ENCLOSURE 1

Updates Included In This Submittal

DIABLO CANYON EMERGENCY PLAN
IMPLEMENTING PROCEDURES

Volume 3A

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EP R-6, Revision 9
EP M-6, Revision 11

Volume 3B

Updated Table of Contents
EP EF-6, Revision 5
EP EF-7, Revision 2
EP EF-8, Revision 1

0559S/0037K

8510180143 851004
REG5 ADOCK 05000275
F PDR

ENCLOSURE 2

Location of Proprietary Information

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ENCLOSURE 3

Updates to Diablo Canyon

Emergency Plan Implementing Procedures

CURRENT

EMERGENCY PLAN

IMPLEMENTING PROCEDURES

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PG&E **Pacific Gas and Electric Company**

DEPARTMENT OF NUCLEAR PLANT OPERATIONS

DIABLO CANYON POWER PLANT UNIT NO(S) 1 AND 2

NUMBER EP R-6
REVISION 9
DATE 8/7/85
PAGE 1 OF 12

TITLE EMERGENCY PROCEDURE
RADIOLOGICAL FIRE

APPROVED R. C. Thornberg 9-5-85
PLANT MANAGER DATE

IMPORTANT TO SAFETY

SCOPE

This procedure discusses the actions which are taken in the event of a fire which involves radioactive materials or radiation. This procedure and changes thereto requires PSRC review.

GENERAL

A radiological fire is one which involves either radiation or radioactive materials. Examples of this type of fire are fires in the solid radwaste storage facility, the drumming station, contaminated ventilation filters, and electrical or lube oil fires in radiation areas. The primary hazard (after plant safety and personnel injury) is the spread of contamination. All reasonable attempts to prevent the spread of smoke-borne contamination should be made.

SYMPTOMS

1. A fire is discovered in the auxiliary building, fuel handling building, containment or solid radwaste storage facility.

2. The fire detection system annunciator indicates a fire in any area where radioactive materials or radiation areas are present.

AUTOMATIC ACTION

The fire water sprinkler systems may activate.

IMMEDIATE ACTION

1. Activate the fire signal by dialing 779-XX. "XX" is a code which gives the location of fire (see Table 1). The fire signal is a 30-second blast on the fire sirens. The signal will be followed by the location code of the fire on the code call system repeated 8 times. The first five persons to dial 76 will be connected into a conference call. The priority for the conference call is:

   a. Shift Foreman (Interim Site Emergency Coordinator).

SUBSEQUENT ACTIONS

The Shift Foreman, acting as Interim Site Emergency Coordinator, shall direct all subsequent actions from the Control Room until relieved by the long-term Site Emergency Coordinator if the emergency warrants it. Such actions should include the following:

1. If a fire cannot be physically contained and controlled promptly with available resources, assistance from the California Department of Forestry (CDF) should be requested. Their assistance should also be requested at any other time the Fire Brigade Leader feels that they may be needed. Refer to Appendix 1 for telephone numbers.

   NOTE: 1) If outside assistance has been requested, notify the Security Department [redacted] and have them notify the Avila Gate. One or more plant operating personnel shall be dispatched to the Security Building to escort and provide radiological monitoring to CDF personnel.

   2) Maintain a record of notifications made to offsite personnel, Form 69-9221, "Emergency Notification Record" may be used to provide this record.

2. If CDF is called to respond, insure that tne person calling CDF gives a name and number to call the plant back. Provide CDF with details concerning location and the type of fire. Also give CDF an update of the fire conditions even before they arrive as they may decide to send more support.

3. If CDF responds, they will stage at the G.C. Warehouse parking lot. Their first responding chief officer will take charge and identify himself. He may initially decide to go to the scene of the fire. He will eventually decide to contact the PGandE Site Emergency Coordinator. Therefore, escort and access should be provided to him to reach either the control room or TSC, depending on where the Site Emergency Coordinator is located. A CDF radio phone is available in the shift foreman's office and the TSC for the use of the CDF chief officer.

4. During the course of the fire, the Control Operator and those at the scene should pay particular attention for signs that the operability of the various engineered safeguards equipment is reduced below minimum Technical Specification limits, or if such damage is imminent, shut down the unit immediately.

   NOTE: Emergency Procedure EP M-10 provides the operator with listing of safeguards equipment which may be affected by fires in various locations. This procedure should be consulted to assist in determining the operating strategy during the fire.

5. Establish an initial emergency classification based on the criteria in Appendix Z and perform the actions required by the classification.

6. If the Control Room must be evacuated, follow the instructions given in Emergency Procedure OP-8.

7. If a sprinkler system was activated, the thermal element must be replaced before the system can be reset.

8. Investigate to see whether any radioactive material release limits were violated.

9. Close out with verbal summary to offsite organizations and complete the following written reports:

   a. Plant Problem Report (See Nuclear Plant Administrative Procedure C-12)

   b. Written summary to NRC within 24 hours for an Unusual Event or 8 hours for a higher classification.

10. If a fire has been put out before CDF arrives, they may still request to send one engine company to visit the site for their close out.

11. The plant Fire Marshal, or his designee shall be promptly notified of all plant fires.

SPECIAL CONSIDERATIONS REGARDING RADIOLOGICAL FIRES

1. Radiation exposure control.

   a. Know the radiation levels.

      1) Posted barrier signs.

      2) Surveys by Chemistry and Radiation Protection Technicians.

   b. Radiation surveys may be required during the fire fighting as plant conditions change. The on-shift Chemistry and Radiation Protection Technician is designated to respond to all fire emergencies to provide monitoring support. Additional Technicians are assigned to the maintenance brigade crews to assist the shift C&RP technician.

   c. All fire fighting personnel entering radiation or high radiation areas, must wear and periodically monitor their dosimetry to avoid exceeding the exposure limits set forth in the DCPP Radiation Protection Manual. Off-site fire fighters shall be escorted by plant personnel in these areas.

2. Contamination Control

   a. Surface Contamination

      1) Fires in the surface contamination areas will probably also create an airborne contamination hazard.

      2) Wear self-contained breathing apparatus.

      3) Turnout gear should provide adequate contamination protection to the fire fighters in most loose surface contamination areas of the plant. In areas of very high contamination, additional protective clothing may be required. Fire fighters should never wear polyethylene boots or gloves, since these may melt to the skin or clothing in a fire environment.

      4) A wide water fog pattern may help keep the contamination from going airborne.

5) Care must be taken to minimize the spread of contamination and its potential release to the environment.

6) Water use should consider processing capacity of Radwaste systems.

7) Turnout gear for offsite fire fighters which may become contaminated at the plant will be replaced from spares in the warehouse if it cannot be readily decontaminated.

b. Airborne Contamination

1) Levels may be continually changing.

2) Always wear a self-contained breathing apparatus when fighting fires in surface contamination areas, airborne contamination areas, or radioactive material storage or processing areas.

3) Smoke will be radioactive and ventilation should be performed via filters and an effluent monitor.

4) A wide fog pattern will help to reduce airborne contamination levels by entraining the radioactive particles and carrying them to the floor.

5) High pressure water or dry chemical agent directed at areas of surface contamination will cause some of the contaminants to become airborne.

6) Radiation Protection personnel should monitor airborne contamination levels during the emergency and recommend actions and precautions to lower the concentrations.

c. Environmental Conditions

1) Minimize excess water usage due to limited capacity of waste tanks and activity discharge restrictions.

2) Minimize unmonitored releases to the atmosphere of water or airborne contamination.

3. Post-fire Fighting Activities

   a. Monitor personnel for contamination.

      1) External.

      2) Internal monitoring may also be required.

   b. Monitor fire fighting and emergency equipment for contamination under the direction of radiation protection personnel.

   c. Determine radiation exposure of fire fighting personnel. A radiation work permit may also need to be prepared to document exposures.

   d. Areas in or adjacent to the fire area may require decontamination.

   e. An environmental monitoring program for areas surrounding the plant may be required if contamination has spread outside the controlled area.

   f. Smoke damage to electrical equipment and stainless steel piping must be assessed due to the high chlorine content of the polyethylene used for contamination control.

   g. Dry chemical agents and halon used in areas of stainless steel piping or machinery must be thoroughly cleaned and then inspected.

FIRE FIGHTING PREPLANS

Attachment 2 contains fire fighting preplans for plant locations which are reasonably expected to contain radioactive materials or a radiation hazard. These preplans are intended to aid the Fire Brigade Leader and the Site Emergency Coordinator during the fire emergency.

REFERENCES

1. Emergency Procedure M-6, "Non-Radiological Fire."
2. Emergency Procedure G-1, "Accident Classification and Emergency Plan Activation."
3. Emergency Procedure G-2, "Establishment of the Onsite Emergency Organization.
4. Emergency Procedure G-3, "Notification of Offsite Organizations."
5. Diablo Canyon Power Plant - Fire Protection Plan.
6. General Operating Order 1.300 and 1.301.
7. PGandE Fire Prevention Manual.
8. Accident Prevention Rule 23.

ATTACHMENTS

1. Form 69-9221, "Emergency Notification Record," 3/82.
2. "Fire Fighting Preplans".

TABLE 1

FIRE CODE CALL LOCATIONS

CODE	LOCATIONS
779 11	Control Building
12	No. 1 Containment
13	No. 1 Turbine Building
14	No. 1 Auxiliary Building
15	No. 1 Fuel Handling Building
16	Package Boiler Area
21	Hot machine shop area
22	No. 2 Containment
23	No. 2 Turbine Building
24	No. 2 Auxiliary Building
25	No. 2 Fuel Handling Building
26	Security Diesel Area
31	Grass Fire
32	Outside Transformer Fire
33	Intake Structure
34	500 kV Switchyard
35	230 kV Switchyard
36	Radwaste Storage
41	All Clear
43	Fire Drill
779 45	Test Fire Code
51	Administration Building
52	Security Building
53	Training Building
54	Assembly Building
55	Technical Support Center
61	Medical Emergency

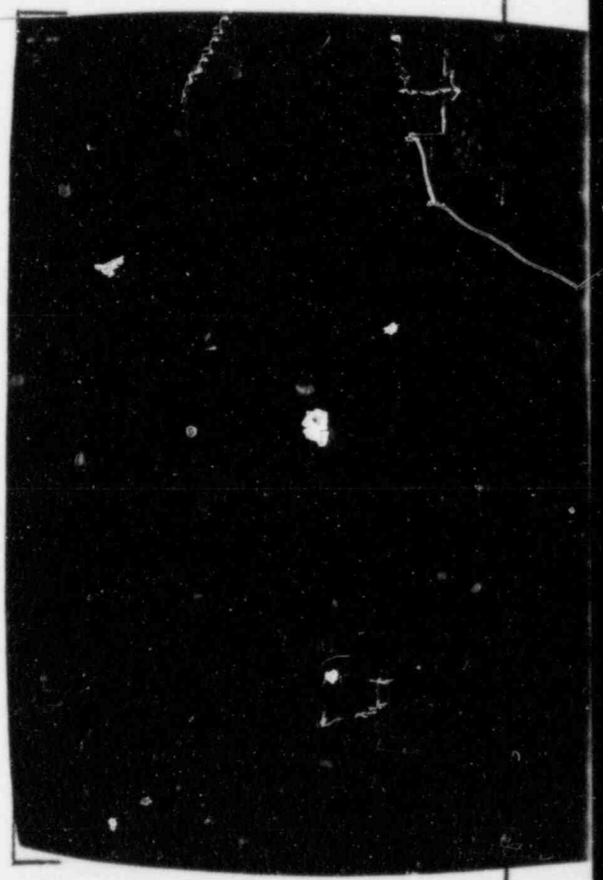
APPENDIX 1

FIRE ASSISTANCE COMMUNICATION

1. California Department of Forestry

OR

San Luis Obispo County Sheriff
(Request they dispatch the
California Department of Forestry)



2. Fire Protection
Randy Kohout

Fire Marshall
Carmon Johnson

APPENDIX Z

EMERGENCY PROCEDURE NOTIFICATION INSTRUCTIONS

1. When this emergency procedure has been implemented, and upon direction from the Shift Foreman, proceeds as follows:

   a. Designate this event a Notification of Unusual Event for fires within site boundary if a verified fire is not under control within 10 minutes of initiating fire fighting efforts or if California Division of Forestry Assistance is requested, or for any fire in radioactive material causing an uncontrolled increase in airborne activity. Notify plant staff and response organizations required for this classification by implementing Emergency Procedures G-2 "Establishment of the Onsite Emergency Organization" and G-3 "Notification of Offsite Organizations" in accordance with Emergency Procedure G-1 "Accident Classification and Emergency Plan Activation."

   b. Designate this event an ALERT if a verified fire is not under control within 10 minutes of initiating fire fighting efforts and the fire threatens the operability of safety related equipment or is located in one of the following areas containing safety systems:

      1) Containment
      2) Control Room
      3) Cable Spreading Room
      4) Diesel Generator Rooms
      5) Auxiliary Building
      6) Intake Structure Pump Rooms

      Notify Plant Staff and response organizations required by EP G-2 and EP G-3 in accordance with EP G-1.

   c. Designate this event a Site Area Emergency if a verified fire is not under control within 10 minutes of initiating fire fighting efforts in an area containing safety systems, and causes a confirmed loss of a safety system function that causes entry into a technical specification action statement (i.e., loss of both trains of containment spray when in modes 1, 2, 3, or 4 or loss of both Safety Injection pumps when in modes 1, 2, or 3). Notify plant staff and response organizations required by EP G-2 and EP G-3 in accordance with EP G-1.

d. Designate this event a General Emergency if the fire causes massive damage to plant systems which, in the opinion of the Site Emergency Coordinator, is likely to lead to a core melt situation. Notify plant staff and response organizations required by EP G-2 and EP G-3 and implement the instructions in EP G-1 regarding on and offsite protective actions.

2. In addition to personnel required to be notified by EP G-2 also notify the following:

   a. Fire Marshal (See Appendix 1)

   b. System Dispatcher (if load may be affected)

   NOTE: In off-normal working hours, consideration should also be given to calling in additional members of the Plant Fire Brigade. This should not take precedence over calling CDF.

69-9221 3/82 (100)

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT

EMERGENCY NOTIFICATION RECORD

EMERGENCY IDENTIFICATION _____ DATE _____ SHEET _____

PERSON CALLED	AFFILIATION	TIME	REACHED	BY	MESSAGE GIVEN	RESPONSE

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NOS 1 AND 2

ATTACHMENT 2 TO EP R-6

TITLE: "FIRE FIGHTING PREPLANS"

UNIT #	PREPLAN TITLE	PAGE	REVISION
1 & 2	AUXILIARY BUILDING - EL 64'	1-1 R	0
1 & 2	AUXILIARY BUILDING - EL 73'	2-1 R	0
1 & 2	ACCESS CONTROL & CHEMISTRY LABORATORY	3-1 R	0
1 & 2	AUXILIARY BUILDING - EL 85'	4-1 R	0
1	CONTAINMENT PENETRATION - EL 85'	5-1 R	0
2	CONTAINMENT PENETRATION - EL 85'	6-1 R	0
1 & 2	AUXILIARY BUILDING - EL 100'	7-1 R	0
1	CONTAINMENT PENETRATION - EL 100'	8-1 R	0
1	FUEL HANDLING BUILDING - EL 100'	9-1 R	0
2	CONTAINMENT PENETRATION - EL 100'	10-1 R	0
2	FUEL HANDLING BUILDING - EL 100'	11-1 R	0
1 & 2	AUXILIARY BUILDING - EL 115'	12-1 R	0
1	CONTAINMENT PENETRATION - EL 115'	13-1 R	0
1	FUEL HANDLING BUILDING - EL 115'	14-1 R	0
2	CONTAINMENT PENETRATION - EL 115'	15-1 R	0
2	FUEL HANDLING BUILDING - EL 115'	16-1 R	0
1	FUEL HANDLING BUILDING - EL 140'	17-1 R	0
2	FUEL HANDLING BUILDING - EL 140'	18-1 R	0
1 & 2	VENTILATION ROOMS - EL 154' & 164'	19-1 R	0
1	CONTAINMENT - EL 91'	20-1 R	0
1	CONTAINMENT - EL 117'	21-1 R	0
1	CONTAINMENT - EL 140' & ABOVE	22-1 R	0
2	CONTAINMENT - EL 91'	23-1 R	0
2	CONTAINMENT - EL 117'	24-1 R	0
2	CONTAINMENT - EL 140' & ABOVE	25-1 R	0
1 & 2	RADWASTE AND CHEM STORAGE - EL 115'	26-1 R	0

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1 & 2

AUXILIARY BUILDING EL. 64'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Lube Oil
2. Grease
3. Cable Insulation
4. Hydrogen (Waste Gas Decay Tanks)
5. Transient Combustibles

MOST PROBABLE FIRE:
1. Transient Combustibles
2. Lube Oil
3. Cable Insulation
4. Hydrogen from Waste Gas System
5. Grease

ACCESS AND EGRESS ROUTES:
1. Primary - Via Door No's B-7 or B-8 from center Stairway S-2 or elev. No. 2.
2. Secondary Via Door B-15 from Stairway S-3 Unit No. 1 side.
3. Tertiary - Via Door B-12 from Stairway S-4 Unit No. 2 side.

NOTE: Security Barriers may allow access from EL' 115' S-2 Stairway only.

FIRE BRIGADE STAGING AREA:
1. Primary - Stairway S-2 (64' Elevation Landing)
2. Secondary - Access Control El. 85'.
3. Tertiary - S-3 Stairway Unit 1 side. S-4 Stairway Unit 2 side.

NOTE: El. 115' Tank Area is the primary response location for outside agencies responding to a fire emergency in the Auxiliary Building.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS
1. Combustion Products (Cable Insulation)
2. Potential radiological airborne and surface contamination especially around tanks and pumps.
3. Potential high radiation areas around waste tanks, monitor tanks, waste gas decay tanks, filters and R.H.R. pumps and heat exchangers.

MANAGEMENT OF PLANT SYSTEMS:
1. The source of hydrogen gas fires should be secured before total extinguishment.
2. Hallways are provided with drains and drainage is to the Auxiliary Building Sump.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Water fog should be used to cool exposures, especially redundant safe shutdown equipment.
2. Fire doors should be closed as necessary to retard fire spread.

FIRE SUPPRESSION EQUIPMENT:

1. Fire extinguishers - six - 20# Dry Chemicals
   (3) Unit No 1 side.
   (3) Unit No 2 side.
2. Fire hose reels - six (3) Unit No 1 side.
   (3) Unit No 2 side.

VENTILATION:

1. Fans S-31 & S-32 Supply Air and E-1 & E-2 are exhaust fans.
2. Open grating at the east end would allow smoke and gases to vent to El. 115' where it could be exhausted to the outside via roll up door no 354.
3. Portable smoke exhausters may be required, smoke could be exhausted via stairwells S-3 and S-4 to El. 140' Hot Shop.

COMMUNICATIONS:

1. Plant Telephones -
2. Portable radios (ops. freq.)

LIGHTING:

1. Plant lighting panels Pl. 13-1 Unit No 1.
   Pl. 23-1 Unit No 2.
2. Emergency lighting.

SPECIAL PRECAUTIONS:

1. Self contained breathing apparatus will be required.
2. An explosive possibility exists from H_2 in the gas decay tank area.
3. Portable hand lanterns should be carried by fire brigade members.
4. Provide radiation detection devices.
5. Turnout gear and SCBA will provide necessary anti-contamination functions.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1 & 2
AUXILIARY BUILDING EL. 73'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Lube Oil
2. Cable Insulation (Cable Trays & 480V MCC's)
3. Grease
4. Hydrogen (Gas Decay Tanks)
5. Motor Control Centers
6. Transient Combustibles

MOST PROBABLE FIRE:
1. Transient Combustibles
2. Cable Insulation
3. Motor Control Centers
4. lube Oil
5. Hydrogen
6. Grease

ACCESS AND EGRESS ROUTES:
1. Primary - via Door No's B-31 or B-32 from center stairway S-2, or Elev. No 2.
2. Secondary via - Door No B-29 from stairway S-3 Unit 1 side.
3. Tertiary - via Door No. B-34 from stairway S-4 Unit 2 side.

NOTE: Security barriers may allow access from El. 115' S-2 stairway only.

FIRE BRIGADE STAGING AREA:
1. Primary - outside Elev. No 2 El. 73' landing.
2. Secondary - Access Control El. 85'.
3. Tertiary - S-4 Stairway El. 85' Unit 2 side.
   S-3 Stairway El. 85' Unit 1 side.

NOTE: El. 115' Tank Area is the primary response location for outside agencies responding to a fire emergency in the Auxiliary Building.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Sodium Hydroxide
2. Hydrogen
3. Boric Acid
4. Combustion Products (Cable Insulation)
5. Potential radiological airborne and surface contamination.
6. High radiation areas such as Hold Up Tanks, BIT tank and charging pumps.

MANAGEMENT OF PLANT SYSTEMS:
1. Wet pipe automatic sprinklers provide protection for the:
   (A) Centrifugal charging pump rooms
   (B) Reciprocating charging pump rooms, and
   (C) Component Cooling Water Pump Rooms in both units.
2. Unit No 1 isolation valve is located above walkway outside Comp. Cooling Pump Room 1-3 #FP-1-346 Unit No 2 outside Comp. Cooling Pump Room 2-3 #FP-2-349. The Main Isolation Valve is located at center stairway landing 78' El. #FP-0-30.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Water fog may be required to protect exposures such as redundant safe shutdown equipment.
2. Fire doors should be closed as necessary to retard fire spread.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Four 20# Dry Chemicals.
   Two 15# CO_2's.
2. Fire Hose Reels - Four (2) Unit No 1 side.
   (2) Unit No 2 side.
3. Automatic Wet Sprinkler System.

VENTILATION:

1. Fans S-31 & S-32 supply air and E-1 & E-2 are exhaust fans.
2. In each Component Cooling Water Pump Room, exhaust air ducting prevents smoke and heat from spreading from one compartment to another.
3. Open grating at the east end would allow smoke and gases to vent to El. 115' where it could be exhausted to the outside via roll up door no. 354.
4. Portable smoke exhausters may be required, smoke could be exhausted via open stairwells S-3 & S-4 up to El. 140' Hot Shop.

COMMUNICATIONS:

1. Plant Telephones [redacted]
2. Portable Radios (ops. freq.)

LIGHTING:

1. Plant Lighting Panels Pl. 13-2 Unit No 1
   23-2 Unit No 2
2. Emergency lighting

SPECIAL PRECAUTIONS:

1. Self contained breathing apparatus will be required.
2. Portable hand lanterns should be carried by fire brigade members.
3. An explosive possibility exists from H_2 in the gas decay tank area.
4. Provide radiation detection devices.
5. Turn out gear and SCBA will provide necessary anti contamination functions.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1 & 2
ACCESS CONTROL & CHEMISTRY LABORATORY
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES: 1. Flammable Liquids (Acetone etc) Lab.
2. Class "A" Combustibles.
3. Cable Insulation.
4. Magnesium Filings. (Lab)

MOST PROBABLE FIRE: 1. Flammable Liquids.
2. Class "A" Combustibles.
3. Cable Insulation.

ACCESS AND EGRESS ROUTES: 1. Primary - Via doors 163 and 143 to El. 85' Turbine Bldg. by elev. No. 1.
2. Secondary - Via Door No. 155 to El. 85' Auxiliary Building.
3. Tertiary - Via stairway S-5.

FIRE BRIGADE STAGING AREA: 1. Primary - Outside Elev. No. 1 @ El. 85' Turbine Building.
2. Secondary - Outside Elev. No. 2 @ El. 85' Auxiliary Building.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS: 1. Various acids in concentrated form.
2. Various sources of radiation in main lab area in two (2) safes and one (1) locked 4 drawer cabinet. Small sources in counting room in locked drawers.
3. Potential surface or airborne radiation contamination inside controlled area. Some low level radioactive materials.

MANAGEMENT OF PLANT SYSTEMS: 1. The majority of this area is protected by a wet sprinkler system. The system shut-off is located above the ceiling in the hallway by door no. 155 Valve No. FP-1-37.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire hose lines may be required as back up for the sprinkler system to cool exposures.
2. Vital cables in conduits are located north of the laboratory and south of the locker room area.

FIRE SUPPRESSION EQUIPMENT: 1. Fire extinguishers - (4) 20# dry chems.
(3) 15# CO_2's.
(2) 17# Halon's.
2. Automatic Sprinklers.
3. Fire Hose Reels - Three (2) Auxiliary Building El. 85' and (1) Cold Machine Shop.

VENTILATION: 1. Maintain access control air conditioning system in service.
2. Maintain ventilation fans S-21, S-22, S-23, S-24 and S-25 running.
3. Portable smoke exhausters may be required. Smoke may be contaminated.
NOTE: Smoke may be contaminated, obtain guidance from C&RP prior to ventilating with portable exhausters.

COMMUNICATIONS: 1. Plant Communications Telephones - [redacted]

2. Portable Radios (Ops Freq)

LIGHTING: 1. Normal Plant Lighting Panels A-B-C & D.
2. Emergency Lighting.

SPECIAL PRECAUTIONS: 1. Wear Self Contained Breathing Apparatus due to toxic smoke or airborne radioactive contamination.
2. Three flammable liquid storage cabinets are located in the lab - two in stores room and one in hallway opposite door no. 140 a hose stream may be required to protect these cabinets.
3. Small amounts of magnesium are stored in the lab. Do not use water on combustible metal fires, use sand only.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1 & 2

AUXILIARY BUILDING EL. 85'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable Insulation
2. Lube Oil
3. Grease
4. Control Panel
5. Transient Combustibles

MOST PROBABLE FIRE:
1. Transient Combustibles
2. Control Panel
3. Cable Insulation
4. Lube Oil
5. Grease

ACCESS AND EGRESS ROUTES:
1. Primary - via door no's 173 & 188 from Access Control Hallway.
2. Secondary - via door no 187 from stairway S-3.
3. Tertiary - via door no 185 from stairway S-4.

NOTE: Security barriers may allow access from El. 115' S-2 stairway only.

FIRE BRIGADE STAGING AREA:
1. Primary - Access Control El. 85'
2. Secondary - Cold Machine Shop

NOTE: El. 115' tank area is the primary response location for outside agencies responding to a fire emergency in the Auxiliary Building.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Potential radiological airborne and surface contamination.
2. Potential high radiation area by sample panel at B.A. evaporators, in seal water and letdown heat exchanger rooms, safety injection pumps and radwaste concentrator.

MANAGEMENT OF PLANT SYSTEMS:
1. Hallways are provided with floor drains drainage is to the Auxiliary Building Sump.
2. Breathing air refill station should not be used to refill air bottles during a fire in the Auxiliary Building.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Water fog may be required to protect exposures.
2. Fire doors should be closed as necessary to retard fire spread.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Five 20# Dry Chemicals. One 15# CO_2.
2. Fire Hose Reels Four (4) 2 - Unit No 1. 2 - Unit No 2.

VENTILATION:

1. Fans S-31 & S-32 supply air and E-1 & E-2 are exhaust fans.
2. Open grating at the east end would allow smoke and gases to vent to El. 115' where it could be exhausted to the outside via roll up Door No 354.
3. Portable smoke exhausters may be required, smoke could be exhausted via open stairways S-3 and S-4 to El. 140' Hot Shop.

NOTE: (Smoke may be contaminated, obtain guidance from C&RP prior to ventilating with portable exhausters.)

COMMUNICATIONS:

1. Plant Telephones - [redacted]
2. Portable Radios (ops. freq.)

NOTE: (The use of portable radios is prohibited in the Auxiliary Building Control Panel Area.)

LIGHTING:

1. Plant Lighting Panel Pl. 13-2 - AUX. Bldg. El. 85' Col. N17-4.
2. Emergency lighting.

SPECIAL PRECAUTIONS:

1. Self contained breathing apparatus will be required.
2. Fire brigade members should carry portable lanterns
3. Provide radiation detection devices.
4. Turn out gear & SCBA will provide necessary anti contamination functions.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1
CONTAINMENT PENETRATION EL. 85'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable Insulation.
2. Grease.
3. Transient Combustibles.
4. Hydrogen In Primary System Piping.

MOST PROBABLE FIRE:
1. Transient Combustibles may be Radiologically Contaminated.
2. Cable Insulation.
3. Grease (motor operated valves).

ACCESS AND EGRESS ROUTES:
1. Primary - via Door Nos. 174 & 174A from Aux. Bldg. El. 85'.
2. Secondary - via Door No. 189 from F.H. Bldg. El. 85'.
3. Tertiary - via Door No. 116 from Turbine Bldg. through Post LOCA Sampling Room.

NOTE: This area is criss-crossed with pipe supports and other obstacles.

FIRE BRIGADE STAGING AREA:
1. Primary - Access Control El. 85'.
2. Secondary - Outside Aux. Bldg. Control Panel.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Potential Radiation Area with possible localized high radiation hot spots.
2. Possible Loose Surface on Airborne Radiological Contamination.
3. Consult with C&RP Tech about radiation precautions. (Area Radiation Monitors, Rad. Surveys.)
4. Acknowledge posted radiation signs and barriers.

MANAGEMENT OF PLANT SYSTEMS:

1. De-energize electrical equipment as necessary to reduce shock potential.
2. Fire suppression water will collect in floor drain receivers (Conservative water use should be observed).

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT

1. Fire streams may be required to cool conduits to reduce heat damage.
2. Fire doors should be kept closed to minimize fire or smoke spread.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Two 20# Dry Chemicals.
   One 15# CO_2 - Post LOCA Sample Room.
2. Fire Hose Reels - One-West of Door No. 174.
   One-Adjacent to Door No. 189.

VENTILATION:

1. An Opening is provided between the containment structure and El. 100' which would vent smoke and gases to the upper elevations.
2. Portable smoke exhausters may be required. Smoke could be exhausted via Door No. 192 through the Post LOCA Sampling Room.
3. If high airborne contamination is present, air should be sampled prior to ventilation and filters used where possible.

COMMUNICATIONS:

1. Plant Communication Telephones [redacted]
2. Portable Radios (Los. Freq.)

LIGHTING: 1. Lighting Panel Pl. 13-2 Aux. Bldg. 85' El. Col. N17-4.
2. Emergency Lighting.

SPECIAL PRECAUTIONS:

1. Self contained breathing apparatus will be required.
2. Portable hand lanterns should be carried by Fire Brigade members.
3. Hot steam lines traverse through the area. Use discretion when applying water to these lines.
4. Wear TLD and pencil dosimeter.
5. Observe good contamination control practices.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

CONTAINMENT PENETRATION EL. 85' & SEC. DIESEL GEN.
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable Insulation
2. Grease
3. Transient Combustibles
4. Hydrogen in Primary Piping System
5. Diesel Fuel (Security Diesel Gen. Area)

MOST PROBABLE FIRE:
1. Transient Combustibles
2. Cable Insulation
3. Grease (Motor Operated Valves)
4. Diesel Fuel

ACCESS AND EGRESS ROUTES:
1. Primary - Penetration Area Via Doors 174A-2 & 174-2 from Aux. Bldg. El. 85'.
2. Secondary Via Door No. 189-2 from FHB El. 85'.
3. Tertiary - Via Door No. 116-2 from Post Loco Sampling Room.
4. For FHB Fan Room South Side Via Door 194-2.
5. For Sec. Diesel Gen. Area Via Door No's. 199A & 199B.

NOTE: Security barriers may allow access from El. 115' S-2 stairway or El. 85' or 140' of the Turbine Building only.

FIRE BRIGADE STAGING AREA:
1. Primary - Access Control for Cont. Penet. Area.
2. Secondary - Outside Aux. Bldg. Control Panel. for Cont. Penet. Area.
3. For - 2S-1 & 2S-2 Fan Room Area Outside Door 194-2.
4. For - Sec. Diesel Gen. Area Outside Door 199A.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Probable Radiation Area with possible localized high radiation hot spots.
2. Possible loose surface on airborne radiological contamination.
3. Consult with C&RP Tech about radiation precautions. (Area radiation monitors, Rad. surveys)
4. Acknowledge posted radiation signs and barriers.
5. H_2SO_4 in batteries located in Security Diesel Generator area.

MANAGEMENT OF PLANT SYSTEMS:
1. Deenergize electrical equipment as necessary to reduce shock potential.
2. Fire suppression water will collect in floor drain receivers. Conservative water use should be observed.
3. Sprinkler shutoff valve for Sec. Diesel Gen. & Tank Room NW corner above Battery Room.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Hose Streams may be required to cool conduits to reduce heat damage.
2. Fire doors should be shut as necessary to retard spread of fire and smoke.

FIRE SUPPRESSION EQUIPMENT

1. Fire Extinguishers - Four 20# Dry Chemicals
   (2) Cont. Penetration
   (1) Fan Room Area South Side
   (1) Sec. Diesel Gen. Area
2. Fire Hose Reels - Three (2) Cont. Penetration
   (1) Yard SW Fan Room Area
3. Automatic Sprinkler System - Sec. Diesel Gen. & Fuel Tank

VENTILATION:

1. An opening is provided between the Containment structure and the 100' El. which would vent smoke and gases to the upper elevations.
2. If High Airborne Contamination is present, air should be sampled prior to ventilation and filters used where possible.
3. Portable Smoke Exhausters may be required for the Fan Room Area and Sec. Diesel Gen. Area. Smoke could be exhausted via doorways to the outside. Obtain guidance from C&RP.

COMMUNICATIONS:

1. Plant Telephones - [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING:

1. Plant Lighting Panel - PL 23-2 at 85' El. Aux. Bldg.
2. Emergency Lighting.

SPECIAL PRECAUTIONS:

1. Self Contained Breathing Apparatus will be required.
2. Portable Hand Lanterns should be available.
3. Hot Steam Lines traverse through the Penetration Area. Use discretion when applying water to these lines.
4. Wear TLD and Pencil Dosimeter.
5. Observe Good Contamination Control Practices.
6. Sulfuric Acid is contained in the batteries Sec. Diesel Gen. Room Area and this Acid "Reacts Violently with Water."
7. This area is criss crossed with pipe supports and other obstacles.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1 & 2

AUXILIARY BUILDING EL. 100'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Lube Oil
2. Hydrogen (VCT)
3. Cable Insulation
4. Grease
5. Transient Combustibles
6. Demineralizer Resids

MOST PROBABLE FIRE:
1. Transient Combustibles
2. Cable Insulation
3. Hydrogen from VCT Piping
4. Lube Oil

ACCESS AND EGRESS ROUTES:
1. Primary - stairway S-2 or Elev. No 2 El. 100'.
2. Secondary - via Door No. 257 stairway S-3 Unit No 1.
   - via Door No. 251 stairway S-4 Unit No 2.

NOTE: Security barriers may allow access from El. 115' S-2 stairway only.

FIRE BRIGADE STAGING AREA:
1. Primary - Stairway S-2 at El. 100' landing.
2. Secondary - Tank area at 115' El. Fuel Handling Building roll up door No. 35A.

NOTE: El. 115' tank area is the primary response location for outside agencies responding to a fire emergency in the Aux. Bldg.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Potential radiological airborne and surface contamination.
2. Potential high radiation areas such as CVCS filter gallery, demins, VCT tanks and liquid hold up tanks.

MANAGEMENT OF PLANT SYSTEMS:
1. The east corridor is protected by an automatic sprinkler system. The system isolation valve #FP-1-332 is located above hose reel FW 105A 25-1 N.E. corner.
2. Hallways are provided with drains. Drainage is to the Aux. Bldg. main sump.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Use water fog from hose reels to protect exposures.
2. Fire doors should be closed as necessary to retard fire or smoke spread.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Five 20# Dry Chemicals.
2. Fire Hose Reels - (2) Unit No 1 Side.
   (2) Unit No 2 Side.
3. Automatic Sprinkler System - east end corridor.

VENTILATION:

1. Fans S-31 & S-32 supply air and E-1 & E-2 are exhaust fans.
2. Open grating at the east end would allow smoke and to the outside via roll up Door No 354.

NOTE: (Smoke may be contaminated. Obtain guidance from C&RP prior to ventilating with portable exhausters.)

COMMUNICATIONS:

1. Plant Telephones [redacted]
2. Portable Radios (ops. freq.)

LIGHTING:

1. Plant Lighting Panels. PL. 14-1.
   PJ. 14-1.
2. Emergency lighting.

SPECIAL PRECAUTIONS:

1. Self contained breathing apparatus will be required.
2. Fire brigade members should carry portable lanterns.
3. High radiation concentrations can be expected in the RCP sealwater injection filter area monitoring will be necessary prior to entry in this area.
4. Provide radiation detection devices.
5. Turn out gear and SCBA will provide necessary anti contamination functions.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1
CONTAINMENT PENETRATION EL. 100'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable Insulation.
2. Grease.
3. Transient Combustibles.
4. Hydrogen In Primary System Piping.

MOST PROBABLE FIRE:
1. Transient Combustibles (may be Radiologically Contaminated).
2. Cable Insulation.
3. Grease (motor operated valves).

ACCESS AND EGRESS ROUTES:
1. Primary - via Door Nos. 294 & 245 from Aux. Bldg. El. 100'.
2. Secondary - via Door No. 265 from F.H. Bldg. El. 100'.

NOTE: This area is criss crossed with pipe supports and other obstacles making it difficult to access or egress. Use Caution.

FIRE BRIGADE STAGING AREA:
1. Primary - Outside Elev. No. 2 El. 100' Auxiliary Building.
2. Secondary - Fuel Handling Corridor East of Spent Fuel Pool. Hx. 1-1.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Probable Radiation Area with possible localized high radiation hot spots.
2. Possible loose surface on airborne radiological contamination.
3. Consult with C&RP Tech about radiation precautions. (Area Radiation Monitors, Rad. Surveys.)
4. Acknowledge posted radiation signs and barriers.

MANAGEMENT OF PLANT SYSTEMS:

1. The area is protected by an automatic wet sprinkler system. The isolation valve #FP-1-338 is located in the S. E. corner immediately above Fire Hose Reel No. FW-105.A23-1.
2. Deenergize electrical equipment as necessary to reduce shock potential.
3. Fire suppression water will collect in floor drain receivers. Conservative water use should be observed.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT

1. Hose Streams may be Required to Cool Conduits to Reduce Heat Damage.
2. Do not apply water directly to exposed hot piping.
3. Keep fire doors closed as necessary to reduce fire and smoke spread.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Two 20# Dry Chemicals.
2. Fire Hose Reels - Two-(1) West of Door No. 245 south wall.
   (1) East of Door No. 245 adjacent to Door No. 265.
3. Automatic sprinkler system.

VENTILATION:

1. An Opening is Provided Between the Containment Structure and the 115' Elevation which would vent smoke and gases to the upper elevation.
2. Portable smoke exhausters may be required. Smoke could be exhausted via Door No. 269 to the pipe racks. (Consult with C&RP prior to exhausting smoke out of doors).
3. If high airborne contamination is present, air should be sampled prior to ventilation and filters used where possible.

COMMUNICATIONS:

1. Plant Communication Telephones - [redacted]
2. Portable Radios (Ops. Freq.)

LIGHTING: 1. Plant Lighting Panel PL. 14-1 Aux. Bldg. El. 100' .
2. Emergency Lighting.

SPECIAL PRECAUTIONS:

1. Self contained breathing apparatus will be required.
2. Portable hand lanterns should be carried by Fire Brigade members.
3. Hot steam lines traverse through the area. Use discretion when applying water to these lines.
4. Wear TLD and pencil dosimeter.
5. Observe good contamination control practices.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1

FUEL HANDLING BUILDING, EL. 100'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Filters (HEPA, Roughing, Carbon).
2. Transient Combustibles. (Rad Control).
3. Lube Oil.
4. Cable Insulation.
5. Grease.

MOST PROBABLE FIRE:
1. Transient combustibles during outage periods.
2. Cable insulation, hot shorts.
3. Filters. (HEPA, Roughing, Carbon)
4. Lube Oil.

ACCESS AND EGRESS ROUTES:
1. Primary - via Door No. 258 from Aux. Bldg. El. 115'.
2. Secondary - via Door No. 262 from El. 115' F.H.B.
3. Tertiary - via Door No. 263 from El. 115' F.H.B.

FIRE BRIGADE STAGING AREA:
1. Primary - Outside Door No. 258 Aux. Bldg. El. 100'.
2. Secondary - Outside Door No. 360 El. 115' F.H.B.
3. Tertiary - Cont Penetration El.100'.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Smoke and Fumes from HEPA, carbon and roughing filters.
2. Potential radiological airborne and surface contamination.
3. Potential high radiation areas such as SFP Heat Exchanger and Ventilation Filter.

MANAGEMENT OF PLANT SYSTEMS:

1. The AFW pump rooms and East Hallway are protected by an automatic sprinkler system. The shut off valve #FP-1-332 is located above fire hose reel FW 105.A25-1 N.E. corner Aux. Bldg., El. 100'.
2. Floor drains provided in the hallways allows drainage to the Aux. Bldg. Main Sump.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire Hose Streams may be required to protect protect exposures.
2. Fire doors should be shut as necessary to retard fire and smoke spread.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Three 20# Dry Chemicals
   One 15# CO_2
2. Fire Hose Reels - Four (3) - Fuel Handling
   (1) - Cont. Penetration
3. Wet Sprinkler System - AFW pump rooms & east hallway

VENTILATION:

1. Fans S-1 & S-2 supply air and E-4, E-5 and E-6 are exhaust fans.
2. Smoke may be contaminated. Obtain guidance from C&RP prior to ventilating with portable exhausters out of doors.

COMMUNICATIONS:

1. Plant Telephones: [redacted]
2. Portable radios.

LIGHTING:

1. Plant Lighting Panel Pl. 15-1.
2. Emergency Lighting.

SPECIAL PRECAUTIONS:

1. Self contained breathing apparatus will be required.
2. Portable hand lanterns should be carried by Fire Brigade members.
3. Turn out gear and S.C.B.A. will perform necessary anti-contamination function.
4. Provide radiation detection devices.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

CONTAINMENT PENETRATION EL. 100'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable Insulation
2. Grease
3. Transient Combustibles
4. Hydrogen in Primary System Piping

MOST PROBABLE FIRE:
1. Transient Combustibles may be Radiologically Contaminated.
2. Cable Insulation
3. Grease - Motor Operated Valves

ACCESS AND EGRESS ROUTES:
1. Primary - Via Door No. 245-2 From Aux. Bldg. El. 100'.
2. Secondary - Via Door No. 265-2 From FHB El. 100'.

NOTE 1: Security barriers may allow access from El. 115' S-2 stairway only.

NOTE 2: This area is criss crossed with pipe supports and other obstacles. Use caution.

FIRE BRIGADE STAGING AREA:
1. Primary - Outside Elev. No. 2 @ El. 100'.
2. Secondary - Fuel Handling Corridor East of Spent Fuel Pool Hx 2-1.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Probable radiation area with possible localized high radiation hot spots.
2. Possible loose surface on airborne radiological contamination.
3. Consult with C& RP Tech about radiation precautions (Area Radiation Monitors, Rad Surveys).
4. Acknowledge posted radiation signs and barriers.

MANAGEMENT OF PLANT SYSTEMS:
1. The area is protected by an Automatic Sprinkler System. The isolation valve is located in the SE corner immediately above Fire Hose Reel No FE-105. A23-2.
2. Deenergize electrical equipment as necessary to reduce shock potential.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Hose streams may be required to cool conduits to reduce heat damage. Do not apply water directly to exposed hot piping.
2. Fire doors should be closed as necessary to retard fire and smoke spread.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Two 20# Dry Chemicals
2. Fire Hose Reels - Two
3. Automatic Sprinklers

VENTILATION:

1. An opening is provided between the Containment structure and 115' El. which would vent smoke and gases to upper elevations.
2. Portable smoke exhausters may be required. Smoke could be exhausted via Door No. 269-2 to the pipe racks. Obtain guidance from C&RP prior to exhausting out of doors.
3. If high airborne contamination is present, air should be sampled prior to ventilation & filters used where possible.

COMMUNICATIONS:

1. Plant Telephones [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING:

1. Plant Lighting Panel - PL 24-1 Aux. Bldg.
2. Emergency lighting.

SPECIAL PRECAUTIONS:

1. Self Contained Breathing Apparatus will be required.
2. Portable Hand Lanterns should be available.
3. Hot steam lines traverse through the area. Use discretion when applying water to these lines.
4. Observe good contamination control practices.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

FUEL HANDLING BLDG. EL 100'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Filters (HEPA, Roughing & Carbon)
2. Transient Combustibles (Rad Control)
3. Lube Oil
4. Cable Insulation
5. Grease

MOST PROBABLE FIRE:
1. Transient combustibles, during outage periods
2. Cable insulation, hot shorts
3. Filters (HEPA, Roughing, Carbon)
4. Lube Oil

ACCESS AND EGRESS ROUTES:
1. Primary - Via Door No. 258-2 from Aux. Bldg. El. 100'.
2. Secondary - Via Door No. 262-2 from El. 115' FHB.
3. Tertiary - Via Door No. 263-2 from El. 115' FHB.

NOTE: Security barriers may allow access only via El. 115' of the S-2 stairway.

FIRE BRIGADE STAGING AREA:
1. Primary - Outside Door No. 258 Aux. Bldg. 100' El.
2. Secondary - Cont. Penetration El. 100'.
3. Tertiary - Outside Door No. 360 El. 115' FHB.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Smoke and fumes from HEPA, carbon and roughing filters
2. Potential radiological airborne and surface contamination
3. Potential high radiation areas such as SFP heat exchanger and ventilation filter

MANAGEMENT OF PLANT SYSTEMS:
1. The AFW pump room and east hallway are protected by an automatic sprinkler system. The shutoff is located above fire hose reel FW-105.A25-1 NE Corner Aux. Bldg. El. 100'.
2. Floor drains provided in the hallways allow drainage to the Aux. Bldg. main sump.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire Hose Steams May Be Required to Protect Exposures.
2. Fire doors should be shut as necessary to retard fire and smoke spread.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Two 20# Dry Chemicals
2. Fire Hose Reels - Four (3) FHB, (1) Cont. Penet.
3. Automatic Sprinkler System

VENTILATION:

1. Fans 2S-1 & 2S-2 Supply Air and 2E-2, 2E-5 and 2E-6 are Exhaust Fans.
2. Smoke May Be Contaminated, obtain guidance from C&RP prior to ventilating with portable exhausters out of doors.

COMMUNICATIONS:

1. Plant Telephones -
2. Portable Radios (OPS FREQ)

LIGHTING:

1. Plt Lighting Panel - PL 24-1
2. Emergency Lighting

SPECIAL PRECAUTIONS:

1. Self Contained Breathing Apparatus will be required.
2. Portable Hand Lanterns should be available.
3. Turnout Gear and S.C.B.A. will perform necessary Anti-Contamination function.
4. Provide Radiation Detection Devices.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1 & 2

AUXILIARY BUILDING - El. 115'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Lube Oil
2. Cable Insulation
3. Transient Combustibles (Radwaste)
4. Grease
5. Demineralizer Resins.

MOST PROBABLE FIRE:
1. Transient Combustibles (Radwaste)
2. Lube Oil
3. Cable Insulation
4. Dry Resins.

ACCESS AND EGRESS ROUTES:
1. Primary - via stairway S-2 or Elev. No 2 from Door No's 346 & 344-2
2. Secondary - from S-3 (Unit 1) S-4 (Unit 2) stairways via Door No's 356 & 350-2.
3. Tertiary - from 115' El. tank area via Door No 354.

NOTE: Access to Unit 2 side can be via locked security grate at El. 115' of stairway S-2.

FIRE BRIGADE STAGING AREA:
1. Primary - Elev. No 2 El. 115' landing.
2. Secondary - tank area outside roll up Door No 354.

NOTE: El. 115' tank area is the primary response location for outside agencies responding to a fire emergency in the Aux. Bldg.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Caustic
2. Sulfuric Acid
3. Demineralizer Resins
4. Nitrogen
5. Potential radiological airborne and surface contamination.
6. Potential high rad. areas such as spent resin storage tanks, or radwaste collection points.

MANAGEMENT OF PLANT SYSTEMS:
1. Floor drains are provided at tank locations which drain to the Aux. Bldg. floor drain receiver.
2. Hallways are provided with drains and drainage is to the Aux. Bldg. Sump.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire hose streams may be required to protect exposures.
2. Fire doors should be closed as necessary to retard fire and smoke spread.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Five 20# Dry Chemicals
2. Fire Hose Reels - Four (4).
3. Fire hydrant located at Radwaste Building accessible via rollup Door # 354 El. 115'.

VENTILATION:

1. S-31 & S-32 supply air and E-1 & E-2 are exhaust fans.
2. Portable smoke exhausters, smoke could be exhausted to the outside via rollup Door No 354.

NOTE: (Smoke may be contaminated. Obtain guidance from C&RP prior to ventilating with portable exhausters.)

COMMUNICATIONS:

1. Plant Telephones - [redacted]
2. Portable Radios (ops. freq.)

LIGHTING:

1. Plant Lighting Panel PL. 14-1.
   PJ. 14-1.
2. Emergency lighting

SPECIAL PRECAUTIONS:

1. Self contained breathing apparatus will be required.
2. Fire brigade members should carry portable lanterns.
3. Full protective clothing to be worn as contact with caustic & sulfuric acid can destroy skin tissue.
4. Turn out gear and SCBA will perform necessary anti contamination functions.
5. Provide radiation devices.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1
CONTAINMENT PENETRATION EL. 115'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable Insulation.
2. Grease.
3. Transient Combustibles.
4. Hydrogen In Primary System Piping.

MOST PROBABLE FIRE:
1. Transient Combustibles may be Radiologically Contaminated
2. Cable Insulation
3. Grease (motor operated valves).

ACCESS AND EGRESS ROUTES:
1. Primary - via Door No. 348 from Aux. Bldg. El. 115'.
2. Secondary - via Door No. 358 from F.H. Bldg. Fire Pump area.
3. Tertiary - via door No. 364 from pipe rack area of turbine building.

NOTE: This area is criss crossed with pipe supports and other obstacles making access difficult.

FIRE BRIGADE STAGING AREA:
1. Primary - Outside Elev. No. 2 El. 115' Aux. Bldg.
2. Secondary - North of Spent Resin Storage Tanks.

NOTE: El. 115' tank area is the primary response location for outside agencies responding to a fire in the Auxiliary or Fuel Handling Buildings.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Probable radiation area with possible localized high radiation hot spots.
2. Possible loose surface on airborne radiological contamination.
3. Consult with C&RP Tech about radiation precautions. (Area Radiation Monitors, Rad. Surveys.)
4. Acknowledge posted radiation signs and barriers.

MANAGEMENT OF PLANT SYSTEMS:

1. The area is protected by an automatic sprinkler system. The isolation valve #FP-1-29 is located in the S. E. corner immediately above Fire Hose Reel No. FW-120.A36-1.
2. Deenergize electrical equipment as necessary to reduce shock potential.
3. Fire suppression water will collect in floor drain receivers. Conservative water use should be observed.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT

1. Hose streams may be required to cool conduits to reduce heat damage. Do not apply water directly to exposed hot piping.
2. Fire doors should be kept closed as necessary to retard fire and smoke spread.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Two 20# Dry Chemicals.
2. Fire Hose Reels - Two-(1) West of Door No. 245 south wall.
   (1) East of Door No. 245 adjacent to Door No. 265.
3. Automatic sprinkler system.

VENTILATION:

1. Vent opening at El. 140' on the east and west side of the containment would allow smoke and gases to vent to the outside.
2. Portable smoke exhausters may be required. Smoke could be exhausted via Door Nos. 358 and 355 to the outside by the make up water tank.
   NOTE: Smoke may be contaminated. Obtain guidance from C&RP Technician prior to exhausting out of doors.

COMMUNICATIONS:

1. Plant Communication Telephones - [redacted]
2. Portable Radios (Ops. Freq.)

LIGHTING: 1. Plant Lighting Panel PL. 14-1 Aux. Bldg. 100' El.
2. Emergency Lighting.

SPECIAL PRECAUTIONS:

1. Self contained breathing apparatus will be required.
2. Portable hand lanterns should be carried by Fire Brigade members.
3. Hot steam lines traverse through the area. Use discretion when applying water to these lines.
4. Wear TLD and pencil dosimeter.
5. Observe good contamination control practices.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1

FUEL HANDLING BUILDING, EL. 115'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Filters (carbon, HEPA - roughing)
2. Transient combustibles.
3. Lube oil.
4. Cable Insulation.

MOST PROBABLE FIRE:
1. Transient combustibles, during outage periods.
2. Filters (carbon - HEPA - roughing)
3. Lube oil.
4. Grease.

ACCESS AND EGRESS ROUTES:
1. Primary - North end from Door No. 363. Fire Pump room from Door No. 353.
2. Secondary - via Stairways from Door Nos. 359 or 362.

FIRE BRIGADE STAGING AREA:
1. Primary - North end El. 115' tank area. Aux. Bldg. El. 115' outside Door No. 363.
2. Secondary - Cont. Penetration Area El. 115'.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Ammonia - NH_3.
2. Hydrazine - N_2H_4.
3. Smoke and fumes from hepa, carbon and roughing filters.
4. Potential radiological airborne and surface contamination.
5. Potential high radiation areas in filter rooms and in the cask decon area.

MANAGEMENT OF PLANT SYSTEMS:
1. Floor drains provided in the hallways allows drainage to the Aux. Bldg. Sump.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. A water fog from hose lines may be required to protect exposures.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Two 20# Dry Chemicals
   One 15# CO_2.
   One Pressurized water.
2. Fire Hose Reels - Four.

VENTILATION:

1. Fans S-1 & S-2 supply air and E-4, E-5 & E-6 are exhaust fans.
2. Smoke may be contaminated. Obtain guidance from C&RP prior to ventilating with portable exhausters.
3. Ventilation could also be accomplished with fire hose streams via roll up and man doors.

COMMUNICATIONS:

1. Plant Telephones - [redacted]
2. Portable Radios (Ops. Freq.).

LIGHTING:

1. Lighting Panel Pl. 15-1.
2. Emergency Lighting.

SPECIAL PRECAUTIONS:

1. Self contained breathing apparatus will be required.
2. Provide radiation detection devices.
3. Turn out gear and S.C.B.A. will perform necessary anti-contamination functions.
4. An ammonia tank is located in the fire pump room. Eye and skin protection is required, fire & explosion hazard is moderate when exposed to flame.
5. Contact with 35% hydrazine very irritating to eyes and skin. This tank is located in the fire pump room.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

CONTAINMENT PENETRATION EL. 115'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable Insulation
2. Grease
3. Transient Combustibles
4. Hydrogen In Primary System Piping

MOST PROBABLE FIRE:
1. Transient Combustibles which may be radiologically contaminated.
2. Cable Insulation
3. Grease (Motor Operated Valves)

ACCESS AND EGRESS ROUTES:
1. Primary - Via Door 348-2 From Aux. Bldg. El. 115'
2. Secondary - Via Door 358-2 from FHB Ammonia and Hydrazine Tank Area.

NOTE: This area is criss crossed with pipe supports and other obstacles making access difficult.

FIRE BRIGADE STAGING AREA:
1. Primary - outside Elev. No. 2 at El. 115'.
2. Secondary - East of Ammonia & Hydrazine Tanks.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Probable radiation area with possible localized high radiation hot spots.
2. Possible loose surface on airborne radiological contamination.
3. Consult with C&RP Tech about radiation precautions. (Area radiation monitors, rad. surveys, etc.).
4. Acknowledge posted radiation signs and barriers.

MANAGEMENT OF PLANT SYSTEMS:
1. The area is protected by an automatic sprinkler system. The isolation valve is located in the NE corner immediately above Fire Hose Reel, FW-120-A42-2.
2. Deenergize electrical equipment as necessary to reduce shock potential.
3. Fire suppression water will collect in floor drain receivers. Conservative water use should be observed.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire hose streams may be required to protect exposures. Do not apply water directly to exposed hot piping.
2. Fire doors should be kept closed as necessary to retard fire and smoke spread.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Three 20# Dry Chemicals
2. Fire Hose Reels - Two
3. Automatic sprinkler system

VENTILATION:

1. Vent opening at El. 115' on the west side & east side of the Containment would allow smoke and gases to vent to the outside.
2. Portable smoke exhausters may be required. Smoke could be exhausted via Door 358-2 & 361-2 to the outside. Consult C&RP Technician prior to exhausting with portable fans or hose streams out of doors.

COMMUNICATIONS:

1. Plant Telephone - [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING:

1. Plant Lighting Panel - PL 24-1
2. Emergency Lighting

SPECIAL PRECAUTIONS:

1. Self contained breathing apparatus will be required.
2. Portable Hand Lanterns should be available.
3. Hot steam lines traverse through the area. Use discretion when applying water to these lines.
4. Wear TLD and pencil dosimeter.
5. Observe good contamination control practices.
6. Turnouts with provided anti-contamination protection.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

FUEL HANDLING BLDG EL. 115'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Filters (Carbon, HEPA-Roughing)
2. Transient Combustibles
3. Lube Oil
4. Cable Insulation

MOST PROBABLE FIRE:
1. Transient Combustibles, during outage periods
2. Filters (Carbon-HEPA-Roughing)
3. Lube Oil
4. Grease

ACCESS AND EGRESS ROUTES:
1. Primary - North end via doors 360-2 or 361-2.
   South end via door 353-2
2. Secondary - North end via door 357-2
   South end via door 377-2

FIRE BRIGADE STAGING AREA:
1. Primary - N. End Tank Area By Door 360-2, El. 115'.
2. Secondary - El. 115' Aux. Bldg. By Door No. 353-2.
3. Tertiary - Cont. Penetration Area El. 115'.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Ammonia - NH_3
2. Hydrazine - N_2H_4.
3. Smoke & fumes from HEPA-carbon and roughing filters.
4. Potential radiological airborne and surface contamination.
5. Potential high radiation areas in filter rooms & cask decon. area.

MANAGEMENT OF PLANT SYSTEMS:
1. Floor drains provided in the hallways allows drainage to the Aux. Bldg. Main Sump.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. A water fog from hose streams may be required to protect exposures.
2. Fire doors should be kept closed as necessary to retard fire and smoke spread.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Three (2) - FHB
   (1) - Filter Room Corridor
2. Fire Hose Reels - Three (2) FHB
   (1) Cont. Penetration

VENTILATION:

1. Fans 2S-1 & 2S-2 Supply Air and 2E-4, 2E-5 & 2E-6 are exhaust fans.
2. Smoke may be contaminated; obtain guidance from C&RP prior to ventilating with portable exhausters.
3. Ventilation could also be accomplished by fire hose streams via roll up door and man doors.

COMMUNICATIONS:

1. Plant Telephones - [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING:

1. Plant Lighting Panel - PL 24-1.
2. Emergency Lighting.

SPECIAL PRECAUTIONS:

1. Self Contained Breathing Apparatus will be required.
2. Provide Radiation Detection devices.
3. Turnout gear & S.C.B.A. will perform necessary anti-contamination functions.
4. An Ammonia Tank is located in the N. end via Door 357-2. Eye and skin protection is required. Fire & Explosion Hazard is moderate when exposed to flame.
5. Contact with 35% Hydrazine very irritating to eyes and skin. This tank is located in the N. end via Door No. 357-2.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1

FUEL HANDLING BUILDING, EL. 140'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Transient combustibles.
2. Acetylene in shop area.
3. Cable insulation.
4. Grease & Solvents in Fab. Shops.
5. Filters (HEPA, carbon & roughing).

MOST PROBABLE FIRE:
1. Transient combustibles.
2. Acetylene in shop area.
3. Cable insulation.
4. Grease and solvents.
5. Filters (HEPA, carbon and roughing).

ACCESS AND EGRESS ROUTES:
1. Primary - from Door No. 528, El. 140'.
2. Secondary - from Door No. 529, El. 140'.

FIRE BRIGADE STAGING AREA:
1. Primary - outside roll up Door No. 525, El. 140'.
2. Secondary - tank area 115' El.
3. Tertiary - Turb. Bldg., 140' El.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Smoke and fumes from HEPA, carbon and roughing filters.
2. Potential high rad. areas such as spent fuel pool and filter areas.
3. Potential radiological airborne and surface contamination.

MANAGEMENT OF PLANT SYSTEMS:
1. Floor drains provided in the hallways allows drainage to the Aux. Bldg. Sump.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire hose streams may be required to protect exposures.

FIRE SUPPRESSION EQUIPMENT:

1. Fire extinguishers - three 20# dry chemicals.
   two 15# CO_2's
   two pressurized water.
2. Fire hose reels - five

VENTILATION:

1. Fans S-1 & S-2 provide air and E-4, E-5 and E-6 are exhaust fans.
2. Smoke may be contaminated. Obtain guidance from C&RP prior to ventilating with protable exhausters.
3. Ventilation could be accomplished by using water fog hose streams via roll up doors.

COMMUNICATIONS:

1. Plant telephones [redacted]
2. Portable radios (Ops. Freq.).

LIGHTING:

1. Lighting Panels - Pl. 14-2, 15-2, 15-4 & 15-5.
2. Emergency Lighting.

SPECIAL PRECAUTIONS:

1. Self-contained breathing apparatus will be required.
2. Provide radiation detection devices.
3. Do not use halon or dry chemical on new fuel.
4. Turn out gear and S.C.B.A. will provide necessary anti-contamination functions.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

FUEL HANDLING BLDG. EL. 140'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable insulation
2. Filters (HEPA, roughing & carbon)
3. Transient combustibles

MOST PROBABLE FIRE:
1. Cable insulation
2. Filters - HEPA, roughing & carbon
3. Transient combustibles

ACCESS AND EGRESS ROUTES:
1. Primary - Via Door No. 557 El. 140'
2. Secondary - Via Door No. 530-2 El. 140'

FIRE BRIGADE STAGING AREA:
1. Primary - Outside Roll Up Door No. 525-2 El. 140'
2. Secondary - Tank Area El. 115'.
3. Tertiary - Turb. Bldg. El. 140'.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Smoke and fumes from HEPA, carbon and roughing filters.
2. Potential high rad. areas such as spent fuel pool and filter areas.
3. Potential radiological airborne and surface contamination.

MANAGEMENT OF PLANT SYSTEMS:
1. Floor Drains provided in the hallways allows drainage to the Aux. Bldg. Main Sump.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire Hose Steams may be required to protect exposures.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Two 20# Dry Chemicals
2. Fire Hose Reels - Two

VENTILATION:

1. Fans 2S-1 & 2S-2 Supply Air and 2E-4, 2E-5 & 2E-6 are exhaust fans.
2. Ventilation could be affected by using portable exhausters and exhausted via Door 557 and roll up door on east side.
3. Smoke may be contaminated. Obtain guidance from C&RP prior to ventilating with portable exhausters.

COMMUNICATIONS:

1. Plant Telephones [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING:

1. Lighting Panels - PL 25-5 - 25-2 & 24-2
2. Emergency Lighting

SPECIAL PRECAUTIONS:

1. Self Contained Breathing Apparatus will be required.
2. Provide radiation detection devices.
3. Do not use dry chemical on new fuel.
4. Turnout gear and S.C.B.A. will provide necessary anti-contamination functions.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1 & 2

VENTILATION ROOMS - El. 154' & 164'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Filters (Carbon, HEPA, Roughing)
2. Cable Insulation
3. Grease
4. Transient Combustibles

MOST PROBABLE FIRE:
1. Transient Combustibles
2. Filters (Carbon, HEPA, Roughing)
3. Cable Insulation
4. Grease

ACCESS AND EGRESS ROUTES:
1. Primary - Via Doors 605 & 604 of stairway S-1 only for 154' elevation.
2. For fan and elevator machine room door - No. 612 or No. 613 to roof area at El. 164'.

FIRE BRIGADE STAGING AREA:
1. Primary - For 154' elevation outside elevator No. 2 at 140' elevation.
2. Secondary - For 164' Elevation Fan and Elevator Machine Room, outside Elev. No. 1 El. 140' turbine deck.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Smoke and fumes from HEPA, carbon and roughing filters.
2. Potential for radiological contamination of filters from airborne particles.

MANAGEMENT OF PLANT SYSTEMS:
1. Both Unit 1 & 2 rooms are protected by a wet type Automatic Sprinkler System. The isolation valve is located at bottom of Stairway S-2 El. 140'. Between Door 521 & Elev. No. 2 Valve #FP-1-341.
2. Drains are provided in each room as well as the condenser rooms.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Close fire doors to reduce fire & smoke spread.
2. A water fog from hoselines may be required to cool exposures.

FIRE SUPPRESSION EQUIPMENT:

1. Fire extinguishers - Two 15# CO_2's.
   - One 20# Dry Chemical
2. Automatic wet sprinkler system.
3. Fire Hose Reel Top of Stairway El. 154'.
   Fire Hose Reel outside Door No. 521 El. 154'.
   Fire Hose Reel adjacent to Elev. No. 1 El. 140' Turbine Deck for use at El. 164' Fan Room.

NOTE: For 154' elevation an additional 100' of hose may be required. For 164' elevation an additional 150' of hose may be required to reach fan rooms S-27 & S-28.

VENTILATION:

1. Exhaust fans E-35 & E-36 are provided in these rooms.
2. Louvers are provided which could vent smoke to the outside.
3. Portable smoke exhausters may be required for the filter rooms and exhausted to the condenser rooms. For the Fan Rooms & Elev. Machine Room, exhaust to the outside.
4. Obtain guidance from C&RP prior to ventilating out of doors.

COMMUNICATIONS:

1. Plant Telephone No.'s. [redacted]
2. Portable Radios (Ops. Freq.)

LIGHTING:

1. Lighting Panel PL. 13-4 at El. 140' Aux. Bldg. Col. M-174.
2. Emergency Lighting

SPECIAL PRECAUTIONS:

1. Self contained breathing apparatus will be required.
2. Access and egress to El. 154' is limited to one stairway only.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1

CONTAINMENT EL. 91'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable Insulation
2. Lube Oil Reactor Coolant Pumps 265 gals. per pump
3. Charcoal Filters (Iodine Removal Units)
4. Transient Combustibles (Outage Periods)

MOST PROBABLE FIRE:
1. Transient Combustibles (Outage Periods)
2. Cable Insulation
3. Lube Oil @ R. C. Pumps
4. Charcoal Filters @ Iodine Removal Units

ACCESS AND EGRESS ROUTES:
1. East Stairway at Approx. 100°
2. West Stairway at Approx. 270°

FIRE BRIGADE STAGING AREA:
1. Primary - Unit No. 1 Turbine Deck
2. Secondary - Hot Machine Shop - FHB El. 140'

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Charcoal filters (iodine removal units)
2. Smoke from cable insulation
3. Potential radiological airborne and surface contamination
4. High radiation areas inside biological shield walls by RCPs and S/Gs

MANAGEMENT OF PLANT SYSTEMS:
1. Containment Fire Protection System. Isolation Valve FCV-633 open, Located in Cnt Penetration El. 100' GW Col. Line K-12'9".
2. Floor Drains at El. 91' allows drainage to the Containment structure sump.
3. Containment evacuation alarm may be operated from the personnel hatch.
4. RCP lube oil collection tank located by fuel transfer tube.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Water spray from hose reels may be required to protect safety related conduits and sensing lines.
2. Do not spray water directly on exposed hot piping.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Four 15# CO_2's.
2. Fire Hose Reel Stations - Four
3. Automatic Sprinkler System @ Reactor Coolant Pumps

VENTILATION:

1. S-3 Containment Supply Fan
2. E-1 Containment Exhaust Fan
3. E-11, E-12, E-13 & E-14 CRDM Fans
4. E-15 & E-16 Exhaust Fans For Iodine Removal Units

COMMUNICATIONS:

1. Plant Telephones [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING:

1. Lighting Panels. PL 16-1 & 17-1
2. Emergency Lighting

SPECIAL PRECAUTIONS:

1. Self Contained Breathing Apparatus will be required.
2. Portable Hand Lanterns should be carried by Fire Brigade members.
3. Turn out gear & S.C.B.A. will provide necessary anti-contamination function.
4. Provide Radiation Detection Devices.
5. "CAUTION": SCBA's Air supply capacity may limit Fire Brigade to 5 minute stay time at El. 91'.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1

CONTAINMENT EL. 117'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable Insulation
2. RCP Pump Oil
3. Transient Combustibles (during outages)

MOST PROBABLE FIRE:
1. Transient Combustibles
2. Cable Insulation
3. RCP Pump Oil

ACCESS AND EGRESS ROUTES:
1. East Stairway Approx. 120°.
2. West Stairway Approx. 270°.

FIRE BRIGADE STAGING AREA:
1. Primary - Unit No. 1 Turbine Deck El. 140'.
2. Secondary - Hot Machine Shop - FHB El. 140'

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Smoke From Cable Insulation
2. Potential Radiological Airborne and Surface Contamination
3. High Radiation Areas inside Biological Shield Walls by RCP's and S/G's

MANAGEMENT OF PLANT SYSTEMS:
1. Floor Drains Provided at El. 91' allows drainage to the Containment structure sump.
2. Containment Evacuation Alarm may be operated from the personnel hatch.
3. Containment Fire Protection System isolation valve (FCV-633), located in Containment penetration El. 100' GW Col. Line K-12'9".

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT

1. Fire Hose Streams may be required to protect safety related conduits and sensing lines.
2. Do not apply hose streams directly to exposed hot piping.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Two 15# CO_2's.
2. Sprinklers for each RCP.
3. Fire Hose must be routed from El. 140'

VENTILATION:

1. S-3 Containment Supply Fan
2. E-1 Main Containment Exhaust Fan
3. E-11, E-12, E-13 & E-14 CRDM Fans
4. E-15 & E-16 Exhaust Fans for Iodine Removal Units

COMMUNICATIONS:

1. Plant Telephones - [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING:

1. Plant Lighting Panel 16-2
2. Emergency Lighting

SPECIAL PRECAUTIONS:

1. Self Contained Breathing Apparatus will be required.
2. Portable Hand Lanterns should be carried by Fire Brigade Members.
3. Turn Out Gear and S.C.B.A. will provide necessary anti-contamination function.
4. Provide Radiation Detection Devices.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1

CONTAINMENT EL. 140' AND ABOVE
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable Insulation
2. HEPA and Roughing Filters (Fan Air Coolers)
3. Transient Combustibles (During Outages)
4. Grease and Oil (Cranes and Fan Cooler Motors

MOST PROBABLE FIRE:
1. Transient Combustibles
2. Grease and Oil
3. Cable Insulation
4. HEPA and Roughing Filters

ACCESS AND EGRESS ROUTES:
1. Personnel Hatch
2. Equipment Hatch (if open)
3. Emergency Exit Approx. 70° Between Fan Coolers Coolers 1-3 & 1-4

FIRE BRIGADE STAGING AREA:
1. Primary - Turbine Deck El. 140' Unit 1
2. Secondary - Hot Machine Shop - FHB El. 140'

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. HEPA & Roughing Filters (Fan Air Coolers)
2. Smoke From Cable Insulation
3. Potential Radiological Airborne and Surface Contamination
4. High Radiation Areas around the reactor cavity.

MANAGEMENT OF PLANT SYSTEMS:
1. Floor drains at El. 91' allows drainage to the Containment sump.
2. Containment evacuation alarm may be operated from the personnel hatch.
3. Containment Fire Protection System isolation valve (FCV-633) located in Containment - penetration 100' El. GW #FP-1-177 Col. Line K-12'9".

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire hose streams may be required to protect safety related conduits and sensing lines.

FIRE SUPPRESSION EQUIPMENT:
1. Fire Extinguishers - Four 15# CO_2's.
2. Fire Hose Reel Stations - Four

VENTILATION:
1. S-3 Containment Supply Fan
2. E-1 Main Containment Exhaust Fan
3. E-11, E-12, E-13 & E-14 CRDM Fans
4. E-15 & E-16 Exhaust Fans for Iodine Removal Units

COMMUNICATIONS:
1. [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING:
1. Plant Lighting Panels - 17-4 - 17-2 - 16-3 & 16-5
2. Emergency Lighting

SPECIAL PRECAUTIONS:
1. Self Contained Breathing apparatus wil` be required.
2. Portable Hand Lanterns should be carried by Fire Brigade members.
3. Turn Out Gear and S.C.B.A. will provide necessary anti-contamination function.
4. Provide Radiation Detection Devices.
5. "CAUTION" 30 Minute S.C.B.A.'s will probably not provide sufficient air capacity for a Fire Fighting response above the Polar Crane.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

CONTAINMENT EL. 91'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable Insulation
2. Lube Oil (Reactor Cooling Pumps 265 Gals Per Pump)
3. Charcoal Filters (Iodine Removal Units)
4. Transient Combustibles (Outage Periods)

MOST PROBABLE FIRE:
1. Transient Combustibles
2. Cable Insulation
3. Lube Oil @ R.C. Pumps
4. Charcoal Filters

ACCESS AND EGRESS ROUTES:
1. West Stairway @ Approx. 100°
2. East Stairway @ Approx. 270°

FIRE BRIGADE STAGING AREA:
1. Primary - Unit No. 2 Turbine Deck
2. Secondary - Hot Machine Shop - FHB El. 140'.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Charcoal filters (iodine removal units)
2. Smoke from cable insulation
3. Potential radiological airborne and surface contamination
4. High radiation areas inside shield walls by RCP's and S/G's.

MANAGEMENT OF PLANT SYSTEMS:
1. Containment Fire Protection System. Isolation valve located in Cont. Penetration El. 100' Col. Line L-21
2. Floor Drains at El. 91' allows drainage to the Containment Main Sump.
3. Containment Evacuation Alarm may be operated from the personnel hatch.
4. RCP lube oil collection tank located by the fuel transfer tube.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Water spray from hose reels may be required to protect exposures such as safety related conduits and sensing lines.
2. Do not apply water directly on exposed hot piping.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Four 20# Dry Chemicals
2. Fire Hose Reels - Four
3. Automatic Sprinkler System @ Reactor Cooling Pumps

VENTILATION:

1. 2S-3 Containment Supply Purge Fan
2. 2E-15 & 2E-16 Exhaust FAns for Iodine Removal Units
3. 2E-11, 2E-12, 2E-13 & 2E-14 Reactor Exhaust Fans
4. Fan coolers may also be run in their normal mode to recirculate and cool hot gases and smoke.
5. 2E- Main Containment Exhaust Fan

COMMUNICATIONS:

1. Plant Telephones [redacted]
2. Portable Radios (may have to relay outside containment to contact Control Room - OPS frequency).

LIGHTING:

1. Lighting Panel - PL-27-1
2. Emergency lighting

SPECIAL PRECAUTIONS:

1. Self Contained Breathing Apparatus will be required.
2. Portable Hand Lanterns should be carried by Fire Brigade members.
3. "CAUTION" S.C.B.A's Air Supply Capacity may Limit Fire Brigade to 5 minute stay time at El. 91'.
4. Turnout Gear and S.C.B.A. will provide necessary anti-contamination function.
5. Provide Radiation Detection Devices.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

CONTAINMENT EL. 117'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable Insulation
2. RCP Pump Oil
3. Transient Combustibles (During Outages)

MOST PROBABLE FIRE:
1. Transient Combustibles
2. Cable Insulation
3. RCP Pump Oil

ACCESS AND EGRESS ROUTES:
1. West Stairway Approx. 120°
2. East Stairway Approx. 270°

FIRE BRIGADE STAGING AREA:
1. Primary - Turbine Deck Elevation 140' Unit 2
2. Secondary - Hot Machine Shop - FHB El. 140'

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Smoke from cable insulation.
2. Potential radiological airborne and surface contamination.
3. High radiation areas inside shield walls by RCP's and SIG's.
4. Boric acid from primary system.

MANAGEMENT OF PLANT SYSTEMS:
1. Floor drains provided at El. 91' would allow water to drain to the Containment Main Sump.
2. Containment evacuation alarm may be operated from the personnel hatch.
3. Containment fire protection system isolation valve located in Containment Penetration El. 100' Col. Line K-12' 9".

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire Hose Streams may be required to protect exposures such as safety related conduits and sensing lines.
2. Do not apply hose streams directly on hot exposed piping.

FIRE SUPPRESSION EQUIPMENT:

1. Fire extinguishers - Two 20# Dry Chemicals
2. Sprinklers for each RCP
3. Fire Hose must be routed from El. 140'

VENTILATION:

1. 2S-3 Containment Supply Purge Fan
2. 2-E1 Main Containment Exhaust Fan
3. Fan Coolers may also be run in their normal mode to recirculate and cool hot gases and smoke.
4. 2E-15 & 2E-16 Exhaust Fans for Iodine Removal Units

COMMUNICATIONS:

1. Plant Telephones [redacted]
2. Portable Radios (May have to relay outside Containment to contact Control Room - OPS frequency)

LIGHTING:

1. Lighting Panel - PL 26-2
2. Emergency Lighting

SPECIAL PRECAUTIONS:

1. Self Contained Breathing Apparatus will be required.
2. Portable hand lanterns should be carried by Fire Brigade members.
3. Turnout Gear and S.C.B.A. will provide necessary anti-contamination function.
4. Provide radiation detection devices.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

CONTAINMENT EL. 140'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable Insulation
2. HEPA & Roughing Filters (Fan Air Coolers)
3. Transient Combustibles (During Outages)
4. Grease & Oil (Cranes and Fan Cooler Motors)

MOST PROBABLE FIRE:
1. Transient Combustibles
2. Grease and Oil
3. Cable Insulation
4. HEPA & Roughing Filters

ACCESS AND EGRESS ROUTES:
1. Personnel Hatch
2. Equipment Hatch (If Open)
3. Emergency Exit Approx. 290° between Fan Coolers 2-3 & 2-4

FIRE BRIGADE STAGING AREA:
1. Primary - Turbine Deck El. 140' Unit 2
2. Secondary - Hot Machine Shop FHB El. 100'.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. HEPA & roughing filters (fan air coolers)
2. Smoke from cable insulation
3. Potential radiological airborne and surface contamination.
4. High radiation area around the reactor cavity
5. Boric acid from primary system leakage

MANAGEMENT OF PLANT SYSTEMS:
1. Floor Drains at El.91' allows drainage to the Containment Main Sump.
2. Containment Evacuation Alarm may be operated from the personnel hatch.
3. Containment Fire Protection System Isolation Valve located in Containment Penetration 100' El. Col. Line K-12' 9".

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire Hose Streams may be required to protect exposures such as safety related conduits and sensing lines.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Four 20# Dry Chemicals
2. Fire Hose Stations - Four

VENTILATION:

1. 2S-3 Containment Supply Purge Fan
2. 2E-3 Main Containment Exhaust Fan
3. Fan Coolers may also be run in their normal mode to recirculate and cool hot gases and smoke.
4. 2E-15 and 2E-16 Exhaust Fans for Iodine Removal Units
5. 2E-11, 2E-12, 2E-13 & 2E-14 Reactor Exhaust Fans

COMMUNICATIONS:

1. [redacted]
2. Portable Radios (May have to relay outside Containment to contact Control Room - OPS Frequency)

LIGHTING:

1. Plant Lighting - PL 26-3, 26-5, 27-2 & 27-4, 27-3
2. Emergency Lighting

SPECIAL PRECAUTIONS:

1. Self Contained Breathing Apparatus will be required.
2. Portable hand lanterns should be carried by Fire Brigade members.
3. Turnout Gear and S.C.B.A. will provide necessary anti-contamination function.
4. Provide radiation detection devices.
5. "CAUTION" 30 minute S.C.B.A.'s will probably not provide sufficient breathing air capacity for a fire fighting response above the Polar Crane.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1 & 2

RADWASTE AND CHEM STORAGE - EL 115'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Contaminated Lube Oil (Approx. 2600 gals)
2. Transient Combustibles
3. Class "A" Combustibles (Solid Radwaste)
4. Hydrogen (Stg Vault North End)
5. HEPA & Roughing Filters

MOST PROBABLE FIRE:
1. Transient Combustibles
2. Contaminated Lube Oil
3. Class "A" Combustibles (Solid Radwaste)
4. Hydrogen
5. HEPA & Roughing Filters

ACCESS AND EGRESS ROUTES:
1. Primary - Via Door No's R-9, R-11

FIRE BRIGADE STAGING AREA:
1. Primary - East end Aux Bldg. by roll up door 354.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Contaminated Lube Oil
2. Hydrogen H_2
3. Contaminated Clothing
4. Sulfuric Acid - H_2SO_4
5. Sodium Hydroxide (Caustic Soda) NaOH
6. HEPA & Roughing Filters

MANAGEMENT OF PLANT SYSTEMS:
1. The boxed waste area and contaminated oil storage areas are protected by an automatic sprinkler system. The isolation valve is located inside door No. R-11.
2. Should a leak or tank rupture occur at the caustic & sulfuric acid tanks, contact Chem & Rad to have sampled prior to removal or spilled liquid.
3. A 4 3/4" curb is provided at doorways R-9 & R-10 to prevent a contaminated lube oil spill leaking to other areas.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire Hose steams may be required to protect exposures.
2. Do not apply water to an H_2SO_4 or NaOH spill.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Three 20# Halon
2. Fire Hose Reels - Five (3) Outside Bldg.
   (1) North End
   (1) South End
3. Automatic Sprinkler System (S. Radwaste)
4. Fire Hydrant - West of Vault Area

VENTILATION:

1. Fans E-401 & E-402 are exhaust fans
2. Portable Smoke Exhausters may be required. Smoke could be exhausted via doorways to the outside.
3. Smoke may be contaminated. Obtain guidance from C&RP prior to ventilating with portable exhausters.
4. Possible loose surface on airborne radiological contamination.

COMMUNICATIONS:

1. Plant Telephones - [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING:

1. Lighting Panel - PL 25-6
2. Emergency Lighting
3. Yard Lighting

SPECIAL PRECAUTIONS:

1. Self contained breathing apparatus will be required.
2. Provide radiation detection devices.
3. Turn out gear and SCBA will provide necessary anti-contamination functions.
4. Full protective clothing to be worn in the vicinity of the caustic and acid tank as contact can destroy skin tissue.
5. Avoid water coming in contact with sulfuric acid as a violent reaction takes place.

PG&E **Pacific Gas and Electric Company**

DEPARTMENT OF NUCLEAR PLANT OPERATIONS

DIABLO CANYON POWER PLANT UNIT NO(S) 1 AND 2

EMERGENCY PROCEDURE
NONRADIOLOGICAL FIRE

TITLE

NUMBER	EP M-6
REVISION	11
DATE	8/8/85
PAGE	1 OF 12

APPROVED R. C. Thornberry 9-5-85
PLANT MANAGER DATE

IMPORTANT TO SAFETY

SCOPE

This procedure discusses the actions which are taken in the event of a fire which does not involve radioactive materials. This procedure and changes thereto requires PSRC review.

GENERAL

Fires at Diablo Canyon can be classified as either radiological or nonradiological. Nonradiological fires do not involve either radiation or radioactive material. Examples of such fires are fires in the turbine building or outside grass fires. Radiological fires are handled in accordance with Emergency Procedure R-6, "Radiological Fires".

SYMPTOMS

1. A fire is discovered outside the plant or inside the plant in an area where no radioactive materials are located.

2. The fire detection system may indicate the presence of a fire within the plant.

AUTOMATIC ACTIONS

The Sprinkler, Deluge, Halon, Cardox, or Intake CO_2 fire systems may activate.

IMMEDIATE ACTION

1. Activate the fire signal by dialing 779-XX. "XX" is a code which gives the location of the fire (see Table 1). The fire signal is a 30 second blast on the fire sirens. The signal will be followed by the location code of the fire on the code call system repeated 8 times. The first five persons to dial 76 will be connected into a conference call. The priority of the conference call is:

a. Shift Foreman (Interim Site Emergency Coordinator).
b. Fire Brigade Leader (Typically the Senior Control Operator).
c. Assistant Fire Brigade Leaders (Two).
d. Plant Superintendent/Manager.
e. Fire Marshal

2. The Shift Foreman and Senior Control Operator will dial 76 and be given the details regarding the fire, including the exact location and potential damage to the plant.

3. Members of the on-shift fire brigade should report to the control room to pick up their equipment and receive instructions from the Shift Foreman. The Shift Foreman is responsible for establishing an appropriate on-shift emergency organization and assuring that Technical Specifications for control room staffing are not violated.

4. If the fire occurs during normal working hours, members of the Maintenance Fire Brigade should go to the cold machine shop. The Assistant Fire Brigade Leaders should enter the conference call to receive their instructions.

5. If appropriate, isolate (Mode 3) the control room ventilation system to prevent the entry of smoke. If the fire is within the control room, change the ventilation system to Mode 2 for 100% outside air makeup.

6. If the fire is in an area protected by either the cardox, halon or deluge systems, manual initiations of these systems may be accomplished from the panel in the control room or locally.

7. Evacuate the area affected by the fire. This may be done by sounding the site emergency signal, or other appropriate means.

SUBSEQUENT ACTIONS

The Shift Foreman, acting as Interim Site Emergency Coordinator, shall direct all subsequent actions from the control room until relieved by the long term Site Emergency Coordinator if the emergency warrants it. Such actions should include the following:

1. If the fire is a grass fire, notify the California Department of Forestry (CDF) and give details regarding the fire.

2. If the fire cannot be physically contained and controlled promptly with available resources, or if the Fire Brigade Leader recommends, assistance from the California Department of Forestry should also be requested. Refer to Appendix 1 for telephone numbers.

   NOTE: 1) If outside assistance has been requested, notify the Security Department [redacted] and have them notify the Avila Gate. One or more plant operating personnel shall be dispatched to the Security Building to escort CDF crews to the scene of the fire. Security Officers may be requested to escort off-site fire fighters to the appropriate plant access door.

   2) Maintain a record of notification made to offsite personnel. Form 69-9221 "Emergency Notification Record" may be used to provide this record.

3. If CDF is called to respond, insure that the person calling CDF gives a name and number to call back the plant. Provide CDF with details concerning location and type of fire. Also give CDF an update of fire conditions even before they arrive as they may decide to send more support.

4. If CDF responds, they will stage at the G.C. Warehouse parking lot. Their first responding chief officer will take charge and identify himself. He may initially decide to go to the scene of the fire. He will eventually desire to contact the PGandE Site Emergency Coordinator. Therefore escort and access should be provided to him to reach either the Control Room or TSC depending on where the Site Emergency Coordinator is located. A CDF radio phone is available in the shift foreman's office and the TSC for the use of the chief officer.

5. If the fire is a grass fire that is near the plant, a person such as the Assistant Fire Brigade Leader from the Maintenance Brigade should be dispatched to the scene. This person can then interface with CDF and assist in providing equipment and manpower.

6. During the course of the fire, the Control Operator and those at the scene should pay particular attention for signs that the operability of the various engineered safeguards equipment is being affected. If the operability of any safeguards equipment is reduced below minimum Technical Specifications limits, or if such damage is imminent, shut down the Unit immediately.

NOTE: Emergency Procedure EP M-10 provides the operator with listing of safeguards equipment which may be affected by fires in various locations. This procedure should be consulted to assist in determining the operating strategy during the fire.

7. Establish an initial emergency classification based on the criteria in Appendix Z and perform the actions required by the classification.

8. If the control room must be evacuated, follow the instructions given in Emergency Procedure OP-8.

9. If the deluge or cardox system has been activated, the system must be reset after the fire is extinguished. The reset buttons for the cardox system are located in the terminal boxes on the south side of the cardox assembly on the 104 foot elevation of the turbine building. The reset buttons for the deluge system are located locally. If the system was activated by a thermal element, the thermal element must be replaced before the system can be reset.

10. Supplied air breathing apparatus should be worn if smoke inhalation is a hazard. If self-contained breathing apparatus (SCBA) is being used, a crew should be dispatched to an air bottle refilling station and prepare to refill the backpack bottles as required. The stations are located at the northwest end of the Unit No. 2 component cooling water heat exchangers on the +85 foot elevation and on the +140 foot elevation behind the control room.

11. Close out with verbal summary to offsite organizations and complete the following written reports:

    a. Plant Problem Report (see Nuclear Plant Administrative Procedure C-12).

    b. Written summary to NRC within 24 hours for an Unusual Event or 8 hours for a higher classification.

12. If the fire is put out before CDF arrives, they may still request to send one engine company to the site for their close out.

13. The plant Fire Marshal, or his designee, shall be promptly notified of all plant fires.

SPECIAL CONSIDERATIONS REGARDING BRUSH FIRES

1. Because of the danger of rapid spreading, the Department of Forestry should always be called in case of a brush fire.

2. Mobile fire suppression equipment is available on site to provide limited capability fighting grass fires. Portable fire fighting packs are located with the mobile equipment.

3. When fighting a brush fire there are several basic precautions which should be taken by plant personnel engaged in fire fighting:

   a. Always remain upwind on the fire.
   b. Remain downhill of the fire, if possible.
   c. Watch for fires circling behind the fire fighters.
   d. The safest location is within the already blacked area of the fire.

FIRE FIGHTING PREPLANS

1. Attachment 2 contains fire fighting preplans for plant locations which will not routinely contain radioactive material or radiation hazards. These pre-plans are intended to aid the Fire Brigade Leader and the Site Emergency Coordinator during the fire emergency.

2. Guidelines for fighting fires involving flammable gases, liquids, and fires involving energized electrical equipment are as follows:

   a. Flammable Gas Fires

      1) Protect surrounding equipment, usually providing a fog pattern to cool the equipment.

      2) Shut off the source of the leakage prior to extinguishment. This reduces the potential for explosion.

3) Extinguish the remaining fire, usually with water or dry chemical-type agent.

b. Flammable Liquid Fires

1) Isolate source of fuel (most easily done by securing the pump or shutting a valve).

2) Shutdown (trip) the centrifuge to prevent possible spread of the fire or contaminated oil to other reservoirs.

3) Open the lube oil reservoir emergency dump valve to drain all the oil to the dump tank from the affected equipment (LO-1-30D for main LO reservoir, LO-1-23D for No. 11 feedwater pump, LO-1-22D for No. 12 feedwater pump and LO-1-51 and LO-1-52 for the clean and dirty lube oil tank room).

4) When all the oil has been drained to the dump tank, close the dump valve.

5) Protect nearby equipment if possible with the water fog.

6) Extinguish the fire using dry chemical or foam.

7) Attempt to minimize smoke and water damage.

c. Energized Electrical Equipment Fires

1) De-energize the equipment if possible.

2) Use carbon dioxide or halon, if possible, to minimize the residue and cleanup time.

3) Ensure the agent penetrates into the motor or cabinet via ports, vents, etc. Otherwise, the fire may reflash.

4) If water must be used, use only a fog patter and stand no closer than 6 feet from the energized 30 KV or less electrical source.

d. Electrical Cable Fires

1) Use self-contained breathing apparatus due to toxic products of combustion.

2) Attempt to de-energize the source of electrical current.

3) A lifeline may be needed due to the density of the smoke.

4) Use carbon dioxide or dry chemical extinguishers if practicable, since they are relatively nonconductive.

5) Water may be used and is recommended on large cable fires, but recognize the hazard and use only a fog nozzle no closer than 6 feet.

6) Smoke control is very important to minimize damage to electrical equipment.

REFERENCES

1. Diablo Canyon Power Plant - Fire Protection Plan

2. Emergency Procedure G-1 "Accident Classification and Emergency Plan Activation."

3. Emergency Procedure G-2 "Establishment of the Onsite Emergency Organization."

4. Emergency Procedure G-3 "Notification of Offsite Emergency Organizations."

5. General Operating Orders - 1.300 and 1.301

6. PGandE Fire Prevention Manual

7. Accident Prevention Rule No. 23

8. Emergency Procedure R-6, "Radiological Fire."

ATTACHMENTS

1. Form 69-9221, "Emergency Notification Record", 3/82.
2. Fire Fighting Preplans.

TABLE 1

FIRE CODE CALL LOCATIONS

CODE	LOCATIONS
779 11	Control Building
12	No. 1 Containment
13	No. 1 Turbine Building
14	No. 1 Auxiliary Bldg.
15	No. 1 Fuel Handling Bldg.
16	Package Boiler Area
21	Hot machine shop area
22	No. 2 Containment
23	No. 2 Turbine Building
24	No. 2 Auxiliary Bldg.
25	No. 2 Fuel Handling Bldg.
26	Security Diesel Area
31	Grass fire
32	Outside Transformer Fire
33	Intake structure
34	500 kV switchyard
35	230 kV switchyard
36	Radwaste Storage
41	All clear
43	Fire Drill
45	Test fire code
51	Administration Building
52	Security Building
53	Training Building
54	Assembly Building
55	Technical Support Center
61	Medical Emergency

APPENDIX 1

FIRE ASSISTANCE COMMUNICATION

1. California Department of Forestry

1.
2.
3.

OR

San Luis Obispo County Sheriff
(Request they dispatch the
California Dept. of Forestry)

1.
2.
3.
4.

Only)

2. Fire Protection
Randy Kohout

Fire Marshal
Carmon Johnson

APPENDIX Z

EMERGENCY PROCEDURE NOTIFICATION INSTRUCTIONS

1. When this emergency procedure has been implemented, and upon direction from the Shift Foreman, proceed as follows:

   a. Designate this event a Notification of Unusual Event for fires within the site boundary if a verified fire is not under control within 10 minutes of initiating fire fighting efforts or if the California Department of Forestry Assistance is requested. Notify plant staff and response organizations required for this classification by implementing Emergency Procedures G-2 "Establishment of the On-Site Emergency Organization" and G-3 "Notification of Off-site Organizations" in accordance with Emergency Procedure G-1 "Accident Classification and Emergency Plan Activation."

   b. Designate this event an ALERT if a verified fire is not under control within 10 minutes of initiating fire fighting efforts and the fire threatens operability of safety related equipment located in one of the following areas containing safety systems:

      1) Containment
      2) Control Room
      3) Cable Spreading Rooms
      4) Diesel Generator Rooms
      5) Auxiliary Building
      6) Intake Structure Pump Rooms

      Notify Plant Staff and response organizations required by EP G-2 and EP G-3 in accordance with EP G-1.

   c. Designate this event a Site Area Emergency if a verified fire is not under control within 10 minutes of initiating fire fighting efforts in an area containing safety systems, and causes a confirmed complete loss of a safety system function that causes entry into a technical specification action statement (i.e., loss of both trains of containment spray when in Modes 1, 2, 3 or 4 or loss of both safety injection pumps when in Modes 1, 2 or 3). Notify plant staff and response organizations required by EP G-2 and EP G-3 in accordance with EP G-1.

APPENDIX Z (continued)

d. Designate this event a General Emergency if the fire causes massive damage to plant systems which, in the opinion of the Site Emergency Coordinator, is likely to lead to a core melt situation. Notify plant staff and response organizations required by EP G-2 and EP G-3 and implement the instructions in EP G-1 regarding on and offsite protective actions.

2. In addition to personnel required to be notified by EP G-2 also notify the following:

   a. Fire Marshal (See Appendix 1)

   b. System Dispatcher (if load may be affected).

      NOTE: In off-normal working hours, consideration should also be given to calling in additional members of the Plant Fire Brigade. This should not take precedence over calling CDF.

69-9271 3/82 (100)

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT

EMERGENCY NOTIFICATION RECORD

EMERGENCY IDENTIFICATION _____ DATE _____ SHEET _____

PERSON CALLED	AFFILIATION	TIME REACHED	BY	MESSAGE GIVEN	RESPONSE

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NOS 1 AND 2

"FIRE FIGHTING PRE-PLANS"

UNIT #	PREPLAN TITLE	PAGE	REVISION
1	12 KV Swgr and cable spreading room	1-1	0
1	DG's 1-1, 1-2 and 1-3	2-1	0
1	Turbine Bldg. EL 85' and below	3-1	0
1 & 2	Cold machine shop	4-1	0
1	4160 Swgr cable spreading rooms and ISO Phase Bus Area	5-1	0
1	Diesel generator exhaust area	6-1	0
1	Turbine Bldg EL. 104'	7-1	0
1	4160 Swgr and Elec. Shop Area	8-1	0
1	Turbine Bldg. EL 119'	9-1	0
1 & 2	Turbine Bldg. Warehouse	10-1	0
1	Turbine Bldg. EL 140'	11-1	0
1	Condensate Polishing Area	12-1	0
1	Package Boiler Area	13-1	0
1	Transformers and R.O. Area	14-1	0
1 & 2	480V. Vital Swgr Area - EL 100'	15-1	0
1 & 2	Vital Battery Rooms - EL 115'	16-1	0
1 & 2	Cable Spreading Rooms - EL 127'	17-1	0
1 & 2	Control Room	18-1	0
2	12 KV Swgr and cable spreading room	19-1	0
2	DG's 2-1, 2-2 & Document Storage	20-1	0
2	Turbine Bldg. EL 85' and below	21-1	0
2	Condensate Polishing Area	22-1	0
2	East Buttress and Transformer Area	23-1	0
2	DG. 2-1 & 2-2 Exhaust & Document Storage	24-1	0
2	Turbine Building EL. 104'	25-1	0
2	Technical Support Center	26-1	0
2	4160 Swgr Cable Spreading Rooms and ISO Phase Bus Area	27-1	0
2	4160 Swgr area	28-1	0
2	Traveling Crews Quarters	29-1	0
2	Turbine Bldg. EL. 119'	30-1	0
2	Turbine Bldg. EL. 140'	31-1	0
0	Security Building	32-1	0
1 & 2	Intake Structure	33-1	0
0	Administration Building	34-1	0
0	G.C. Warehouse	35-1	0
0	G.C. Security and Payroll Office	36-1	0
0	G.C. Project Office	37-1	0

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1
12KV SWGR. AND CABLE SPREADING ROOMS
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Electrical Cable Insulation.
2. Breaker Components.
3. Switchgear Components.

MOST PROBABLE FIRE:
1. Fire in Breaker Cubicles and Switchgear Control Panels.
2. Electric Cable Fire in Cable Spreading Room below Switchgear Room.

ACCESS AND EGRESS ROUTES:
1. Primary - from Turbine Bldg. via door #117.
2. Secondary - from D.G. corridor via door #118.
3. Tertiary - via stairway from 104' iso phase area.

FIRE BRIGADE STAGING AREA:
1. Primary - Turbine No. 1 El. 85' South door #117.
2. Secondary - Hallway by D.G. 1-1 outside door #118.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Fumes from burning or overheated electrical cable insulation.
2. CO_2 from hose reel discharge.

MANAGEMENT OF PLANT SYSTEMS:
1. Floor drain in Cable Spreading Room is located along the East Wall. Drains to turbine building sump.
2. De-energize electrical equipment where feasible.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

Water spray may be necessary to protect exposures. Use in a fog pattern only at a distance of at least 6 feet due to energized electrical equipment.

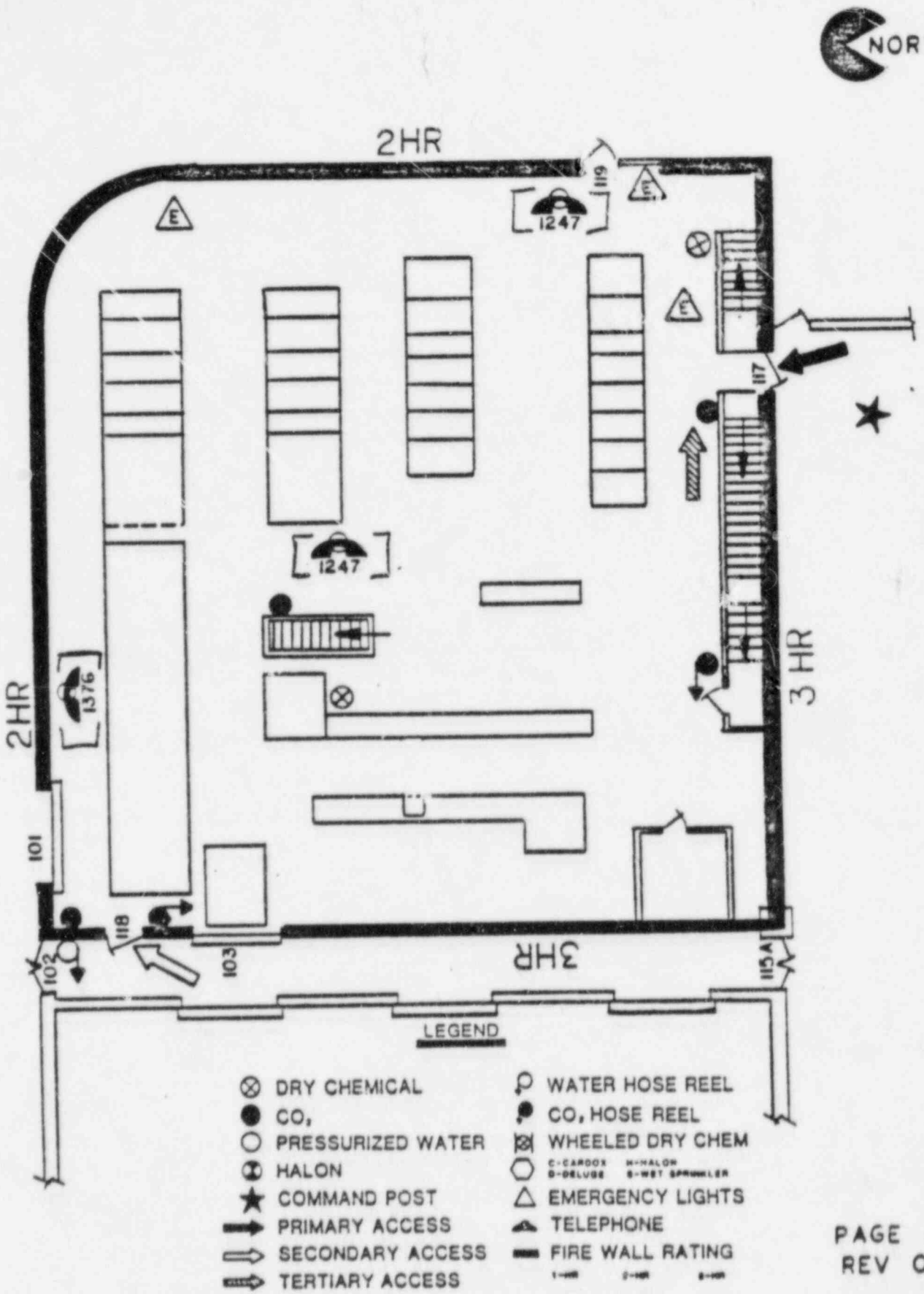
FIRE SUPPRESSION EQUIPMENT:
1. Fire Extinguishers - 3-CO_2's in Swgr Room.
2. CO_2 Hose Reels - (1) By Door #117.
   (1) By Door #118.
3. Water Hose Reels - (1) Outside Door #118.
   (1) Outside Door #117.
4. Hydrants & hose reels outside roll up door #101.

VENTILATION:
1. Normal Plant Ventilation - FAN S-71
2. Portable smoke exhausters to aid in exhausting smoke.
3. Hose streams could exhaust smoke via doors 101 or 119 to out of doors.

COMMUNICATIONS:
1. [redacted]
2. [redacted]
3. Portable radios (Ops. Freq.)

LIGHTING:
1. Normal Plant Lighting Panel - PL 11-1 El. 85' Col. D-5.
2. Emergency Lighting along east wall.

SPECIAL PRECAUTIONS:
1. Self contained breathing apparatus must be worn.
2. Smoke exhausters may be required particularly for a fire in the Cable Spreading Room Elevation 76', Exhaust smoke via roll up door No. 101 or door No. 119.
3. CO_2 The Agent Of Choice.
4. Water to be used in fog pattern only due to high voltage electrical equipment.


NORTH
2HR
2HR
3 HR
3HR
1247
1247
1376
101
102
103
115A
117
118
119
LEGEND
DRY CHEMICAL
CO,
PRESSURIZED WATER
HALON
COMMAND POST
PRIMARY ACCESS
SECONDARY ACCESS
TERTIARY ACCESS
WATER HOSE REEL
CO, HOSE REEL
WHEELED DRY CHEM
EMERGENCY LIGHTS
TELEPHONE
FIRE WALL RATING

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1
DG's 1-1 1-2 1-3
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES: 1. Fuel oil.
2. Lubricating oil.
3. Cable insulation
4. Transient combustibles during maintenance.

MOST PROBABLE FIRE: 1. Fuel oil.
2. Lubricating oil.
3. Transient combustibles.

ACCESS AND EGRESS ROUTES: 1. Primary - North door No. 102 at D.G. 1-1 to outside.
2. Secondary - South door No. 115A to turbine bldg.
3. Tertiary - via 12KV Sw'gr Room Door No. 118.

FIRE BRIGADE STAGING AREA: 1. Primary - outside door No. 115A in the turbine bldg.
2. Secondary - outside door No. 102 in transformer area.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS: 1. CO2 discharge.
2. Fumes from burning or overheated electrical cable insulation.

MANAGEMENT OF PLANT SYSTEMS: A 2 3/4" curb is provided at each automatic door to prevent oil spread to adjacent areas. All three generators are protected by an automatic CO2 system. The generators are surrounded by 3 hour fire walls and ceilings. The overhead rolling doors are also 3 hour fire rated. The CO2 system may be actuated automatically, manually from the control room or manually from the turbine building North wall by the fire equipment storage area. The shut-off for the hallway sprinklers (FP-1-42) is located in the N.W. corner by booster pump 1-1. Fuel oil leaks drain automatically to the turbine bldg. main sump.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT: Fire hose reels located in the hallway, the turbine bldg. or the yard loop may be required to protect exposures.

FIRE SUPPRESSION EQUIPMENT: 1. Fire Extinguishers (3) 20# dry chemicals. (1 each bay)
150# dry chemical wheeled unit.
CO2 hose reels 12KV Sw'ge room.
2. Fire Hose Reels (1) hallway at door #118.
(2) Turbine bldg. E. & W. stairways.
(3) Yardloop hose trailer.
3. Automatic CO2 System Diesel Generator Rooms.
4. Sprinkler system in hallway.
5. Foam (Fire equipment locker)
NOTE: A second manual discharge of CO2 should be considered if a re-flash occurs or to assure sufficient concentration.

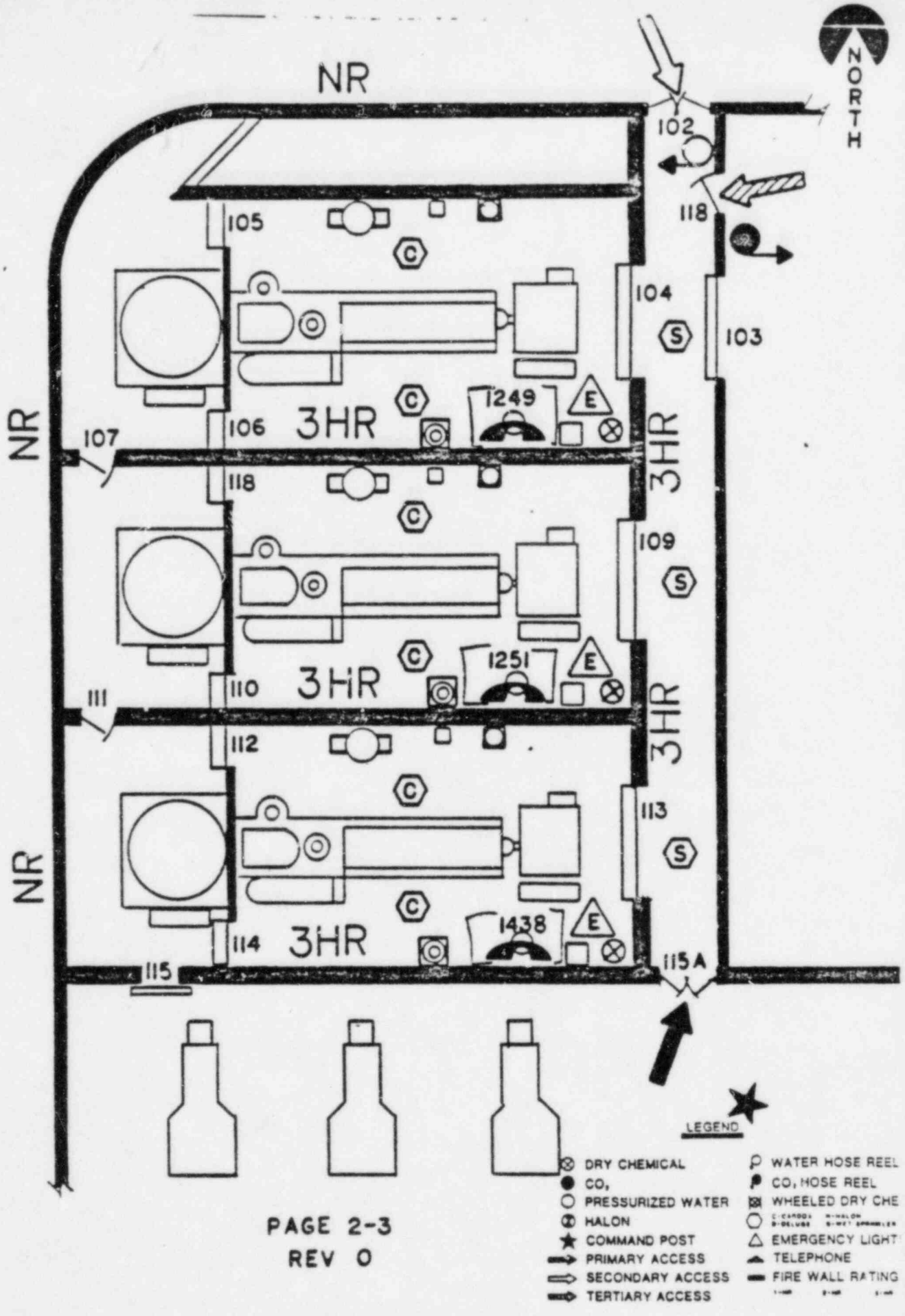
VENTILATION: 1. Normal plant ventilation. Louvers are provided in the west wall. Cardox activation will isolate ventilation.
2. Portable smoke exhausters may be required. Smoke can be exhausted to the outside via door no. 102.
3. Hose stream ventilation is also possible via door no. 102.

COMMUNICATIONS: 1. Plant communications telephones No. [redacted]

2. Hand operated radio (Ops. Freq.)

LIGHTING: 1. Normal plant lighting - Panel. PL 11-1 El. 85'A Col D-5 in the 12KV Sw'gr Room.
Distribution panel PLD 11 Bk 5 breaker no's 13-15 & 17.
2. Emergency lighting.

SPECIAL PRECAUTIONS: 1. Portable smoke exhausters may be required. Smoke can be exhausted via door no. 102 to the outside.
2. Self Contained Breathing Apparatus will be required due to smoke and CO2 discharge
3. Tests should be conducted to determine CO, O2 and flammable vapors prior to removal of S.C.B.A.
4. To gain access to a particular D.G. room may require a fire brigade member to re-engage the ratchet mechanism above the west roll-up doors and elevate the door by the chain.


NORTH
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1251
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112
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114
3HR
1438
115
115A
LEGEND
DRY CHEMICAL
CO,
PRESSURIZED WATER
HALON
COMMAND POST
PRIMARY ACCESS
SECONDARY ACCESS
TERTIARY ACCESS
WATER HOSE REEL
CO, HOSE REEL
WHEELED DRY CHE
EMERGENCY LIGHT
TELEPHONE
FIRE WALL RATING

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1
TURBINE BLDG. EL. 85' AND BELOW
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Lube Oil.
2. Cable Insulation.
3. Batteries.

MOST PROBABLE FIRE:
1. Lube Oil Leakage
2. Transient Combustibles.
3. Cable Insulation.
4. Battery Casings.

ACCESS AND EGRESS ROUTES:
1. Primary - via door #'s 126-127 & 129 to West Side El. 85'.
2. Secondary - via door #102 N. End at D.G.'s.
3. Tertiary - via door #122 East Wall by R.O. Unit.

FIRE BRIGADE STAGING AREA:
1. Primary - Cold Machine Shop.
2. Secondary - Fire Equipment Storage Area El. 85'.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS: Hydrazine, Ammonia, Sulphuric Acid. Cable Insulation, Battery Acid.

MANAGEMENT OF PLANT SYSTEMS:

1. The clean & dirty lube oil room is surrounded by 3 hour fire barriers, raised doorways and sealed pipeways thus preventing oil from a ruptured tank leaking to an outside area.

2. Water deluge systems protect the main feedwater pumps 1-1 & 1-2 & H_2 Seal Oil Unit. Shut off valves are located at:

   FWP-1-1 El. 85' No. FCV-200 Wall West of 6 Htr Drain Cooler.
   FWP-1-2 El. 85' No. FCV 201 On Column East of Clean & Dirty L.O. Tanks Room.
   H_2 Seal Oil El. 85' No. FCV-203 at S.E. Corner of Fire Equip Locker.

3. Wet sprinkler system protects the entire 85' El. Shut off valves are located at: No. FP-1-50-South System Above & Behind Vacuum Pump S.W. Corner.
   No. FP-1-42-North System N.W. Corner By Booster Pumps.

4. Lube oil reservoir dump valves LO-1-23D (Feed water pump 11) and LO-1-22D (Feedwater Pump 12) are located below the pumps. Lube oil reservoir dump valves LO-1-51 and LO-1-52 for the clean and dirty lube oil tanks are located below the south access catwalk.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT: Fire hose reels may be required to protect exposures. Do not spray cold water directly on exposed hot steam piping.

FIRE SUPPRESSION EQUIPMENT:
1. Fire Extinguishers - 2 - 15# CO_2's Battery Rooms.
   - 7 - 20# Dry Chemicals.
   - 1 - 150 Dry Chem Wheeled Unit.
2. Fire Hose Reels Each - 5
   Deluge Systems - May be manually actuated from Control Room.
3. Foam (Fire equipment locker)

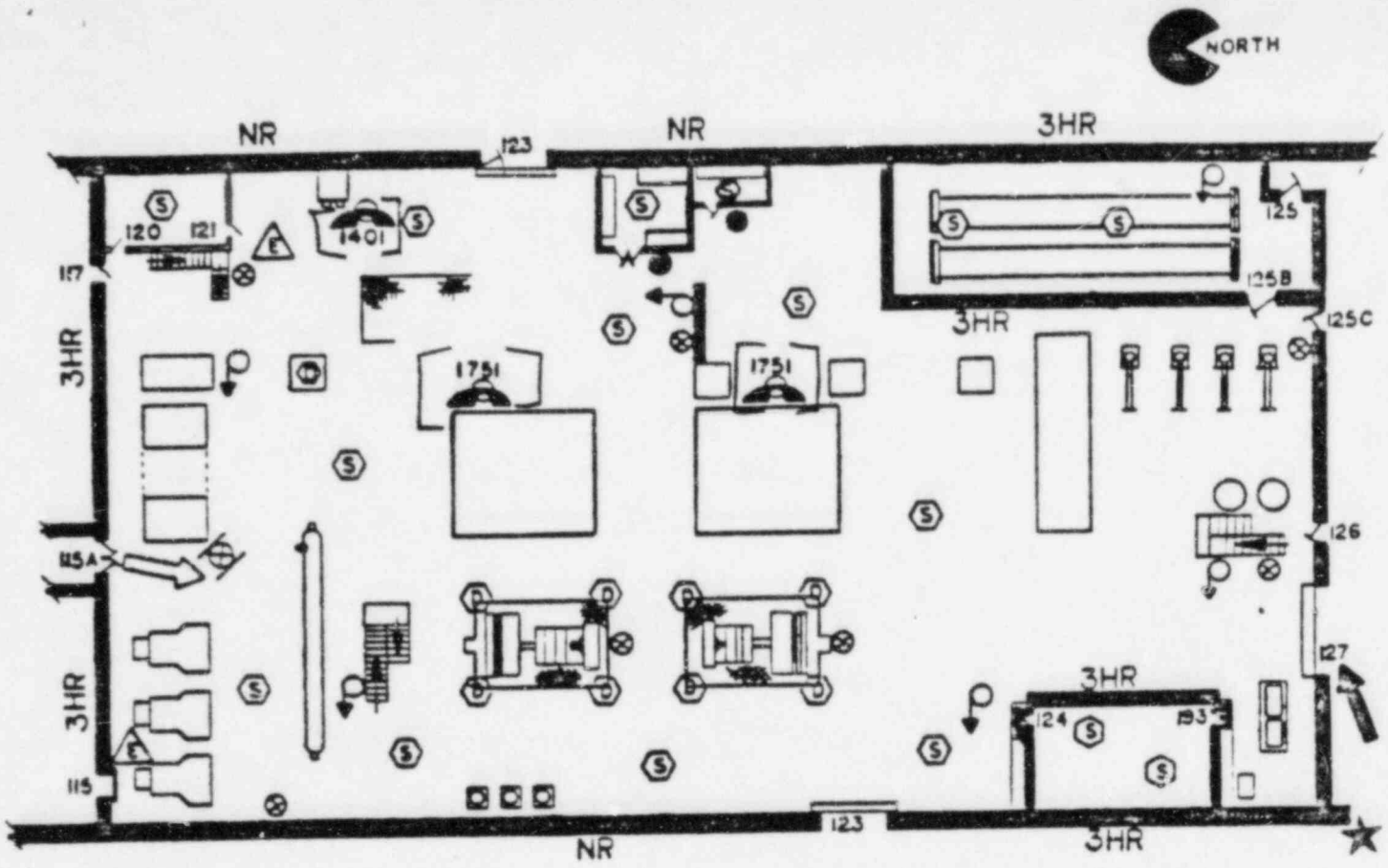
VENTILATION:
1. Vent Fan No's. S-51, S-52 & S-53 located on the east wall and exhaust outlets are located on the west wall of the fire zone.
2. If extreme smoke conditions are encountered smoke could be exhausted by hose streams through outside opening doorways.

COMMUNICATIONS:
1. Plant Telephone System No's

2. Portable Radios (Ops. Freq.)

LIGHTING:
1. Normal plant lighting panels located at:
   Panel PL 11-1-EL. 85' Col D-5
   Panel PJ 11-2-EL. 85' Col B-6
   Panel PLD-11-EL. 85' Col D-5
   Panel PJ-11-1-EL. 85' Col D-5
   Panel PL-12-1-EL. 85' Col D-17
2. Emergency lights.

SPECIAL PRECAUTIONS: Self contained breathing apparatus and other personal protective equipment will be required in the event of a fire. Portable hand lanterns may be required if smoke conditions dictate. Special protective clothing will be necessary if sulphuric acid, ammonia or hydrazine spills occur.



LEGEND

- DRY CHEMICAL
- CO,
- PRESSURIZED WATER
- HALON
- COMMAND POST
- PRIMARY ACCESS
- SECONDARY ACCESS
- TERTIARY ACCESS
- WATER HOSE REEL
- CO, HOSE REEL
- WHEELED DRY CHEM
- C-CARDOX H-HALON D-DELUGE S-WET SPRINKLER
- EMERGENCY LIGHTS
- TELEPHONE
- FIRE WALL RATING 1-HR 2-HR 3-HR

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1 & 2
COLD MACHINE SHOP
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Acetylene.
2. Lube Oil Tank.
3. Electrical Panels.
4. Misc.Combustibles. (Tool Room)
5. Solvents.

MOST PROBABLE FIRE:
1. Transient Combustibles.
2. Welding Fire.
3. Electrical Panels.
4. Solvent Spill.

ACCESS AND EGRESS ROUTES:
1. Primary Access - Hallway via door No. 131, El. 85'.
2. Secondary Access - Hallway via door No. 135, El. 85'.
3. Tertiary Access - via door No. 138 to Unit No. 2 turbine bldg., El. 85'.

FIRE BRIGADE STAGING AREA:
1. Primary - Unit 1 Turbine Bldg. 85' El., outside door No. 131.
2. Secondary - Access Control, outside door No. 135.
3. Tertiary - Unit 2 Turbine Bldg. 85' El., outside door No. 138.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS: Some small quantities of solvents may pose a small health risk.

MANAGEMENT OF PLANT SYSTEMS: 1. The entire shop offices, tool crib and welding shop are protected by automatic sprinklers. 2. The system shut off is located on El. 85' above and behind Nash vacuum pump (valve No. FP-1-50).

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT: Use water spray to cool compressed gas and acetylene cylinders and flammable liquid lockers.

FIRE SUPPRESSION EQUIPMENT: 1. Fire Extinguishers - 3 - 20# Dry Chem. Shop Area
- 2 - 15# CO_2's Shop Area.
- 1 - 15# CO_2 Lunch Area.
- 2 - 2½ Gal. Water Shop Area.

2. Water Hose Reel's - (1) - by door No. 135 Shop Area.
(1) - Turbine Bldg. via door No. 131.

3. Wet Sprinkler System - Shop Area, Offices, Tool Room and Welding Shop

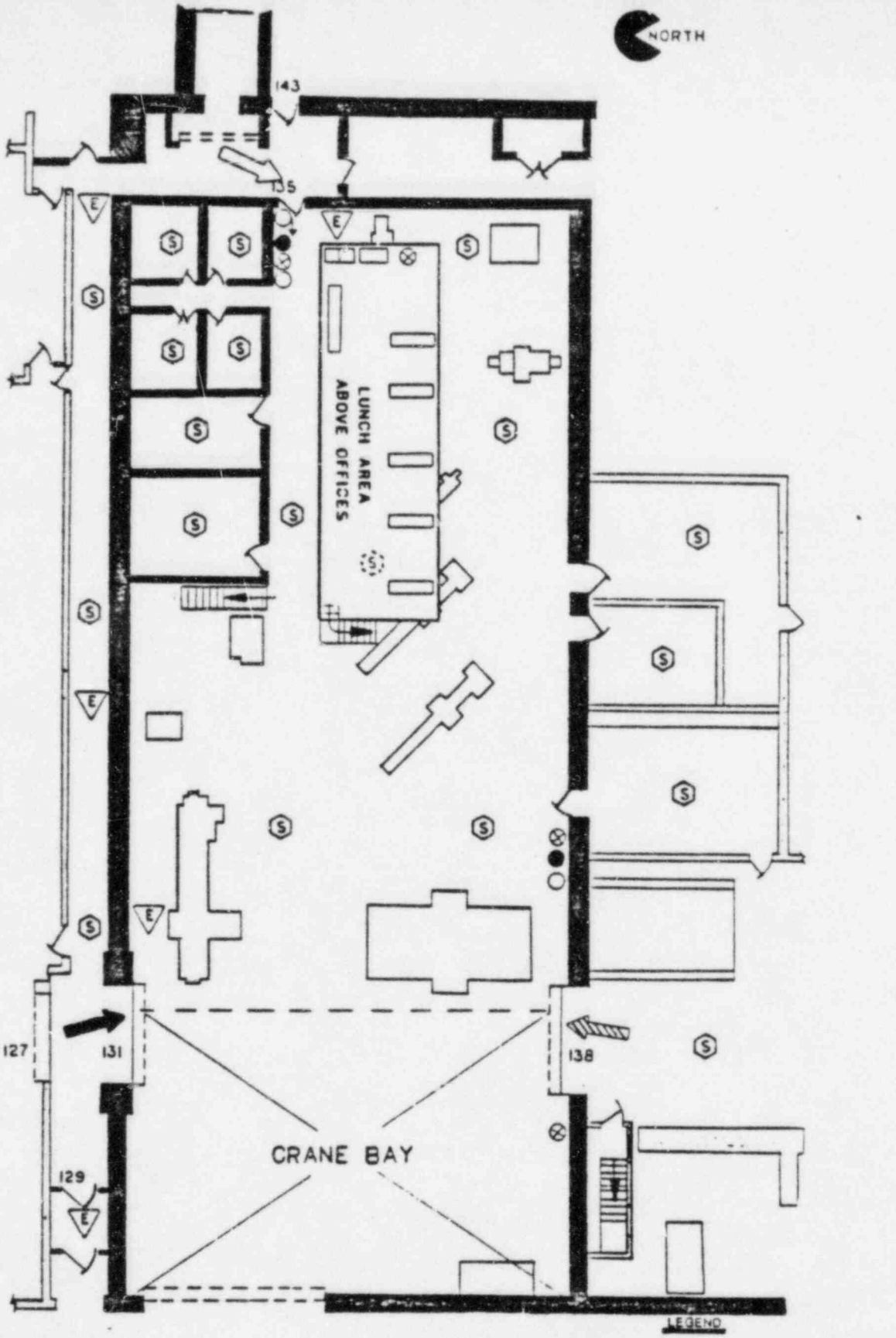
VENTILATION: Normal plant ventilation system. Smoke from a fire in this area would exhaust through the equipment opening to 140' El. roof. Portable exhausters could be used to ventilate offices and welding shop areas.

COMMUNICATIONS: 1. Plant Telephones Shop Area (1)
(2)

2. Portable Radios. (Ops. Freq.)

LIGHTING: 1. Normal plant lighting control panel located at panel PL 12-1 El. 85' Col. D-17. (Machine Shop)
2. Emergency lights indicated by E on drawing.

SPECIAL PRECAUTIONS: 1. Self contained breathing apparatus will be required especially in the offices, tool room and welding shop.
2. The possibility of an explosion exists from leaking acetylene.


NORTH
143
135
LUNCH AREA
ABOVE OFFICES
127
131
138
CRANE BAY
129
LEGEND
DRY CHEMICAL
CO,
PRESSURIZED WATER
HALON
COMMAND POST
PRIMARY ACCESS
SECONDARY ACCESS
WATER HOSE REEL
CO, HOSE REEL
WHEELED DRY CHEM
EMERGENCY LIGHTS
TELEPHONE
FIRE WALL RATING

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1
4160 SWGR CABLE SPREADING ROOMS AND ISO PHASE BUS AREA
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES: 1. Cable Insulation - Cable Spreading Rooms.
2. ISO Phase Bus Cooler Panels.
3. Transient Combustibles.

MOST PROBABLE FIRE: 1. Electrical fire in Cable Spreading Rooms.
2. Fire in ISO Phase Bus Cooler Panels.

ACCESS AND EGRESS ROUTES: 1. Primary - Via door #213, El. 104' Turbine Bldg.
2. Secondary - Via door No's 212 and 201.
3. Tertiary - Via door #210, up from 12KV Swgr Room.

FIRE BRIGADE STAGING AREA: 1. Primary - Outside Door #213 @ El. 104'.
2. Secondary - Corridor To East of EDG Exhaust. Stack Area Via Door No's 212 an 201.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS: 1. Fumes from cable insulation.
2. CO_2 discharge from hose reels.

MANAGEMENT OF PLANT SYSTEMS: 1. No floor drains are provided in the Cable Spreading Rooms.
2. Isolate affected buses if possible.

The following table lists equipment powered from the 3 different buses.

Bus F ACB's	
52HF7	Diesel-Generator No. 13 Source
52HF8	Aux. Salt Water Pump No. 11
52HF9	Aux. Feedwater Pump No. 13
52HF10	480V Load Center 1F Feeder
52HF11	Centrifugal Charging Pump No. 11
52HF12	Component Cooling Water Pump No. 11
52HF13	Aux. Transformer Source
52HF14	Startup Transformer Source
52HF15	Safety Injection Pump No. 11
Bus G ACB's	
52HG5	Diesel-Generator No. 12 Source
52HG6	Aux. Salt Water Pump No. 12
52HG7	Containment Spray Pump No. 11
52HG8	Residual Heat Removal Pump No. 11
52HG9	Centrifugal Charging Pump No. 12
52HG10	480V Load Center 1G Feeder
52HG11	Reciprocal Charging Pump No. 13
52HG12	Component Cooling Water Pump No. 12
52HG13	Aux. Transformer Source
52HG14	Startup Transformer Source
52HG15	Startup Transformer Feeder to Buses F, G, H
Bus H ACB's	
52HH7	Diesel-Generator No. 11 Source
52HH8	Aux. Feedwater Pump No. 12
52HH9	Containment Spray Pump No. 12
52HH10	480V Load Center 1H Feeder
52HH11	Residual Heat Removal Pump No. 12
52HH12	Component Cooling Water Pump No. 13
52HH13	Auxiliary Transformer Source
52HH14	Startup Transformer Source
52HH15	Safety Injection Pump No. 12

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Use water fog only if necessary to cool and protect exposures due to high voltage electrical hazards.
2. Maintain fire barrier penetration seals to protect redundant equipment.

FIRE SUPPRESSION EQUIPMENT:

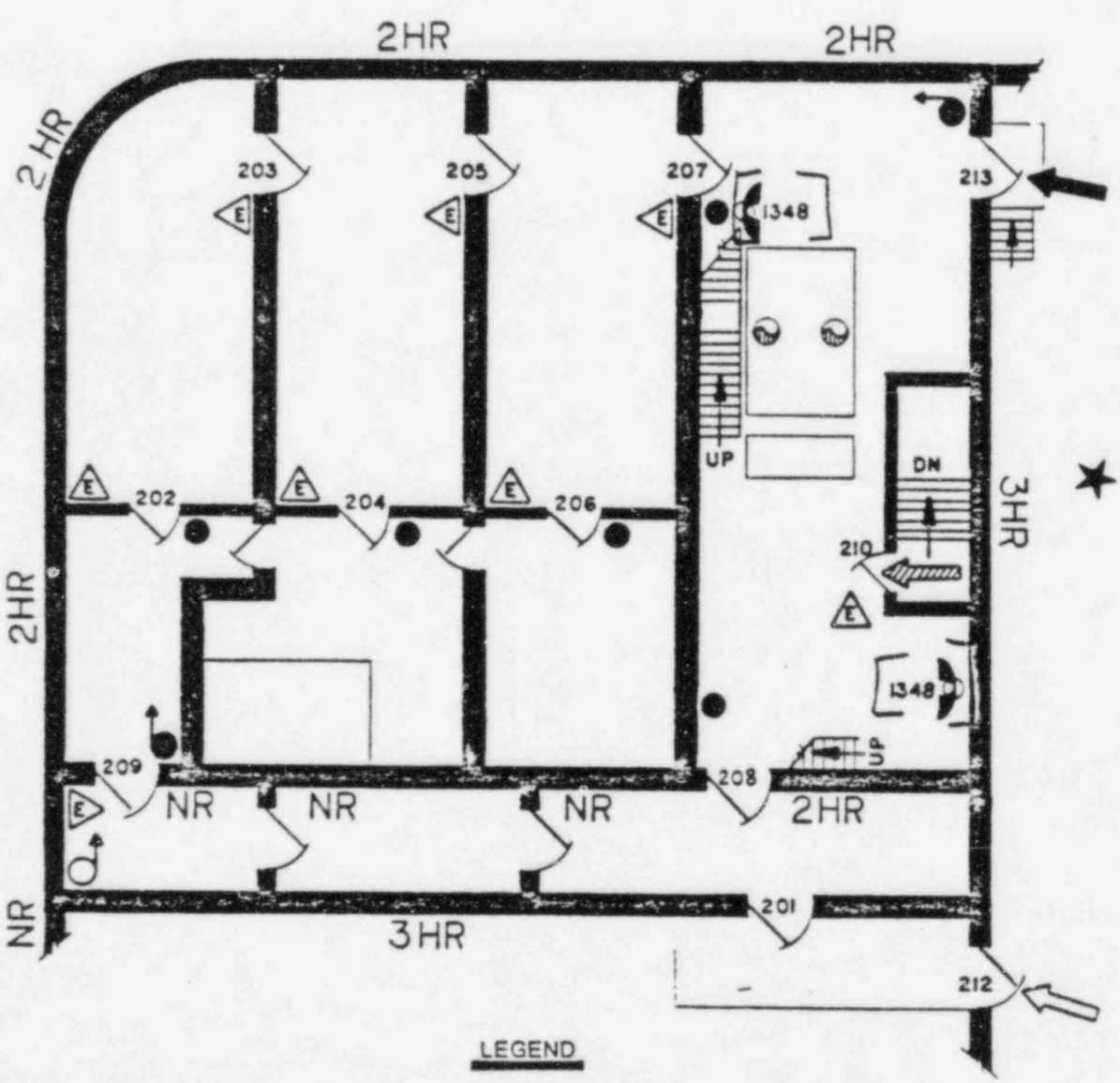
1. Fire Extinguishers	(5) 15# CO_2's.
2. CO_2 Hose Reels	(1) Inside Door No. 213.
	(1) Inside Door No. 209.
3. Fire Hose Reel	(1) Hallway N.E. End by Door No. 209.
	(1) By N. Stairway El. 104' Turbine Building.

VENTILATION: 1. Each CSR is provided with a grating at ceiling level which would allow smoke to exhaust to the 4160 Swgr rooms (EL 119'). The 4160 Swgr rooms are provided with ceiling grating with fusible link closers (EL. 140') which would allow smoke to exhaust at the turbine deck area N.E. corner. 2. Portable smoke exhausters could be used to exhaust smoke through doors 203-205 & 207 to door 213 at El. 107' turbine bldg. 3. Plant ventilation fans on the west wall of the ISO phase bus room would force smoke to open louvers on the east wall leading to the outside. An open stairway leads to EL. 140' turbine deck. Maintain the following vent fans running S-67, S-68 & S-69 for Bus rooms F,G & H respectively at El. 119'

COMMUNICATIONS: 1. Plant Communications Telephone No. [redacted]
2. Portable Radios (Ops Freq)

LIGHTING: 1. Normal Plant Lighting: Panel PL-11-4 El. 119' turbine bldg. exciter Swgr Room. Panel fed from dist. panel PLD. 11 breaker 6-85A
2. Emergency lighting.

SPECIAL PRECAUTIONS: 1. Self Contained Breathing Apparatus will be required for a fire in these rooms.
2. High voltage equipment, especially by ISO Phase Bus Panels



LEGEND

- DRY CHEMICAL
- CO_2
- PRESSURIZED WATER
- HALON
- COMMAND POST
- PRIMARY ACCESS
- SECONDARY ACCESS
- TERTIARY ACCESS
- WATER HOSE REEL
- CO_2 HOSE REEL
- WHEELED DRY CHEM
- C-CARBOX H-HALON D-DELUGE S-WET SPRINKLER
- EMERGENCY LIGHTS
- TELEPHONE
- FIRE WALL RATING 1-HR 2-HR 3-HR

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1
DIESEL GENERATOR EXHAUST AREA
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES: Transient Combustibles.

MOST PROBABLE FIRE:
1. Transient combustibles in contact with hot exhaust piping.
2. The Dow fire barrier material if not isolated from D.G. exhaust (approx. 1100°) by thermal insulation will smolder and burn.

ACCESS AND EGRESS ROUTES:
1. Primary - via doorways 211 & 212 at El. 104'.
2. Secondary - via door No. 201.

FIRE BRIGADE STAGING AREA:
1. Primary - Turbine Building. EL. 104' outside door No's 211 & 212
2. Secondary - Hallway to the east.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS: None

MANAGEMENT OF PLANT SYSTEMS: A flat head screwdriver will be required to gain entrance to exhaust areas, available in fire brigade tool boxes.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT: Do not use water on hot D.G. exhaust pipes because cracking may occur.

FIRE SUPPRESSION EQUIPMENT: Fire Extinguisher (1) 20# Dry Chemical inside door No. 212.
Fire Hose Reels (1) Located at N.W. stairs El. 104.
(1) Hallway by door No. 209.
To effectively fight a fire using the above two hose reels an additional 100' of hose would be required from each reel.

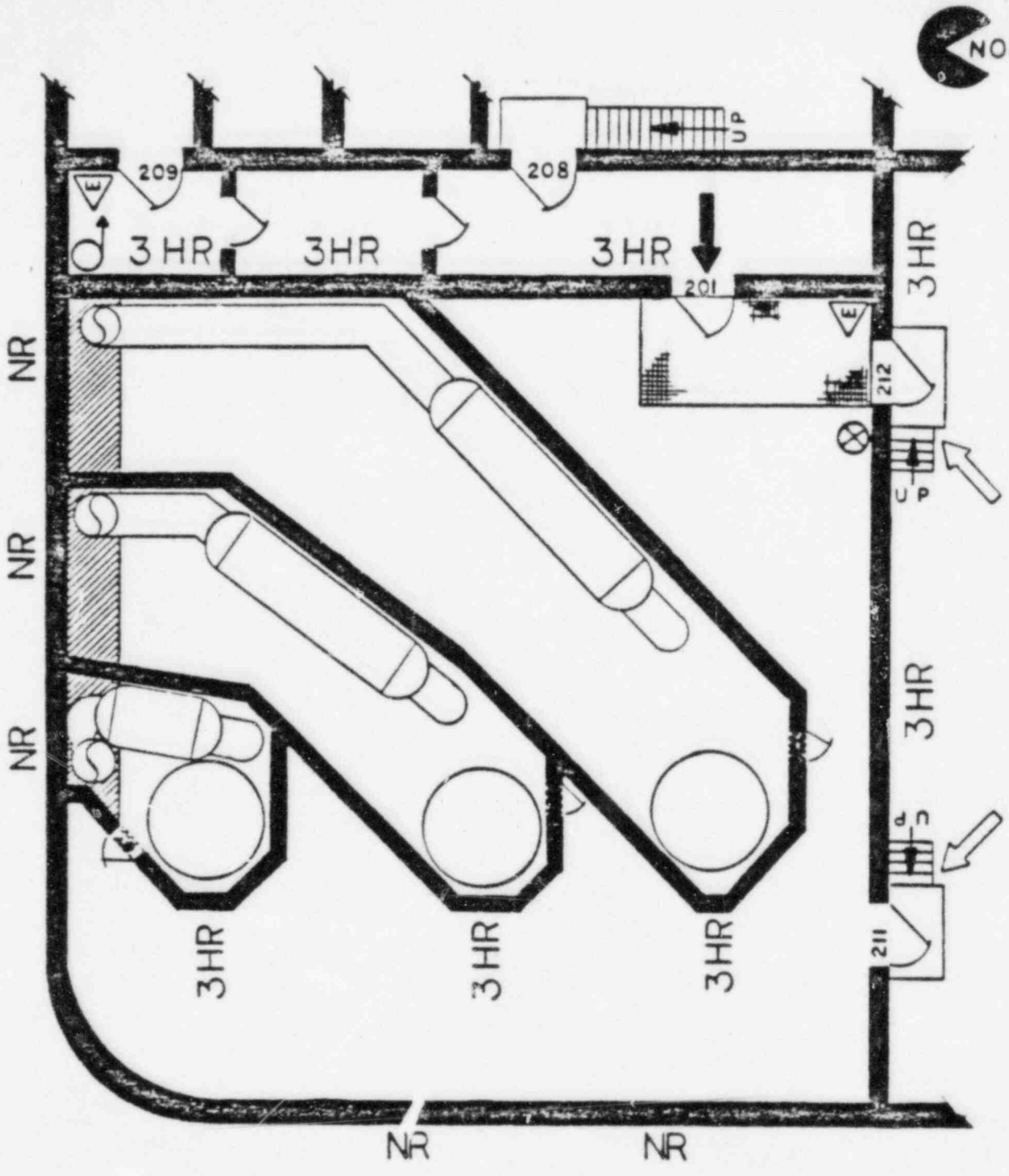
VENTILATION: Louvers in the permanently open position are located on the west wall.

COMMUNICATIONS: Plant Telephone -

Portable Radios (Ops. Freq.)

LIGHTING: Normal Plant Lighting - Pl. 11-4 El. 119' Col. D-2.
Emergency lighting hand held lanterns required in the DG exhaust rooms.
Hand held lanterns required in the DG exhaust rooms.

SPECIAL PRECAUTIONS: None.



LEGEND

- DRY CHEMICAL
- CO_2
- PRESSURIZED WATER
- HALON
- COMMAND POST
- PRIMARY ACCESS
- SECONDARY ACCESS
- TERTIARY ACCESS
- WATER HOSE REEL
- CO_2 HOSE REEL
- WHEELED DRY CHEM
- C-CARBOX H-HALON D-DELUGE S-WET SPRINKLER
- EMERGENCY LIGHTS
- TELEPHONE
- FIRE WALL RATING 1-HR 2-HR 3-HR

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1
TURBINE BLDG. EL. 104'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Lube Oil.
2. Cable Insulation.

MOST PROBABLE FIRE:
1. Lube Oil.
2. Overheated Cables.
3. Electrical Panels.
4. Transient Combustibles.

ACCESS AND EGRESS ROUTES:
1. Primary - via stairway S.W. turbine building.
2. Secondary - via elevator #1 or adjacent stairway.
3. Tertiary - via door 213 from iso phase bus area.

FIRE BRIGADE STAGING AREA:
1. Primary - cold machine shop El. 85'.
2. Secondary - outside elevator #1.
3. Tertiary - ISO phase bus area.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Fumes from burning or overheated cable insulation.
2. CO_2 total flooding system in Main Turbine L.O. Reservoir Room.

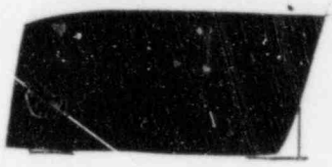
MANAGEMENT OF PLANT SYSTEMS: 1. The entire floor area is protected by wet piped automatic sprinklers. North system shut off valve #FP-1-50 located on El. 85' N.W. corner by booster pumps. South system shut off valve #FP-1-42 located on El. 85' above and behind vacuum pump S.W. corner.
2. The main turbine L.O. reservoir is protected by a total flooding CO_2 system that can be activated manually from Control Room or outside the north wall of the L.O. reservoir room. 3. The main lube oil reservoir dump valve LO-1-30D is located at El. 140' immediately west of the Shift Foreman/Clearance Coordinator's office. 4. Floor drains below the L.O. reservoir allow drainage to the U-1 main lube oil tank located under the machine shop.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT: Fire hose reels may be required to protect exposures. Do not spray cold water on exposed hot steam piping.

FIRE SUPPRESSION EQUIPMENT:
1. Fire Extinguishers - 7 - 20# Dry Chemicals
2. Fire Hose Reels - Each 5.
3. Cardox System - L.O. Reservoir Room.
4. Wet Sprinkler System.
5. Foam (Fire equipment locker)

VENTILATION:
1. Ventilation Fans S-55 & S-56 are located in the N.E. corner.
2. Four (4) exhaust fans are located on the west wall.
3. Smoke exhausters may be required to ventilate pockets under solid flooring.

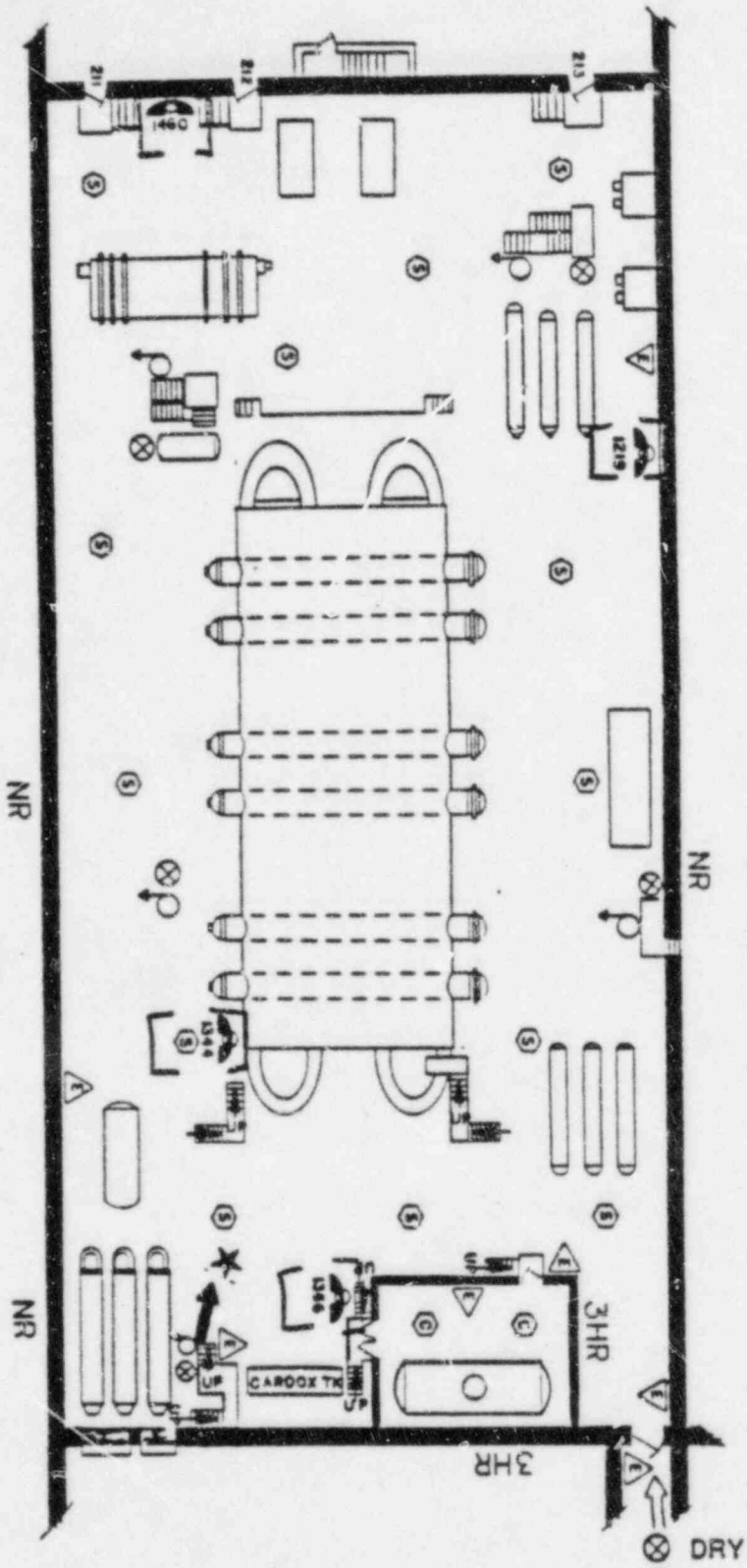
COMMUNICATIONS:
1. Plant Communication System Phone No's



2. Portable Radios (Ops. Freq.)

LIGHTING:
1. Plant Lighting Panels: PL-11-2 El. 104' Col F-6
   PL-11-3 El. 104' Col B-7
2. Lube Oil Reservoir PL-12-2 El. 123' Col C-16
3. Emergency Lighting

SPECIAL PRECAUTIONS: 1. Self contained breathing apparatus will be required particularly for a fire in the lube oil reservoir. 2. Portable hand lanterns should also be available. 3. A lube oil fire may also involve the 85' elevation below or 119' elevation above. 4. Use extreme caution in areas of open grating.


NORTH
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3HR
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CARBOX TK
LEGEND
DRY CHEMICAL
CO,
PRESSURIZED WATER
HALON
COMMAND POST
PRIMARY ACCESS
SECONDARY ACCESS
TERTIARY ACCESS
WATER HOSE REEL
CO, HOSE REEL
WHEELED DRY CHE
C-CARBOX H-HALON
D-DELUGE S-WET SPRINKLER
EMERGENCY LIGHT
TELEPHONE
FIRE WALL RATING
1-HR 2-HR 3-HR

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1
4160 SWGR. AND ELEC. SHOP AREA
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable Insulation
2. Switchgear Components.
3. Transient Combustibles - Shop Area.

MOST PROBABLE FIRE:
1. Fire in Switchgear Components.
2. Transient Combustibles.
3. Cleaning Solvents.
4. Overheated Cables.

ACCESS AND EGRESS ROUTES:
1. Primary - via door No. 303 from the turbine machinery area.
2. Secondary - via door No. 304 to Iso Phase Bus Room.

FIRE BRIGADE STAGING AREA:
1. Primary - outside door No. 303 in the turbine spaces.
2. Secondary - via door No. 304 from Iso Phase Bus Room.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Fumes from cable insulation.
2. CO_2 from hose reel discharge.

MANAGEMENT OF PLANT SYSTEMS: 1. Sprinkler isolation valve (FP-1-47) for electric shop, vent fan area is located on turbine building side of door No.303
2. See pre plan page 5-2 for list of equipment powered from Buses F, G, & H.
3. De-energize affected buses if possible.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire hose reels may be required to protect exposures.
2. Water should be used in a fog pattern no less than 6 feet away from energized electrical equipment.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - 1 - 20# Dry Chemical each 1
   3 - 15# CO_2's
2. CO_2 Hose Reels each (2) 1 at Equip Hatch
   1 Swgr. Rm. Bus "F"
3. Fire Hose Reel — Vent Fan Room
4. Sprinkler system in shop areas.

VENTILATION:

1. Swgr. Vent Fans No's S-67 through S-72 are located in the Switchgear Vent Fan Room.
2. Smoke Exhauster may be required.
3. Ventilation exhaust is through ceiling grating to El. 140', Turbine Deck.

COMMUNICATIONS:

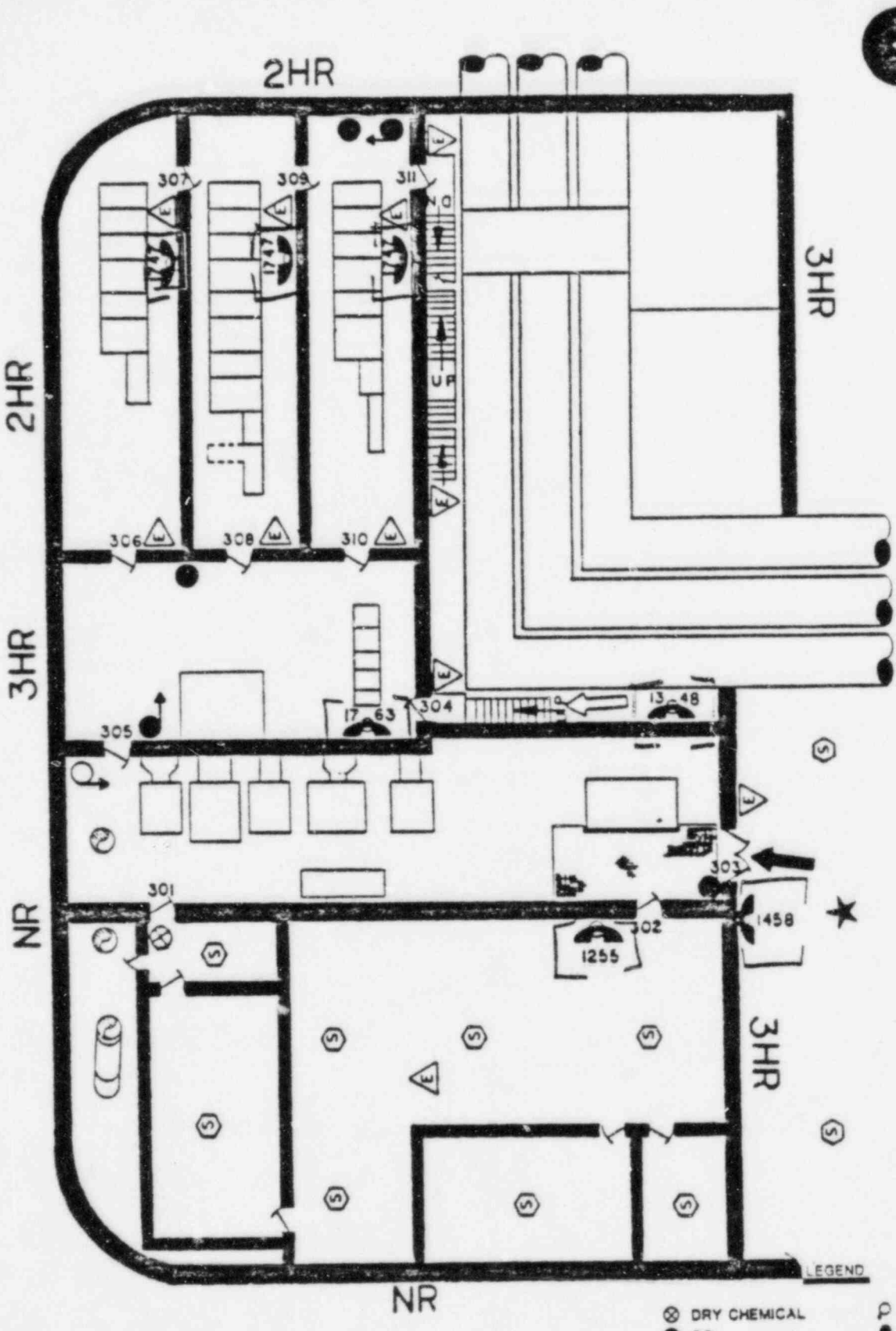
1. Plant Communication System phone No's. [redacted]
2. Portable Radios (Ops. Freq.)

LIGHTING:

1. Normal Plant Lighting Panel No. PL 11-4 El. 119' Col D-2
2. Emergency lighting.

SPECIAL PRECAUTIONS:

1. Self contained breathing apparatus will be required.
2. Smoke exhausters may be required particularly for a fire in the Electrical Shop & store room.
3. CO_2 is the agent of choice.
4. If water used in fog pattern only due to high voltage elec. equipment.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LEGEND
DRY CHEMICAL
CO,
PRESSURIZED WATER
HALON
COMMAND POST
PRIMARY ACCESS
SECONDARY ACCESS
WATER HOSE REEL
CO, HOSE REEL
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EMERGENCY LIGHT
TELEPHONE
FIRE WALL RATING

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1
TURBINE BLDG. EL. 119'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES: 1. Lubricating Oil.
2. Electric Wiring.
3. Transient Combustibles

MOST PROBABLE FIRE: 1. 480 volt nonvital motor control center.
2. Transient combustibles.
3. Broken lube oil line, oil soaked insulation.

ACCESS AND EGRESS ROUTES: 1. Primary - Via elevator No. 1 or adjacent stairs.
2. Secondary - Via S.W. stairway.
3. Tertiary - Via N.E. stairway.

FIRE BRIGADE STAGING AREA: 1. Primary - Outside Elevator No. 1.
2. Secondary - Cold machine shop crane bay.
3. Tertiary - By Maint. Fire Brigade Locker.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS: None anticipated beyond products of combustion

MANAGEMENT OF PLANT SYSTEMS: The entire floor area is protected by wet piped automatic sprinklers, shut offs are located at, North system EL. 85' behind condensate booster pumps #FP-1-42. South system EL. 85' above and behind Nash vacuum pump S.W. corner #FP-1-50.

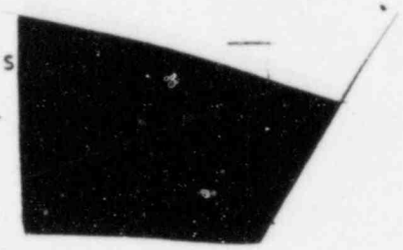
RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT

1. Fire hose reels may be required to protect exposures.
2. Caution should be used when applying water to hot steam lines, rapid cooling can cause cracking and steam leaks.

FIRE SUPPRESSION EQUIPMENT: 1. Fire Extinguishers - (4) 20# dry chemicals
(1) 15# CO2.
2. Fire Hose Reels each (6).
3. Foam (Fire equipment locker)

VENTILATION: Ventilation Fans S-57, S-58 and S-59 are located in the N.E. area of the bldg. There are no exhaust outlets on the west wall. Smoke would vent to EL. 140' via stairways and open grating in the N.W. corner. Smoke exhausters will be required for a fire in the S.E. corner of this area and smoke vented to EL. 140'.

COMMUNICATIONS: 1. Plant communication telephones No's

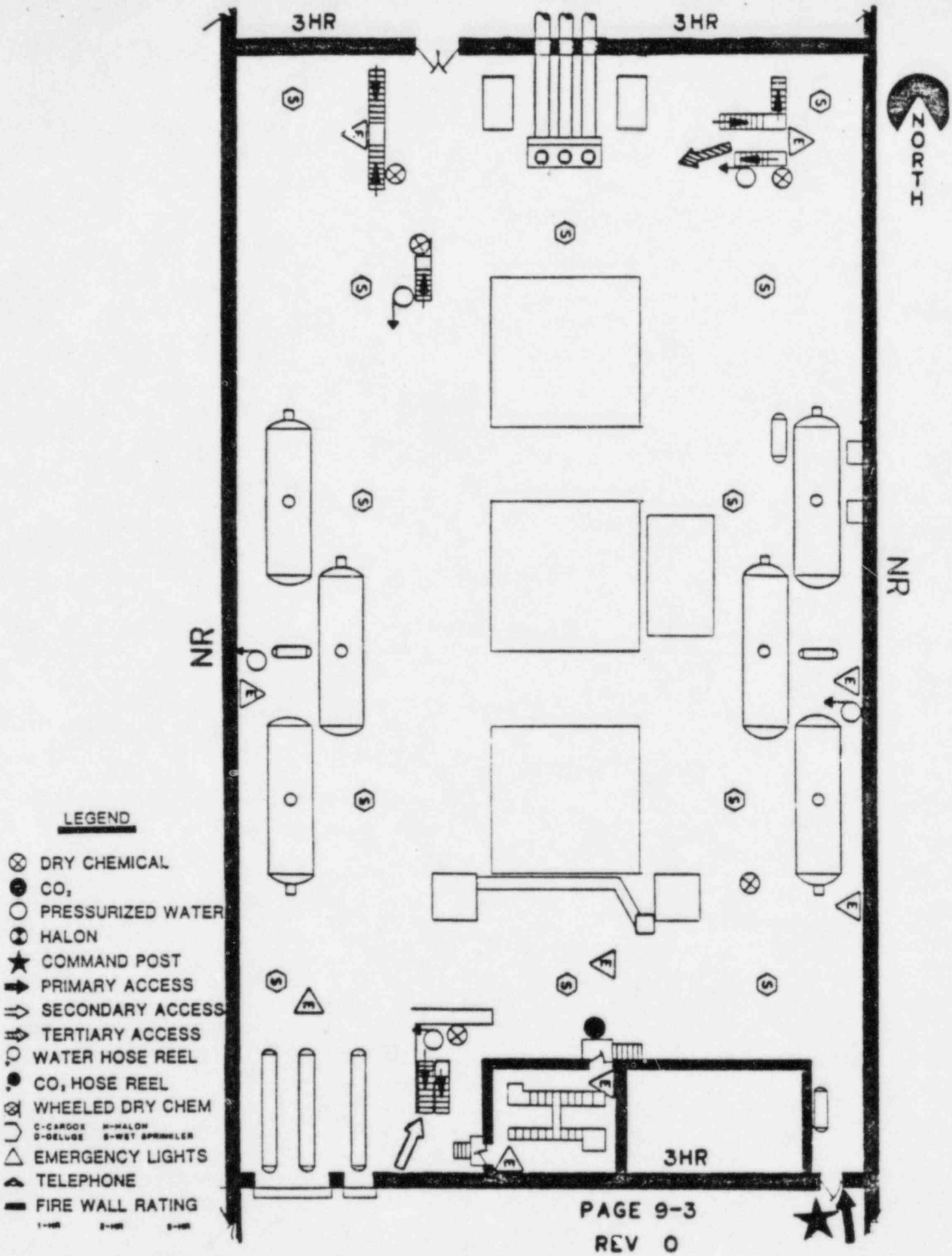


2. Portable Radios. (Ops. Freq.)

LIGHTING: 1. Normal plant lighting panels located at
PL 11-4 El. 119' col D-2
PL 12-3 El. 119' col F-16.
2. Emergency lighting.

SPECIAL PRECAUTIONS: Self contained breathing apparatus will be required. Portable hand lanterns should be carried by members of the fire brigade.

Seismic bracing makes access very difficult. Lube oil fires may also involve lower elevations, exercise extreme caution while working on open gratings.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SECONDARY ACCESS
TERTIARY ACCESS
WATER HOSE REEL
CO2 HOSE REEL
WHEELED DRY CHEM
C-CARBOX H-HALON
D-DELUGE S-WET SPRINKLER
EMERGENCY LIGHTS
TELEPHONE
FIRE WALL RATING

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1
TURBINE BLDG. WAREHOUSE
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
Packing Materials.
Thinners.
Trifluoroethane - Glass bottles.
Linseed Oil.
Ethyl Alcohol.
Urethane Spray Cans.
Paint Spray Cans.

MOST PROBABLE FIRE:
1. Packing Materials.
2. Flammable Liquids.

ACCESS AND EGRESS ROUTES:
1. Primary - West entrance via warehouse office or sliding fire door No. 381
2. Secondary - East entrance via door No. 319 El. 119' elevator lobby.

FIRE BRIGADE STAGING AREA:
1. Primary - El. 119' outside 480V MCC 15 Room.
2. Secondary - At elevator lobby east of warehouse.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Dense smoke from combustibles and toxic solvents.

MANAGEMENT OF PLANT SYSTEMS: The area is protected by automatic wet piped sprinklers. Shut off valve is located on EL. 85' - Above and behind Nash vacuum pump (valve No.FP-1-50).

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Level "A" storage is heat and humidity sensitive.
2. Flammable liquids - protect exposures with water spray

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - (4) 20# Dry Chemical
   - 1- at door #319
   - 1- shelving behind counter
   - 1- elevator hallway
   - 1- crane bay hallway
   - (1) 15# CO_2 Level "A" Storage
2. CO_2 Hose Reel Outside 480V MCC 15
3. Fire Hose Reel - Crane bay hallway
4. Automatic Sprinkler System

VENTILATION:

1. Normal Plant Ventilation - Supply fan S-74.
2. Portable smoke exhausters to exhaust smoke through sliding door at counter to crane bay.

COMMUNICATIONS:

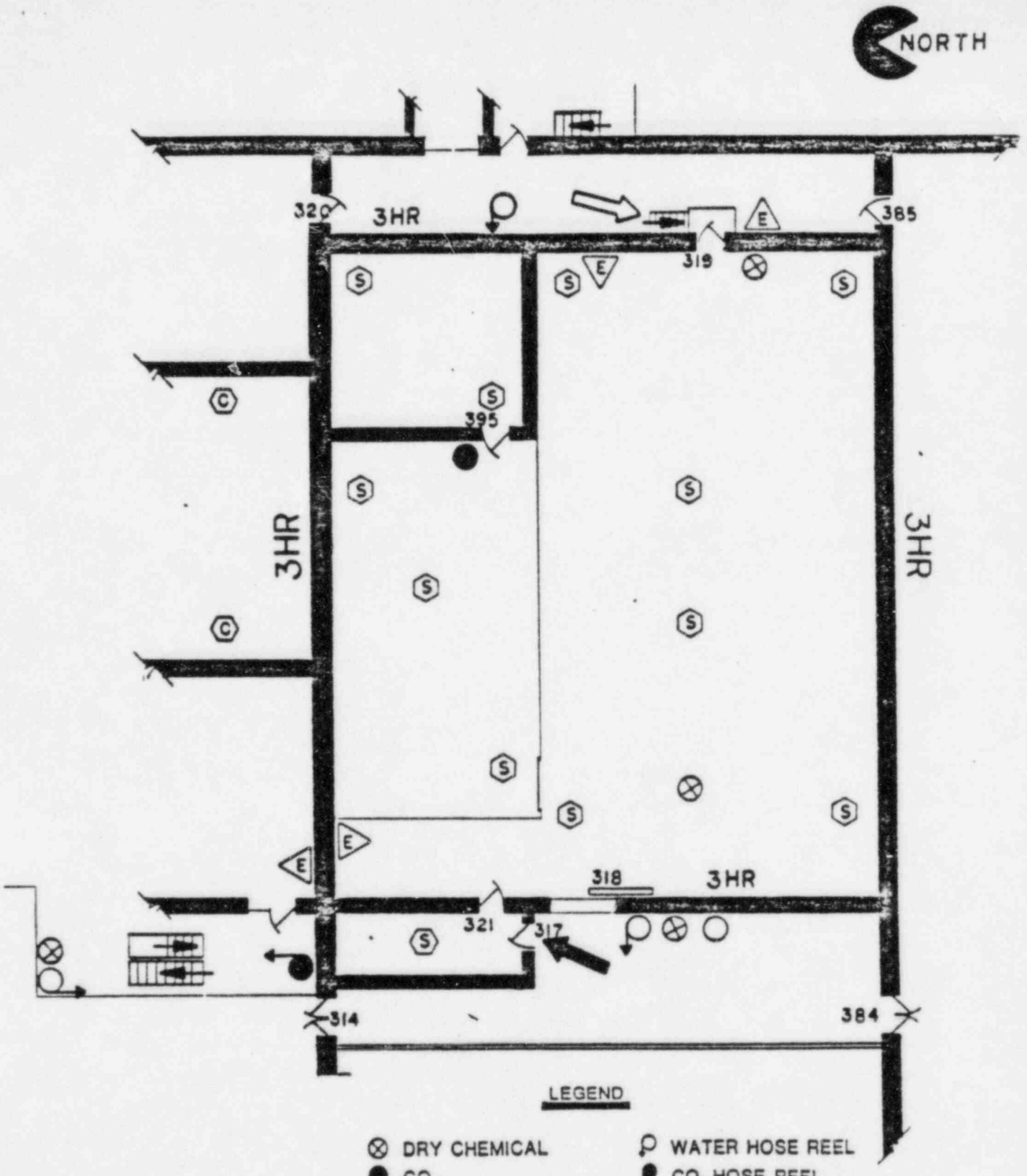
1. Plant Telephone No. [redacted]
2. Portable Radios (Ops. Freq.)

LIGHTING:

1. Normal Plant Lighting Power Supply Panel, PC 12-3
2. Emergency lights.

SPECIAL PRECAUTIONS:

1. Breathing apparatus must be worn due to confined area (large quantities of smoke probable also toxic fumes from quantities of flammable liquids).
2. Protect pressurized spray paint containers located on shelving adjacent to door No. 319 and flammable liquids with water spray to preclude possible explosion.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PRESSURIZED WATER
HALON
COMMAND POST
PRIMARY ACCESS
SECONDARY ACCESS
TERTIARY ACCESS
WATER HOSE REEL
CO, HOSE REEL
WHEELED DRY CHEM
C-CARDOX H-HALON D-DELUGE S-WET SPRINKLER
EMERGENCY LIGHTS
TELEPHONE
FIRE WALL RATING
1-HR 2-HR 3-HR

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1
TURBINE BLDG EL. 140'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES: Lube Oil.
Hydrogen.
Class "A" Combustibles in Office Areas.
Solvents Repair Shops.
Transient Combustibles.

MOST PROBABLE FIRE:
1. Class "A" Combustibles.
2. Hydrogen Leak.
3. Lube Oil Leak.

ACCESS AND EGRESS ROUTES:
1. Primary - Elevator No.1.
2. Secondary - N.E. Stairway.
3. Tertiary - S.W. Stairway.

FIRE BRIGADE STAGING AREA:
1. Primary - Outside Elevator No. 1.
2. Secondary - Outside Instrument Repair Shop.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS: CO_2 Discharge at #10 bearing.

MANAGEMENT OF PLANT SYSTEMS:
1. Cardox control valve #1-FCV-216 located between vent fans S-62 and S-63 east wall.
2. Deluge control valves located at turbine pedestals (FCV-204, 205, 206, & 207).
3. Sprinkler control valve, Shift Clerks Office located, outside Control Room by Elevator No. 1 (FP-1-145).
4. Instrument Shop sprinkler control valve, located by Booster Pumps El. 85'.
5. Hydrogen shut off valve located at 85' El. near seal oil Unit No. 1-1 #GGS-1-5.
6. Main hydrogen shut off valve south end of west buttress El. 85' #GGS-1-81.
7. Hydrogen is vented to the roof vent valve shut off at seal oil Unit 1-1 El. 85'.
8. Cardox tie in to No-10 bearing located at El. 104' Cardox Tank #0-FCV-215.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT: Water spray from hose reels may be used to cool housing of Turbine Hoods, the Turbine and Generator Exciter Unit. Care must be exercised as water may cause steam leaks when applied to hot metal. Water spray should be used to protect exposures from a hydrogen leak.

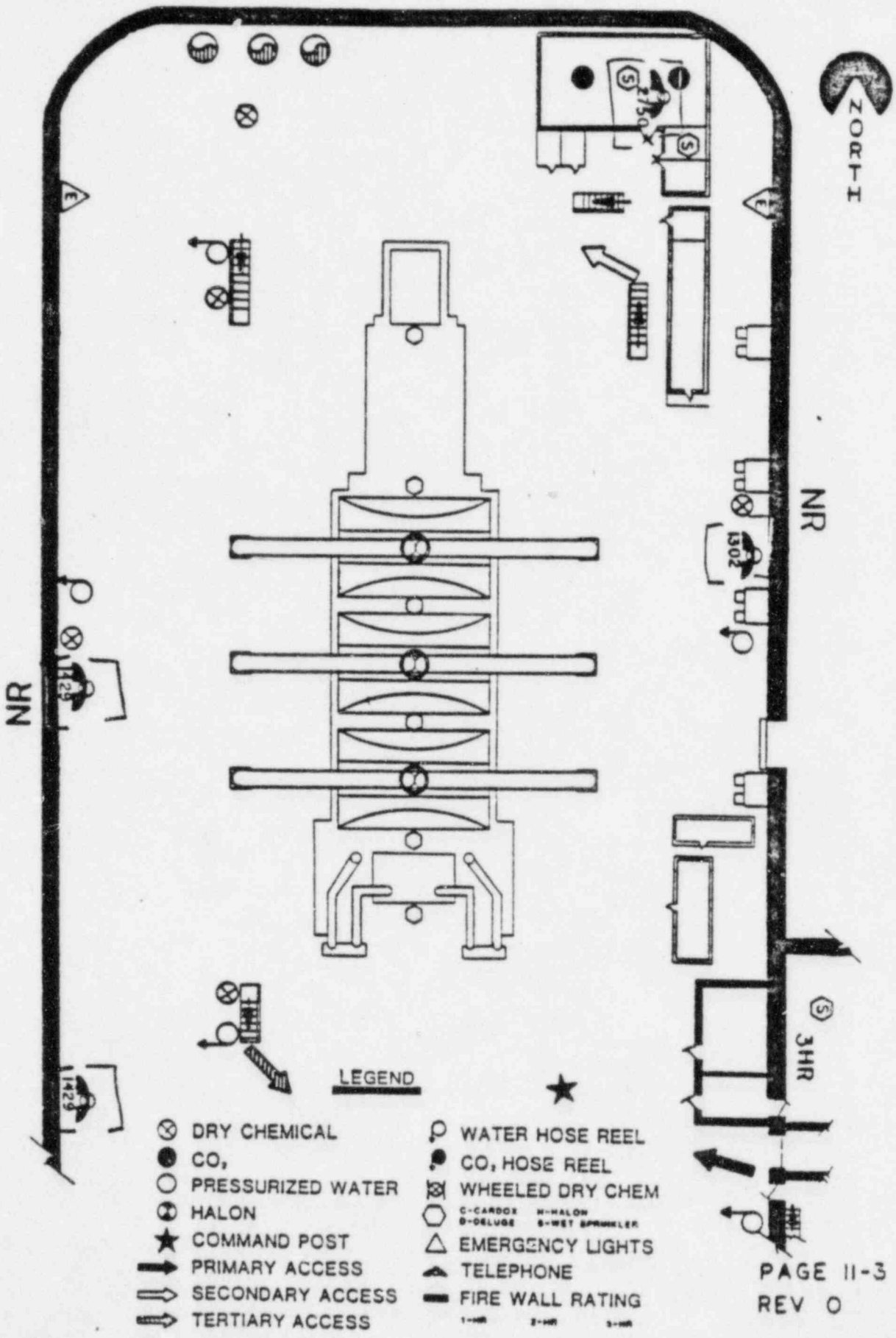
FIRE SUPPRESSION EQUIPMENT:
1. Fire Extinguishers (6) 20# Dry Chemical.
   (2) 15# CO_2's.
   (1) Pressurized Water.
   (6) Fire Hose Reels.
2. Deluge Spray System.
3. CO_2 Flooding System to #10 Bearing.
4. Wet Sprinkler System - Offices and Instrument Repair Shop.

VENTILATION:
1. Supply Fans - S-61, S-62, S-63, S-64 & S-65.
2. Smoke from any fire would probably vent through the roof via the open vents.

COMMUNICATIONS:
1. Plant Communications System Telephone No's.
2. Portable Radios - Ops. Frequency.

LIGHTING:
1. Normal plant lighting from:
   Panel P1. 12-4 El. 140' Col. G-14
   Panel P1. 12-5 El. 140' Col. A-14
   Panel P1. 11-5 El. 140' Col. D-1
2. Emergency lighting.

SPECIAL PRECAUTIONS:
1. In the event of a hydrogen leak, do not attempt to extinguish the fire until such time as the hydrogen supply has been shut off at valve located by Seal Oil Unit 1-1 El. 85'.
2. Self contained breathing apparatus is required to fight a fire in the office and shop areas and may be necessary on the Turbine Deck.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WATER HOSE REEL
CO2 HOSE REEL
WHEELED DRY CHEM
EMERGENCY LIGHTS
TELEPHONE
FIRE WALL RATING

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1
CONDENSATE POLISHING AREA
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable Insulation.
2. Electrical Control Panels.
3. Anhydrous Dimethylaime (DMA).
4. Hydrogen Storage (S. End).
5. Fuel Oil.
6. Dry Resin Storage.

MOST PROBABLE FIRE:
1. Cable Insulation.
2. Electrical Control Panels.
3. Overheated Pump Bearings.
4. Anhydrous Dimethylaime (D.M.A.).
5. Hydrogen Leak.
6. Fuel Oil Spill During Loading.
7. Transient Combustibles.

ACCESS AND EGRESS ROUTES:
1. Primary - Via Door at South End El. 85'.
2. Secondary - Via Door North End El. 85' (for EL. 104' Via stairways N&S).
3. Tertiary - Via center roll up door.

FIRE BRIGADE STAGING AREA:
1. Primary - North end EL. 85'.
2. Secondary - South end EL. 85'.
NOTE: Staging area selected should be upwind of smoke plume.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS: 1. Anhydrous Dimethylaime (DMA)
Health Hazards: Eye, skin and respiratory irritant, direct or prolonged contact can cause burns and serious injury.

2. Sulfuric Acid (H_2SO_4)
Health Hazard: Causes severe, deep burns to tissue; very corrosive effect. Avoid any contact.

3. Caustic (Sodium Hydroxide)(NaOH)
Health Hazard: Toxic. A severe eye hazard; solid or concentrated solution destroys tissue on contact. Deep tissue burns.

MANAGEMENT OF PLANT SYSTEMS:
1. D.M.A. shutoff valves are located in the cylinder cabinet. A vent is provided from the cabinet to the roof above 104' elevation.
2. Fuel oil transfer pump shut offs are located at the 480V. MCC - No. 1-7 cubicle (manually) or automatically from the control room.
3. The acid and caustic controls are located at the individual tanks.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT: Fire Hose reels located on west side of building may be required in the event a fire cannot be extinguished using portable extinguishers. Exposure protection is necessary for the H2 storage until source of gas is secured.

FIRE SUPPRESSION EQUIPMENT: 1. Fire Extinguishers - (3) 15# CO2's 85' El.
(3) 15# CO2's 104' El.
(1) Halon Ext. Control Cubicle.
(1) 20# Dry Cnem @H2 Storage.

2. Fire Hose Reels (2) West Side North & South ends Next to office complex.
(1) Col. B-14 Turbine Bldg. 85' El via roll up door #123.

3. Fire Hose Trailer

4. Fire Hydrants (1) South end @ office complex.
(1) N.W. corner at fence.

NOTE: multi purpose dry chemical or foam should be used on fuel oil spills or fires.

VENTILATION: 1. Exhaust Fans: E-82 El 104' N. end.
E-74 El 104' control cubicle.
E-47 El 104' above acid and caustic tks.
E-68 El 85' between acid & caustic tks.

2. Portable smoke exhausters will be required. Smoke can be exhausted via doors @ N & S end and rolling doors west side all on EL. 85' and via double doors EL. 104' opposite resin hopper.

COMMUNICATIONS: 1. Plant Communication Telephones -

2. Portable Radios (ops. freq.)

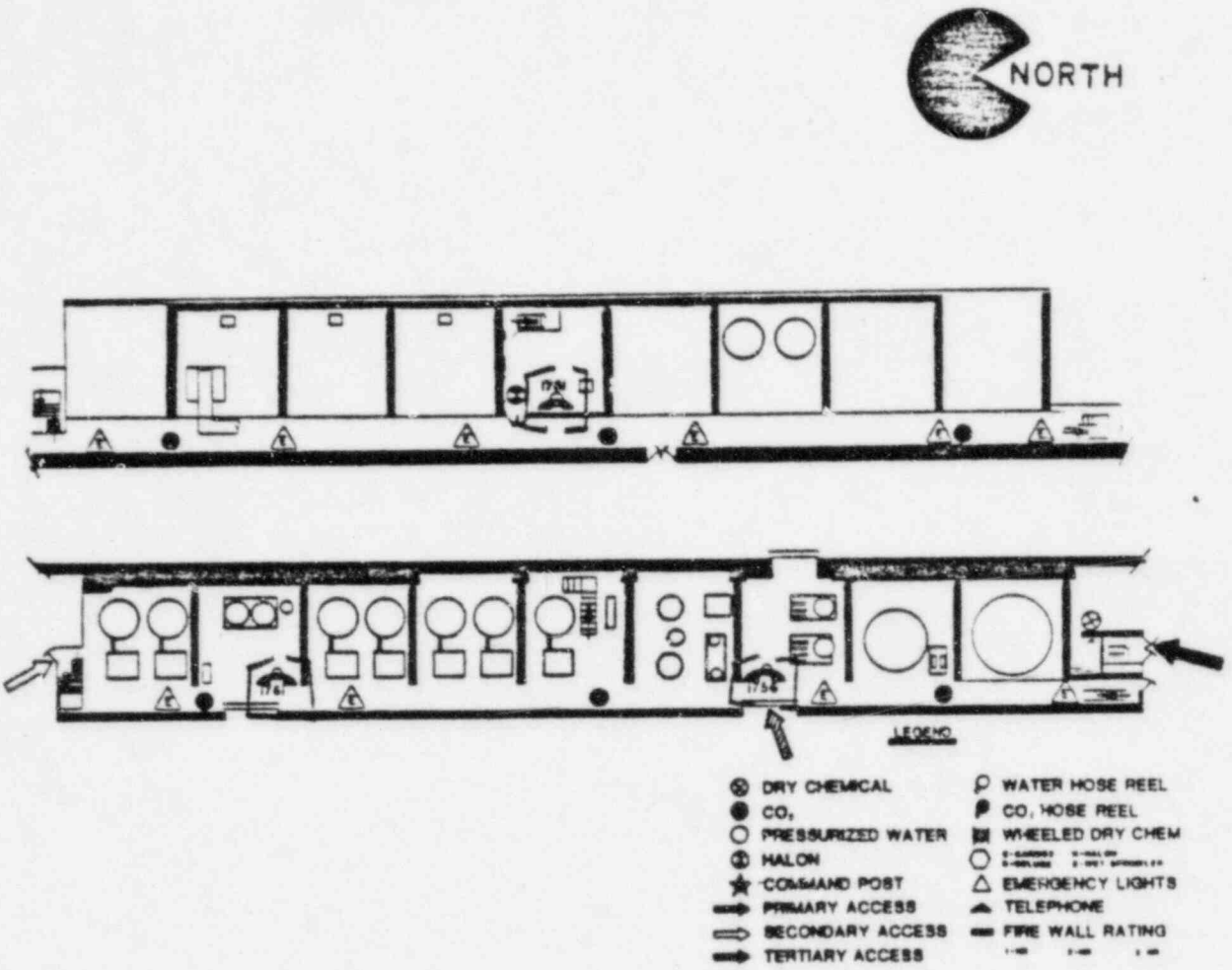
LIGHTING: 1. Normal Plant Lighting - Panel PL 19-1 located on west wall in No 1-7 resin tank bay

2. Emergency lights.

SPECIAL PRECAUTIONS: 1. Self Contained Breathing Apparatus and Personal Protective Equipment will be required due to large quantities of sulfuric acid & caustic.

2. H2 Explosive Hazard

3. Provide additional dry chemical extinguishers when unloading fuel oil.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WATER HOSE REEL
CO, HOSE REEL
WHEELED DRY CHEM
EMERGENCY LIGHTS
TELEPHONE
FIRE WALL RATING

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1
PACKAGE BOILER AREA
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Diesel Fuel to Boiler.
2. Start-up Propane to Boiler.

MOST PROBABLE FIRE:
1. Burner Oil Leak.
2. Propane Leak.
3. Overheated Pumps.

ACCESS AND EGRESS ROUTES: Primary - North Door No. 191 El. 85'.
Secondary - Door No. 194 Fuel Handling. Bldg. Fan Room (Access only)

NOTE: Egress from door 190 is restricted since door No. 199 is a locked security door.

FIRE BRIGADE STAGING AREA: Primary - North end EL. 85' yard area

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS: Toxic fumes or skin contact from 35% Hydrazine.

MANAGEMENT OF PLANT SYSTEMS:
1. Diesel fuel shut off located at top of stairway in area covered by asphalt, control valve in same location.
2. Propane shut off in small penetration above bottles.
3. Sprinkler system shut off located at EL. 85' Indicated by FP-1-20 on drawing.
4. Shut off fuel oil rather than de-energize. This allows 30 sec. purge.
5. Floor drains. Drain to Aux. Bldg. sump.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT: Use water fog to cool exposures.

FIRE SUPPRESSION EQUIPMENT:
1. Fire Extinguisher - 20# Dry Chem. in room.
2. Sprinkler System.
3. Fire Hose Reel Outside North end.
4. Fire Hydrant N. end El. 85'.
5. Foam.

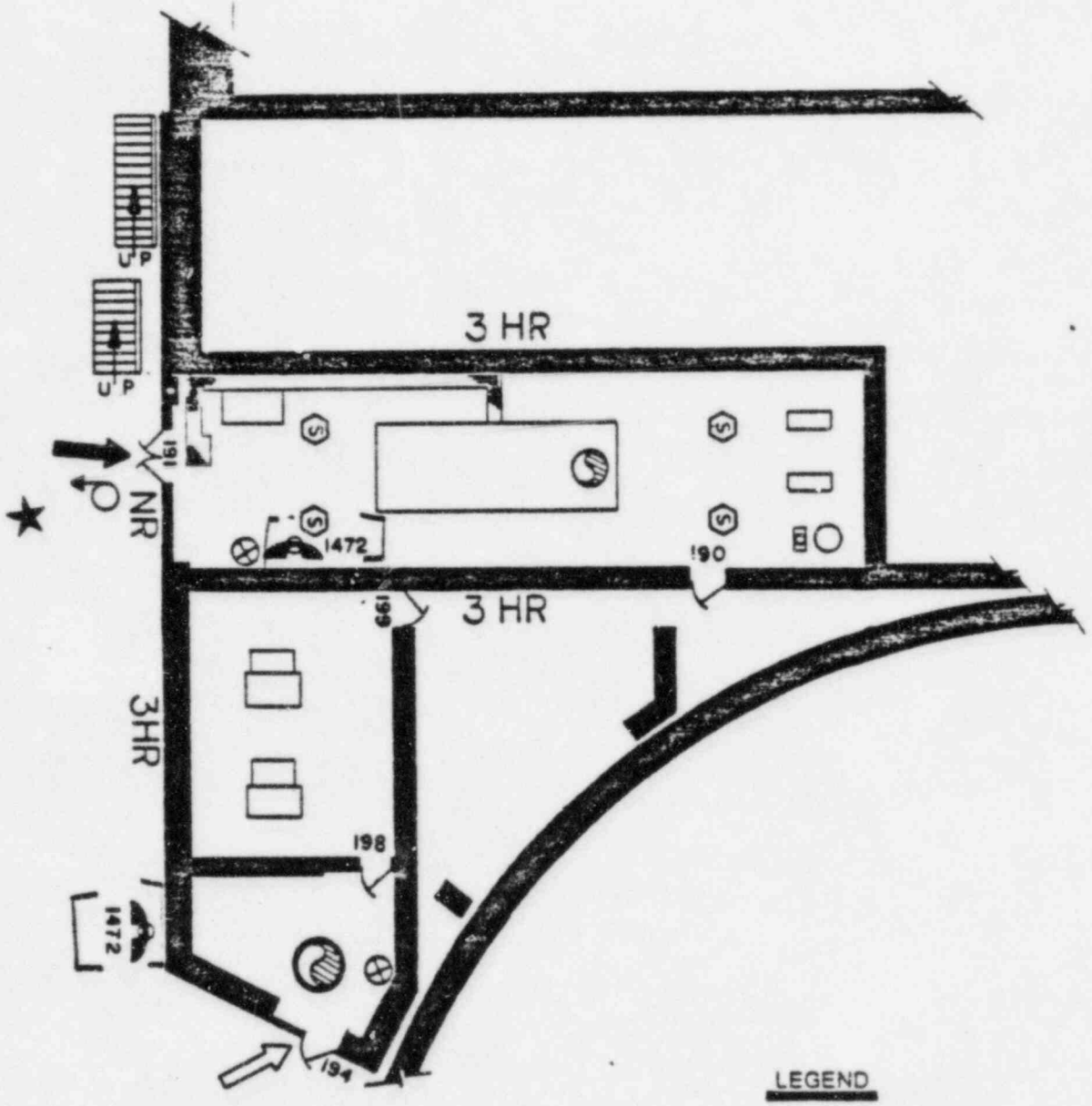
NOTE: Additional fire hose will be required to reach south end of room.

VENTILATION:
1. Fuel Handling Bldg. Ventilation.
2. Portable Smoke Exhausters.
3. Fire Hose Stream Ventilation capability via door No. 191

COMMUNICATIONS:
1. Plant Telephone System No. [redacted]
2. Portable Radios (Ops. Freq.)

LIGHTING: Normal Plant Lighting Control Panel PL 15-1.
Emergency Lighting

SPECIAL PRECAUTIONS:
1. Contact with 35% Hydrazine very irritating to eyes and skin. Personal protective equipment should be worn. Use SCBA to prevent inhalation of hydrazine vapors.
2. Secure source of propane prior to extinguishment to avoid explosion.



LEGEND

- DRY CHEMICAL
- CO_2
- PRESSURIZED WATER
- HALON
- COMMAND POST
- PRIMARY ACCESS
- SECONDARY ACCESS
- TERTIARY ACCESS
- WATER HOSE REEL
- CO_2 HOSE REEL
- WHEELED DRY CHEM
- C-CARBOX H-HALON D-DELUGE S-WET SPRINKLER
- EMERGENCY LIGHTS
- TELEPHONE
- FIRE WALL RATING 1-HR 2-HR 3-HR

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1
TRANSFORMERS AND R.O. AREA
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Transformer Oil
2. Cable Insulation.
3. Electrical Control Panel (R.O. Area).
4. Transient Combustibles (R.O. Area).
5. Temporary Structures.

MOST PROBABLE FIRE:
1. Transformer Oil.
2. Control Panel (R.O. Area).
3. Transient Combustibles (Temporary Structures)

ACCESS AND EGRESS ROUTES:
1. R.O. Area EL. 85' via Roll-up or personnel doors
2. R.O. Area EL. 104' via Stairway from EL. 85'.

FIRE BRIGADE STAGING AREA:
1. Primary - Transformers North end Turbine Bldg.
   R.O. Area Northeast of turbine bldg.
2. Secondary - Transformers east end turbine bldg.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Citric Acid.
2. Sodium Bisulfate (inorganic salt solution).
3. Hypochlorite (bleach).
4. Formaldehyde (HCHO).
   (See special precautions)

MANAGEMENT OF PLANT SYSTEMS:

1. All nine ~~(9)~~ transformers are protected by automatic deluge water spray systems, that can be manually operated locally or remotely from the Control Room.
2. The pavement around the transformers is sloped so that spilled transformer oil would drain away from the turbine bldg. Rock blotters with drains are provided around each transformer which prevents oil from reaching the turbine bldg. A sliding gate valve located opposite Fire Hose Station YL-5, North side of roadway controls discharge to Diablo Creek.
3. Burning oil discharging to Diablo Creek could ignite a wild land fire.
4. Deenergize involved transformer.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT

1. Fire hose streams may be required to provide exposure protection for transformers and the turbine bldg.
2. The interior of the turbine bldg. should be checked for heat damage in vicinity of exterior exposure fire.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - 2 - 15# CO_2's.
2. Fire Hose Stations - YL-6 - N.W. by fence
   YL-7 - N.E. by fence
   YL-8 - At transformer 2-1
   YL-9 - N.E. Corner
   YL-10 - East side
   YL-11 - N.W. Corner turbine bldg.
3. Fire Hose Trailer - N.W. Corner Turbine Bldg. Hose control device available for exposure protection.
4. Deluge Systems - FCV-209 Startup Transformer 2-1
   FCV-208 Startup Transformers - 1-2/1-1.
   FCV-210 Aux. Transformer - 1-1
   Unit 1 Main Transformer SP
   Unit 1 Main Transformer Ø-C
   FCV-211 Aux. Transformer 1-2
   Unit 1 Main Transformer ØA
   Locker ØB
5. Foam - (Fire Equipment Locker)

VENTILATION: 1. Open grating at ceiling level of the R.O. Area would allow smoke and gases to vent to the degasifier room above and be exhausted by S1-81 exhaust fan to the outside.

2. Smoke can also be exhausted to the outside by opening the three overhead rolling doors with hose streams or portable smoke exhausters.

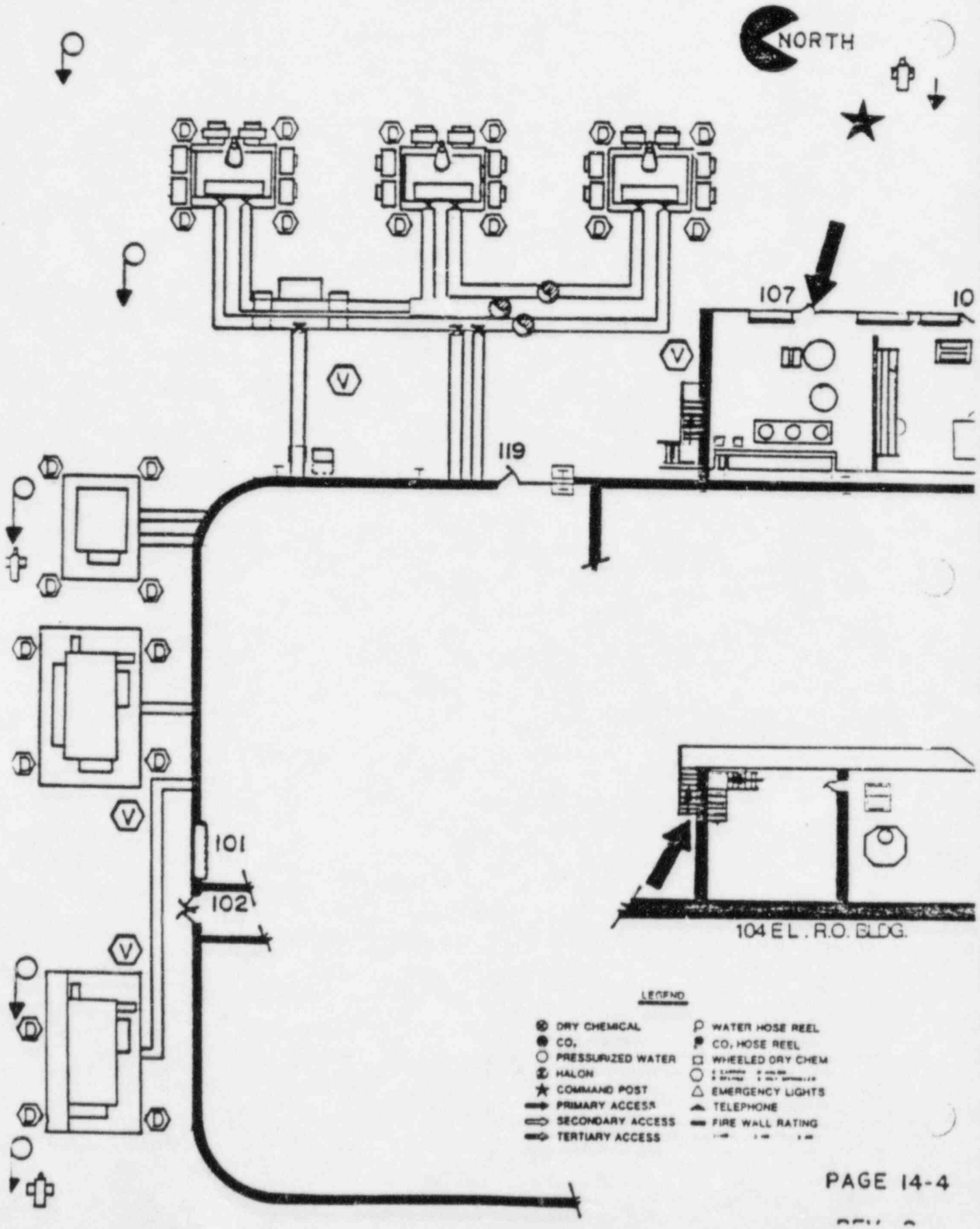
COMMUNICATIONS: 1. Plant Telephones -

2. Portable Radios (Ops. Freq.)

LIGHTING: 1. Plant Lighting Panels PJRO &PPRO in R.O. Area.
2. Yard lighting.
3. Emergency lighting.

SPECIAL PRECAUTIONS:

1. Fire hose streams in fog pattern only should be used when fighting a transformer fire due to extreme high voltage. If foam is used, it is more conductive, so application should be very cautious.
2. Self contained breathing apparatus may be required for a fire in the R.O. area.
3. Formaldehyde - vaporizes readily from solution and is flammable in air. Life Hazard, eyes, skin and respiratory irritant.
4. Sodium Bisulfate, when heated releases sulfur dioxide (SO_2).
5. Eye and skin protection should be worn in the R.O. area, Eye contact with sodium bisulfate requires immediate flushing for a minimum of fifteen (15) minutes followed by calling a physician.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LEGEND
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HALON
COMMAND POST
PRIMARY ACCESS
SECONDARY ACCESS
TERTIARY ACCESS
WATER HOSE REEL
CO, HOSE REEL
WHEELED DRY CHEM
EMERGENCY LIGHTS
TELEPHONE
FIRE WALL RATING

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1 & 2
480 VITAL SWGR AREA EL.100'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES: 1. Electrical Swgr Panels
2. Cable insulation

MOST PROBABLE FIRE: 1. Swgr panels
2. Cable insulation
3. Transient combustibles

ACCESS AND EGRESS ROUTES: 1. Primary - via door 222 by west stairway
2. Secondary -via door 231 by east stairway

FIRE BRIGADE STAGING AREA: 1. Primary - outside elev. No. 1 @ El. 104'
2. Secondary - Access control at bottom of stairway S-5 leading to door No. 231.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS: 1. CO2 discharge from hose reels
2. Cable insulation products of combustion.

MANAGEMENT OF PLANT SYSTEMS: 1. No floor drains are provided in this area. Water would have to be removed via the equipment hatches or stairways.
2. De-energize affected equipment from control room where possible.

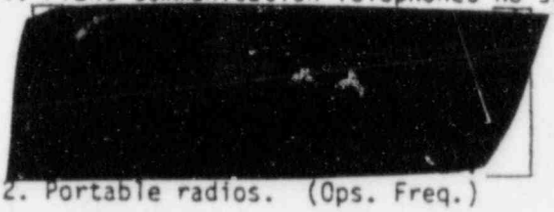
RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Protect exposures with water fog if required on a large fire (use sparingly)
2. Maintain fire barrier penetration seals to separate redundant safe shutdown trains.
3. Keep fire doors closed as necessary to retard spread of flames and smoke.

FIRE SUPPRESSION EQUIPMENT: 1. Fire Extinguishers - (5) 15# CO's.
2. CO2 Hose Reels - (1) At Bus 1-H Room
(1) At Bus 2-F Room
3. Fire Hose Reels - (1) Stairway by Door 231.
(1) Turb. Bldg., by Door 221.

VENTILATION: The ventilation to each Swgr bus room is equipped with automatic fire dampers in both the supply and exhaust ducts. These dampers are designed to keep the fire confined to one bus room. Ventilation is cut off to the room with the fire by these dampers. Maintain ventilation fans S-27 & E-27 in service to provide ventilation to the redundant buses. Portable smoke exhausters may be required, smoke can be exhausted via stairways to upper elevations.

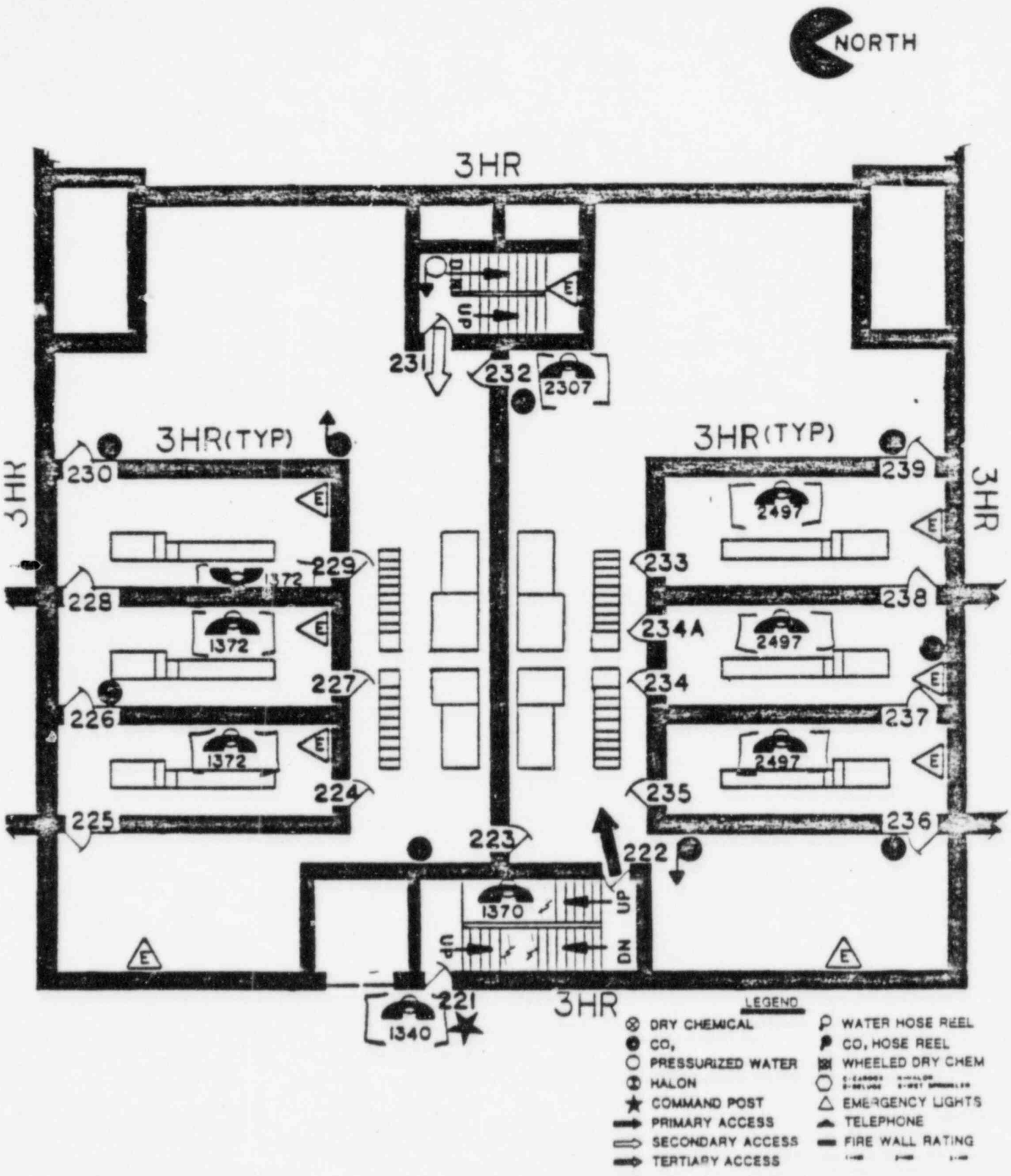
COMMUNICATIONS: 1. Plant Communication Telephones No's.



2. Portable radios. (Ops. Freq.)

LIGHTING: 1. Normal plant lighting, panel PL 13-3 located @ el. 100' - Col L-18 Aux Bldg.
2. Emergency lighting.

SPECIAL PRECAUTIONS: 1. Selt Contained Breathing Apparatus will be required.
2. CO2 fire fighting agent of choice.
3. Water from hose reels in fog pattern only to reduce electric shock potential.
4. Minimize water use due to absence of floor drains.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E
LEGEND
DRY CHEMICAL
CO,
PRESSURIZED WATER
HALON
COMMAND POST
PRIMARY ACCESS
SECONDARY ACCESS
TERTIARY ACCESS
WATER HOSE REEL
CO, HOSE REEL
WHEELED DRY CHEM
EMERGENCY LIGHTS
TELEPHONE
FIRE WALL RATING

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1 & 2

VITAL BATTERY ROOMS EL. 115'

FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable Insulation
2. Electrical Cabinets
3. Hydrogen (Battery Rooms)
4. Battery casings.

MOST PROBABLE FIRE:
1. Electrical Cabinets and Inverters
2. Transient Combustibles.
3. Cable Insulation.

ACCESS AND EGRESS ROUTES:
1. Primary - Via Door 323 from West Stairway.
2. Secondary - Via Doors 342 & 343 from East Stariway.

FIRE BRIGADE STAGING AREA:
1. Primary - Outside elevator No. 1 Turbine Bldg. at EL. 104'.
2. Secondary - Access control via East Stairway.
3. Tertiary - Outside elevator No. 2 Aux. Bldg. at EL. 100'.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Batteries (Hydrogen-H_2/Sulfuric Acid-H_2SO_4)
2. No floor drains are provided in this area; Water used would have to be drained via equipment hatches or stairways.

MANAGEMENT OF PLANT SYSTEMS:
1. De-energize electrical equipment where feasible.
2. No floor drains are provided in this area water used would have to be drained via equipment hatches or stairways.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT

1. Water spray may be required to protect exposures use a fog pattern only. Maintain a minimum distance of six (6) feet from potentially energized electrical equipment.
2. Minimize water usage since floor drains are not provided.

FIRE SUPPRESSION EQUIPMENT:

1. Fire extinguishers - Nine (9) 15# CO_2's.
2. CO_2 Hose Reels - 2-East Side 1-West Side.
3. Fire Hose Reel - East Stairway at EL. 115'.

NOTE: An additional 100' of fire hose will be required to reach 1-2 & 2-1 Battery Rooms.

VENTILATION:

1. Battery Rooms Ventilation supplied by S-27 & E-27 Unit 1 Side and S-28 & E-28 for Unit 2 side.
2. Fans S-43 & S-44 Supply Inverter Rooms Unit 1 side. Fans S-45 & S-46 Supply Inverter Rooms Unit 2 side. The Inverter Rooms have natural draft exhaust to 140' El. Turbine Bldg. east side.
3. Portable smoke exhausters may be required smoke could be exhausted via Doors 323-234-344 & 345.

COMMUNICATIONS:

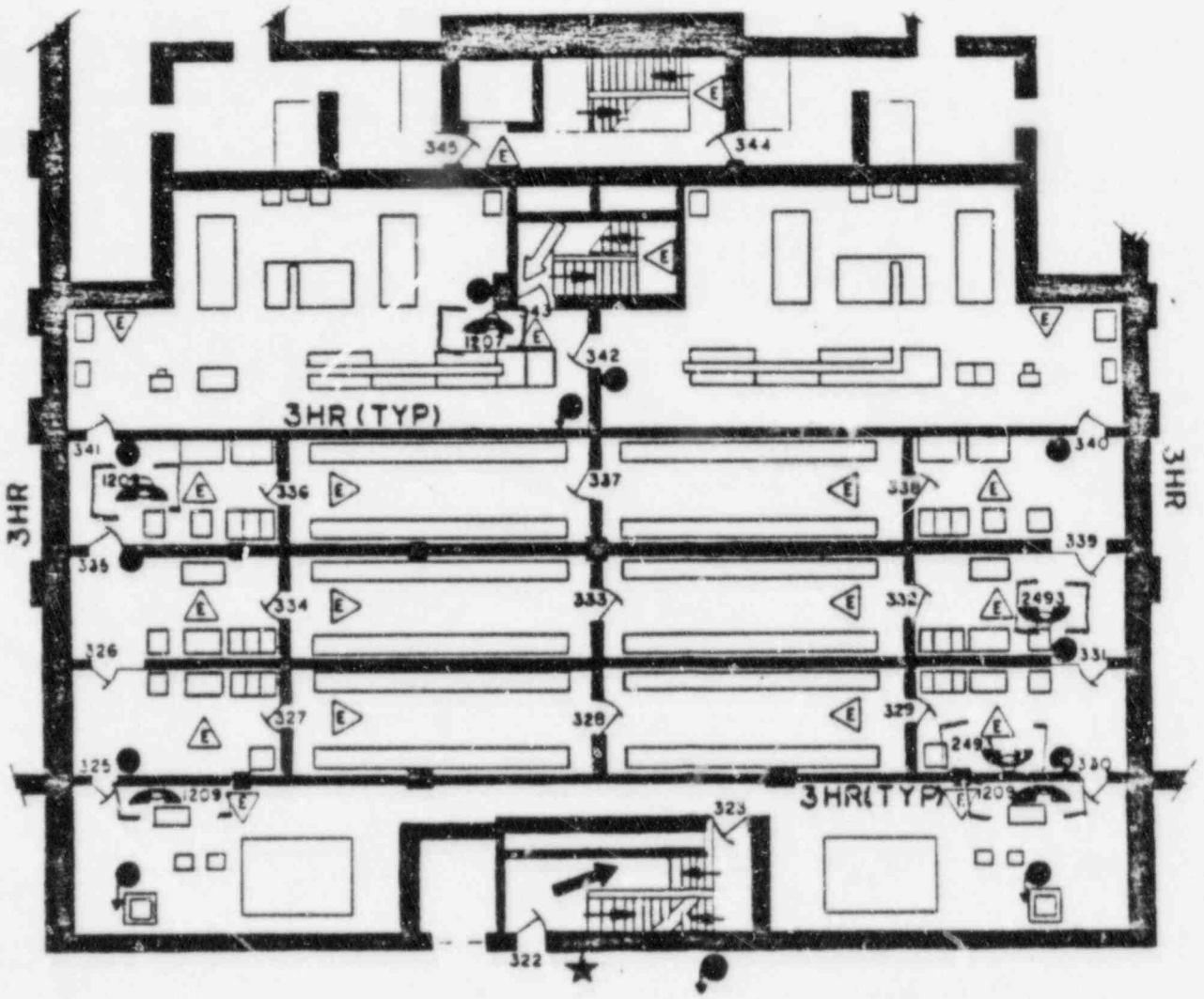
1. Plant Telephones -
2. Portable Radios (Ops. Freq.)

LIGHTING:

1. Plant Lighting Panel Pl. 13-3 Aux. Bldg. 100' El. Col. L-18.
2. Emergency lighting.

SPECIAL PRECAUTIONS:

1. Self contained breathing apparatus will be required.
2. Water to be used in fog pattern only due to high voltage electrical equipment.
3. Should the exhaust system fail, concentrations of hydrogen could exist presenting an explosive atmosphere.
4. Sulfuric acid is contained in the batteries and "Reacts Violently with water".
5. Full protective clothing to be worn as skin contact with sulfuric acid causes severe deep burns.



LEGEND

- DRY CHEMICAL
- CO_2
- PRESSURIZED WATER
- HALON
- COMMAND POST
- PRIMARY ACCESS
- SECONDARY ACCESS
- TERTIARY ACCESS
- WATER HOSE REEL
- CO_2 HOSE REEL
- WHEELED DRY CHEM
- C-CARDOX H-HALON D-DELUGE W-WET SPRINKLER
- EMERGENCY LIGHTS
- TELEPHONE
- FIRE WALL RATING 1-HR 2-HR 3-HR

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1 & 2
CABLE SPREADING ROOMS-EL. 127'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES: 1. Cable Insulation.
2. Communication Room Equipment.
3. Transient Combustibles.

MOST PROBABLE FIRE: 1. Transient Combustibles Exposing Cables.
2. Overheated Electrical Cables and Cabinets.

ACCESS AND EGRESS ROUTES: 1. Primary - West stairway El. 128' via door 401.
2. Secondary - East stairway El. 128' via door 405.

FIRE BRIGADE STAGING AREA: 1. Primary - turbine deck El. 140' outside west stairway.
2. Secondary - Access Control El. 85' outside east stairway.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS: 1. Cable insulation products of combustion.
2. CO_2 discharge

MANAGEMENT OF PLANT SYSTEMS: CO_2 can be activated automatically by thermal detectors, manually from the control room or, locally outside door No. 401. Master control located at cardox tank El. 104'. There are no floor drains provided in these rooms. De-energize electrical equip. if possible.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT

1. Use CO_2 where possible for extinguishment.
2. Use water fog to protect exposures if necessary.
3. Maintain fire barrier penetration seals and fire doors shut between Units 1 & 2 to the extent possible.

FIRE SUPPRESSION EQUIPMENT: 1. Fire extinguishers (5) 15# CO_2's.
2. CO_2 flood system both rooms, local actuator top of west stairway @ El. 128'.
3. Fire hose reel at east stairway El 128'.

NOTE: A second manual discharge of CO_2 should be considered if reflash occurs or to assure sufficient concentration.

VENTILATION: A 1½ hr ventilation exhaust duct fire damper separates the cable spreading room from a concrete encased exhaust plenum. Dampers close on CO_2 discharge making normal ventilation impossible. Portable smoke exhausters may be required. Smoke could be exhausted via door 401 to turbine deck or door 405 to Aux. Bldg. roof.

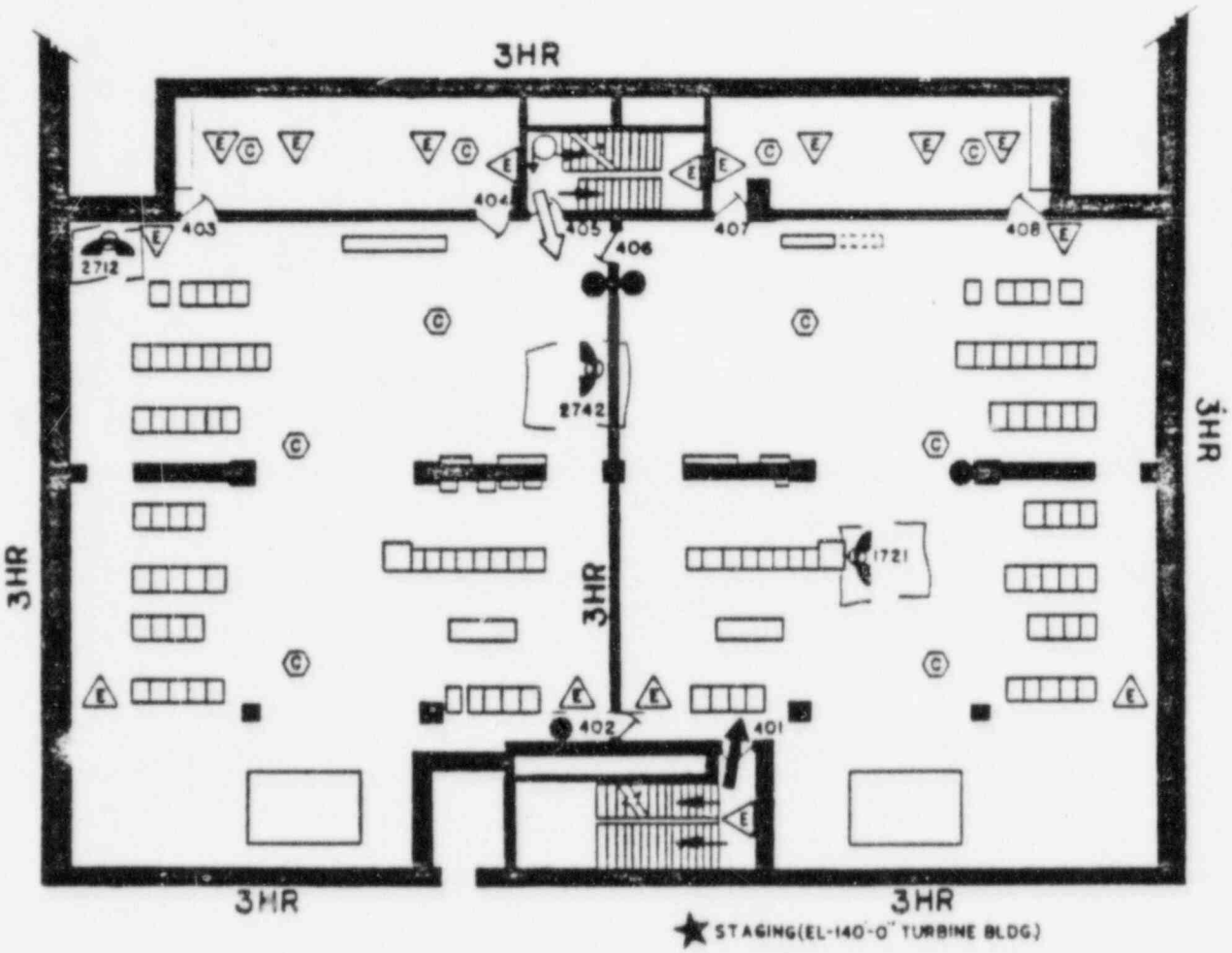
COMMUNICATIONS: 1. Plant Communications Telephones.
Unit No. 1 - Phone No's
Unit No. 2 - Phone No's

2. Portable Radios. (Ops. Freq.)

CAUTION: Do not use portable radios near the Hagan Racks.

LIGHTING: 1. Normal plant lighting from Panel PL 13-3 Aux Bldg. el 100' Col. L-18 Breaker No's 8-10 & 12
2. Emergency lighting.

SPECIAL PRECAUTIONS: Self Contained Breathing Apparatus will be required due to possibility of large quantities of smoke, toxic fumes and CO2 discharge. Sample atmosphere for O_2 prior to removing SCBA after CO_2 system discharge.



LEGEND

- DRY CHEMICAL
- CO_2
- PRESSURIZED WATER
- HALON
- COMMAND POST
- PRIMARY ACCESS
- SECONDARY ACCESS
- TERTIARY ACCESS
- WATER HOSE REEL
- CO_2 HOSE REEL
- WHEELED DRY CHEM
- C-CARBOX H-HALON D-DELUGE S-WET SPRINKLER
- EMERGENCY LIGHTS
- TELEPHONE
- FIRE WALL RATING 1-HR 2-HR 3-HR

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1 & 2
CONTROL ROOM
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Class "A" Combustibles. (Paper)
2. Control Panels.
3. Cable Insulation.
4. Lighting Diffusers.

MOST PROBABLE FIRE:
1. Class "A" Combustibles. (Paper)
2. Control Panels.
3. Cable Insulation.

ACCESS AND EGRESS ROUTES:
1. Primary - Via Elevator No. 1.
2. Secondary - Via Elevator No. 2.
3. Tertiary - Via Stairways 1 & 2.

FIRE BRIGADE STAGING AREA:
1. Primary - Outside Elev. No. 1, Turbine Bldg., EL. 140'.
2. Secondary - Outside Elev. No. 2, Aux. Bldg. Roof, EL 140'.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Cable insulation products of combustion.
2. Halon discharge inside SSPS rooms.

MANAGEMENT OF PLANT SYSTEMS:
1. Automatic Halon Fire Protection is provided by two (2) automatic systems; one for each SSPS room. A manual activation switch and a

MANAGEMENT OF PLANT SYSTEMS (Cont'd):

reserve tank switch are provided in each computer room. A Halon abort switch is provided for each system, as well.

2. The SFM Office, Shift Clerk's Office and C.A.S. are provided with wet piped sprinklers. The shut-off control valve is located next to Elev. No. 1, EL. 140' Turbine Deck.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT: 1. Fire Hose Streams in fog pattern only may be required in an extreme case.

FIRE SUPPRESSION EQUIPMENT: 1. Fire Extinguishers (5) 17# Halon.
(2) 15# CO_2s.

2. Fire Hose Reels (1) By Elev. No 1 Turbine Deck
(1) Roof Outside Elev. No. 2 SSPS Rooms 1 & 2

3. Halon Systems - SSPS Rooms Only.

4. Wet Sprinkler System - Office & Records Room and Central Alarm Station.

VENTILATION: 1. a. Main supply fan (S-35 or S-36 for Unit 1, and S-37 or S-38 for Unit No. 2).

b. Filter booster fan (S-39 or S-40 for Unit No. 1, and S-41 or S-42 for Unit No. 2).

c. Pressurization supply fan (S-96 and S-97 are located on Unit No. 2, while S-98 and S-99 are located on Unit No. 1).

2. Portable smoke exhausters may be required. Smoke can be exhausted through doors 503 & 501 to the outside. Also, through door No. 508 to the turbine deck.

COMMUNICATIONS: 1. Plant Communication Telephones -

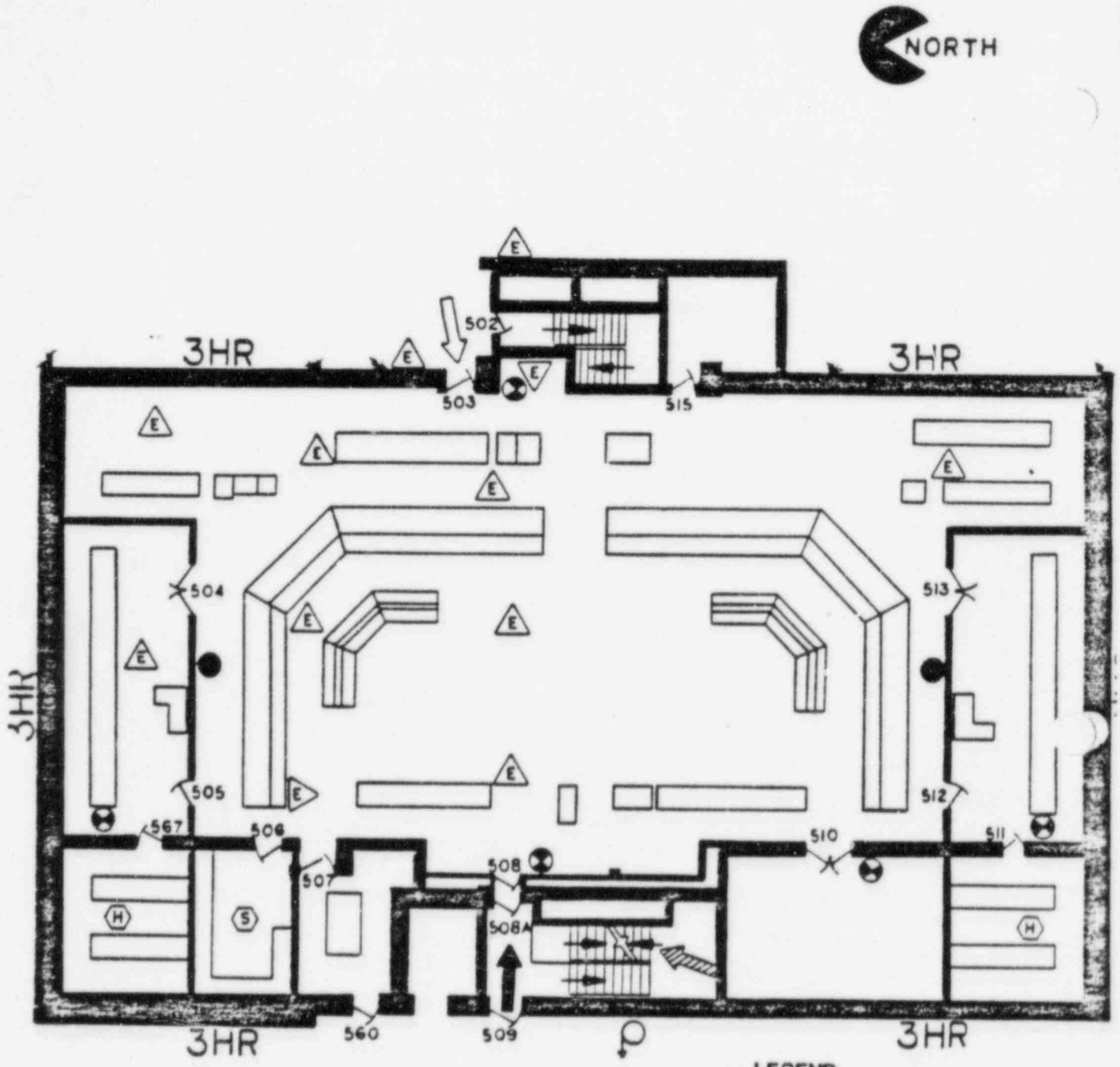
2. Radio Console

CAUTION: Portable radios should not be used in the Control Room due to interference with the NI's and seismic detection equipment.

LIGHTING: 1. Normal plant lighting - Panel Pl. 23-5 Unit No. 2.
Panel Lp. 13-5 Unit No. 1.

2. Emergency Lighting.

SPECIAL PRECAUTIONS: 1. Self contained breathing apparatus may be required.
2. Minimize any use of water on dry chemical agent.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LEGEND
DRY CHEMICAL
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PRESSURIZED WATER
HALON
COMMAND POST
PRIMARY ACCESS
SECONDARY ACCESS
TERTIARY ACCESS
WATER HOSE REEL
CO, HOSE REEL
WHEELED DRY CHEM
C-CARBOX H-HALON
D-DELUGE S-WET SPRINKLER
EMERGENCY LIGHTS
TELEPHONE
FIRE WALL RATING

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

12KV SWGR. AND CABLE SPREADING ROOM
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable Insulation
2. Breaker Components
3. Switchgear Components

MOST PROBABLE FIRE:
1. Fire In Breaker Cubicles & Swgr Control Panels
2. Electric Cable Fire In Cable Spreading Room below Switchgear room.

ACCESS AND EGRESS ROUTES:
1. Primary - From Turbine Bldg. via Door #117-2
2. Secondary - From D.G. Corridor via Door #118-2
3. Tertiary - Via Stairway from 104' Iso Phase Area

FIRE BRIGADE STAGING AREA:
1. Primary - Turbine No. 1 El. 85' south door #117-2
2. Secondary - Hallway by D.G. 2-1 outside door # 118-2

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Fumes from Burning or Overheated Electrical Cable Insulation
2. CO_2 from Hose Reel Discharge

MANAGEMENT OF PLANT SYSTEMS:
1. Floor Drain in cable spreading room is located along the east wall. Drains to Turbine Bldg. Sump.
2. Deenergize electrical equipment where feasible.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT: Water spray from hose streams may be necessary to protect exposures. Use in fog pattern only at a distance of at least 6 feet due to energized electrical equipment.

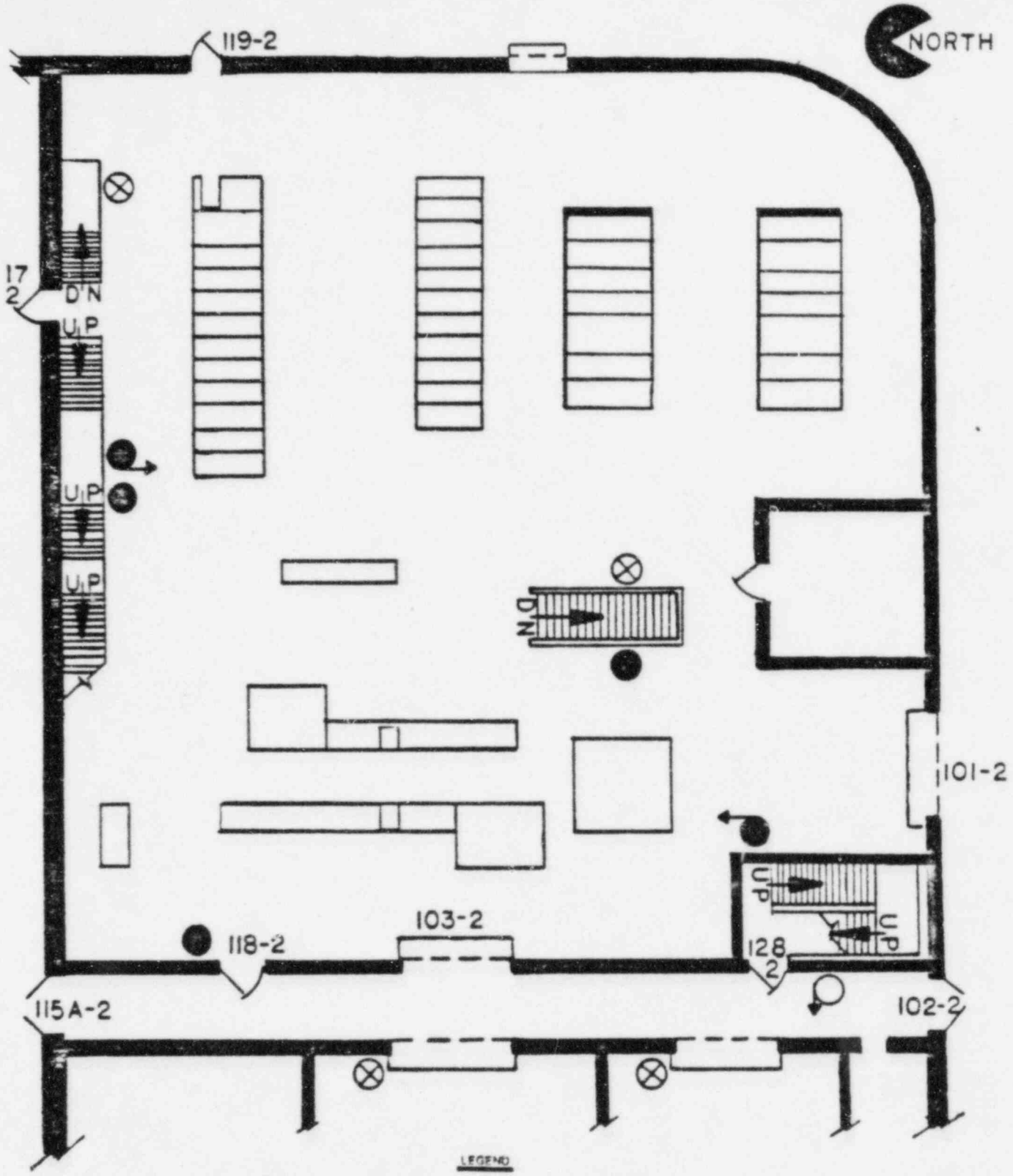
FIRE SUPPRESSION EQUIPMENT:
1. Fire Extinguishers - Two 20# Dry Chemicals in Cable Spreading Room.
   Three 15# CO_2's
2. CO_2 Hose Reels - Two
3. Water Hose Reel in D.G. Corridor.
4. Hydrants & hose reels outside roll up door 101-2

VENTILATION:
1. Normal Plant Ventilation
2. Portable Smoke Exhausters may be required. Smoke can be exhausted via roll up Door #101-2, South end.
3. Hose streams could exhaust smoke via doors 101-2 or 119-2 to the out of doors.

COMMUNICATIONS:
1. Plant Telephones - [redacted]
2. Portable Radios.

LIGHTING:
1. Plant Lighting Panel PL. 21-1
2. Emergency Lighting.

SPECIAL PRECAUTIONS:
1. Self Contained Breathing Apparatus must be worn.
2. Smoke Exhausters may be required particularly for a fire in the Cable Spreading Room Elevation 76'. Exhaust smoke via roll up doors 101-2 or 119-2.
3. CO_2 is the agent of choice.
4. Water to be used in fog pattern only due to high voltage electrical equipment.


NORTH
119-2
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103-2
118-2
128
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115A-2
102-2
LEGEND
DRY CHEMICAL
CO2
PRESSURIZED WATER
HALON
COMMAND POST
PRIMARY ACCESS
SECONDARY ACCESS
TERTIARY ACCESS
WATER HOSE REEL
CO2 HOSE REEL
WHEELED DRY CHEM
EMERGENCY LIGHTS
TELEPHONE
FIRE WALL RATING

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

DG's 2-1, 2-2 & DOCUMENT STORAGE FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Fuel oil
2. Lube oil
3. Cable insulation
4. Transient combustibles during maintenance
5. Class "A" Combustibles (Document Storage)

MOST PROBABLE FIRE:
1. Fuel Oil
2. Lube Oil
3. Transient Combustibles
4. Class "A" Combustibles

ACCESS AND EGRESS ROUTES:
1. Primary: North door 115A-2 Turb. Bldg. EL. 85'
2. Secondary: South door 102-2 Turb. Bldg. EL. 85'
3. Tertiary: Via 12KV Swgr door 118-2.
4. For Document Storage via doors 115-2 and 113-2.

FIRE BRIGADE STAGING AREA:
1. Primary - Via Door 115A-2 Turbine Bldg. El. 85'
2. Secondary - Via Door 102-2 South End Turb. Bldg. EL. 85' for Document Storage Outside Door 115-2
3. EL. 85' Turbine Bldg.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. CO_2 Discharge at DG's and Document Storage
2. Cable insulation products of combustion.

MANAGEMENT OF PLANT SYSTEMS:
1. A 2 3/4" curb is provided at each automatic door to prevent oil spread to adjacent areas. Both generators are protected by an automatic CO_2 system.
2. The CO_2 system may be actuated automatically, manually from the Control Room or from the Turb. Bldg. south end behind the condensate booster pumps.
3. The shut off for the automatic sprinkler system in hallway is located behind condensate booster pump 2-1 SW corner.
4. A manual activation of the CO_2 system for the Document Storage Area is located on the wall adjacent to Door #113-2

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT: Fire hose reels located in the hallway, turbine bldg. or the yard loop may be required to protect exposures.

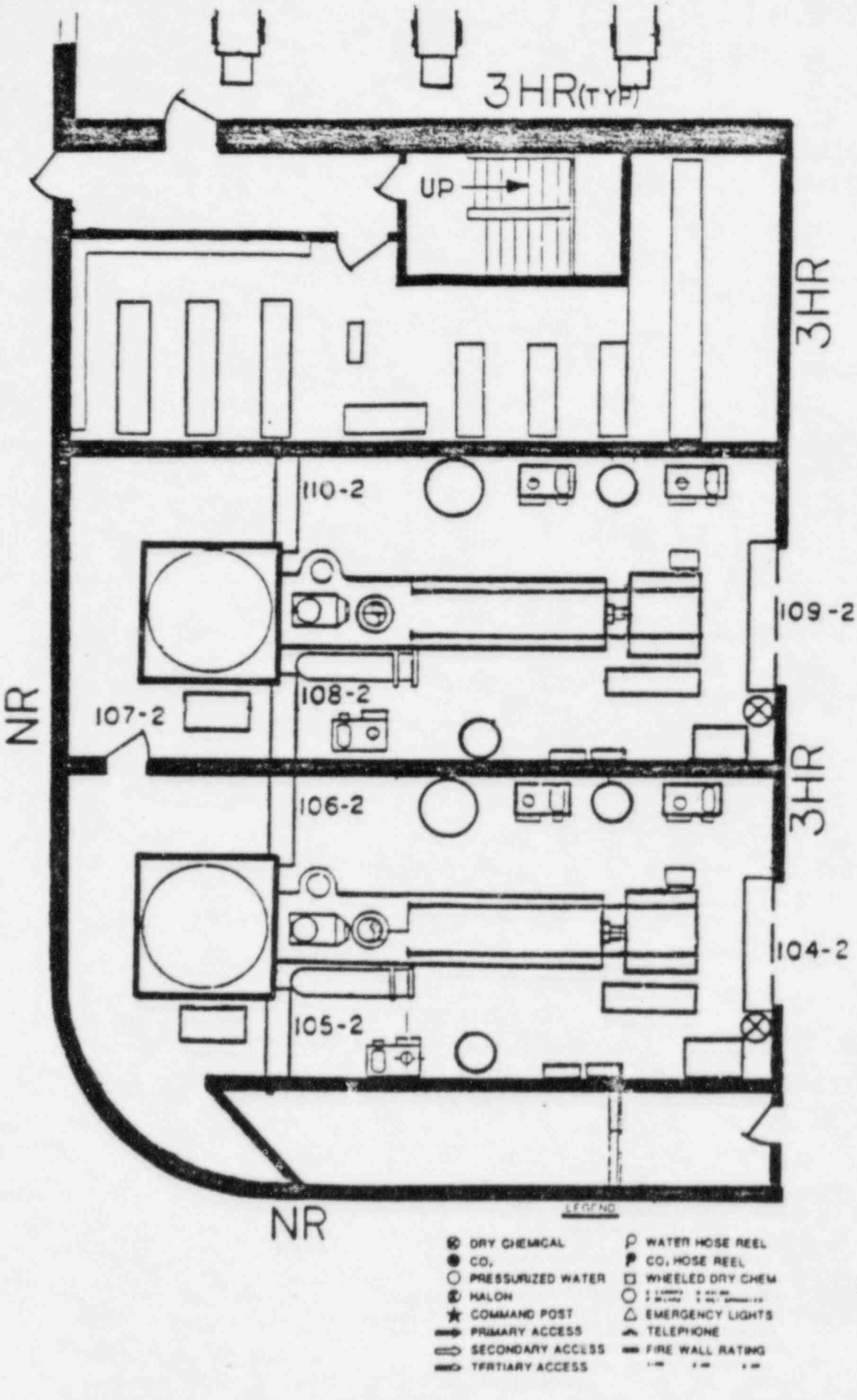
FIRE SUPPRESSION EQUIPMENT:
1. Fire Extinguishers (3) 20# Dry Chemicals
   (1) Pressurized Water
   (1) 150# Wheeled Unit
2. Automatic CO_2 system generator rooms and document stg. rooms.
3. Sprinkler system in hallway.
4. Foam (Fire Equipment locker)
   NOTE: A second manual discharge of CO_2 should be considered if a reflash occurs or to assure sufficient concentration.

VENTILATION:
1. Louvers are provided in the West wall.
2. Portable smoke exhausters may be required. Smoke can be exhausted via door 102-2 to the outside.
3. Hose stream ventilation is possible via Door 102-2. Portable smoke exhausters will be required for a fire in Document Storage and can exhaust via Door 115-2 to EL. 85' Turbine Bldg.

COMMUNICATIONS:
1. Plant Telephones [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING:
1. Plant Lighting Panel PL 21-1
2. Emergency lighting.

SPECIAL PRECAUTIONS:
1. Portable Smoke Exhausters may be required.
2. Self Contained Breathing Apparatus will be required due to smoke and CO_2 discharge.
3. Tests should be conducted to determine CO_2, O_2 & flamable vapors prior to removal of SCBA in D.G. Rooms.
4. To gain access to a particular E.D.G. Room will require a Fire Brigade member to re-engage the ratchet mechanism above the filter and elevate the door by chain.
5. Access to Document Storage is locked with keys controlled by the Shift Foreman and Document Control.


3 HR (TYP)
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3HR
110-2
109-2
NR
107-2
108-2
3HR
106-2
104-2
105-2
NR
LEGEND
DRY CHEMICAL
CO2
PRESSURIZED WATER
HALON
COMMAND POST
PRIMARY ACCESS
SECONDARY ACCESS
TERTIARY ACCESS
WATER HOSE REEL
CO2 HOSE REEL
WHEELED DRY CHEM
EMERGENCY LIGHTS
TELEPHONE
FIRE WALL RATING

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

TURBINE BLDG. EL. 85' and Below
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Lube Oil
2. Cable Insulation
3. Batteries
4. Solvent - Waste Solvent, Diesel Oil

MOST PROBABLE FIRE:
1. Lube Oil Leakage
2. Transient Combustibles
3. Oil Reclamation Room (Approx. 3000 gal. Flamable Liquids)
4. Cable Insulation

ACCESS AND EGRESS ROUTES:
1. Primary - Via Cold Machine Shop (Locked Security Barrier)
2. Secondary - Via Door 102-2 & 115-2 South End
3. Tertiary - Via Roll Up Door 125-2 West Side

FIRE BRIGADE STAGING AREA:
1. Primary - Cold Machine Shop
2. Secondary - Outside Roll Up Door 125-2 West Side
3. Tertiary - D.G. Hallway by Door #115A-2

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Hydrazine, Ammonia, Sulphuric Acid, Cable Insulation & Battery acid.
2. Calibration facility contains radioactive sources.

MANAGEMENT OF PLANT SYSTEMS: 1. The oil drum storage room is surrounded by 3 hour fire barriers, raised doorways and sealed pipeways thus preventing oil from a ruptured tank leaking to an outside area.

2. Water deluge protects the feedwater pumps 2-1 and 2-2 and the H_2 seal oil unit. Shut off valves are located at:
AT COL LINE 21/C North End for FWP 2-1
AT COL LINE by Hydrazine & Ammonia Tanks for FWP 2-2
At S.E. corner by Stator Cooling Unit for H_2 Seal Oil Unit Deluge.

3. Wet sprinkler systems protect the entire 85' El.
North System Shut Off Valve FP-2-59 is located at the N.W. side of the Freight elevator.
South System shut off valve FP-2-66 is located by Condensate Booster Pump 2-1.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire Hose Reels may be required to protect exposures.
2. Do not spray cold water directly on exposed steam piping.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers (6) 20# Dry Chemicals
   (1) 150# D.C. Wheeled Unit
2. Automatic Sprinklers. General floor Area, oil reclamation, paint storage & drum storage, and non vital battery rooms.
3. Deluge Systems. Feed pumps and H_2 seal oil.
4. Foam (Fire equipment locker)

VENTILATION:

1. Vent Fans 2S-53, 2S-52 & 2S-51 are located on the East wall and exhaust outlets are located on the West wall of the fire gone.
2. If extreme smoke conditions are encountered, smoke could be exhausted by hose steams through outside opening doorways.

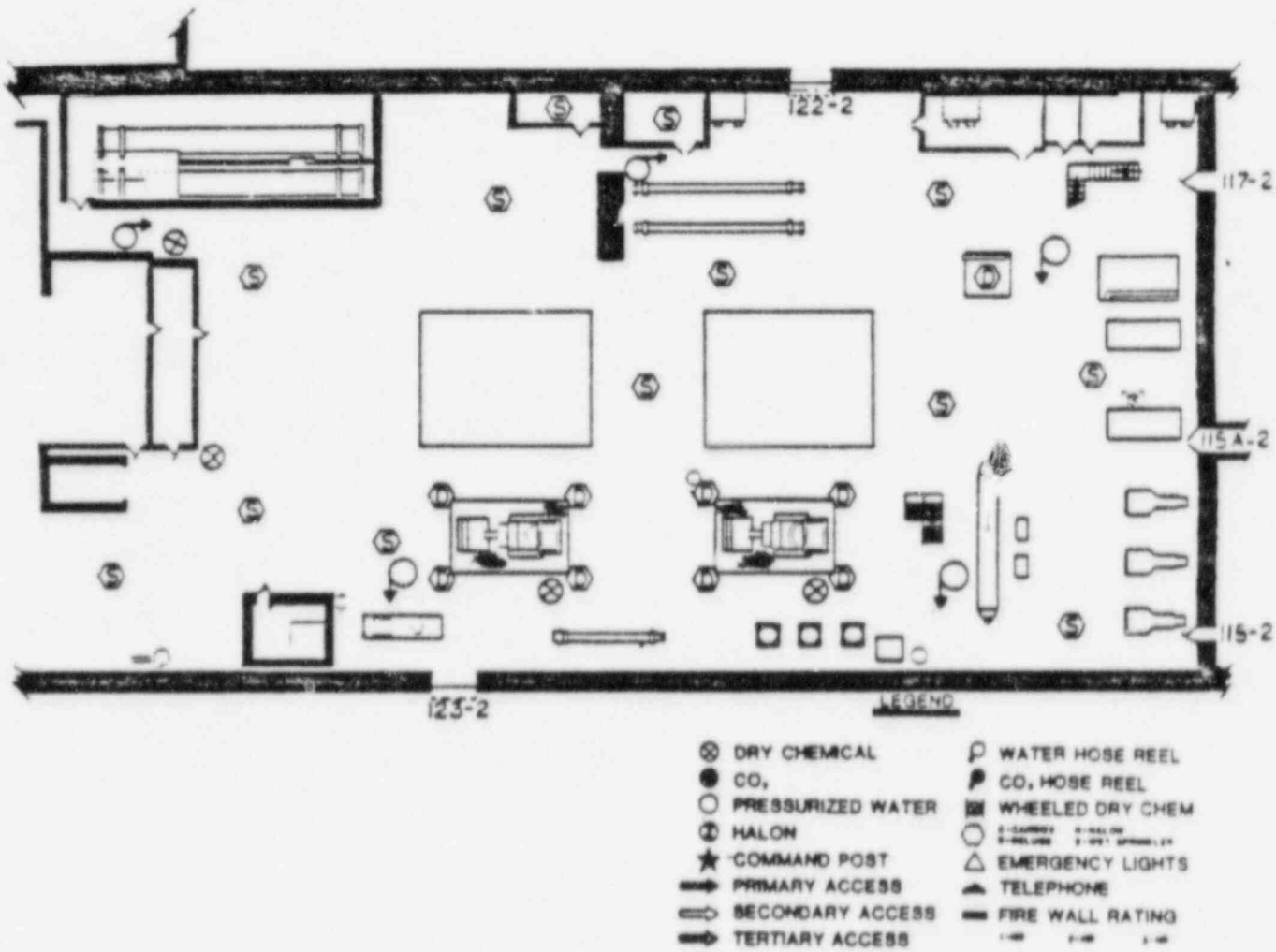
COMMUNICATIONS:

1. Plant telephones -
2. Portable radios (OPS FREQ)

LIGHTING:

1. Plant Lighting PL's PJ21-2, PJ22-1
2. Emergency Lighting.

SPECIAL PRECAUTIONS: Self contained breathing apparatus and other personal protective equipment will be required in the event of a fire. Portable hand lanterns may be required if smoke conditions dictate. Special protective clothing may be necessary to cleanup sulphuric acid, ammonia or hydrazine spills.


NORTH
122'-2
117'-2
115A'-2
115'-2
123'-2
LEGEND
DRY CHEMICAL
CO,
PRESSURIZED WATER
HALON
COMMAND POST
PRIMARY ACCESS
SECONDARY ACCESS
TERTIARY ACCESS
WATER HOSE REEL
CO, HOSE REEL
WHEELED DRY CHEM
EMERGENCY LIGHTS
TELEPHONE
FIRE WALL RATING

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

CONDENSATE POLISHING AREA
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable Insulation
2. Electrical Control Panels
3. Anhydrous dimethylaime (DMA)
4. Hydrogen Storage (N. End)
5. Dry Resin Storage

MOST PROBABLE FIRE:
1. Cable Insulation
2. Electrical Control Panels
3. Overheated Pump Bearings
4. Anhydrous Dimethylaime (DMA)
5. Hydrogen Leak
6. Transient Combustibles

ACCESS AND EGRESS ROUTES:
1. Primary - Via Door At N. End 85' El.
2. Secondary - Via Door At S. End 85' El.
3. Tertiary - Via Center Roll Up Doors.

FIRE BRIGADE STAGING AREA:
1. Primary - North End 85' El.
2. Secondary - South End 85' El.
   NOTE: Staging area selected should be up-wind of smoke plume.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Anhydrous Dimethylaime (DMA) - Health Hazards: Eye, Skin and Respiratory Irritant, Direct or Prolonged Contact Can Cause Burns and Serious Injury.
2. Sulfuric Acid (H_2SO_4) - Health Hazards: Causes Severe Deep Burns to Tissue; Very Corrosive Effect. Avoid Any Contact.
3. Caustic (Sodium Hydroxide) - Health Hazards: Toxic, A Severe Eye Hazard; Solid or Concentrated Solution Destroys Tissue on Contact. Deep Tissue Burns.

MANAGEMENT OF PLANT SYSTEMS:
1. DMA Shutoff Valves are Located in the Cylinder Cabinet. A Vent is Provided From the Cablinet to the Roof Above.
2. The Acid and Caustic Controls Are Located at the Individual Tanks.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:
Fire hose reels located on the west side of the building may be required in the event a fire cannot be extinguished using portable extinguishers. Exposure protection is necessary for the H_2 storage until source of gas is secured.

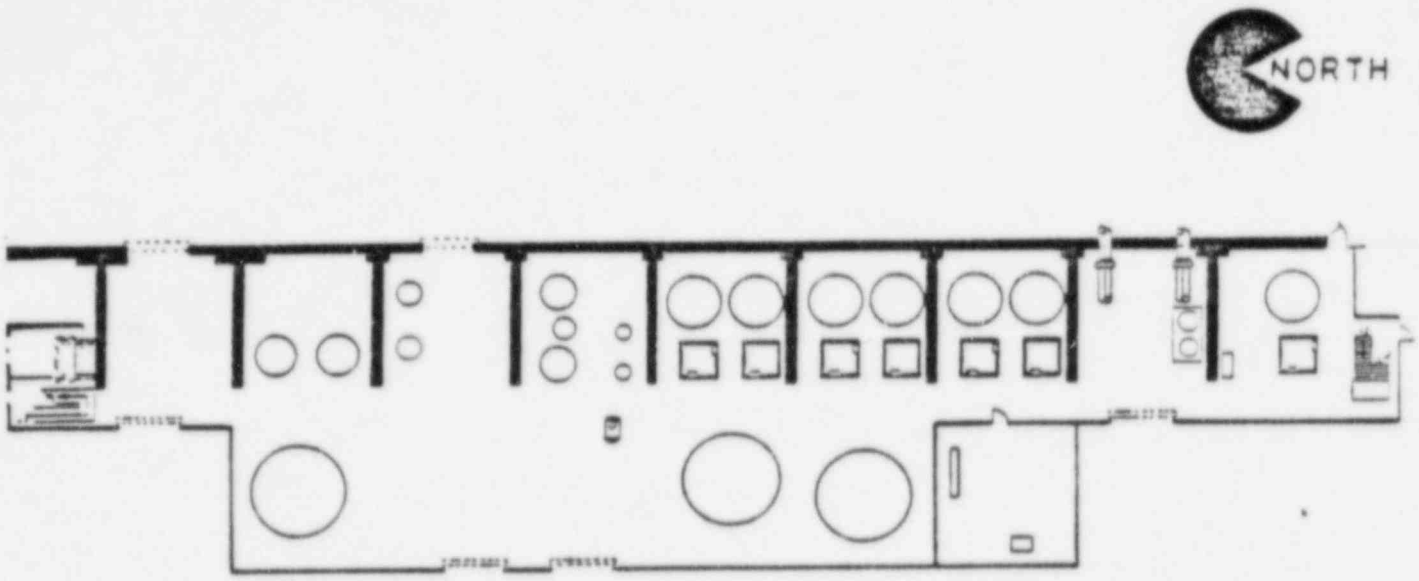
FIRE SUPPRESSION EQUIPMENT:
1. Fire Extinguishers
2. Fire Hose Stations - (3)-West Side (Yard Loop)
   (1)-Via Rollup Door 123-2 El. 85' Turb. Bldg.
3. Fire Hydrants - (2)-West Side (Yard Loop)

VENTILATION
1. Supply Fans Are 2S& 2S-77.
   Exhaust Fans Are 2E-60 & 2E-61.
2. Portable Smoke Exhausters Will Be Required. Smoke Can Be Exhausted Via Doors @ N & S Ends and Rolling Doors West Side El. 85'.

COMMUNICATIONS: 1. Plant Telephones - [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING: 1. Normal Plt Lighting Panels - PL 29-1 & 29-2.
2. Emergency Lighting.

SPECIAL PRECAUTIONS: 1. Self contained breathing apparatus and personal protective equipment will be required.
2. H2 explosive hazard.



LEGEND

- DRY CHEMICAL
- CO_2
- PRESSURIZED WATER
- HALON
- COMMAND POST
- PRIMARY ACCESS
- SECONDARY ACCESS
- TERTIARY ACCESS
- WATER HOSE REEL
- CO_2 HOSE REEL
- WHEELED DRY CHEM
- EMERGENCY LIGHTS
- TELEPHONE
- FIRE WALL RATING

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

EAST BUTTRESS AND TRANSFORMER AREA
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Transformer Oil
2. Cable Insulation
3. Transient Combustibles

MOST PROBABLE FIRE:
1. Transformer Oil
2. Transient Combustibles
3. Cable Insulation

ACCESS AND EGRESS ROUTES:
1. Primary Buttress Area

NOTE: Access through security barriers from Unit 1 to Unit 2 on EL 140' and EL 85' only.

FIRE BRIGADE STAGING AREA:
1. Primary - South End Turbine Bldg.
2. Secondary - East Side Turbine Bldg.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS: None

MANAGEMENT OF PLANT SYSTEMS:
1. All transformers are protected by automatic deluge water spray systems that can be manually operated locally and remotely from the Control Room.
2. The pavement around the transformers is sloped so that spilled oil would drain away from the Turbine Bldg. Rock blotters with drains are provided around each transformer which prevents oil from reaching the Turbine Bldg.
3. Deenergize involved transformer.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire hose streams may be required to provide exposure protection for transformers and the Turbine Bldg.
2. The interior of the Turbine Bldg. should be checked for heat damage in the vicinity of an exterior exposure fire.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Hose Stations - YL 20-N. of Main Transformers
   YL 19-S.W. of Standby Transformer 2-2.
2. Fire Hydrants - By each Hose Station YL-19 & YL-20.
3. Foam (Fire Brigade Equipment Locker)
4. Deluge Systems FCV-214 Main Transformers, B&C phase & Aux. Transformers 2-2.
   FCV-213 Main Transformer A phase & Aux. Transformer 2-1.
   FCV-212 Standby Startup Transformer 2-2.

VENTILATION: N/A (OUT OF DOORS)

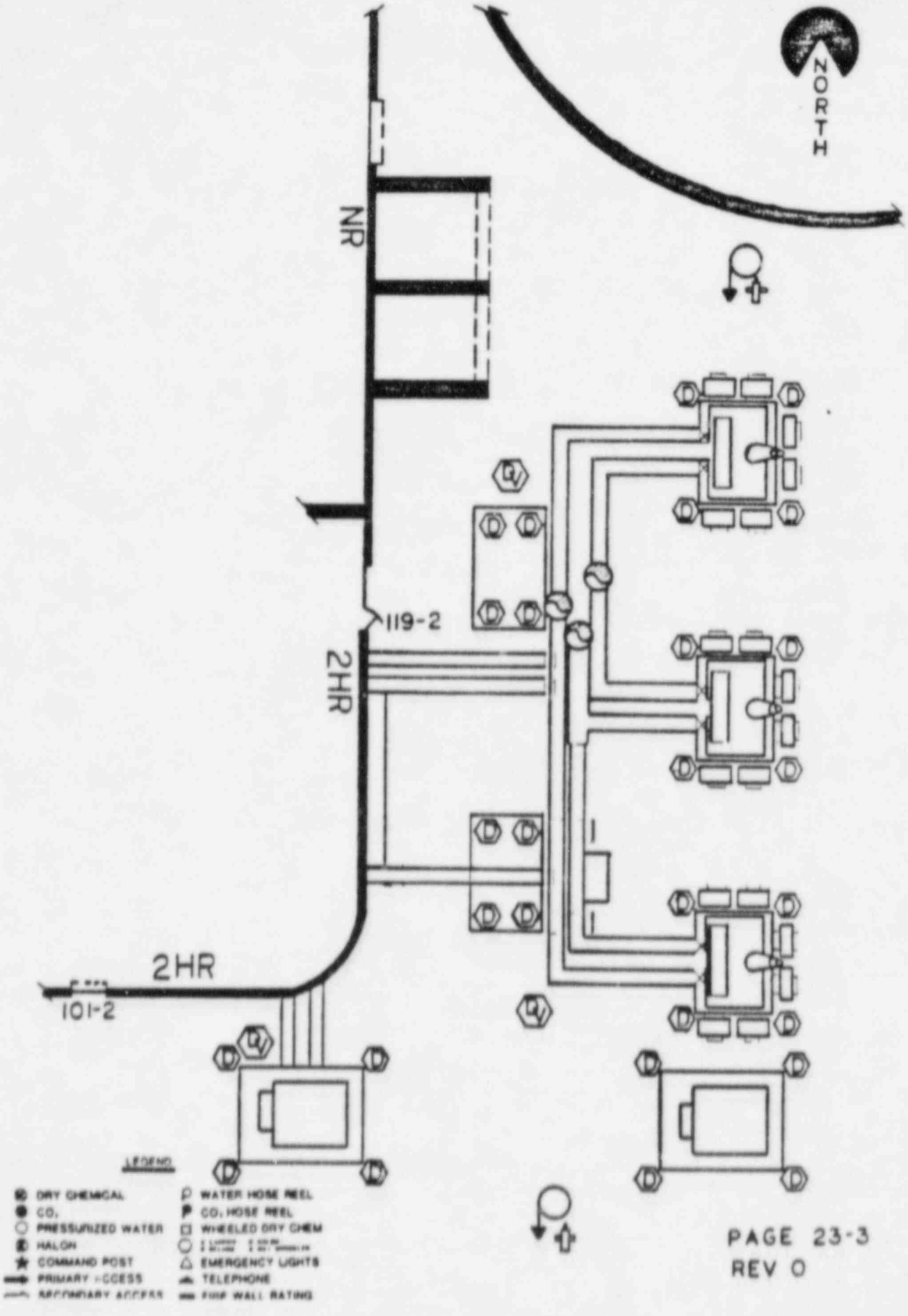
COMMUNICATIONS:

1. Plant Telephones - [redacted] 101-2 & 102-2.
2. Portable Radios (OPS FREQ)

LIGHTING: Yard Lighting

SPECIAL PRECAUTIONS:

1. Fire hose streams in fog pattern only should be used when fighting a transformer fire due to extreme high voltage. If foam is used, it is more conductive, so application should be cautious.


NORTH
NR
119-2
2HR
2HR
101-2
LEGEND
DRY CHEMICAL
CO2
PRESSURIZED WATER
HALON
COMMAND POST
PRIMARY ACCESS
WATER HOSE REEL
CO2 HOSE REEL
WHEELED DRY CHEM
EMERGENCY LIGHTS
TELEPHONE

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

DG 2-1 & 2-2 EXHAUST & DOCUMENT STORAGE
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES: 1. Class "A" Combustibles
2. Transient Combustibles

MOST PROBABLE FIRE: 1. Transient Combustibles in contact with hot exhaust piping
2. Class "A" combustibles (Records Storage)

ACCESS AND EGRESS ROUTES: 1. Primary - Via Door No. 211-2 & 289-2 - 104' El.
2. Secondary - Hallway Via Door 290-2 El. 104" For Diesel Gen. Exhaust Area
3. For Records Stg. Via Door 115-2 and Stairway at 85' El. Turb. Bldg. to doors 129-2 and 130-2.

NOTE: Access through security barriers from Unit 1 to Unit 2 on EL 140' and EL 85' only.

FIRE BRIGADE STAGING AREA: 1. Primary - For D.G. Exhaust Area Outside Door No. 211-2 El. 104' Turbine Bldg.
2. Secondary - Hallway Outside Door 290-2 El. 104'
3. Primary only for Records Stg. Outside Door 115-2 Turbine Bldg. 85' El.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS: 1. CO_2 discharge in Records Storage Area

MANAGEMENT OF PLANT SYSTEMS: 1. A flat head screwdriver will be required to gain access to exhaust areas, available in Fire Brigade Tool Boxes.
2. Access keys to Record Storage must be obtained from Document Control during normal hours and from the Shift Foreman on back shifts.
3. Automatic CO_2 System local actuator and abort valve is located immediately inside Door No. 129-2.
4. Sprinkler system isolation valve is located at 104' El. east of Door No 211-2.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Do not use water directly on hot exposed D.G. Exhaust. Pipe cracking may occur.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers
   (1) 20# Dry Chemical
   (1) Pressurized Water, Outside Door No. 129-2 @ 96' El.
   (1) 20# Dry Chemical
   (1) Pressurized Water, Outside Door No. 287-2 @ 104' El.
2. Automatic CO_2 System (Records Stg.)
3. Automatic Sprinkler System, hallway between Door No's. 211-2 & 289-2, hallway outside Door No. 290-2 and storage rooms.

VENTILATION:

1. Louvers in the permanently open position are provided on the West wall D.G. Exhaust Area.
2. Portable smoke exhausters will be required for a fire in the Records Stg. Room. Smoke could be exhausted via Doors 130-2 & 129-2.

COMMUNICATIONS:

1. Plant Telephones -

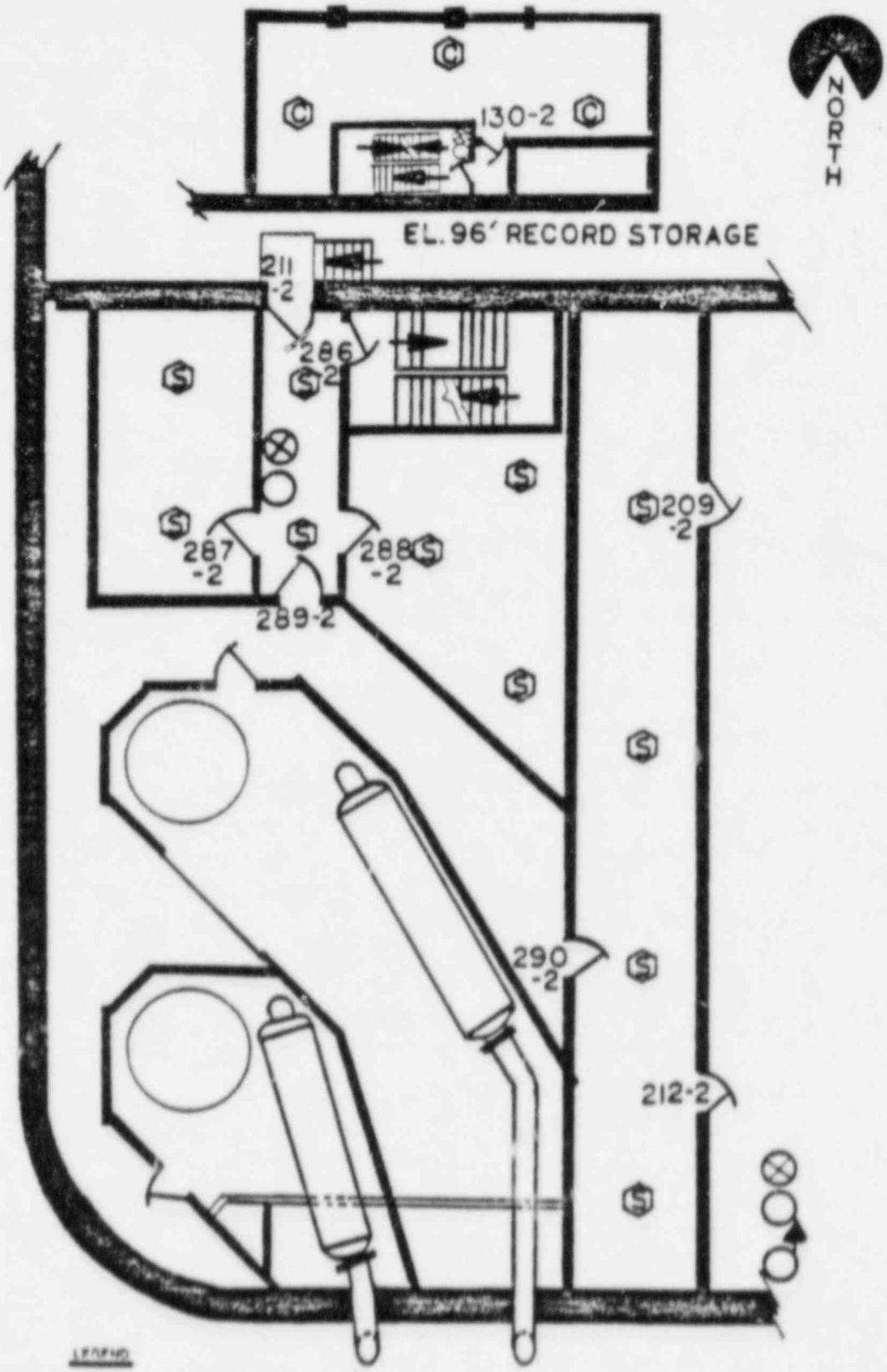
2. Portable Radios (OPS FREQ)

LIGHTING:

1. Plant Lighting Panel, PL - 21 - 4
2. Emergency Lighting.

SPECIAL PRECAUTIONS:

1. Self Contained Breathing Apparatus will be required in the Records Storage Area until air quality is checked.
2. Access & egress to and from Records Storage Area on EL 96' is limited to stairway from Door No. 115-2 SW corner Turbine Bldg. behind Condensate Booster Pump 2-1.



LEGEND

- DRY CHEMICAL
- CO_2
- PRESSURIZED WATER
- HALON
- COMMAND POST
- PRIMARY ACCESS
- SECONDARY ACCESS
- TERTIARY ACCESS
- WATER HOSE REEL
- CO_2 HOSE REEL
- WHEELED DRY CHEM
- EMERGENCY LIGHTS
- TELEPHONE
- FIRE WALL RATING

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

TURBINE BUILDING EL. 104'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Lube oil
2. Cable insulation

MOST PROBABLE FIRE:
1. Lube oil
2. Overheated cables

ACCESS AND EGRESS ROUTES:
1. Primary - Via Elev. No. 1 to Doorway 240-2
2. Secondary - Via SE Stairway
3. Tertiary - Via SW Stairway

NOTE: Access through security barriers from Unit 1 to Unit 2 on EL 140' and EL 85' only.

FIRE BRIGADE STAGING AREA:
1. Primary - Outside Door 240-2 at Lube Oil Reservoir Rm. (When security barrier removed)
2. Secondary - SE Stairway from EL 85' or 140'
3. Tertiary - SW Stairway from EL 85' or 140'

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Toxic fumes from cable insulation
2. CO_2 Discharge Lube Oil Reservoir

MANAGEMENT OF PLANT SYSTEMS: 1. The general floor area is protected by wet piped automatic sprinklers. North system shutoff valve located at EL. 85' N. end immediately west of freight elev. South system shutoff located at EL. 85' SW corner by Cond. Booster Pump 2-1.
2. The main Lube Oil Reservoir is protected by a total flooding CO_2 system that can be activated manually from the Control Room or E. end of Room.
3. The main Lube Oil Reservoir Dump Valve is located at EL. 140' of the Turbine Deck.
4. Floor drains below the L.O. Reservoir allow drainage to the Unit 2 main Lube Oil Tank located under the Machine Shop.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire hose steams may be required to protect exposures.
2. Water should not be sprayed directly on exposed, hot steam piping.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - (4) 20# Dry Chemicals
2. Fire Hose Reels - (5)
3. Cardox System - Lube Oil Reservoir
4. Wet Type Sprinkler System (General Area)
5. Foam - Fire equipment locker

VENTILATION:

1. Vent fans 2S-55 & 2S-56 are located in the SE corner.
2. Four exhaust ducts are located on the west side.
3. Smoke exhausters may be required to ventilate pockets under solid flooring and the lube oil room.

COMMUNICATIONS:

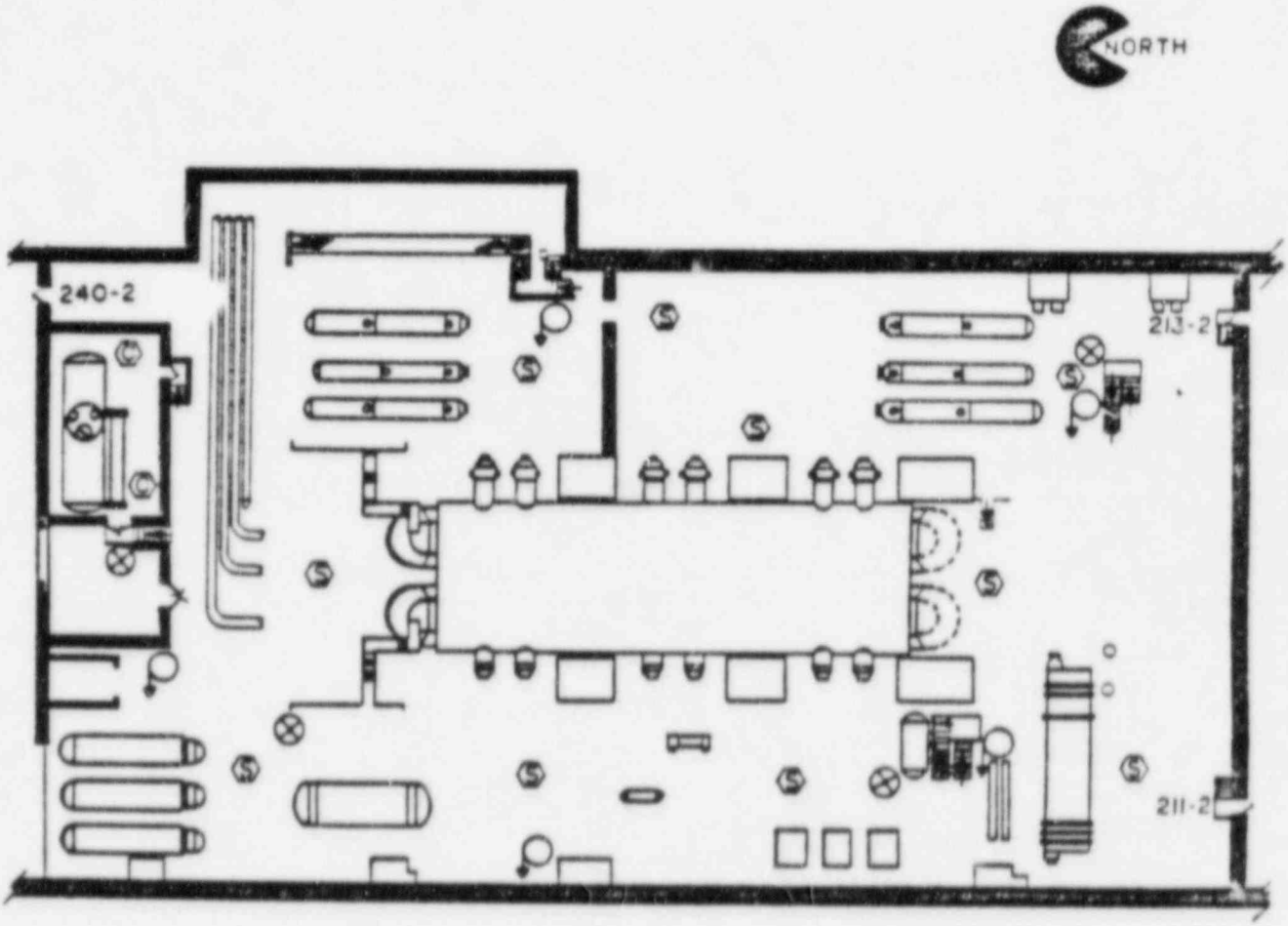
1. Plant Telephones [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING:

1. Plant Lighting Panels, PL. 21-3, 21-2, & 23-2
2. Emergency Lighting.

SPECIAL PRECAUTIONS:

1. Self contained breathing apparatus will be required.
2. Portable lanterns should be available.
3. A lube oil fire may involve the EL. 85' below and EL. 119' above.
4. Use extreme caution in areas of open grating.



LEGEND

DRY CHEMICAL	WATER HOSE REEL
CO_2	CO_2 HOSE REEL
PRESSURIZED WATER	WHEELED DRY CHEM
HALON	
COMMAND POST	EMERGENCY LIGHTS
PRIMARY ACCESS	TELEPHONE
SECONDARY ACCESS	FIRE WALL RATING
TERTIARY ACCESS	

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

TECHNICAL SUPPORT CENTER
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Class A combustibles
2. Computer equipment
3. Filters in HVAC room.

MOST PROBABLE FIRE:
1. Class A combustibles
2. Overheated computer equipment

ACCESS AND EGRESS ROUTES:
1. Primary - computation center - west door from condensate demin area.
2. Secondary - Office N.E. door via EL 104' Turb. Bldg.
3. Tertiary - NRC Office E. door via EL 104' Turb. Bldg.

(NOTE: Access from Unit 2 turbine bldg may be blocked by security grating).

FIRE BRIGADE STAGING AREA:
1. Primary - EL 104' condensate demineralizer catwalk.
2. Secondary - EL 104' Unit 2 turbine building.

(NOTE: Access from Unit 2 turbine building may be blocked by security grating).

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Toxic products of combustion from cable insulation and plastic furnishings.
2. Halon 1211 from portable extinguishers.
3. Low level radiation calibration sources.

MANAGEMENT OF PLANT SYSTEMS:
1. TSC is not provided with floor drains.
2. Sprinkler system isolation is at about EL 114' of the turbine building along the east wall of the TSC and between the office and NRC office doors.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

Use Halon 1211 as the agent of choice for fires involving computer equipment.

FIRE SUPPRESSION EQUIPMENT:

1. Fire extinguishers (5) 17# Halon 1211
2. Automatic sprinklers.
3. Fire hose reel stations (1) operation center
   (1) EL 104' turb bldg.
4. Fire hydrants and hose reels of the yard loop.
5. Fire hose trailer.

VENTILATION:

1. TSC ventilation system is self contained in the HVAC room located between NRC Office and the laboratory.
2. Supply fans OS-92, OS-94, and OS-95.
3. Portable smoke exhausters - exhaust to the West (cond demins) or the East (turb bldg 104')

COMMUNICATIONS:

1. Plant telephones -

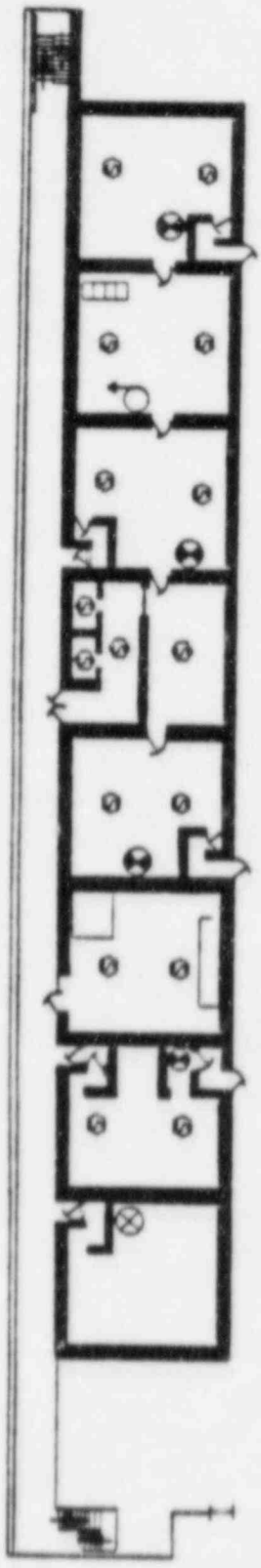
2. Plant radio console.
3. CDF radio telephone stored in emergency locker.

LIGHTING:

1. Plant lighting panels PL-29-1 and PL-30-1.
2. Emergency battery powered lighting.

SPECIAL PRECAUTIONS:

1. De-energize electrical equipment where possible prior to attempting extinguishment.
2. Hose line protection for a westerly attack will require 2½" hose from yard hydrants to the EL 104' of the condensate demineralizer corridor, reduced to 1½" lines for attach and personal protection.



NORTH

LEGEND

- DRY CHEMICAL
- CO_2
- PRESSURIZED WATER
- HALON
- COMMAND POST
- PRIMARY ACCESS
- SECONDARY ACCESS
- TERTIARY ACCESS
- WATER HOSE REEL
- CO_2 HOSE REEL
- WHEELED DRY CHEM
- EMERGENCY LIGHTS
- TELEPHONE
- FIRE WALL RATING

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

4160 SWGR CABLE SPREADING ROOMS AND ISO PHASE BUS AREA
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable Insulation - Cable Spreading Rooms
2. Iso Phase Bus Cooler Panels
3. Transient combustibles

MOST PROBABLE FIRE:
1. Class "A" Transient Combustibles
2. Electrical Fire in Cable Spreading Rooms
3. Fire in Iso Phase Bus Cooler Panels

ACCESS AND EGRESS ROUTES:
1. Primary - Via Door 213-2 El. 104' Turb. Bldg.
2. Secondary - Via Door 210-2 from 12KV Swgr Room.
3. Tertiary - Via Doors 201-2 & 284-2

NOTE: Access through security barriers from Unit 1 to Unit 2 on EL 140' and EL 85' only.

FIRE BRIGADE STAGING AREA:
1. Primary - Outside door No. 213-2 @ EL.104'
2. Secondary - Corridor outside doors No. 201-2 and 208-2

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Fumes from cable insulation
2. CO_2 discharge from hose reels

MANAGEMENT OF PLANT SYSTEMS:
1. No floor drains are provided in cable spreading rooms.
2. Isolate affected buses if possible

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Use water fog only if necessary to protect exposures due to electrical hazards.
2. Maintain fire barrier penetration seals to protect redundant equipment.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers (3) 15# CO_2's
   (1) 20# Dry Chemical
   (1) Pressurized Water
2. Two CO_2 Hose Reels
3. Two Fire Hose Reels:
   (1) Next to Door No. 201-2
   (2) SE Stwy. Turb. EL. 104'

VENTILATION: 1. Each Cable Spreading Room is provided with a grating at ceiling level which would allow smoke to vent to the 4.160 Swgr Rooms at 119' El. The 4160 Swgr Rooms are provided with grating (fusible link closers) @ El. 140' which would allow smoke to exhaust at the turbine deck area SE corner.
2. Portable smoke exhausters could be used to exhaust smoke through Doors 203-2 205-2 & 207-2 to Door 213-2 @ EL. 107' Turb. Bldg.
3. Plant ventilation fans on the west wall of the Iso Phase Bus room would force smoke to open louvers on the east wall to the outside.
4. An open stairway leads to EL. 140' Turbine Deck.
5. Maintain the following vent fans running: 2S-67, 2S-68 & 2S-69 in Bus Rooms F,G & H at El. 119".

COMMUNICATIONS:

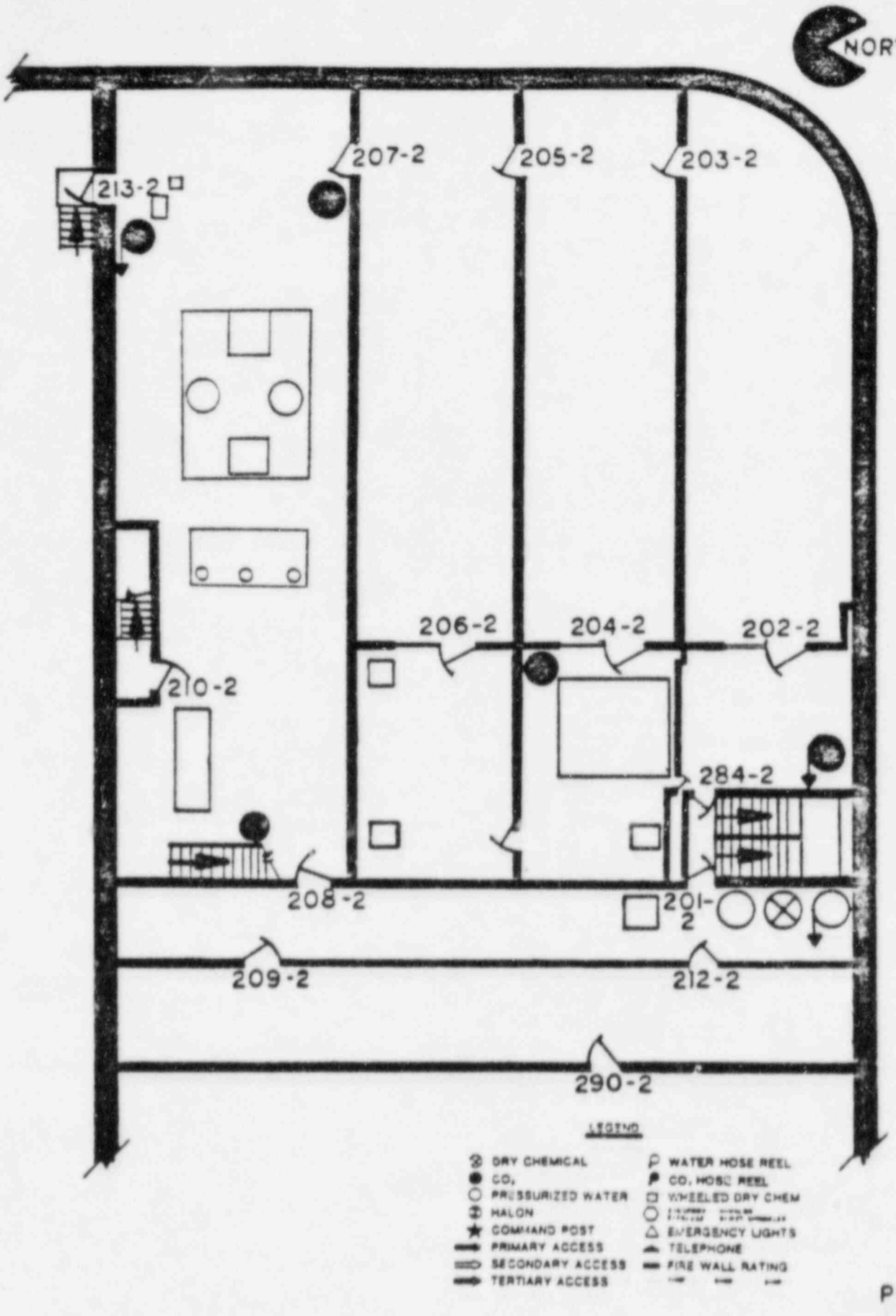
1. Plant Telephone [redacted]
2. Portable Radios (OPS. FREQ)

LIGHTING:

1. Plant Lighting Panel - PL 21-4
2. Emergency Lighting.

SPECIAL PRECAUTIONS:

1. Self Contained Breathing Apparatus will be required.
2. High Voltage by Iso Phase Bus Panels.


NORTH
213-2
207-2
205-2
203-2
206-2
204-2
202-2
210-2
284-2
208-2
201-2
209-2
212-2
290-2
LEGEND
DRY CHEMICAL
CO2
PRESSURIZED WATER
HALON
COMMAND POST
PRIMARY ACCESS
SECONDARY ACCESS
TERTIARY ACCESS
WATER HOSE REEL
CO2 HOSE REEL
WHEELED DRY CHEM
EMERGENCY LIGHTS
TELEPHONE
FIRE WALL RATING

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

4160 SWGR AREA
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Cable insulation
2. Switchgear components
3. Transient Combustibles

MOST PROBABLE FIRE:
1. Switchgear Components
2. Transient Combustibles
3. Overheated Cables

ACCESS AND EGRESS ROUTES:
1. Primary - Via Door 304-2 to Swgr vent fan area.
2. Secondary - Via Door 302-2 to Swgr components room from stairway.

NOTE: Access through security barriers from Unit 1 to Unit 2 on EL 140' and EL 85' only.

FIRE BRIGADE STAGING AREA:
1. Primary - Outside Door 304-2 El. 119' Turb. Bldg.
2. Secondary - Turb Bldg EL 140' by stairway leading down to Door 302-2

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Fumes from burning Cable Insulation
2. CO_2 from hose reel discharge

MANAGEMENT OF PLANT SYSTEMS:
1. The Vent Fan Room is protected by an automatic sprinkler system. The isolation valve is located outside Door No. 304-2 Turb. Bldg. El. 100'.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire Hose Steams may be required to protect exposures.
2. Water should be used in a fog pattern at least 6 feet away from energized electrical equipment.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers Three 15# CO_2's
   One 20# Dry Chemical
2. CO_2 Hose Reels (2)
3. Fire Hose Reels One By Door No. 301-2

VENTILATION:

1. Swgr Vent Fans No's. 2S-67, 2S-68, 2S-69, 2S-70 & 2S-71 are located in the Sw'gr Vent Fan Room.
2. Smoke exhauster may be required.
3. Ventilation exhaust is through ceiling crating to El. 140'. Damper is provided with a fusible link.

COMMUNICATIONS:

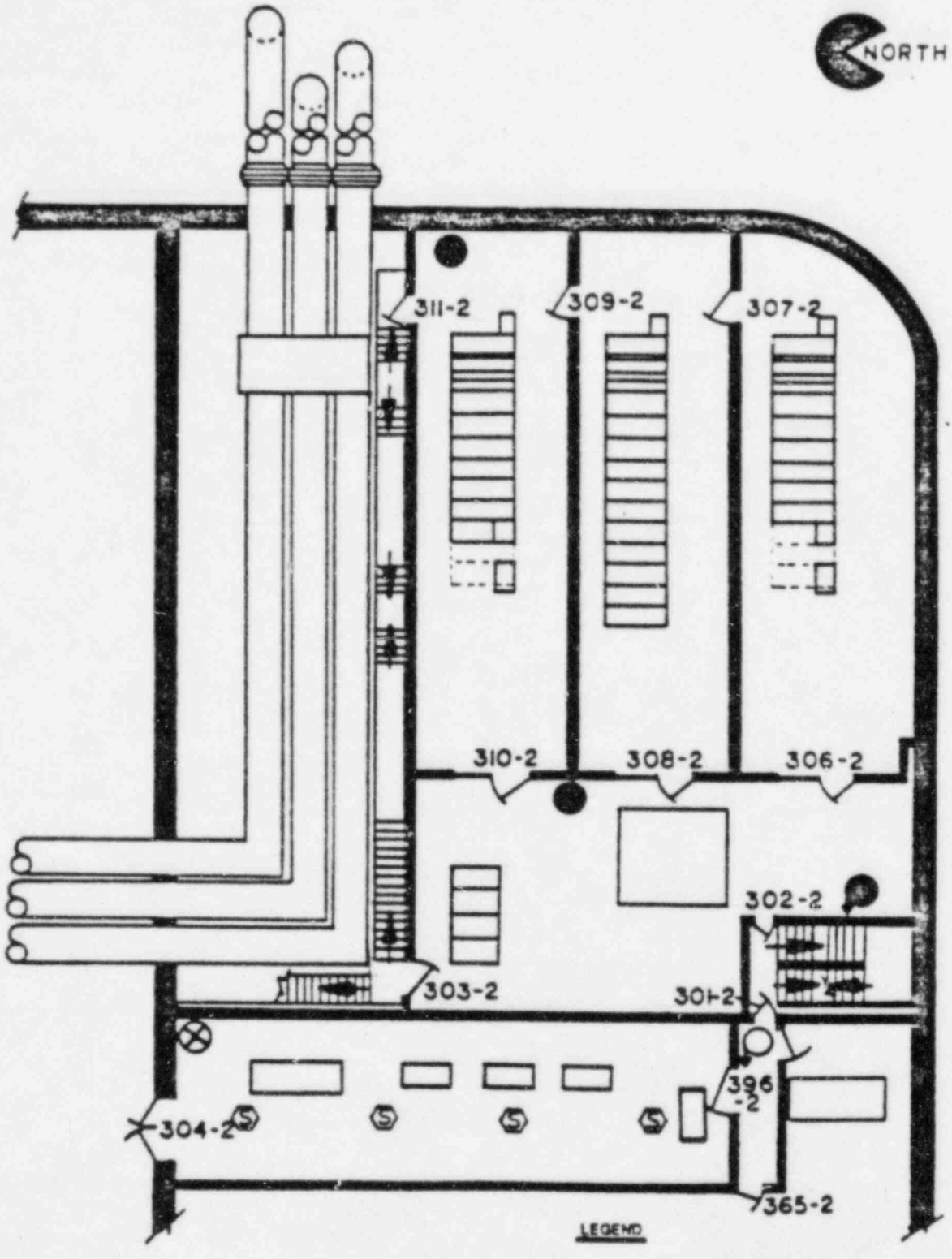
1. Plant Telephones [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING:

1. Plant Lighting Panel, PL 21-4
2. Emergency Lighting.

SPECIAL PRECAUTIONS:

1. Self Contained Breathing Apparatus will be required.
2. CO_2 is the agent of choice.
3. If water is used it should be applied in a fog pattern only due to high voltage electrical equipment and from no closer than 6 feet.


NORTH
311-2
309-2
307-2
310-2
308-2
306-2
302-2
303-2
301-2
396-2
304-2
365-2
LEGEND
DRY CHEMICAL
CO2
PRESSURIZED WATER
HALON
COMMAND POST
PRIMARY ACCESS
SECONDARY ACCESS
TERTIARY ACCESS
WATER HOSE REEL
CO2 HOSE REEL
WHEELED DRY CHEM
EMERGENCY LIGHTS
TELEPHONE
FIRE WALL RATING

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

TRAVELING CREWS QTRS
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Class "A" Combustibles
2. Electric Stove in kitchenette

MOST PROBABLE FIRE:
1. Class "A" Combustibles
2. Kitchen Fire (grease)

ACCESS AND EGRESS ROUTES:
1. Primary - via Door 305-2 from El. 119' Turb. Bldg.
2. Secondary - via Door 301-2 from stairway S-7.
3. Tertiary - via Door Nos. 393-2 & 392-2 from Stairway S-6

NOTE: Access through security barriers from Unit 1 to Unit 2 on EL 140' and EL 85' only.

FIRE BRIGADE STAGING AREA:
1. Primary - Outside Door No. 305-2 at 119' El. Turb. Bldg.
2. Secondary - Top of stairway S-7 at El. 140'.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:

1. Toxic products of combustion

MANAGEMENT OF PLANT SYSTEMS:
1. Isolation Valve for automatic sprinkler system located overhead & outside Door No. 304-2 El. 119' Turb. Bldg.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire Hose Streams may be required to protect exposures.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - One - 20# Dry Chemical
   One - Pressurized Water
2. Automatic Sprinkler System
3. Fire Hose Reel - Outside Doorway 301-2

VENTILATION:

1. Normal Plant Ventilation
2. Smoke Exhausters may be required. Smoke could be exhausted via Door No. 305-2 to El. 119' Turb. Bldg. or up stairway S-7 to the El. 140' Turb. Deck.

COMMUNICATIONS:

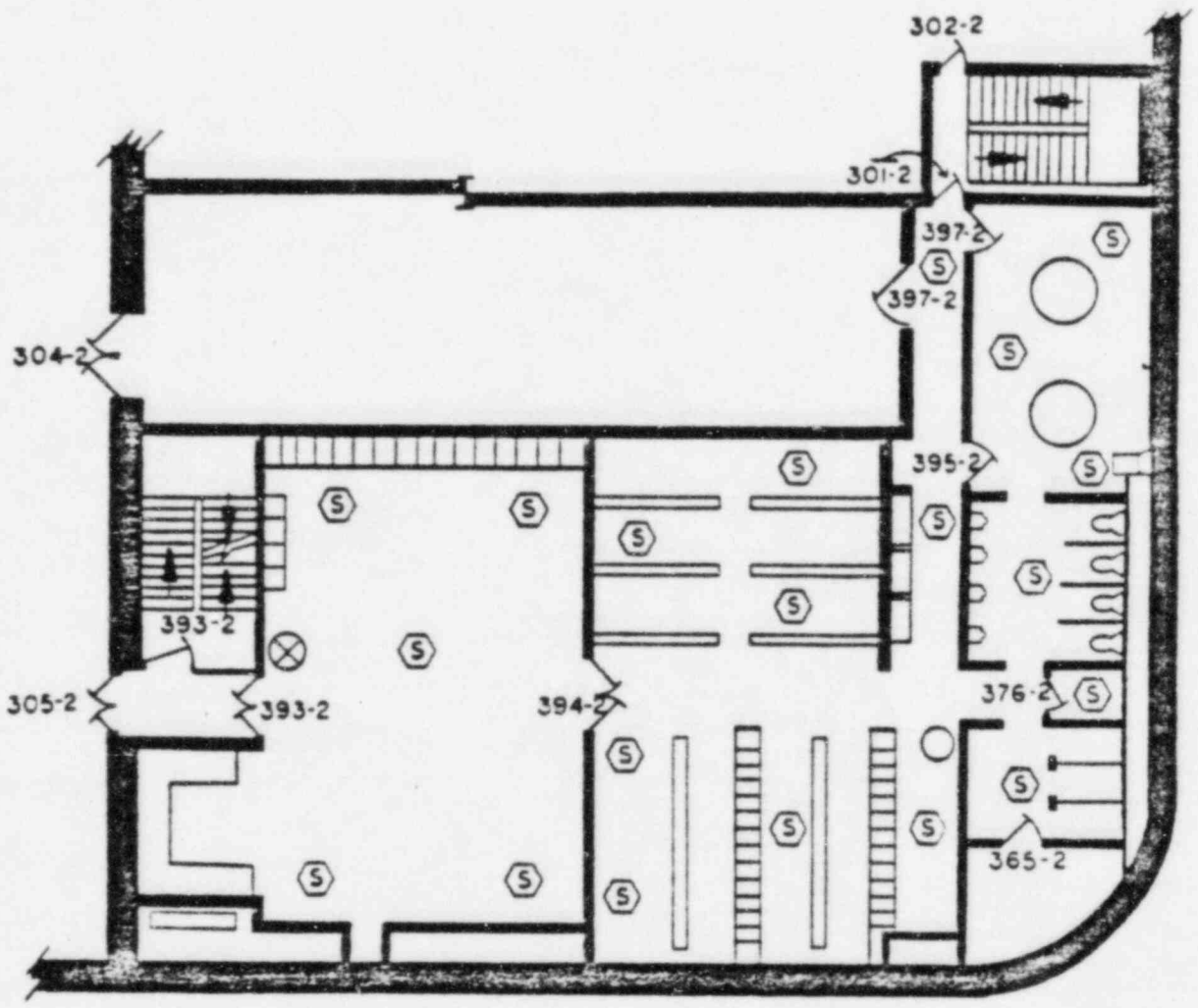
1. Plant Telephones [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING:

1. Plant Lighting Panel - PL 21-4
2. Emergency Lighting.

SPECIAL PRECAUTIONS:

1. Self Contained Breathing Apparatus will be required.
2. Portable hand lanterns should be carried by Fire Brigade members.



LEGEND

- DRY CHEMICAL
- CO_2
- PRESSURIZED WATER
- HALON
- COMMAND POST
- PRIMARY ACCESS
- SECONDARY ACCESS
- TERTIARY ACCESS
- WATER HOSE REEL
- CO_2 HOSE REEL
- WHEELED DRY CHEM
- EMERGENCY LIGHTS
- TELEPHONE
- FIRE WALL RATING

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

TURBINE BLDG. EL 119'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Lubricating Oil
2. Electric cable insulation
3. Transient Combustibles

MOST PROBABLE FIRE:
1. Broken Lube Oil Line, Oil Soaked Insulation
2. Transient Combustibles
3. Overheated Electric Motor or Control Wiring

ACCESS AND EGRESS ROUTES:
1. Primary - Via Southeast Stairway from EL 85' or 140'.
2. Secondary - Via Southwest Stairway from EL 85' or 140'.

NOTE: Access through security barriers from Unit 1 to Unit 2 on EL 140' and EL 85' only.

FIRE BRIGADE STAGING AREA:
1. Primary - by Door No. 304-2 in 4160 Swgr fan area.
2. Secondary - Top of SE Stairway EL 140'
3. Tertiary - Top of SW Stairway EL 140'

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Toxic products of combustion

MANAGEMENT OF PLANT SYSTEMS:
1. The entire floor area is protected by wet piped automatic sprinklers. Shutoffs are located at North System @ EL 85' immediately west of freight elev. South system @ EL. 85' SW corner by Condensate Booster Pump 2-1.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire hose Steams may be required to protect exposures.
2. Caution should be used when applying water to hot steam lines. Rapid cooling can cause cracking and steam leaks.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Five 20# Dry Chemicals
2. Fire Hose Reels - Six
3. Automatic West Sprinkler System
4. Foam - Fire equipment lockers.

VENTILATION:

1. Ventilation Fans 2S-57, 2S-58 & 2S-59 are located in the Southeast end. There are no exhaust outlets on the West wall. Smoke would vent to El. 140' via stairways and open grating in the SE corner.
2. Smoke Exhausters will be required for a fire in the NE area and smoke vented to El. 140'.

COMMUNICATIONS:

1. Plant Telephones: [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING:

1. Plant Lighting Panels - PL 22-3 & 22-2
2. Emergency Lighting

SPECIAL PRECAUTIONS:

1. Self Contained Breathing Apparatus will be required.
2. Portable Hand Lanterns should be available.
3. Seismic bracing makes access very difficult.
4. Lube oil fires may also involve lower elevations.
5. Exercise extreme caution while working on open gratings.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 2

TURBINE BLDG. EL. 140'
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Lube Oil
2. Hydrogen
3. Class "A" Transient Combustibles

MOST PROBABLE FIRE:
1. Lube Oil
2. Hydrogen Leak
3. Class "A" Transient Combustibles

ACCESS AND EGRESS ROUTES:
1. Primary - Stairway No. 1 from Unit 1 Turbine Deck
2. Secondary - SE Stairway from EL 85'
3. Tertiary - SW Stairway from EL 85'

FIRE BRIGADE STAGING AREA:
1. Primary - Unit 1 Turbine Deck, North End
2. Secondary - EL. 85' by SE Stairway
3. Tertiary - EL 85' by SW Stairway

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. CO_2 Discharge at No. 10 Bearing
2. CO_2 in generator casing during outage periods.

MANAGEMENT OF PLANT SYSTEMS:
1. Cardox control valve located between vent fans 2S-62 & 2S-63 East wall.
2. Deluge control valves located at Turbine pedestals.
3. Hydrogen Shutoff valve located at 85' El. near Seal Oil Unit.
4. Main hydrogen shutoff valve North end of West buttress 85' El.
5. Hydrogen is vented to the roof, vent valve shutoff at Seal Oil Unit 2-1.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Water spray from hose reels may be used to cool housing of turbine generator. Care must be exercised as water may cause steam leaks when applied to hot turbine parts or piping.
2. Water spray should be used to protect exposures from a hydrogen fire.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Four (4) 20# Dry Chemicals
2. Deluge Spray System
3. CO_2 Flooding System at No. 10 Bearing
4. Fire hose Reels Five (5)

VENTILATION:

1. Supply Fans 2S-61, 2S-62, 2S-63, 2S-64 & 2S-65
2. Smoke from any fire should vent via center roof vents.

COMMUNICATIONS:

1. Plant Telephones [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING:

1. Plant Lighting Panels - PL 22-5 & 22-4
2. Emergency Lighting.

SPECIAL PRECAUTIONS:

1. In the event of a hydrogen leak, do not attempt to extinguish the fire until such time as the hydrogen supply has been shut off at valve located at seal oil unit 2-1 El. 85'.
2. Self Contained Breathing Apparatus will be required.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 0

SECURITY BUILDING
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Class "A" Combustibles
2. Electric Wiring to Control Panels

MOST PROBABLE FIRE:
1. Class "A" Combustibles
2. Electric Wiring

ACCESS AND EGRESS ROUTES:
1. Primary - Via Doors 19, 20, 21, 14, 17, 18
2. Secondary - Via Doors 1 & 2
3. Tertiary - Via Door 28

FIRE BRIGADE STAGING AREA:
1. Primary - North end outside Doors 19 & 20.
2. Secondary - South end outside Doors 1 & 2

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS: Toxic products of combustion

MANAGEMENT OF PLANT SYSTEMS: Security building fire protection system isolation valve FP-0-360

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire Hose streams may be required to protect exposures.
2. Care should be taken to protect sensitive computer equipment.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Three 20# dry chemicals
   One 15# CO_2
2. Fire Hose Reels - Two Hallway By Door No. 26
   Outside NW Corner
3. Fire Hydrant - Yard Loop

VENTILATION: 1. Building Ventilation System
2. Portable Smoke Exhausters may be required. Smoke could be exhausted via doorways to the outside.

COMMUNICATIONS: 1. [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING: 1. Lighting Panels - LB - UP - LA & HL
2. Emergency Lighting - SAS

SPECIAL PRECAUTIONS:

1. Self contained breathing apparatus will be required.
2. Ammunition storage is provided inside Door 13. Access may be gained via Door No. 14.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1 & 2

INTAKE STRUCTURE
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Lube Oil
2. Cable Insulation
3. 480V Swgr Panels
4. Transient combustibles

MOST PROBABLE FIRE:
1. Transient combustibles
2. Lube Oil
3. Cable Insulation
4. 480V Swgr Panels

ACCESS AND EGRESS ROUTES:
1. Via Stairway East Side
2. Via Stairways N & S ends door No's 11 & 12

FIRE BRIGADE STAGING AREA:
1. Primary - Outside - East side of intake structure

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Chlorine (CL_2)
2. Fumes from cable insulation
3. CO_2 discharge at circulating pumps (CO_2 will drift to lower elevations)

MANAGEMENT OF PLANT SYSTEMS:
1. Water circulating pumps are protected by an automatic CO_2 flood system.
2. Each circulating pump has a local CO_2 manual actuator.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:
1. Fire Hose Reels may be required to protect exposures.

FIRE SUPPRESSION EQUIPMENT:
1. Fire Extinguishers - Six CO_2's
2. Fire Hose Reels - Eight (4) exterior & (4) interior
3. Fire Hydrants - Two

VENTILATION: 1. Potable Smoke Exhauster may be required. Smoke can be exhausted via the three stairways to the outside.

COMMUNICATIONS:
1. Plant Telephones [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING:
1. Plant Lighting Panel - PJ 18-1, PL 18-1
2. Emergency Lighting.

SPECIAL PRECAUTIONS:
1. Liquid chlorine (CL_2) will cause serious skin burns. Gaseous CL_2 will form HCl when inhaled causing possible respiratory arrest.
2. Self contained breathing apparatus will be required.
   NOTE: (A) Use water to keep fire-exposed chlorine tanks cool.
   NOTE: (B) Two (2) Self contained breathing apparatus are wall mounted outside on the east wall between the 480V Swgr Rooms.
   NOTE: (C) Chlorine emergency kit is located in the chlorinator room to plug chlorine cylinder leaks.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 0

ADMINISTRATION BUILDING
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Class "A" Combustibles
2. Electric Wiring

MOST PROBABLE FIRE:
1. Class "A" Combustibles
2. Electric Wiring

ACCESS AND EGRESS ROUTES: Doorways - Lunch Room
East Side
Document Control (2)
Emergency Exits West Side (2)

NOTE: Axes, prybars and bolt cutters may be required to gain access.

FIRE BRIGADE STAGING AREA:
1. Primary - Outside Door No. 31 South End
2. Secondary - Outside Door No. 19 East Side

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS: Toxic products of combustion.

MANAGEMENT OF PLANT SYSTEMS: Contact "Temporary Power" to deenergize various buildings and trailers.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT: Fire hose stations located outside may be required as backup for fire extinguishers located within the building. Hose control devices on hose trailers may be used with 2½" fire hose to protect exposed structures.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Six Pressurized Water
   Two 30# Dry Chemicals
   One 5# CO_2
   One 9# Halon
2. Fire Hose Stations - Two Outside East Wall
3. Fire Hydrant - One Outside SE End

VENTILATION:
1. Normal Ventilation System
2. Portable Smoke Exhausters may be required, smoke can be exhausted via doorways to the outside.
3. Hose stream ventilation may be more effective than exhausters.

COMMUNICATIONS:
1. Telephones In All Offices.
2. Portable Radios (OPS FREQ)

LIGHTING:
1. Plant Lighting Panels A-B-C & D.
2. Hand held battery powered lanterns will be required.

SPECIAL PRECAUTIONS:
1. Self contained breathing apparatus will be required.
2. No emergency lighting is provided, portable hand lanterns to be carried by Fire Brigade.
3. Provide hose stream exposure protection for the turbine building buttress areas.
4. Offsite fire fighting assistance should be called since the entire complex is of combustible construction with no automatic suppression systems.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 1 & 2
G.C. WAREHOUSE
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Class "A" Combustibles
2. Lube Oil (45 gal. drums)
3. Flammable liquids (gasoline tanks)
4. Drum Resins
5. Grease
6. 40% Hydrogen (cylinders)
7. Acetylene

MOST PROBABLE FIRE:
1. Class "A" Combustibles
2. Flammable liquids
3. Flammable gases

ACCESS AND EGRESS ROUTES:
1. Primary - Via Overhead Rolling Doors
2. Secondary - Via Man Doors NE End & SW Side

NOTE: Axes, prybars or bolt cutters may be required to gain access.

FIRE BRIGADE STAGING AREA:
1. Primary - Dock Unloading Area West Side

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Potassium Hydroxide
2. Ammonium Hydroxide
3. Resin In Drums
4. 35% Hydrazine
5. Reagent chemicals

MANAGEMENT OF PLANT SYSTEMS:
1. The entire building is protected by an automatic wet sprinkler system. The sprinkler isolation valve is located in the NPO storage area east wall south end.
2. The sprinkler system is extended to cover the cylinder storage racks west side north end of dock unloading area.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT"

1. Mobile Fire Fighting Apparatus should be staged such that water spray may be applied to compressed gas storage on the west side and the gasoline tanks to the north.
2. Brush and grass should be wetted down to preclude potential wild land fire.

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Three - 30# dry chemicals
   Two - 15# CO_2's
   Five - Pressurized water
2. Automatic Sprinkler System

NOTE: Since no hydrants exist in the area, Outside fire fighting assistance will be required. Nearest fire hydrant is outside GC Security Office.

VENTILATION:

1. Normal Building Ventilation System
2. Portable Smoke Exhausters may be required. Smoke could be exhausted via overhead rolling doors to the outside using hose streams from offsite fire engines.

COMMUNICATIONS:

1. Plant Telephones [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING:

1. Plant Lighting Panel Located in the Office at the N.W. corner.

SPECIAL PRECAUTIONS:

1. Self Contained breathing apparatus will be required.
2. Portable hand lanterns should be available.
3. For a fire involving the south end NPO Storage, full protective clothing will be required as contact with hydrazine and ammonium hydroxide are very toxic and attach eyes and respiratory system. Liquid is corrosive to skin.
4. The possibility of a severe flamable liquid fire exists in the south end which would involve toxic materials stored in this area.
5. Access to the NPO Storage area requires a "D" master key available from the Shift Foreman.
6. Actual fire fighting will probably require offsite assistance.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 0

G.C. SECURITY & PAYROLL OFFICE
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Class "A" Combustibles
2. Electric Wiring

MOST PROBABLE FIRE:
1. Class "A" Combustibles
2. Electric Wiring

ACCESS AND EGRESS ROUTES:
1. East, West and North Doorways
2. For QC Area, East and South Doorways

NOTE: Fire axes, prybars and bolt cutters may be required for access.

FIRE BRIGADE STAGING AREA:
1. Primary - Parking Lot Area South End
2. Secondary - NE Side Admin. Bldg.

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS: Toxic products of combustion

MANAGEMENT OF PLANT SYSTEMS:
1. The entire building is protected by an automatic sprinkler system. The isolation valve is located on the South end in the room housing the Halon spheres.
2. The QC vault is protected by an automatic Halon 1301 system. The isolation valve is located on the south wall.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire Hose Streams may be required to protect exposures (i.e., Trailers to the North and Administration Building to the West).

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - One (1) 10# dry chemical
   Two (2) Pressurized Water
   One (1) 15# CO_2 QC area
2. Fire Hose Stations - (1) SW Corner Outside Security
   (1) East Wall Admin. Bldg.
3. Fire Hydrant - SW Corner in Parking Lot Area
4. Automatic Wet Sprinkler System
5. Automatic Halon System (QC Vault)

VENTILATION:

1. Normal Bldg. Ventilation System
2. Portable Smoke Exhausters may be required. Smoke could be exhausted via doorways to the outside using exhausters or hose streams.

COMMUNICATIONS:

1. Plant Telephones [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING:

1. Lighting Panel Located in Sec. Visitors Waiting Room
2. Portable hand held lanterns will be required.

SPECIAL PRECAUTIONS:

1. Self contained breathing apparatus will be required.
2. Portable hand lanterns should be available.
3. Grass and brush in the area could be ignited from heat or embers. CDF should be called as a backup.

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT
UNIT NO. 0

PROJECT OFFICE BUILDING
FIRE FIGHTING PRE-PLAN

POTENTIAL COMBUSTIBLES:
1. Class "A" Combustibles
2. Electric Wiring

MOST PROBABLE FIRE:
1. Class "A" Combustibles
2. Electric Wiring

ACCESS AND EGRESS ROUTES:
1. Primary - East Doorways
2. Secondary - West Doorways

FIRE BRIGADE STAGING AREA:
1. Parking Lot area SW corner
2. Roadway bottom of stairways West side

RADIOLOGICAL OR TOXICOLOGICAL HAZARDS:
1. Ammonia in Print Room
2. Toxic products of combustion

MANAGEMENT OF PLANT SYSTEMS:
1. The entire building is protected by an automatic sprinkler system. The isolation valve is located on the East side.

RECOMMENDATION FOR PROTECTION OF HEAT SENSITIVE EQUIPMENT:

1. Fire Hose Streams may be required to protect exposures (i.e., trailers to the North and South end the G.C. Security Building to the East.)

FIRE SUPPRESSION EQUIPMENT:

1. Fire Extinguishers - Five Pressurized Water
   Two 15# CO_2's
2. Fire Hose Stations - Two (1) NE corner
   (1) SE corner
3. Fire Hydrant - SW corner in Parking Lot area

VENTILATION:
1. Normal Building Ventilation System
2. Smoke Exhausters may be required. Smoke could be exhausted via doorways to the outside by smoke exhausters or fire hose streams.

COMMUNICATIONS:
1. [redacted]
2. Portable Radios (OPS FREQ)

LIGHTING:
1. Plant Lighting Panel "A"
2. Portable hand held lanterns.

SPECIAL PRECAUTIONS:

1. Self contained breathing apparatus will be required.
2. Portable hand lanterns should be available.
3. Small quantities of ammonia may be encountered in the vicinity of the print room.
4. Grass and brush in the area could be ignited from heat or embers. CDF should be called as a backup.

CURRENT

EMERGENCY PLAN

IMPLEMENTING PROCEDURES

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PG&E **Pacific Gas and Electric Company**

NUMBER EP EF-6
REVISION 5
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PAGE 1 OF 61

DEPARTMENT OF NUCLEAR PLANT OPERATIONS

DIABLO CANYON POWER PLANT UNIT NO(S) 1 AND 2

TITLE: EMERGENCY PROCEDURE
OPERATING PROCEDURES FOR EARS 9845C
CONTROLLING STATIONS

IMPORTANT TO SAFETY

APPROVED: R. C. Thornberry 9-13-85

SCOPE

This procedure provides startup instructions and operating flow diagrams for any HP-9845C station capable of functioning as a controlling station for the Emergency Assessment and Response System (EARS). These EARS stations include the Control Room (CR), Technical Support Center (TSC), Emergency Operations Facility (EOF), and Simulator Room (SR).

In addition a discussion of the terminology used, and a brief overview of some of the support software used in the EARS is included.

Startup and operating instructions for the EARS TSC HP-1000F computer are contained in procedure EP EF-8.

This procedure and changes thereto requires PSRC review.

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DISCUSSION

The purpose of the EARS is to assist the Company Emergency Response Organization and offsite authorities in projecting offsite radiological consequences should radioactive isotopes be released during an accident at the DCPP. The system gathers data on meteorological parameters, onsite and offsite real time radiation monitor readings. It performs dispersion computations, disseminates information and displays data to various onsite and offsite stations. These stations include the CR, the TSC, the EOF, the SR, the Corporate Incident Response Center (CIRC), and the State Office of Emergency Services (OES) stations.

The CR, TSC, SR and EOF are all capable of being the controlling station; although only one can be the controller at any one time. Any station that is not functioning as the controller can receive calculational results from the EARAUT (EARS automatic) program via communication links. If the links are disrupted, EARS can function by means of the manual EARS program (EARMAN), using data obtained via voice communication with the controlling station operator.

This procedure provides the necessary information for CR, TSC, SR and EOF operators to start up the EARS computer hardware and run the three primary EARS programs (STATUS, EARAUT, EARMAN) on the HP-9845C desktop computer at the respective station.

The structures and contents of all EARS data files at the CR, TSC, SR and EOF EARS stations is given in Ref. 1.

PROCEDURE

1. EARS Hardware at Controlling Stations

All HP hardware at the CR, TSC, SR and EOF is covered by a service maintenance agreement with Hewlett-Packard, Inc. (see Appendix A for a complete list of hardware). In case of any hardware failure, contact the System Manager of the EARS at [redacted] and explain the problem to him. If the System Manager or his alternate cannot be contacted, the EARS operator may call Hewlett-Packard service [redacted] directly during business hours (8 a.m. to 5 p.m., Monday thru Friday).

2. Start-Up Procedures

The following start-up procedures assume that all power to the computer hardware is off when the EARS operator arrives at an EARS station.

a. Set the power strip switch on. All of the equipment at each station is connected to one power strip which is located on the back of the desk console, with the exceptions of the TSC (attached to the console underneath the HP-9845C) and SR (plugged into individual outlets). This should turn everything on if the station was left in proper order, with all of the individual component switches set to the "ON" or "1" position. Check to see that all of the switches on all of the components are set to "ON" or "1" at this point.

b. Check to see that the 7906 disc drive RUN/STOP switch is set to "RUN." After about one minute the front panel of the 7906 should display 'DRIVE READY'.

c. Check to see that the HP-9845C computer power switch (on the right side of the computer) is set to "1." The CRT should beep and begin a self-test ("MEMORY TEST IN PROGRESS" message should appear on the CRT). When the self-test is completed, the "9845 READY FOR USE" message and a flashing cursor will appear on the CRT indicating the computer is ready for use.

d. After the entire system at this station is turned on, check the paper reserve in the HP-9845C internal printer. Instructions on how to load a new roll of thermal paper into the HP-9845C internal printer is given in Appendix B.

3. Shut-Down Procedures

a. Place the 7906 disc drive RUN/STOP switch to the STOP position, and wait for the 'DOOR UNLOCKED' light to appear on the front panel of the disc.

b. Turn the power strip switch to off position. This should turn off all of the equipment. Turn off each equipment at the SR station.

4. Power Failure

Should the power to the system be lost during operation, the system must be shut-down as described in section 3 before power is restored.

Any data in the computer memory is erased by power failure.

5. EARS Software and Flow Diagrams

There are three primary EARS programs stored on the HP-7906 disc drive (select code: C12): 1) "STATUS: for non-emergency (or idle) mode operations; 2) "EARAUT" automatic EARS program; and 3) "EARMAN" - manual EARS program for emergency mode operations.

There are two basic modes in which the EARAUT program can be operated: CONTROL and NON-CONTROL. Only the CR, the SR and the TSC EARS stations at DCPP, and the EOF EARS station in San Luis Obispo can be operated in the CONTROL mode. Only one station can serve as the controller at any one time. Data is transmitted to all NON-CONTROL stations in fixed data strings containing information about the accident, instrument readings, calculated dose results, and messages.

Once the EARS station is activated, the operator should start running the STATUS program. If the emergency mode of EARS has already been established at another controlling station, EARAUT program will automatically be loaded from the disc and be run on the HP-9845C.

The flow diagrams following each program description are intended to give an EARS operator a general overview of the operator logic flow for each of the main EARS programs. The numbers in the flow diagrams reference other "KEY SETS" within the same program, whereas the letters reference specific entry points within the same or other programs.

a. STATUS

When EARS is not operated in the emergency mode, this program allows all HP-9845C stations to log onto the system for data polling purposes. As long as this station stays 'logged on' to the system, it can be 'scheduled' automatically to go into emergency mode by a CONTROL station when an emergency is declared.

When 'logged on', this program allows the operator to poll the HP-1000 at the TSC for meteorology (MET), plant radiation monitors (RMS), or pressurized ion chambers (PIC) data. It also allows the operator to determine the system network status, such as which stations are currently logged on in the system, and when they are logged on or off. In addition, the site and area maps can be displayed and 'dumped' to the thermal printer on the HP-9845C.

Once logged on, the operator of one of the CONTROL stations can initiate the emergency mode of EARS by pressing the key under the CRT labeled 'DOSE ASSESSMENT'. This will load EARAUT and thereby begin the actual assessment of the emergency.

1) After the computer system at this station is up and running STATUS can be loaded and run by entering the following commands from the HP-9845C keyboard.

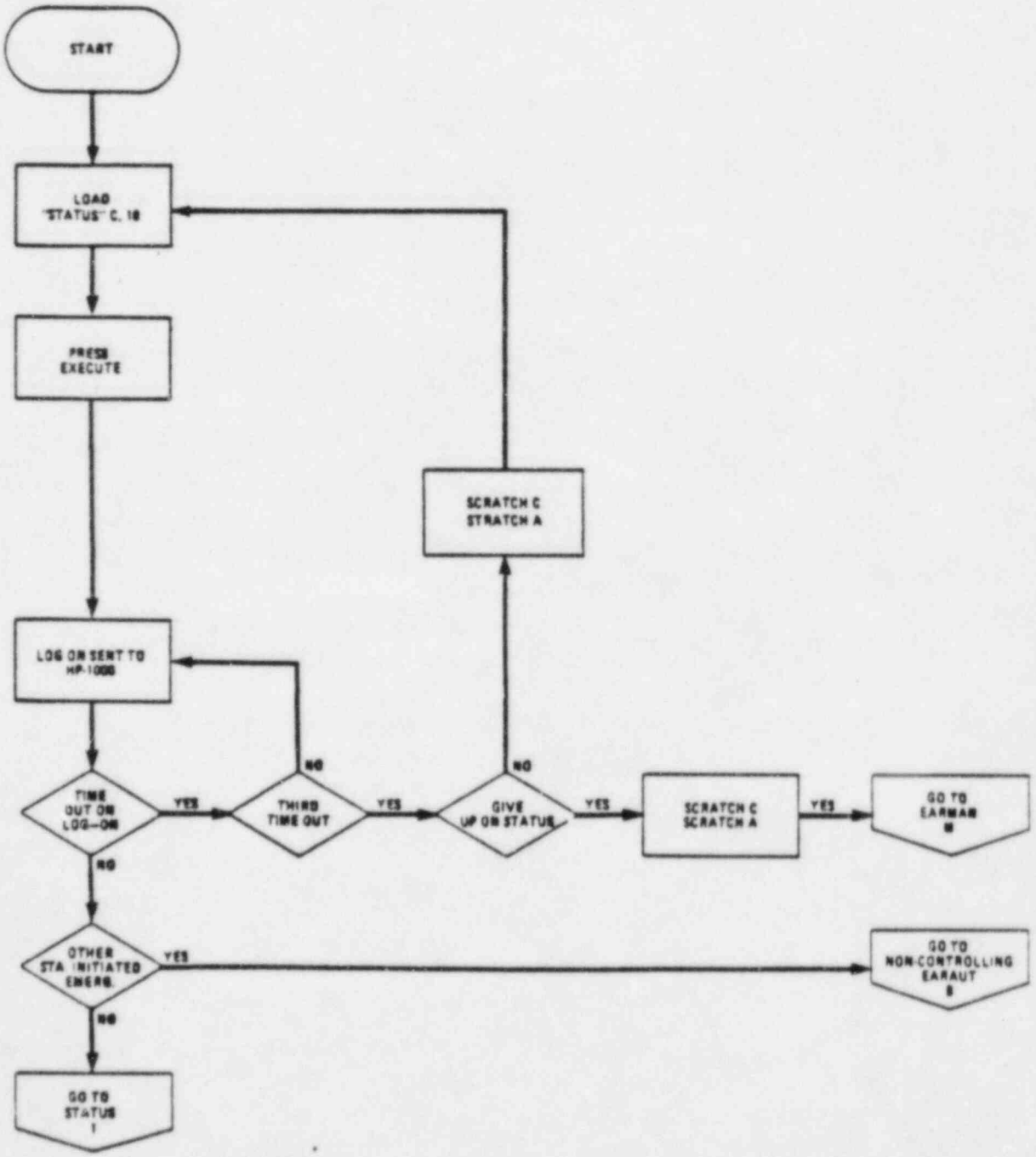
   a) Type in 'SCRATCH A', press [EXECUTE].

   b) Type in 'SCRATCH C', press [EXECUTE].

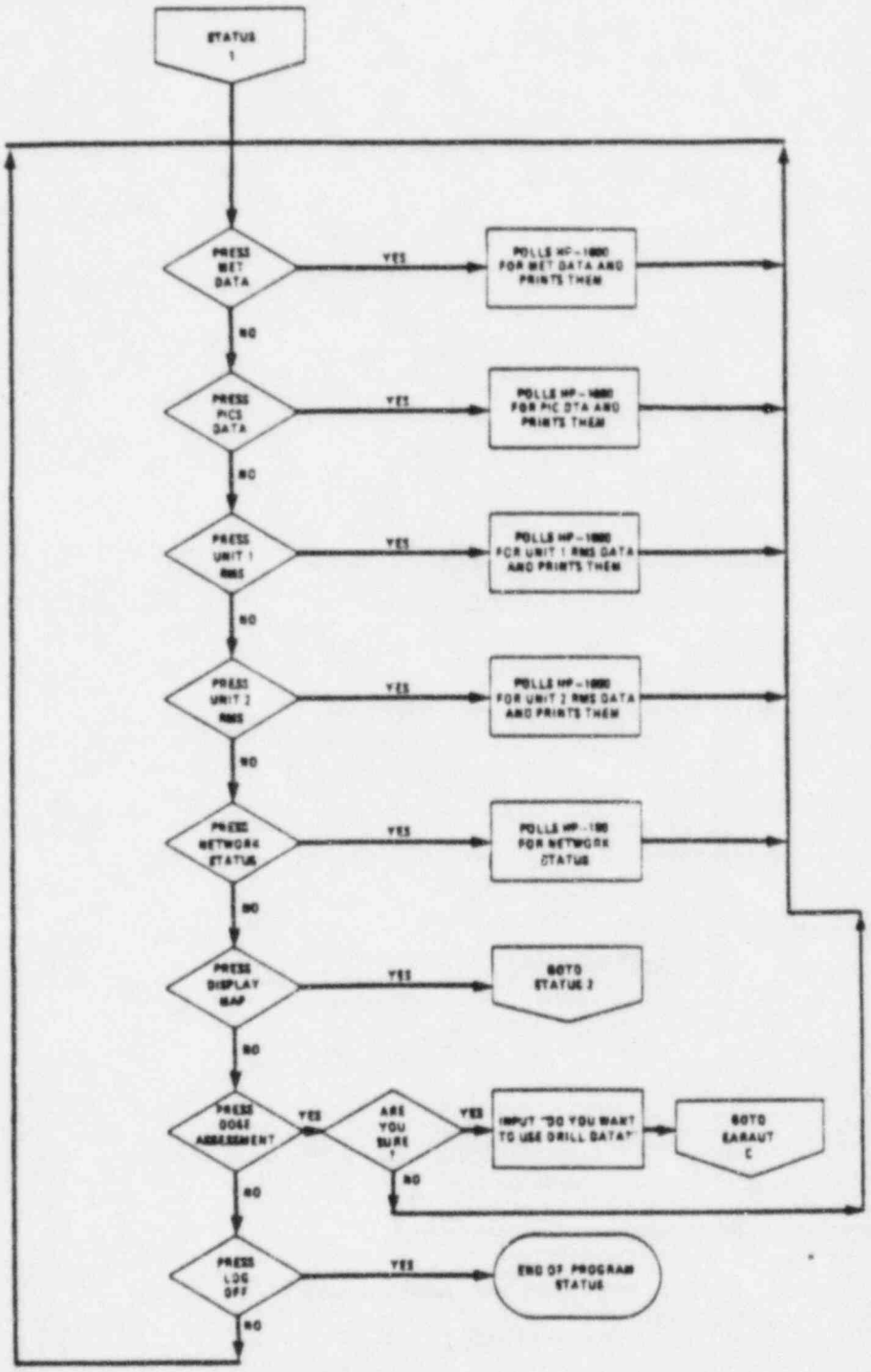
   c) Type 'LOAD "STATUS: C," 10' and press [EXECUTE] key.

2) The following three pages are flow diagrams for STATUS.

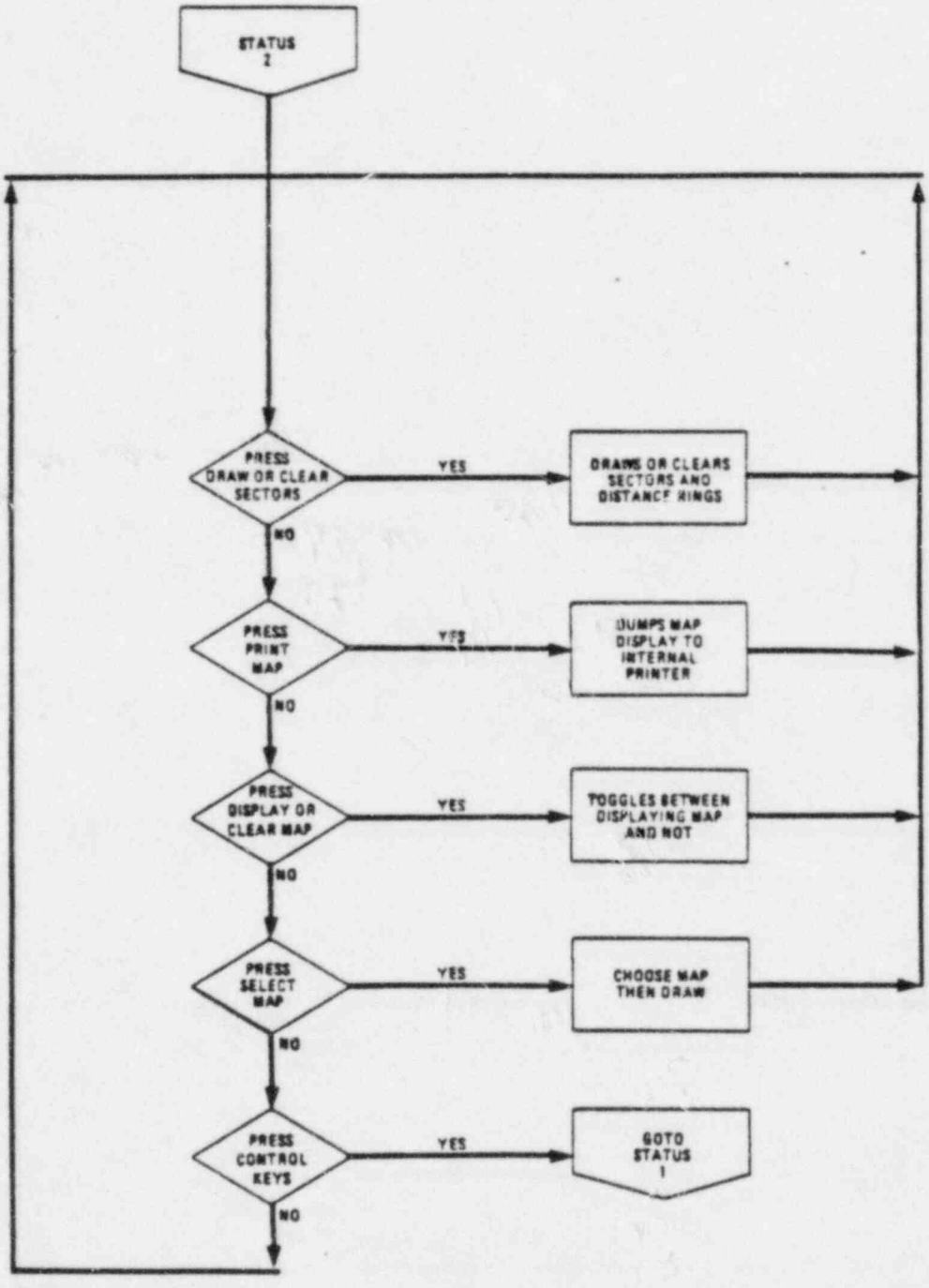
STATUS


START
LOAD "STATUS" C, 18
PRESS EXECUTE
LOG ON SENT TO HP-1000
TIME OUT ON LOG-ON
YES
NO
THIRD TIME OUT
YES
NO
GIVE UP ON STATUS
YES
SCRATCH C SCRATCH A
YES
GO TO EARMAR M
SCRATCH C STRATCH A
OTHER STA INITIATED EMERG
YES
GO TO NON-CONTROLLING EARAUT B
NO
GO TO STATUS I

STATUS KEY SET #1



STATUS KEY SET #2



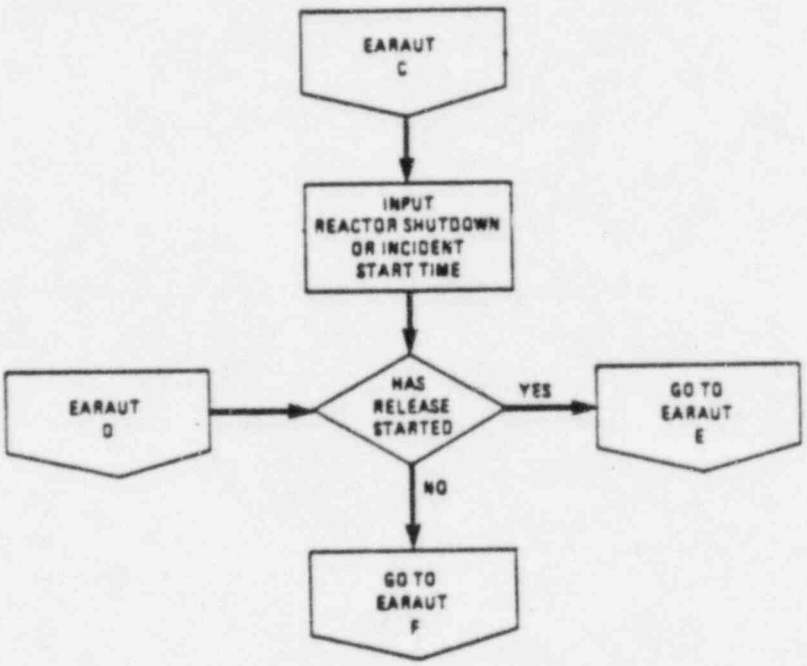
b. EARAUT PROGRAM (Controller)

The EARS automatic (EARAUT) controller program consists of two subprograms: EARADC (Central processing program for Controlling stations), and EARrdc (Release rate calculation subprogram), in addition to the EARAUT main entry program. These subprograms are loaded in and out of the HP-9845C as needed.

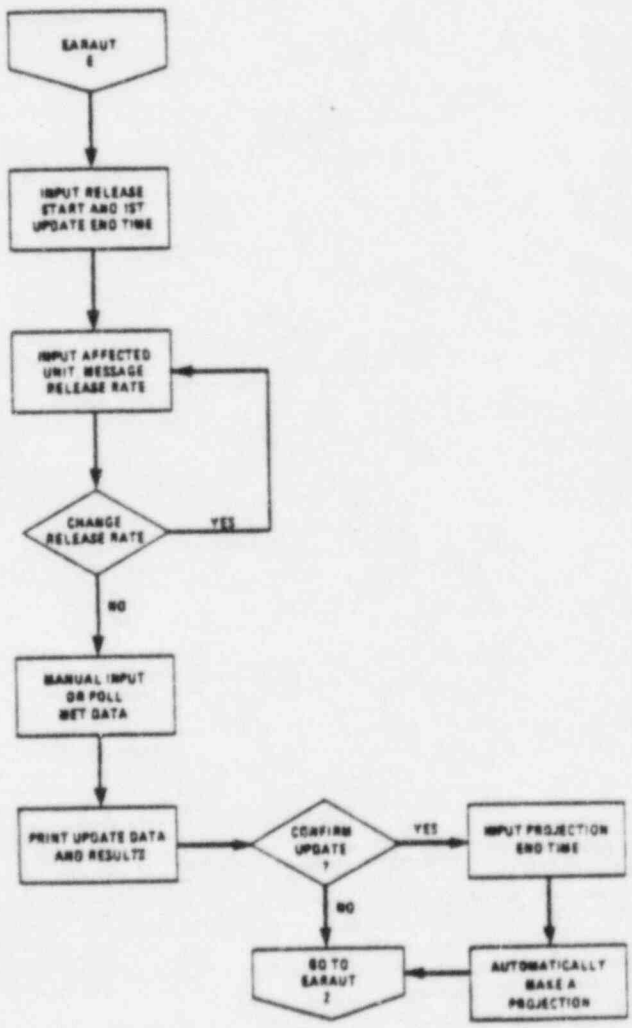
EARAUT can be loaded and run as the CONTROLLING station by pressing the 'DOSE ASSESSMENT' softkey in the STATUS program.

The following eleven pages are flow diagrams for controlling EARAUT.

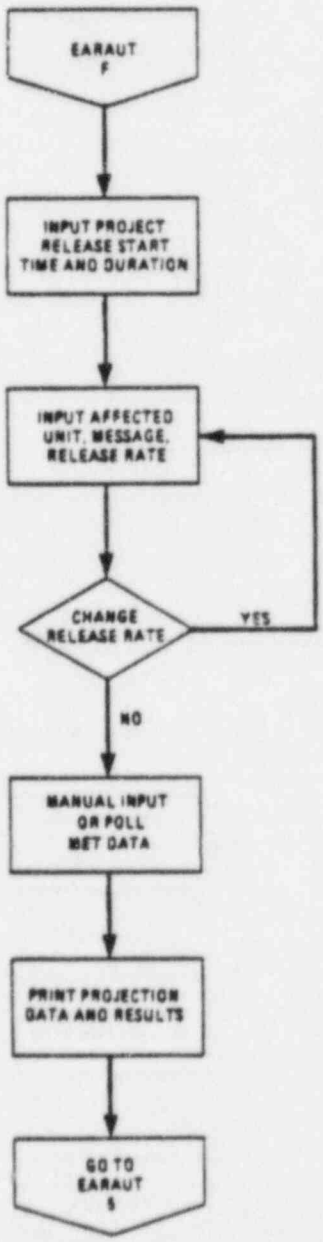
EARAUT FOR CONTROLLING STATIONS



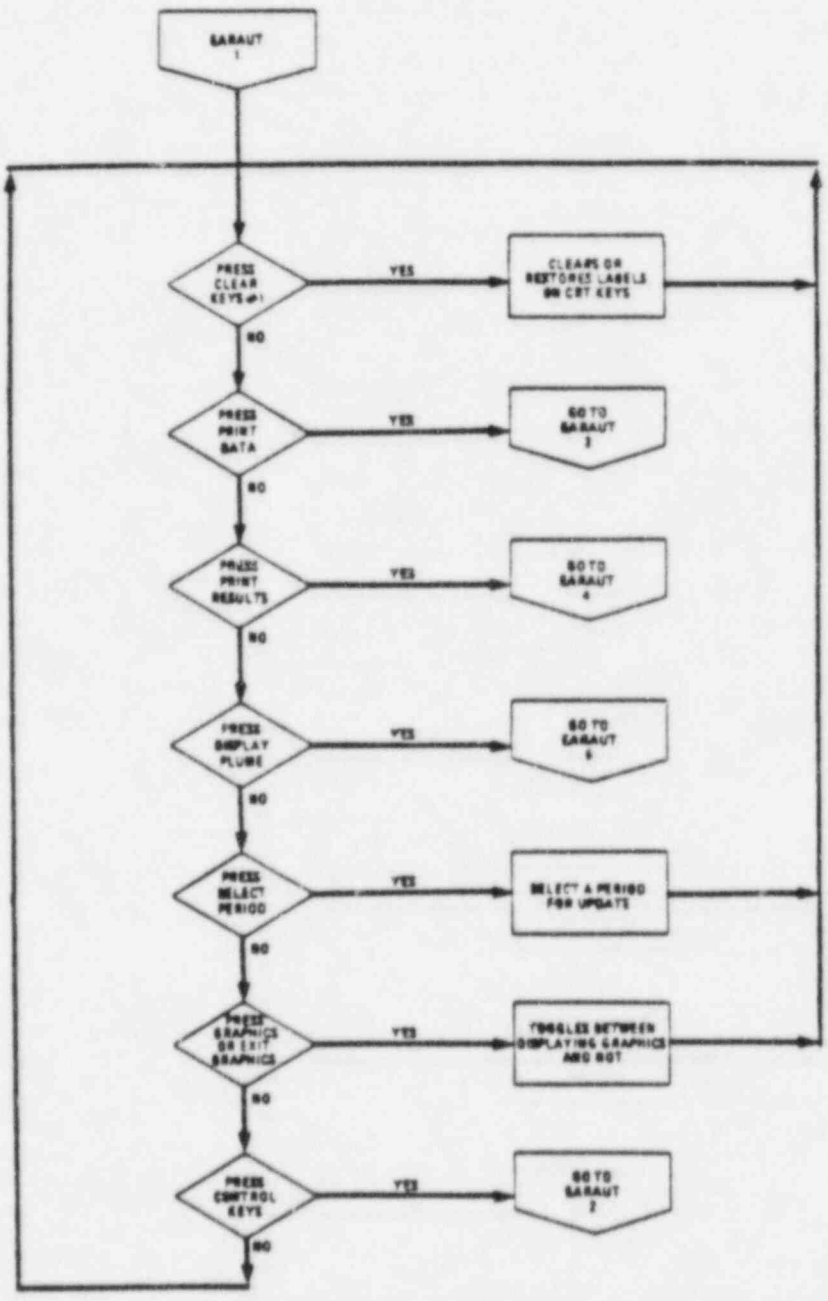
CONTROL EARAUT FIRST UPDATE



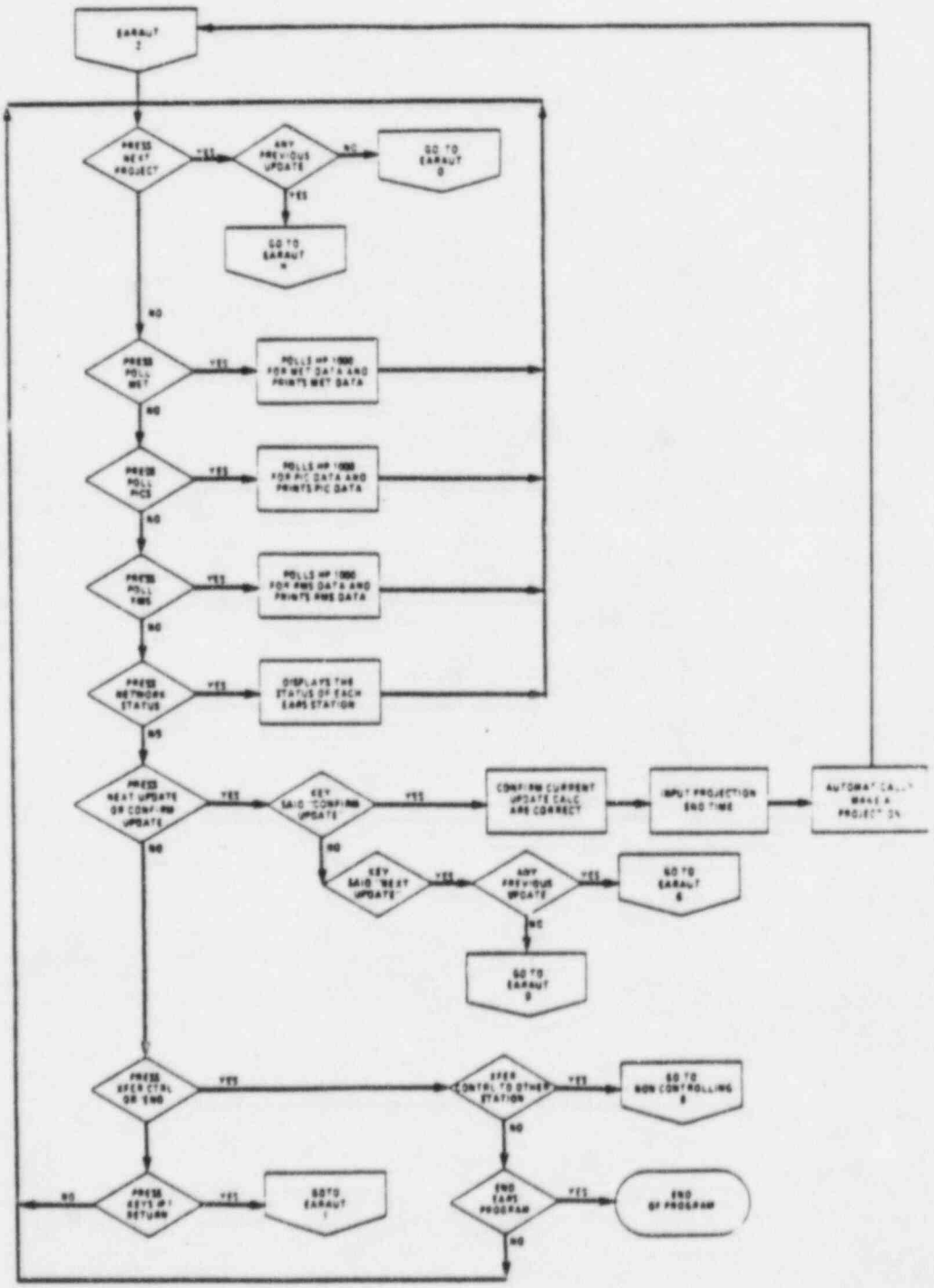
CONTROL EARAUT PROJECTION BEFORE FIRST UPDATE



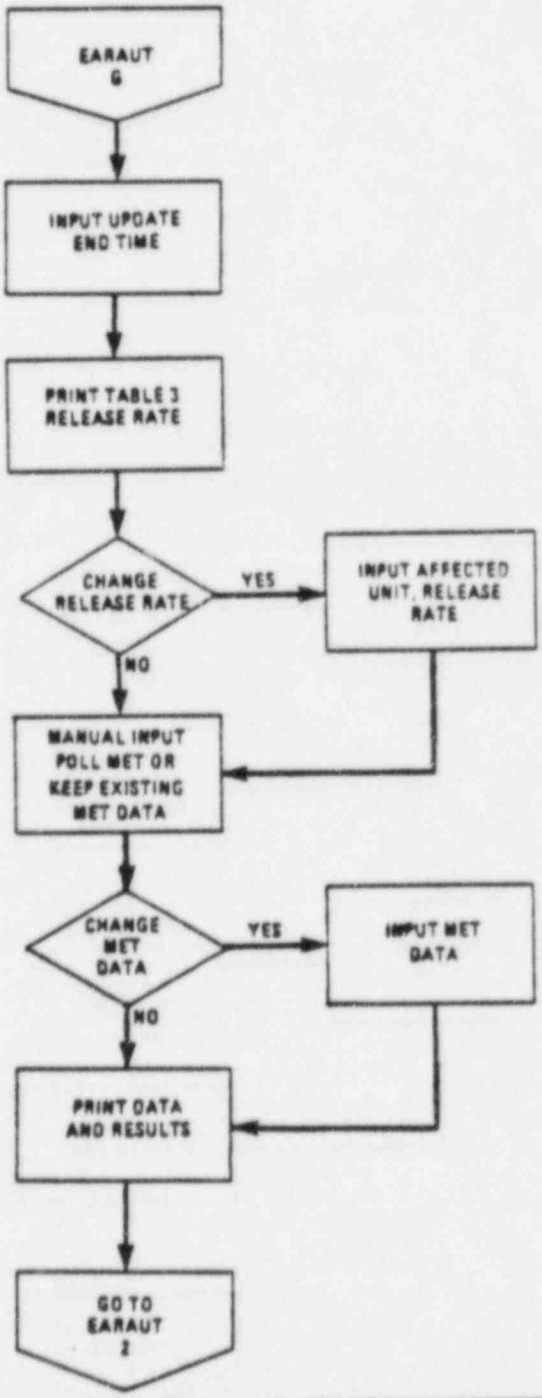
CONTROL EARAUT KEY SET #1



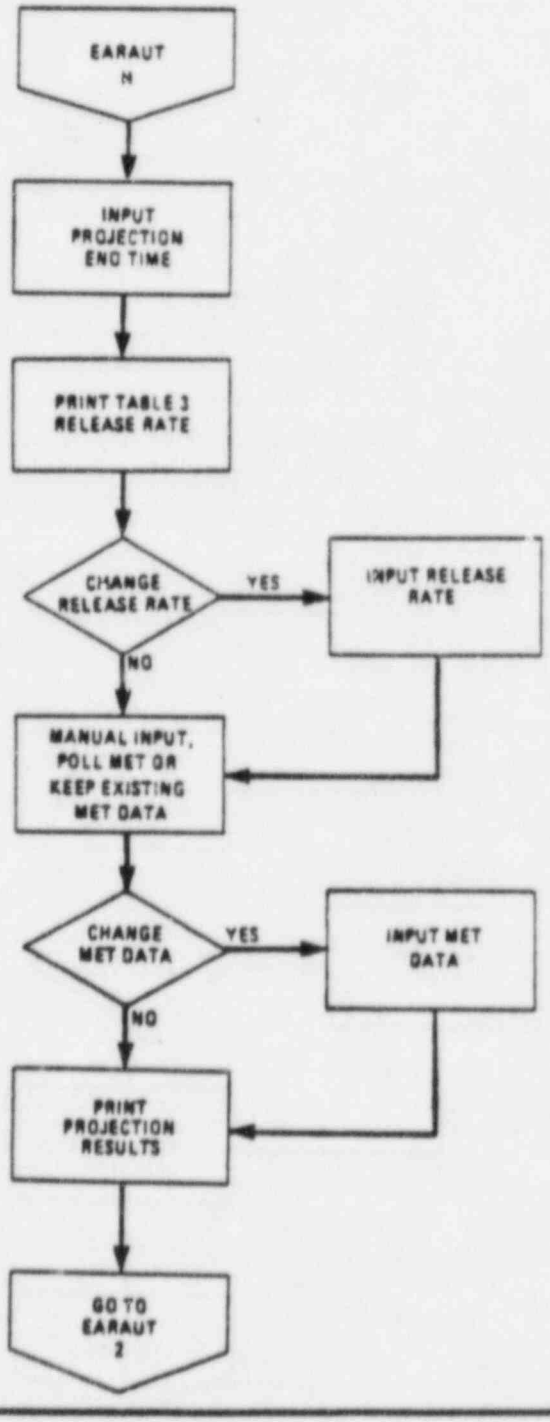
CONTROL EARAUT KEY SET #2



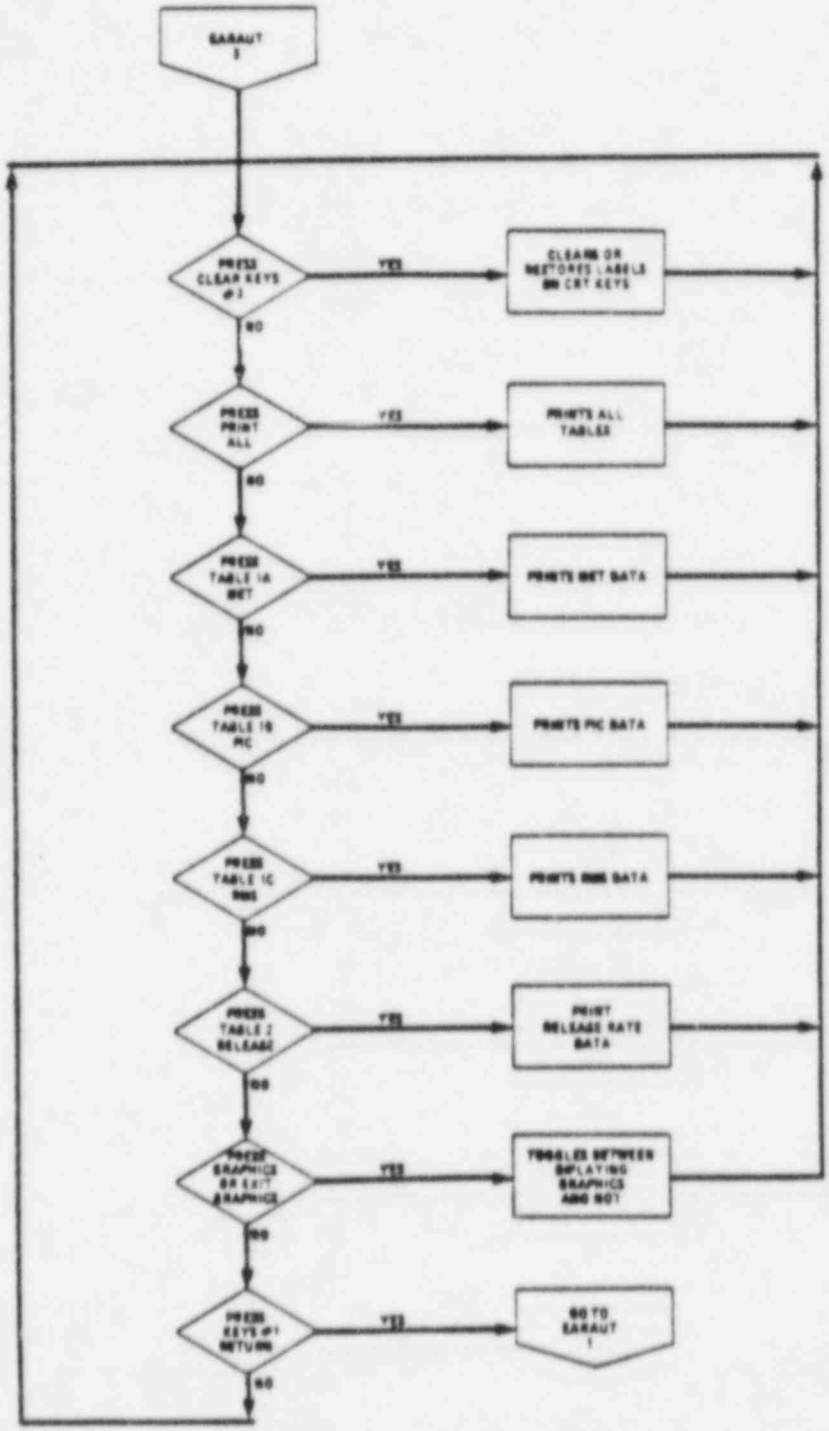
CONTROL EARAUT NEXT UPDATE



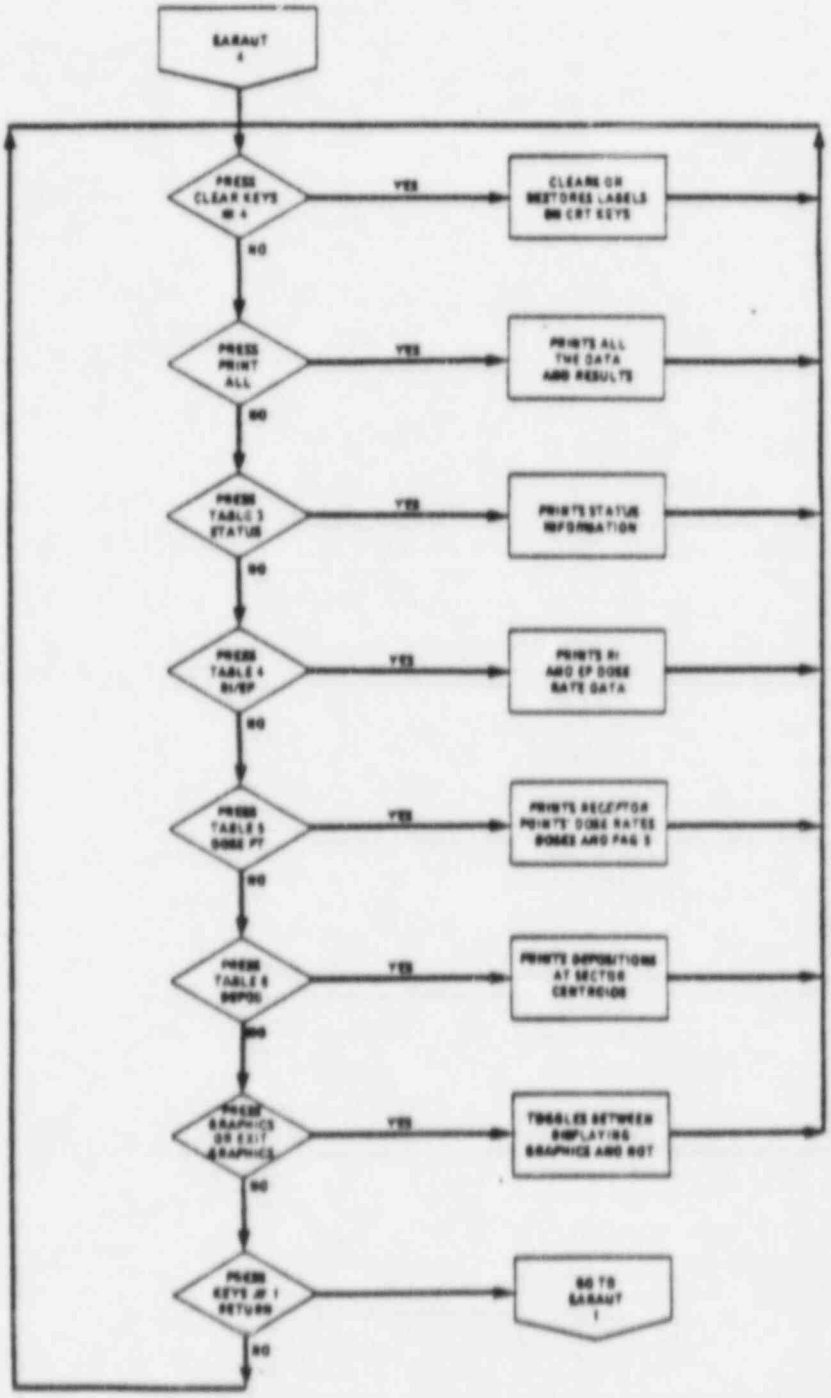
CONTROL EARAUT NEXT PROJECTION



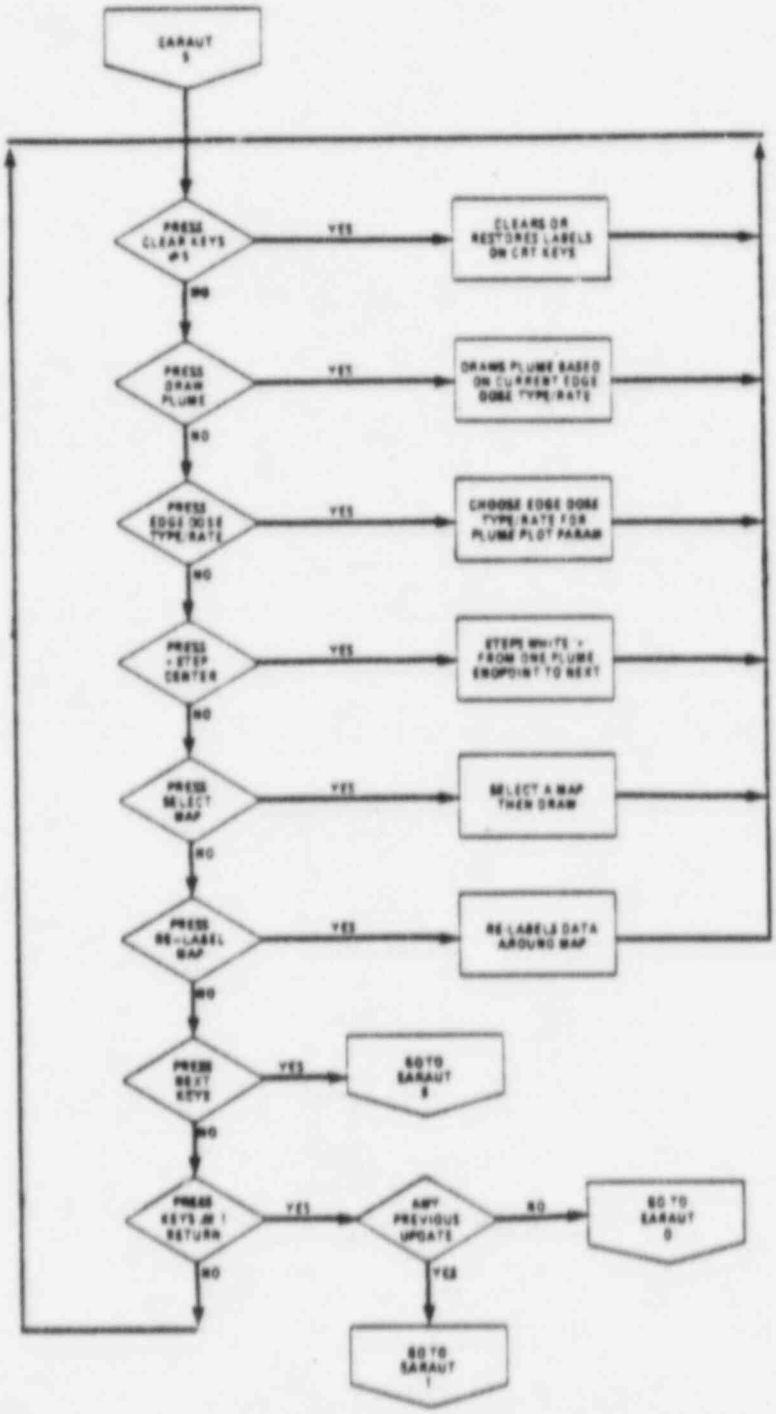
CONTROL EARAUT KEY SET #3



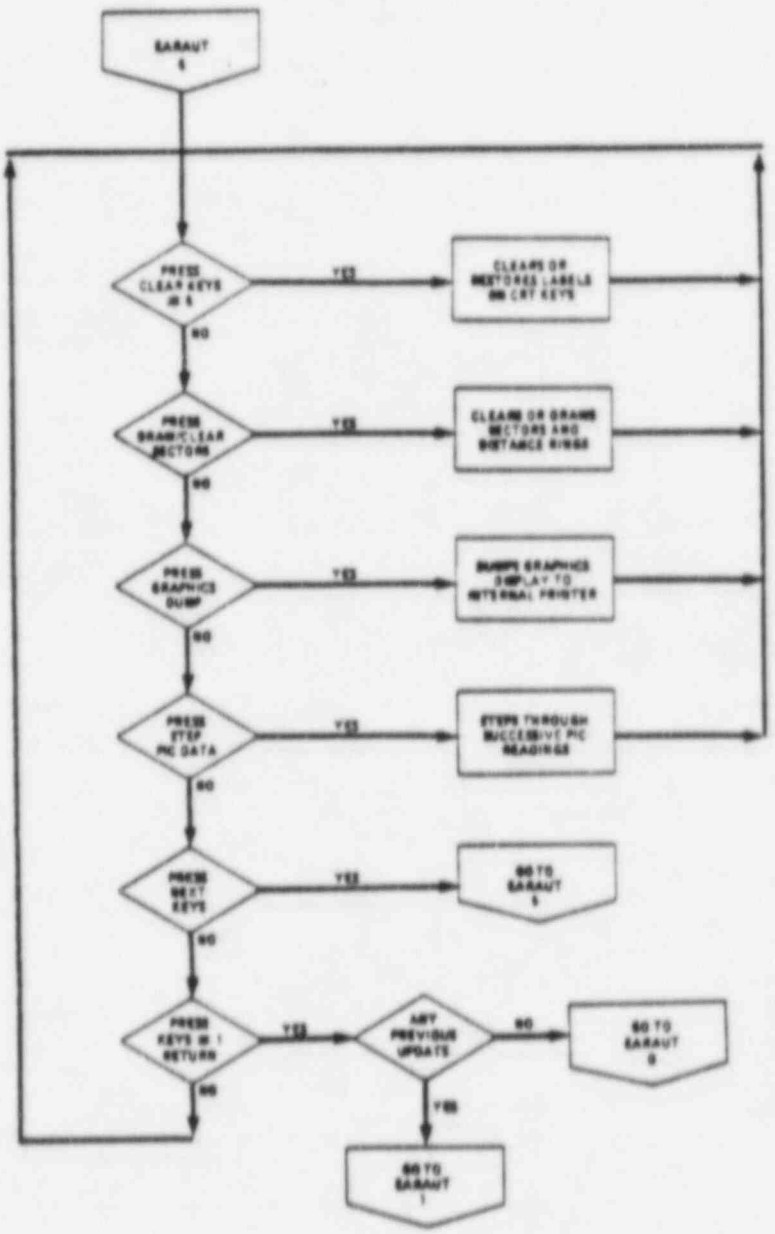
CONTROL EARAUT KEY SET #4



CONTROL EARAUT KEY SET #5



CONTROL EARAUT KEY SET #6



c. EARAUT PROGRAM (Non-Controller)

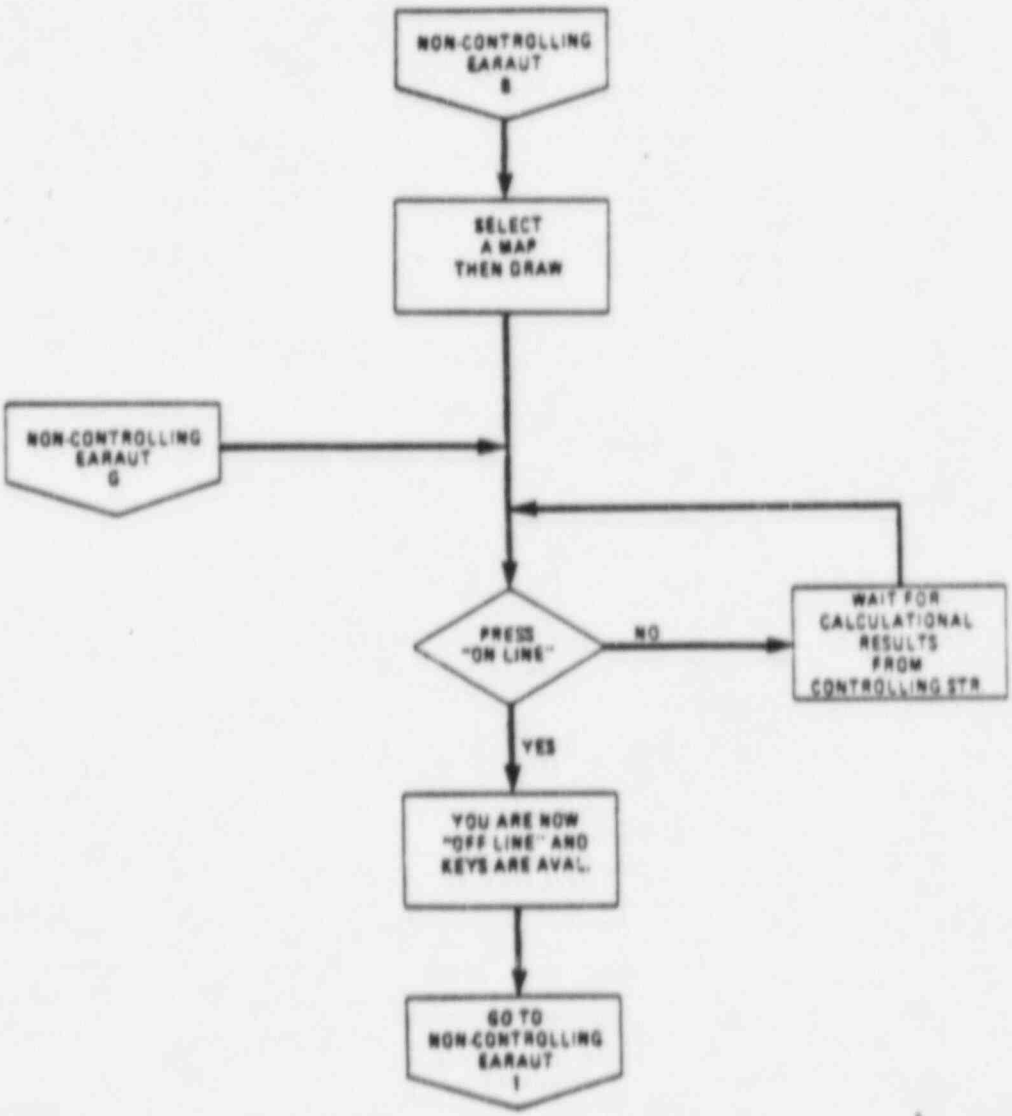
The EARS automatic (EARAUT) non-controller program consists of one subprogram: EARNDC (Central processing program for Non-Controlling stations), in addition to the EARAUT main entry program.

The function of EARAUT as a non-controller is to receive periodic updates of plume release parameters, and observe the resulting plume displays, as based on input from a EARS CONTROL station.

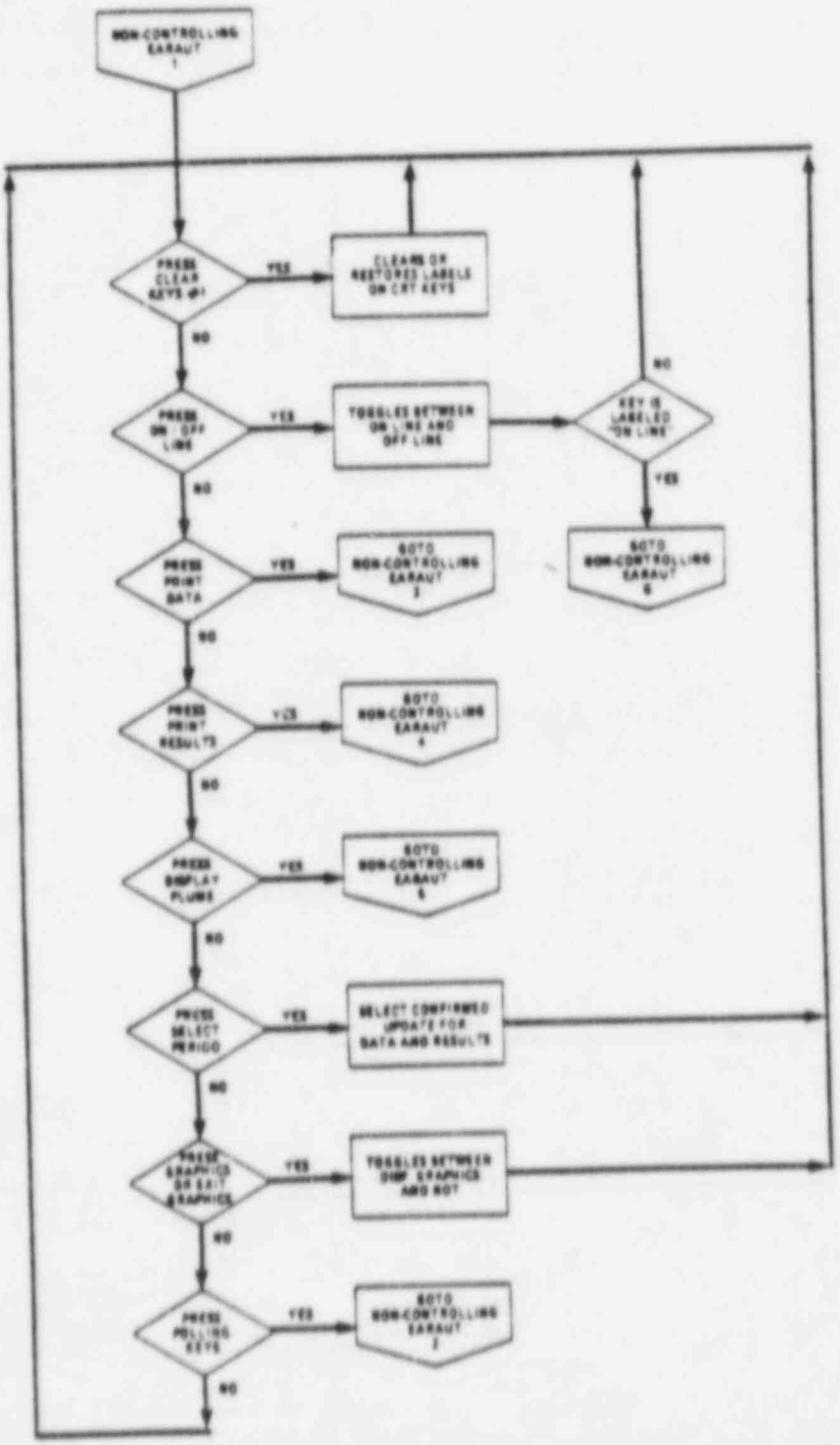
EARAUT (Non-controller) can be run in the following way. The user loads the STATUS program and waits for one of the 'CONTROL' stations to log on as the 'CONTROLLER.'

The following SEVEN pages are flow diagrams for non-controlling EARAUT.

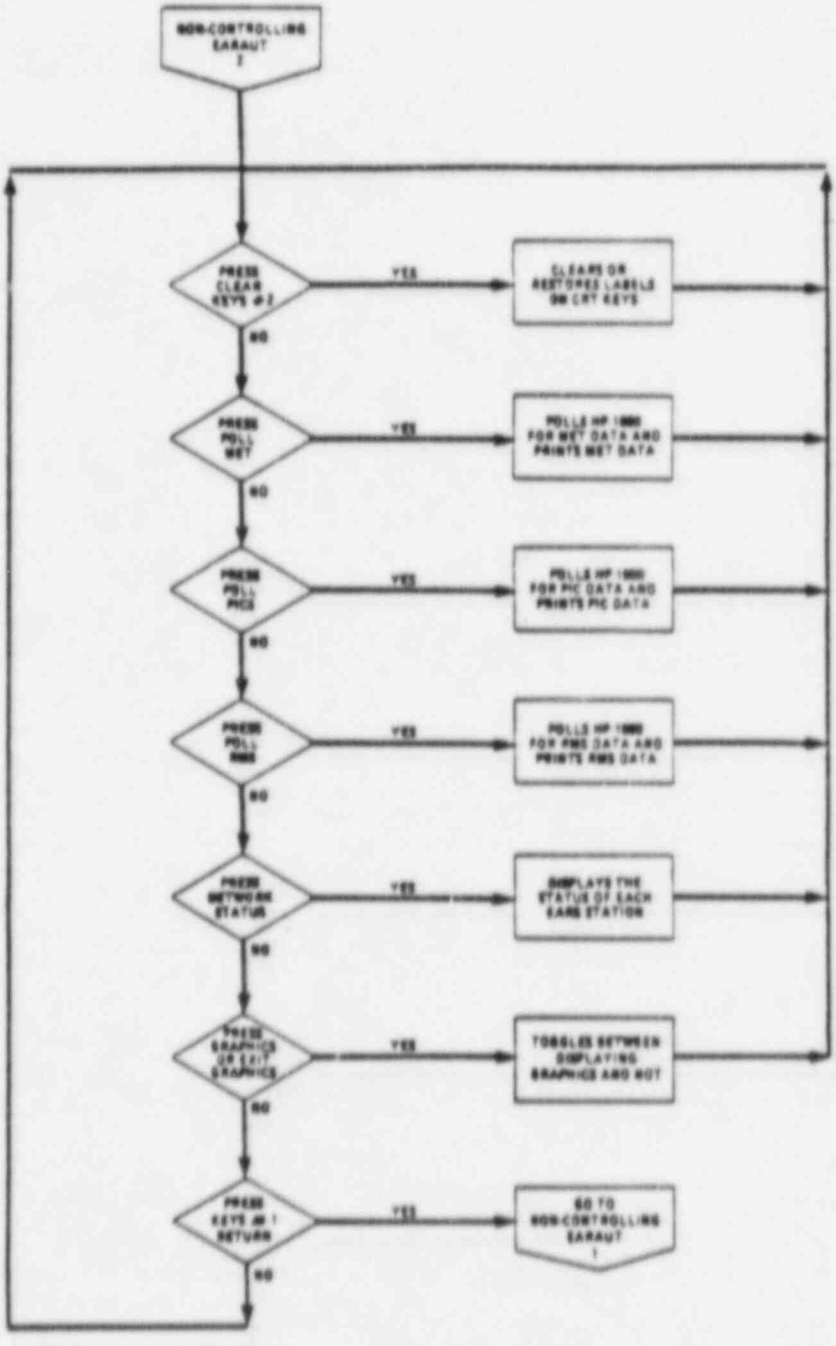
EARAUT FOR NON-CONTROL STATIONS



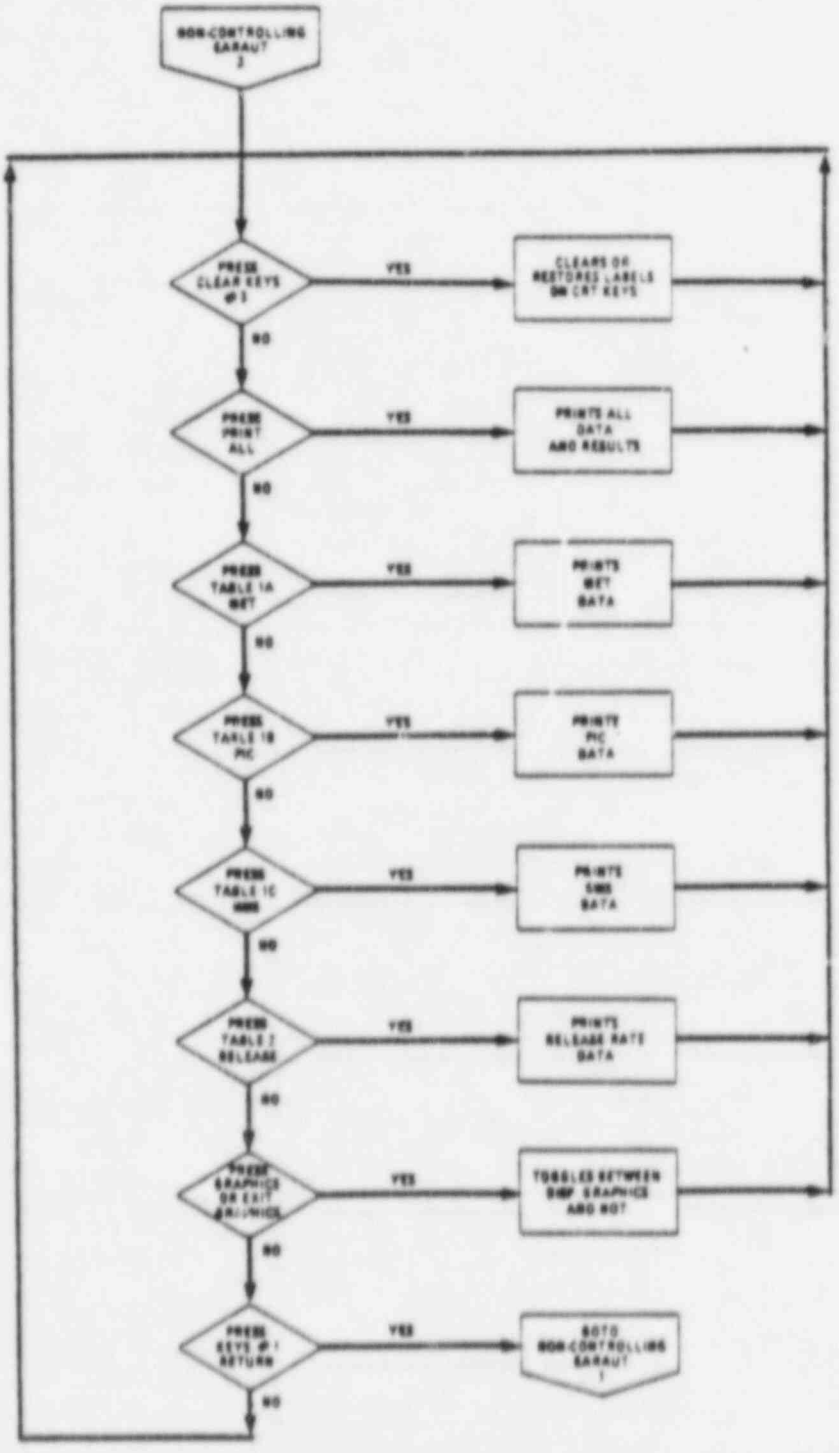
NON-CONTROL EARAUT KEY SET #1



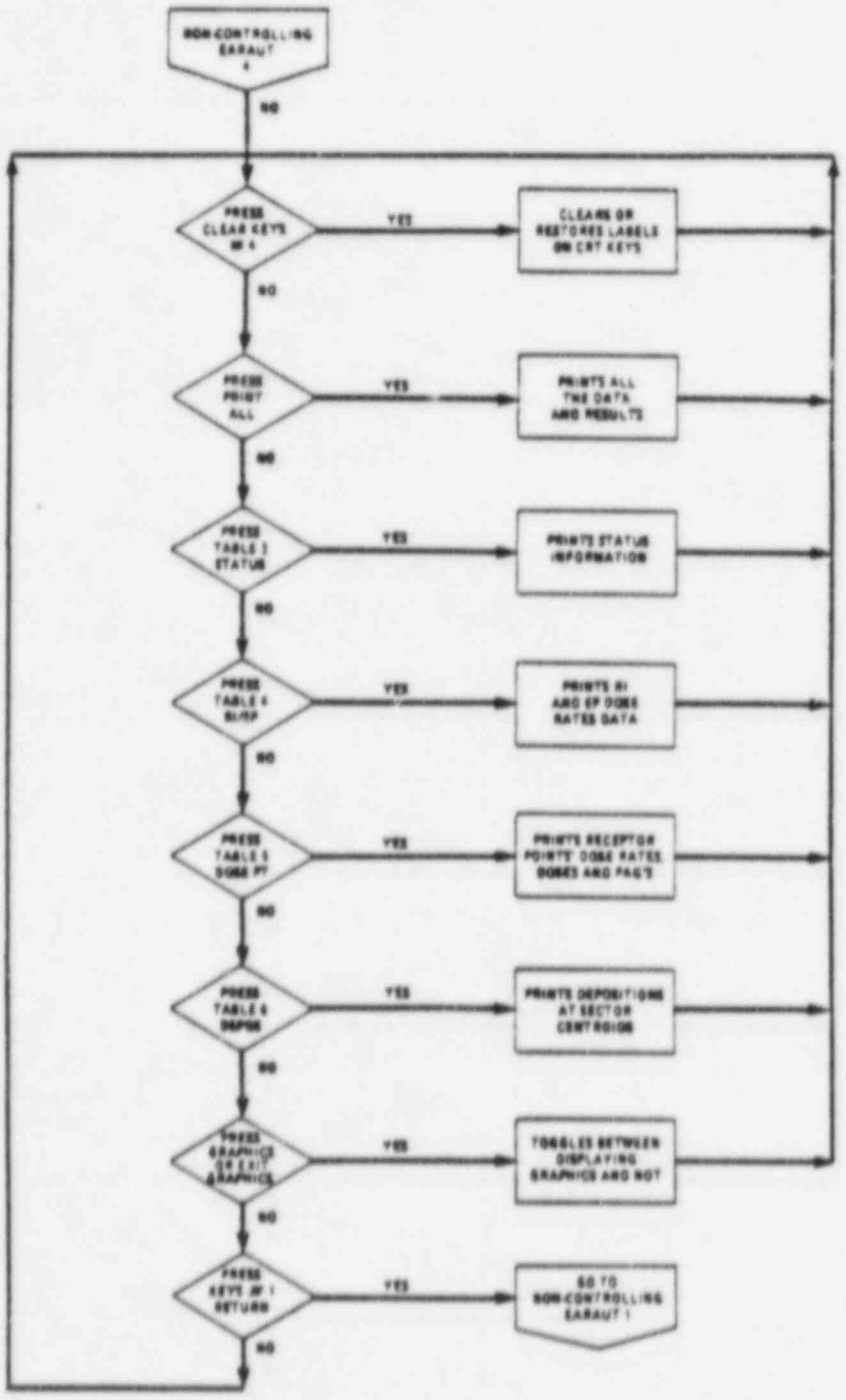
NON-CONTROL EARAUT KEY SET #2



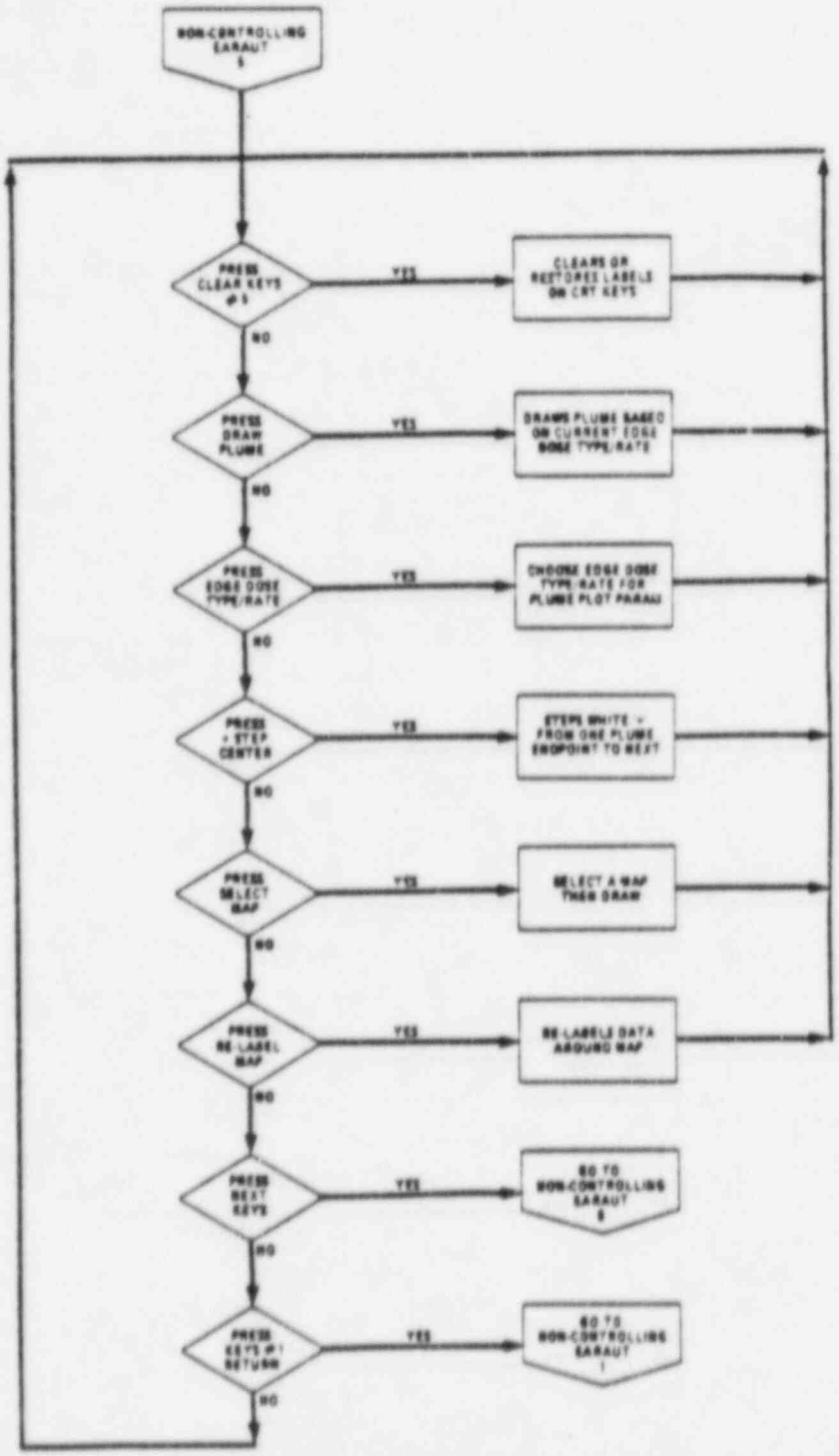
NON-CONTROL EARAUT KEY SET #3



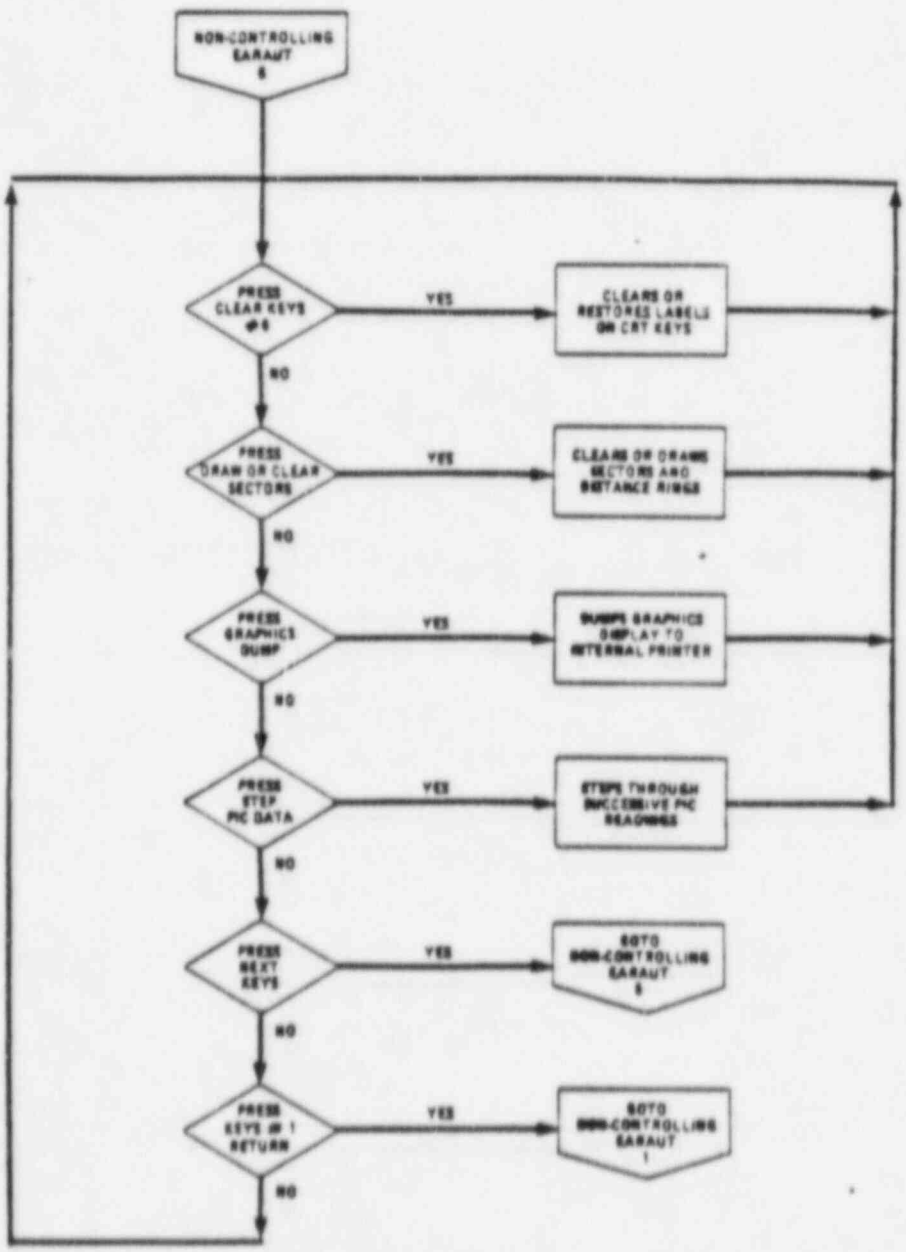
NON-CONTROL EARAUT KEY SET #4



EARAUT NON-CONTROL KEY SET #5



NON-CONTROL EARAUT KEY SET #6



d. EARMAN PROGRAMS

The EARS Manual (EARMAN) program is the manual version of the EARS programs. All of its functions are performed at the individual HP-9845C stations independent of the operation of the other stations and the HP-1000 at the TSC. Any data input such as MET data or release rate data is manually entered from the keyboard. In addition no data is transmitted to or from a station that is operating EARMAN. EARMAN consists of two separate subprograms: EARMDC (Core subprogram) and EARRDC (Release rate definition subprogram), in addition to the initial entry program EARMAN. These subprograms are loaded in and out of the HP-9845C as needed.

In the event of a hardware failure of the HP-1000 at the TSC and/or the loss of communications between various HP-9845C EARS stations and the HP-1000, EARMAN program can be initiated. Essential data can be obtained by telephone communication via PGandE or PT&T lines with EARS operators at the other 'CONTROLLING STATIONS' (CR, TSC, SR, or EOF).

1. To load and run the EARMAN program type in the following commands from the keyboard.

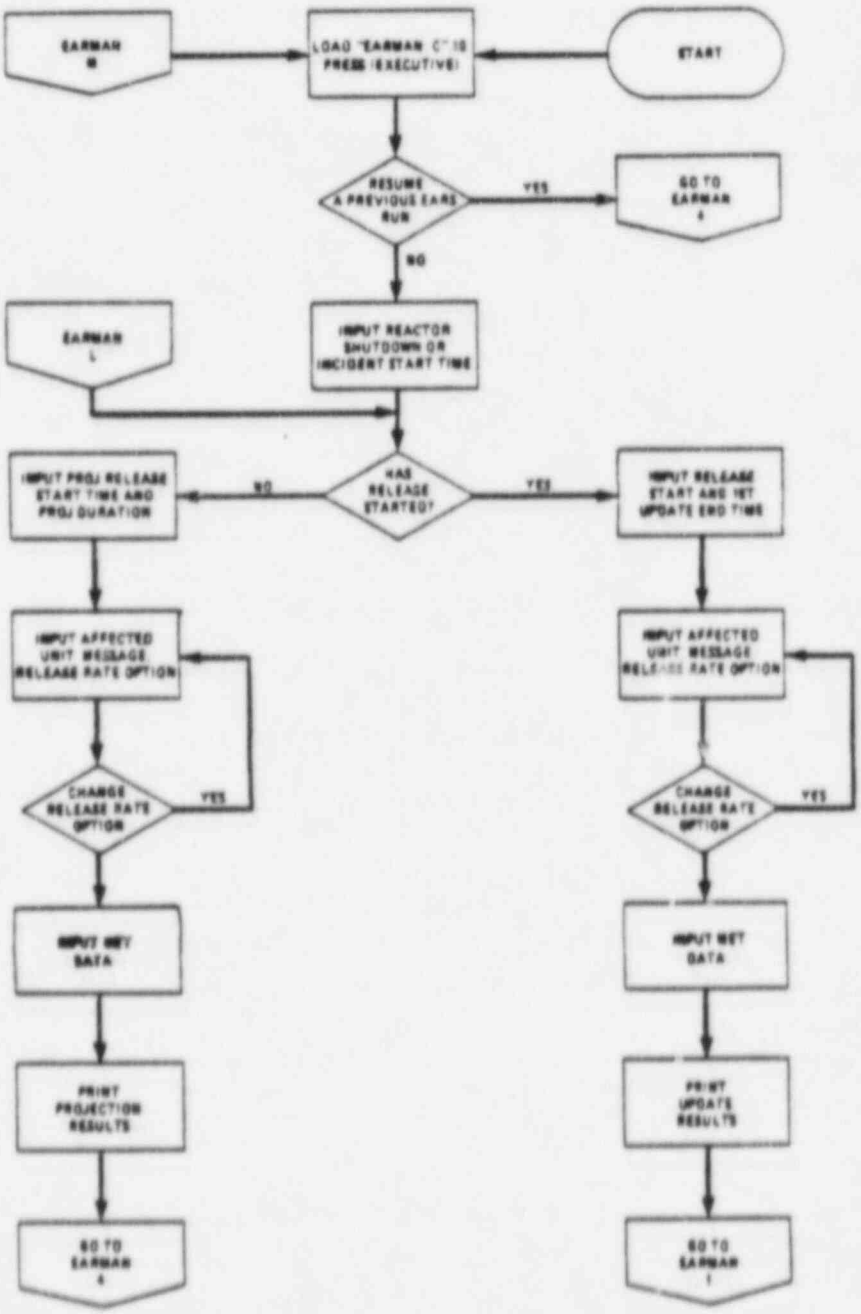
   a. Type in 'SCRATCH A', press [EXECUTE].

   b. Type in 'SCRATCH C', press [EXECUTE].

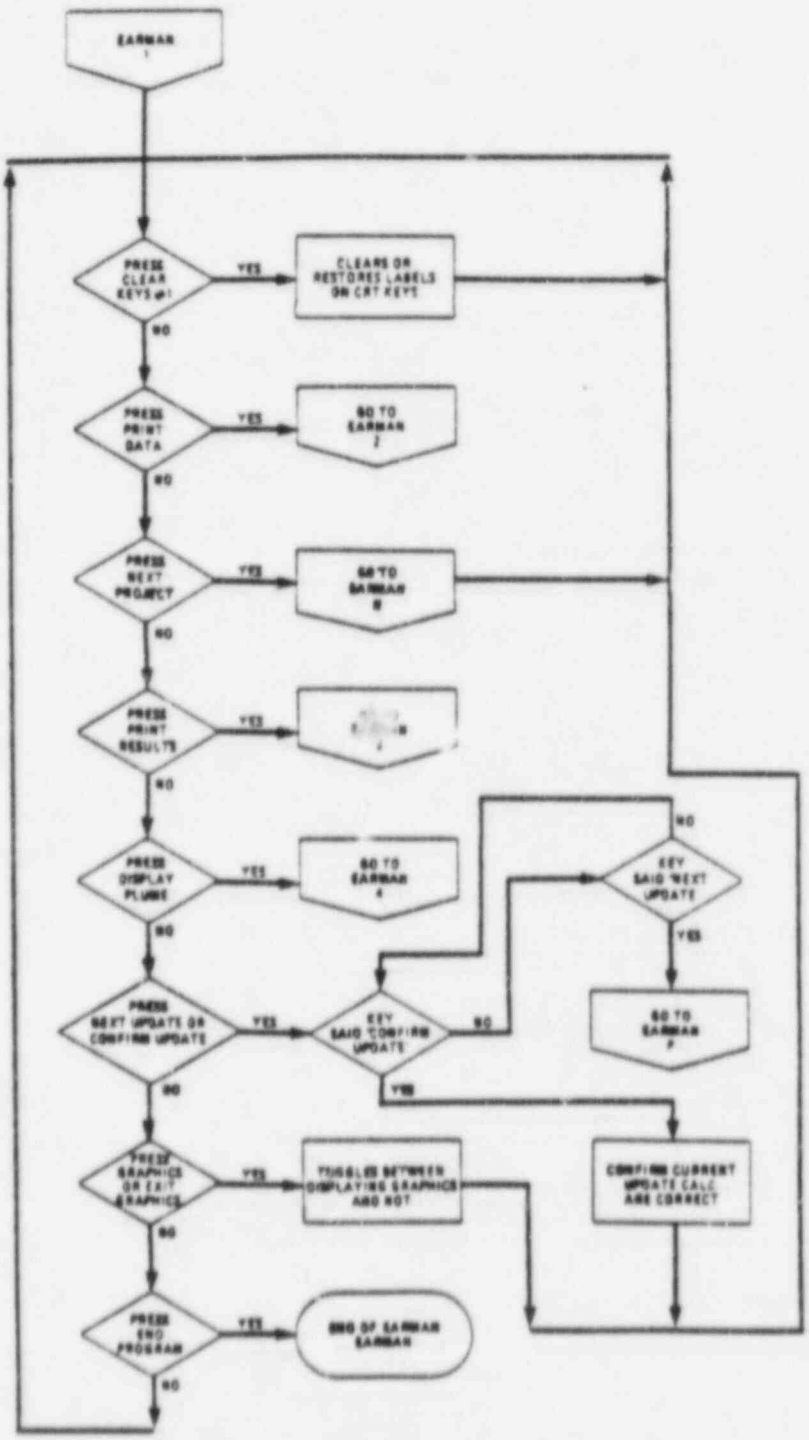
   c. Type in 'LOAD "EARMAN: C," 10', and press [EXECUTE].

2. The following eight pages are flow diagrams for EARMAN.

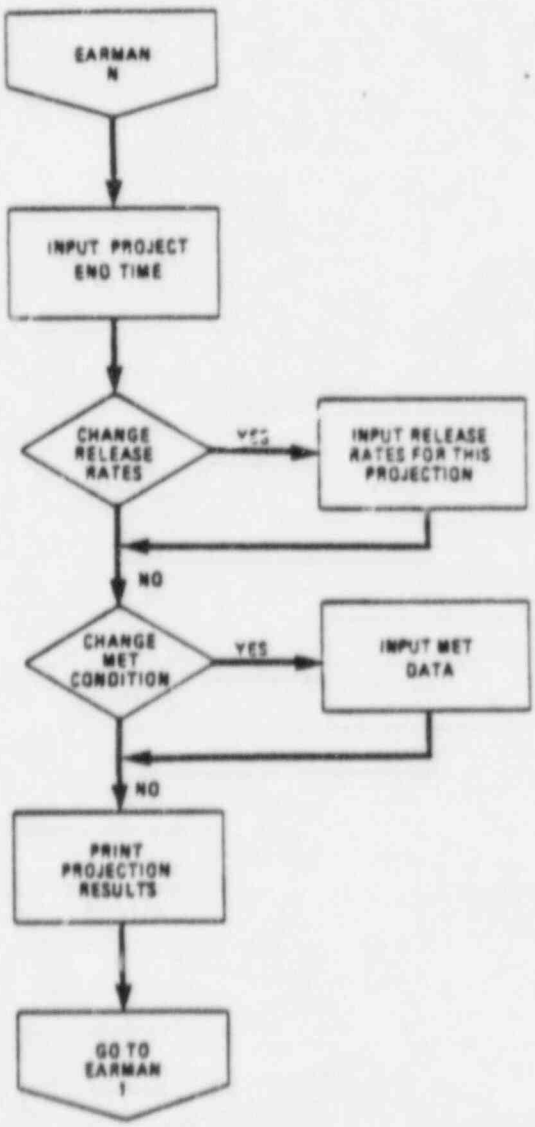
EARMAN


EARMAN
M
LOAD "EARMAN C" TO
PRESS (EXECUTIVE)
START
RESUME
A PREVIOUS EARS
RUN
YES
GO TO
EARMAN
4
NO
EARMAN
L
INPUT REACTOR
SHUTDOWN OR
INCIDENT START TIME
INPUT PROJ RELEASE
START TIME AND
PROJ DURATION
NO
HAS
RELEASE
STARTED?
YES
INPUT RELEASE
START AND 1ST
UPDATE END TIME
INPUT AFFECTED
UNIT MESSAGE
RELEASE RATE OPTION
INPUT AFFECTED
UNIT MESSAGE
RELEASE RATE OPTION
CHANGE
RELEASE RATE
OPTION
YES
CHANGE
RELEASE RATE
OPTION
YES
INPUT MET
DATA
INPUT MET
DATA
PRINT
PROJECTION
RESULTS
PRINT
UPDATE
RESULTS
GO TO
EARMAN
4
GO TO
EARMAN
1

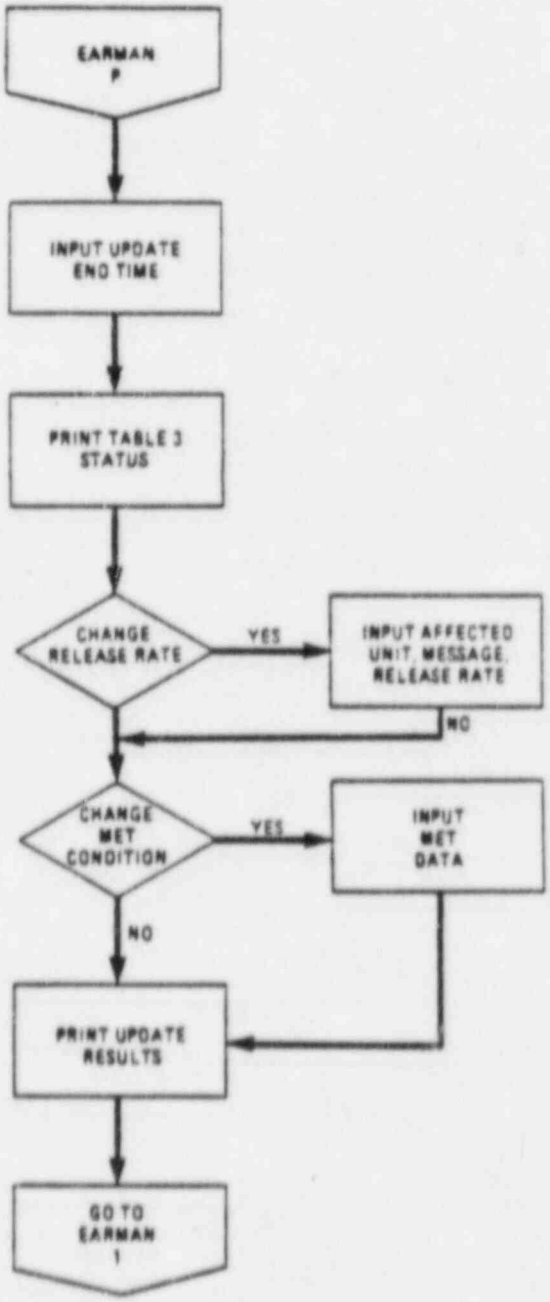
EARMAN KEY SET #1



EARMAN NEXT PROJECTION

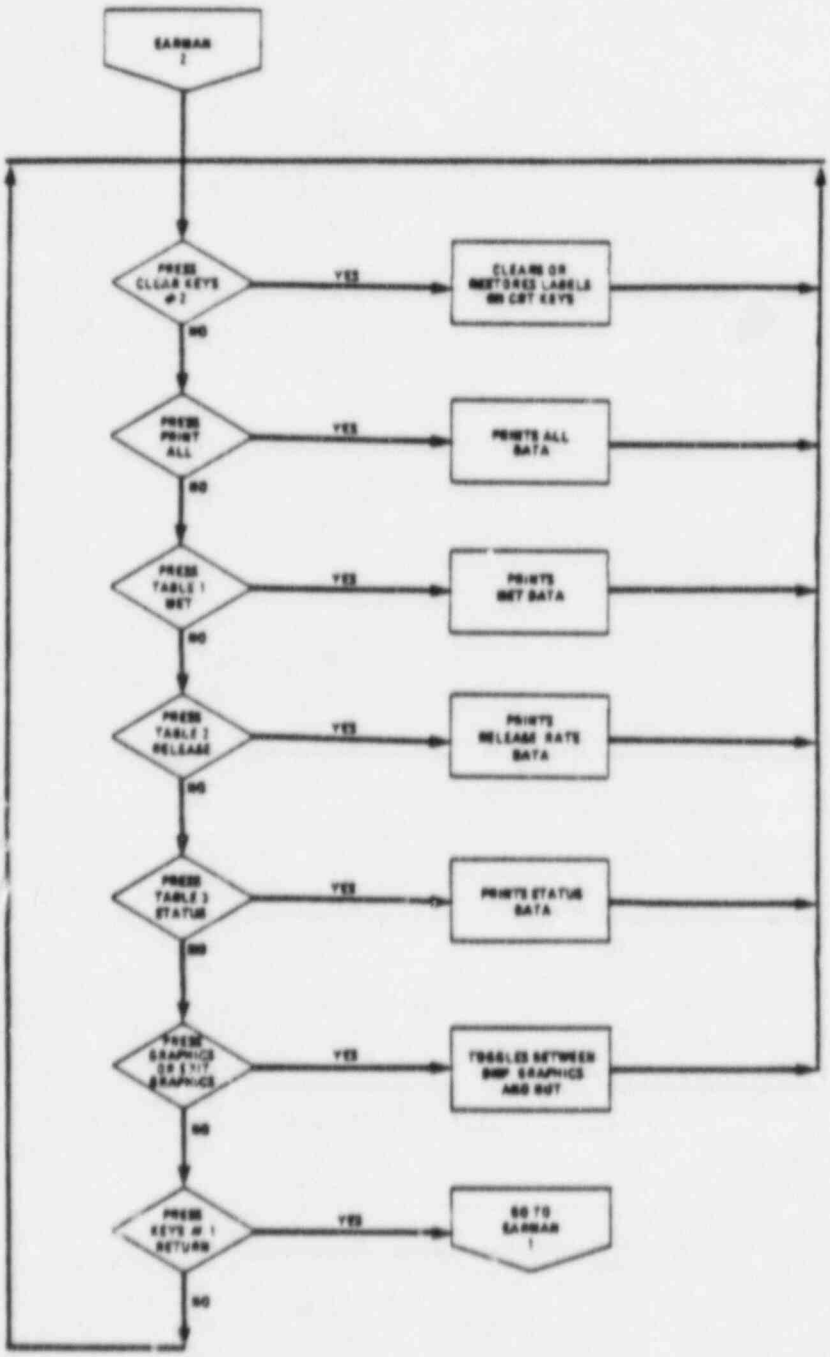


EARMAN NEXT UPDATE

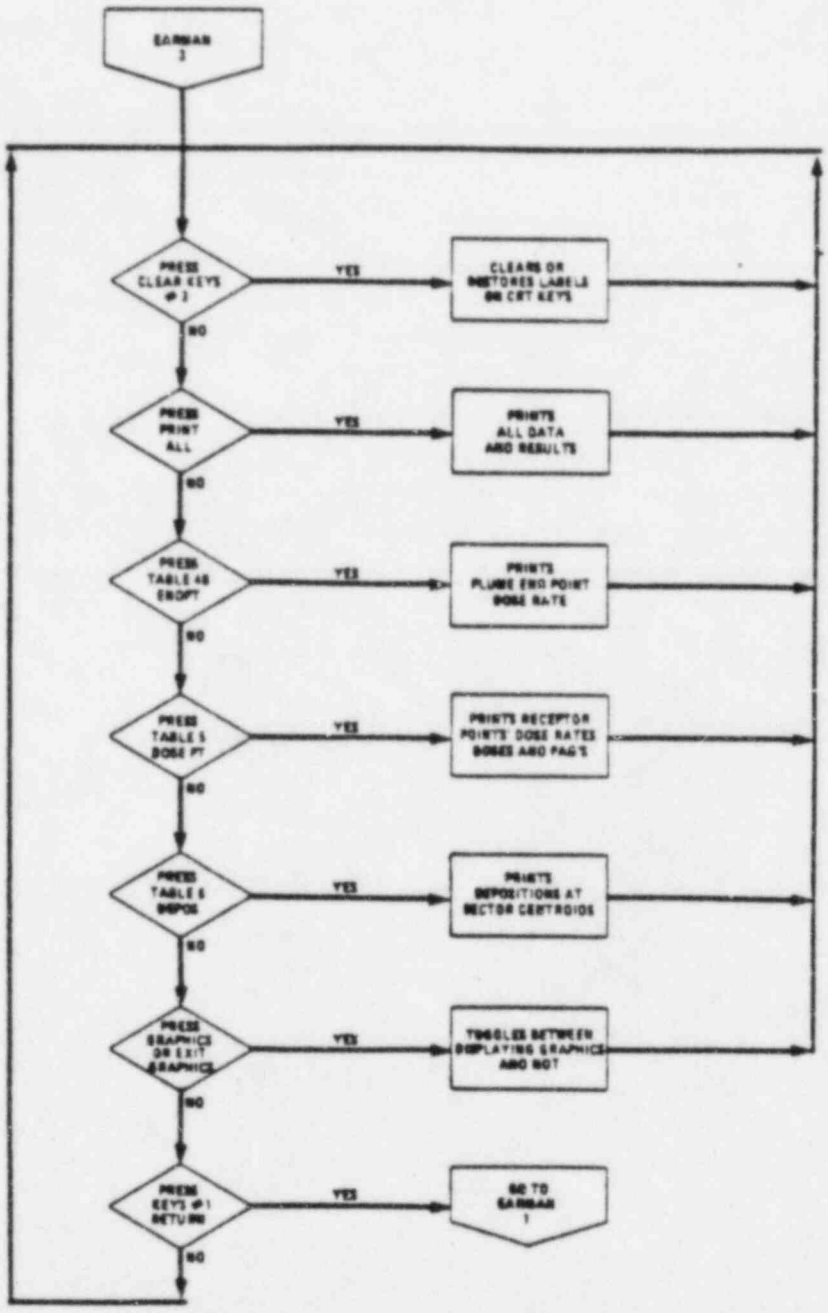


TITLE OPERATING PROCEDURES FOR EARS 9845C CONTROLLING STATIONS

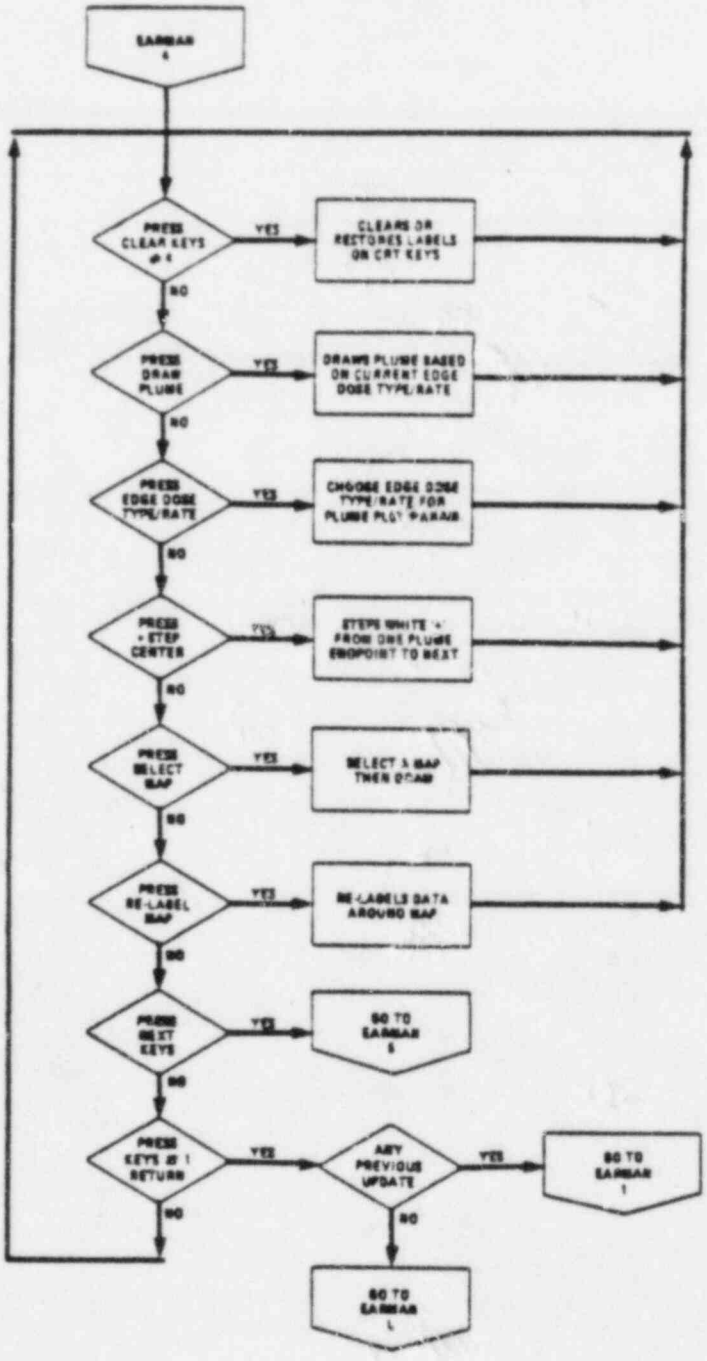
EARMAN KEY SET #2



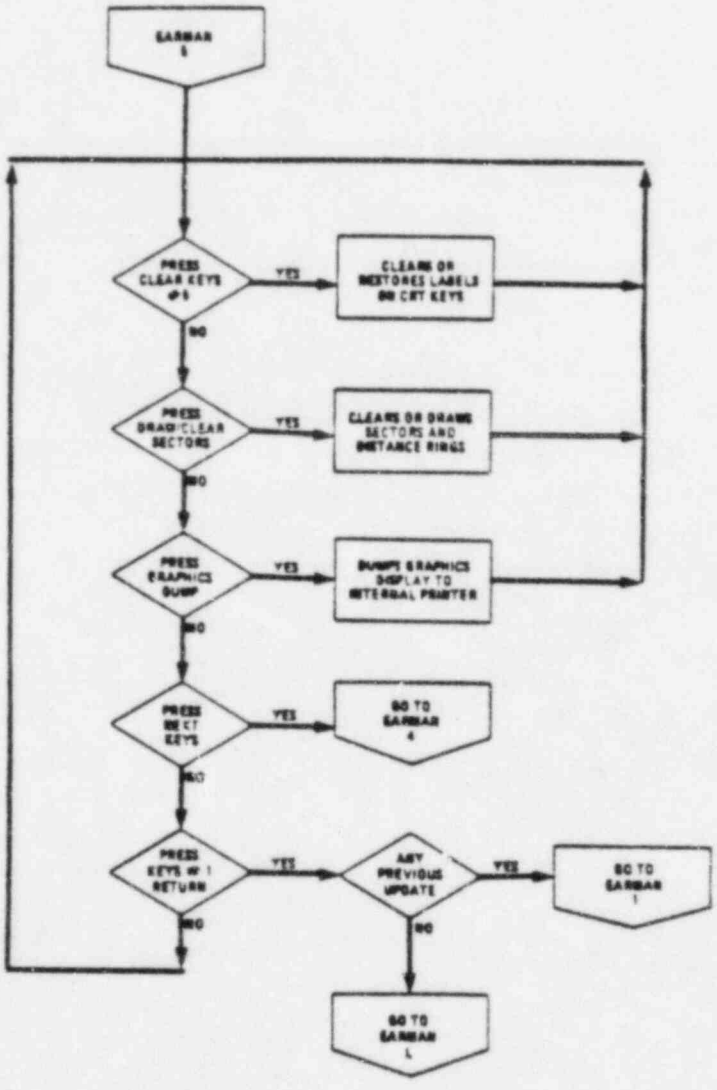
EARMAN KEY SET #3



EARMAN KEY SET #4



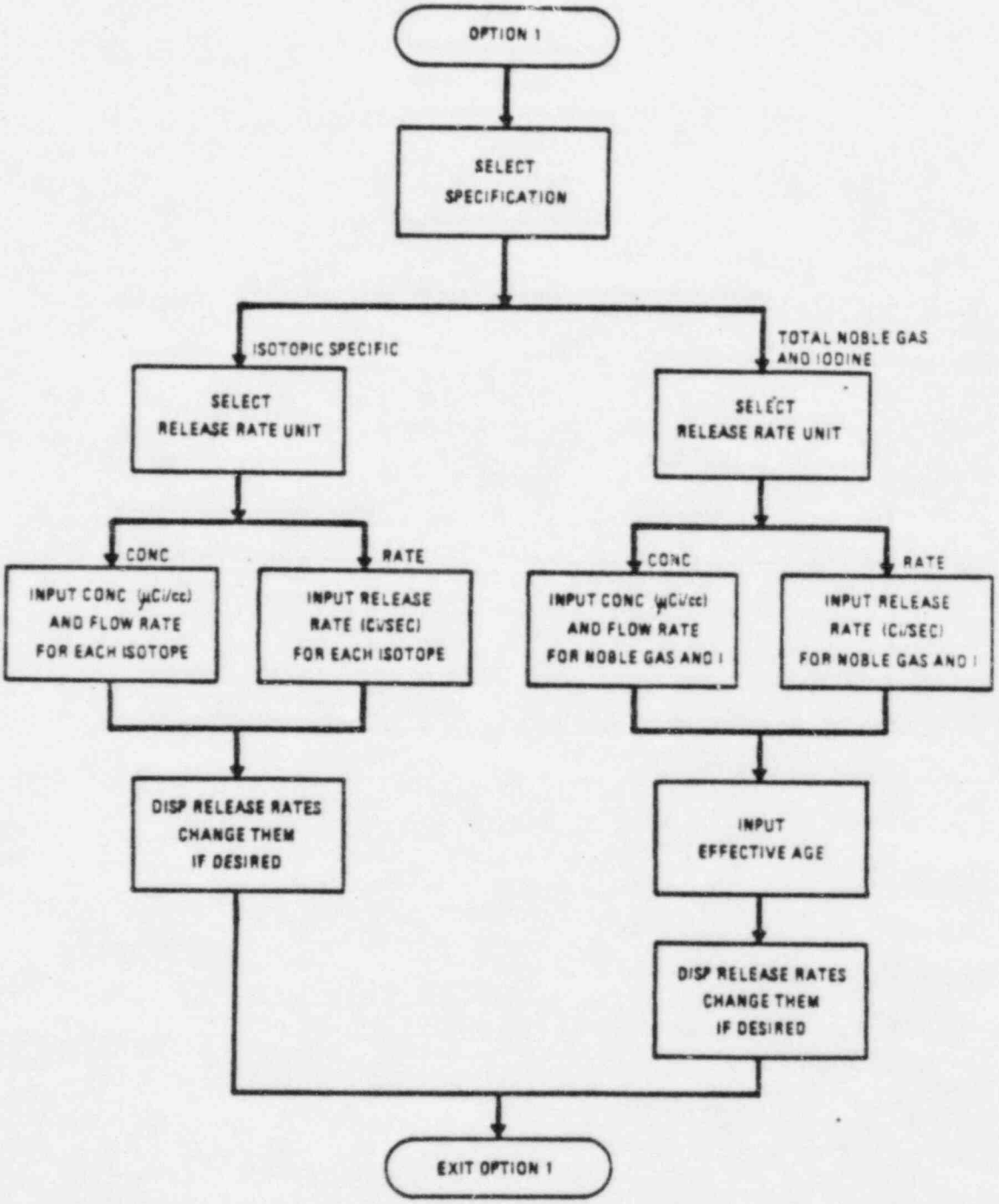
EARMAN KEY SET #5



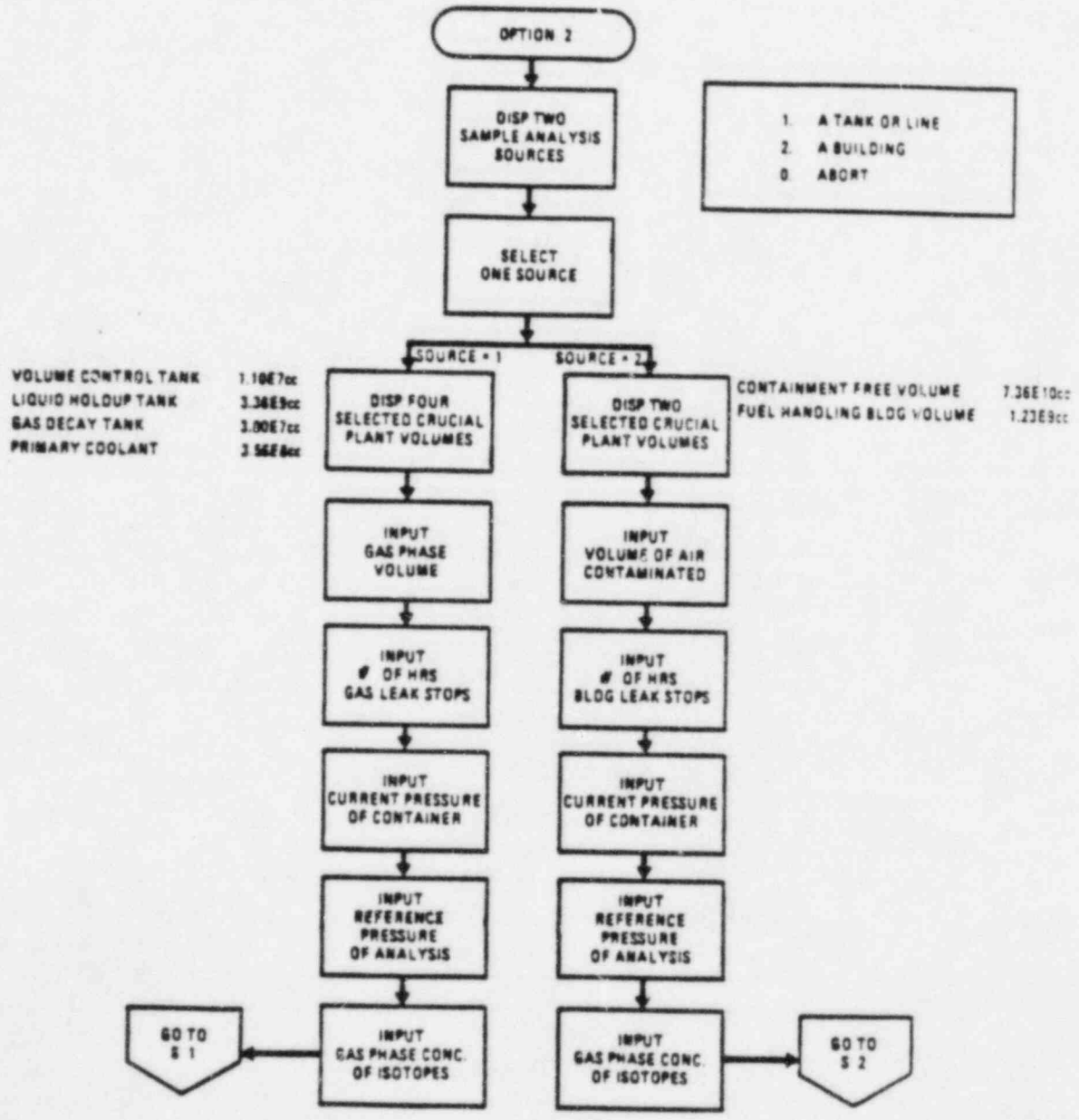
e. EARRDC/EARrdc PROGRAMS

The release rate definition program EARRDC/EARrdc is linked by the core program EARMDC/EARADC. Thirteen different release options are available in these programs. The logic for each option is outlined in the following thirteen pages of flow diagrams.

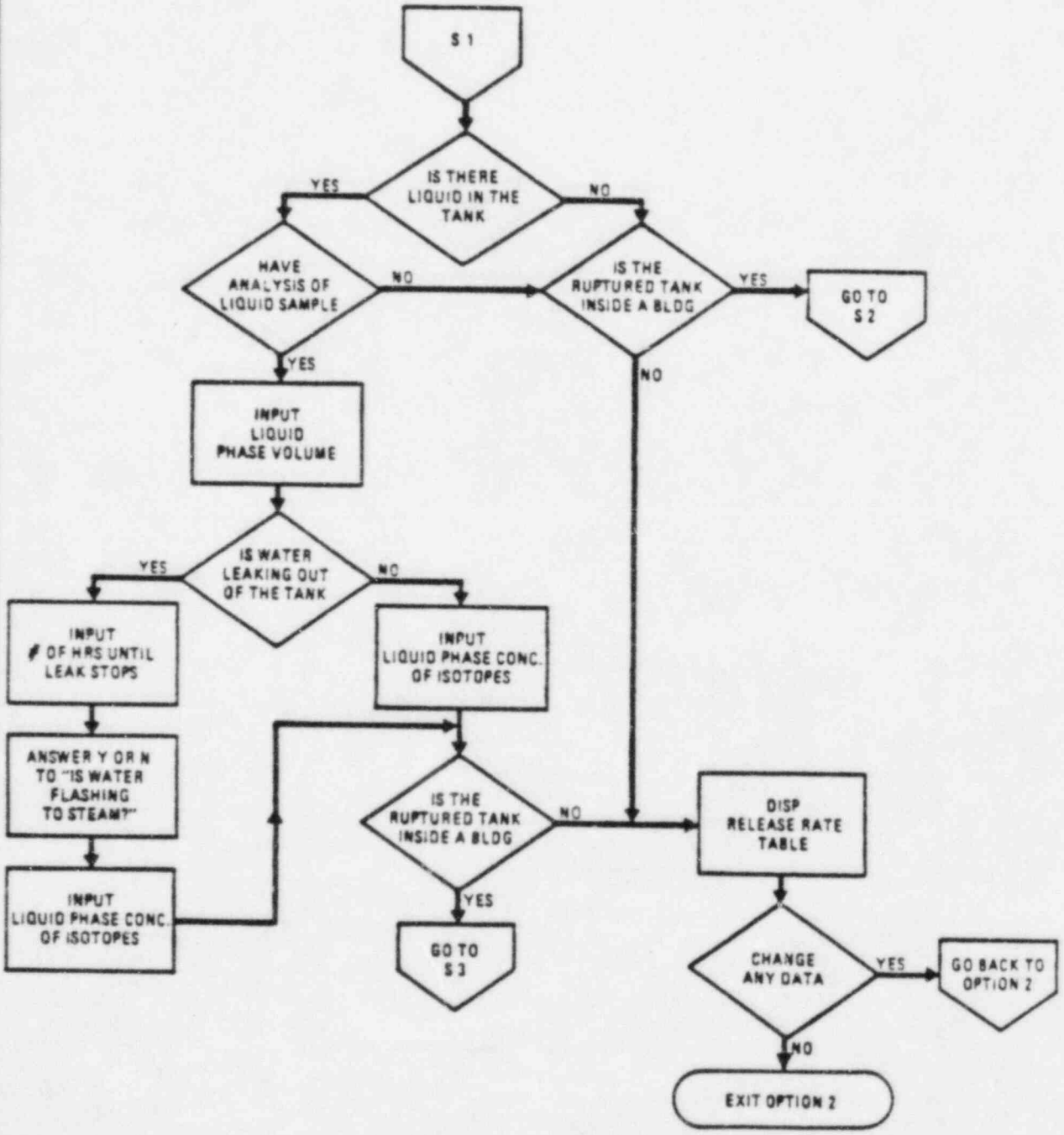
RELEASE RATES MANUAL SPECIFICATION



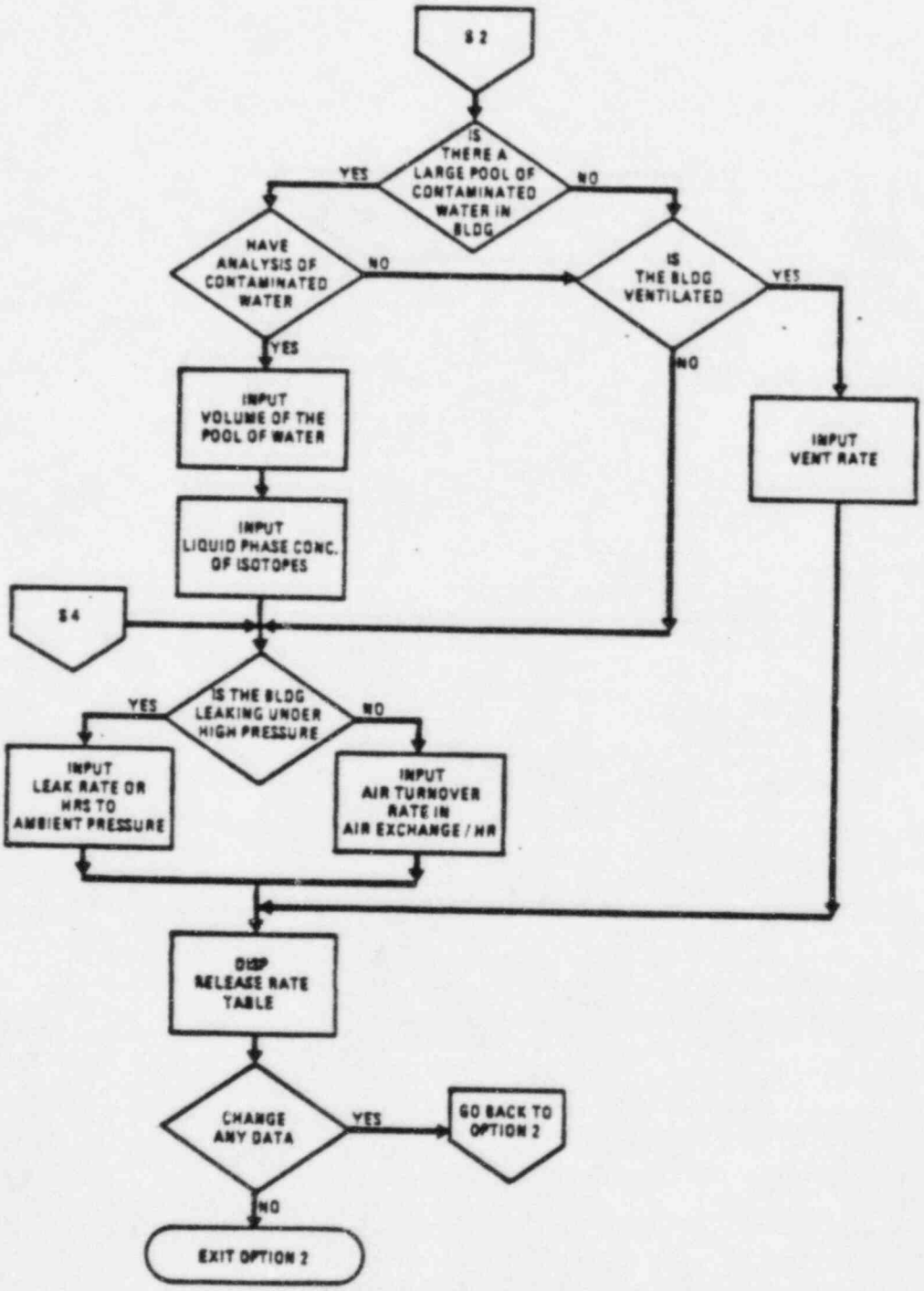
TANK / BLDG INVENTORY FROM SAMPLE ANALYSIS (1 OF 4)



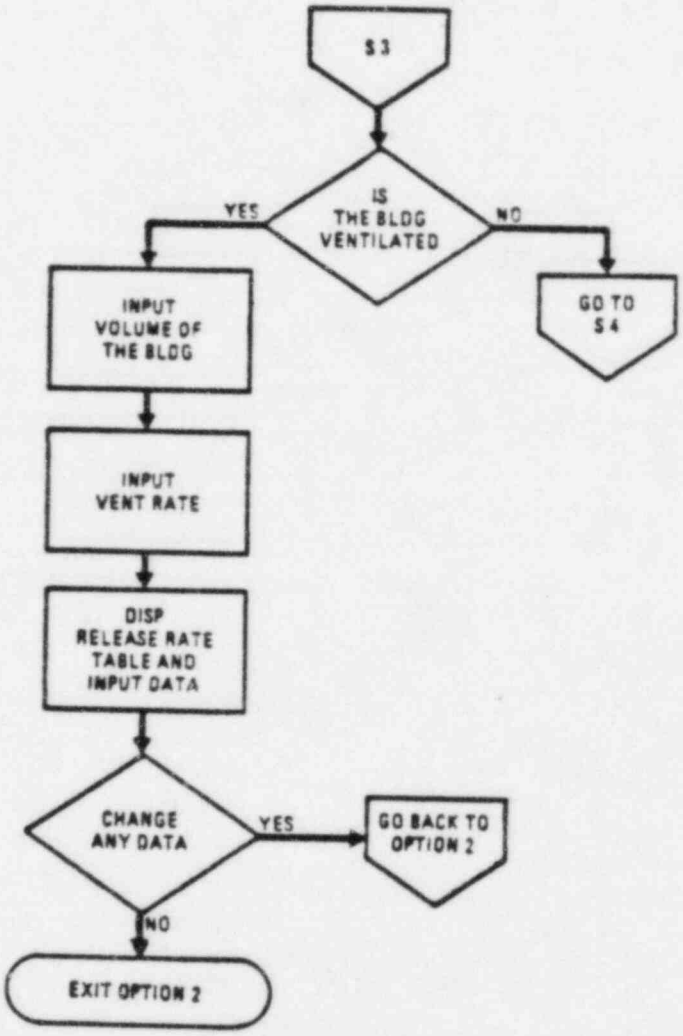
TANK / BLDG INVENTORY FROM SAMPLE ANALYSIS (2 OF 4)

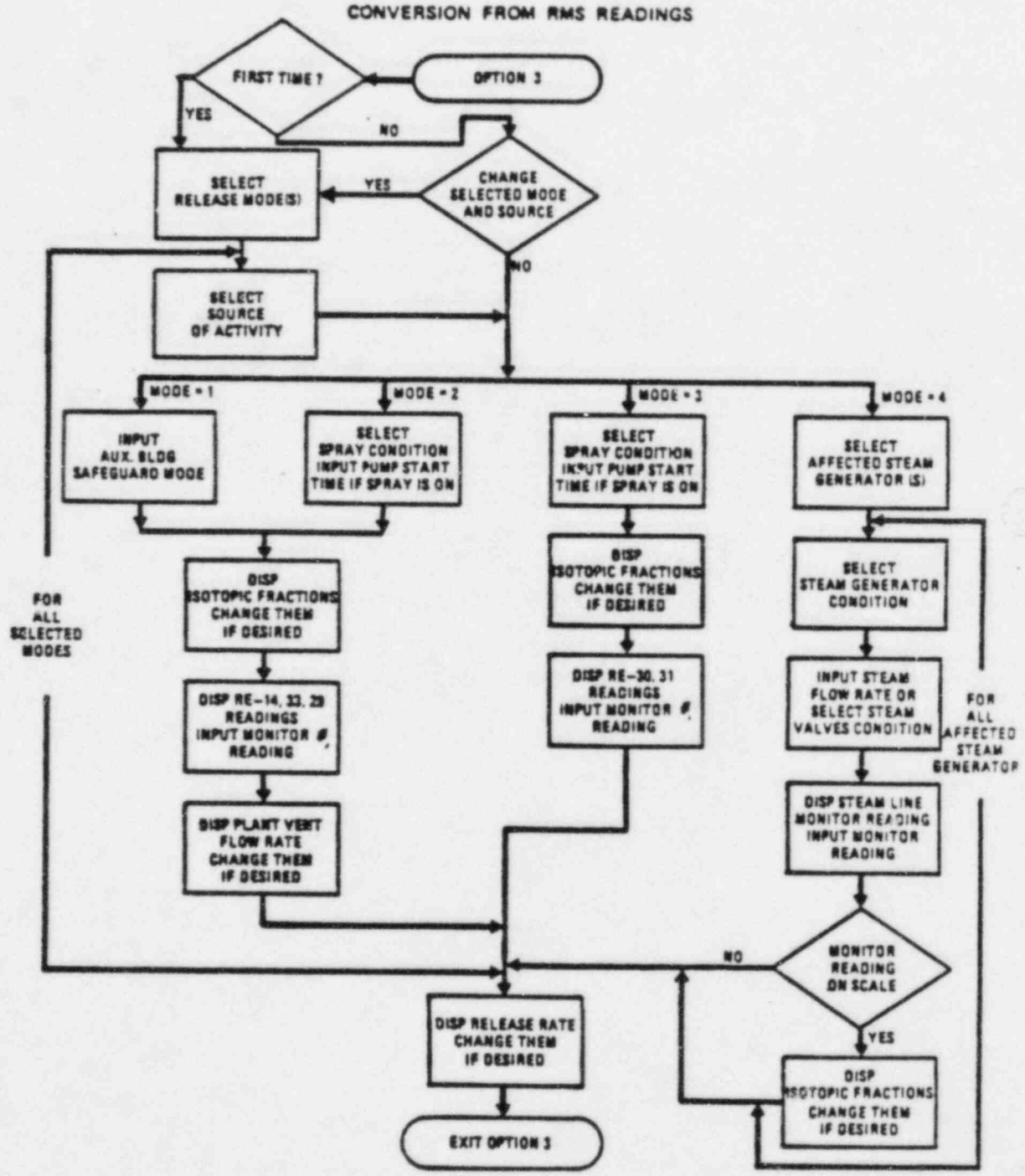


TANK / BLDG INVENTORY FROM SAMPLE ANALYSIS (3 OF 4)

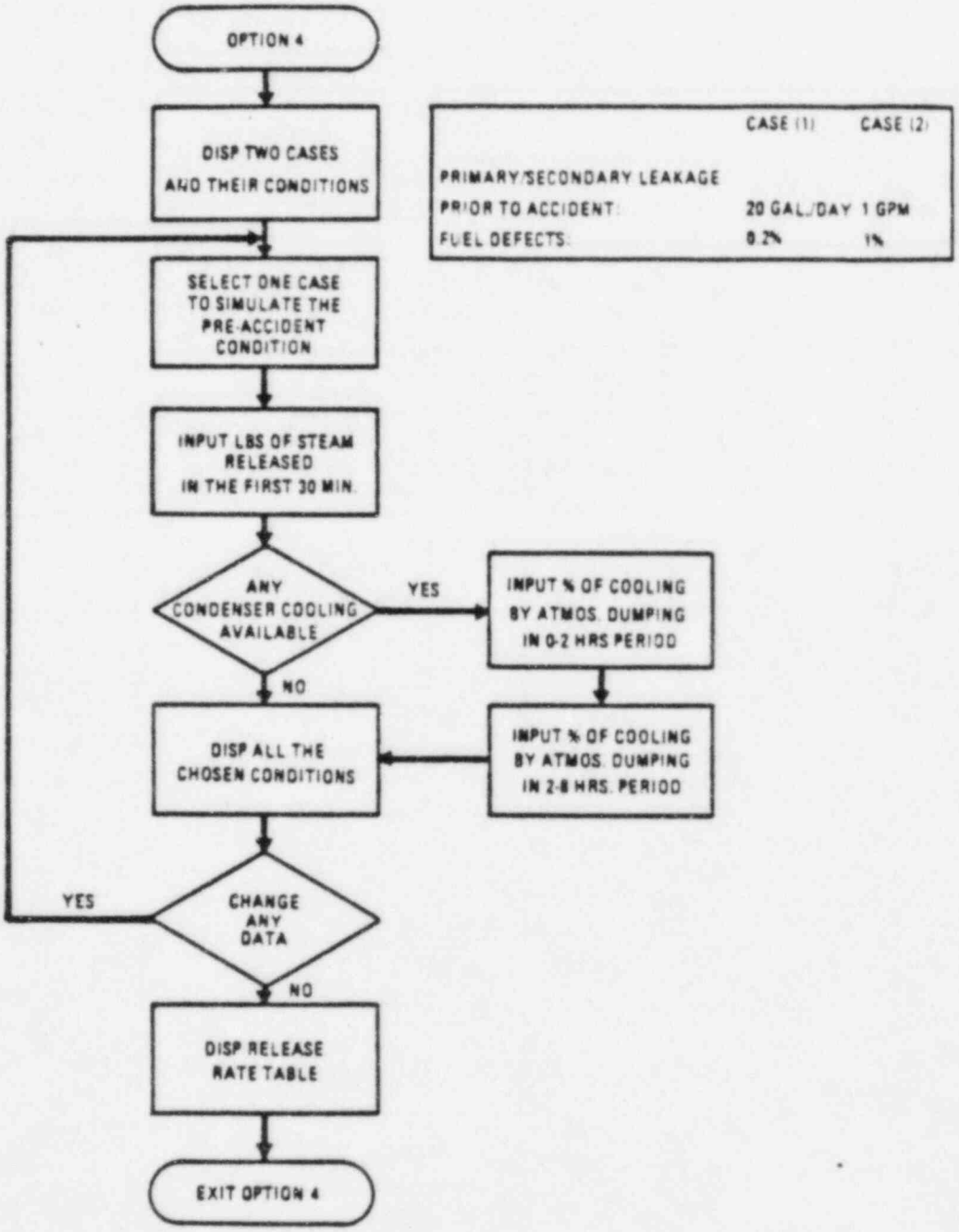


TANK / BLDG INVENTORY FROM SAMPLE ANALYSIS (4 OF 4)

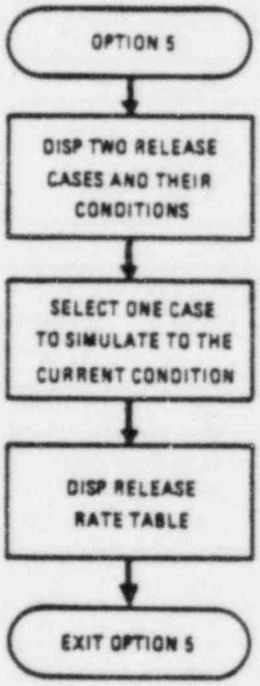



CONVERSION FROM RMS READINGS
OPTION 3
FIRST TIME ?
YES
NO
CHANGE SELECTED MODE AND SOURCE
YES
NO
SELECT RELEASE MODE(S)
SELECT SOURCE OF ACTIVITY
MODE = 1
MODE = 2
MODE = 3
MODE = 4
INPUT AUX. BLDG SAFEGUARD MODE
SELECT SPRAY CONDITION INPUT PUMP START TIME IF SPRAY IS ON
SELECT SPRAY CONDITION INPUT PUMP START TIME IF SPRAY IS ON
SELECT AFFECTED STEAM GENERATOR (S)
DISP ISOTOPIC FRACTIONS CHANGE THEM IF DESIRED
DISP ISOTOPIC FRACTIONS CHANGE THEM IF DESIRED
SELECT STEAM GENERATOR CONDITION
FOR ALL SELECTED MODES
DISP RE-14, 33, 29 READINGS INPUT MONITOR # READING
DISP RE-30, 31 READINGS INPUT MONITOR # READING
INPUT STEAM FLOW RATE OR SELECT STEAM VALVES CONDITION
FOR ALL AFFECTED STEAM GENERATOR
DISP PLANT VENT FLOW RATE CHANGE THEM IF DESIRED
DISP STEAM LINE MONITOR READING INPUT MONITOR READING
NO
MONITOR READING ON SCALE
YES
DISP RELEASE RATE CHANGE THEM IF DESIRED
DISP ISOTOPIC FRACTIONS CHANGE THEM IF DESIRED
EXIT OPTION 3

STEAM GENERATOR TUBE RUPTURE

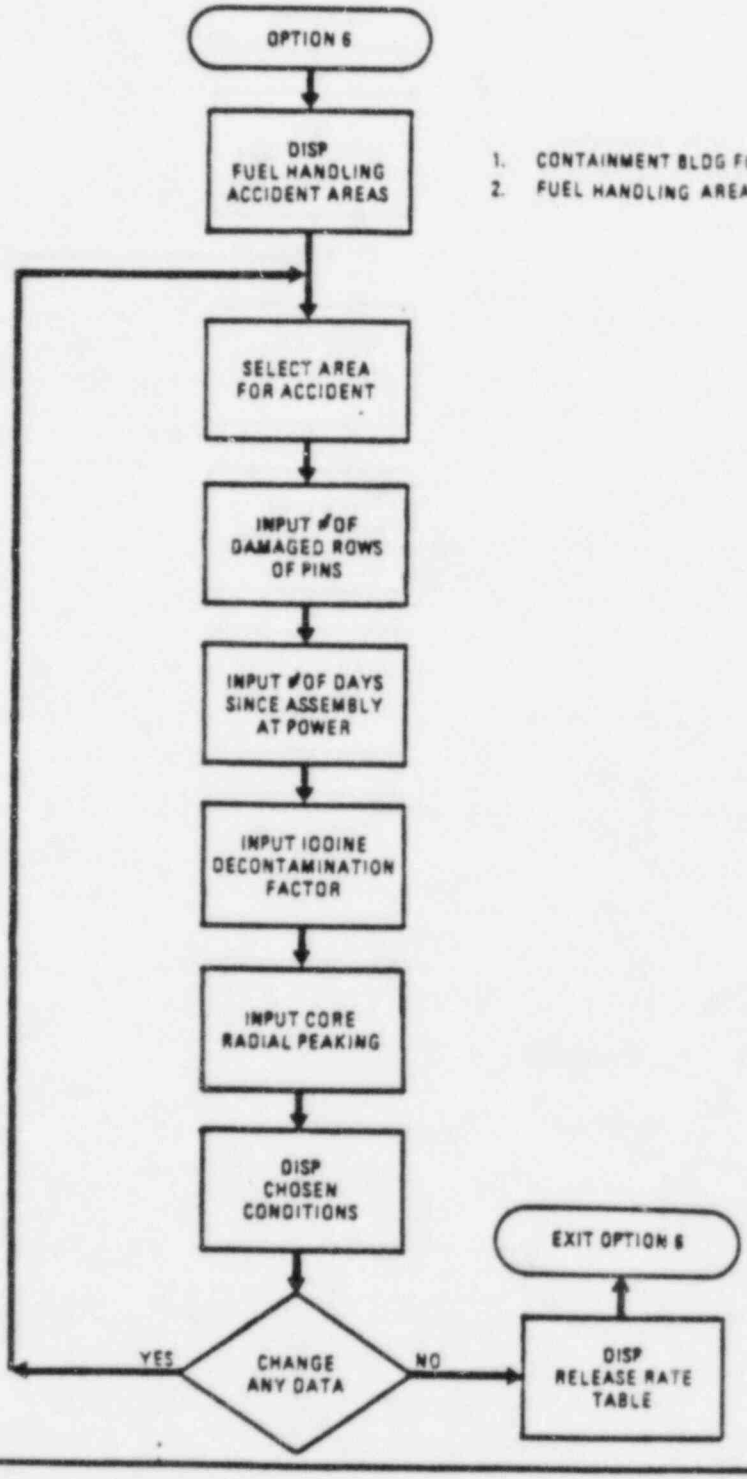


LOSS OF COOLANT ACCIDENT

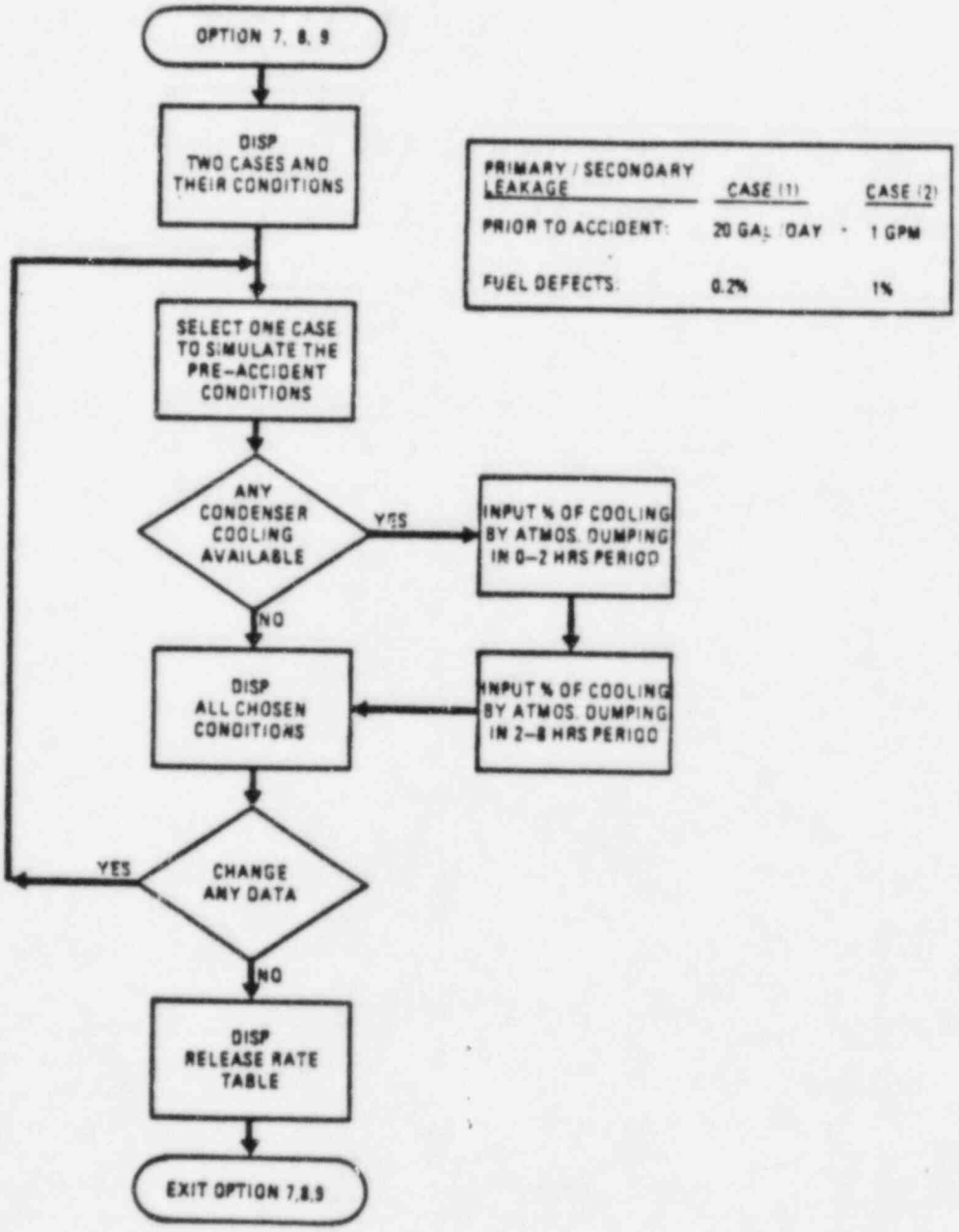


	CASE (1)	CASE (2)
FREE ACTIVITY IN CONTAINMENT:		
NOBLE GASES:	100% GAP	100% CORE
IODINES:	25% GAP	25% CORE
ANTICIPATED CONTAINMENT LEAK RATE:		
FIRST DAY:	0.05%/DAY	0.1%/DAY
LATER DAYS:	0.025%/DAY	0.05%/DAY

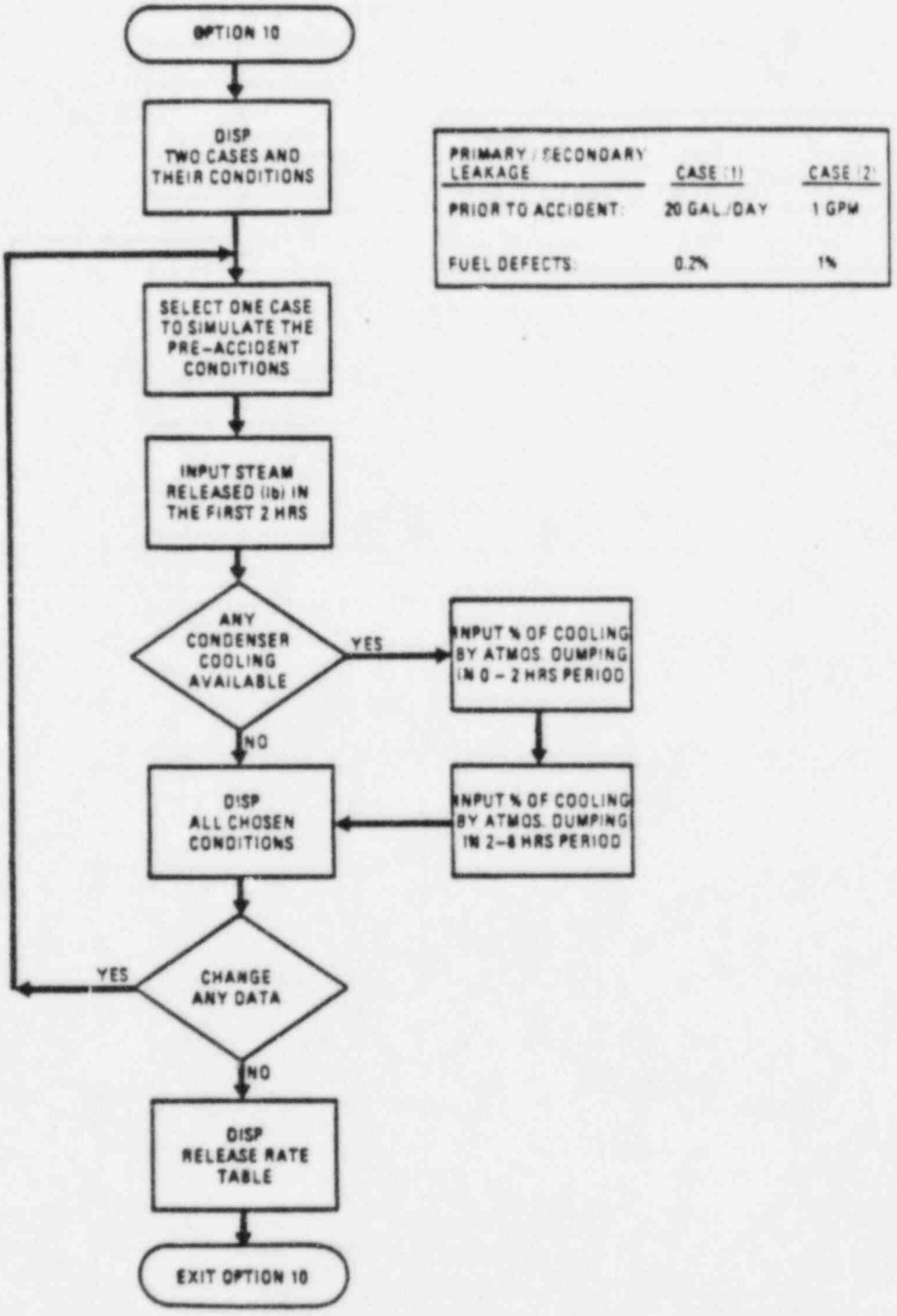
FUEL HANDLING ACCIDENT



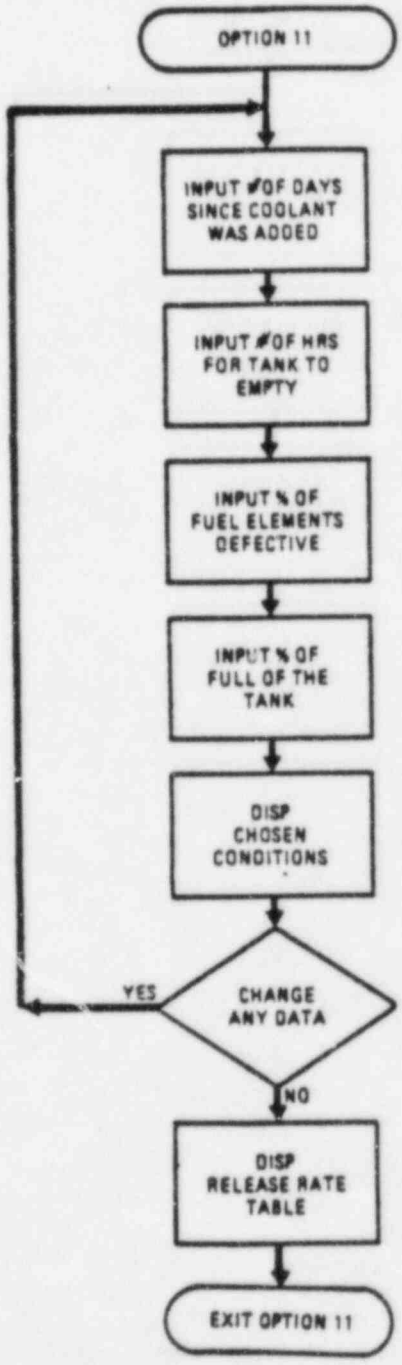
CONTROL ROD EJECTION ACCIDENT
LOCKED PUMP ROTOR ACCIDENT
LOSS OF OFFSITE POWER INCIDENT



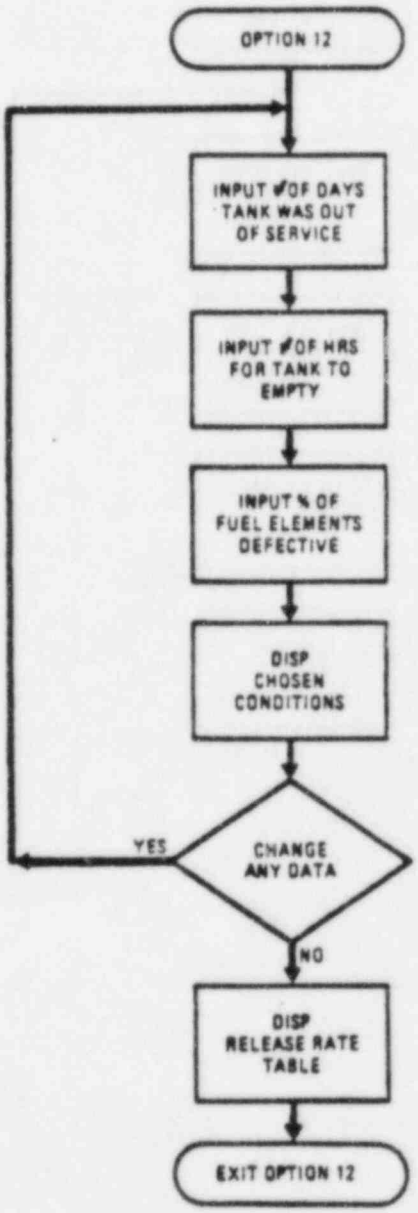
STEAM LINE BREAK ACCIDENT



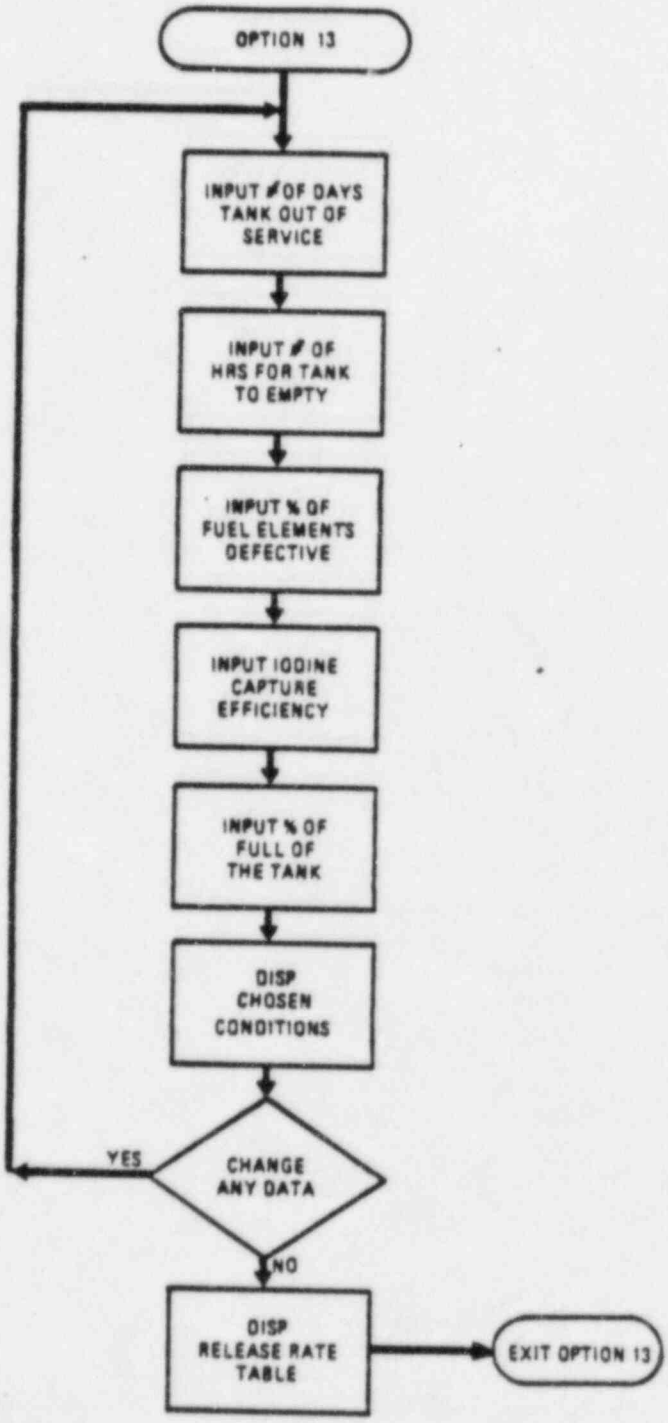
VOLUME CONTROL TANK RUPTURE



WASTE GAS DECAY TANK RUPTURE



LIQUID HOLDUP TANK RUPTURE



6. Terms Common to EARAUT and EARMAN

Meteorological Data Input

Meteorological data from the primary and the backup MET towers are sent to the HP-1000 computer at the TSC. Both STATUS and EARAUT programs can 'poll' the HP-1000 for MET averaged data (previous or current), including wind direction, wind speed, sigma theta, lapse rate, precipitation, and mixing height (provided the data link between this station and the TSC exists).

During a drill run, MET data is read from the HP-1000 drill database.

If EARMAN program is run, the operator has to enter all MET data manually.

Release Estimate

The DCPP Emergency Procedure RB-9 (Ref. 2) is the technical basis for the EARS release rate calculations. The radionuclide distribution and release rate are determined in the EARS subprograms EARrdc or EARRDC, using one or more of the following techniques:

A. Plant vent monitors and vent flow indication.

B. Containment area monitors and derived release rate based on containment leak rate, etc.

C. Isotopic analyses of selected plant containers and systems performed prior to the accident.

D. Steam line monitors and steam flow rate meters.

E. Final Safety Analysis Report (FSAR)(Ref. 3) accident scenarios:

-Steam Generator Tube Rupture Accident
-Loss of Coolant Accident (LOCA)
-Fuel Handling Accident
-Control Rod Ejection Accident
-Locked Pump Rotor Accident
-Loss of Offsite Power Accident
-Steam Line Break Accident
-Volume Control Tank Rupture Accident
-Waste Gas Decay Tank Rupture Accident
-Liquid Holdup Tank Rupture Accident

When using the FSAR cases, the operator must exercise judgement as to whether the 'expected case' or the 'design basis' estimates are appropriate to adequately describe the accident. The DCPP Emergency Procedure RB-11 (Ref. 4) indicates that unless actual release data is available, the operator should initially choose the 'design basis' (more conservative) values in determining initial accident classification.

F. If none of the FSAR accident types is appropriate, the 'Manually Specified Release Rate' permits manual entry of radionuclide release data, either by isotope or as total noble gases and iodines.

P.A.G. Table

The Protective Action Guide (PAG) criteria used in the EARS programs are from Table 5.1 of Reference 5. They apply to the total cumulated dose (or dose commitment) from the time of release up to the time of interest. The criteria are:

1. No action needed if Whole Body dose <0.5 rem* and Thyroid dose <5 rem.

2. Sheltering recommended if Whole Body dose >= 0.5 rem* and Whole Body dose <5 rem, or Thyroid dose >=5 rem and Thyroid dose <25 rem.

3. Evacuation recommended if Whole Body dose >=5 Rem or Thyroid dose >= 25 rem.

Projections and Updates

It is possible to run unlimited number of Gaussian straight-line 'dose projections' before the first update and between any two subsequent updates, and forty segmented Gaussian modeled, near 'real-time' dose updates. A 'projection' is a straight line Gaussian modeled dispersion and dose calculation which does NOT deposit activities but does take into account previously accumulated doses from updates. An 'update' is a complete set of segmented Gaussian modeled dispersion and dose calculations which disperses and deposits activities along the travelling direction.

In EARMAN operation, at the end of either projection or update calculations, a set of output tables is automatically printed.

*0.5 rem is the PAG criteria set by the State of California.

Edge Dose Rate

The edge dose rate is the plume exposure rate at the edge of the plume as displayed for the dose type (thyroid or immersion) selected. This is displayed on the right-side of the CRT graphics area. If the edge dose rate value chosen is greater than the plume center dose rate, message "Edge dose rate > Centerline dose rate" is displayed. When a new edge dose rate is chosen, a plume with this new dose rate will be drawn. This is to prevent confusion regarding the parameters selected and the particular plume displayed.

The edge dose rate is always in rem/hr. The default value in the EARS is 10^{-4} rem/hr. It can be changed by pressing the EDGE DOSE TYPE/RATE soft key and entering a new edge dose rate.

Dose Type

Two different dose types can be selected: thyroid or immersion. Whenever a new dose type is selected and a previous plume is already displayed, the new plume will be redrawn for the new dose type.

Radius and Plume Center

The value displayed as '+Radius' on the right-side of the CRT graphics area is the minimum distance in meters from the plume segment center (denoted by a small white cross on the graphics) to the edge of the plume for a given edge dose rate. This marker is used to indicate the 'centers' of the plume segments, starting from the earliest (generally the outermost segment) to the latest segment (generally the innermost or closest to the site). The plume center-line dose rate is indicated in mrem/hr under the '+Center Dose Rate' label on the right-side of the CRT graphics area.

Each time the STEP CENTER soft key is pressed, the white cross will move to the next plume segment center and the corresponding center-line dose rate and radius will change accordingly, cycling from the earliest segment to the latest.

Sector Element

The cumulative deposition data are listed for each of 96 'sector elements'.

A sector element is an area bounded by a division of the compass into 16 sectors (from number 1 centered on North to number 16 on NNW) with radial distances as 800 meters to 2 miles, 2 to 5 miles, 5 to 10 miles, 10 to 15 miles, and 15 to 20 miles.

Cumulative Deposition

The cumulative deposition listed as uCi/m**2 of 'Cs-137 equivalents' is the quantity of Cs-137 which would yield a direct radiation exposure rate from ground plane deposition equal to the decay-corrected sum of all deposition which has occurred for that period. Due to uncertainties involved in calculating both wet and dry deposition, this information is meant just to provide guidance to field survey teams as to where deposition is likely to have occurred. The values listed have relatively large uncertainties and should be used together with accurate field survey data in determining appropriate protective actions.

Output Tables

The EARS output is listed in tabular forms as:

Table 1 (EARMAN) or Table 1A (EARAUT or STATUS) - MET data (wind speed, wind direction, sigma theta, lapse rate, precipitation, stability classes, and mix height);

Table 1B (EARAUT or STATUS) - PIC data;

Table 1C (EARAUT or STATUS) - RMS data;

Table 2 - Release rate data in Ci/sec;

Table 3 - Emergency status data (projection or update duration, incident and release start times, accident type and any message);

Table 4 (EARMAN) - Plume segment radial intercept (RI) points dose rates and endpoints (EP) dose rates and doses data; A RI point is the intersection of a plume segment centerline with one of the radial rings: 800 m, 2, 5, 10, 15 or 20 miles.

Table 4A (EARAUT) - Plume segment radial intercept (RI) points dose rates data;

Table 4B (EARMAN or EARAUT) - Plume segment centerline endpoint (EP) dose rates data;

Table 5 (EARMAN or EARAUT) - Dose rates, doses and P.A.G.'s at specific locations;

Table 6 (EARMAN or EARAUT) - Deposition data by sector elements.

Radiological Status Summary Sheet (EARAUT) - This sheet summarizes data and results such as MET data (wind speed, wind direction, average stability class), release rate data (total noble gas release rate, E-bar value, total iodine or I-131 dose equivalent release rate) and dose rates at plume centerline intersections with distance rings, and at the first plume segment endpoint. In an update, if more than one plume segment is present, only the endpoint dose rate of the furthest segment is printed. Doses are printed for projections, but are calculated simply as corresponding dose rates multiplied by the length of projection.

7. EARS Support Software

The function of the EARS support programs is to initialize, edit or review the EARS data files. These programs include EAREDT, EARSED, EARSDP, EARKSP, EARKDC and EARDOC, and are all stored on the HP-7906 disc drive at the stations. These programs are not used during emergency conditions.

EAREDT - Data File Edit Program

The EAREDT program is used to setup, edit, or print the fixed data files used by the EARS for system parameters, isotope specific parameters, FSAR release rate data, site boundary locations, fixed PIC locations, RMS parameters, etc. This program can also duplicate from one msus to another all of the data files used by the EARS.

The data files accessed by this program are ERDSYS, ERNRMS, ERRTXY, ERDISO, ERBNDY, ERPLOC, ERNMAP, ERDMET, ERNSTN, ERNMAP, ERSRCE, ERMONI, ERELOC, ERDGRD and ERSTDC.

EARSED - Data String File Edit Program

The EARSED program allows the operator to access the data base to print, edit or initialize the projection and update string data stored on ERDSTA and ERDSTR, respectively. Rather than decoding the strings, this program edits or prints the ASCII characters of the string for each of the parameters. EARSED can also purge old data on ERDSTA or ERDSTR.

EARSDP - Calculational Parameters Plot Program

The EARSDP program allows the operator to print the immersion dose correction factors and to plot sigma y, sigma z and plume depletion curves used in the EARS calculations. Data files accessed by this program are ERDSIG, ERDDEP and ERDIMR.

EARKSP - Soft Key Functions Defining Program

The EARKSP program is used to create and edit the soft key labels used in EARAUT, EARMAN, and STATUS programs. Labels for the soft keys are stored in a string array that is read from a data file on the program mass storage media (7906 disc cartridge).

Data files EARSKY, EARACK, and EARKEY are used in program; STATUS, EARAUT, EARMAN, respectively.

EARKDC - Graphics Documentation Program

The EARKDC program is a documentation program used to describe the CRT screen layout and soft key functions of the EARMAN, EARAUT and STATUS programs.

EARDOC - File Documentation Program

The EARDOC is a documentation program that lists all types of data files in the HP-9845C software. For each data file or type of data file, the file name, size, contents and general purpose can be listed.

8. REFERENCES

1. "EARS User's Operating Manual for CIRC Station," Rev. 4, Aug., 1985.

2. PGandE: "DCPP Emergency Procedure RB-9 - Determination of Release Rates," Rev. 3, June, 1984.

3. PGandE: "DCPP Final Safety Analysis Report," Chapter 15.

4. PGandE: "DCPP Emergency Procedure RB-11 - Emergency Offsite Dose Calculations," Rev. 4, June, 1984.

5. EPA: "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents"; EPA-520/1-75-001, 1975.

APPENDIX A

EARS HARDWARE

The EARS computer hardware at CR, SR, TSC, and EOF EARS stations includes:

MODEL	DESCRIPTION	FUNCTION
HP-9845C	Desktop Computer w/graphics ROM, I/O ROMs, Mass storage ROM, Assembly execution ROM	EARS graphics computer at this station
HP-7906MR	Disc Drive	Mass storage unit
HP-98041A	Disc Interface	Interface the 9845C with the 7906
HP-13037C	Disc Controller	Controls 7906 operation
HP-98036A	Serial Interface (select code 5 at TSC, SR & CR) (select code 4 at EOF)	Interface the 9845C with the modem to the TSC

APPENDIX B

LOADING HP-9845C INTERNAL PRINTING PAPER

Printer paper is loaded by using the following procedure. To perform the following steps, the computer must be switched "ON."

1. Lift or remove the access cover on the top of the printer by pushing down on the raised surface at the rear of the door. The door can be removed by lifting up and pulling it toward you. It is reinstalled by placing it on the hinge pins and pushing until it snaps into place.

2. Remove and discard the paper core of any previous roll. If the remaining roll is small and a new roll is to be used, remove the old roll by:

   a. Unrolling and lifting it upwards until the roll is above the printer, then,

   b. Holding the roll firmly and pulling it upward and forward; the paper guide will tear the paper off.

3. If any paper remains in the printer mechanism, remove it by pressing the PAPER ADVANCE key until the paper stops moving.

4. Remove the first layer of paper from a new roll. Be sure the paper has a cleanly torn or cut edge, as paper with a ragged edge may not load properly. The corners can be folded back to form a point for easier loading.

5. Insert the new roll such that the free end is positioned as shown. Press the PAPER ADVANCE key until paper appears at the front of the printer, then close the access door.

PG&E **Pacific Gas and Electric Company**

DEPARTMENT OF NUCLEAR PLANT OPERATIONS

DIABLO CANYON POWER PLANT UNIT NO(S) 1 AND 2

TITLE EMERGENCY PROCEDURE
ACTIVATION OF THE NUCLEAR DATA
COMMUNICATIONS SYSTEM

NUMBER	EP EF-7
REVISION	2
DATE	12/11/84
PAGE	1 OF 36

APPROVED R C Thornberry 9-4-85
PLANT MANAGER DATE

SCOPE

This procedure describes the activation of the Nuclear Data Communications Systems (NDCS) in the event the Technical Support Center (TSC), Corporate Incident Response Center (CIRC), and Emergency Operations Facility (EOF) are activated.

GENERAL

The NDCS is located in the TSC, Administration Annex B (ADMIN), and CIRC. Each of these facilities has similar computer equipment to be used for data communications during an ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY at the Diablo Canyon Power Plant and also for day-to-day data processing. It should be noted that the NDCS network will be in continuous operation 24 hours per day. Plant data from Unit 1 and Unit 2 is continuously sent to each facility's NDCS processor.

Plant data is stored at the CIRC on one disk file. At any given time, the maximum plant data storage on disk will be 15 days.

Upon activation of the TSC, the Emergency Evaluations and Recovery Coordinator (EERC) or his designated representative is responsible to assure that the TSC NDCS is activated and operational. The EERC is also responsible for verification of the Administration Annex B NDCS and activating the communications link between the CIRC and the ADMIN NDCS in the event the TSC NDCS becomes inoperable. The NDCS located in the CIRC is activated by the General Office Nuclear Safety and Engineering staff.

INITIATING CONDITIONS

The Shift Foreman declares that the plant is in an ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY status as defined in Emergency Procedure G-1, "Accident Classification and Emergency Plan Activation," and initiates those activities necessary to activate and staff the TSC.

ACTIVATION OF THE TSC NDCS

1. In the TSC, the Emergency Evaluations and Recovery Coordinator or his designee shall:

   a. Verify or accomplish the following on the TSC NDCS equipment:

      1) Processor "SYSTEM POWER" switches "ON" (located in back of processor).

      2) Processor "ON-OFF" pushbutton in.

      3) Control console "POWER" switch "ON."

      4) Control console "LINE/LOCAL" switch on "LINE."

      5) Disk: "READY" light on.

      6) Disk: "CLEAR FAULT" pushbutton light off.

      7) Disk: "WRITE PROTECT" pushbutton light off.

      8) Control console matrix printer "POWER" pushbutton light on.

      9) Control console matrix printer "SELECT" pushbutton light on.

      10) Control console matrix printer "OFF LINE" switch in "MODE 1" (located on rear of printer).

      11) For each line printer, "POWER SWITCH" is "ON" (located on rear of printer).

      12) For each line printer, depress the "ON" and "RUN" pushbutton.

13) In the TSC NDCS communication cabinet, "SFGO" switch "7101" in the "TSC" position.

b. Verify the operation of all the components of the NDCS by looking for the following messages being displayed on the system console:

```
OS FSO1 JN=PD LFN=OD1 DEV=03 END OF FILE
X3 ING
X3 XMT
OS FSO1 JN=X3 LFN=RDR1 DEV=I3 END OF FILE
X3 EOT
```

If all of these messages are being displayed then the system is fully operational. Skip steps c, d, e and verify the operation of the ADMIN NDCS by following the directions in Activation of Admin NDCS beginning at 1 c.

c. Access what is working properly

1) At the console type in:

DA CR

where CR is the carriage return key.

The computer will respond and display which programs are "RUNNING." The following is a sample response:

```
OS PD RUNNING    157C    3
OS X3 RUNNING    2380    4
```

These programs must be running for the system to be fully active.

d. Verify Harris is receiving plant data.

1) Enter the following at the system console:

EX (PR),JN=PR CR

2) Verify that a line printer is printing plant parameters on a fifteen (15) minute interval.

3) If the data prints out on fifteen (15) minute intervals, cancel the program then skip to part e.

CA PR CR

4) If the data is not being received, cancel PD then execute it again. The following commands will accomplish this.

```
CA PD  CR
EX (PD),JN=PD  CR
```

5) If the data is still not being received call the control room at 1224 to verify that the P250 computer is operating.

e. Verify data is being transmitted to CIRC, SFGO Harris.

1) Verify that the following messages are being displayed on the console:

```
X3 ING
X3 XMT
OS FSO1 JN=X3 LFN=RDR1 DEV=I3 END OF FILE
X3 EOT
```

If the messages are being displayed then the NDCS is now fully operational. Skip to the ADMIN NDCS section.

2) If the messages are not being displayed then enter the following at the console:

```
DA  CR
```

3) Verify that X3 is "RUNNING." If it is not then go to the next step. If it is, enter the following command at the console to cancel it:

```
CA X3  CR
CA DL
```

4) Enter the following command to initialize X3:

```
RN X3,JN=X3  CR
```

NOTE: RN X3 initializes X3 to transmit on line 7101 which implies:

```
RCV=S7
XMIT=S8
PUN1=05
```

5) Verify X3 is operational

NOTE: If X3 BTO message appears repeatedly instead of the messages listed in step 1 of this part, then the CIRC Harris Computer is not receiving the data. The following phone numbers may be called to do this.

DCPP EXTENTIONS [redacted]

These are DCPP extentions that go directly to CIRC in San Francisco. Another number is:

Terry Chu [redacted]

6) If line 7101 can not be establish to transmit the data see Appendix 2 for alternate connections.

ACTIVATION OF ADMIN NDCS

1. In the event the TSC NDCS is determined inoperable, the Emergency Evaluations and Recovery Coordinator or his designee shall:

   a. In the TSC NDCS communications cabinet, verify or switch the "SFGO" "7101" switch to the "ADMIN" position.

   b. Verify or accomplish the following on the "ADMIN" NDCS equipment.

      1) Processor "SYSTEM POWER" switches "ON" (located on back of processor.

      2) Processor "ON-OFF" pushbutton in.

      3) Control console "POWER" switch "ON."

      4) Control console "LINE/LOCAL" switch on "LINE."

      5) Disk: "READY" light on.

      6) Disk: "CLEAR FAULT" pushbutton light off.

      7) Disk: "WRITE PROTECT" pushbutton light off.

      8) Control console matrix printer "POWER" pushbutton light on.

      9) Control console matrix printer "SELECT" pushbutton light on.

10) Control console matrix printer "OFF LINE" switch in "MODE 1" (located on rear of printer).

11) Line printer "POWER SWITCH" is "ON" (located on rear of printer).

12) At line printer depress "ON" and "RUN" pushbuttons.

c. Verify Harris is receiving plant data.

1) Enter the following at the system console:

EX (PR),JN=PR CR

2) Verify that a line printer is printing plant parameters on a fifteen (15)minute interval.

3) If the data prints out on fifteen (15) minute intervals, cancel the program then skip to part d.

CA PR CR

4) If the data is not being received, cancel PD then execute it again. The following commands will accomplish this:

CA PD CR
EX (PD),JN=PD CR

5) If the data is still not being received call the control room at 1224 to verify that the P250 Computer is operating. You may have to start the data sending program at the P250. (See Appendix 3)

d. If the TSC Harris is inoperable, then continue with this procedure.

e. Verify data is being transmitted to CIRC, SFGO Harris.

1) Verify that the following messages are being displayed on the console:

X3 ING
X3 XMT
OS FS01 JN=X3 LFN=RDR1 DEV=I3 END OF FILE
X3 EOT

If the messages are being displayed then the NDCS is now fully operational.

2) If the messages are not being displayed, then enter the following at the console:

DA CR

3) Verify that X3 is "RUNNING". If it is not, then go to the next step. If it is, enter the following command at the console to cancel it:

CA X3 CR

4) Enter the following commands to initialize X3:

RN X3,JN=X3

NOTE: RN X3 initializes X3 to transmit on line 7101 which implies:

RCV=S7
XMIT=S8
PUN1=05

5) Verify X3 is operational

NOTE: If X3 BTO message appears repeatedly instead of the messages listed in step 1 of this part, then the CIRC Harris Computer is not receiving the data. The following phone numbers may be called to do this:

6) If line 7101 can not be established to transmit the data see Appendix 2 for alternate connections.

ACTIVATION OF CIRC NDCS

1. CIRC data processor shall:

a. Verify or accomplish the following on the CIRC NDCS equipment:

1) Processor "SYSTEM POWER" switches "ON" (located on back of processor).

2) Processor "ON-OFF" pushbutton in.

3) Control console "POWER" switch "ON".

4) Control console "LINE/LOCAL" switch on "LINE".

5) Disk: "READY" light on.

6) Disk: "CLEAR FAULT" pushbutton light off.

7) Disk: "WRITE PROTECT" pushbutton light off.

8) Matrix printer "POWER" pushbutton light on.

9) Matrix printer "SELECT" pushbutton light on.

10) Matrix printer "OFF LINE" switch in "MODE 1" (located on rear of printer).

11) Line printer "POWER SWITCH" is "ON" (located on rear of printer).

12) Depress line printer "ON" and "RUN" pushbuttons.

b. Accept plant data from TSC:

The CIRC NDCS is brought up to accept data from TSC during the IPL (initial program load) of the Harris 1660 processor.

1) Type at the control console to check the status of X3 and ND program:

DA CR

If X3 is running, the control console would display:

OS X3 RUNNING...

If ND is running, the control console would display:

OS ND RUNNING...

2) If X3 is not running, type at the control console:

RN X3,JN=X3 CR

3) If ND is not running, type at the control console:

EX (ND),JN=ND CR

4) If both X3 and ND are not running, type at the control console:

RN X3,JN=X3 CR
EX (ND),JN=ND CR

c. Accept plant data from ADMIN:

1) If X3 is not running, type at the control console:

RN X3,JN=X3 CR

2) If ND is not running, type at the control console:

EX (ND),JN=ND CR

3) If both X3 and ND are not running, type at the control console:

RN X3,JN=X3 CR
EX (ND),JN=ND CR

d. Verify plant data is being received by the CIRC NDCS processor by:

1) At the control console type in:

EX (PR),JN=PR CR

2) Verify that the line printer is printing plant parameters on an approximate fifteen (15) minute interval.

3) The following typed in the control console will stop the printing of plant parameters:

CA PR CR

e. Upon completion of a through d above, the CIRC NDCS can be considered activated and operable.

In the event b, c, or d above cannot be

accomplished, use Appendix 1, "Bootstrapping the NDCS Processor." For use of the switches and patch panel in the CIRC NDCS communications cabinet, see Appendix 3, "Use of the NDCS Switches and Patch Panels".

APPENDIXES

1. BOOTSTRAPPING THE NDCS

2. USE OF THE NDCS PATCH PANELS

3. INITIALIZATION OF DATA TRANSMISSION FROM P250

SUPPORTING PROCEDURES

EF-1, "ACTIVATION OF THE TSC".

EF-3, "ACTIVATION OF THE EOF".

REFERENCE

HARRIS USER'S MANUAL

APPENDIX 1

BOOTSTRAPPING THE NDCS

INTRODUCTION

In the event bootstrapping of a NDCS processor is required, the following steps may be taken.

NOTE: When the processor is bootstrapped the following programs are automatically started:

PD - P250 DATA LINK
X3 - X2780
RC - RECOVERY UTILITY

PROCEDURE

1. Step 1.a accomplished in the "Activation of the "TSC NDCS" or Steps 1.a and 1.b in the "Activation of the ADMIN NDCS".

2. On the processor pushbutton station, depress the following pushbuttons:

   SGL
   INIT
   DATA
   LOAD

3. At the control console, type in:

   DT MM/DD/YY (where MM=month, DD=day, YY=year) CR
   TM HH:MM:SS (where HH=hours, MM=minutes, SS=seconds) CR

4. If the first line on the control console reads:

   "OS ECOS MOUNTED OAMM2, OOXX BAD FILES CATALOGUED VOLUME" (where XX can be any digits), complete the following:

   a. When the following prompts appear:

      RC ANY VOLUMES TO BE RECOVERED??
      RC PLEASE ENTER YES (*Y) OR NO (*N)

Type in:

*Y CR

b. When the following prompt appears:

RC PLEASE ENTER VOLUME NAME (*....) TO BE RECOVERED

Type in:

*ECOS CR

c. When the following prompt appears:

WRITE ECF FOR FILE??

PLEASE ENTER YES (*Y) OR NO (*N)

Type in:

*Y CR

d. For all other prompts that appear, type in:

*N CR

e. When the following appears:

RC RECOVERY UTILITY--END EXECUTION
OS JM60 JN=RE END EXECUTION
The NDCS processor has been bootstrapped.

APPENDIX 2

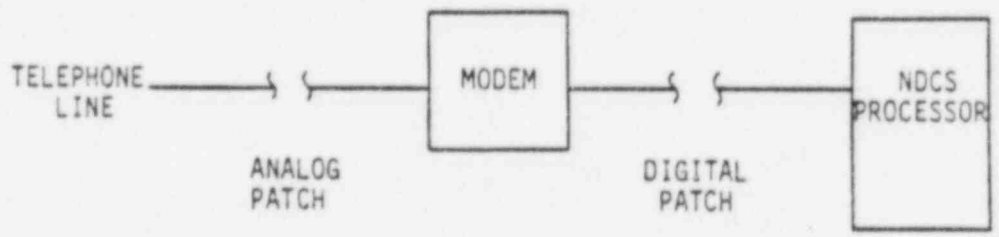
USE OF THE NDCS PATCH PANELS

INTRODUCTION

A communications cabinet is provided in the TSC Operations Center, the Administration Building computer room, and the CIRC computer room to enable transmission of data to various locations. These cabinets contain modems, telephone lines, patch panels, and switches. The patch panels and switches provide an alternate means of transmitting data in the event of modem or telephone line failure.

The patch panels at each location contain two types of patches, analog and digital. Analog patches are made on the telephone line side of a modem, while digital patches are made on the NDCS processor side of a modem (see Figure 1 below).

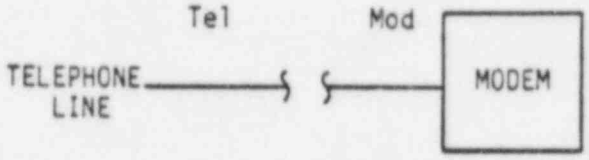
Figure 1



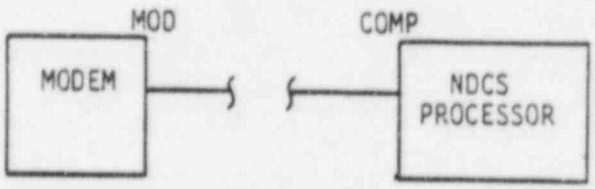
Each analog and digital patch is further broken down into a telephone (TEL), modem (MOD), or computer (COMP) side patch as shown in ~~the~~ Figure 2.

Figure 2

Analog Patch



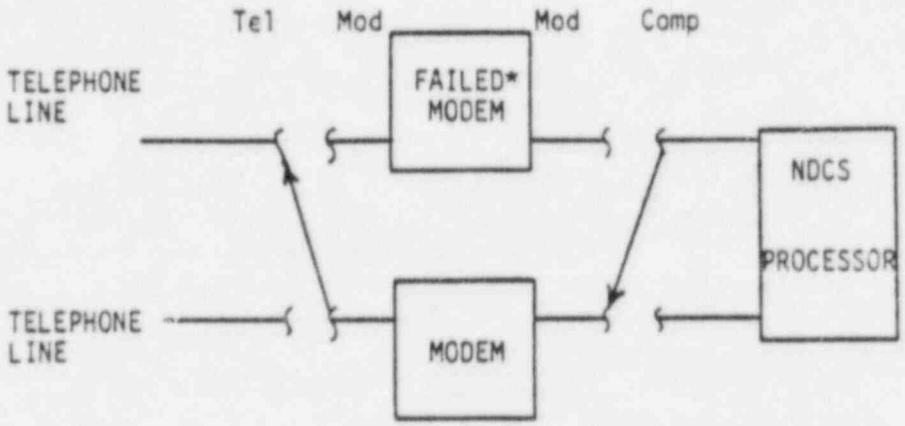
Digital Patch



It is therefore possible to patch compatible modems in the event of a line or modem failure. Figure 3 illustrates how a patch can be in the event of a modem failure.

Figure 3

Modem Failure Patch

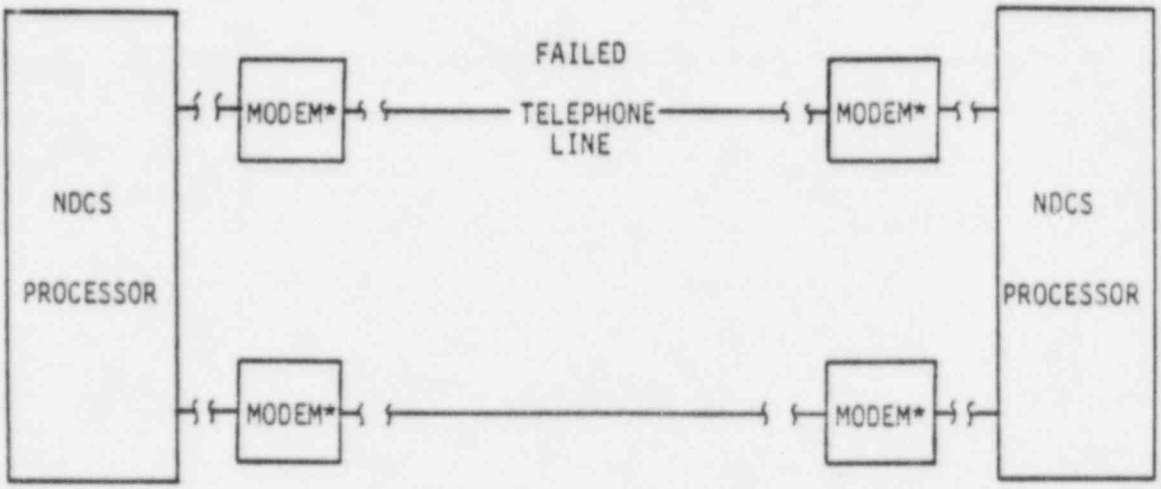


*Compatible modems

A modem failure patch as illustrated above requires only local patching. Reassignment of input or output ports of the two communicating NDCS processor is not necessary since data transmission is on the same telephone line. In the event of a telephone line failure, patches at both NDCS processor locations are required; however, no input/output port reassignments are required. Figure 4 shows a telephone line failure patch configuration.

Figure 4

Telephone Line Failure Patch



*Compatible modems

The analog switches located in the TSC communications cabinet provide a mechanism to allow data transmission from either the TSC or ADMIN NDCS processor to the CIRC processor, EOF keystation, and Boeing Computer Services.

PROCEDURE

1. Two lines are dedicated to data communications. Line "7101" is designated for communication between TSC and CIRC and line "7161" is designated for ADMIN and CIRC. One dial-up line may also be used for this type of communication if it is desirable.

   Normal communication is considered inoperable if either the "7101" modem or the "7101" telephone line fails. Under such condition, corrective actions to reestablish communication are required. Patching is necessary to use other available modems or telephone lines.

In the event of "7101" modem failure, see Step 1.1. In the event of "7101" telephone line failure, see Step 1.2. In the event that both lines "7101" and "7161" are inoperable, see Step 1.3.

1.1 Modem Failure

In the event that line "7101" modem is inoperable, switch to the "7161" modem using the following patching:

On the digital side, patch "7101" "COMP" into "7161" "MOD", and on the analog side, patch "7161" "MOD" into "7101" "TEL".

1.2 Telephone Line Failure

In the event that "7101" telephone line is inoperable, switch to line "7161"by the following procedure.

In the TSC, either patch digital "7101" "COMP" into "7161" "MOD" or analog "7101" "MOD" into "7161" "TEL".

In the CIRC, either patch digital "7161" "MOD" into "7101" "COMP" or patch analog "7161" "TEL" into "7101" "MOD".

1.3 Both "7101" and "7161" Failure

In the event that both "7101" and "7161" circuits (modems and/or lines) are inoperable, the dial-up line could be adopted for backup data communication. This can be achieved by entering commands from the processor control consoles at TSC and CIRC.

At the TSC processor control console, type in:

```
CA X3                          CR
OF S7                          CR
RN X3, JN=X3                   CR
AS X3, RCV=S3                  CR
AS X3, SMIT=S4                 CR
```

At the CIRC processor control console, type in;

```
CA X3                          CR

CA ND                          CR
```

```
OF S7                                   CR
RN X3, JN=X3
AS X3, RCV=S3
AS X3, SMIT=S4
EX (ND),JN=ND                           CR
```

Then using a dial data phone (4800 BAUD) call the appropriate CIRC data phone [redacted]. When both parties are on the data phone line, both parties should depress the data pushbuttons, then replace the receivers.

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1.0 GENERAL DESCRIPTION

The PARMDATA program displays nuclear plant operation data received from the P250 computers at Diablo Canyon. The data can be displayed in a number of operator chosen formats that allow him to easily interpret the data. The program is run on a Harris computer using the KEP operating system. The P250 computer is connected to the Harris systems at both Diablo Canyon and 77 Beale Street via communications lines. The main device for both control and output of this program is a KEP station CRT.

The program is designed to allow the operator to examine the data received in several different formats (or screens). The screens are chosen from menus and are easily called. Two modes of operation are possible. In present mode, the data in the program is automatically updated as it is received. In past mode, the operator may choose any data received in the last 24 hours to examine. Both screens and modes of operation are altered through the use of PA keys. These keys (located along the top of the KEP keyboard) are defined on the screen and will produce the appropriate menus on the screen when activated. In addition, a Status Board Report can be produced on the system lineprinter. This report is also produced (PAST mode) or its options altered (PRESent mode) by the use of a PA key.

Each parameter received from the P250 has a value and a status associated with it. Any parameter whose status indicated that it is unreliable or off scan will be followed by an asterisk on the screen (e.g. 79.6*).

PARMDATA User's Manual

2.0 PROGRAM OPERATION

2.1 STARTING PROGRAM

The program can be started once the user is logged into the KEF system. The system will print an "ENTER COMMAND:" prompt and the user will respond will a "EX PARMDATA" as shown below.

```
ENTER COMMAND:
EX PARMDATA
```

2.2 IN CASE OF ABORT

There is a possibility that the program might abort if an improper input sequence is given. This possibility has been minimized. However, if it happens, the user's response should be to answer N (no) to the dump question and restart the program with EX PARMDATA. The program does not alter any data so the abort will not corrupt the data base.

2.3 PRECAUTIONS

Several precautions should be noted in using the program. There is some inherent delay involved in the execution. Response and execution of a feature might take as long as 15 seconds to complete. Hitting the PA key a second time should be avoided as it tends to confuse the machine and/or operator with its response. A good rule of thumb might be to let the cursor span the bottom of the screen (in present mode) ten times before an operation is retryed.

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3.0 STANDARD SCREEN

The screens displaying the data will have several common features that are described below. Changing the screen format or the arrival of new data will cause the screen to be cleared and the new data printed.

3.1 TITLE OF SCREEN

The title of the screen being displayed will be printed on the left hand side of the top line of the screen.

3.2 TIME AND DATE

The time and date of the data are displayed on the right hand side of the top line. This time and date refer to when the data was taken which is not necessarily the actual time.

3.3 ERROR MESSAGES

Any error messages will be displayed on the left hand side of the second to last line on the screen. These error messages refer to the data currently being displayed on the screen. Explanations of the error messages can be found in Appendix A.

3.4 MODE OF OPERATION

The mode of operation(PAST,PRESent) which the program is currently in is displayed on the right hand side of the second to last line on the screen. The mode of operation can be changed with the PA keys and this field will be changed with the first update of the screen.

3.5 TEMPORARY MESSAGES

Temporary messages give an indication of what the program is doing. They are displayed on the second to last line of the screen immediately to the left of the mode of operation. A READ message indicates that the program is currently reading in a new record from the data file. A WAIT message (PRESent mode only) indicates the program is waiting for a new record of data to arrive from the P250 computer.

PARMDATA User's Manual

4.0 PA KEYS

The PA keys are used to alter the operation of the program. This could be the screen format, the mode of operation, or the operation of the lineprinter report. They keys can be pressed at any time and will be acted on when the program pauses. The program might therefore finish a screen output before acting on a PA key. However, if the program is in present mode waiting for the next record, it never pauses. In this case the BREAK key should be used to force a pause. Therefore, if in present mode, the BREAK key should be hit after hitting the PA key to cause the appropriate action. The function of each of the PA keys is explained below.

4.1 PA1 - SCREEN

This key causes the screen menu to be printed on the screen. This menu lists all possible screen formats for the data. The desired screen is chosen by entering its corresponding number. The subgroup screen will print an additional menu.

4.2 PA2 - LP

This key is associated with the Status Board Report printed on the lineprinter. If in past mode, the key causes the report to be printed for the data currently being examined. If in present mode, the key causes the status of the automatic Status Board Report to be displayed and any of its variables to be altered. This report can be set up to print every "n" minutes. The operator will be asked whether he wants the option on or off and the interval between reports desired.

4.3 PA3 - PAST

This key puts the program in past mode. The automatic updating of data will be disabled (Note: Data will still be received from the P250 but not displayed) and the time of the old data is to be examined will be requested. Any data received in the last 24 hours can be examined using one of the available screens. To change the data being examined, this key is pressed again.

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4.5 PA4 - PRESENT

This key puts the program in present mode. The automatic updating of data is reactivated and the latest data received displayed on the screen. The program will then go into wait mode until a new record is received from the P250.

4.6 PA5 - END

This key will cause the program to terminate and return the user to the KEP operating system.

4.7 PA29 - BREAK

This key is used to force a pause in the program so that the PA key can be acted on. This key need only be used during the WAIT state in present mode. It can be pressed either before or after the desired PA function key.

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5.0 SCREENS

There are five different types of screens in which the data can be displayed. The screen is chosed by pressing the PA1 key (and BREAK key if necessary) and choosing from the menu. Any value on a screen followed by an asterisk is unreliable. Brief descriptions of the available screens are listed below.

5.1 REACTOR STATUS

This screen displays data on power levels, temperatures, and parameters associated with LOOP1 to LOOP4.

5.2 SUPPORT SYSTEMS AND CONTAINMENT STATUS

This screen displays data on pump parameters, flow parameters, and tank levels.

5.3 THERMOCOUPLE MAP

This screen displays a map of the reactor core and the thermocouple readings at different positions within the core.

5.4 SUBGROUPS

This screen displays any two subgroups of parameters. A subgroup contains ten related parameters. Each parameter includes its AP symbol, its description, and its actual value. A second menu is displayed when choosing the screen to specify the subgroups.

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5.5 DUMP

This screen is a utility to examine all 170 parameters in a record. It displays twenty parameters at a time on the screen. Each parameter lists its numeric status, its numeric value, and its character string as displayed on the other screens (the value and possibly an asterik). To list the next twenty parameters, the SKIP key is pressed. An E key will cause the screen to exit and return to the beginning. Because of this, it is best to change the screen using PA1 before hitting the E key when a new screen is desired.

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6.0 MODES OF OPERATION

The program can operate in either PAST or PRESent mode of operation. The current mode is displayed in the bottom right hand corner of the screen and can be changed by the use of the PA3 or PA4 key.

In past mode, the operator is asked for a time of day and the program retrieves the data from the data file. The data file holds data from the last 24 hours with one record for every minute of the day. Once retrieved, the data may be displayed using any of the screens available. A Status Board Report from the lineprinter may be obtained by pressing the PA2 key. To replace the data with another record of data the PA3 key is pressed again and the new time entered.

In present mode, the program automatically updates the data when a new record is inserted into the data file by the P250. Therefore, the screen always displays the most current data received from the P250. In this mode, the cursor will scan across the bottom of the screen to indicate that it is working. The lineprinter can be set up to print a Status Board Report every "n" minutes. To turn this option off or on, and to choose the interval time "n" the PA2 key is pressed. The lineprinter's current status will be displayed and the new parameters asked for.

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7.0 STATUS BOARD REPORT

The Status Board Report is a report printed on the lineprinter and used to update the status board in the control room. It contains data on the reactor status, support status, containment status, and radiation readings. It is designed to fit on a standard 8 1/2" x 11" sheet. The report can be set up (in present mode) to print at some given interval of time (in minutes). To turn the option on or off and to change the interval time, the PA2 key is pressed. The program must be in present mode to change these parameters. In past mode, a Status Board Report can be generated for the current data being examined by pressing the PA2 key.

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APPENDIX A - ERROR MESSAGES

** WARNING - DATA IS NOT TODAYS **

This message indicates that the date on the data record currently on the screen does not match the system date on the Harris computer. This indicates that the data is old, possibly yesterday's data. The actual date of the data will be displayed on the screen. This error might also indicate a corrupted header on the record. The date might be corrupted and therefore not match the system data.

*** DATA CHECK ERROR ***

This error indicates that the data record was corrupted and could not be decoded. It could be caused by illegal or missing characters in the data record. All values that can not be read are marked with an asterisk. However, in this case there is a high probability that all the data is corrupted and therefore its validity should be questioned.

** ERROR - FILE READ FAILURE **

This indicates an error has occurred in accessing either the circular data file. (PDFILE) or the parameter description file (DESCRIPT/DATA). The file is either locked or a non-existent record has been accessed.

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APPENDIX B - SCREEN SAMPLES

```
********************************  DATA TIME= 0:00  DATA DATE= 00/00/00  ***

INDICATE PARAMETER GROUPING TO MONITOR

    1 REACTOR STATUS
    2 SUPPORT SYSTEM AND CONTAINMENT STATUS
    3 THERMOCOUPLE MAP
    4 SUBGROUP DISPLAY
    * DUMP PARAMETER VALUES

SCREEN (1-4,*)


                                                              **PRE1**
PA1-SCREEN  PA2-LP  PA3-PAST  PA4-PRES  PA5-END    ( HIT BREAK IF NO RESPONCE )
```

**** REACTOR STATUS ********** DATA TIME=15 45 DATA DATE= [illegible]

		HIGHEST	AVERAGE	
POWER LEVEL	POWER RANGE	0 0	0 0	%RTP
	INT RANGE	0 0	0 0	NCAMP
	SOURCE RANGE	0 0	0 0	DKCS

RCS PRESSURE 11 2 PSIG
PRESSURIZER LEVEL 100 0 %

	LOOP1	LOOP2	LOOP3	LOOP4	
RCS TEMP (HL)	415 0	415 0	415 0	415 0	F
(CL)	408 0	408 0	408 0	408 0	F
RCS FLOW	120 9	120 2	120 1	120 2	%
SG LEVEL (WR)	-0 7	-2 9	-0 8	47 0	%
SG PRESSURE	250 0	250 0	250 0	250 0	PSIG
STEAM FLOW	0 0*	0 0*	0 0*	0 0*	%
FW FLOW	1** 2	165 7	0 0*	0 0*	*BM

SUBCOOLING 200 4 F
INCORE T/C HOTTEST 600 0 F AVERAGE 600 0 F
RV HEAD TEMPERATURES 600 0 600 0 600 0 600 0 F
PRT TEMP **8 4 F PRES -1 9 PSIG LEVEL 80 5 %

PRES

PA1-SCREEN PA2-LP PA3-PAST PA4-PRES PA5-END (HIT BREAK IF NO RESPONCE)

**** SUPPORT SYSTEMS ********** DATA TIME=15 48 DATA DATE= [illegible] ***

CHARGE PUMP FLOW 121 7 GPM LETDOWN FLOW 0 0* GPM

RHR PUMP FLOW TO HOT LEGS 1160 1 GPM

RHR PUMP DISCHARGE TEMP (1) ** 7 (2) 77 8 F

CC FLOW (A) 3059 0 (B) 3837 5 (C) 3103 7 GPM

	CST	FWST	RWST	VCT
TANK LEVELS	**9 3 %	** 3 %	*2 0 %	12 4 %

**** CONTAINMENT STATUS **********

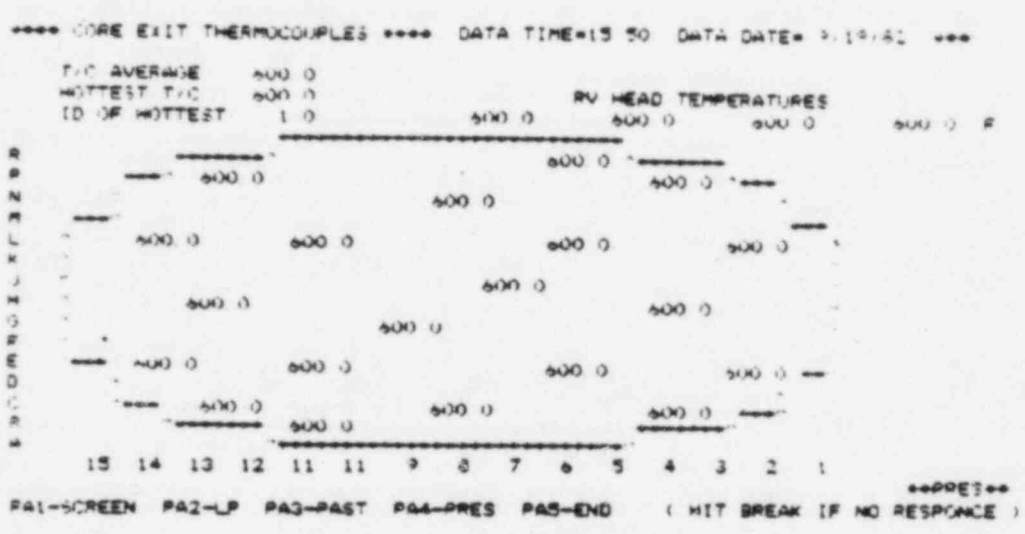
PRESSURE (A) 0 0 PSIG (B) 0 0 PSIG

TEMPERATURE 110 0 F

PRES

PA1-SCREEN PA2-LP PA3-PAST PA4-PRES PA5-END (HIT BREAK IF NO RESPONCE)

TITLE: ACTIVATION OF NUCLEAR DATA COMMUNICATIONS SYSTEM



RCS LOOP 1 AND S/G 1-1 * DATA TIME=13 54 DATA DATE= 2/13/82 ***

F0400A	RCL 1-1 FLOW	120 0	%
F0401A	RCL 1-1 FLOW	119 0	%
T0406A	RCL 1-1 T COLD	408 0	F
T0419A	RCL 1-1 T HOT	415 0	F
L0400A	S/G 1-1 NR LEVEL	30 0	%
L0403A	S/G 1-1 WR LEVEL	-0 0	%
P0400A	S/G STEAM PRESSURE	250 0	PSIG
P0401A	S/G STEAM PRESSURE	-0 1	PSIG
F0402A	S/G 1-1 FW FLOW	234 4	KLBM
F0405A	S/G 1-1 STEAM FLOW	0 0*	KLBM

CONTAINMENT ATMOS & CCW DLOW ********************

P1000A	CONTAINMENT PRESSURE	0 0	PSIG
P1001A	CONTAINMENT PRESSURE	0 0	PSIG
T0701A	CONTAINMENT TEMPERATURE	110 0	F
F0619A	CCW HDR-A FLOW	2973 5	GPM
F0620A	CCW HDR-B FLOW	3797 5	GPM
F0621A	CCW HDR-C FLOW	3048 1	GPM
------	SPARE	0 0	
------	SPARE	0 0	
------	SPARE	0 0	
------	SPARE	0 0	

PRE

PA1-SCREEN PA2-UP PA3-PAST PA4-PRES PA5-END (HIT BREAK IF NO RESPONCE)

TITLE: ACTIVATION OF NUCLEAR DATA COMMUNICATIONS SYSTEM

```
**********************************  DATA TIME=15 54  DATA DATE= 9/19/82  ***

INDEX=  1  STAT=0  VALUE= 120 0   OUTVAL(IN)= 120 0        SKIP TO CONTINUE
INDEX=  2  STAT=0  VALUE= 119 9   OUTVAL(IN)= 119 9        E TO END
INDEX=  3  STAT=0  VALUE= 408 0   OUTVAL(IN)= 408 0
INDEX=  4  STAT=0  VALUE= 415 0   OUTVAL(IN)= 415 0
INDEX=  5  STAT=0  VALUE=  30 0   OUTVAL(IN)=  30 0
INDEX=  6  STAT=0  VALUE=  -0 6   OUTVAL(IN)=  -0 6
INDEX=  7  STAT=0  VALUE= 250 0   OUTVAL(IN)= 250 0
INDEX=  8  STAT=0  VALUE=  -8 1   OUTVAL(IN)=  -8 1
INDEX=  9  STAT=0  VALUE= 234 4   OUTVAL(IN)= 234 4
INDEX= 10  STAT=2  VALUE=   0 0   OUTVAL(IN)=   0 0*
INDEX= 11  STAT=0  VALUE= 120 2   OUTVAL(IN)= 120 2
INDEX= 12  STAT=0  VALUE= 120 0   OUTVAL(IN)= 120 0
INDEX= 13  STAT=0  VALUE= 408 0   OUTVAL(IN)= 408 0
INDEX= 14  STAT=0  VALUE= 415 0   OUTVAL(IN)= 415 0
INDEX= 15  STAT=0  VALUE=  30 0   OUTVAL(IN)=  30 0
INDEX= 16  STAT=0  VALUE=  -2 9   OUTVAL(IN)=  -2 9
INDEX= 17  STAT=0  VALUE= 250 0   OUTVAL(IN)= 250 0
INDEX= 18  STAT=0  VALUE=  -8 1   OUTVAL(IN)=  -8 1
INDEX= 19  STAT=0  VALUE= 165 7   OUTVAL(IN)= 165 7
INDEX= 20  STAT=2  VALUE=   0 0   OUTVAL(IN)=   0 0*
                                                          **PRES**
PA1-SCREEN  PA2-LP  PA3-PAST  PA4-PRES  PA5-END   ( HIT BREAK IF NO RESPONCE )
```

```
**********************************  DATA TIME=16 11  DATA DATE= 9/19/82  ***

INDEX=161  STAT=0  VALUE=   0 0   OUTVAL(IN)=   0 0        SKIP TO CONTINUE
INDEX=162  STAT=0  VALUE=   0 0   OUTVAL(IN)=   0 0        E TO END
INDEX=163  STAT=0  VALUE=   0 0   OUTVAL(IN)=   0 0
INDEX=164  STAT=0  VALUE=   0 0   OUTVAL(IN)=   0 0
INDEX=165  STAT=0  VALUE=   0 0   OUTVAL(IN)=   0 0
INDEX=166  STAT=0  VALUE=   0 0   OUTVAL(IN)=   0 0
INDEX=167  STAT=0  VALUE=   0 0   OUTVAL(IN)=   0 0
INDEX=168  STAT=0  VALUE=   0 0   OUTVAL(IN)=   0 0
INDEX=169  STAT=0  VALUE=   0 0   OUTVAL(IN)=   0 0
INDEX=170  STAT=0  VALUE=   0 0   OUTVAL(IN)=   0 0

                                                          **PRES**
PA1-SCREEN  PA2-LP  PA3-PAST  PA4-PRES  PA5-END   ( HIT BREAK IF NO RESPONCE )
```

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APPENDIX 3

INITIALIZATION OF DATA TRANSMISSION FROM P250

The procedure to start the P-250 sending the data for the PARMDATA program is as follows:

From the programmer console:

Fush "ATTN INT" button
Type DH CORE/3916/
Push "RETURN" key
Push Space Bar

The location in core (3916) will be displayed in hexadecimal such as:

107F.

This word is the Auto Turbine Start Bid Word. Each bit controls the periodic bidding of a particular task. The bit arrangement for the above word is:

0001 0000 0111 1111

A "0" indicates the task is on periodic bid, and a "1" indicates it is not.

The 4th bit in the word controls the bidding of the B priority task which has been assigned to the program P250TSC, which is the program we are concerned with. In order to initiate the periodic bidding of the program, this bit must be changed to a "0". The procedure for this is:

Push "ATTN INT" button
Type MH CORE/3916/
Push "RETURN" key
Push Space Bar
Type 007F
Push "RETURN" key

Push Space Bar

Type !

Push "RETURN" key

Push Space Bar

The program will now begin executing at a predetermined frequency and will send the data to both the TSC and the administration building Harris Computers.*

*NOTE: This data can also be printed at the P-250 computer room by plugging in the AJ terminal into a provided RS-232 cable connector on the modem cart.

PG&E **Pacific Gas and Electric Company**

DEPARTMENT OF NUCLEAR PLANT OPERATIONS

DIABLO CANYON POWER PLANT UNIT NO(S) 1 AND 2

TITLE EMERGENCY PROCEDURE
EARS OPERATING PROCEDURES FOR TSC-CC
HP-1000 STATION

NUMBER	EP EF-8
REVISION	1
DATE	6/3/85
PAGE	1 OF 16

APPROVED: R C Thornberry 9-4-85
PLANT MANAGER DATE

IMPORTANT TO SAFETY

SCOPE

The purpose of this procedure is to give general instructions on the operations of the Technical Support Center Computation Center (TSC-CC), Emergency Assessment and Response System (EARS) HP-1000 computation and display station. This procedure assumes some prior knowledge of the HP-1000 and its operating system.

DISCUSSION

This procedure instructs and illustrates TSC-CC EARS operator(s) on how to turn on the TSC-CC HP-1000 and related equipment (7925 Disc Drive, 2608 Printer etc.,) and how to run the major EARS programs.

RESPONSIBILITIES

1. In case of a radiological emergency at DCPP, or when the DCPP Emergency Procedures (Ref. 1) is activated, the TSC-CC EARS operator(s) is responsible for performing the instructions given in this procedure, and to ensure the smooth operating of the TSC-CC station.

2. During normal operation of DCPP, or when the DCPP Emergency Procedures are not in effect, the TSC-CC EARS System Manager is responsible for performing periodic testing, calling for necessary maintenance on the system, as well as to revise this procedure when necessary.

3. The Senior Nuclear Generation Engineer in charge of radiation projects and support in the Personnel and Environment Safety section at NPO is responsible for providing technical support.

INSTRUCTIONS

1. EARS Hardware at TSC-CC

   a. Hardware at TSC-CC

      A service contract exists with Hewlett-Packard. In case of equipment failure, contact the System Manager for the EARS system. If no one is available, contact Hewlett-Packard directly by calling [redacted] and provide them with the serial number of the failed device and a description of the failure. This number is available 24 hours a day.

   b. Turn-On Procedures

      The following procedures are used in "start-up" of the station when no equipment is running.

      1) Set the 7925M disc drive power switch (on lower portion of the back panel) to "ON". The "DOOR UNLOCKED" sign on the front panel should light up. Make sure the drive lid is closed. Turn the run switch to "RUN". After about 30 seconds the "DRIVE READY" light should come on.

      2) Set the HP-2608A line printer power switch (on the back panel) to "ON". Press the "ON LINE" button on the front panel to enable the printer. Check the paper reserve in the paper box underneath the printer.

         If it becomes necessary to replace the paper, extra boxes of paper are stored in the TSC laboratory. Paper is loaded by opening the top cover and releasing the platen release lever on the left side of the printer. Next, release the paper guide mechanisms and remove any remaining paper. Open the front door to the paper holder and insert the paper box, making sure the paper is oriented in the correct direction. Next feed the paper up through the slot in the top of the paper box and align it with the guide mechanisms on the top of the printer. Once the paper is aligned correctly, push the platen release lever in and press the "UP" or "DOWN" button on the "FORMS ADJUST" to line up the paper folds with the appropriate markings printed on the upper left of the printer (e.g. 11" paper would line-up with the 11).

3) Set the HP-2648A terminal power switch (on the rear panel) to "ON". Make sure the terminals "REMOTE" and "CAPS LOCK" buttons are engaged. After the terminal completes its self-test, the "TERMINAL READY" message, and a flashing cursor should appear on the CRT.

4) Set the HP-2621P or HP-2624B terminal power switch (on the rear Panel) to "ON". After the terminal completes its self-test, a flashing cursor should appear on the CRT.

5) Power is normally always supplied to the equipment rack. If power has been removed for servicing, the rack will need to be reenergized. Power is engaged by installing the 30 amp. plug into it's receptacle which is located under the raised floor and directly west of the equipment rack. When the rack is energized the "POWER" indicator on the PDT-3010 Protected Power Distributor at the bottom of the rack will be lit.

c. Turn-Off Procedures

Since the HP-1000 computer is required to be in continuous operation, the following procedures should be used only before scheduled maintenance or unscheduled repairs.

NOTE: All data in the HP-1000 memory will be erased, and all programs terminated.

1) Ensure that all "SESSION" users are logged off. Remove the floor panel immediately west of the equipment rack and disconnect the 30 amp power connector located there. The "POWER" indicator of the Protected Power Distributor located at the bottom of the rack will be off to indicate that power has been removed.

NOTE: To shut down the remainder of the system continue with the following procedures.

2) Flip the "RUN/STOP" switch of the 7925M disc drive to "STOP". When the "DOOR UNLOCKED" sign comes on, set the power switch to "OFF".

3) Set the HP-2621P and HP-2624B terminals power switch to "OFF".

4) Set the HP-2648A terminal power switch to "OFF".

5) Press the "ON LINE/OFF LINE" button on the 2608A to "OFF LINE". Press the "FORM FEED" button to eject any printed pages out of the printer. Set the power switch to "OFF".

d. Power Failure

In case of a power failure to the HP-1000, the system will normally re-boot automatically when the power is restored. No action is necessary. Refer to Step 2 if the automatic re-boot does not occur.

2. EARS Boot-up for TSC-CC HP-1000

a. If the "LOCKED/OPERATE" switch located behind the front panel of the HP-1000 is in the "LOCKED" position;

1) When power is supplied to the CPU the HP-1000 will perform an automatic re-boot.

2) At the system console, the HP-1000 will display status messages and then prompt with the message: "GETTM: Do you wish to enter the time manually? [Y/N]".

a) If you wish to set the time manually, type 'Y' and then press the [RETURN] key. Enter the time in the format that will be requested.

b) If you do not wish to set the time manually, press the [RETURN] key. The program will attempt to set the time from the system auxiliary real-time clock. If this attempt fails, the program will attempt to poll the primary MET tower and request the time. If this attempt also fails, the program will return to step 2.a.2 above.

c) If no response is entered to the prompt in step 2.a.2, after 30 seconds a 'N' response will be assumed and the program will attempt to automatically set the time.

b. If the "LOCKED/OPERATE" switch is in the "OPERATE" position, the computer will not perform an automatic re-boot. To start the system perform the following steps.

1) With the disc drive at select code 12B (octal), display the S-register on the front panel of the HP-1000 and SET bits 7, 9, 12 and 15. Press the following switches in the exact order specified: STORE, PRESET, IBL/TEST, PRESET and RUN.

2) At the system control, the HP-1000 will display status messages and then prompt with the message: "GETTM: Do you wish to enter the time manually? [Y/N]".

   a) If you wish to set the time manually, type "Y" and then press the [RETURN] key. Enter the time in the format that will be requested.

   b) If you do not wish to set the time manually, press the [RETURN] key. The program will attempt to set the time from the system auxiliary real-time clock. If this attempt fails, the program will attempt to poll the primary MET tower and request the time. If this attempt also fails, the program will return to step 2.a.2 above.

   c) If no response is entered to the prompt in step 2.a.2 after 30 seconds a 'N' response will be assumed and the program will attempt to automatically set the time.

3. System Configuration

The EAR system consists of a single HP-1000F mini-computer and 5 HP-9845C's placed at various strategic locations throughout the DCPP, San Luis Obispo County, and State. (See Figure 1.)

Each HP-9845C has an associated Logical Unit (LU) number and device number. These numbers are used by the HP-1000 as addresses to aid in communicating with the peripheral HP-9845C stations.

The EARS/1000 programs are entitled EAR<N>K, where N is a number between 1 and 9 inclusive, which corresponds to the device number for each peripheral station connected to the HP-1000.

A transfer file AUTO1 automatically starts up these programs at the time of "BOOT-UP". Should it become necessary to halt any or all of the EAR<N>K programs, they can be restarted by a "TR,AUTO1" from the original copy of File Manager outside the Session Monitor from the system console.

FIGURE 1

Device #	LU#	Program	Location
1	40	EAR1K	Control Room
2	39	EAR2K	Technical Support Center
3	58	EAR3K	Emergency Operations Facility
4	59	EAR4K	Corporate Incident Response Center
5	60	EAR5K	Office of Emergency Services
6	63	EAR6K	DCPP Simulator Training Building

4. EARS Software for TSC-CC HP-1000

a. EARST (EARS status). This program can be executed from either the system console outside of Session Monitor, or from a Session Console. EARST will dump to the line printer or to the users console the overall system status; including the date, and time, EMERGENCY status, and the location of the system controller. The device status listing includes for each station:

1) Location of the device
2) LU of the device
3) Status of the device
4) Whether or not the device is "on-line" (only valid in emergency situations)
5) Log on/off date and time
6) The last record number of data from "real-time" data base received by this station.
7) The last record number of data from the "projected" data base, received by this station.

FIGURE 1

STATUS LISTING OF EARS SYSTEM: 85/06/03 09:51

NON-EMERGENCY

	lu	stat	time on/off	irr	irp	on line
CONTROL ROOM	40	4	85/06/01 13:51	87	0	0
TECHNICAL SUPPORT CENTER	39	4	85/06/03 09:46	0	0	0
EMERGENCY OPERATIONS FACILITY	55	4	85/06/02 16:33	0	0	0
CORPORATE INCIDENT RESPONSE CTR	59	4	85/05/31 14:51	0	0	0
OFFICE OF EMERGENCY SERVICES	60	4	84/12/05 10:07	0	0	0
DCPP SIMULATOR TRAINING BUILDING	63	8	/ / :	0	0	0

THE LATEST DATA IS FROM DATABASES: REAL00 AND PROJ00.

THE STATUSES REFERRED TO ABOVE HAVE THE FOLLOWING MEANINGS:

1) LOGGED ON TO THE EMERGENCY PROCEDURES.
2) TEMPORARILY OFF-LINE.
3) DEVICE IN UPDATE MODE.
4) PERMANENTLY LOGGED OFF.
5) DEVICE IS DOWN.
6) DEVICE LOGGED ON TO 'STATUS' MODE.
7) DEVICE HAD A PARITY ERROR.
8) DEVICE TIMED OUT.

b. To run EARST type: RU,EARST, and press [RETURN].

Upon running EARST the screen will read:

OUTPUT TO LINE PRINTER (=6) OR SYSTEM CONSOLE (=1)??

Enter the appropriate number and press [RETURN]. The status report will appear on the specified device.

c. EARED (EARS edit). This program can be executed from either the systems console outside of Session Monitor, or from a Session Console. EARED will initialize, add to, or modify the device status table (DTABLE) for the EARS system.

CAUTION: Since DTABLE is responsible for dictating the primary I/O control on a software level for EARS, this program is to be used only by a qualified individual (i.e., EARS System Manager).

EARED is protected by a password, which can only be modified by running EARED to change it. The program will ask for the password first. Commands can only be executed with it and the program will terminate without the correct password. The EARS System Manager has sole control over the password.

To run EARED type: RU,EARED, and press [RETURN].

Upon running EARED the screen will display:

ENTER THE PASSWORD FOR EARED OPERATIONS, PLEASE:

If the incorrect password is entered, EARED will terminate.

Upon entering the correct password, the operator will be asked:

"What would you like to do"?

1) EDIT EARS DATABASE 'DTABLE',
2) INITIALIZE DTABLE,
3) ADD A STATION

Input number of choice (Enter 0 to End):

Any answer out of the range of [0-3] will cause the question to be reissued.

3) This indicates how many EARS stations are configured in DTABLE.

4) If an emergency run of EARS is in progress, this flag is set. If not, the flag = 0.

5) This is a flag used mainly in the event of a control shift between stations. It contains the LU of the controller trying to perform the switch.

6) This is set to LU13 and should not be changed without consulting with the EARS System Manager.

7) This flag is used mainly in the event of a control shift. It then contains the LU of the station to which control is being shifted.

8) During a control shift, this flag is set, indicating that the LU in 7) above is the object of the switch.

9) This is the four (4) character password which is input through an EARS station to start-up the emergency operations. This is also the password for executing EARED. The "delivered" password is [redacted] and should be changed by the system manager as soon as possible after delivery.

10) This flag is set in either of the emergency or status (quiescent) modes through a station. It indicates whether (=1) or not (=0) to use the scenario data on the disc for EARS operations.

11) This flag indicates that the controlling station has made Emergency Action Levels data available to the stations. Each station has its own EAL flag.

After a selection is made, the old value is displayed and EARED prompts the operator for a new value. Upon input of the replacement value, a verification is requested. A 'NO' response to any verification message during this phase will cause EARED to restart.

d. EDIT EARS DATABASE 'DTABLE'. There are two subsections to this section. After choosing this section, the console will display:

"Would you like to:"

1) EDIT THE HEADER
2) EDIT A DEVICE RECORD

Enter the number of your choice (Enter 0 to End):

e. EDIT THE HEADER. The console will now display:

1) # of DB for current or next emergency.
2) LU # for RTDAP Databases.
3) # of devices in DTABLE.
4) Emergency flag (=1 if emergency in progress).
5) LU # of default controlling device.
6) LU for EARS' Databases.
7) LU # of current controller.
8) =1 if control to be switched to LU in field 7.
9) Password for EARS.
10) =1 if drill Database to be used.
11) The EAL data string available flag.

Modifying #1 above also modifies work 10 in the header.

Enter number of item to be changed (Enter 0 to End):

A description of each of the above by number follows:

1) This refers to the REAL and PROJECTED databases which will archive the update and projected plume segment data during an emergency. There are 20 pairs of these databases (REAL00 - REAL19, PROJ00 - PROJ05) on the EARS database logical unit. By selecting this command and entering a number [0-19], the next emergency run of EARS will utilize the databases selected. EARS automatically increments the number upon termination of an emergency run.

2) Upon delivery of the EARS/RTDAP system, the RTDAP databases are located on LU21. This LU is sized to the specific needs of the system. This should not be changed without consulting the EARS System Manager.

f. EDIT A DEVICE RECORD. The console will now display the stations now configured in the Device Status Table. The first station will be listed as #2 (as opposed to #1), because it is the second record in DTABLE (the header is #1). Choose the station to be edited by selecting and entering its respective record number. You will be asked to verify your choice.

The following will be displayed on the console screen:

1) LU of device.
2) Status of device.
3) Location of device.
4) =1 if device can be controller.
5) Last record received from REALXX Database.
6) Last record received from PROJXX Database.
7) The station on-line flag.
8) The station emergency flag.
9) The EAL data received flag (=1 if data not (!!) received).

"Which would you like to modify (Enter 0 to End):

1) This is the LU of this particular station. This should change only if the device's MUX port has changed or a new system generation has been installed.

NOTE: Changing the device LU will impact the MUX configuration transfer file.

2) This is the EARS status for this station.

The Status is set up as follows:

STATUS	MEANING
0	No initial log on
1	Logged on (EAR<N>K)
2	Temporarily off-line
3	Device in update mode
4	Permanently logged off
6	Logged on (status)
7	A parity error occurred on read from service
8	Device time out

3) This is the 32 character station location.

4) If the device can be a controller, this flag =1. If not, =0.

5) This is used during emergency operations for automatic update purposes.

6) Same as 5), above.

7) This flag =1 if a non-controlling station is available to receive automatically transmitted data.

8) This flag =1 if the station is in emergency operations.

9) This flag =1 if the EAL date has not been received by this station =0 otherwise.

After a selection is made, the old value is displayed and EARED prompts the operator for a new value. Upon input of the replacement value, a verification is requested. A 'NO' response to any verification message during this phase will cause EARED to restart.

g. INITIALIZE DTABLE. This section leads the operator through a series of questions designed to set up DTABLE to the system manager's specifications. The questions fall into two categories:

1) System parameters
2) Station parameters

After all questions are asked, the AUTO1 transfer file is created and setup to clone and run all EAR<N>K programs from boot-up. DTABLE is also created and the header and all station records are configured according to the responses to the following prompts.

h. SYSTEM PARAMETERS. The screen will display the following instructions:

PLEASE ANSWER THE FOLLOWING QUESTIONS TO INITIALIZE THE DEVICE STATUS TABLE HEADER RECORD:

WHAT IS THE LU (BETWEEN 10 AND 25) FOR THE RTDAP DATABASES?

Always answer this with the number "21". (There are no default answers to any of these questions.)

WHAT IS THE LU FOR THE EARS DATABASES?

Always answer "13".

INPUT EXACTLY 4 CHARACTERS (INCLUDING BLANKS) FOR THE EARS START-UP PASSWORD:

Any four characters will suffice.

The screen will then clear and all responses will be printed out for verification.

ARE THESE CORRECT? ('YE' OR 'NO')

If the response is 'NO', all questions are re-asked.

i. STATION PARAMETERS. Up to 20 stations may not be entered into DTABLE. Station # <N>.

WHAT IS THE LU OF THIS STATION (RANGE 25-64)?

Enter the station logical unit number.

WHAT IS THE LOCATION OF THIS STATION (UP TO 32 CHARACTERS)?

Enter unique location identifier.

CAN THIS DEVICE BE A CONTROLLING STATION DURING AN EMERGENCY (1=YES, 0=NO)?

After a short pause, the screen will clear and all responses in regard to this station will be printed to the console. No verification of the data is requested. If any data is incorrectly entered, it may be changed through the editing portion of EARED.

DO YOU WISH TO ADD ANOTHER STATION (1=YES, 0=NO)?

If the response is '1' (YES), the previous station questions will be asked for station N+1. If N+1 is greater than 20, the screen will display:

ONLY 20 DEVICES ARE ALLOWED.

At this time, AUTO1 will be created and the commands to set-up the EARS system are entered into it. EARED now terminates.

NOTE: If DTABLE and/or AUTO1 are already on the system, they will be purged during the DTABLE initialization phase before being recreated.

j. ADD A RECORD. If 20 stations are already configured, a message will be printed to the screen and EARED will terminate.

YOU WILL BE ADDING STATION # <N>.
THERE IS A MAXIMUM OF 20 DEVICES FOR 'DTABLE'.
PLEASE INPUT UP TO 32 CHARACTERS FOR THE DEVICE LOCATION:

Enter a unique location identifier.

LU OF DEVICE

Enter the logical unit number.

CAN THIS DEVICE BE A CONTROLLER (1=YES, 0=NO)?:

After a response to this question is entered, the screen is cleared and all responses regarding this station are printed and a verification is requested. If the response 'NO', EARED restarts. If an affirmative response is input, AUTO1 is updated and EARED restarts.

REFERENCES

1. Pacific Gas and Electric Company; DCPP Plant Manual Vol. 3A and 3B: Emergency Procedures

2. HP: 2624B Interactive Terminal Owner's Manual

3. HP: 2624B Interactive Terminal User's Manual

4. HP: 2621P Interactive Terminal Owner's Manual

5. HP: 2621P Interactive Terminal User's Manual

6. HP: 7925M Disc Drive User's Manual

7. HP: 2117F Installation and Service Manual

8. HP: 2648A Graphics Terminal User's Manual

9. HP: 7970E Magnetic Tape Drive Operations Manual

10. Applied Physical Technology, Inc., Emergency Assessment and Response System EARS/1000 Operator's Manual

APPENDICES

1. List of EARS HP-1000 Hardware

APPENDIX A

List of EARS HP-1000 Hardware

	Model	Description	Quantity
1.	HP-2117F	HP-1000 mini-computer with floating point processor	1
2.	HP-7970E	1600 cpi Mag. Tape Drive	1
3.	HP-12979B	I/O Expander	1
4.	HP-37201A	HP-IB Extender	3
5.	PDT-3010	Protected Power Distributor	1
6.	HP-7925M	Disc Drive	1
7.	HP-2608A	Line Printer	1
8.	HP-2648A	Graphics Terminal	1
9.	HP-2621P	Interactive Terminal	1
10.	HP-2624B	Interactive Terminal	3

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

October 15, 1985

50-275/323 Diablo Canyon

MEMORANDUM FOR: Chief, Document Management Branch, TIDC

FROM: Director, Division of Rules and Records, ADM

SUBJECT: REVIEW OF UTILITY EMERGENCY PLAN DOCUMENTATION

The Division of Rules and Records has reviewed the attached document and has determined that it may now be made publicly available.

J. M. Felton, Director
Division of Rules and Records
Office of Administration

Attachment: As stated