APPROXIMATE SPING-4 STACK NOBLE GAS AND RADIOIODINE RELEASE CONCENTRATIONS RELATED TO APPROXIMATE FUEL DEGRADATION CONDITIONS[a]

APPROXIMATE FUEL DEGRADATION CONDITION	CONTAINMENT INITIAL CONCENTRATION (μCi/cc)[b]		STACK INITIAL CONCENTRATION (μCi/cc) WITH C.B. VENTS ON AND 2 STACK BLOWERS ON[c]		STACK INITIAL CONCENTRATION (μCi/cc) W/C.B. VENTS OFF AT 0.1% LEAKAGE/24 HOURS @ 52 PSIG & 2 STACK BLOWERS ON[d]	
	NOBLE GASES	RADIOIODINES	NOBLE GASES	RADIOIODINES	NOBLE GASES	RADIOIODINES
100% Fuel Degradation, LOCA	4,830.0	1,184.0	6.133 E02	1.504 E02	3.013 E01	7.341
10% Fuel Degradation, LOCA	483.0	118.4	6.133 E01	1.504 E01	3.013	7.34 E-01
1% Fuel Degradation, LOCA	48.3	11.84	6.133	1.504	3.013 E-01	7.341 E-02
0.1% Fuel Degradation, LOCA	4.83	1.18	6.133 E-01	1.504 E-01	3.013 E-02	7.341 E-03
LOCA, Loss of Major Fuel Gap Activity[e]	3.62	0.59	4.597 E-01	7.490 E-02	2.240 E-02	3.70 E-03
LOCA, No Fuel Degradation, Loss of All Coolant Inventory	0.07	3.5 E-03	8.90 E-03	4.45 E-04	4.34 E-04	5.52 E-05

(a) Assumes the SPING-4 samples the stack isokinetically at approximately 50-60 lpm.
(b) Assumes 100% of noble gases, 25.0% radioiodines and 1% particulates move from the fuel to containment free air space (7.48×10^9 cc) and mix uniformly.
(c) Assumes containment ventilation exhaust system operating at 8,000 cfm (maximum) and two stack blowers operating at 63,000 cfm (measured) for a dilution factor of 0.1270 = 0.1270 x concentration in C.B. (μCi/cc).
(d) Calculated by $F_{CC} \times \left[\frac{(P_C + P_A)}{P_A}\right] \times 0.001 \times 1.1574\text{ E-05 sec}^{-1}\text{ day}^{-2} \times 1.588\text{ E-05 cfm}^{-1}$ = 0.0062 x Concentration in C.B. (μCi/cc) x C (μCi/cc).
(e) Approximately 0.075% of noble gases, 0.025% of radioiodines and 0.001% of particulates.

ATTACHMENT B

COMPARISON OF REACTOR COOLANT PASS 10-CC CYLINDER APPROXIMATE GAMMA DOSE RATES AT CONTACT (1 CM) AND AT 10 CM WITH APPROXIMATE FUEL DEGRADATION (All Dose Rates are in R/hr)

	APPROXIMATE GAMMA DOSE RATE @ 1 CM	APPROXIMATE GAMMA DOSE RATE @ 10 CM
100% FUEL DEGRADATION		
Undiluted Sample @ 2 Hours	23,234*	688.86
Undiluted Sample @ 24 Hours	3,809	113.0
Diluted Sample (2/1) @ 2 Hours	7,745	229.6
Diluted Sample (4/2) @ 2 Hours	4,647	137.8
Diluted Sample (10/1) @ 2 Hours	2,112	62.6
10% FUEL DEGRADATION		
Undiluted Sample @ 2 Hours	2,323.4	68.9
Undiluted Sample @ 24 Hours	380.9	11.3
Diluted Sample (2/1) @ 2 Hours	774.5	23.0
Diluted Sample (4/2) @ 2 Hours	464.7	13.8
Diluted Sample (10/1) @ 2 Hours	211.2	6.3
1% FUEL DEGRADATION		
Undiluted Sample @ 2 Hours	232.3	6.9
Undiluted Sample @ 24 Hours	38.1	1.1
Diluted Sample (2/1) @ 2 Hours	77.5	2.3
Diluted Sample (4/2) @ 2 Hours	46.5	1.4
Diluted Sample (10/1) @ 2 Hours	21.1	0.63
0.1% FUEL DEGRADATION		
Undiluted Sample @ 2 Hours	23.2	0.69
Undiluted Sample @ 24 Hours	3.8	0.11
Diluted Sample (2/1) @ 2 Hours	7.8	0.23
Diluted Sample (4/2) @ 2 Hours	4.7	0.14
Diluted Sample (10/1) @ 2 Hours	2.1	0.06

*Computed by NES in Technical Study.

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ATTACHMENT C

REACTOR COOLANT ISOTOPIC CONCENTRATIONS AS COMPARED TO APPROXIMATE FUEL DEGRADATION

(The listed isotpic concentrations assume the reactor was operating at 100% thermal power at time of accident.)

SAMPLE TIME IS ASSUMED TO BE 2 HOURS AFTER SHUTDOWN.

ISOTOPE	100% FUEL DEGRADATION* CI/GRAM	10% FUEL DEGRADATION* CI/GRAM	1% FUEL DEGRADATION* CI/GRAM	0.1% FUEL DEGRADATION* CI/GRAM	1 FUEL ROD DEGRADED CI/GRAM
Kr-85M	4.65 E-2	4.65 E-3	4.65 E-4	4.65 E-5	6.46 E-6
Kr-85	2.55 E-3	2.55 E-4	2.55 E-5	2.55 E-6	3.54 E-7
Kr-88	9.73 E-2	9.73 E-3	9.73 E-4	9.73 E-5	1.35 E-5
Xe-133	4.78 E-1	4.78 E-2	4.78 E-3	4.78 E-4	6.64 E-5
Xe-135	5.57 E-2	5.57 E-3	5.57 E-4	5.57 E-5	7.74 E-6
I-131	1.18 E-1	1.18 E-2	1.18 E-3	1.18 E-4	1.64 E-5
I-133	2.26 E-1	2.26 E-2	2.26 E-3	2.26 E-4	3.14 E-5
I-135	1.82 E-1	1.82 E-2	1.82 E-3	1.82 E-4	2.53 E-5
Zr-95	3.61 E-3	3.61 E-4	3.61 E-5	3.61 E-6	5.01 E-7
Nb-95	3.89 E-3	3.89 E-4	3.89 E-5	3.89 E-6	5.40 E-7
Mo-99	4.40 E-3	4.40 E-4	4.40 E-5	4.40 E-6	6.11 E-7
Tc-99M	3.14 E-3	3.14 E-4	3.14 E-5	3.14 E-6	4.36 E-7
Rh-105	2.03 E-3	2.03 E-4	2.03 E-5	2.03 E-6	2.82 E-7
Ba-140	4.19 E-3	4.19 E-4	4.19 E-5	4.19 E-6	5.82 E-7
La-140	4.24 E-3	4.24 E-4	4.24 E-5	4.24 E-6	5.89 E-7
Ce-141	4.03 E-3	4.03 E-4	4.03 E-5	4.03 E-6	5.60 E-7
Ce-144	3.07 E-3	3.07 E-4	3.07 E-5	3.07 E-6	4.26 E-7
Ru(Rh)-106	2.80 E-3	2.80 E-4	2.80 E-5	2.80 E-6	3.88 E-7
Np-239$^{\Delta}$	6.07 E-2	6.07 E-3	6.07 E-4	6.07 E-5	8.43 E-6

*Isotopic concentrations must be divided by the dilution factor used during sampling.

$^{\Delta}$Based on extrapolation from NUREG-0771.

ATTACHMENT D

APPROXIMATE CONTAINMENT BUILDING ATMOSPHERIC ACTIVITY CONCENTRATIONS HRCBARM READINGS AND 300-CC PASS CYLINDER GAMMA DOSE RATES AT 10-CM AS RELATED TO APPROXIMATE FUEL DEGRADATION CONDITIONS(a)

APPROXIMATE HRCBARM READINGS (R/HR)	INITIAL CONTAINMENT ACTIVITY CONCENTRATIONS (μCi/cc)(b)			APPROX. CONTAINMENT PASS 300-CC SAMPLE CYLINDER γ DOSE RATES @ 10 CM (R/HR)(c)	APPROXIMATE FUEL DEGRADATION CONDITION
	NOBLE GASES	RADIOIODINES	PARTICULATES		
6.0 E05	4,830.0	1,184.0	119.0	36.40	100% Fuel Degradation, LOCA
6.0 E04	830.0	118.4	11.9	3.64	10% Fuel Degradation, LOCA
6.0 E03	48.3	11.84	1.19	0.364	1% Fuel Degradation, LOCA
6.0 E02	4.83	1.18	0.12	0.036	0.1% Fuel Degradation, LOCA
4.0 E02	3.62	0.59	0.01	0.024	Major Fuel Gap Activity Loss, LOCA
70-100	0.67	0.16	0.01	0.005	1 Fuel Rod Degraded, LOCA
7-10	0.07	3.5 E-03	1.13 E-03	< 0.001	No Fuel Degradation, Loss of Activity to Containment

(a) Assumes 100% of the noble gases, 25% of the radioiodines and 1% of the particulates move from the fuel to containment free air space and mix uniformly.

(b) Assumes containment isolated.

(c) Calculated by $\phi\mu = \frac{S_L}{4\pi r}(\theta_1 + \theta_2)$ for an approximate line source @ 10 cm since $S_L = S_V \pi r^2$ or $S_L = S_V (1.563)$ at 10 cm, and sample cylinder height in $\approx$ 36 cm.

ATTACHMENT E

ACNP #66564
POST-ACCIDENT PROCEDURES

It is expected that fuel cladding failure will be prevented or minimized by the automatic operation of core spray systems in event of MCA. However, the control room is shielded sufficiently to permit continued occupancy after an accident, even if there is cladding failure and 100 percent release of fission products from all of the reactor fuel. The schedule for shift changes will depend on measured radiation levels, since plant personnel would be subject to a larger dose during evacuation within a short time after MCA (with 100 percent fission product release) than would be the case for an extended occupancy of the control room. This is illustrated by Table 5-1, which shows the maximum dose to personnel remaining in the control room for a specified time after the accident and the whole body dose received while evacuating at the specified time. The evacuation doses are based on a conservative 4.6-min transit time through the radiation-affected zone.

While carrying out his assigned duties following an accident, the operator will be especially cognizant of those parameters which will indicate the likely location and size of the primary system leak. Building pressure; reactor liquid level; and the behavior of the feedwater supply system, the core spray pumps, and the gravity core spray systems will provide primary information for analysis of the problem.

TABLE 5-1

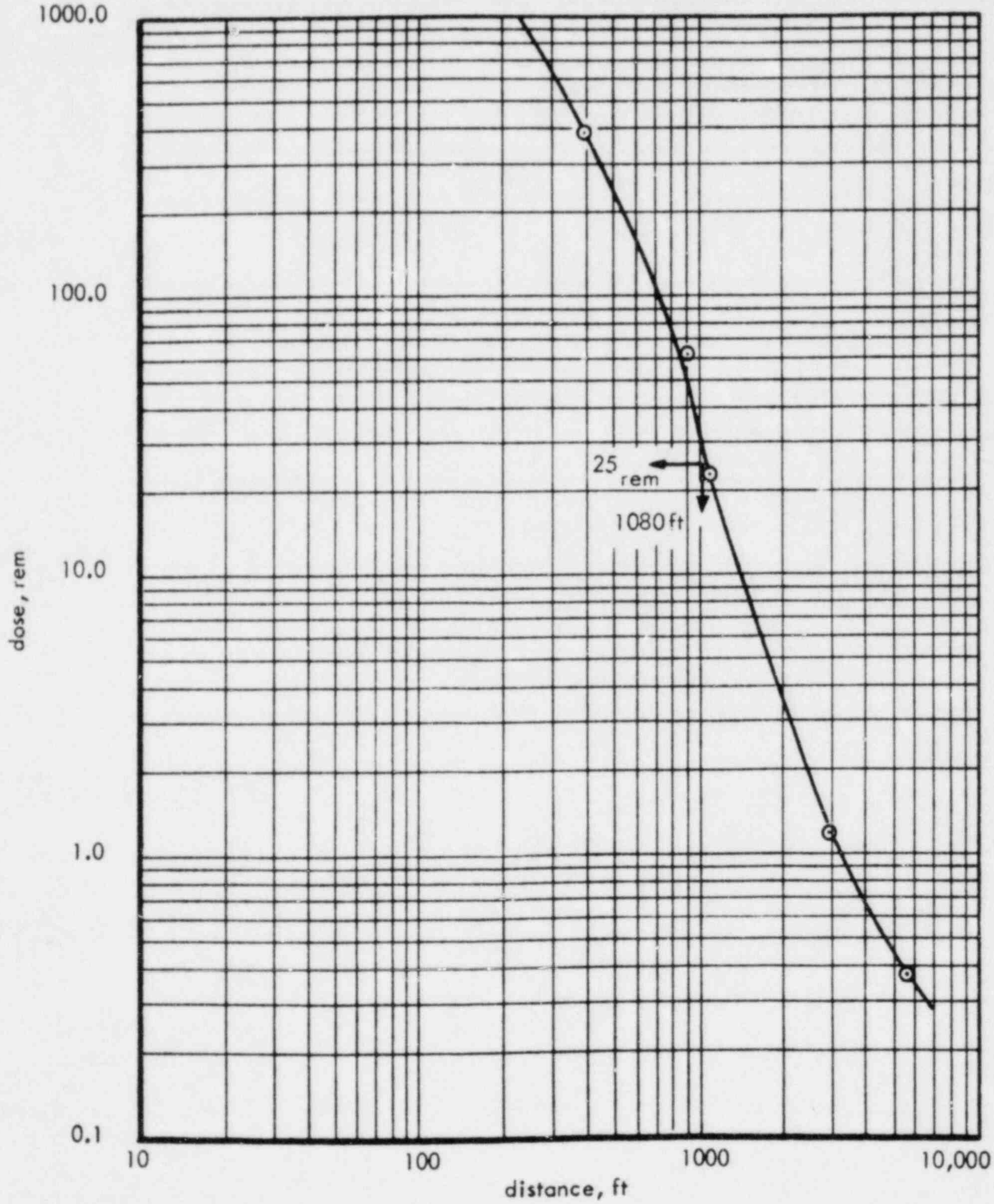
SUMMARY OF MAXIMUM* WHOLE BODY DOSE LEVELS TO OPERATING PERSONNEL AFTER MCA

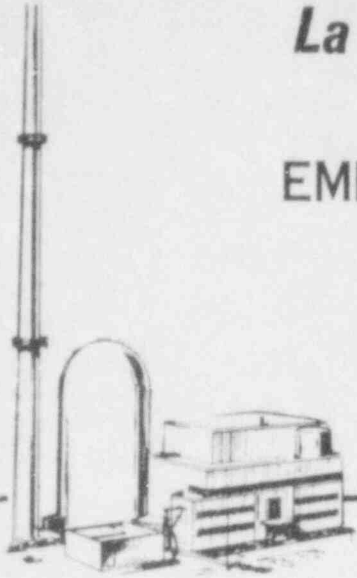
Elapsed Time After Accident (hr)	Cumulative Control Room Dose (rems)	Dose Received While Entering or Leaving the Plant (rems)
0.1	-	40
8	13.1	9
16	15.7	4.2
24	16.4	2.6
32	16.7	1.8
40	16.8	1.4
200	17.2	0.5

*Based on assumed 100 percent release of fission products from the fuel.

ATTACHMENT F

TOTAL WHOLE-BODY DOSE FOLLOWING MCA





La Crosse Boiling Water Reactor
LACBWR

EMERGENCY PLAN PROCEDURE

EMERGENCY PLAN TRAINING

DAIRYLAND POWER

Record and Control of Initial Issue, Revisions & Periodic Reviews					
Issue	Prepared By or Periodic Rev. By Signature Date	Operations Supv. Review Signature Date	QA Supervisor Review Signature Date	Health & Safety Review** Signature Date	Appv'd & Issued* Effective Date of Issue
0	J.D Parkyn for L. Kelley 4/24/81	[illegible] for G. BOYD 4/24/81	[illegible] 24 Apr '81	[illegible] 4/24/81	J.D Parkyn 4/24/81
1	Lee Kelley 8/30/82	[illegible] 8/31/82	[illegible] 8-31-82	[illegible] 8/30/82	J.D Parkyn 8/31/82

 **H&S Supv. or Rad. Prot. Engineer *LACBWR Plant Superintendent

LACBWR

EMERGENCY PLAN PROCEDURES

EMERGENCY PLAN AND PROCEDURE TRAINING

Issue Notice No. 1 Dated 8/31/82

INSTRUCTIONS

Remove Old Page No.	Insert New Page No.	Description Of and Reason for Change
Remove EPP-14 Issue 0, Pages 0.1, 0.2, Pages 2 and 3	Insert EPP-14 Issue 1, Pages 0.1, 0.2, Pages 2 and 3.	Change made to comply with NRC recommendations of 10/29/81 I & E Report 50-409/81-13

PAGE SCHEDULE

No.	Issue	No.	Issue	No.	Issue
0.1	1				
0.2	1				
1	0				
2	1				
3	1				
4	0				
5	0				

This issue shall not become effective unless accompanied by a new cover sheet properly signed off in the appropriate review/approval columns.

LACBWR

EMERGENCY PLAN PROCEDURE

EMERGENCY PLAN TRAINING

1.0 PURPOSE

The purpose of this procedure is to define the training requirements which will be provided to plant personnel and off-site support agencies which have responsibilities described in the LACBWR Emergency Plan, Section 8.3.

2.0 APPLICABILITY

This procedure applies to all personnel and agencies commensurate with their degree of involvement and the kind of support they provide.

3.0 DEFINITIONS

3.1 Annually - Means within the calendar year but not to exceed fourteen (14) months.

3.2 Semi-Annual - Means within each six (6)-month interval beginning January 1 of each year.

3.3 Quarterly - Means within each three (3)-month interval beginning January 1 of each year.

4.0 RESPONSIBILITIES

4.1 The Plant Superintendent is responsible for the general administration of all training programs utilized at LACBWR.

4.2 The Health and Safety Supervisor is responsible for the administration and documentation of training required by this procedure except for Fire Brigade training and First Aid training.

4.3 The Training and Relief Supervisor is responsible for the coordination of all training programs at LACBWR.

4.4 The Fire Protection Supervisor is responsible for administration and documentation of all employee Fire Brigade training.

4.5 The Safety Coordinator is responsible for the coordination of employee First Aid training to ensure as many employees as practical are certified in First Aid.

5.0 REQUIREMENTS

5.1 General

5.1.1 The Health and Safety Supervisor or Radiation Protection Engineer shall initiate and maintain and provide a copy to the Training and Relief Supervisor records of offsite and LACBWR personnel participation in training as provided by this procedure except for Fire Brigade training and First Aid training.

5.1.2 The Safety Coordinator shall schedule First Aid training sessions as required to ensure as many employees as is practical are certified in First Aid.

5.1.3 The Fire Protection Supervisor shall initiate and maintain records fo all Fire Brigade training received by LACBWR personnel.

5.1.4 All phases of the Emergency Plan, Section 8.3.1, shall be covered annaully with all LACBWR personnel. The training will consist of the following:

(1) Reasons for the Emergency Plan,

(2) Explanation of the organization,

(3) Explanation of the plan; including use of the plan and procedures (EPP 1 and EPP 2).

(4) Emphasize specific responsibilities,

(5) Location and use of special emergency equipment, and

(6) Question and answer session.

In addition, plant personnel are encouraged to use the Emergency Plan as a topic for Monthly Safety Meetings.

5.2 Specific - Plant Personnel

5.2.1 Plant operations personnel will be given training on emergency and abnormal operating procedures through the Plant Operator Requalification Training Program.

5.2.2 Members of the LACBWR staff, who may be required to use the equipment, will be given instruction in respiratory protective equipment in accordance with Volume X, Section 10 of the LACBWR Operating Manual.

5.2.3 Section 8.3.3, First Aid training will be conducted regularly for all plant personnel, using the American Red Cross Multi-Media Course. It is intended that as many personnel as possible will hold current American Red Cross cards. At least one (1) person on each operating shift will have current cards.

5.2.4 Section 8.2.2(2), Fire Fighting training will be given to members of the LACBWR Fire Brigade as per FPP 2.2. The overall aspects of LACBWR Operating Manual, Volume I, Section 3.6, will be covered with the personnel during the Annual Emergency Plan retraining. Items included in the training will be:

(1) Location and use of firefighting equipment,

(2) Procedures for notification of a fire detected in the plant,

(3) Individual responsibilities of a Fire Brigade members, and

(4) Outside assistance available and procedures for notification of these agencies.

5.2.5 Plant personnel will be given instruction in evacuation procedures which include the following:

(1) Response to alarms and sirens

(2) Types of evacuations

(3) Individual responsibilities

(4) Evacuation routes

(5) Assembly points

(6) Assembly point operations and organization

(7) Surveys

(8) Recall of personnel

(9) Emergency medical treatment and ambulance service

(10) Training exercises

(11) Decontamination

5.3 Section 8.3.4, Specific - Offsite Support Groups

5.3.1 Provide current copies of the Emergency Plan and all pertinent Emergency Plan Procedures as they are revised and apply to each offsite support agency.

5.3.2 At least annually, contact each offsite support agency to discuss responsibilities as per our agreement and review any personnel or other significant changes.

5.3.3 Invite the members of the Genoa Fire Department to hold a meeting annually at the LACBWR facility for a plant tour and discussion session and to verify our agreement.

5.3.4 Discuss the results of any training exercises and determine the need for further or more detailed training as it applies to each offsite support group.

5.3.5 Review the Hospital's "Nuclear Emergency Medical Plan" with the available appropriate hospital staff annually.

5.3.6 Offsite personnel with responsibilities for implementation of radiological emergency response plans shall receive initial and annual retraining in their specific response areas. The below listed personnel shall receive training:

(1) Directors or coordinators of the response organizations,

(2) Personnel responsible for accident assessment,

(3) Radiological monitoring teams and radiological analysis personnel,

(4) Police, security, and fire fighting personnel,

(5) Repair and damage control/correctional action teams (onsite),

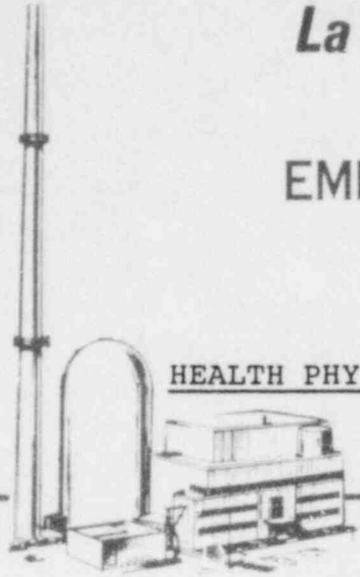
(6) First aid and rescue personnel,

(7) Local support services personnel including Civil Defense/Emergency Service personnel,

(8) Medical support personnel,

(9) Licensee's headquarters support personnel, and

(10) Personnel responsible for transmission of emergency information and instructions.



La Crosse Boiling Water Reactor
LACBWR

Page 0.1
EPP-22

EMERGENCY PLAN PROCEDURE

HEALTH PHYSICS DEPARTMENT EMERGENCY RESPONSE ACTIONS

DAIRYLAND Power

Record and Control of Initial Issue, Revisions & Periodic Reviews

Issue	Prepared By or Periodic Rev. By Signature Date	Operations Supv. Review Signature Date	QA Supervisor Review Signature Date	Health & Safety Review** Signature Date	Appv'd & Issued* Effective Date of Issue
0	[signature] 8/30/82	[signature] 8/30/82	[signature] 8-31	[signature] 8/30/82	[signature] 8/31/82

HSP EPP **H&S Supv. or Rad. Prot. Engineer *LACBWR Plant Superintendent

LACBWR

EMERGENCY PLAN PROCEDURES

HEALTH PHYSICS DEPARTMENT EMERGENCY RESPONSE ACTIONS

Issue Notice No. 0 Dated 8/31/82

INSTRUCTIONS

Remove Old Page No.	Insert New Page No.	Description Of and Reason for Change
Not applicable due to new procedure.	Insert EPP-22 Issue 0 All pages	Change made to comply with NRC recommendations of 10/29/81 I&E Report 50-409/81-13

PAGE SCHEDULE

No.	Issue	No.	Issue	No.	Issue
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This issue shall not become effective unless accompanied by a new cover sheet properly signed off in the appropriate review/approval columns.

LACBWR

EMERGENCY PLAN PROCEDURE

HEALTH PHYSICS DEPARTMENT EMERGENCY RESPONSE ACTIONS

1.0 PURPOSE

The purpose of this procedure is to identify the health physics department activities required to support the emergency response effort.

2.0 APPLICABILITY

This procedure is applicable to the following LACBWR emergency response plan position holders and their alternates.

EMERGENCY PLANT TITLE	PRIMARY POSITION HOLDER	ALTERNATE POSITION HOLDER
Onsite Radiological Assessment Director	Health & Safety Supervisor	Radiation Protection Engineering
Cooperative Radiological Assessment Director	Director of Environmental Affairs	Radiation Protection Engineer
Cooperative In-Field Radiological Assessment Director	Radiation Protection Engineer	Environmental Engineer Meteorologist
Off-site Dose Calculations and Trajectory Specialist	Environmental Engineer Meteorologist	Environmental Engineer
On-Site Radiological Monitoring Teams	Health Physcis Technicians	Health Physics Technicians
Off-Site Radiological Monitoring Teams	Health Physics Technicians	State or Federal Radiation Response Teams

3.0 DEFINITIONS

4.0 REFERENCES

4.1 LACBWR Emergency Plan

4.2 LACBWR Emergency Plan Procedures, EPP-1 through EPP-21.

4.3 LACBWR Health and Safety Procedures

4.4 LACBWR Operating Manual, Volume X Heath Physics Procedures

5.0 RESPONSIBILITY

The authorities and responsibility of health physics department personnel are delineated in Section 3.0 of EPP-2, "Organization and Operations During Emergencies."

6.0 EMERGENCY RESPONSE INTERFACES

The nature and extent of the interface activities will depend upon the following circumstances.

(1) The emergency action level in effect.

(2) The initiating parameter which caused the abnormal plant condition.

(3) The actual or potential release of radioactive material.

6.1 Onsite Radiological Assessment Director will interface with the following emergency plan personnel.

6.1.1 The Onsite Emergency Response Director

6.1.2 The Onsite Operations Parameter Director

6.1.3 The Onsite Radiological Monitoring Teams

6.1.4 The Radiological Parameter Communicator

6.2 Cooperative Radiological Assessment Director will interface with the following emergency plan personnel.

6.2.1 The Emergency Control Director

6.2.2 The Cooperative In-Field Radiological Assessment Director

6.2.3 The Offsite Dose Calculations and Trajectory Specialist

6.2.4 The Radiological Parameter Communicator

6.2.5 The Secretary-Recorder

6.2.6 The State and Federal Response Teams

6.2.7 The Cooperative Emergency Support Director

6.3 Cooperative In-Field Radiological Assessment Director will interface with the following emergency plan personnel.

6.3.1 The Cooperative Radiological Assessment Director

6.3.2 The Off-Site Dose Calculations and Trajectory Specialist

6.3.3 The Offsite Radiological Monitoring Teams

6.3.4 The Radiological Parameter Communicator

6.3.5 The State and Federal Response Teams

6.4 Offsite Dose Calculations and Trajectory Specialist will interface with the following emergency plan personnel.

6.4.1 The Cooperative Radiological Assessment Director

6.4.2 The Cooperative In-Field Radiological Assessment Director

6.4.3 The Offsite Radiological Monitoring Teams

6.5 The Onsite Radiological Monitoring Team(s) will interface with the following emergency plan personnel.

6.5.1 The Onsite Radiological Assessment Director

6.6 The Offsite Radiological Monitoring Team(s) will interface with the following emergency plan personnel.

6.6.1 The Cooperative In-Field Radiological Assessment Director

6.6.2 The State and Federal Response Teams

7.0 RESPONSE ACTIONS LEVELS

This section will identify actions which should be taken by the health physics department personnel in responding to the various emergency action levels. This procedure assumes that a health physics technician is on shift and that the Shift Supervisor will assume the duties of the Onsite Radiological Assessment Director. If the emergency condition should take place during the normal work day the Health and Safety Supervisor or the Radiation Protection Engineer would assume the duties of the Onsite Radiological Assessment Director.

When the announcement is made that an emergency condition exists the on shift health physics technician shall report to the Shift Supervisor. The Shift Supervisor will inform the health physics technician of the nature and extent of the emergency condition. In cases involving high reactor coolant activity or increasing activity the health physics technician will inform the Shift Supervisor. At this time, EPP-1, "Emergency Conditions and Response" should be implemented and used to determine the course of action the health physics technician should take.

7.1 Unusual Event - if it is determined that an unusual event conditions exist the onsite HP(s) shall:

(1) Report to the Shift Supervisor in the Control Room.

(2) Monitor the radiological monitoring equipment in control (Panel G2, G3 and A).

(3) Report any unusual activity levels to the Shift Supervisor

(4) Perform any sampling/surveying deemed necessary by the Shift Sueprvisor following existing HSP's.

(5) Report all results to the Shift Supervisor.

7.2 Alert - if it is determined that an Alert Condition exists the onsite HP(s) shall:

(1) Report to the Shift Supervisor in the Control Room.

(2) Monitor the radiological monitoring equipment in control (Panel G2, G3 and A).

(3) Report any unusual activity levels to the Shift Supervisor

(4) If a potential offsite release exists, perform the offsite calculations of EPP-5. Report results to Shift Supervisor.

(5) If a radiological condition activated the alert level, obtain air and ground surveys as outlined in EPP-7.

(6) Perform any additional sampling/surveying deemed necessary by the Shift Supervisor following the precautions of EPP-6 and EPP-7.

(7) Report all results to the Shift Supervisor.

(8) When the TSC is activated report directly to the Onsite Radiological Assessment Director in the TSC.

(9) Update the RAD of the status of all surveys, samples, and offsite calculations performed before his arrival.

(10) Continue performing any additional sampling/calculation as directed by the RAD.

(11) The RAD will be responsible to inform the ERD of the status of all health physics acitivities.

7.3 <u>Site Area Emergency</u>

7.3.1 If it is determined that a site area emergency exists the on-duty health technician(s) shall:

(1) Report to the Shift Supervisor in the Control Room.

(2) Monitor the radiological monitoring equipment in control (Panel G2, G3 and A).

(3) Report any unusual activity levels to the Shift Supervisor

(4) If a potential offsite release exists, perform the offsite calculations of EPP-5. Report results to Shift Supervisor.

(5) If a radiological condition activated the alert level, obtain air and ground surveys as outlined in EPP-7.

(6) Perform any additional sampling/surveying deemed necessary by the Shift Supervisor following the precautions of EPP-6 and EPP-7.

(7) Report all results to the Shift Supervisor.

(8) When the TSC is activated report directly to the Onsite Radiological Assessment Director in the TSC.

(9) Update the RAD of the status of all surveys, samples, and offsite calculations performed before his arrival.

(10) Continue performing any additional sampling/calculation as directed by the RAD.

(11) The RAD will be responsible to inform the ERD of the status of all health physics acitivities.

7.3.2 If it is determined that a site area emergency exists the offsite health technician(s) shall:

(1) Upon arrival at the site, report to the site RAD.

(2) If directed to perform offsite surveys refer to and comply with EPP-8, "Offsite Radiological Survey."

(3) If directed to go to the evacuation point he shall contact the Security Directory/Duty Sargeant and take control of the personnel contamination survey and subsequent decon effort.

(4) The offsite health technician(s) will remain in the field until directed to return to the site by the IRAD.

7.4 General Emergency

7.4.1 If it is determined that a general area emergency exists the on-duty health technician(s) shall:

(1) Report to the Shift Supervisor in the Control Room.

(2) Monitor the radiological monitoring equipment in control (Panel G2, G3 and A).

(3) Report any unusual activity levels to the Shift Supervisor

(4) If a potential offsite release exists, perform the offsite calculations of EPP-5. Report results to Shift Supervisor.

(5) If a radiological condition activated the alert level, obtain air and ground surveys as outlined in EPP-7.

(6) Perform any additional sampling/surveying deemed necessary by the Shift Supervisor following the precautions of EPP-6 and EPP-7.

(7) Report all results to the Shift Supervisor.

(8) When the TSC is activated report directly to the Onsite Radiological Assessment Director in the TSC.

(9) Update the RAD of the status of all surveys, samples, and offsite calculations performed before his arrival.

(10) Continue performing any additional sampling/calculation as directed by the RAD.

(11) The RAD will be responsible to inform the ERD of the status of all health physics acitivities.

7.4.2 If it is determined that a general area emergency exists the offsite health technician(s) shall:

(1) Upon arrival at the site, report to the site RAD.

(2) If directed to perform offsite surveys refer to and comply with EPP-8, "Offsite Radiological Survey."

(3) If directed to go to the evacuation point he shall contact the Security Directory/Duty Sargeant and take control of the personnel contamination survey and subsequent decon effort.

(4) The offsite health technician(s) will remain in the field until directed to return to the site by the IRAD.