ATTACHMENT

Consumers Power Company
Palisades Plant
Docket 50-255

1991 PALISADES EMERGENCY EXERCISE SCENARIO

July 11, 1991

PALEX 91

TABLE OF CONTENTS

SCOPE AND OBJECTIVES

1.0 SCOPE AND OBJECTIVES

1.1 SCOPE

PALEX 91 is designed to meet exercise requirements specified in 10 CFR 50, Appendix E, Section IV.F. The Joint Public Information Center will not be activated during the exercise. PALEX 91 is a utility only exercise and will not include the participation of local governments. State personnel will participate only to the extent of answering phones and supplying information on simulated offsite actions.

1.2 OBJECTIVES

The following objectives will be demonstrated as dictated by the exercise scenario.

1. Assessment and Classification

    a. Assess conditions which warrant classification within fifteen minutes of being provided those conditions.

    b. Classify posed conditions in accordance with Emergency Action Levels within fifteen minutes of determination that conditions warrant classification.

2. Communications

    a. Upon making an emergency classification, complete initial notifications within fifteen minutes to the State and locals and within one hour to the NRC using the Notification Form.

    b. Complete subsequent notifications to the State, locals, and NRC on a routine fifteen minute basis or as mutually agreed.

    c. Contact other organizations such as contractors, utilities, fire or medical support within one hour of recognizing that conditions exist that warrant their assistance.

    d. Provide accurate press release information on plant conditions within one hour after occurrence.

    e. Provide updates between appropriate Emergency Response Facilities at least every 30 minutes.

3. Radiological Assessment and Control

    a. Collect, analyze, document and trend radiological survey data.

    b. Analyze plant radiological conditions and implement protective actions for site personnel in accordance with procedures.

c. Prepare and brief personnel for activities required in high radiation areas.

d. Monitor, track and document radiation exposure to maintenance, operations, and monitoring team personnel.

e. Calculate dose projections based on sample results or monitor readings.

f. Identify appropriate protective action recommendations.

g. Perform core damage assessments in accordance with procedures. This objective will be conducted apart from the main exercise and will be scheduled to meet NRC needs.

4. Emergency Response Facilities

a. Staff and activate onsite Emergency Response Facilities within approximately 30 minutes of an Alert classification.

b. Staff and activate the Emergency Operations Facility within about an hour of the Site Area Emergency declaration.

c. Update status boards at least every 30 minutes.

d. Document field team activities in logs or on appropriate status boards.

e. Track and prioritize status of key in plant jobs.

5. Direction and Control

a. Command and control all Emergency Response Facilities in accordance with assigned functions.

b. Coordinate maintenance activities.

c. Take appropriate measures to secure emergency equipment, supplies, and support.

d. Dispatch field teams in accordance with procedures.

e. Direct and monitor field team actions.

f. Transfer Command and control in accordance with the Site Emergency Plan.

g. Perform accountability within approximately 30 minutes of the Alert classification.

h. Brief Emergency Response Facility staffs approximately every 30 minutes on changes in plant status, emergency classification, field team progress, and offsite actions as appropriate.

i. Effectively coordinate with state and local governments as appropriate.

j. Demonstrate reentry and recovery in accordance with procedures

6. Exercise Control

a. Allow adequate free play for players to demonstrate their capabilities.

b. Accurately assess performance of exercise players and controllers.

EXERCISE CONDUCT

2.0 EXERCISE CONDUCT

2.1 EXERCISE ORGANIZATION

The exercise organization is comprised of Controller/Evaluators, Players and Observers.

Controller/Evaluators observe player activities and judge the effectiveness of Player actions based on Evaluator Checklists in section 2.6. Each CPCo Controller/Evaluator must submit a completed, signed Evaluator Checklist at the conclusion of the exercise. NRC evaluators will also be present for the exercise.

Selected Controller/Evaluators provide messages and exercise data to players and ensure that the exercise proceeds in accordance with the Sequence of Events. Controller/Evaluators are authorized to modify scenario data as judged appropriate. However, every attempt must be made to contact a Lead Controller or the Exercise Coordinator before doing so. If data is modified without approval, the Controller/Evaluator involved is required to notify his/her Lead Controller as soon as possible.

Controller/Evaluators are authorized to prompt players, but again should make every effort to discuss the situation with the Lead Controller before doing so. If a player must be prompted, it must be noted during the critique following the exercise.

Observers may be present at any location where exercise activities may occur. Observers are not allowed to converse with exercise players unless approved by the Controller/Evaluator in charge.

Players include all personnel responding to simulated emergency conditions.

2.2 CONTROLLER ORGANIZATION

The Exercise Coordinator is in charge of overall exercise conduct. Responsibilities include conducting preexercise Controller/Evaluator training sessions, the NRC Entrance, joint critiques, and the NRC Exit; approving major scenario deviations; resolving exercise questions; and terminating the exercise.

A Lead Controller is assigned to each Emergency Response Facility and is responsible for addressing Player inquiries, conducting a post exercise critique, and collecting completed Evaluator Checklists following the exercise.

Controller/Evaluators will refer all Player inquiries to the Lead Controller if possible. If the Lead Controller is not able to answer the question, it should be referred to the Exercise Coordinator.

2.3 EXERCISE DATA AND MESSAGES

Messages and data to drive Player actions are contained in Section 3, Exercise Data. Refer to the Table of Contents for headings.

It is each Controller/Evaluator's responsibility to be fully familiar with the scenario package and ensure that only appropriate information is provided to Players. Leading questions and hints are not allowed at any time. If confidential scenario information must be provided to a Player, it must be formally noted in the critique that the Player was prompted.

2.4 EXERCISE GROUND RULES

1. Perform all actions without simulation to the maximum extent possible. This includes acting as if radiation is actually present, donning anti-C's, and minimizing radiation exposure. Simulation is not allowed unless your Controller/Evaluator has authorized simulating a specific action. If authorized to simulate, you should explain to the Controller/Evaluator how the task would be accomplished.

2. Although it may seem artificial, speak out loud to identify your actions and decisions to Controller/Evaluators. This will assist in the evaluation process.

3. Be aware of CPCo Controller/Evaluators and NRC Evaluators in your area.

4. Whenever a Controller/Evaluator provides a message or data, accept it for face value. If you do not understand a message or any Controller/Evaluator provided information, ask for clarification. Exercise data is intended to be clear and straight forward. Scenario developers will never provide data that intentionally misleads Players.

5. If your Controller/Evaluator asks you a question or provides directions, you should answer or comply as appropriate. If you think he/she is in error, feel free to discuss your concerns. You must, however, accept his/her word as final with respect to scenario related matters.

6. Observe all rules and procedures when entering radiation areas. No one is exempt from normal station radiological practices and procedures.

7. Demonstrate your knowledge of emergency operations and procedures. Use status boards, logs, and message forms to document your actions and instructions from other Players. This will assist in event reconstruction.

8. Keep your focus on the exercise. Unrelated conversations detract from your performance.

9. If an NRC Evaluator asks you a question, you should answer to the best of your knowledge or refer the question to your Team Leader.

10. At the conclusion of the exercise there will be a critique. Team Leaders will be asked for suggestions and comments. Make sure that your comments are known to your Team Leader.

2.5 CRITIQUES

Following the conclusion of the exercise, each Lead Controller will conduct a critique in the Emergency Response Facility where he/she is assigned. Each Team Leader, Director, and Controller/Evaluator shall be asked for comments during the critique. NRC evaluators are expected to attend.

Following Facility Critiques, a Joint Critique will be conducted with each Lead Controller presenting findings. Players and NRC evaluators are welcome to attend.

Following the Joint Critique, the NRC will conduct an Exit Meeting. The NRC will verbally present its preliminary findings at this time. This is the only opportunity to comment on NRC observations before the formal exercise report is published. If anyone has a question, this is the time to ask.

2.6 EVALUATOR CHECKLISTS

The checklists provided in the following section are used in gauging effectiveness of Player response. Checklists are cross referenced to exercise objectives to ensure that Player and Controller/Evaluator actions have accomplished exercise objectives.

Each Controller/Evaluator shall submit a completed, signed, and dated checklist at the conclusion of the exercise. Problems shall be fully explained on the completed checklist.

Control Room Evaluator Checklist

1. Assessment and Classification — Overall: MET NOT MET

   a. Assess conditions which warrant classification within fifteen minutes of being provided those conditions. — MET MET/PROBLEM NOT MET N/A
   EXPLANATION:

   b. Classify posed conditions in accordance with Emergency Action Levels within fifteen minutes of determination that conditions warrant classification. — MET MET/PROBLEM NOT MET N/A
   EXPLANATION:

2. Communications — Overall: MET NOT MET

   a. Upon making an emergency classification, complete initial notifications within fifteen minutes to the State and locals and within one hour to the NRC using the Notification Form. — MET MET/PROBLEM NOT MET N/A
   EXPLANATION:

   b. Complete subsequent notifications to the State, locals, and NRC on a routine fifteen minute basis or as mutually agreed. — MET MET/PROBLEM NOT MET N/A
   EXPLANATION:

   c. Contact other organizations such as contractors, utilities, fire or medical support within one hour of recognizing that conditions exist that warrant their assistance. — MET MET/PROBLEM NOT MET N/A
   EXPLANATION:

   e. Provide updates between appropriate Emergency Response Facilities at least every 30 minutes. — MET MET/PROBLEM NOT MET N/A
   EXPLANATION:

3.	Radiological Assessment and Control	Overall: MET NOT MET
	c. Prepare and brief personnel for activities required in high radiation areas.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
4.	Emergency Response Facilities	Overall: MET NOT MET
	a. Staff and activate onsite Emergency Response Facilities within approximately 30 minutes of an Alert classification.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
	b. Staff and activate the Emergency Operations Facility within about an hour half of the Site Area Emergency declaration.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
	e. Track and prioritize status of key inplant jobs.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
5.	Direction and Control	Overall: MET NOT MET
	a. Command and control of Emergency Response Facilities in accordance with assigned functions.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
	b. Coordinate maintenance activities.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
	c. Take appropriate measures to secure emergency equipment, supplies, and support.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
	f. Transfer Command and control in accordance with the Site Emergency Plan.	MET MET/PROBLEM NOT MET N/A EXPLANATION:

h. Brief Emergency Response Facility staffs approximately every 30 minutes on changes in plant status, emergency classification, field team progress, and offsite actions as appropriate.

MET MET/PROBLEM NOT MET N/A
EXPLANATION:

i. Effectively coordinate with state or local governments as appropriate.

MET MET/PROBLEM NOT MET N/A
EXPLANATION:

6. Exercise Control

Overall: MET NOT MET

a. Allow adequate free play for players to demonstrate their capabilities.

MET MET/PROBLEM NOT MET N/A
EXPLANATION:

b. Accurately assess performance of exercise players and controllers.

MET MET/PROBLEM NOT MET N/A
EXPLANATION:

c. Adequacy of scenario data.

MET MET/PROBLEM NOT MET N/A
EXPLANATION:

Name: _____

Date: _____

TSC Evaluator Checklist

1. Assessment and Classification — Overall: MET NOT MET

   a. Assess conditions which warrant classification within fifteen minutes of being provided those conditions. — MET MET/PROBLEM NOT MET N/A EXPLANATION:

   b. Classify posed conditions in accordance with Emergency Action Levels within fifteen minutes of determination that conditions warrant classification. — MET MET/PROBLEM NOT MET N/A EXPLANATION:

2. Communications — Overall: MET NOT MET

   a. Upon making an emergency classification, complete initial notifications within fifteen minutes to the State and locals and within one hour to the NRC using the Notification Form. — MET MET/PROBLEM NOT MET N/A EXPLANATION:

   b. Complete subsequent notifications to the State, locals, and NRC on a routine fifteen minute basis or as mutually agreed. — MET MET/PROBLEM NOT MET N/A EXPLANATION:

   c. Contact other organizations such as contractors, utilities, fire or medical support within one hour of recognizing that conditions exist that warrant their assistance. — MET MET/PROBLEM NOT MET N/A EXPLANATION:

   e. Provide updates between appropriate Emergency Response Facilities at least every 30 minutes. — MET MET/PROBLEM NOT MET N\A EXPLANATION:

3. Radiological Assessment and Control — Overall: MET NOT MET

   a. Collect, analyze, document and trend radiological survey data. — MET MET/PROBLEM NOT MET N/A
   EXPLANATION:

   b. Analyze plant radiological conditions and implement protective actions for site personnel in accordance with procedures. — MET MET/PROBLEM NOT MET N/A
   EXPLANATION:

   e. Calculate dose projections based on sample results or monitor readings. — MET MET/PROBLEM NOT MET N/A
   EXPLANATION:

   f. Identify appropriate protective action recommendations. — MET MET/PROBLEM NOT MET N/A
   EXPLANATION:

4. Emergency Response Facilities — Overall: MET NOT MET

   a. Staff and activate onsite Emergency Response Facilities within approximately 30 minutes of an Alert classification. — MET MET/PROBLEM NOT MET N/A
   EXPLANATION:

   c. Update status boards at least every 30 minutes. — MET MET/PROBLEM NOT MET N/A
   EXPLANATION:

   e. Track and prioritize status of key in plant jobs. — MET MET/PROBLEM NOT MET N/A
   EXPLANATION:

5. Direction and Control — Overall: MET NOT MET

   a. Command and control of Emergency Response Facilities in accordance with assigned functions. — MET MET/PROBLEM NOT MET N/A
   EXPLANATION:

   c. Take appropriate measures to secure emergency equipment, supplies, and support. — MET MET/PROBLEM NOT MET N/A
   EXPLANATION:

d. Dispatch field teams in accordance with procedures.

MET MET/PROBLEM NOT MET N/A
EXPLANATION:

f. Transfer Command and control in accordance with the Site Emergency Plan.

MET MET/PROBLEM NOT MET N/A
EXPLANATION:

g. Perform accountability within approximately 30 minutes of the Alert classification.

MET MET/PROBLEM NOT MET N/A
EXPLANATION:

h. Brief Emergency Response Facility staffs approximately every 30 minutes on changes in plant status, emergency classification, field team progress, and offsite actions as appropriate.

MET MET/PROBLEM NOT MET N/A
EXPLANATION:

i. Effectively coordinate with state and local governments as appropriate.

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EXPLANATION:

6. Exercise Control

Overall: MET NOT MET

a. Allow adequate free play for players to demonstrate their capabilities.

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EXPLANATION:

b. Accurately assess performance of exercise players and controllers.

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EXPLANATION:

c. Adequacy of scenario data.

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EXPLANATION:

Name: _____

Date: _____

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5. Direction and Control

Overall: MET NOT MET

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b. Coordinate maintenance activities.

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EXPLANATION:

c. Take appropriate measures to secure emergency equipment, supplies, and support.

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d. Dispatch field teams in accordance with procedures.

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EXPLANATION:

e. Direct and monitor field team actions.

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g. Perform accountability within approximately 30 minutes of the Alert classification.

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h. Brief Emergency Response Facility staffs approximately every 30 minutes on changes in plant status, emergency classification, field team progress, and offsite actions as appropriate.

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EXPLANATION:

6. Exercise Control

Overall: MET NOT MET

a. Allow adequate free play for players to demonstrate their capabilities.

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EXPLANATION:

b. Accurately assess performance of exercise players and controllers.

MET MET/PROBLEM NOT MET N/A
EXPLANATION:

c. Adequacy of scenario data.

MET MET/PROBLEM NOT MET N/A
EXPLANATION:

Name: _____

Date: _____

EOF Evaluator Checklist

1. Assessment and Classification — Overall: MET NOT MET

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   b. Classify posed conditions in accordance with Emergency Action Levels within fifteen minutes of determination that conditions warrant classification. — MET MET/PROBLEM NOT MET N/A
   EXPLANATION:

2. Communications — Overall: MET NOT MET

   a. Upon making an emergency classification, complete initial notifications within fifteen minutes to the State and locals and within one hour to the NRC using the Notification Form. — MET MET/PROBLEM NOT MET N/A
   EXPLANATION:

   b. Complete subsequent notifications to the State, locals, and NRC on a routine fifteen minute basis or as mutually agreed. — MET MET/PROBLEM NOT MET N/A
   EXPLANATION:

   c. Contact other organizations such as contractors, utilities, fire or medical support within one hour of recognizing that conditions exist that warrant their assistance. — MET MET/PROBLEM NOT MET N/A
   EXPLANATION:

   d. Provide accurate press release information on plant conditions within one hour after occurrence. — MET MET/PROBLEM NOT MET N\A
   EXPLANATION:

	e. Provide updates between appropriate Emergency Response Facilities at least every 30 minutes.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
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	a. Collect, analyze, document and trend radiological survey data.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
	e. Calculate dose projections based on sample results or monitor readings.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
	f. Identify appropriate protective action recommendations.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
4.	Emergency Response Facilities	Overall: MET NOT MET
	b. Staff and activate the Emergency Operations Facility within about an hour of the Site Area Emergency declaration.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
	c. Update status boards at least every 30 minutes.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
	d. Document field team activities in logs or on appropriate status boards.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
5.	Direction and Control	Overall: MET NOT MET
	a. Command and control all Emergency Response Facilities in accordance with assigned functions.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
	c. Take appropriate measures to secure emergency equipment, supplies, and support.	MET MET/PROBLEM NOT MET N/A EXPLANATION:

e. Direct and monitor field team actions.

MET MET/PROBLEM NOT MET N/A
EXPLANATION:

f. Transfer Command and control in accordance with the Site Emergency Plan.

MET MET/PROBLEM NOT MET N/A
EXPLANATION:

h. Brief Emergency Response Facility staffs approximately every 30 minutes on changes in plant status, emergency classification, field team progress, and offsite actions as appropriate.

MET MET/PROBLEM NOT MET N/A
EXPLANATION:

i. Effectively coordinate with state and local governments as appropriate.

MET MET/PROBLEM NOT MET N/A
EXPLANATION:

6. Exercise Control

Overall: MET NOT MET

a. Allow adequate free play for players to demonstrate their capabilities.

MET MET/PROBLEM NOT MET N/A
EXPLANATION:

b. Accurately assess performance of exercise players and controllers.

MET MET/PROBLEM NOT MET N/A
EXPLANATION:

c. Adequacy of scenario data.

MET MET/PROBLEM NOT MET N/A
EXPLANATION:

Name: _____

Date: _____

RMT Evaluator Checklist

2.	Communications	Overall: MET NOT MET
	e. Provide updates between appropriate Emergency Response Facilities at least every 30 minutes.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
3.	Radiological Assessment and Control	Overall: MET NOT MET
	a. Collect radiological survey data.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
	h. Brief Emergency Response Facility staffs approximately every 30 minutes on changes in plant status, emergency classification, field team progress, and offsite actions as appropriate.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
6.	Exercise Control	Overall: MET NOT MET
	a. Allow adequate free play for players to demonstrate their capabilities.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
	b. Accurately assess performance of exercise players and controllers.	MET MET/PROBLEM NOT MET N/A EXPLANATION:
	c. Adequacy of scenario data.	MET MET/PROBLEM NOT MET N/A EXPLANATION:

Name: _____

Date: _____

SEQUENCE OF EVENTS

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-0030/0800

Initial Conditions are provide to Players:

The reactor is operating at normal full power

Equipment out of service:

Auxiliary feedwater pump P-8A

Reactor Vessel water level channel LTRI-0101A

Containment radiation monitor RIA-2321

Alarm: Annunciator No EK-02-05, "Cont Gamma RIA-2321 Fail"

PCS leak rate (most recent results): 0.07 gpm identified, 0.034 gpm unidentified, 0.104 gpm total.

Estimated primary to secondary leak rate: 0.001 total

Total containment leak rate 35,942 cc/min

0000/0830

The exercise begins.

0002/0832

Control Room indications of PCS leakage are received.

0010/0840

Reactor trip.

0015/0845

Site Area Emergency should be declared.

0016/0846

Loss of preferred AC Bus Y-20.

0017/0847

Left channel SIAS received due to low pressurizer pressure.

0025/0855

All primary coolant pumps stopped.

0033/0903

Containment Isolation received due to Containment High Pressure; low level unmonitored fission gas release from containment commences.

0040/0910

Containment radiation monitors RIA-1805 through 1808 fail due to degrading containment conditions.

0115/0945

Containment pressure peaks at 20 psig.

0120/0950

Safety injection begins to recover PCS inventory.

0200/1030

A General Emergency may be declared based on interpretation of data available.

0203/1033

Containment high pressure alarm clears; the release from containment ceases.

0216/1046

Power operated relief PRV-1042B fails open and is isolated; neither channel of LTOP is available.

0300/1130

PCS cooldown begins.

0400/1230

Time jump conditions are provided to players; recovery planning begins. Players not involved in recovery planning begin critiques.

0600/1430

Recovery planning is completed; the exercise is terminated.

NARRATIVE SUMMARY

NARRATIVE SUMMARY

0800 (-0030)

A. The plant is at full power at the end of core life (10.5 gwd/mtu). Bi-weekly control rod exercising per D/WO-1 Attachment 4 is in progress.

B. Technical Specification Surveillance Procedure SO-6, "Fire Protection Sprinkler System Water Flow Switch Alarm Surveillance Test," is in progress in conjunction with Checklist 21.13, "Quarterly Wet Pipe Fire System Alarm/Flow Test Checklist."

C. Equipment in a degraded mode:

1. Auxiliary Feedwater Pump P-8A is tagged out of service for coupling inspection and excessive unadjustable packing leakage noted during an incomplete performance of Technical Specification Test MO-38. P-8A packing is removed and the coupling is disassembled; coupling fasteners are broken and surfaces are scoured, necessitating replacement of the coupling. The LCO of Technical Specification 3.5.2.a has been entered, with 65 hours remaining until plant shutdown is required.

2. Reactor Vessel Water Level Channel LTRI-0101A is inoperable due to periodic sensor channel failure and is deenergized for troubleshooting. The action of Technical Specification Table 3.17.4 footnote "K" is applicable.

3. Containment Radiation Monitor RIA-2321 is inoperable due to detector failure; a replacement is on order for installation during the next refueling outage. The action of Standing Order 54 Table 3.17.4 Footnote "N" is applicable.

D. Existing Alarm Conditions:

Annunciator No. EK-02-25, "Cont Gamma RIA-2321 Fail"

E. Exercise responders will use actual meteorological conditions.

F. Primary and secondary chemistry

1. Primary System Chemistry

a. ph: 6.8

b. Boron: 103 ppm

c. Dissolved oxygen: < 0.02 ppm

d. Hydrogen: 25 cc/kg

e. Total beta gamma activity: 1.45 microcuries/ml

f. Iodine dose equivalent: 3.1 E-2 microcuries/ml

g. Total PCS gas activity: 4.5 microcuries/ml

h. PCS Xe-133 specific isotope activity: 410 microcuries/kg.

2. Secondary System Chemistry

a. Primary to secondary leak rate: 0.001 gpm

b. Offgas Xe-133: 5.45 E-5 microcuries/ml

c. Condenser air inleakage: 3 scfm

d. A and B steam generator gross gamma activities: <5.6 E-6 microcuries/ml

G. Primary Coolant System Leak Rate (most recent results)

1. Identified: 0.07 gpm

2. Unidentified: 0.034 gpm

3. Total: 0.104 gpm

H. Total Containment Leak Rate (Technical Data Book Figure 10.1): 35,942 cc/min

0830-0840 (0000-0010) Simulator Key: IC10, IC15, or IC20

A. The exercise begins with control rod exercising in progress on Group 4. When the Control Operator finishes exercising Rod 39, its mechanical pressure housing begins to crack and leak (Simulator malfunction RC03). Pressurizer and VCT Level begin to decrease due to a LOCA of approximately 150 gpm.

B. Expected Actions:

1. Respond to alarms in accordance with alarm response procedures.

2. Conclude that PCS leakage is indicated and refer to ONP 23.1, "Primary Coolant Leak," and Emergency Plan Implementing Procedure EI-1.

3. Operators will realize that the leak rate exceeds charging pump capacity and prepare to trip the reactor.

A. The mechanical pressure housing for Rod 39 fails, ejecting the Rod 39 blade assembly and drive shaft to the fully withdrawn position and increasing the size of the LOCA to 250 gpm (Simulator malfunction RC 04).

B. The reactor trips on variable high power and the pressure spike accompanying the rod ejection increases the PCS leak rate to 350 gpm (Simulator malfunction RC 04).

C. The core power excursion and redistribution of core radial power causes 10-15% total fuel failure due to departure from nucleate boiling.

D. An Auxiliary Operator who is on a stepladder outside the station battery room door directing water flow to a floor drain while testing Flow Switch WFS-2B per SO-6 and CL 21.13 via Inspector's Test Valve MV-FP 505 is startled by the commotion attending the reactor trip and loses his footing. Grasping the drain hose for support, he inadvertently pulls it from the floor drain directing its discharge into Inverter No 2 and Preferred AC Bus Y-20 which is located directly beneath the inverter. Regaining his footing, he closes MV-FP 505 to stop the spillage and leaves the scene to report to the Control Room.

E. Expected Actions:

1. Perform EOP 1.0 standard post trip actions.

2. EOP 4.0, "Loss of Coolant Accident Recovery," will be invoked and Safety Function Status Checks commenced.

3. The Shift Supervisor assumes the Site Emergency Director (SED) position and:

   a. Classifies a "Site Area Emergency" based on "PCS leak rate greater than charging pump capacity."

   b. Directs a public address announcement on the situation and sounding of the emergency siren.

   c. Delegates actions and notifications identified in EI-1 and marked on EI-2.1 Attachment 1, including emergency staff augmentation; personnel accountability; activation of the Operational Support Center (OSC) and Technical Support Center (TSC); dose assessment; and activation of the Emergency Response Data System (ERDS).

   d. Directs completion of the emergency notification forms of EI-3 and NOD Form 3160.

   e. Commences 15 minute notifications per EI-3.

0845-0847 (0015-0017)

A. EOP 4.0 Safety Function Status Checks continue.

B. Prior to reaching the CHP setpoint of 3.7 psig or the SIAS setpoint of 1605 psia, Preferred AC Bus Y-20 Inverter No 2 output breaker trips due to a fault on the bus (Simulator malfunction ED08). This results in the following malfunctions:

1. Auxiliary Feed Pump P-8C trips.

2. Primary and secondary rod position is lost.

3. No reactor vessel level monitoring system channels are available.

4. Core exit thermocouples are lost.

5. Right channel of SIAS is disabled.

6. Both main steam line gamma monitors are lost.

7. The only operable containment high range monitor, RIA-2322, is lost.

8. LTOP channel "B" is disabled due to loss of temperature input.

9. Multiple Control Room safety-related instruments are lost.

10. In addition to those caused by instrument failures, various CFMS inputs are lost due to CFMS Multiplexer deenergization.

C. Expected Actions:

1. Operators will elect to remain in EOP 4.0 recovery actions (invoking EOP 9.0, "Functional Recovery Procedure," is optional but is unnecessary) and continue Safety Function Status Checks.

2. Utilize steam driven auxiliary feedwater pump P-8B for immediate auxiliary feedwater requirements. P-8B, however, will not suffice to reach cold shutdown by itself.

0847-0915 (0017-0045)

A. Left channel SIAS is received due to low pressurizer pressure.

B. All Primary Coolant Pumps are intentionally secured when PCS pressure lowers to 1300 psia following SIAS. This action places reliance on natural circulation for core heat removal; natural circulation will be difficult to verify due to absence of core exit

thermocouples from the PIP computer and RVLMS core exit thermocouples.

C. Containment isolation occurs due to containment high pressure (CHP).

D. As the containment pressurizes, an unmonitored release commences from several of the various small penetration leak paths which make up total containment leakage.

E. Expected Actions:

1. Complete EOP 4.0 Safety Function Status Checks.

2. Complete staffing of the OSC, MSC, and TSC and turnover responsibility.

3. Manually operate right channel SIS equipment (and P-54A spray pump when CHP is received) and stop condensate pumps.

4. Verify containment isolation when received; however, this action will not terminate the unmonitored release. Additionally,this leaves the atmospheric steam dump valves and/or code safeties to remove PCS heat; these paths are potential (but not actual) release paths until alternate steam line monitoring is in place.

5. Verify containment spray and iodine removal systems are initiated and start hydrogen recombiners.

0915-0930 (0045-0100)

A. Fission gases escape the containment at an increasing rate as the containment pressurizes.

B. Expected Actions:

1. Continue EOP 4.0 operator actions.

2. Evacuate non-essential personnel.

3. Players will devise an alternate ("pre-planned" according to Standing Order 54) method to perform offsite dose estimates, i.e., either instrumented or based on survey data (containment area monitors RIA-1805 through 1808 and RIA-2315 should be considered unavailable due to lack of EEQ qualification and degraded containment conditions).

0930-1030 (0100-0200)

A. EOP 4.0 operator actions continue. PCS inventory losses are recovered by safety injection flow.

B. Containment pressure peaks at approximately 20 psig.

C. This period of time is deliberately intended to be somewhat static to permit the TSC and the Control Room time to interpret data:

1. Possible recognition that General Emergency conditions exist due to loss of all fission product barriers.

   a. The fact that fuel damage has occurred must be recognized to reach a decision to classify the General Emergency. The lack of qualified instrumentation to determine the extent of core damage makes it imperative to initiate post accident sampling as soon as possible. This in turn involves violating containment integrity by utilizing I&C personnel to jumper open PCS sample valves CV-1910 and CV-1911. It will take approximately 3 hours for sample results to be determined.

   b. Offsite survey results will indicate only the minute presence of noble gasses. Players will have difficulty determining that General Emergency conditions exist. Information will not be provided by controllers if results are not forthcoming. Players will be left to determine the General Emergency classification based on bits and pieces of information.

2. Loss of Preferred AC Bus Y-20 has detrimental effects on several safety functions (repair efforts will not result in clearing the fault for the duration of the exercise):

   a. Loss of both primary and secondary rod position, reactor vessel water level monitoring, radiation instruments, and core exit thermocouples make confirmation of acceptable Safety Function Status Checks (reactivity control, PCS inventory control, core heat removal, containment isolation) less than straightforward. Alternative indications do exist, but their identification should engender considerable discussion between the TSC and Control Room personnel and exercise both communication and decision making.

   b. Mitigation of the consequences of the accident depends to an extent on throttling safety injection flow as soon as possible and regaining forced cooling of the PCS, the criteria for which are affected by instrumentation losses; this should also exercise the TSC/Control Room interface.

   c. In the absence of normal radiation instrumentation, a strategy to ensure that timely and conservative protective action recommendations can be made to State and local agencies will need to be developed.

3. Allocation of personnel resources should support subsequent cooldown and recovery and attempt to compensate for instrumentation losses where necessary. Potential items include:

   a. Repair of AFW Pump P-8A (mechanical).

b. Restoration of AFW Pump P-8C by defeating the low suction pressure trip (electrical).

c. Troubleshooting Preferred AC Bus Y-20 fault (electrical).

d. Provide alternate power to PIP (electrical).

e. Provide alternate power to right channel SIS Block Circuit (electrical).

f. Jumper open PCS sample valves CV-1910 and CV-1911 (I&C).

g. Manually read rod position and core exit thermocouple temperatures (I&C).

h. Reenter PIP computer program when available (I&C).

i. Provide alternate radiation monitoring, e.g., main steam lines (I&C and Health Physics)

D. Expected Actions:

1. The EOF will be declared operational and assume responsibility for protective action recommendations.

2. A General Emergency will be declared.

3. Repair and compensatory measures will commence.

4. Operators will make preparations for PCS cooldown with TSC guidance and will conclude that safety injection throttling criteria are met using alternate indications.

1030-1045 (0200-0215)

A. Preparations for PCS cooldown continue. Safety Injection is throttled to stabilize PCS pressure and pressurizer level.

B. Containment high pressure alarm clears; the release from containment essentially ceases.

C. Expected actions:

1. Conclude with TSC concurrence that Iodine Removal System operation is no longer required; stop spray pumps, close spray valves, and close T-102 isolation valves and reset SIAS.

2. Restore PCP seal bleedoff and manually restore Component Cooling Water to and from containment per ONP 6.2.

3. Conclude with TSC concurrence that PCP restart criteria are met (as CET's and LTOP 'B' are not available), and restart PCP's P-50B and P-50C.

4. Revise protective actions as appropriate.

1045-1130 (0215-0300)

A. While making preparations for PCS cooldown, operators attempt to place LTOP Channel "A" in service by opening PORV Isolation Valve MO-1042A per SOP 1 Attachment 8. PORV PRV-1042B opens and does not reseat (Simulator malfunction RC-19).

B. Operators reclose MO-1042A to isolate the new PCS leakage path. Neither channel of LTOP is now available.

C. Expected Actions:

Players will conclude that deliberate PCS cooldown is not permitted without at least one channel of LTOP being in service and devise a scheme to repower LTOP Channel "B" temperature inputs from an alternate power supply. Players may also elect to proceed with cooldown with neither channel of LTOP available by invoking 10 CFR 50.54 (x).

1130-1230 (0300-0400)

A. LTOP Channel "B" has been returned to service, or not.

B. PCS cooldown begins at 75 degrees fahrenheit per hour.

C. Expected Actions:

1. Continue to cooldown to meet shutdown cooling entry requirements; eliminate reactor head voiding if required.

2. Determine if PCS activity is acceptable for circulation outside of containment and implement appropriate radiological controls in anticipation of shutdown cooling operations.

3. Determine alternate appropriate PCS post-accident sample flowpaths, as a LPSI pump is unavailable after RAS procedurally until PCS is less than 70 psia.

1230-1430 (0400-0600)

A. Players are provided new plant conditions. Personnel not involved in recovery planning terminate participation and conduct critiques.

B. Approximately 9 hours have elapsed since event initiation. The fault on Y-20 has been cleared and Y-20 is reenergized; auxiliary feedwater pump P-8C is in service.

Shutdown cooling is in service, and PCS cooldown is in progress at 60 degrees Fahrenheit per hour.

C. PCS leakage into containment continues at approximately 20 gpm, resulting in an attendant small fission product release which no longer escapes the containment.

D. Recovery planning begins.

E. Expected actions:

1. Appropriate operating instructions will be developed which will direct expeditious cooldown and depressurization while providing for continued PCS inventory losses, i.e., modifications to GOP 9 or development of a TSC/PRC approved procedure.

2. Containment entry, survey, and leak location and isolation plans will be developed which account for potentially high fission product exposures.

0600 (1430)

Terminate exercise.

MESSAGE SHEETS

Scenario: PALEX 91 Time 0800

Message No: 1 Scenario Time -0030

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:
See attached Initial Conditions and Data Sheets.

Message:
Announce following over the Plant Public Address System when directed by the controller: "Attention all personnel. The emergency exercise will commence shortly. All announcements related to the drill will be preceded by and followed by the statement, 'This is a drill'."

For Controller Use Only

Controller Notes:

1. Act as off going SS and give turnover to players.
2. Inform Operators that alarms provided are key alarms only.
3. Answer questions as appropriate.

Action Expected:

Players should familiarize themselves with data provided.

INITIAL CONDITIONS

0800 (-0030)

A. The plant is at full power at the end of core life (10.5 gwd/mtu). Bi-weekly control rod exercising per D/WO-1 Attachment 4 is in progress.

B. Technical Specification Surveillance Procedure SO-6, "Fire Protection Sprinkler System Water Flow Switch Alarm Surveillance Test," is in progress in conjunction with Checklist 21.13, "Quarterly Wet Pipe Fire System Alarm/Flow Test Checklist."

C. Equipment in a degraded mode:

1. Auxiliary Feedwater Pump P-8A is tagged out of service for coupling inspection and excessive unadjustable packing leakage noted during an incomplete performance of Technical Specification Test MO-38. P-8A packing is removed and the coupling is disassembled; coupling fasteners are broken and surfaces are scoured, necessitating replacement of the coupling. The LCO of Technical Specification 3.5.2.a has been entered, with 65 hours remaining until plant shutdown is required.

2. Reactor Vessel Water Level Channel LTRI-0101A is inoperable due to periodic sensor channel failure and is deenergized for troubleshooting. The action of Technical Specification Table 3.17.4 footnote "K" is applicable.

3. Containment Radiation Monitor RIA-2321 is inoperable due to detector failure; a replacement is on order for installation during the next refueling outage. The action of Standing Order 54 Table 3.17.4 Footnote "N" is applicable.

D. Existing Alarm Conditions:

Annunciator No. EK-02-25, "Cont Gamma RIA-2321 Fail"

E. Exercise responders will use actual meteorological conditions.

F. Primary and secondary chemistry

1. Primary System Chemistry

a. ph: 6.8

b. Boron: 103 ppm

c. Dissolved oxygen: < 0.02 ppm

d. Hydrogen: 25 cc/kg

e. Total beta gamma activity: 1.45 microcuries/ml

f. Iodine dose equivalent: 3.1 E-2 microcuries/ml

g. Total PCS gas activity: 4.5 microcuries/ml

h. PCS Xe-133 specific isotope activity: 410 microcuries/kg.

2. Secondary System Chemistry

a. Primary to secondary leak rate: 0.001 gpm

b. Offgas Xe-133: 5.45 E-5 microcuries/ml

c. Condenser air inleakage: 3 scfm

d. A and B steam generator gross gamma activities: <5.6 E-6 microcuries/ml

G. Primary Coolant System Leak Rate (most recent results)

1. Identified: 0.07 gpm

2. Unidentified: 0.034 gpm

3. Total: 0.104 gpm

H. Total Containment Leak Rate (Technical Data Book Figure 10.1): 35,942 cc/min

PALEX 91

Date June 18, 1991 Message # 1 (Page 1) Time 0800 Scenario Time -0030

C-08

SW Sumps P-7A ON P-7B ON P-7C S/B SW Critical Hdr Press A 69 B 69 psig
CCW Pumps P-52A ON P-52B S/B P-52C S/B FPC Pumps P-51A ON
Fire Pumps P-9A OFF P-9B OFF P-41 OFF P-51B OFF

Containment Cooler Recirc Fans

V1A ON V2A ON V3A ON V4A ON V1B ON V2B ON V3B ON V4B ON

C-03

CCW Cooler Outlet Temp A 75 F B 75 F
Containment Spray Pumps P-54A OFF P-54B OFF P-54C OFF
HPSI Pumps P-66A OFF P-66B OFF LPSI Pumps P-67A OFF P-67B OFF

Safety Injection Suction Supply

Train A Train B
CV-3057 (SIRW) OPEN CV-3029 (Sump) CLOSED CV-3031 (SIRW) OPEN CV-3030 (Sump) CLOSED

C-02

CVCS

Letdown

Intermediate Press Letdown Temp 107 F
Letdown Line Temp 231 F
Letdown Flow 40 gpm

Charging

Flow 50 gpm
Line Temp 371 F
Pumps P-55A ON P-55B OFF P-55C OFF

Volume Control Tank

Temp 107 F Pressure 45 psi Level 68 % PCP Control Bleedoff Pressure 74 psig

Shutdown Cooling System

SDCS from PCS (R) 77 F SDCS to PCS (R) 77 F

Quench Tank

Temp 101 F Pressure 4 psig Level 69 %

Primary Coolant System

Pressurizer Pressure (R) 2061 psia
PCS Tave (R) Loop 1 (TR-0111) 559 Loop 2 (TR-0121) 559
Pressurizer Level (R) LRC-0101A 56 % LRC-0101B 56 % LIA-0102A 47 %
Pzr Htr Amps LCC 15 141 LCC 16 141
PORV PRV-1042B CLOSED PRV-1043B CLOSED Block Valve MOV-1042A CLOSED MOV-1043A CLOSED
PCPs P-50A ON P-50B ON P-50C ON P-50D ON
Reactor Power Level NI-01 1.00E+0 NI-02 1.00E+0 NI-03 1.00E+2 NI-04 1.00E+2
NI-05 98 NI-06 1.00E+2 NI-07 100 NI-08 100

C-01

AFW System

AFW Pump P-8A OFF P-8B OFF P-8C OFF AFW Pump Amps P-8A 0 P-8C 0 amps
AFW Pump P-8B Steam Pressure 0 psig AFW Disch Press P-8A & P-8B 15 P-8C 15 psig

Secondary System

MSIV Bypass MOV-0501 CLOSED MOV-0510 CLOSED MSIV's CV-0501 OPEN CV-0510 OPEN
MFP Suction Pressure 401 psig MFP Discharge Pressure A 1087 B 1087 psi
Moisture Separator Drain Tank Level 75 % Condenser Hotwell Level 58 %
Atmospheric Dump Valves CLOSED Condenser Vacuum 26.5 in Hg.
Heater Drain Pump Status P-10A ON P-10B ON Gland Seal Condenser Vacuum 14.2 in Hg.
Condensate Pump Status P-2A ON P-2B ON

PIP

(Demand Log + Constant, Rod, or Flux/Temp)
Gross MW 822 Net MW 778 Core Exit Thermocouple Temperature 584.5 F
Control Rod Position GP1 131 GP2 131 GP3 131 GP4 131 GP5(P) 131 GP6(A) 131 GP7(B) 131
Stuck Rods NONE # 0

PALEX 91

Date June 18, 1991 Message # 1 (Page 2) Time 0800 Scenario Time -0030

C-13

T-81 Level 90 % T-939 Level 66 % Condensate Storage Tank Level T-2 60 %
Instrument Air Pressure 104 psig
Containment Building Pressure 0 psig Dome Temperature 101 F Humidity 19 %
S/G A Compartment Temperature 101 F Humidity 19 %
S/G B Compartment Temperature 101 F Humidity 19 %
SIRW Tank Level 96 %
WR Containment Pressure (R) 15 psia
Containment Sump Level 0 % Containment Water Level (R) 0 %

SI Tank Level (%) A 56 B 51 C 51 D 47
SI Tank Pressure (psig) A 215 B 213 C 211 D 210

Panel K-13

SIAS Alarm NO Containment High Pressure Alarm NO Containment High Radiation Alarm NO

C-12

Concentrated Boric Acid Tank Levels T53A 97.5 % T53B 100 %
Reactor Vessel DP 39 psid
PORV Discharge Temperature 100 F
Pzr Safety Valve Discharge Temp (F) RV-1039 100 RV-1040 100 RV-1041 100
PCP Current (Amps) P-50A 622 P-50B 642 P-50C 649 P-50D 625
PCS Flow 87 % Pressurizer Level (cold) 46.7 %
Loop Thot (F) Loop 1 581 Loop 2 581
Loop Tcold (F) Loop 1 536 Loop 2 536
Tcold Wide range Loop 1 536 Loop 2 536
Subcooling Temp 59 F Press 720 psi
PCS Pressure (R) WR 2061 NR 600 psia

	Steam Generator A	Steam Generator B
Level	(WR) 63 % (NR) 63 %	(WR) 63 % (NR) 63 %
Press	752 psia	752 psia
Flow	Steam 5.4 PPH Feed 5.4 PPH	Steam 5.4 PPH Feed 5.4 PPH

Note: Steam and Feed Flow X 1000000

C-11

AFW Flow to A S/G From P-8A&B 0 From P-8C 0 gpm
AFW Flow to B S/G From P-8A&B 0 From P-8C 0 gpm
Condenser Vacuum (R) 27
PCP Seal Leakoff Flow P-50A 1.5 P-50B 1.5 P-50C 1.5 P-50D 1.5

C-04

Diesel Generator Frequency 1-1 0 1-2 0
1-C BUS Voltage 2482 Amps 414
1-D BUS Voltage 2483 Amps 313

C-11 Back C-11A

Containment Area Monitors (R/Hr) RIA-1805 1.90E-2 RIA-1806 2.00E-2
RIA-1807 1.20E-1 RIA-1808 8.00E-2
High Range Containment Monitors (R/Hr) RIA-2321 _ RIA-2322 1.00E-1
Containment Hydrogen Concentration (%) AI-2401R 0 AI-2401L 0
Main Steam Line Gamma (cpm) RIA-2324 2.30E+1 RIA-2323 2.50E+1

Stack Monitors RIA-2325 3.00E+2 cpm RIA-2326 6.00E-2 cpm RIA-2327 .2 mr/hr

Scenario: PALEX 91 Time 0832

Message No: 2 Scenario Time 0002

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:
Rod 39 exercising is complete.

Message:
"Gaseous Waste Monitoring High Radiation" alarm is received; Containment Air Monitor RIA-1817 is offscale high. Charging Pumps P-55B and P-55C have started automatically.

For Controller Use Only

Controller Notes:

1. Provide slowly decreasing pressurizer and VCT levels when queried.
2. Restrain immediate reactor trip response, if necessary, for scenario purposes.

Action Expected:

Operators should refer to ARP 8 and ONP 23.1.

Scenario: PALEX 91 Time 0841

Message No: 3 Scenario Time 0011

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:
Post-trip

Message:
The reactor has tripped on variable high power. See post-trip (+1 minute) data and alarm sheets.

For Controller Use Only

Controller Notes:

Provide event diagnostic responses pointing to LOCA when queried.

Action Expected:

1. Complete EOP 1.0 Standard Post-trip Actions and invoke either EOP 4.0 or EOP 9.0.
2. Declare a Site Area Emergency.

PALEX 91

Date June 18, 1991 Message # 3 (Page 1) Time 0841 Scenario Time 0011

C-08

SW Sumps P-7A ON P-7B ON P-7C S/B SW Critical Hdr Press A 69 B 69 psig
CCW Pumps P-52A ON P-52B S/B P-52C S/B FPC Pumps P-51A ON
Fire Pumps P-9A OFF P-9B OFF P-41 OFF P-51B OFF

Containment Cooler Recirc Fans

V1A ON V2A ON V3A ON V4A ON V1B ON V2B ON V3B ON V4B ON

C-03

CCW Cooler Outlet Temp A 74 F B 74 F
Containment Spray Pumps P-54A OFF P-54B OFF P-54C OFF
HPSI Pumps P-66A OFF P-66B OFF LPSI Pumps P-67A OFF P-67B OFF

Safety Injection Suction Supply

Train A Train B
CV-3057 (SIRW) OPEN CV-3029 (Sump) CLOSED CV-3031 (SIRW) OPEN CV-3030 (Sump) CLOSED

C-02

CVCS

Letdown **Charging**
Intermediate Press Letdown Temp 105 F Flow 133 gpm
Letdown Line Temp 160 F Line Temp 158 F
Letdown Flow 0 gpm Pumps P-55A ON P-55B ON P-55C ON

Volume Control Tank

Temp 105 F Pressure 24 psi Level 38 % PCP Control Bleedoff Pressure 49 psig

Shutdown Cooling System

SDCS from PCS (R) 77 F SDCS to PCS (R) 77 F

Quench Tank

Temp 102 F Pressure 4 psig Level 69 %

Primary Coolant System

Pressurizer Pressure (R) 1884 psia
PCS Tave (R) Loop 1 (TR-0111) 545 Loop 2 (TR-0121) 545
Pressurizer Level (R) LRC-0101A 30 % LRC-0101B 30 % LIA-0102A 35 %
Pzr Htr Amps LCC 15 0 LCC 16 0
PORV PRV-1042B CLOSED PRV-1043B CLOSED Block Valve MOV-1042A CLOSED MOV-1043A CLOSED
PCPs P-50A ON P-50B ON P-50C ON P-50D ON
Reactor Power Level NI-01 1.00E+0 NI-02 1.00E+0 NI-03 5.80E-1 NI-04 5.30E-1
NI-05 .6 NI-06 5.20E-1 NI-07 5.8E-1 NI-08 5.8E-1

C-01

AFW System

AFW Pump P-8A OFF P-8B OFF P-8C OFF AFW Pump Amps P-8A 0 P-8C 0 amps
AFW Pump P-8B Steam Pressure 0 psig AFW Disch Press P-8A & P-8B 15 P-8C 15 psig

Secondary System

MSIV Bypass MOV-0501 CLOSED MOV-0510 CLOSED MSIV's CV-0501 OPEN CV-0510 OPEN
MFP Suction Pressure 542 psig MFP Discharge Pressure A 933 B 537 psi
Moisture Separator Drain Tank Level 64 % Condenser Hotwell Level 51 %
Atmospheric Dump Valves THROT Condenser Vacuum 28.1 in Hg.
Heater Drain Pump Status P-10A ON P-10B ON Gland Seal Condenser Vacuum 14.2 in Hg.
Condensate Pump Status P-2A ON P-2B ON

PIP

(Demand Log + Constant, Rod, or Flux/Temp)
Gross MW 0 Net MW -4 Core Exit Thermocouple Temperature 549.4 F
Control Rod Position GP1 0 GP2 0 GP3 0 GP4 0 GP5(P) 131 GP6(A) 0 GP7(B) 0
Stuck Rods NONE # 0

PALEX 91

Date June 18, 1991 Message # 3 (Page 2) Time 0841 Scenario Time 0011

C-13

T-81 Level 90 % T-939 Level 66 % Condensate Storage Tank Level T-2 57 %
Instrument Air Pressure 95 psig
Containment Building Pressure 0 psig Dome Temperature 103 F Humidity 55 %
S/G A Compartment Temperature 103 F Humidity 55 %
S/G B Compartment Temperature 103 F Humidity 55 %
SIRW Tank Level 96 %
WR Containment Pressure (R) 15 psia
Containment Sump Level 6 % Containment Water Level (R) 0 %

SI Tank Level (%) A 56 B 51 C 51 D 47
SI Tank Pressure (psig) A 215 B 213 C 211 D 210

Panel K-13

SIAS Alarm NO Containment High Pressure Alarm NO Containment High Radiation Alarm NO

C-12

Concentrated Boric Acid Tank Levels T53A 97.5 % T53B 100 %
Reactor Vessel DP 39.1 psid
PORV Discharge Temperature 101 F
Pzr Safety Valve Discharge Temp (F) RV-1039 101 RV-1040 101 RV-1041 101
PCP Current (Amps) P-50A 621 P-50B 640 P-50C 647 P-50D 623
PCS Flow 87 % Pressurizer Level (cold) 35.1 %
Loop Thot (F) Loop 1 549 Loop 2 549
Loop Tcold (F) Loop 1 540 Loop 2 540
Tcold Wide range Loop 1 540 Loop 2 540
Subcooling Temp 79 F Press 848 psi
PCS Pressure (R) WR 1884 NR 600 psia

	Steam Generator A	Steam Generator B
Level	(WR) 48 % (NR) 48 %	(WR) 48 % (NR) 48 %
Press	918 psia	918 psia
Flow	Steam 1.3 PPH Feed 1.4 PPH	Steam 1.3 PPH Feed 1.4 PPH

Note: Steam and Feed Flow X 1000000

C-11

AFW Flow to A S/G From P-8A&B 0 From P-8C 165 gpm
AFW Flow to B S/G From P-8A&B 0 From P-8C 165 gpm
Condenser Vacuum (R) 28
PCP Seal Leakoff Flow P-50A 1.4 P-50B 1.4 P-50C 1.4 P-50D 1.4

C-04

Diesel Generator Frequency 1-1 0 1-2 0
1-C BUS Voltage 2482 Amps 433
1-D BUS Voltage 2485 Amps 188

C-11 Back C-11A

Containment Area Monitors (R/Hr) RIA-1805 2.55E+2 RIA-1806 2.48E+2
RIA-1807 2.61E+2 RIA-1808 2.68E+2
High Range Containment Monitors (R/Hr) RIA-2321 _ RIA-2322 7.00E-2
Containment Hydrogen Concentration (%) AI-2401R 0 AI-2401L 0
Main Steam Line Gamma (cpm) RIA-2324 2.50E+1 RIA-2323 2.60E+1

Stack Monitors RIA-2325 3.50E+2 cpm RIA-2326 1.20E-1 cpm RIA-2327 .2 mr/hr

Scenario No: PALEX-91 Time 0841

Message No: 3 Scenario Time 0011

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-01	01	TURBINE TRIP
K-01	49	FW PUMP P1B TURBINE K7B TRIP
K-02	25	CONT GAMMA RIA-2321 FAIL
K-03	01	GENERATOR TRIP
K-03	07	GENERATOR ACB TRIP
K-03	13	GENERATOR EXCITER FLD BREAKER TRIP
K-06A	01	VARIABLE HIGH POWER LEVEL TRIP
K-06C	07	DROPPED ROD
K-07	09	VOLUME CONTROL TANK HI-LO LEVEL
K-07	41	PZR HTR TRANSF #15 AND #16 BREAKERS TRIP
K-07	53,54	PZR PRESSURE OFF NORMAL HI-LO
K-07	63,64	PZR LEVEL LO-LO
K-09	48	DROPPED ROD
K-09	62	STEAM GEN E-50A LO LEVEL
K-09	64	STEAM GEN E-50B LO LEVEL
K-09	72	REACTOR TRIP

Scenario No: PALEX-91 Time 0841

Message No: 3 Scenario Time 0011

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-13	51	CONTAINMENT SUMP HIGH LEVEL
K-13	64	GASEOUS WASTE MONITORING HI RADIATION
K-33	05	4160V BUS 1F INCOMING BKR 252-301 TRIP
K-33	09	4160 BUS 1G INCOMING BKR 252-401 TRIP

Scenario: PALEX 91 Time 0844

Message No: 4 Scenario Time 0014

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
Feedwater Purity Auxiliary Operator reports that he inadvertantly doused Preferred AC Panel Y-20 while performing SO-6; spill is stopped with no apparent damage.

For Controller Use Only

Controller Notes:

Refer to narrative if event details are required.

Action Expected:

Check instruments powered from Y-20 and continue EOP 4.0/9.0 actions.

Scenario: PALEX 91 Time 0845

Message No: 5 Scenario Time 0015

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:
Post-trip

Message:
Main Feed Pump P-1A has been stopped. See data and alarm sheets.

For Controller Use Only

Controller Notes:

Action Expected:

Continue EOP 4.0/9.0 actions; declare a Site Area Emergency.

PALEX 91

Date June 18, 1991 Message # 5 (Page 1) Time 0845 Scenario Time 0015

C-08

SW Sumps P-7A ON P-7B ON P-7C S/B SW Critical Hdr Press A 69 B 69 psig
CCW Pumps P-52A ON P-52B S/B P-52C S/B FPC Pumps P-51A ON
Fire Pumps P-9A OFF P-9B OFF P-41 OFF P-51B OFF

Containment Cooler Recirc Fans

V1A ON V2A ON V3A ON V4A ON V1B ON V2B ON V3B ON V4B ON

C-03

CCW Cooler Outlet Temp A __ F B 73 F
Containment Spray Pumps P-54A OFF P-54B OFF P-54C OFF
HPSI Pumps P-66A OFF P-66B OFF LPSI Pumps P-67A OFF P-67B OFF

Safety Injection Suction Supply

Train A Train B
CV-3057 (SIRW) OPEN CV-3029 (Sump) CLOSED CV-3031 (SIRW) OPEN CV-3030 (Sump) CLOSED

C-02

CVCS

Letdown **Charging**
Intermediate Press Letdown Temp 103 F Flow 133 gpm
Letdown Line Temp 153 F Line Temp 103 F
Letdown Flow 0 gpm Pumps P-55A ON P-55B ON P-55C ON

Volume Control Tank

Temp 103 F Pressure 20 psi Level 16 % PCP Control Bleedoff Pressure 40 psig

Shutdown Cooling System

SDCS from PCS (R) 77 F SDCS to PCS (R) 77 F

Quench Tank

Temp 103 F Pressure 4 psig Level 69 %

Primary Coolant System

Pressurizer Pressure (R) 1673 psia
PCS Tave (R) Loop 1 (TR-0111) 534 Loop 2 (TR-0121) 534
Pressurizer Level (R) LRC-0101A 0 % LRC-0101B 0 % LIA-0102A 18 %
Pzr Htr Amps LCC 15 0 LCC 16 0
PORV PRV-1042B CLOSED PRV-1043B CLOSED Block Valve MOV-1042A CLOSED MOV-1043A CLOSED
PCPs P-50A ON P-50B ON P-50C ON P-50D ON
Reactor Power Level NI-01 1.00E+0 NI-02 1.00E+0 NI-03 3.90E-3 NI-04 3.60E-3
NI-05 2.4E-2 NI-06 3.10E-2 NI-07 2.4E-2 NI-08 4.8E-2

C-01

AFW System

AFW Pump P-8A OFF P-8B OFF P-8C ON AFW Pump Amps P-8A 0 P-8C 70 amps
AFW Pump P-8B Steam Pressure 0 psig AFW Disch Press P-8A & P-8B 16 P-8C 1150 psig

Secondary System

MSIV Bypass MOV-0501 CLOSED MOV-0510 CLOSED MSIV's CV-0501 OPEN CV-0510 OPEN
MFP Suction Pressure 558 psig MFP Discharge Pressure A 558 B 558 psi
Moisture Separator Drain Tank Level 56 % Condenser Hotwell Level 71 %
Atmospheric Dump Valves CLOSED Condenser Vacuum 28.1 in Hg.
Heater Drain Pump Status P-10A ON P-10B ON Gland Seal Condenser Vacuum 14.2 in Hg.
Condensate Pump Status P-2A ON P-2B ON

PIP

(Demand Log + Constant, Rod, or Flux/Temp)
Gross MW 0 Net MW -4 Core Exit Thermocouple Temperature 534.8 F
Control Rod Position GP1 0 GP2 0 GP3 0 GP4 0 GP5(P) 0 GP6(A) 0 GP7(B) 0
Stuck Rods NONE # 0

PALEX 91

Date June 18, 1991 Message # 5 (Page 2) Time 0845 Scenario Time 0015

C-13

T-81 Level 90 % T-939 Level 66 % Condensate Storage Tank Level T-2 64 %
Instrument Air Pressure 103 psig
Containment Building Pressure 1 psig Dome Temperature 106 F Humidity 91 %
S/G A Compartment Temperature 106 F Humidity 91 %
S/G B Compartment Temperature 106 F Humidity 91 %
SIRW Tank Level 96 %
WR Containment Pressure (R) 16 psia
Containment Sump Level 11 % Containment Water Level (R) 0 %

SI Tank Level (%) A 56 B 51 C 51 D 47
SI Tank Pressure (psig) A 214 B 213 C 211 D 210

Panel K-13

SIAS Alarm NO Containment High Pressure Alarm NO Containment High Radiation Alarm NO

C-12

Concentrated Boric Acid Tank Levels T53A 97.5 % T53B 100 %
Reactor Vessel DP 39 psid
PORV Discharge Temperature 101 F
Pzr Safety Valve Discharge Temp (F) RV-1039 101 RV-1040 101 RV-1041 101
PCP Current (Amps) P-50A 622 P-50B 642 P-50C 649 P-50D 625
PCS Flow 87 % Pressurizer Level (cold) 18 %
Loop Thot (F) Loop 1 535 Loop 2 535
Loop Tcold (F) Loop 1 534 Loop 2 534
Tcold Wide range Loop 1 534 Loop 2 534
Subcooling Temp 76 F Press 753 psi
PCS Pressure (R) WR 1673 NR 600 psia

	Steam Generator A	Steam Generator B
Level	(WR) 49 % (NR) 49 %	(WR) 49 % (NR) 49 %
Press	907 psia	907 psia
Flow	Steam .1 PPH Feed 0 PPH	Steam .1 PPH Feed 0 PPH

Note: Steam and Feed Flow X 1000000

C-11

AFW Flow to A S/G From P-8A&B 0 From P-8C 165 gpm
AFW Flow to B S/G From P-8A&B 0 From P-8C 165 gpm
Condenser Vacuum (R) 28
PCP Seal Leakoff Flow P-50A 1.3 P-50B 1.3 P-50C 1.3 P-50D 1.3

C-04

Diesel Generator Frequency 1-1 0 1-2 0
1-C BUS Voltage 2482 Amps 413
1-D BUS Voltage 2485 Amps 173

C-11 Back C-11A

Containment Area Monitors (R/Hr) RIA-1805 3.20E+3 RIA-1806 3.30E+3
RIA-1807 4.50E+3 RIA-1808 3.60E+3
High Range Containment Monitors (R/Hr) RIA-2321 _ RIA-2322 1.00E-1
Containment Hydrogen Concentration (%) AI-2401R 0 AI-2401L 0
Main Steam Line Gamma (cpm) RIA-2324 2.50E+1 RIA-2323 2.60E+1

Stack Monitors RIA-2325 3.50E+2 cpm RIA-2326 1.20E-1 cpm RIA-2327 .2 mr/hr

Scenario No: PALEX-91 Time 0845

Message No: 5 Scenario Time 0015

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-01	01	TURBINE TRIP
K-01	43	FW PUMP P1A TURBINE K7A TRIP
K-01	49	FW PUMP P1B TURBINE K7B TRIP
K-02	25	CONT GAMMA RIA-2321 FAIL
K-03	01	GENERATOR TRIP
K-03	07	GENERATOR ACB TRIP
K-03	13	GENERATOR EXCITER FLD BREAKER TRIP
K-06A	01	VARIABLE HIGH POWER LEVEL TRIP
K-06C	01	TM/LO PRESSURE CHANNEL TRIP
K-06C	07	DROPPED ROD
K-07	09	VOLUME CONTROL TANK HI-LO LEVEL
K-07	41	PZR HTR TRANSF #15 AND #16 BREAKERS TRIP
K-07	53,54	PZR PRESSURE OFF NORMAL HI-LO
K-07	63,64	PZR LEVEL LO-LO
K-09	48	DROPPED ROD
K-09	62	STEAM GEN E-50A LO LEVEL

Scenario No: PALEX-91 Time 0845

Message No: 5 Scenario Time 0015

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-09	64	STEAM GEN E-50B LO LEVEL
K-09	72	REACTOR TRIP
K-13	50	CONTAINMENT SUMP HIGH-HIGH LEVEL
K-13	62	CONTAINMENT PRESSURE OFF NORMAL
K-13	64	GASEOUS WASTE MONITORING HI RADIATION
K-33	05	4160V BUS 1F INCOMING BKR 252-301 TRIP
K-33	09	4160 BUS 1G INCOMING BKR 252-401 TRIP

Scenario: PALEX 91 Time 0846

Message No: 6 Scenario Time 0016

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
Annunciator No EK-05-45, "Preferred AC Bus No 2 Trouble," received. Auxiliary feedwater pump P-8C has tripped.

For Controller Use Only

Controller Notes:

Action Expected:

Refer to ONP 24.2; use Auxiliary Feedwater Pump P-8B as required.

Scenario: PALEX 91 Time 0847

Message No: 7 Scenario Time 0017

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
Annunciator No. EK-13-40, "Safety Inj Initiation Signal 'A'" received. See data and alarm sheets.

For Controller Use Only

Controller Notes:

Action Expected:

Verify left channel SIAS equipment and manually start right channel equipment. Stop one condensate pump, as non-critical service water is isolated.

PALEX 91

Date June 18, 1991 Message # 7 (Page 1) Time 0847 Scenario Time 0017

C-08

SW Sumps P-7A ON P-7B ON P-7C S/B SW Critical Hdr Press A 71 B 71 psig
CCW Pumps P-52A ON P-52B S/B P-52C ON FPC Pumps P-51A ON
Fire Pumps P-9A OFF P-9B OFF P-41 OFF P-51B OFF

Containment Cooler Recirc Fans

V1A ON V2A ON V3A ON V4A ON V1B ON V2B ON V3B ON V4B OFF

C-03

CCW Cooler Outlet Temp A __ F B 79 F
Containment Spray Pumps P-54A OFF P-54B OFF P-54C OFF
HPSI Pumps P-66A OFF P-66B ON LPSI Pumps P-67A OFF P-67B ON

Safety Injection Suction Supply

Train A Train B
CV-3057 (SIRW) OPEN CV-3029 (Sump) CLOSED CV-3031 (SIRW) OPEN CV-3030 (Sump) CLOSED

C-02

CVCS

Letdown **Charging**
Intermediate Press Letdown Temp 109 F Flow 133 gpm
Letdown Line Temp 152 F Line Temp 110 F
Letdown Flow 0 gpm Pumps P-55A ON P-55B ON P-55C ON

Volume Control Tank

Temp 103 F Pressure 19 psi Level 14 % PCP Control Bleedoff Pressure 37 psig

Shutdown Cooling System

SDCS from PCS (R) 77 F SDCS to PCS (R) 77 F

Quench Tank

Temp 104 F Pressure 4 psig Level 69 %

Primary Coolant System

Pressurizer Pressure (R) 1504 psia
PCS Tave (R) Loop 1 (TR-0111) 535 Loop 2 (TR-0121) _
Pressurizer Level (R) LRC-0101A 0 % LRC-0101B 0 % LIA-0102A 14 %
Pzr Htr Amps LCC 15 0 LCC 16 0
PORV PRV-1042B CLOSED PRV-1043B CLOSED Block Valve MOV-1042A CLOSED MOV-1043A CLOSED
PCPs P-50A ON P-50B ON P-50C ON P-50D ON
Reactor Power Level NI-01 1.00E+0 NI-02 1.00E+0 NI-03 2.00E-3 NI-04 1.80E-3
NI-05 2.2E-2 NI-06 _ NI-07 4.6E-2 NI-08 4.6E-2

C-01

AFW System

AFW Pump P-8A OFF P-8B OFF P-8C OFF AFW Pump Amps P-8A 0 P-8C 0 amps
AFW Pump P-8B Steam Pressure 0 psig AFW Disch Press P-8A & P-8B 16 P-8C _ psig

Secondary System

MSIV Bypass MOV-0501 CLOSED MOV-0510 CLOSED MSIV's CV-0501 OPEN CV-0510 OPEN
MFP Suction Pressure 558 psig MFP Discharge Pressure A 558 B 558 psi
Moisture Separator Drain Tank Level 55 % Condenser Hotwell Level 67 %
Atmospheric Dump Valves CLOSED Condenser Vacuum 28.1 in Hg.
Heater Drain Pump Status P-10A OFF P-10B OFF Gland Seal Condenser Vacuum 14.2 in Hg.
Condensate Pump Status P-2A ON P-2B ON

PIP

(Demand Log + Constant, Rod, or Flux/Temp)
Gross MW 0 Net MW -2 Core Exit Thermocouple Temperature __ F
Control Rod Position GP1 _ GP2 _ GP3 _ GP4 _ GP5(P) _ GP6(A) _ GP7(B) _
Stuck Rods NONE # 0

PALEX 91

Date June 18, 1991 Message # 7 (Page 2) Time 0847 Scenario Time 0017

C-13

T-81 Level 90 % T-939 Level 66 % Condensate Storage Tank Level T-2 65 %
Instrument Air Pressure 104 psig
Containment Building Pressure 1 psig Dome Temperature 106 F Humidity 96 %
S/G A Compartment Temperature 106 F Humidity 96 %
S/G B Compartment Temperature 106 F Humidity 96 %
SIRW Tank Level 96 %
WR Containment Pressure (R) 16 psia
Containment Sump Level 12 % Containment Water Level (R) 0 %

SI Tank Level (%) A 56 B 51 C _ D 47
SI Tank Pressure (psig) A 214 B 213 C _ D 210

Panel K-13

SIAS Alarm YES Containment High Pressure Alarm NO Containment High Radiation Alarm NO

C-12

Concentrated Boric Acid Tank Levels T53A 97.5 % T53B 100 %
Reactor Vessel DP 39.1 psid
PORV Discharge Temperature 101 F
Pzr Safety Valve Discharge Temp (F) RV-1039 101 RV-1040 101 RV-1041 101
PCP Current (Amps) P-50A 622 P-50B 641 P-50C 649 P-50D 624
PCS Flow 87 % Pressurizer Level (cold) _ %
Loop Thot (F) Loop 1 535 Loop 2 535
Loop Tcold (F) Loop 1 534 Loop 2 534
Tcold Wide range Loop 1 534 Loop 2 534
Subcooling Temp 61 F Press 581 psi
PCS Pressure (R) WR 1504 NR 600 psia

	Steam Generator A	Steam Generator B
Level	(WR) 48 % (NR) 48 %	(WR) 48 % (NR) 48 %
Press	907 psia	907 psia
Flow	Steam .1 PPH Feed 0 PPH	Steam .1 PPH Feed 0 PPH

Note: Steam and Feed Flow X 1000000

C-11

AFW Flow to A S/G From P-8A&B 0 From P-8C _ gpm
AFW Flow to B S/G From P-8A&B 0 From P-8C _ gpm
Condenser Vacuum (R) 28
PCP Seal Leakoff Flow P-50A 1.2 P-50B 1.2 P-50C 1.2 P-50D 1.2

C-04

Diesel Generator Frequency 1-1 0 1-2 0
1-C BUS Voltage 2482 Amps 440
1-D BUS Voltage 2485 Amps 171

C-11 Back C-11A

Containment Area Monitors (R/Hr) RIA-1805 6.50E+3 RIA-1806 _
RIA-1807 7.30E+3 RIA-1808 6.80E+3
High Range Containment Monitors (R/Hr) RIA-2321 _ RIA-2322 _
Containment Hydrogen Concentration (%) AI-2401R 0 AI-2401L 0
Main Steam Line Gamma (cpm) RIA-2324 _ RIA-2323 _

Stack Monitors RIA-2325 3.90E+2 cpm RIA-2326 1.90E+2 cpm RIA-2327 .2 mr/hr

Scenario No: PALEX-91 Time 0847

Message No: 7 Scenario Time 0017

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-01	01	TURBINE TRIP
K-01	39	AUX FEEDWATER PUMP TRIP
K-01	40	AUX FEEDWATER LOW SUCTION PRESSURE
K-01	43	FW PUMP P-1A TURBINE K-7A TRIP
K-01	49	FW PUMP P1B TURBINE K7B TRIP
K-02	25	CONT GAMMA RIA-2321 FAIL
K-02	26	CONT GAMMA RIA-2322 FAIL
K-02	29	MAIN STEAM E-50B RIA-2323 FAIL
K-02	30	MAIN STEAM E-50A RIA-2324 FAIL
K-03	01	GENERATOR TRIP
K-03	07	GENERATOR ACB TRIP
K-05	05	2400V BUS 1E BKR 152-302 TRIP
K-05	17	2400V BUS 1E UNDERVOLTAGE
K-05	20	2400V BUS IE BKR 152-310 TRIP
K-05	45	PREFERRED AC BUS NO 2 TROUBLE
K-06C	01	TM/LO PRESSURE CHANNEL TRIP

Scenario No: PALEX-91 Time 0847

Message No: 7 Scenario Time 0017

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-07	09	VOLUME CONTROL TANK HI-LO LEVEL
K-07	41	PZR HTR TRANSF #15 AND #16 BREAKERS TRIP
K-07	53,54	PZR PRESSURE OFF NORMAL HI-LO
K-07	55-58	PZR SAFETY INJ SIGNAL LO-LO PRESS
K-07	63,64	PZR LEVEL LO-LO
K-09	62	STEAM GEN E-50A LO LEVEL
K-09	64	STEAM GEN E-50B LO LEVEL
K-09	65	STEAM GEN LO PRESS CONTROL CKT UNDERVOLTAGE
K-09	72	REACTOR TRIP
K-11	50	CONTAINMENT RECIRC FANS TRIP
K-13	40	SAFETY INJ INITIATION SIGNAL "A"
K-13	49	CONTAINMENT SUMP HI-HI LEVEL
K-13	55	SIRW TANK T-58 HI-LO LEVEL
K-13	62	CONTAINMENT PRESSURE OFF NORMAL
K-13	64	GASEOUS WASTE MONITORING HI RADIATION
K-13	69	SAFETY INJECTION SIGNAL BLOCK PERMIT

Scenario No: PALEX-91 Time 0847

Message No: 7 Scenario Time 0017

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-13	71	RADIATION MONITORING SYSTEM CKT FAILURE
K-13	78	CONT ISO AND SAFETY INJ RIGHT SIDE CONT CKT UV
K-33	05	4160V BUS 1F INCOMING BKR 252-301 TRIP
K-33	09	4160 BUS 1G INCOMING BKR 252-401 TRIP

Scenario: PALEX 91 Time 0855

Message No: 8 Scenario Time 0025

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
PCS pressure is 1300 PSIA.

For Controller Use Only

Controller Notes:

Action Expected:

Stop all primary coolant pumps.

Scenario: PALEX 91 Time 0900

Message No: 9 Scenario Time 0030

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
See data and alarm sheets.

For Controller Use Only

Controller Notes:

Action Expected:

Continue EOP 4.0/9.0 actions. Complete SED and communications turnover to TSC.

PALEX 91

Date June 18, 1991 Message # 9 (Page 1) Time 0900 Scenario Time 0030

C-08

SW Sumps P-7A ON P-7B ON P-7C ON SW Critical Hdr Press A 82 B 82 psig
CCW Pumps P-52A ON P-52B ON P-52C ON FPC Pumps P-51A ON
Fire Pumps P-9A OFF P-9B OFF P-41 OFF P-51B OFF

Containment Cooler Recirc Fans

V1A ON V2A ON V3A ON V4A ON V1B OFF V2B OFF V3B OFF V4B OFF

C-03

CCW Cooler Outlet Temp A __ F B 64 F
Containment Spray Pumps P-54A OFF P-54B OFF P-54C OFF
HPSI Pumps P-66A ON P-66B ON LPSI Pumps P-67A ON P-67B ON

Safety Injection Suction Supply

Train A Train B
CV-3057 (SIRW) OPEN CV-3029 (Sump) CLOSED CV-3031 (SIRW) OPEN CV-3030 (Sump) CLOSED

C-02

CVCS

Letdown **Charging**
Intermediate Press Letdown Temp 107 F Flow 127 gpm
Letdown Line Temp 140 F Line Temp 160 F
Letdown Flow 0 gpm Pumps P-55A ON P-55B ON P-55C ON

Volume Control Tank

Temp 96 F Pressure 20 psi Level 16 % PCP Control Bleedoff Pressure 32 psig

Shutdown Cooling System

SDCS from PCS (R) 77 F SDCS to PCS (R) 77 F

Quench Tank

Temp 118 F Pressure 5 psig Level 69 %

Primary Coolant System

Pressurizer Pressure (R) 1203 psia
PCS Tave (R) Loop 1 (TR-0111) 529 Loop 2 (TR-0121) _
Pressurizer Level (R) LRC-0101A 0 % LRC-0101B 0 % LIA-0102A 10 %
Pzr Htr Amps LCC 15 0 LCC 16 0
PORV PRV-1042B CLOSED PRV-1043B CLOSED Block Valve MOV-1042A CLOSED MOV-1043A CLOSED
PCPs P-50A OFF P-50B OFF P-50C OFF P-50D OFF
Reactor Power Level NI-01 1.10E+3 NI-02 1.00E+0 NI-03 9.40E-8 NI-04 8.80E-8
NI-05 8.6E-8 NI-06 _ NI-07 2.0E-2 NI-08 2.0E-2

C-01

AFW System

AFW Pump P-8A OFF P-8B ON P-8C OFF AFW Pump Amps P-8A 0 P-8C 0 amps
AFW Pump P-8B Steam Pressure 250 psig AFW Disch Press P-8A & P-8B 1187 P-8C _ psig

Secondary System

MSIV Bypass MOV-0501 CLOSED MOV-0510 CLOSED MSIV's CV-0501 OPEN CV-0510 OPEN
MFP Suction Pressure 15 psig MFP Discharge Pressure A 15 B 15 psi
Moisture Separator Drain Tank Level 53 % Condenser Hotwell Level 70 %
Atmospheric Dump Valves CLOSED Condenser Vacuum 28.1 in Hg.
Heater Drain Pump Status P-10A OFF P-10B OFF Gland Seal Condenser Vacuum 14.2 in Hg.
Condensate Pump Status P-2A ON P-2B OFF

PIP

(Demand Log + Constant, Rod, or Flux/Temp)
Gross MW 0 Net MW -3 Core Exit Thermocouple Temperature __ F
Control Rod Position GP1 _ GP2 _ GP3 _ GP4 _ GP5(P) _ GP6(A) _ GP7(B) _
Stuck Rods NONE # 0

PALEX 91

Date June 18, 1991 Message # 9 (Page 2) Time 0900 Scenario Time 0030

C-13

T-81 Level 90 % T-939 Level 66 % Condensate Storage Tank Level T-2 63 %
Instrument Air Pressure 106 psig
Containment Building Pressure 3 psig Dome Temperature 128 F Humidity 100 %
S/G A Compartment Temperature 128 F Humidity 100 %
S/G B Compartment Temperature 128 F Humidity 100 %
SIRW Tank Level 96 %
WR Containment Pressure (R) 17 psia
Containment Sump Level 23 % Containment Water Level (R) 0 %

SI Tank Level (%) A 56 B 51 C _ D 47
SI Tank Pressure (psig) A 217 B 215 C _ D 212

Panel K-13

SIAS Alarm YES Containment High Pressure Alarm NO Containment High Radiation Alarm NO

C-12

Concentrated Boric Acid Tank Levels T53A 88.1 % T53B 80.8 %
Reactor Vessel DP .2 psid
PORV Discharge Temperature 105 F
Pzr Safety Valve Discharge Temp (F) RV-1039 105 RV-1040 105 RV-1041 105
PCP Current (Amps) P-50A 0 P-50B 0 P-50C 0 P-50D 0
PCS Flow 7 % Pressurizer Level (cold) _ %
Loop Thot (F) Loop 1 532 Loop 2 532
Loop Tcold (F) Loop 1 525 Loop 2 527
Tcold Wide range Loop 1 527 Loop 2 527
Subcooling Temp 35 F Press 300 psi
PCS Pressure (R) WR 1203 NR 600 psia

	Steam Generator A	Steam Generator B
Level	(WR) 51 % (NR) 51 %	(WR) 52 % (NR) 52 %
Press	874 psia	887 psia
Flow	Steam 0 PPH Feed .1 PPH	Steam 0 PPH Feed .1 PPH

Note: Steam and Feed Flow X 1000000

C-11

AFW Flow to A S/G From P-8A&B 170 From P-8C _ gpm
AFW Flow to B S/G From P-8A&B 164 From P-8C _ gpm
Condenser Vacuum (R) 28
PCP Seal Leakoff Flow P-50A 1 P-50B 1 P-50C 1 P-50D 1

C-04

Diesel Generator Frequency 1-1 0 1-2 0
1-C BUS Voltage 2482 Amps 391
1-D BUS Voltage 2483 Amps 335

C-11 Back C-11A

Containment Area Monitors (R/Hr) RIA-1805 8.90E+3 RIA-1806 _
RIA-1807 9.70E+3 RIA-1808 9.10E+3
High Range Containment Monitors (R/Hr) RIA-2321 _ RIA-2322 _
Containment Hydrogen Concentration (%) AI-2401R 0 AI-2401L 0
Main Steam Line Gamma (cpm) RIA-2324 _ RIA-2323 _

Stack Monitors RIA-2325 4.40E+2 cpm RIA-2326 1.80E+2 cpm RIA-2327 .2 mr/hr

Scenario No: PALEX-91 Time 0900

Message No: 9 Scenario Time 0030

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-01	01	TURBINE TRIP
K-01	39	AUX FEEDWATER PUMP TRIP
K-01	40	AUX FEEDWATER LOW SUCTION PRESSURE
K-01	43	FW PUMP P-1A TURBINE K-7A TRIP
K-01	49	FW PUMP P1B TURBINE K7B TRIP
K-02	25	CONT GAMMA RIA-2321 FAIL
K-02	26	CONT GAMMA RIA-2322 FAIL
K-02	29	MAIN STEAM E-50B RIA-2323 FAIL
K-02	30	MAIN STEAM E-50A RIA-2324 FAIL
K-03	01	GENERATOR TRIP
K-03	07	GENERATOR ACB TRIP
K-05	05	2400V BUS 1E BKR 152-302 TRIP
K-05	17	2400V BUS 1E UNDERVOLTAGE
K-05	20	2400V BUS IE BKR 152-310 TRIP
K-05	45	PREFERRED AC BUS NO 2 TROUBLE
K-06A	03	LOW FLOW CHANNEL TRIP

Scenario No: PALEX-91 Time 0900

Message No: 9 Scenario Time 0030

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-06C	01	TM/LO PRESSURE CHANNEL TRIP
K-07	09	VOLUME CONTROL TANK HI-LO LEVEL
K-07	41	PZR HTR TRANSF #15 AND #16 BREAKERS TRIP
K-07	53,54	PZR PRESSURE OFF NORMAL HI-LO
K-07	55-58	PZR SAFETY INJ SIGNAL LO-LO PRESS
K-07	63,64	PZR LEVEL LO-LO
K-09	62	STEAM GEN E-50A LO LEVEL
K-09	64	STEAM GEN E-50B LO LEVEL
K-09	65	STEAM GEN LO PRESS CONTROL CKT UNDERVOLTAGE
K-09	72	REACTOR TRIP
K-11	50	CONTAINMENT RECIRC FANS TRIP
K-11	65	NON-CRITICAL SERVICE WATER LO PRESS
K-13	40	SAFETY INJ INITIATION SIGNAL "A"
K-13	49	CONTAINMENT SUMP HI-HI LEVEL
K-13	55	SIRW TANK T-58 HI-LO LEVEL
K-13	62	CONTAINMENT PRESSURE OFF NORMAL

Scenario No: PALEX-91 Time 0900

Message No: 9 Scenario Time 0030

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-13	64	GASEOUS WASTE MONITORING HI RADIATION
K-13	69	SAFETY INJECTION SIGNAL BLOCK PERMIT
K-13	71	RADIATION MONITORING SYSTEM CKT FAILURE
K-13	78	CONT ISO AND SAFETY INJ RIGHT SIDE CONT CKT UV
K-33	05	4160V BUS 1F INCOMING BKR 252-301 TRIP
K-33	09	4160 BUS 1G INCOMING BKR 252-401 TRIP

Scenario: PALEX 91 Time 0903

Message No: 10 Scenario Time 0033

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
Annunciator No EK-13-61, "Containment High Press" and Annunciator No EK-11-26, "CIS Initiated" received.

For Controller Use Only

Controller Notes:

Action Expected:

Verify containment isolation; stop remaining condensate pump and shift steaming path to Atmospheric Steam Dumps, as MSIV's are closed. Manually start P-54A Containment Spray Pump and start hydrogen recombiners.

Scenario: PALEX 91 Time 0910

Message No: 11 Scenario Time 0040

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
Annunciator No EK-13-63, "Containment Hi Radiation" received; RIA-1805, RIA-1807 and RIA-1808 are offscale high.

For Controller Use Only

Controller Notes:

Alarm is due to detector failure. If queried on Personnel Air Lock Monitor RIA-2315 status, erratic response should be indicated due to degrading containment conditions.

Action Expected:

Continue EOP 4.0/9.0 actions.

Scenario: PALEX 91 Time 0915

Message No: 12 Scenario Time 0045

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
See data and alarm sheets. Charging Pump suction has been shifted to SIRWT.

For Controller Use Only

Controller Notes:

Iodine/noble gas release is in progress; alternate dose assessment actions should be in progress.

Action Expected:

Continue EOP 4.0/9.0 actions.

PALEX 91

Date June 18, 1991 Message # 12 (Page 1) Time 0915 Scenario Time 0045

C-08

SW Sumps P-7A ON P-7B ON P-7C ON SW Critical Hdr Press A 82 B 82 psig
CCW Pumps P-52A ON P-52B ON P-52C ON FPC Pumps P-51A ON
Fire Pumps P-9A OFF P-9B OFF P-41 OFF P-51B OFF

Containment Cooler Recirc Fans

V1A ON V2A ON V3A ON V4A ON V1B OFF V2B OFF V3B OFF V4B OFF

C-03

CCW Cooler Outlet Temp A __ F B 63 F
Containment Spray Pumps P-54A ON P-54B ON P-54C ON
HPSI Pumps P-66A ON P-66B ON LPSI Pumps P-67A ON P-67B ON

Safety Injection Suction Supply

Train A Train B
CV-3057 (SIRW) OPEN CV-3029 (Sump) CLOSED CV-3031 (SIRW) OPEN CV-3030 (Sump) CLOSED

C-02

CVCS

Letdown Charging
Intermediate Press Letdown Temp 160 F Flow 127 gpm
Letdown Line Temp 129 F Line Temp 160 F
Letdown Flow 0 gpm Pumps P-55A ON P-55B ON P-55C ON

Volume Control Tank

Temp 95 F Pressure 20 psi Level 16 % PCP Control Bleedoff Pressure 150 psig

Shutdown Cooling System

SDCS from PCS (R) 77 F SDCS to PCS (R) 77 F

Quench Tank

Temp 160 F Pressure 8 psig Level 70 %

Primary Coolant System

Pressurizer Pressure (R) 1175 psia
PCS Tave (R) Loop 1 (TR-0111) 508 Loop 2 (TR-0121) _
Pressurizer Level (R) LRC-0101A 0 % LRC-0101B 0 % LIA-0102A 5 %
Pzr Htr Amps LCC 15 0 LCC 16 0
PORV PRV-1042B CLOSED PRV-1043B CLOSED Block Valve MOV-1042A CLOSED MOV-1043A CLOSED
PCPs P-50A OFF P-50B OFF P-50C OFF P-50D OFF
Reactor Power Level NI-01 2.60E+2 NI-02 1.00E+0 NI-03 1.60E-8 NI-04 1.50E-8
NI-05 4.4E-2 NI-06 _ NI-07 2.0E-2 NI-08 5.6E-9

C-01

AFW System

AFW Pump P-8A OFF P-8B ON P-8C OFF AFW Pump Amps P-8A 0 P-8C 0 amps
AFW Pump P-8B Steam Pressure 250 psig AFW Disch Press P-8A & P-8B 1156 P-8C _ psig

Secondary System

MSIV Bypass MOV-0501 CLOSED MOV-0510 CLOSED MSIV's CV-0501 CLOSED CV-0510 CLOSED
MFP Suction Pressure 15 psig MFP Discharge Pressure A 15 B 15 psi
Moisture Separator Drain Tank Level 51 % Condenser Hotwell Level 79 %
Atmospheric Dump Valves CLOSED Condenser Vacuum -.2 in Hg.
Heater Drain Pump Status P-10A OFF P-10B OFF Gland Seal Condenser Vacuum 14.2 in Hg.
Condensate Pump Status P-2A OFF P-2B OFF

PIP

(Demand Log + Constant, Rod, or Flux/Temp)
Gross MW 0 Net MW -3 Core Exit Thermocouple Temperature __ F
Control Rod Position GP1 _ GP2 _ GP3 _ GP4 _ GP5(P) _ GP6(A) _ GP7(B) _
Stuck Rods NONE # 0

PALEX 91

Date June 18, 1991 Message # 12 (Page 2) Time 0915 Scenario Time 0045

C-13

T-81 Level 90 % T-939 Level 66 % Condensate Storage Tank Level T-2 58 %
Instrument Air Pressure 102 psig
Containment Building Pressure 10 psig Dome Temperature 182 F Humidity 100 %
S/G A Compartment Temperature 182 F Humidity 588 %
S/G B Compartment Temperature 182 F Humidity 594 %
SIRW Tank Level 94 %
WR Containment Pressure (R) 25 psia
Containment Sump Level 60 % Containment Water Level (R) 0 %

SI Tank Level (%) A 56 B 51 C _ D 47
SI Tank Pressure (psig) A 224 B 222 C _ D 218

Panel K-13

SIAS Alarm YES Containment High Pressure Alarm YES Containment High Radiation Alarm YES

C-12

Concentrated Boric Acid Tank Levels T53A 70.2 % T53B 62.6 %
Reactor Vessel DP .3 psid
PORV Discharge Temperature 121 F
Pzr Safety Valve Discharge Temp (F) RV-1039 121 RV-1040 121 RV-1041 121
PCP Current (Amps) P-50A 0 P-50B 0 P-50C 0 P-50D 0
PCS Flow 8 % Pressurizer Level (cold) _ %
Loop Thot (F) Loop 1 513 Loop 2 513
Loop Tcold (F) Loop 1 503 Loop 2 506
Tcold Wide range Loop 1 506 Loop 2 506
Subcooling Temp 36 F Press 290 psi
PCS Pressure (R) WR 1175 NR 600 psia

	Steam Generator A	Steam Generator B
Level	(WR) 59 % (NR) 59 %	(WR) 65 % (NR) 66 %
Press	717 psia	732 psia
Flow	Steam .1 PPH Feed .1 PPH	Steam .1 PPH Feed .1 PPH

Note: Steam and Feed Flow X 1000000

C-11

AFW Flow to A S/G From P-8A&B 170 From P-8C _ gpm
AFW Flow to B S/G From P-8A&B 165 From P-8C _ gpm
Condenser Vacuum (R) 0
PCP Seal Leakoff Flow P-50A .9 P-50B .9 P-50C .9 P-50D .9

C-04

Diesel Generator Frequency 1-1 0 1-2 0
1-C BUS Voltage 2482 Amps 399
1-D BUS Voltage 2483 Amps 343

C-11 Back C-11A

Containment Area Monitors (R/Hr) RIA-1805 O/S HIGH RIA-1806 _
RIA-1807 O/S HIGH RIA-1808 O/S HIGH
High Range Containment Monitors (R/Hr) RIA-2321 _ RIA-2322 _
Containment Hydrogen Concentration (%) AI-2401R 0 AI-2401L 0
Main Steam Line Gamma (cpm) RIA-2324 _ RIA-2323 _

Stack Monitors RIA-2325 3.40E+2 cpm RIA-2326 2.00E+2 cpm RIA-2327 .2 mr/hr

Scenario No: PALEX-91 Time 0915

Message No: 12 Scenario Time 0045

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-01	01	TURBINE TRIP
K-01	39	AUX FEEDWATER PUMP TRIP
K-01	40	AUX FEEDWATER LOW SUCTION PRESSURE
K-01	43	FW PUMP P-1A TURBINE K-7A TRIP
K-01	49	FW PUMP P1B TURBINE K7B TRIP
K-02	25	CONT GAMMA RIA-2321 FAIL
K-02	26	CONT GAMMA RIA-2322 FAIL
K-02	29	MAIN STEAM E-50B RIA-2323 FAIL
K-02	30	MAIN STEAM E-50A RIA-2324 FAIL
K-03	01	GENERATOR TRIP
K-03	07	GENERATOR ACB TRIP
K-05	05	2400V BUS 1E BKR 152-302 TRIP
K-05	17	2400V BUS 1E UNDERVOLTAGE
K-05	20	2400V BUS IE BKR 152-310 TRIP
K-05	45	PREFERRED AC BUS NO-2 TROUBLE
K-06A	03	LOW FLOW CHANNEL TRIP

Scenario No: PALEX-91 Time 0915

Message No: 12 Scenario Time 0045

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-06C	01	TM/LO PRESSURE CHANNEL TRIP
K-06C	06	CONTAINMENT HIGH PRESSURE TRIP
K-07	09	VOLUME CONTROL TANK HI-LO LEVEL
K-07	41	PZR HTR TRANSF #15 AND #16 BREAKERS TRIP
K-07	53,54	PZR PRESSURE OFF NORMAL HI-LO
K-07	55-58	PZR SAFETY INJ SIGNAL LO-LO PRESS
K-07	63,64	PZR LEVEL LO-LO
K-09	62	STEAM GEN E-50A LO LEVEL
K-09	64	STEAM GEN E-50B LO LEVEL
K-09	65	STEAM GEN LO PRESS CONTROL CKT UNDERVOLTAGE
K-09	72	REACTOR TRIP
K-11	26	CIS INITIATED
K-11	50	CONTAINMENT RECIRC FANS TRIP
K-11	65	NON-CRITICAL SERVICE WATER LO PRESS
K-13	40	SAFETY INJ INITIATION SIGNAL "A"
K-13	49	CONTAINMENT SUMP HI-HI LEVEL

Scenario No: PALEX-91 Time 0915

Message No: 12 Scenario Time 0045

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-13	55	SIRW TANK T-58 HI-LO LEVEL
K-13	61	CONTAINMENT HI PRESS
K-13	62	CONTAINMENT PRESSURE OFF NORMAL
K-13	63	CONTAINMENT HI RADIATION
K-13	64	GASEOUS WASTE MONITORING HI RADIATION
K-13	69	SAFETY INJECTION SIGNAL BLOCK PERMIT
K-13	71	RADIATION MONITORING SYSTEM CKT FAILURE
K-13	77	CONTAINMENT SPRAY VALVE OPEN
K-13	78	CONT ISO AND SAFETY INJ RIGHT SIDE CONT CKT UV
K-33	05	4160V BUS 1F INCOMING BKR 252-301 TRIP
K-33	09	4160 BUS 1G INCOMING BKR 252-401 TRIP
K-35	20,27	IODINE REM TANK T-102 LEVEL HI-LO

Scenario: PALEX 91 Time 0930

Message No: 13 Scenario Time 0100

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
See data sheets; alarm conditions are unchanged.

For Controller Use Only

Controller Notes:

Prompt fuel damage sample request if required. Jumpering open CV-1910 and CV-1911 is necessary.

Action Expected:

Notify Chemistry to sample PCS for assessment of fuel damage per EI-7.0.

PALEX 91

Date June 18, 1991 Message # 13 (Page 1) Time 0930 Scenario Time 0100

C-08

SW Sumps P-7A ON P-7B ON P-7C ON SW Critical Hdr Press A 84 B 84 psig
CCW Pumps P-52A ON P-52B ON P-52C ON FPC Pumps P-51A ON
Fire Pumps P-9A OFF P-9B OFF P-41 OFF P-51B OFF

Containment Cooler Recirc Fans

V1A ON V2A ON V3A ON V4A ON V1B OFF V2B OFF V3B OFF V4B OFF

C-03

CCW Cooler Outlet Temp A __ F B 63 F
Containment Spray Pumps P-54A ON P-54B ON P-54C ON
HPSI Pumps P-66A ON P-66B ON LPSI Pumps P-67A ON P-67B ON

Safety Injection Suction Supply

Train A Train B
CV-3057 (SIRW) OPEN CV-3029 (Sump) CLOSED CV-3031 (SIRW) OPEN CV-3030 (Sump) CLOSED

C-02

CVCS

Letdown **Charging**
Intermediate Press Letdown Temp 160 F Flow 127 gpm
Letdown Line Temp 121 F Line Temp 160 F
Letdown Flow 0 gpm Pumps P-55A ON P-55B ON P-55C ON

Volume Control Tank

Temp 95 F Pressure 20 psi Level 16 % PCP Control Bleedoff Pressure 150 psig

Shutdown Cooling System

SDCS from PCS (R) 77 F SDCS to PCS (R) 77 F

Quench Tank

Temp 185 F Pressure 11 psig Level 71 %

Primary Coolant System

Pressurizer Pressure (R) 1160 psia
PCS Tave (R) Loop 1 (TR-0111) 487 Loop 2 (TR-0121) _
Pressurizer Level (R) LRC-0101A 0 % LRC-0101B 0 % LIA-0102A 5 %
Pzr Htr Amps LCC 15 0 LCC 16 0
PORV PRV-1042B CLOSED PRV-1043B CLOSED Block Valve MOV-1042A CLOSED MOV-1043A CLOSED
PCPs P-50A OFF P-50B OFF P-50C OFF P-50D OFF
Reactor Power Level NI-01 2.40E+2 NI-02 1.00E+0 NI-03 1.50E-8 NI-04 1.40E-8
NI-05 4.7E-9 NI-06 _ NI-07 3.9E-2 NI-08 4.4E-9

C-01

AFW System

AFW Pump P-8A OFF P-8B ON P-8C OFF AFW Pump Amps P-8A 0 P-8C 0 amps
AFW Pump P-8B Steam Pressure 250 psig AFW Disch Press P-8A & P-8B 1152 P-8C _ psig

Secondary System

MSIV Bypass MOV-0501 CLOSED MOV-0510 CLOSED MSIV's CV-0501 CLOSED CV-0510 CLOSED
MFP Suction Pressure 15 psig MFP Discharge Pressure A 15 B 15 psi
Moisture Separator Drain Tank Level 48 % Condenser Hotwell Level 79 %
Atmospheric Dump Valves CLOSED Condenser Vacuum -.2 in Hg.
Heater Drain Pump Status P-10A OFF P-10B OFF Gland Seal Condenser Vacuum 14.2 in Hg.
Condensate Pump Status P-2A OFF P-2B OFF

PIP

(Demand Log + Constant, Rod, or Flux/Temp)
Gross MW 0 Net MW -3 Core Exit Thermocouple Temperature __ F
Control Rod Position GP1 _ GP2 _ GP3 _ GP4 _ GP5(P) _ GP6(A) _ GP7(B) _
Stuck Rods NONE # 0

PALEX 91

Date June 18, 1991 Message # 13 (Page 2) Time 0930 Scenario Time 0100

C-13

T-81 Level 90 % T-939 Level 66 % Condensate Storage Tank Level T-2 53 %
Instrument Air Pressure 99 psig
Containment Building Pressure 12 psig Dome Temperature 193 F Humidity 100 %
S/G A Compartment Temperature 193 F Humidity **** %
S/G B Compartment Temperature 193 F Humidity **** %
SIRW Tank Level 93 %
WR Containment Pressure (R) 27 psia
Containment Sump Level 62 % Containment Water Level (R) 0 %

SI Tank Level (%) A 56 B 51 C _ D 47
SI Tank Pressure (psig) A 232 B 231 C _ D 227

Panel K-13

SIAS Alarm YES Containment High Pressure Alarm YES Containment High Radiation Alarm YES

C-12

Concentrated Boric Acid Tank Levels T53A 70.2 % T53B 62.6 %
Reactor Vessel DP .3 psid
PORV Discharge Temperature 139 F
Pzr Safety Valve Discharge Temp (F) RV-1039 139 RV-1040 139 RV-1041 139
PCP Current (Amps) P-50A 0 P-50B 0 P-50C 0 P-50D 0
PCS Flow 8 % Pressurizer Level (cold) _ %
Loop Thot (F) Loop 1 492 Loop 2 492
Loop Tcold (F) Loop 1 482 Loop 2 485
Tcold Wide range Loop 1 485 Loop 2 485
Subcooling Temp 36 F Press 290 psi
PCS Pressure (R) WR 1160 NR 600 psia

	Steam Generator A	Steam Generator B
Level	(WR) 65 % (NR) 65 %	(WR) 76 % (NR) 76 %
Press	589 psia	602 psia
Flow	Steam .1 PPH Feed .1 PPH	Steam .1 PPH Feed .1 PPH

Note: Steam and Feed Flow X 1000000

C-11

AFW Flow to A S/G From P-8A&B 170 From P-8C _ gpm
AFW Flow to B S/G From P-8A&B 165 From P-8C _ gpm
Condenser Vacuum (R) 0
PCP Seal Leakoff Flow P-50A .9 P-50B .9 P-50C .9 P-50D .9

C-04

Diesel Generator Frequency 1-1 0 1-2 0
1-C BUS Voltage 2482 Amps 401
1-D BUS Voltage 2483 Amps 344

C-11 Back C-11A

Containment Area Monitors (R/Hr) RIA-1805 O/S HIGH RIA-1806 _
RIA-1807 O/S HIGH RIA-1808 O/S HIGH
High Range Containment Monitors (R/Hr) RIA-2321 _ RIA-2322 _
Containment Hydrogen Concentration (%) AI-2401R 0 AI-2401L 0
Main Steam Line Gamma (cpm) RIA-2324 _ RIA-2323 _

Stack Monitors RIA-2325 2.90E+2 cpm RIA-2326 1.90E+2 cpm RIA-2327 .2 mr/hr

Scenario: PALEX 91 Time 0945

Message No: 14 Scenario Time 0115

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
Containment pressure has peaked at 20 PSIG. See data and alarm sheets.

For Controller Use Only

Controller Notes:

Action Expected:

Continue EOP 4.0/9.0 actions; obtain TSC concurrence that safety function status checks and natural circulation verification criteria are met using available or substituted instrumentation.

PALEX 91

Date June 18, 1991 Message # 14 (Page 1) Time 0945 Scenario Time 0115

C-08

SW Sumps P-7A ON P-7B ON P-7C ON SW Critical Hdr Press A 84 B 84 psig
CCW Pumps P-52A ON P-52B ON P-52C ON FPC Pumps P-51A ON
Fire Pumps P-9A OFF P-9B OFF P-41 OFF P-51B OFF

Containment Cooler Recirc Fans

V1A ON V2A ON V3A ON V4A ON V1B OFF V2B OFF V3B OFF V4B OFF

C-03

CCW Cooler Outlet Temp A __ F B 63 F
Containment Spray Pumps P-54A ON P-54B ON P-54C ON
HPSI Pumps P-66A ON P-66B ON LPSI Pumps P-67A ON P-67B ON

Safety Injection Suction Supply

Train A Train B
CV-3057 (SIRW) OPEN CV-3029 (Sump) CLOSED CV-3031 (SIRW) OPEN CV-3030 (Sump) CLOSED

C-02

CVCS

Letdown Charging
Intermediate Press Letdown Temp 160 F Flow 127 gpm
Letdown Line Temp 116 F Line Temp 160 F
Letdown Flow 0 gpm Pumps P-55A ON P-55B ON P-55C ON

Volume Control Tank

Temp 95 F Pressure 20 psi Level 16 % PCP Control Bleedoff Pressure 150 psig

Shutdown Cooling System

SDCS from PCS (R) 77 F SDCS to PCS (R) 77 F

Quench Tank

Temp 210 F Pressure 17 psig Level 71 %

Primary Coolant System

Pressurizer Pressure (R) 1132 psia
PCS Tave (R) Loop 1 (TR-0111) 444 Loop 2 (TR-0121) _
Pressurizer Level (R) LRC-0101A 0 % LRC-0101B 0 % LIA-0102A 2 %
Pzr Htr Amps LCC 15 0 LCC 16 0
PORV FRV-1042B CLOSED FRV-1043B CLOSED Block Valve MOV-1042A CLOSED MOV-1043A CLOSED
PCPs P-50A OFF P-50B OFF P-50C OFF P-50D OFF
Reactor Power Level NI-01 2.10E+2 NI-02 1.00E+0 NI-03 1.40E-8 NI-04 1.30E-8
NI-05 3.8E-9 NI-06 _ NI-07 6.4E-2 NI-08 3.6E-9

C-01

AFW System

AFW Pump P-8A OFF P-8B ON P-8C OFF AFW Pump Amps P-8A 0 P-8C 0 amps
AFW Pump P-8B Steam Pressure 250 psig AFW Disch Press P-8A & P-8B 1152 P-8C _ psig

Secondary System

MSIV Bypass MOV-0501 CLOSED MOV-0510 CLOSED MSIV's CV-0501 CLOSED CV-0510 CLOSED
MFP Suction Pressure 15 psig MFP Discharge Pressure A 15 B 15 psi
Moisture Separator Drain Tank Level 46 % Condenser Hotwell Level 79 %
Atmospheric Dump Valves CLOSED Condenser Vacuum -.2 in Hg.
Heater Drain Pump Status P-10A OFF P-10B OFF Gland Seal Condenser Vacuum 14.2 in Hg.
Condensate Pump Status P-2A OFF P-2B OFF

PIP

(Demand Log + Constant, Rod, or Flux/Temp)
Gross MW 0 Net MW -4 Core Exit Thermocouple Temperature __ F
Control Rod Position GP1 _ GP2 _ GP3 _ GP4 _ GP5(P) _ GP6(A) _ GP7(B) _
Stuck Rods NONE # 0

PALEX 91

Date June 18, 1991 Message # 14 (Page 2) Time 0945 Scenario Time 0115

C-13

T-81 Level 90 % T-939 Level 66 % Condensate Storage Tank Level T-2 48 %
Instrument Air Pressure 105 psig
Containment Building Pressure 20 psig Dome Temperature 219 F Humidity 100 %
S/G A Compartment Temperature 219 F Humidity **** %
S/G B Compartment Temperature 219 F Humidity **** %
SIRW Tank Level 91 %
WR Containment Pressure (R) 35 psia
Containment Sump Level 64 % Containment Water Level (R) 0 %

SI Tank Level (%) A 56 B 51 C _ D 47
SI Tank Pressure (psig) A 235 B 234 C _ D 230

Panel K-13

SIAS Alarm YES Containment High Pressure Alarm YES Containment High Radiation Alarm YES

C-12

Concentrated Boric Acid Tank Levels T53A 70.2 % T53B 62.6 %
Reactor Vessel DP .4 psid
PORV Discharge Temperature 160 F
Pzr Safety Valve Discharge Temp (F) RV-1039 160 RV-1040 160 RV-1041 160
PCP Current (Amps) P-50A 0 P-50B 0 P-50C 0 P-50D 0
PCS Flow 9 % Pressurizer Level (cold) _ %
Loop Thot (F) Loop 1 450 Loop 2 450
Loop Tcold (F) Loop 1 437 Loop 2 440
Tcold Wide range Loop 1 440 Loop 2 440
Subcooling Temp 36 F Press 290 psi
PCS Pressure (R) WR 1132 NR 600 psia

	Steam Generator A	Steam Generator B
Level	(WR) 62 % (NR) 62 %	(WR) 83 % (NR) 83 %
Press	376 psia	387 psia
Flow	Steam .2 PPH Feed .1 PPH	Steam .1 PPH Feed .1 PPH

Note: Steam and Feed Flow X 1000000

C-11

AFW Flow to A S/G From P-8A&B 170 From P-8C _ gpm
AFW Flow to B S/G From P-8A&B 165 From P-8C _ gpm
Condenser Vacuum (R) 0
PCP Seal Leakoff Flow P-50A .9 P-50B .9 P-50C .9 P-50D .9

C-04

Diesel Generator Frequency 1-1 0 1-2 0
1-C BUS Voltage 2482 Amps 408
1-D BUS Voltage 2482 Amps 351

C-11 Back C-11A

Containment Area Monitors (R/Hr) RIA-1805 O/S HIGH RIA-1806 _
RIA-1807 O/S HIGH RIA-1808 O/S HIGH
High Range Containment Monitors (R/Hr) RIA-2321 _ RIA-2322 _
Containment Hydrogen Concentration (%) AI-2401R 0 AI-2401L 0
Main Steam Line Gamma (cpm) RIA-2324 _ RIA-2323 _

Stack Monitors RIA-2325 2.90E+2 cpm RIA-2326 1.70E+2 cpm RIA-2327 .2 mr/hr

Scenario No: PALEX-91 Time 0945

Message No: 14 Scenario Time 0115

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-01	01	TURBINE TRIP
K-01	39	AUX FEEDWATER PUMP TRIP
K-01	40	AUX FEEDWATER LOW SUCTION PRESSURE
K-01	43	FW PUMP P-1A TURBINE K-7A TRIP
K-01	49	FW PUMP P1B TURBINE K7B TRIP
K-02	25	CONT GAMMA RIA-2321 FAIL
K-02	26	CONT GAMMA RIA-2322 FAIL
K-02	29	MAIN STEAM E-50B RIA-2323 FAIL
K-02	30	MAIN STEAM E-50A RIA-2324 FAIL
K-03	01	GENERATOR TRIP
K-03	07	GENERATOR ACB TRIP
K-05	05	2400V BUS 1E BKR 152-302 TRIP
K-05	17	2400V BUS 1E UNDERVOLTAGE
K-05	20	2400V BUS IE BKR 152-310 TRIP
K-05	45	PREFERRED AC BUS NO 2 TROUBLE
K-06A	03	LOW FLOW CHANNEL TRIP

Scenario No: PALEX-91 Time 0945

Message No: 14 Scenario Time 0115

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-06B	02,03	LOW PRESSURE SG CHANNEL TRIP
K-06C	01	TM/LO PRESSURE CHANNEL TRIP
K-06C	06	CONTAINMENT HIGH PRESSURE TRIP
K-07	09	VOLUME CONTROL TANK HI-LO LEVEL
K-07	41	PZR HTR TRANSF #15 AND #16 BREAKERS TRIP
K-07	53,54	PZR PRESSURE OFF NORMAL HI-LO
K-07	55-58	PZR SAFETY INJ SIGNAL LO-LO PRESS
K-07	59,65	NO PCS PROTECTION
K-07	63,64	PZR LEVEL LO-LO
K-09	62	STEAM GEN E-50A LO LEVEL
K-09	64	STEAM GEN E-50B LO LEVEL
K-09	65	STEAM GEN LO PRESS CONTROL CKT UNDERVOLTAGE
K-09	72	REACTOR TRIP
K-11	26	CIS INITIATED
K-11	50	CONTAINMENT RECIRC FANS TRIP
K-11	65	NON-CRITICAL SERVICE WATER LO PRESS

Scenario No: PALEX-91 Time 0945

Message No: 14 Scenario Time 0115

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-13	40	SAFETY INJ INITIATION SIGNAL "A"
K-13	49	CONTAINMENT SUMP HI-HI LEVEL
K-13	55	SIRW TANK T-58 HI-LO LEVEL
K-13	61	CONTAINMENT HI PRESS
K-13	62	CONTAINMENT PRESSURE OFF NORMAL
K-13	63	CONTAINMENT HI RADIATION
K-13	64	GASEOUS WASTE MONITORING HI RADIATION
K-13	69	SAFETY INJECTION SIGNAL BLOCK PERMIT
K-13	71	RADIATION MONITORING SYSTEM CKT FAILURE
K-13	77	CONTAINMENT SPRAY VALVE OPEN
K-13	78	CONT ISO AND SAFETY INJ RIGHT SIDE CONT CKT UV
K-33	05	4160V BUS 1F INCOMING BKR 252-301 TRIP
K-33	09	4160 BUS 1G INCOMING BKR 252-401 TRIP
K-35	20,27	IODINE REM TANK T-102 LEVEL HI-LO

Scenario: PALEX 91 Time 0950

Message No: 15 Scenario Time 0120

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
PCS loop HPSI flow indicators show approximately 500 gpm apiece; cold calibrated pressurizer level indicators are increasing.

For Controller Use Only

Controller Notes:

Action Expected:

Continue EOP 4.0/9.0 actions; obtain TSC concurrence on which instruments will be used to demonstrate that safety injection throttling criteria are met.

Scenario: PALEX 91 Time 1000

Message No: 16 Scenario Time 0130

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
See data sheets; alarm status is unchanged.

For Controller Use Only

Controller Notes:

Restrain any attempt to place LTOP 'A' in service until scenario time 0215 (Message 23).

Action Expected:

Continue EOP 4.0/9.0 actions.

PALEX 91

Date June 18, 1991 Message # 16 (Page 1) Time 1000 Scenario Time 0130

C-08

SW Sumps P-7A ON P-7B ON P-7C ON SW Critical Hdr Press A 82 B 82 psig
CCW Pumps P-52A ON P-52B ON P-52C ON FPC Pumps P-51A ON
Fire Pumps P-9A OFF P-9B OFF P-41 OFF P-51B OFF

Containment Cooler Recirc Fans

V1A ON V2A ON V3A ON V4A ON V1B OFF V2B OFF V3B OFF V4B OFF

C-03

CCW Cooler Outlet Temp A __ F B 63 F
Containment Spray Pumps P-54A ON P-54B ON P-54C ON
HPSI Pumps P-66A ON P-66B ON LPSI Pumps P-67A ON P-67B ON

Safety Injection Suction Supply

Train A Train B
CV-3057 (SIRW) OPEN CV-3029 (Sump) CLOSED CV-3031 (SIRW) OPEN CV-3030 (Sump) CLOSED

C-02

CVCS

Letdown **Charging**
Intermediate Press Letdown Temp 160 F Flow 113 gpm
Letdown Line Temp 112 F Line Temp 160 F
Letdown Flow 0 gpm Pumps P-55A ON P-55B ON P-55C ON

Volume Control Tank

Temp 95 F Pressure 20 psi Level 16 % PCP Control Bleedoff Pressure 150 psig

Shutdown Cooling System

SDCS from PCS (R) 77 F SDCS to PCS (R) 77 F

Quench Tank

Temp 219 F Pressure 20 psig Level 72 %

Primary Coolant System

Pressurizer Pressure (R) 906 psia
PCS Tave (R) Loop 1 (TR-0111) 418 Loop 2 (TR-0121) _
Pressurizer Level (R) LRC-0101A 34 % LRC-0101B 34 % LIA-0102A 33 %
Pzr Htr Amps LCC 15 0 LCC 16 0
PORV PRV-1042B CLOSED PRV-1043B CLOSED Block Valve MOV-1042A CLOSED MOV-1043A CLOSED
PCPs P-50A OFF P-50B OFF P-50C OFF P-50D OFF
Reactor Power Level NI-01 1.90E+2 NI-02 1.00E+0 NI-03 1.30E-8 NI-04 1.30E-8
NI-05 6.5E-2 NI-06 _ NI-07 6.5E-2 NI-08 4.5E-2

C-01

AFW System

AFW Pump P-8A OFF P-8B ON P-8C OFF AFW Pump Amps P-8A 0 P-8C 0 amps
AFW Pump P-8B Steam Pressure 250 psig AFW Disch Press P-8A & P-8B 1352 P-8C _ psig

Secondary System

MSIV Bypass MOV-0501 CLOSED MOV-0510 CLOSED MSIV's CV-0501 CLOSED CV-0510 CLOSED
MFP Suction Pressure 15 psig MFP Discharge Pressure A 15 B 15 psi
Moisture Separator Drain Tank Level 45 % Condenser Hotwell Level 79 %
Atmospheric Dump Valves CLOSED Condenser Vacuum -.2 in Hg.
Heater Drain Pump Status P-10A OFF P-10B OFF Gland Seal Condenser Vacuum 14.2 in Hg.
Condensate Pump Status P-2A OFF P-2B OFF

PIP

(Demand Log + Constant, Rod, or Flux/Temp)
Gross MW 0 Net MW -4 Core Exit Thermocouple Temperature __ F
Control Rod Position GP1 _ GP2 _ GP3 _ GP4 _ GP5(P) _ GP6(A) _ GP7(B) _
Stuck Rods NONE # 0

PALEX 91

Date June 18, 1991 Message # 16 (Page 2) Time 1000 Scenario Time 0130

C-13

T-81 Level 90 % T-939 Level 66 % Condensate Storage Tank Level T-2 43 %
Instrument Air Pressure 98 psig
Containment Building Pressure 17 psig Dome Temperature 219 F Humidity 83 %
S/G A Compartment Temperature 219 F Humidity **** %
S/G B Compartment Temperature 219 F Humidity **** %
SIRW Tank Level 89 %
WR Containment Pressure (R) 32 psia
Containment Sump Level 66 % Containment Water Level (R) 0 %

SI Tank Level (%) A 56 B 51 C _ D 47
SI Tank Pressure (psig) A 244 B 242 C _ D 238

Panel K-13

SIAS Alarm YES Containment High Pressure Alarm YES Containment High Radiation Alarm YES

C-12

Concentrated Boric Acid Tank Levels T53A 70.2 % T53B 62.6 %
Reactor Vessel DP .1 psid
PORV Discharge Temperature 176 F
Pzr Safety Valve Discharge Temp (F) RV-1039 176 RV-1040 176 RV-1041 176
PCP Current (Amps) P-50A 0 P-50B 0 P-50C 0 P-50D 0
PCS Flow 4 % Pressurizer Level (cold) _ %
Loop Thot (F) Loop 1 421 Loop 2 421
Loop Tcold (F) Loop 1 415 Loop 2 421
Tcold Wide range Loop 1 421 Loop 2 421
Subcooling Temp 36 F Press 290 psi
PCS Pressure (R) WR 906 NR 600 psia

	Steam Generator A	Steam Generator B
Level	(WR) 61 % (NR) 61 %	(WR) 87 % (NR) 87 %
Press	299 psia	313 psia
Flow	Steam 0 PPH Feed .1 PPH	Steam 0 PPH Feed 0 PPH

Note: Steam and Feed Flow X 1000000

C-11

AFW Flow to A S/G From P-8A&B 170 From P-8C _ gpm
AFW Flow to B S/G From P-8A&B 0 From P-8C _ gpm
Condenser Vacuum (R) 0
PCP Seal Leakoff Flow P-50A .9 P-50B .9 P-50C .9 P-50D .9

C-04

Diesel Generator Frequency 1-1 0 1-2 0
1-C BUS Voltage 2481 Amps 445
1-D BUS Voltage 2482 Amps 399

C-11 Back C-11A

Containment Area Monitors (R/Hr) RIA-1805 O/S HIGH RIA-1806 _
RIA-1807 O/S HIGH RIA-1808 O/S HIGH
High Range Containment Monitors (R/Hr) RIA-2321 _ RIA-2322 _
Containment Hydrogen Concentration (%) AI-2401R 0 AI-2401L 0
Main Steam Line Gamma (cpm) RIA-2324 _ RIA-2323 _

Stack Monitors RIA-2325 390 cpm RIA-2326 190 cpm RIA-2327 .2 mr/hr

Scenario: PALEX 91 Time 1005

Message No: 17 Scenario Time 0135

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
Annunciators Nos K-07-63 and K-07-64, "Pzr Level Lo-Lo" have cleared.

For Controller Use Only

Controller Notes:

Action Expected:

Continue EOP 4.0/9.0 actions.

Scenario: PALEX 91 Time 1015

Message No: 18 Scenario Time 0145

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
See alarm and data sheets.

For Controller Use Only

Controller Notes:

Action Expected:

Continue EOP 4.0/9.0 actions.

PALEX 91

Date June 18, 1991 Message # 18 (Page 1) Time 1015 Scenario Time 0145

C-08

SW Sumps P-7A ON P-7B ON P-7C ON SW Critical Hdr Press A 82 B 82 psig
CCW Pumps P-52A ON P-52B ON P-52C ON FPC Pumps P-51A ON
Fire Pumps P-9A OFF P-9B OFF P-41 OFF P-51B OFF

Containment Cooler Recirc Fans

V1A ON V2A ON V3A ON V4A ON V1B OFF V2B OFF V3B OFF V4B OFF

C-03

CCW Cooler Outlet Temp A __ F B 63 F
Containment Spray Pumps P-54A ON P-54B ON P-54C ON
HPSI Pumps P-66A ON P-66B ON LPSI Pumps P-67A ON P-67B ON

Safety Injection Suction Supply

Train A Train B
CV-3057 (SIRW) OPEN CV-3029 (Sump) CLOSED CV-3031 (SIRW) OPEN CV-3030 (Sump) CLOSED

C-02

CVCS

Letdown **Charging**
Intermediate Press Letdown Temp 158 F Flow 127 gpm
Letdown Line Temp 110 F Line Temp 151 F
Letdown Flow 0 gpm Pumps P-55A ON P-55B ON P-55C ON

Volume Control Tank

Temp 95 F Pressure 20 psi Level 16 % PCP Control Bleedoff Pressure 150 psig

Shutdown Cooling System

SDCS from PCS (R) 77 F SDCS to PCS (R) 77 F

Quench Tank

Temp 216 F Pressure 19 psig Level 72 %

Primary Coolant System

Pressurizer Pressure (R) 1141 psia
PCS Tave (R) Loop 1 (TR-0111) 404 Loop 2 (TR-0121) _
Pressurizer Level (R) LRC-0101A 100 % LRC-0101B 100 % LIA-0102A 70 %
Pzr Htr Amps LCC 15 0 LCC 16 0
PORV PRV-1042B CLOSED PRV-1043B CLOSED Block Valve MOV-1042A CLOSED MOV-1043A CLOSED
PCPs P-50A OFF P-50B OFF P-50C OFF P-50D OFF
Reactor Power Level NI-01 1.80E+2 NI-02 1.00E+0 NI-03 1.30E-8 NI-04 1.30E-8
NI-05 3.2E-9 NI-06 _ NI-07 2.0E-2 NI-08 3.0E-9

C-01

AFW System

AFW Pump P-8A OFF P-8B ON P-8C OFF AFW Pump Amps P-8A 0 P-8C 0 amps
AFW Pump P-8B Steam Pressure 250 psig AFW Disch Press P-8A & P-8B 1352 P-8C _ psig

Secondary System

MSIV Bypass MOV-0501 CLOSED MOV-0510 CLOSED MSIV's CV-0501 CLOSED CV-0510 CLOSED
MFP Suction Pressure 15 psig MFP Discharge Pressure A 15 B 15 psi
Moisture Separator Drain Tank Level 45 % Condenser Hotwell Level 79 %
Atmospheric Dump Valves CLOSED Condenser Vacuum -.2 in Hg.
Heater Drain Pump Status P-10A OFF P-10B OFF Gland Seal Condenser Vacuum 14.2 in Hg.
Condensate Pump Status P-2A OFF P-2B OFF

PIP

(Demand Log + Constant, Rod, or Flux/Temp)
Gross MW 0 Net MW -4 Core Exit Thermocouple Temperature __ F
Control Rod Position GP1 _ GP2 _ GP3 _ GP4 _ GP5(P) _ GP6(A) _ GP7(B) _
Stuck Rods NONE # 0

PALEX 91

Date June 18, 1991 Message # 18 (Page 2) Time 1015 Scenario Time 0145

C-13

T-81 Level 90 % T-939 Level 66 % Condensate Storage Tank Level T-2 41 %
Instrument Air Pressure 106 psig
Containment Building Pressure 10 psig Dome Temperature 213 F Humidity 45 %
S/G A Compartment Temperature 213 F Humidity 45 %
S/G B Compartment Temperature 213 F Humidity 45 %
SIRW Tank Level 86 %
WR Containment Pressure (R) 24 psia
Containment Sump Level 68 % Containment Water Level (R) 0 %

SI Tank Level (%) A 56 B 51 C _ D 47
SI Tank Pressure (psig) A 252 B 250 C _ D 246

Panel K-13

SIAS Alarm YES Containment High Pressure Alarm YES Containment High Radiation Alarm YES

C-12

Concentrated Boric Acid Tank Levels T53A 70.2 % T53B 62.6 %
Reactor Vessel DP .1 psid
PORV Discharge Temperature 187 F
Pzr Safety Valve Discharge Temp (F) RV-1039 187 RV-1040 187 RV-1041 187
PCP Current (Amps) P-50A 0 P-50B 0 P-50C 0 P-50D 0
PCS Flow 4 % Pressurizer Level (cold) _ %
Loop Thot (F) Loop 1 408 Loop 2 408
Loop Tcold (F) Loop 1 400 Loop 2 416
Tcold Wide range Loop 1 416 Loop 2 416
Subcooling Temp 36 F Press 290 psi
PCS Pressure (R) WR 1141 NR 600 psia

	Steam Generator A	Steam Generator B
Level	(WR) 73 % (NR) 73 %	(WR) 93 % (NR) 93 %
Press	254 psia	280 psia
Flow	Steam 0 PPH Feed .1 PPH	Steam 0 PPH Feed 0 PPH

Note: Steam and Feed Flow X 1000000

C-11

AFW Flow to A S/G From P-8A&B 170 From P-8C _ gpm
AFW Flow to B S/G From P-8A&B 0 From P-8C _ gpm
Condenser Vacuum (R) 0
PCP Seal Leakoff Flow P-50A .9 P-50B .9 P-50C .9 P-50D .9

C-04

Diesel Generator Frequency 1-1 0 1-2 0
1-C BUS Voltage 2482 Amps 389
1-D BUS Voltage 2483 Amps 322

C-11 Back C-11A

Containment Area Monitors (R/Hr) RIA-1805 O/S HIGH RIA-1806 _
RIA-1807 O/S HIGH RIA-1808 O/S HIGH
High Range Containment Monitors (R/Hr) RIA-2321 _ RIA-2322 _
Containment Hydrogen Concentration (%) AI-2401R 0 AI-2401L 0
Main Steam Line Gamma (cpm) RIA-2324 _ RIA-2323 _

Stack Monitors RIA-2325 440 cpm RIA-2326 180 cpm RIA-2327 .2 mr/hr

Scenario No: PALEX-91 Time 1015

Message No: 18 Scenario Time 0145

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-01	01	TURBINE TRIP
K-01	39	AUX FEEDWATER PUMP TRIP
K-01	40	AUX FEEDWATER LOW SUCTION PRESSURE
K-01	43	FW PUMP P-1A TURBINE K-7A TRIP
K-01	49	FW PUMP P1B TURBINE K7B TRIP
K-02	25	CONT GAMMA RIA-2321 FAIL
K-02	26	CONT GAMMA RIA-2322 FAIL
K-02	29	MAIN STEAM E-50B RIA-2323 FAIL
K-02	30	MAIN STEAM E-50A RIA-2324 FAIL
K-03	01	GENERATOR TRIP
K-03	07	GENERATOR ACB TRIP
K-05	05	2400V BUS 1E BKR 152-302 TRIP
K-05	17	2400V BUS 1E UNDERVOLTAGE
K-05	20	2400V BUS IE BKR 152-310 TRIP
K-05	45	PREFERRED AC BUS NO 2 TROUBLE
K-06A	03	LOW FLOW CHANNEL TRIP

Scenario No: PALEX-91 Time 1015

Message No: 18 Scenario Time 0145

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-06B	02,03	LOW PRESSURE SG CHANNEL TRIP
K-06C	01	TM/LO PRESSURE CHANNEL TRIP
K-06C	06	CONTAINMENT HIGH PRESSURE TRIP
K-07	09	VOLUME CONTROL TANK HI-LO LEVEL
K-07	41	PZR HTR TRANSF #15 AND #16 BREAKERS TRIP
K-07	53,54	PZR PRESSURE OFF NORMAL HI-LO
K-07	55-58	PZR SAFETY INJ SIGNAL LO-LO PRESS
K-07	59,65	NO PCS PROTECTION
K-09	62	STEAM GEN E-50A LO LEVEL
K-09	64	STEAM GEN E-50B LO LEVEL
K-09	65	STEAM GEN LO PRESS CONTROL CKT UNDERVOLTAGE
K-09	72	REACTOR TRIP
K-11	26	CIS INITIATED
K-11	50	CONTAINMENT RECIRC FANS TRIP
K-11	65	NON-CRITICAL SERVICE WATER LO PRESS
K-13	40	SAFETY INJ INITIATION SIGNAL "A"

Scenario No: PALEX-91 Time 1015

Message No: 18 Scenario Time 0145

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-13	49	CONTAINMENT SUMP HI-HI LEVEL
K-13	55	SIRW TANK T-58 HI-LO LEVEL
K-13	61	CONTAINMENT HI PRESS
K-13	62	CONTAINMENT PRESSURE OFF NORMAL
K-13	63	CONTAINMENT HI RADIATION
K-13	64	GASEOUS WASTE MONITORING HI RADIATION
K-13	69	SAFETY INJECTION SIGNAL BLOCK PERMIT
K-13	71	RADIATION MONITORING SYSTEM CKT FAILURE
K-13	77	CONTAINMENT SPRAY VALVE OPEN
K-13	78	CONT ISO AND SAFETY INJ RIGHT SIDE CONT CKT UV
K-33	05	4160V BUS 1F INCOMING BKR 252-301 TRIP
K-33	09	4160 BUS 1G INCOMING BKR 252-401 TRIP
K-35	20,27	IODINE REM TANK T-102 LEVEL HI-LO

Scenario: PALEX 91 Time 1030

Message No: 19a Scenario Time 0200

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Site Emergency Director

Simulated Plant Conditions:

Message:
(Contingency Option 1) - PASM results are consistent with 12-15% total failed fuel.

For Controller Use Only

Controller Notes:

Provide either Option 1 or Option 2 message to SED based upon whichever option is closer to yielding a result.

Action Expected:

Declare a General Emergency. Omit this message if already declared.

Scenario: PALEX 91 Time 1030

Message No: 19b Scenario Time 0200

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Site Emergency Director

Simulated Plant Conditions:

Message:
(Contingency Option 2) - Onsite survey results indicate presence of noble gasses.

For Controller Use Only

Controller Notes:

Provide either Option 1 or Option 2 message to SED based upon whichever option is closer to yielding a result.

Action Expected:

Declare a General Emergency. Omit this message if already declared.

Scenario: PALEX 91 Time 1030

Message No: 19c Scenario Time 0200

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
See data sheets; alarm conditions are unchanged.

For Controller Use Only

Controller Notes:

Prompt that safety injection throttling criteria are met, if necessary.

Action Expected:

Throttle safety injection to stabilize PCS pressure and pressurizer level.

PALEX 91

Date June 18, 1991 Message # 19c (Page 1) Time 1030 Scenario Time 0200

C-08

SW Sumps P-7A ON P-7B ON P-7C ON SW Critical Hdr Press A 82 B 82 psig
CCW Pumps P-52A ON P-52B ON P-52C ON FPC Pumps P-51A ON
Fire Pumps P-9A OFF P-9B OFF P-41 OFF P-51B OFF

Containment Cooler Recirc Fans

V1A ON V2A ON V3A ON V4A ON V1B OFF V2B OFF V3B OFF V4B OFF

C-03

CCW Cooler Outlet Temp A __ F B 63 F
Containment Spray Pumps P-54A ON P-54B ON P-54C ON
HPSI Pumps P-66A ON P-66B ON LPSI Pumps P-67A ON P-67B ON

Safety Injection Suction Supply

Train A Train B
CV-3057 (SIRW) OPEN CV-3029 (Sump) CLOSED CV-3031 (SIRW) OPEN CV-3030 (Sump) CLOSED

C-02

CVCS

Letdown Charging
Intermediate Press Letdown Temp 156 F Flow 127 gpm
Letdown Line Temp 108 F Line Temp 137 F
Letdown Flow 0 gpm Pumps P-55A ON P-55B ON P-55C ON

Volume Control Tank

Temp 95 F Pressure 20 psi Level 16 % PCP Control Bleedoff Pressure 150 psig

Shutdown Cooling System

SDCS from PCS (R) 77 F SDCS to PCS (R) 77 F

Quench Tank

Temp 210 F Pressure 17 psig Level 71 %

Primary Coolant System

Pressurizer Pressure (R) 1142 psia
PCS Tave (R) Loop 1 (TR-0111) 400 Loop 2 (TR-0121) _
Pressurizer Level (R) LRC-0101A 100 % LRC-0101B 100 % LIA-0102A 70 %
Pzr Htr Amps LCC 15 0 LCC 16 0
PORV PRV-1042B CLOSED PRV-1043B CLOSED Block Valve MOV-1042A CLOSED MOV-1043A CLOSED
PCPs P-50A OFF P-50B OFF P-50C OFF P-50D OFF
Reactor Power Level NI-01 1.80E+2 NI-02 1.00E+0 NI-03 1.30E-8 NI-04 1.30E-8
NI-05 2.0E-2 NI-06 _ NI-07 4.0E-2 NI-08 4.5E-2

C-01

AFW System

AFW Pump P-8A OFF P-8B ON P-8C OFF AFW Pump Amps P-8A 0 P-8C 0 amps
AFW Pump P-8B Steam Pressure 244 psig AFW Disch Press P-8A & P-8B 1350 P-8C _ psig

Secondary System

MSIV Bypass MOV-0501 CLOSED MOV-0510 CLOSED MSIV's CV-0501 CLOSED CV-0510 CLOSED
MFP Suction Pressure 15 psig MFP Discharge Pressure A 15 B 15 psi
Moisture Separator Drain Tank Level 44 % Condenser Hotwell Level 79 %
Atmospheric Dump Valves CLOSED Condenser Vacuum -.2 in Hg.
Heater Drain Pump Status P-10A OFF P-10B OFF Gland Seal Condenser Vacuum 14.2 in Hg.
Condensate Pump Status P-2A OFF P-2B OFF

PIP

(Demand Log + Constant, Rod, or Flux/Temp)
Gross MW 0 Net MW -4 Core Exit Thermocouple Temperature __ F
Control Rod Position GP1 _ GP2 _ GP3 _ GP4 _ GP5(P) _ GP6(A) _ GP7(B) _
Stuck Rods NONE # 0

PALEX 91

Date June 18, 1991 Message # 19c (Page 2) Time 1030 Scenario Time 0200

C-13

T-81 Level 90 % T-939 Level 66 % Condensate Storage Tank Level T-2 38 %
Instrument Air Pressure 103 psig
Containment Building Pressure 6 psig Dome Temperature 208 F Humidity 23 %
S/G A Compartment Temperature 208 F Humidity 23 %
S/G B Compartment Temperature 208 F Humidity 23 %
SIRW Tank Level 84 %
WR Containment Pressure (R) 21 psia
Containment Sump Level 69 % Containment Water Level (R) 0 %

SI Tank Level (%) A 56 B 51 C _ D 47
SI Tank Pressure (psig) A 254 B 253 C _ D 249

Panel K-13

SIAS Alarm YES Containment High Pressure Alarm YES Containment High Radiation Alarm YES

C-12

Concentrated Boric Acid Tank Levels T53A 70.2 % T53B 62.6 %
Reactor Vessel DP .1 psid
PORV Discharge Temperature 193 F
Pzr Safety Valve Discharge Temp (F) RV-1039 193 RV-1040 193 RV-1041 193
PCP Current (Amps) P-50A 0 P-50B 0 P-50C 0 P-50D 0
PCS Flow 4 % Pressurizer Level (cold) _ %
Loop Thot (F) Loop 1 404 Loop 2 404
Loop Tcold (F) Loop 1 396 Loop 2 408
Tcold Wide range Loop 1 408 Loop 2 408
Subcooling Temp 36 F Press 290 psi
PCS Pressure (R) WR 1142 NR 600 psia

	Steam Generator A	Steam Generator B
Level	(WR) 82 % (NR) 82 %	(WR) 98 % (NR) 98 %
Press	244 psia	264 psia
Flow	Steam 0 PPH Feed .1 PPH	Steam 0 PPH Feed 0 PPH

Note: Steam and Feed Flow X 1000000

C-11

AFW Flow to A S/G From P-8A&B 170 From P-8C _ gpm
AFW Flow to B S/G From P-8A&B 0 From P-8C _ gpm
Condenser Vacuum (R) 0
PCP Seal Leakoff Flow P-50A .9 P-50B .9 P-50C .9 P-50D .9

C-04

Diesel Generator Frequency 1-1 0 1-2 0
1-C BUS Voltage 2482 Amps 389
1-D BUS Voltage 2483 Amps 322

C-11 Back C-11A

Containment Area Monitors (R/Hr) RIA-1805 O/S HIGH RIA-1806 _
RIA-1807 O/S HIGH RIA-1808 O/S HIGH
High Range Containment Monitors (R/Hr) RIA-2321 _ RIA-2322 _
Containment Hydrogen Concentration (%) AI-2401R 0 AI-2401L 0
Main Steam Line Gamma (cpm) RIA-2324 _ RIA-2323 _

Stack Monitors RIA-2325 290 cpm RIA-2326 170 cpm RIA-2327 .2 mr/hr

Scenario: PALEX 91 Time 1033

Message No: 20 Scenario Time 0203

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
Annunciator No EK-13-61, "Containment High Press" cleared.

For Controller Use Only

Controller Notes:

The release from containment has ceased.

Action Expected:

Determine, with TSC concurrence, that iodine removal system operation is no longer required; stop all spray pumps, close spray valves CV-3001 and CV-3002 and close T-102 valves CV-0437A and CV-0437B. Reset SIAS.

Scenario: PALEX 91

Time 1035

Message No: 21a

Scenario Time 0205

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Site Emergency Director

Simulated Plant Conditions:

Message:
(Contingency) - Direct operators to restart PCP's P-50B and P-50C.

For Controller Use Only

Controller Notes:

Omit this message if actions are already in progress or if direction has been given not to restart PCP's.

Action Expected:

Operators will restore CCW to/from containment per ONP 6.2 and line up seal bleedoff; obtain TSC concurrence that restart criteria are met.

Scenario: PALEX 91 Time 1035

Message No: 21b Scenario Time 0205

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
All spray pumps are stopped, CV-3001 and CV-3002 are closed, CV-0437A and CV-0437B are closed and SIAS has been reset per SOP 3. Bus 1E is reenergized; non-critical service water has been restored.

For Controller Use Only

Controller Notes:

Contingency Message 21a may be delivered to restart P-50B and P-50C.

Action Expected:

See Message 21a.

Scenario: PALEX 91 Time 1040

Message No: 22 Scenario Time 0210

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
PCP's P-50B and P-50C are running.

For Controller Use Only

Controller Notes:

Omit this message if direction has been given to not restart PCP's and modify subsequent data.

Action Expected:

Continue EOP 4.0/9.0 actions and decide to place the only operable LTOP channel, 'A' in service.

Scenario: PALEX 91 Time 1045

Message No: 23 Scenario Time 0215

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
See alarm and data sheets.

For Controller Use Only

Controller Notes:

Cue players that additional non-key alarms have been eliminated.

Action Expected:

Place LTOP channel 'A' in service in preparation for PCS cooldown.

PALEX 91

Date June 18, 1991 Message # 23 (Page 1) Time 1045 Scenario Time 0215

C-08

SW Sumps P-7A ON P-7B ON P-7C ON SW Critical Hdr Press A 81 B 81 psig
CCW Pumps P-52A ON P-52B ON P-52C ON FPC Pumps P-51A ON
Fire Pumps P-9A OFF P-9B OFF P-41 OFF P-51B OFF

Containment Cooler Recirc Fans

V1A ON V2A ON V3A ON V4A ON V1B OFF V2B OFF V3B OFF V4B OFF

C-03

CCW Cooler Outlet Temp A __ F B 68 F
Containment Spray Pumps P-54A OFF P-54B OFF P-54C OFF
HPSI Pumps P-66A ON P-66B OFF LPSI Pumps P-67A ON P-67B ON

Safety Injection Suction Supply

Train A Train B
CV-3057 (SIRW) OPEN CV-3029 (Sump) CLOSED CV-3031 (SIRW) OPEN CV-3030 (Sump) CLOSED

C-02

CVCS

Letdown **Charging**
Intermediate Press Letdown Temp 155 F Flow 0 gpm
Letdown Line Temp 107 F Line Temp 127 F
Letdown Flow 0 gpm Pumps P-55A OFF P-55B OFF P-55C OFF

Volume Control Tank

Temp 95 F Pressure 20 psi Level 16 % PCP Control Bleedoff Pressure 150 psig

Shutdown Cooling System

SDCS from PCS (R) 77 F SDCS to PCS (R) 77 F

Quench Tank

Temp 182 F Pressure 11 psig Level 71 %

Primary Coolant System

Pressurizer Pressure (R) 1045 psia
PCS Tave (R) Loop 1 (TR-0111) 401 Loop 2 (TR-0121) _
Pressurizer Level (R) LRC-0101A 100 % LRC-0101B 100 % LIA-0102A 76 %
Pzr Htr Amps LCC 15 71 LCC 16 71
PORV PRV-1042B CLOSED PRV-1043B CLOSED Block Valve MOV-1042A CLOSED MOV-1043A CLOSED
PCPs P-50A OFF P-50B ON P-50C ON P-50D OFF
Reactor Power Level NI-01 1.80E+2 NI-02 1.00E+0 NI-03 1.30E-8 NI-04 1.30E-8
NI-05 2.0E-2 NI-06 _ NI-07 6.6E-2 NI-08 4.5E-2

C-01

AFW System

AFW Pump P-8A OFF P-8B OFF P-8C OFF AFW Pump Amps P-8A 0 P-8C 0 amps
AFW Pump P-8B Steam Pressure 0 psig AFW Disch Press P-8A & P-8B 13 P-8C _ psig

Secondary System

MSIV Bypass MOV-0501 CLOSED MOV-0510 CLOSED MSIV's CV-0501 CLOSED CV-0510 CLOSED
MFP Suction Pressure 15 psig MFP Discharge Pressure A 15 B 15 psi
Moisture Separator Drain Tank Level 44 % Condenser Hotwell Level 79 %
Atmospheric Dump Valves CLOSED Condenser Vacuum -.2 in Hg.
Heater Drain Pump Status P-10A OFF P-10B OFF Gland Seal Condenser Vacuum 14.2 in Hg.
Condensate Pump Status P-2A OFF P-2B OFF

PIP

(Demand Log + Constant, Rod, or Flux/Temp)
Gross MW 0 Net MW -5 Core Exit Thermocouple Temperature __ F
Control Rod Position GP1 _ GP2 _ GP3 _ GP4 _ GP5(P) _ GP6(A) _ GP7(B) _
Stuck Rods NONE # 0

PALEX 91

Date June 18, 1991 Message # 23 (Page 2) Time 1045 Scenario Time 0215

C-13

T-81 Level 90 % T-939 Level 66 % Condensate Storage Tank Level T-2 35 %
Instrument Air Pressure 100 psig
Containment Building Pressure 2.5 psig Dome Temperature 165 F Humidity 28 %
S/G A Compartment Temperature 165 F Humidity 28 %
S/G B Compartment Temperature 165 F Humidity 28 %
SIRW Tank Level 72 %
WR Containment Pressure (R) 16 psia
Containment Sump Level 77 % Containment Water Level (R) 0 %

SI Tank Level (%) A 56 B 51 C _ D 47
SI Tank Pressure (psig) A 249 B 247 C _ D 243

Panel K-13

SIAS Alarm YES Containment High Pressure Alarm NO Containment High Radiation Alarm YES

C-12

Concentrated Boric Acid Tank Levels T53A 70.2 % T53B 62.6 %
Reactor Vessel DP 9.4 psid
PORV Discharge Temperature 190 F
Pzr Safety Valve Discharge Temp (F) RV-1039 190 RV-1040 190 RV-1041 190
PCP Current (Amps) P-50A 0 P-50B 723 P-50C 731 P-50D 0
PCS Flow 43 % Pressurizer Level (cold) _ %
Loop Thot (F) Loop 1 401 Loop 2 401
Loop Tcold (F) Loop 1 401 Loop 2 401
Tcold Wide range Loop 1 401 Loop 2 401
Subcooling Temp 36 F Press 290 psi
PCS Pressure (R) WR 1045 NR 600 psia

	Steam Generator A		Steam Generator B	
Level	(WR) 105 %	(NR) 105 %	(WR) 100 %	(NR) 100 %
Press	249 psia		249 psia	
Flow	Steam 0 PPH	Feed 0 PPH	Steam 0 PPH	Feed 0 PPH

Note: Steam and Feed Flow X 1000000

C-11

AFW Flow to A S/G From P-8A&B 0 From P-8C _ gpm
AFW Flow to B S/G From P-8A&B 0 From P-8C _ gpm
Condenser Vacuum (R) 0
PCP Seal Leakoff Flow P-50A .9 P-50B .9 P-50C .9 P-50D .9

C-04

Diesel Generator Frequency 1-1 0 1-2 0
1-C BUS Voltage 2481 Amps 445
1-D BUS Voltage 2481 Amps 466

C-11 Back C-11A

Containment Area Monitors (R/Hr) RIA-1805 O/S HIGH RIA-1806 _
RIA-1807 O/S HIGH RIA-1808 O/S HIGH
High Range Containment Monitors (R/Hr) RIA-2321 _ RIA-2322 _
Containment Hydrogen Concentration (%) AI-2401R 0 AI-2401L 0
Main Steam Line Gamma (cpm) RIA-2324 _ RIA-2323 _

Stack Monitors RIA-2325 340 cpm RIA-2326 200 cpm RIA-2327 .2 mr/hr

Scenario No: PALEX-91 Time 1045

Message No: 23 Scenario Time 0215

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-01	40	AUX FEEDWATER LOW SUCTION PRESSURE
K-02	25	CONT GAMMA RIA-2321 FAIL
K-02	26	CONT GAMMA RIA-2322 FAIL
K-02	29	MAIN STEAM E-50B RIA-2323 FAIL
K-02	30	MAIN STEAM E-50A RIA-2324 FAIL
K-05	45	PREFERRED AC BUS NO 2 TROUBLE
K-07	59,65	NO PCS PROTECTION
K-09	65	STEAM GEN LO PRESS CONTROL CKT UV
K-09	72	REACTOR TRIP
K-11	26	CIS INITIATED
K-13	49	CONTAINMENT SUMP HI-HI LEVEL
K-13	55	SIRW TANK T-58 HI-LO LEVEL
K-13	62	CONTAINMENT PRESSURE OFF NORMAL
K-13	63	CONTAINMENT HIGH RADIATION
K-13	64	GASEOUS WASTE MONITORING HI RADIATION
K-13	71	RADIATION MONITORING SYSTEM CKT FAILURE

Scenario No: PALEX-91 Time 1045

Message No: 23 Scenario Time 0215

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-13	78	CONT ISO AND SAFETY INJ RIGHT SIDE CONT CKT UV

Scenario: PALEX 91 Time 1046

Message No: 24 Scenario Time 0216

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
During performance of SOP 1 Att 8 for "A" channel, PRV-1042B has opened and has not reseated. Annunciator EK-07-43, "Pressurizer Pwr Operated Relief Valve Disch Hi Temp" is received; pressurizer level and pressure are decreasing rapidly.

For Controller Use Only

Controller Notes:

After isolation, cue operators that pressurizer level and pressure have stopped decreasing; PRV-1042B still indicates open.

Action Expected:

Isolate PRV-1042B using MO-1042A. Proceed with cooldown preparations as directed by the TSC.

Scenario: PALEX 91 Time 1100

Message No: 25 Scenario Time 0230

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
See alarm and data sheets.

For Controller Use Only

Controller Notes:

Action Expected:

Per TSC direction.

PALEX 91

Date June 18, 1991 Message # 25 (Page 1) Time 1100 Scenario Time 0230

C-08

SW Sumps P-7A ON P-7B ON P-7C ON SW Critical Hdr Press A 81 B 81 psig
CCW Pumps P-52A ON P-52B ON P-52C ON FPC Pumps P-51A ON
Fire Pumps P-9A OFF P-9B OFF P-41 OFF P-51B OFF

Containment Cooler Recirc Fans

V1A ON V2A ON V3A ON V4A ON V1B OFF V2B OFF V3B OFF V4B OFF

C-03

CCW Cooler Outlet Temp A __ F B 68 F
Containment Spray Pumps P-54A OFF P-54B OFF P-54C OFF
HPSI Pumps P-66A ON P-66B OFF LPSI Pumps P-67A OFF P-67B OFF

Safety Injection Suction Supply

Train A Train B
CV-3057 (SIRW) OPEN CV-3029 (Sump) CLOSED CV-3031 (SIRW) OPEN CV-3030 (Sump) CLOSED

C-02

CVCS

Letdown **Charging**
Intermediate Press Letdown Temp 153 F Flow 0 gpm
Letdown Line Temp 106 F Line Temp 120 F
Letdown Flow 0 gpm Pumps P-55A OFF P-55B OFF P-55C OFF

Volume Control Tank

Temp 95 F Pressure 20 psi Level 16 % PCP Control Bleedoff Pressure 150 psig

Shutdown Cooling System

SDCS from PCS (R) 77 F SDCS to PCS (R) 77 F

Quench Tank

Temp 170 F Pressure 9 psig Level 73 %

Primary Coolant System

Pressurizer Pressure (R) 1000 psia
PCS Tave (R) Loop 1 (TR-0111) 408 Loop 2 (TR-0121) _
Pressurizer Level (R) LRC-0101A 100 % LRC-0101B 100 % LIA-0102A 79 %
Pzr Htr Amps LCC 15 71 LCC 16 71
PORV PRV-1042B OPEN PRV-1043B CLOSED Block Valve MOV-1042A CLOSED MOV-1043A CLOSED
PCPs P-50A OFF P-50B ON P-50C ON P-50D OFF
Reactor Power Level NI-01 1.90E+2 NI-02 1.00E+0 NI-03 1.30E-8 NI-04 1.30E-8
NI-05 2.1E-2 NI-06 _ NI-07 4.1E-2 NI-08 4.5E-2

C-01

AFW System

AFW Pump P-8A OFF P-8B OFF P-8C OFF AFW Pump Amps P-8A 0 P-8C 0 amps
AFW Pump P-8B Steam Pressure 0 psig AFW Disch Press P-8A & P-8B 13 P-8C _ psig

Secondary System

MSIV Bypass MOV-0501 CLOSED MOV-0510 CLOSED MSIV's CV-0501 CLOSED CV-0510 CLOSED
MFP Suction Pressure 15 psig MFP Discharge Pressure A 15 B 15 psi
Moisture Separator Drain Tank Level 44 % Condenser Hotwell Level 79 %
Atmospheric Dump Valves THROT Condenser Vacuum -.2 in Hg.
Heater Drain Pump Status P-10A OFF P-10B OFF Gland Seal Condenser Vacuum 14.2 in Hg.
Condensate Pump Status P-2A OFF P-2B OFF

PIP

(Demand Log + Constant, Rod, or Flux/Temp)
Gross MW 0 Net MW -5 Core Exit Thermocouple Temperature __ F
Control Rod Position GP1 _ GP2 _ GP3 _ GP4 _ GP5(P) _ GP6(A) _ GP7(B) _
Stuck Rods NONE # 0

PALEX 91

Date June 18, 1991 Message # 25 (Page 2) Time 1100 Scenario Time 0230

C-13

T-81 Level 90 % T-939 Level 66 % Condensate Storage Tank Level T-2 35 %
Instrument Air Pressure 96 psig
Containment Building Pressure 2 psig Dome Temperature 143 F Humidity 36 %
S/G A Compartment Temperature 143 F Humidity 36 %
S/G B Compartment Temperature 143 F Humidity 36 %
SIRW Tank Level 59 %
WR Containment Pressure (R) 16 psia
Containment Sump Level 86 % Containment Water Level (R) 0 %

SI Tank Level (%) A 56 B 51 C _ D 47
SI Tank Pressure (psig) A 239 B 237 C _ D 233

Panel K-13

SIAS Alarm NO Containment High Pressure Alarm NO Containment High Radiation Alarm YES

C-12

Concentrated Boric Acid Tank Levels T53A 70.2 % T53B 62.6 %
Reactor Vessel DP 9.4 psid
PORV Discharge Temperature 250 F
Pzr Safety Valve Discharge Temp (F) RV-1039 180 RV-1040 180 RV-1041 180
PCP Current (Amps) P-50A 0 P-50B 721 P-50C 730 P-50D 0
PCS Flow 43 % Pressurizer Level (cold) _ %
Loop Thot (F) Loop 1 409 Loop 2 409
Loop Tcold (F) Loop 1 408 Loop 2 408
Tcold Wide range Loop 1 408 Loop 2 408
Subcooling Temp 36 F Press 290 psi
PCS Pressure (R) WR 1000 NR 600 psia

	Steam Generator A	Steam Generator B
Level	(WR) 99 % (NR) 99 %	(WR) 93 % (NR) 93 %
Press	270 psia	270 psia
Flow	Steam 0 PPH Feed 0 PPH	Steam 0 PPH Feed 0 PPH

Note: Steam and Feed Flow X 1000000

C-11

AFW Flow to A S/G From P-8A&B 0 From P-8C _ gpm
AFW Flow to B S/G From P-8A&B 0 From P-8C _ gpm
Condenser Vacuum (R) 0
PCP Seal Leakoff Flow P-50A .9 P-50B .9 P-50C .9 P-50D .9

C-04

Diesel Generator Frequency 1-1 0 1-2 0
1-C BUS Voltage 2481 Amps 445
1-D BUS Voltage 2481 Amps 467

C-11 Back C-11A

Containment Area Monitors (R/Hr) RIA-1805 O/S HIGH RIA-1806 _
RIA-1807 O/S HIGH RIA-1808 O/S HIGH
High Range Containment Monitors (R/Hr) RIA-2321 _ RIA-2322 _
Containment Hydrogen Concentration (%) AI-2401R 0 AI-2401L 0
Main Steam Line Gamma (cpm) RIA-2324 _ RIA-2323 _

Stack Monitors RIA-2325 290 cpm RIA-2326 190 cpm RIA-2327 .2 mr/hr

Scenario No: PALEX-91 Time 1100

Message No: 25 Scenario Time 0230

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-01	40	AUX FEEDWATER LOW SUCTION PRESSURE
K-02	25	CONT GAMMA RIA-2321 FAIL
K-02	26	CONT GAMMA RIA-2322 FAIL
K-02	29	MAIN STEAM E-50B RIA-2323 FAIL
K-02	30	MAIN STEAM E-50A RIA-2324 FAIL
K-05	45	PREFERRED AC BUS NO 2 TROUBLE
K-07	31	QUENCH TANK HI TEMP
K-07	32	QUENCH TANK HI PRESS
K-07	43	PZR PWR OP RELIEF VALVE DISCH HI TEMP
K-07	59,65	NO PCS PROTECTION
K-09	65	STEAM GEN LO PRESS CONTROL CKT UV
K-09	72	REACTOR TRIP
K-11	26	CIS INITIATED
K-13	49	CONTAINMENT SUMP HI-HI LEVEL
K-13	55	SIRW TANK T-58 HI-LO LEVEL
K-13	62	CONTAINMENT PRESSURE OFF NORMAL

Scenario No: PALEX-91 Time 1100

Message No: 25 Scenario Time 0230

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-13	63	CONTAINMENT HIGH RADIATION
K-13	64	GASEOUS WASTE MONITORING HI RADIATION
K-13	71	RADIATION MONITORING SYSTEM CKT FAILURE
K-13	78	CONT ISO AND SAFETY INJ RIGHT SIDE CONT CKT UV

Scenario: PALEX 91 Time 1115

Message No: 26 Scenario Time 0245

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
See data sheets; alarm status is unchanged.

For Controller Use Only

Controller Notes:

Action Expected:

Per TSC direction.

PALEX 91

Date June 18, 1991 Message # 26 (Page 1) Time 1115 Scenario Time 0245

C-08

SW Sumps P-7A ON P-7B ON P-7C ON SW Critical Hdr Press A 81 B 81 psig
CCW Pumps P-52A ON P-52B ON P-52C ON FPC Pumps P-51A ON
Fire Pumps P-9A OFF P-9B OFF P-41 OFF P-51B OFF

Containment Cooler Recirc Fans

V1A ON V2A ON V3A ON V4A ON V1B OFF V2B OFF V3B OFF V4B OFF

C-03

CCW Cooler Outlet Temp A __ F B 68 F
Containment Spray Pumps P-54A OFF P-54B OFF P-54C OFF
HPSI Pumps P-66A ON P-66B OFF LPSI Pumps P-67A OFF P-67B OFF

Safety Injection Suction Supply

Train A Train B
CV-3057 (SIRW) OPEN CV-3029 (Sump) CLOSED CV-3031 (SIRW) OPEN CV-3030 (Sump) CLOSED

C-02

CVCS

Letdown **Charging**
Intermediate Press Letdown Temp 151 F Flow 0 gpm
Letdown Line Temp 105 F Line Temp 115 F
Letdown Flow 0 gpm Pumps P-55A OFF P-55B OFF P-55C OFF

Volume Control Tank

Temp 95 F Pressure 20 psi Level 16 % PCP Control Bleedoff Pressure 150 psig

Shutdown Cooling System

SDCS from PCS (R) 77 F SDCS to PCS (R) 77 F

Quench Tank

Temp 139 F Pressure 6 psig Level 72 %

Primary Coolant System

Pressurizer Pressure (R) 982 psia
PCS Tave (R) Loop 1 (TR-0111) 408 Loop 2 (TR-0121) _
Pressurizer Level (R) LRC-0101A 100 % LRC-0101B 100 % LIA-0102A 80 %
Pzr Htr Amps LCC 15 71 LCC 16 71
PORV PRV-1042B OPEN PRV-1043B CLOSED Block Valve MOV-1042A CLOSED MOV-1043A CLOSED
PCPs P-50A OFF P-50B ON P-50C ON P-50D OFF
Reactor Power Level NI-01 1.90E+2 NI-02 1.00E+0 NI-03 1.30E-8 NI-04 1.30E-8
NI-05 3.3E-9 NI-06 _ NI-07 2.1E-2 NI-08 4.5E-2

C-01

AFW System

AFW Pump P-8A OFF P-8B OFF P-8C OFF AFW Pump Amps P-8A 0 P-8C 0 amps
AFW Pump P-8B Steam Pressure 0 psig AFW Disch Press P-8A & P-8B 13 P-8C _ psig

Secondary System

MSIV Bypass MOV-0501 CLOSED MOV-0510 CLOSED MSIV's CV-0501 CLOSED CV-0510 CLOSED
MFP Suction Pressure 15 psig MFP Discharge Pressure A 15 B 15 psi
Moisture Separator Drain Tank Level 44 % Condenser Hotwell Level 79 %
Atmospheric Dump Valves THROT Condenser Vacuum -.2 in Hg.
Heater Drain Pump Status P-10A OFF P-10B OFF Gland Seal Condenser Vacuum 14.2 in Hg.
Condensate Pump Status P-2A OFF P-2B OFF

PIP

(Demand Log + Constant, Rod, or Flux/Temp)
Gross MW 0 Net MW -5 Core Exit Thermocouple Temperature __ F
Control Rod Position GP1 _ GP2 _ GP3 _ GP4 _ GP5(P) _ GP6(A) _ GP7(B) _
Stuck Rods NONE # 0

PALEX 91

Date June 18, 1991 Message # 26 (Page 2) Time 1115 Scenario Time 0245

C-13

T-81 Level 90 % T-939 Level 66 % Condensate Storage Tank Level T-2 35 %
Instrument Air Pressure 102 psig
Containment Building Pressure 2 psig Dome Temperature 130 F Humidity 49 %
S/G A Compartment Temperature 130 F Humidity 49 %
S/G B Compartment Temperature 130 F Humidity 49 %
SIRW Tank Level 46 %
WR Containment Pressure (R) 16 psia
Containment Sump Level 94 % Containment Water Level (R) 0 %

SI Tank Level (%) A 56 B 51 C _ D 47
SI Tank Pressure (psig) A 231 B 229 C _ D 226

Panel K-13

SIAS Alarm NO Containment High Pressure Alarm NO Containment High Radiation Alarm YES

C-12

Concentrated Boric Acid Tank Levels T53A 70.2 % T53B 62.6 %
Reactor Vessel DP 9.4 psid
PORV Discharge Temperature 218 F
Pzr Safety Valve Discharge Temp (F) RV-1039 167 RV-1040 167 RV-1041 167
PCP Current (Amps) P-50A 0 P-50B 721 P-50C 730 P-50D 0
PCS Flow 43 % Pressurizer Level (cold) _ %
Loop Thot (F) Loop 1 408 Loop 2 408
Loop Tcold (F) Loop 1 407 Loop 2 408
Tcold Wide range Loop 1 408 Loop 2 407
Subcooling Temp 36 F Press 290 psi
PCS Pressure (R) WR 982 NR 600 psia

	Steam Generator A	Steam Generator B
Level	(WR) 79 % (NR) 79 %	(WR) 78 % (NR) 78 %
Press	267 psia	267 psia
Flow	Steam 0 PPH Feed 0 PPH	Steam 0 PPH Feed 0 PPH

Note: Steam and Feed Flow X 1000000

C-11

AFW Flow to A S/G From P-8A&B 0 From P-8C _ gpm
AFW Flow to B S/G From P-8A&B 0 From P-8C _ gpm
Condenser Vacuum (R) 0
PCP Seal Leakoff Flow P-50A .9 P-50B .9 P-50C .9 P-50D .9

C-04

Diesel Generator Frequency 1-1 0 1-2 0
1-C BUS Voltage 2481 Amps 444
1-D BUS Voltage 2481 Amps 469

C-11 Back C-11A

Containment Area Monitors (R/Hr) RIA-1805 O/S HIGH RIA-1806 _
RIA-1807 O/S HIGH RIA-1808 O/S HIGH
High Range Containment Monitors (R/Hr) RIA-2321 _ RIA-2322 _
Containment Hydrogen Concentration (%) AI-2401R 0 AI-2401L 0
Main Steam Line Gamma (cpm) RIA-2324 _ RIA-2323 _

Stack Monitors RIA-2325 240 cpm RIA-2326 180 cpm RIA-2327 .2 mr/hr

Scenario: PALEX 91 Time 1130

Message No: 27a Scenario Time 0300

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Site Emergency Director

Simulated Plant Conditions:

Message:
(Contingency) - Direct Operators to begin PCS cooldown at 75 degrees F per hour.

For Controller Use Only

Controller Notes:

This message may be omitted if direction to cooldown is already given, or deferred if a solution to repowering LTOP 'B' is close to being found.

Action Expected:

Base decision to cooldown either on:
a) regaining LTOP 'B', or
b) invoking 10 CFR 50.54 (x)

Scenario: PALEX 91 Time 1130

Message No: 27b Scenario Time 0300

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
See alarm and data sheets.

For Controller Use Only

Controller Notes:

Consult the TSC controller on status of cooldown decision.

Action Expected:

Begin cooldown at 75 degrees F per hour when directed by TSC.

PALEX 91

Date June 18, 1991 Message # 27b (Page 1) Time 1130 Scenario Time 0300

C-08

SW Sumps P-7A ON P-7B ON P-7C ON SW Critical Hdr Press A 81 B 81 psig
CCW Pumps P-52A ON P-52B ON P-52C ON FPC Pumps P-51A ON
Fire Pumps P-9A OFF P-9B OFF P-41 OFF P-51B OFF

Containment Cooler Recirc Fans

V1A ON V2A ON V3A ON V4A ON V1B OFF V2B OFF V3B OFF V4B OFF

C-03

CCW Cooler Outlet Temp A __ F B 68 F
Containment Spray Pumps P-54A OFF P-54B OFF P-54C OFF
HPSI Pumps P-66A ON P-66B OFF LPSI Pumps P-67A OFF P-67B OFF

Safety Injection Suction Supply

Train A Train B
CV-3057 (SIRW) OPEN CV-3029 (Sump) CLOSED CV-3031 (SIRW) OPEN CV-3030 (Sump) CLOSED

C-02

CVCS

Letdown **Charging**
Intermediate Press Letdown Temp 149 F Flow 0 gpm
Letdown Line Temp 105 F Line Temp 112 F
Letdown Flow 0 gpm Pumps P-55A OFF P-55B OFF P-55C OFF

Volume Control Tank

Temp 95 F Pressure 20 psi Level 16 % PCP Control Bleedoff Pressure 150 psig

Shutdown Cooling System

SDCS from PCS (R) 77 F SDCS to PCS (R) 77 F

Quench Tank

Temp 126 F Pressure 5 psig Level 72 %

Primary Coolant System

Pressurizer Pressure (R) 980 psia
PCS Tave (R) Loop 1 (TR-0111) 408 Loop 2 (TR-0121) _
Pressurizer Level (R) LRC-0101A 100 % LRC-0101B 100 % LIA-0102A 81 %
Pzr Htr Amps LCC 15 71 LCC 16 71
PORV PRV-1042B OPEN PRV-1043B CLOSED Block Valve MOV-1042A CLOSED MOV-1043A CLOSED
PCPs P-50A OFF P-50B ON P-50C ON P-50D OFF
Reactor Power Level NI-01 1.90E+2 NI-02 1.00E+0 NI-03 1.30E-8 NI-04 1.30E-8
NI-05 3.3E-9 NI-06 _ NI-07 4.1E-2 NI-08 3.1E-9

C-01

AFW System

AFW Pump P-8A OFF P-8B OFF P-8C OFF AFW Pump Amps P-8A 0 P-8C 0 amps
AFW Pump P-8B Steam Pressure 0 psig AFW Disch Press P-8A & P-8B 13 P-8C _ psig

Secondary System

MSIV Bypass MOV-0501 CLOSED MOV-0510 CLOSED MSIV's CV-0501 CLOSED CV-0510 CLOSED
MFP Suction Pressure 15 psig MFP Discharge Pressure A 15 B 15 psi
Moisture Separator Drain Tank Level 44 % Condenser Hotwell Level 79 %
Atmospheric Dump Valves CLOSED Condenser Vacuum -.2 in Hg.
Heater Drain Pump Status P-10A OFF P-10B OFF Gland Seal Condenser Vacuum 14.2 in Hg.
Condensate Pump Status P-2A OFF P-2B OFF

PIP

(Demand Log + Constant, Rod, or Flux/Temp)
Gross MW 0 Net MW -5 Core Exit Thermocouple Temperature __ F
Control Rod Position GP1 _ GP2 _ GP3 _ GP4 _ GP5(P) _ GP6(A) _ GP7(B) _
Stuck Rods NONE # 0

PALEX 91

Date June 18, 1991 Message # 27b (Page 2) Time 1130 Scenario Time 0300

C-13

T-81 Level 90 % T-939 Level 66 % Condensate Storage Tank Level T-2 34 %
Instrument Air Pressure 101 psig
Containment Building Pressure 2 psig Dome Temperature 121 F Humidity 67 %
S/G A Compartment Temperature 121 F Humidity 67 %
S/G B Compartment Temperature 121 F Humidity 67 %
SIRW Tank Level 34 %
WR Containment Pressure (R) 16 psia
Containment Sump Level 102 % Containment Water Level (R) 0 %

SI Tank Level (%) A 56 B 51 C _ D 47
SI Tank Pressure (psig) A 226 B 224 C _ D 221

Panel K-13

SIAS Alarm NO Containment High Pressure Alarm NO Containment High Radiation Alarm YES

C-12

Concentrated Boric Acid Tank Levels T53A 70.2 % T53B 62.6 %
Reactor Vessel DP 9.4 psid
PORV Discharge Temperature 193 F
Pzr Safety Valve Discharge Temp (F) RV-1039 156 RV-1040 156 RV-1041 156
PCP Current (Amps) P-50A 0 P-50B 721 P-50C 730 P-50D 0
PCS Flow 43 % Pressurizer Level (cold) _ %
Loop Thot (F) Loop 1 408 Loop 2 408
Loop Tcold (F) Loop 1 407 Loop 2 408
Tcold Wide range Loop 1 408 Loop 2 407
Subcooling Temp 36 F Press 290 psi
PCS Pressure (R) WR 980 NR 600 psia

	Steam Generator A	Steam Generator B
Level	(WR) 74 % (NR) 74 %	(WR) 73 % (NR) 73 %
Press	267 psia	267 psia
Flow	Steam 0 PPH Feed 0 PPH	Steam 0 PPH Feed 0 PPH

Note: Steam and Feed Flow X 1000000

C-11

AFW Flow to A S/G From P-8A&B 0 From P-8C _ gpm
AFW Flow to B S/G From P-8A&B 0 From P-8C _ gpm
Condenser Vacuum (R) 0
PCP Seal Leakoff Flow P-50A .9 P-50B .9 P-50C .9 P-50D .9

C-04

Diesel Generator Frequency 1-1 0 1-2 0
1-C BUS Voltage 2481 Amps 444
1-D BUS Voltage 2481 Amps 469

C-11 Back C-11A

Containment Area Monitors (R/Hr) RIA-1805 O/S HIGH RIA-1806 _
RIA-1807 O/S HIGH RIA-1808 O/S HIGH
High Range Containment Monitors (R/Hr) RIA-2321 _ RIA-2322 _
Containment Hydrogen Concentration (%) AI-2401R 0 AI-2401L 0
Main Steam Line Gamma (cpm) RIA-2324 _ RIA-2323 _

Stack Monitors RIA-2325 340 cpm RIA-2326 200 cpm RIA-2327 .2 mr/hr

Scenario No: PALEX-91 Time 1130

Message No: 27b Scenario Time 0300

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-01	40	AUX FEEDWATER LOW SUCTION PRESSURE
K-02	25	CONT GAMMA RIA-2321 FAIL
K-02	26	CONT GAMMA RIA-2322 FAIL
K-02	29	MAIN STEAM E-50B RIA-2323 FAIL
K-02	30	MAIN STEAM E-50A RIA-2324 FAIL
K-05	45	PREFERRED AC BUS NO 2 TROUBLE
K-07	59,65	NO PCS PROTECTION
K-09	65	STEAM GEN LO PRESS CONTROL CKT UV
K-09	72	REACTOR TRIP
K-11	26	CIS INITIATED
K-13	49	CONTAINMENT SUMP HI-HI LEVEL
K-13	55	SIRW TANK T-58 HI-LO LEVEL
K-13	62	CONTAINMENT PRESSURE OFF NORMAL
K-13	63	CONTAINMENT HIGH RADIATION
K-13	64	GASEOUS WASTE MONITORING HI RADIATION
K-13	71	RADIATION MONITORING SYSTEM CKT FAILURE

Scenario No: PALEX-91 Time 1130

Message No: 27b Scenario Time 0300

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-13	78	CONT ISO AND SAFETY INJ RIGHT SIDE CONT CKT UV

Scenario: PALEX 91

Time 1145

Message No: 28

Scenario Time 0315

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
Cooldown is in progress at 75 degrees F per hour. See data sheets; alarm status is unchanged.

For Controller Use Only

Controller Notes:

This message and subsequent messages may be deferred based upon status of TSC cooldown decision.

Action Expected:

Continue EOP 4.0/9.0 cooldown actions.

PALEX 91

Date June 18, 1991 Message # 28 (Page 1) Time 1145 Scenario Time 0315

C-08

SW Sumps P-7A ON P-7B ON P-7C ON SW Critical Hdr Press A 81 B 81 psig
CCW Pumps P-52A ON P-52B ON P-52C ON FPC Pumps P-51A ON
Fire Pumps P-9A OFF P-9B OFF P-41 OFF P-51B OFF

Containment Cooler Recirc Fans

V1A ON V2A ON V3A ON V4A ON V1B OFF V2B OFF V3B OFF V4B OFF

C-03

CCW Cooler Outlet Temp A __ F B 64 F
Containment Spray Pumps P-54A OFF P-54B OFF P-54C OFF
HPSI Pumps P-66A ON P-66B OFF LPSI Pumps P-67A OFF P-67B OFF

Safety Injection Suction Supply

Train A Train B
CV-3057 (SIRW) OPEN CV-3029 (Sump) CLOSED CV-3031 (SIRW) OPEN CV-3030 (Sump) CLOSED

C-02

CVCS

Letdown **Charging**
Intermediate Press Letdown Temp 148 F Flow 0 gpm
Letdown Line Temp 105 F Line Temp 109 F
Letdown Flow 0 gpm Pumps P-55A OFF P-55B OFF P-55C OFF

Volume Control Tank

Temp 95 F Pressure 20 psi Level 16 % PCP Control Bleedoff Pressure 150 psig

Shutdown Cooling System

SDCS from PCS (R) 77 F SDCS to PCS (R) 77 F

Quench Tank

Temp 121 F Pressure 5 psig Level 72 %

Primary Coolant System

Pressurizer Pressure (R) 706 psia
PCS Tave (R) Loop 1 (TR-0111) 403 Loop 2 (TR-0121) _
Pressurizer Level (R) LRC-0101A 100 % LRC-0101B 100 % LIA-0102A 86 %
Pzr Htr Amps LCC 15 71 LCC 16 71
PORV PRV-1042B OPEN PRV-1043B CLOSED Block Valve MOV-1042A CLOSED MOV-1043A OPEN
PCPs P-50A OFF P-50B ON P-50C ON P-50D OFF
Reactor Power Level NI-01 1.80E+2 NI-02 1.00E+0 NI-03 1.30E-8 NI-04 1.30E-8
NI-05 2.0E-2 NI-06 _ NI-07 6.5E-2 NI-08 4.5E-2

C-01

AFW System

AFW Pump P-8A OFF P-8B OFF P-8C OFF AFW Pump Amps P-8A 0 P-8C 0 amps
AFW Pump P-8B Steam Pressure 0 psig AFW Disch Press P-8A & P-8B 13 P-8C _ psig

Secondary System

MSIV Bypass MOV-0501 CLOSED MOV-0510 CLOSED MSIV's CV-0501 CLOSED CV-0510 CLOSED
MFP Suction Pressure 15 psig MFP Discharge Pressure A 15 B 15 psi
Moisture Separator Drain Tank Level 44 % Condenser Hotwell Level 79 %
Atmospheric Dump Valves THROT Condenser Vacuum -.2 in Hg.
Heater Drain Pump Status P-10A OFF P-10B OFF Gland Seal Condenser Vacuum 14.2 in Hg.
Condensate Pump Status P-2A OFF P-2B OFF

PIP

(Demand Log + Constant, Rod, or Flux/Temp)
Gross MW 0 Net MW -4 Core Exit Thermocouple Temperature __ F
Control Rod Position GP1 _ GP2 _ GP3 _ GP4 _ GP5(P) _ GP6(A) _ GP7(B) _
Stuck Rods NONE # 0

PALEX 91

Date June 18, 1991 Message # 28 (Page 2) Time 1145 Scenario Time 0315

C-13

T-81 Level 90 % T-939 Level 66 % Condensate Storage Tank Level T-2 34 %
Instrument Air Pressure 104 psig
Containment Building Pressure 2 psig Dome Temperature 120 F Humidity 67 %
S/G A Compartment Temperature 120 F Humidity 67 %
S/G B Compartment Temperature 120 F Humidity 67 %
SIRW Tank Level 32 %
WR Containment Pressure (R) 16 psia
Containment Sump Level 103 % Containment Water Level (R) 0 %

SI Tank Level (%) A 56 B 51 C _ D 47
SI Tank Pressure (psig) A 223 B 221 C _ D 218

Panel K-13

SIAS Alarm NO Containment High Pressure Alarm NO Containment High Radiation Alarm YES

C-12

Concentrated Boric Acid Tank Levels T53A 70.2 % T53B 62.6 %
Reactor Vessel DP 9.4 psid
PORV Discharge Temperature 173 F
Pzr Safety Valve Discharge Temp (F) RV-1039 146 RV-1040 146 RV-1041 146
PCP Current (Amps) P-50A 0 P-50B 723 P-50C 731 P-50D 0
PCS Flow 43 % Pressurizer Level (cold) _ %
Loop Thot (F) Loop 1 404 Loop 2 404
Loop Tcold (F) Loop 1 402 Loop 2 402
Tcold Wide range Loop 1 402 Loop 2 402
Subcooling Temp 36 F Press 290 psi
PCS Pressure (R) WR 706 NR 600 psia

	Steam Generator A	Steam Generator B
Level	(WR) 66 % (NR) 66 %	(WR) 65 % (NR) 65 %
Press	248 psia	248 psia
Flow	Steam .1 PPH Feed 0 PPH	Steam .1 PPH Feed 0 PPH

Note: Steam and Feed Flow X 1000000

C-11

AFW Flow to A S/G From P-8A&B 0 From P-8C _ gpm
AFW Flow to B S/G From P-8A&B 0 From P-8C _ gpm
Condenser Vacuum (R) 0
PCP Seal Leakoff Flow P-50A .9 P-50B .9 P-50C .9 P-50D .9

C-04

Diesel Generator Frequency 1-1 0 1-2 0
1-C BUS Voltage 2483 Amps 341
1-D BUS Voltage 2482 Amps 386

C-11 Back C-11A

Containment Area Monitors (R/Hr) RIA-1805 O/S HIGH RIA-1806 _
RIA-1807 O/S HIGH RIA-1808 O/S HIGH
High Range Containment Monitors (R/Hr) RIA-2321 _ RIA-2322 _
Containment Hydrogen Concentration (%) AI-2401R 0 AI-2401L 0
Main Steam Line Gamma (cpm) RIA-2324 _ RIA-2323 _

Stack Monitors RIA-2325 390 cpm RIA-2326 190 cpm RIA-2327 .2 mr/hr

Scenario: PALEX 91 Time 1200

Message No: 29 Scenario Time 0330

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
Cooldown is in progress at 75 degrees F per hour. See data sheets; alarm status is unchanged.

For Controller Use Only

Controller Notes:

Action Expected:

Continue EOP 4.0/9.0 cooldown actions.

PALEX 91

Date June 18, 1991 Message # 29 (Page 1) Time 1200 Scenario Time 0330

C-08

SW Sumps P-7A ON P-7B ON P-7C ON SW Critical Hdr Press A 81 B 81 psig
CCW Pumps P-52A ON P-52B ON P-52C ON FPC Pumps P-51A ON
Fire Pumps P-9A OFF P-9B OFF P-41 OFF P-51B OFF

Containment Cooler Recirc Fans

V1A ON V2A ON V3A ON V4A ON V1B OFF V2B OFF V3B OFF V4B OFF

C-03

CCW Cooler Outlet Temp A _ F B _ F
Containment Spray Pumps P-54A OFF P-54B OFF P-54C OFF
HPSI Pumps P-66A OFF P-66B OFF LPSI Pumps P-67A OFF P-67B OFF

Safety Injection Suction Supply

Train A Train B
CV-3057 (SIRW) OPEN CV-3029 (Sump) CLOSED CV-3031 (SIRW) OPEN CV-3030 (Sump) CLOSED

C-02

CVCS

Letdown **Charging**
Intermediate Press Letdown Temp 146 F Flow 33 gpm
Letdown Line Temp 104 F Line Temp 70 F
Letdown Flow 0 gpm Pumps P-55A ON P-55B OFF P-55C OFF

Volume Control Tank

Temp 95 F Pressure 20 psi Level 16 % PCP Control Bleedoff Pressure 150 psig

Shutdown Cooling System

SDCS from PCS (R) 77 F SDCS to PCS (R) 77 F

Quench Tank

Temp 121 F Pressure 5 psig Level 72 %

Primary Coolant System

Pressurizer Pressure (R) 698 psia
PCS Tave (R) Loop 1 (TR-0111) 391 Loop 2 (TR-0121) _
Pressurizer Level (R) LRC-0101A 74 % LRC-0101B 74 % LIA-0102A 61 %
Pzr Htr Amps LCC 15 71 LCC 16 71
PORV PRV-1042B OPEN PRV-1043B CLOSED Block Valve MOV-1042A CLOSED MOV-1043A OPEN
PCPs P-50A OFF P-50B ON P-50C ON P-50D OFF
Reactor Power Level NI-01 1.80E+2 NI-02 1.00E+0 NI-03 1.30E-8 NI-04 1.30E-8
NI-05 3.3E-9 NI-06 _ NI-07 3.9E-2 NI-08 3.1E-9

C-01

AFW System

AFW Pump P-8A OFF P-8B ON P-8C OFF AFW Pump Amps P-8A 0 P-8C 0 amps
AFW Pump P-8B Steam Pressure 214 psig AFW Disch Press P-8A & P-8B 1329 P-8C _ psig

Secondary System

MSIV Bypass MOV-0501 CLOSED MOV-0510 CLOSED MSIV's CV-0501 CLOSED CV-0510 CLOSED
MFP Suction Pressure 15 psig MFP Discharge Pressure A 15 B 15 psi
Moisture Separator Drain Tank Level 44 % Condenser Hotwell Level 79 %
Atmospheric Dump Valves THROT Condenser Vacuum -.2 in Hg.
Heater Drain Pump Status P-10A OFF P-10B OFF Gland Seal Condenser Vacuum 14.2 in Hg.
Condensate Pump Status P-2A OFF P-2B OFF

PIP

(Demand Log + Constant, Rod, or Flux/Temp)
Gross MW 0 Net MW -4 Core Exit Thermocouple Temperature __ F
Control Rod Position GP1 _ GP2 _ GP3 _ GP4 _ GP5(P) _ GP6(A) _ GP7(B) _
Stuck Rods NONE # 0

Scenario: PALEX 91 Time 1215

Message No: 30 Scenario Time 0345

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Operators

Simulated Plant Conditions:

Message:
Cooldown is in progress at 75 degrees F per hour. See data sheets; alarm status is unchanged.

For Controller Use Only

Controller Notes:

Last Control Room player message.

Action Expected:

PALEX 91

Date June 18, 1991 Message # 30 (Page 1) Time 1215 Scenario Time 0345

C-08

SW Sumps P-7A ON P-7B ON P-7C ON SW Critical Hdr Press A 81 B 81 psig
CCW Pumps P-52A ON P-52B ON P-52C ON FPC Pumps P-51A ON
Fire Pumps P-9A OFF P-9B OFF P-41 OFF P-51B OFF

Containment Cooler Recirc Fans

V1A ON V2A ON V3A ON V4A ON V1B OFF V2B OFF V3B OFF V4B OFF

C-03

CCW Cooler Outlet Temp A _ F B _ F
Containment Spray Pumps P-54A OFF P-54B OFF P-54C OFF
HPSI Pumps P-66A OFF P-66B OFF LPSI Pumps P-67A OFF P-67B OFF

Safety Injection Suction Supply

Train A Train B
CV-3057 (SIRW) OPEN CV-3029 (Sump) CLOSED CV-3031 (SIRW) OPEN CV-3030 (Sump) CLOSED

C-02

CVCS

Letdown **Charging**
Intermediate Press Letdown Temp 145 F Flow 93 gpm
Letdown Line Temp 104 F Line Temp 70 F
Letdown Flow 0 gpm Pumps P-55A ON P-55B ON P-55C OFF

Volume Control Tank

Temp 95 F Pressure 20 psi Level 16 % PCP Control Bleedoff Pressure 150 psig

Shutdown Cooling System

SDCS from PCS (R) 77 F SDCS to PCS (R) 77 F

Quench Tank

Temp 121 F Pressure 5 psig Level 72 %

Primary Coolant System

Pressurizer Pressure (R) 665 psia
PCS Tave (R) Loop 1 (TR-0111) 377 Loop 2 (TR-0121) _
Pressurizer Level (R) LRC-0101A 24 % LRC-0101B 24 % LIA-0102A 30 %
Pzr Htr Amps LCC 15 0 LCC 16 0
PORV PRV-1042B OPEN PRV-1043B CLOSED Block Valve MOV-1042A CLOSED MOV-1043A OPEN
PCPs P-50A OFF P-50B ON P-50C ON P-50D OFF
Reactor Power Level NI-01 1.70E+2 NI-02 1.00E+0 NI-03 1.30E-8 NI-04 1.30E-8
NI-05 1.9E-2 NI-06 _ NI-07 2.0E-2 NI-08 3.1E-9

C-01

AFW System

AFW Pump P-8A OFF P-8B ON P-8C OFF AFW Pump Amps P-8A 0 P-8C 0 amps
AFW Pump P-8B Steam Pressure 181 psig AFW Disch Press P-8A & P-8B 1274 P-8C _ psig

Secondary System

MSIV Bypass MOV-0501 CLOSED MOV-0510 CLOSED MSIV's CV-0501 CLOSED CV-0510 CLOSED
MFP Suction Pressure 15 psig MFP Discharge Pressure A 15 B 15 psi
Moisture Separator Drain Tank Level 44 % Condenser Hotwell Level 79 %
Atmospheric Dump Valves THROT Condenser Vacuum -.2 in Hg.
Heater Drain Pump Status P-10A OFF P-10B OFF Gland Seal Condenser Vacuum 14.2 in Hg.
Condensate Pump Status P-2A OFF P-2B OFF

PIP

(Demand Log + Constant, Rod, or Flux/Temp)
Gross MW 0 Net MW -3 Core Exit Thermocouple Temperature __ F
Control Rod Position GP1 _ GP2 _ GP3 _ GP4 _ GP5(P) _ GP6(A) _ GP7(B) _
Stuck Rods NONE # 0

PALEX 91

Date June 18, 1991 Message # 30 (Page 2) Time 1215 Scenario Time 0345

C-13

T-81 Level 90 % T-939 Level 66 % Condensate Storage Tank Level T-2 30 %
Instrument Air Pressure 97 psig
Containment Building Pressure 1 psig Dome Temperature 121 F Humidity 56 %
S/G A Compartment Temperature 121 F Humidity 56 %
S/G B Compartment Temperature 121 F Humidity 56 %
SIRW Tank Level 32 %
WR Containment Pressure (R) 16 psia
Containment Sump Level 104 % Containment Water Level (R) 0 %

SI Tank Level (%) A 56 B 51 C _ D 47
SI Tank Pressure (psig) A 222 B 220 C _ D 217

Panel K-13

SIAS Alarm NO Containment High Pressure Alarm NO Containment High Radiation Alarm YES

C-12

Concentrated Boric Acid Tank Levels T53A 70.2 % T53B 62.6 %
Reactor Vessel DP 9.4 psid
PORV Discharge Temperature 148 F
Pzr Safety Valve Discharge Temp (F) RV-1039 134 RV-1040 134 RV-1041 134
PCP Current (Amps) P-50A 0 P-50B 728 P-50C 737 P-50D 0
PCS Flow 43 % Pressurizer Level (cold) _ %
Loop Thot (F) Loop 1 377 Loop 2 377
Loop Tcold (F) Loop 1 376 Loop 2 376
Tcold Wide range Loop 1 376 Loop 2 376
Subcooling Temp 36 F Press 290 psi
PCS Pressure (R) WR 665 NR 600 psia

	Steam Generator A	Steam Generator B
Level	(WR) 44 % (NR) 44 %	(WR) 49 % (NR) 49 %
Press	181 psia	184 psia
Flow	Steam .1 PPH Feed 0 PPH	Steam .1 PPH Feed 0 PPH

Note: Steam and Feed Flow X 1000000

C-11

AFW Flow to A S/G From P-8A&B 86 From P-8C _ gpm
AFW Flow to B S/G From P-8A&B 97 From P-8C _ gpm
Condenser Vacuum (R) 0
PCP Seal Leakoff Flow P-50A .9 P-50B .9 P-50C .9 P-50D .9

C-04

Diesel Generator Frequency 1-1 0 1-2 0
1-C BUS Voltage 2483 Amps 341
1-D BUS Voltage 2483 Amps 277

C-11 Back C-11A

Containment Area Monitors (R/Hr) RIA-1805 O/S HIGH RIA-1806 _
RIA-1807 O/S HIGH RIA-1808 O/S HIGH
High Range Containment Monitors (R/Hr) RIA-2321 _ RIA-2322 _
Containment Hydrogen Concentration (%) AI-2401R 0 AI-2401L 0
Main Steam Line Gamma (cpm) RIA-2324 _ RIA-2323 _

Stack Monitors RIA-2325 340 cpm RIA-2326 190 cpm RIA-2327 .2 mr/hr

Scenario: PALEX 91 Time 1230

Message No: 31 Scenario Time 0400

PALISADES NUCLEAR PLANT

EMERGENCY PREPAREDNESS EXERCISE MESSAGE FORM

Message for: Site Emergency Director

Simulated Plant Conditions:
Time jump to new plant conditions

Message:
Approximately 9 hours have elapsed since event initiation. The fault on Y-20 has been cleared and Y-20 is reenergized; Auxiliary Feedwater Pump P-8C is in service. Shutdown cooling is in service, and PCS cooldown is in progress at 60 degrees F per hour; see attached data and alarm sheets. PCS leakage into containment continues at approximately (continues under controller notes)

For Controller Use Only

Controller Notes:

20 gpm, resulting in an attendant small fission product release which no longer escapes the containment.

Plant player participation ends. Commence critiques. Selected managers will participate in recovery planning (player determined).

Action Expected:

Recovery planning begins.

PALEX 91

Date June 18, 1991 Message # 31 (Page 1) Time 1230 Scenario Time 0400

C-08

SW Sumps P-7A ON P-7B ON P-7C STBY SW Critical Hdr Press A 68 B 68 psig
CCW Pumps P-52A ON P-52B ON P-52C STBY FPC Pumps P-51A ON
Fire Pumps P-9A OFF P-9B OFF P-41 OFF P-51B OFF

Containment Cooler Recirc Fans

V1A ON V2A ON V3A ON V4A ON V1B ON V2B ON V3B ON V4B ON

C-03

CCW Cooler Outlet Temp A 88 F B 88 F
Containment Spray Pumps P-54A OFF P-54B OFF P-54C OFF
HPSI Pumps P-66A OFF P-66B OFF LPSI Pumps P-67A ON P-67B OFF

Safety Injection Suction Supply

Train A Train B
CV-3057 (SIRW) OPEN CV-3029 (Sump) CLOSED CV-3031 (SIRW) OPEN CV-3030 (Sump) CLOSED

C-02

CVCS

Letdown **Charging**
Intermediate Press Letdown Temp 108 F Flow 73 gpm
Letdown Line Temp 160 F Line Temp 224 F
Letdown Flow 48 gpm Pumps P-55A ON P-55B ON P-55C OFF

Volume Control Tank

Temp 95 F Pressure 50 psi Level 83 % PCP Control Bleedoff Pressure 52 psig

Shutdown Cooling System

SDCS from PCS (R) 300 F SDCS to PCS (R) 266 F

Quench Tank

Temp 84 F Pressure 4 psig Level 78 %

Primary Coolant System

Pressurizer Pressure (R) 262 psia
PCS Tave (R) Loop 1 (TR-0111) 300 Loop 2 (TR-0121) 300
Pressurizer Level (R) LRC-0101A 100 % LRC-0101B 100 % LIA-0102A 95 %
Pzr Htr Amps LCC 15 0 LCC 16 0
PORV PRV-1042B OPEN PRV-1043B CLOSED Block Valve MOV-1042A CLOSED MOV-1043A OPEN
PCPs P-50A OFF P-50B ON P-50C ON P-50D OFF
Reactor Power Level NI-01 1.40E+2 NI-02 1.40E+2 NI-03 1.40E-6 NI-04 1.40E-6
NI-05 2.1E-2 NI-06 4.50E-9 NI-07 2.1E-2 NI-08 4.3E-9

C-01

AFW System

AFW Pump P-8A OFF P-8B OFF P-8C OFF AFW Pump Amps P-8A 0 P-8C 0 amps
AFW Pump P-8B Steam Pressure 0 psig AFW Disch Press P-8A & P-8B 15 P-8C 15 psig

Secondary System

MSIV Bypass MOV-0501 CLOSED MOV-0510 CLOSED MSIV's CV-0501 CLOSED CV-0510 CLOSED
MFP Suction Pressure 15 psig MFP Discharge Pressure A 15 B 15 psi
Moisture Separator Drain Tank Level 75 % Condenser Hotwell Level 88 %
Atmospheric Dump Valves CLOSED Condenser Vacuum -.2 in Hg.
Heater Drain Pump Status P-10A OFF P-10B OFF Gland Seal Condenser Vacuum 0 in Hg.
Condensate Pump Status P-2A OFF P-2B OFF

PIP

(Demand Log + Constant, Rod, or Flux/Temp)
Gross MW 0 Net MW -4 Core Exit Thermocouple Temperature 299.7 F
Control Rod Position GP1 0 GP2 0 GP3 0 GP4 0 GP5(P) 1 GP6(A) 0 GP7(B) 0
Stuck Rods NONE # 0

PALEX 91

Date June 18, 1991 Message # 31 (Page 2) Time 1230 Scenario Time 0400

C-13

T-81 Level 90 % T-939 Level 66 % Condensate Storage Tank Level T-2 27 %
Instrument Air Pressure 97 psig
Containment Building Pressure 0 psig Dome Temperature 84 F Humidity 47 %
S/G A Compartment Temperature 84 F Humidity 47 %
S/G B Compartment Temperature 84 F Humidity 47 %
SIRW Tank Level 31 %
WR Containment Pressure (R) 14 psia
Containment Sump Level 105 % Containment Water Level (R) 0 %

SI Tank Level (%) A 50 B 50 C 48 D 50
SI Tank Pressure (psig) A 210 B 209 C 212 D 209

Panel K-13

SIAS Alarm NO Containment High Pressure Alarm NO Containment High Radiation Alarm NO

C-12

Concentrated Boric Acid Tank Levels T53A 70.2 % T53B 62.6 %
Reactor Vessel DP 9.7 psid
PORV Discharge Temperature 85 F
Pzr Safety Valve Discharge Temp (F) RV-1039 85 RV-1040 85 RV-1041 85
PCP Current (Amps) P-50A 0 P-50B 743 P-50C 751 P-50D 0
PCS Flow 43 % Pressurizer Level (cold) 94.9 %
Loop Thot (F) Loop 1 300 Loop 2 300
Loop Tcold (F) Loop 1 299 Loop 2 300
Tcold Wide range Loop 1 300 Loop 2 299
Subcooling Temp -119 F Press -540 psi
PCS Pressure (R) WR 262 NR 262 psia

	Steam Generator A		Steam Generator B	
Level	(WR) 63 %	(NR) 63 %	(WR) 63 %	(NR) 63 %
Press	66 psia		66 psia	
Flow	Steam 0 PPH Feed 0 PPH		Steam 0 PPH Feed 0 PPH	

Note: Steam and Feed Flow X 1000000

C-11

AFW Flow to A S/G From P-8A&B 0 From P-8C 0 gpm
AFW Flow to B S/G From P-8A&B 0 From P-8C 0 gpm
Condenser Vacuum (R) 0
PCP Seal Leakoff Flow P-50A .4 P-50B .4 P-50C .4 P-50D .4

C-04

Diesel Generator Frequency 1-1 0 1-2 0
1-C BUS Voltage 2482 Amps 408
1-D BUS Voltage 2483 Amps 289

C-11 Back C-11A

Containment Area Monitors (R/Hr) RIA-1805 O/S HIGH RIA-1806 _
RIA-1807 O/S HIGH RIA-1808 O/S HIGH
High Range Containment Monitors (R/Hr) RIA-2321 _ RIA-2322 _
Containment Hydrogen Concentration (%) AI-2401R 0 AI-2401L 0
Main Steam Line Gamma (cpm) RIA-2324 _ RIA-2323 _

Stack Monitors RIA-2325 340 cpm RIA-2326 180 cpm RIA-2327 .2 mr/hr

Scenario No: PALEX-91 Time 1230

Message No: 31 Scenario Time 0400

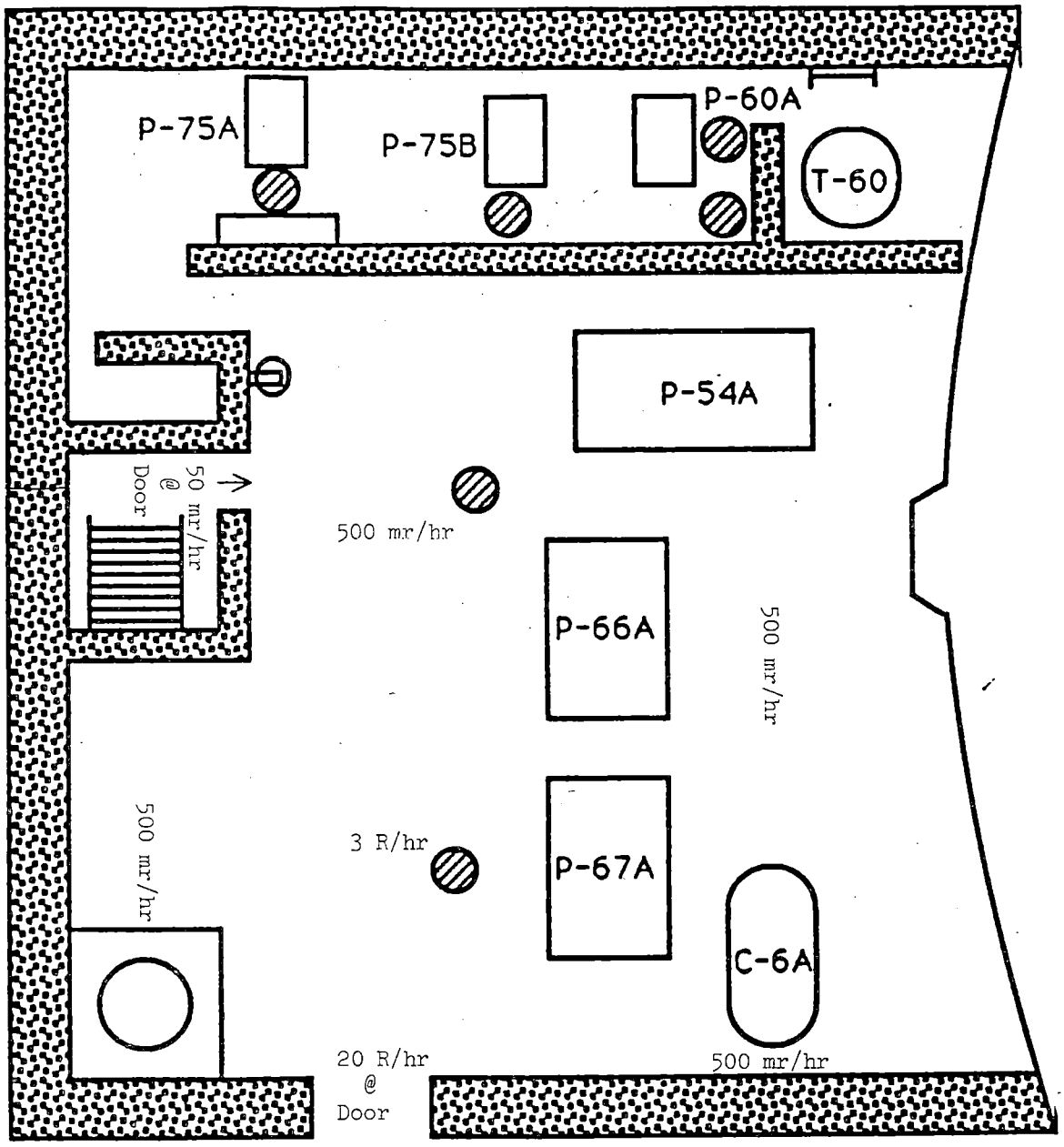
PALISADES NUCLEAR PLANT

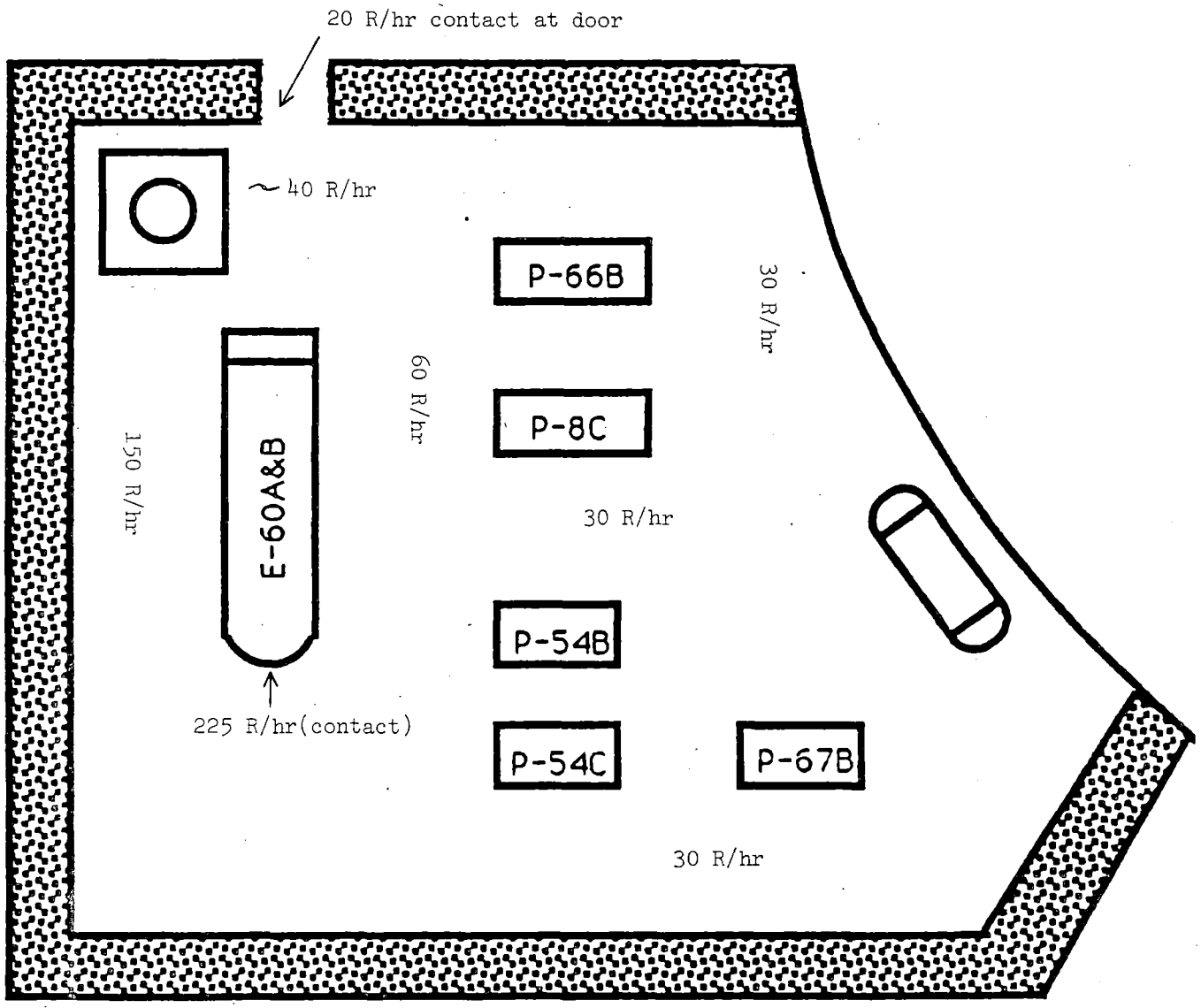
EMERGENCY PREPAREDNESS EXERCISE ALARM SHEET

ALARM PANEL	Annunc. Number	Alarm Window Description
K-02	25	CONT GAMMA RIA-2321 FAIL
K-07	59,65	NO PCS PROTECTION
K-11	20	LOW SUB-COOLING MARGIN
K-13	49	CONT SUMP HI-HI LEVEL
K-13	55	SIRW TANK T-58 HIGH-LO LEVEL
K-13	64	GASEOUS WASTE MONITORING HI RADIATION

REENTRY/RECOVERY

The following maps depict anticipated dose rates in East and West Engineering Safeguard Rooms once the plant is placed on Shutdown Cooling. The major source of the dose rates is contributed from the E-6ØA&B heat exchanger located in the west room and associated piping.


P-75A
P-75B
P-60A
T-60
P-54A
50 mr/hr @ Door
500 mr/hr
P-66A
500 mr/hr
500 mr/hr
3 R/hr
P-67A
C-6A
20 R/hr @ Door
500 mr/hr


20 R/hr contact at door
~40 R/hr
P-66B
30 R/hr
60 R/hr
P-8C
150 R/hr
E-60A&B
30 R/hr
P-54B
225 R/hr(contact)
P-54C
P-67B
30 R/hr

CFMS OPERATIONS DATA

SHAVPAL1 T S C S T A T U S P A G E PALEX 91

Time 0800 Scenario Time -0030 Message # 1 140

C-13

Condensate Storage Tank Level T-2 60 %
Instrument Air Pressure ___ psig
(15) Containment Building Pressure ___ psig
(16) S/G A Compartment Temperature ___ F
S/G A COMPARTMENT Humidity ___ %
(16) S/G B Compartment Temperature ___ F
S/G B Humidity ___ %
(16) Dome Temperature 101 F
(11) SIRW Tank Level 96 %
(15) WR Containment Pressure (R) 15 psia
(14) Containment Sump Level 0 %
(14) Containment Water Level (R) ___ %
(22) SI Tank Level (%)
A 56 B 51 C 51 D 47
SI Tank Pressure (psig)
A 215 B 213 C 211 D 210
(21) SIAS Alarm NO

C-12

Concentrated Boric Acid Tank Levels
T53A 97.5 %
T53B 100 %
Reactor Vessel DP ___ psid
(12) PORV Discharge Temperature ___ F
(13) Pzr Safety Valve Discharge Temp (F)
RV-1039 ___ F
RV-1040 ___ F
RV-1041 ___ F

C-12

PCP Current (Amps)
P-50A 622 P-50B 642
P-50C 649 P-50D 625
(6) PCS Flow ___ %
(3) Thot (F) Loop 1 581F
Loop 2 581F
(2) Tcold (F) Loop 1A 536F
Loop 2A 536F
Loop 1B 536F
Loop 2B 536F
(5) Subcooling 59F ___ PSIA
(7) PCS WR Pressure (R) 2061 PSIA
(7) PCS NR PRESSURE (R) 600 PSIA
(30) S/G A LEVEL WR 63 %
(30) S/G A LEVEL (R) ___ %
(30) S/G A PRESS 752 psia
S/G A STM FLW(R) 5.4 X10**6 PPH
S/G A FD FLW (R) 5.4 X10**6 PPH
(30) S/G B LEVEL WR 63 %
(30) S/G B LEVEL (R) ___ %
(30) S/G B PRESS 752 psia
S/G B STM FLW(R) 5.4 X10**6 PPH
S/G B FD FLW (R) 5.4 X10**6 PPH

PANEL K-13

(20) CONTAINMENT HIGH PRESS
NO

(20) Containment High Radiation
NO

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 0800 Scenario Time -0030 Message # 1 141

C-01

MFP Suction Pressure	___ psig
MFP A Discharge Pressure	1087 psig
MFP B Discharge Pressure	1087 psig
AFW Pump P-8C Amperes	___ AMPS
AFW Disch Press P-8C	15 psig
AFW Pump P-8A Amperes	___ AMPS
AFW PUMP P8-B Steam Pressure	0 psig
AFW Disch Press P-8A & P-8B	15 psig
Moisture SEP Drain Tank Level	___ %
Condensor Hotwell Level	58 %
Condensor Vacuum	26.5 in Hg.
Gland Seal Condensor Vacuum	___ in Hg.
Atmospheric Dump Valves	CLOSED

AFW Pump P-8A OFF P-8B OFF P-8C OFF
Heater Drain Pump P-10A ___ P-10B ___
Condensate Pump P-2A ON P-2B ON

C-11

(31) AFW FLOW TO SGA
FROM P8A,B 0 From P-8C 0 gpm
(31) AFW FLOW TO SGB
FROM P-8A&B 0 From P-8C 0 gpm

Condensor Vacuum (R)	27 IN.HG.
PCP A Leak-off Flow (R)	___ GPM
PCP B Leak-off Flow (R)	___ GPM
PCP C Leak-off Flow (R)	___ GPM
PCP D Leak-off Flow (R)	___ GPM

C-04

(32) D/G Freq 1-1 ____ 1-2 ____
(32) 1-C BUS VOLTS ____ Amps ____
(32) 1-D BUS VOLTS ____ Amps ____

C-11 BACK C-11A

(17) Containment Area Monitors

RIA-1805	1.90E-2 R/Hr
RIA-1806	2.00E-2 R/Hr
RIA-1807	1.20E-1 R/Hr
RIA-1808	8.00E-2 R/Hr

(17) High Range Containment Monitors

RIA-2321	???? R/Hr
RIA-2322	???? R/Hr

(19) Containment Hydrogen Concentration

AI-2401R	???? (%)
AI-2401L	???? (%)

(30) Main Steam Line Gamma

RIA-2324	2.30E+1 CPM
RIA-2323	2.50E+1 CPM

EQUIPMENT STATUS:

1. SIGNIFICANT EQUIP OUTAGES (INOPERABLE EQUIPMENT)
2. SURVEILLANCE DUE/PROGRESS
3. ABNORMAL ELECTRICAL LINEUPS OR OUTAGES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 0800 Scenario Time -0030 Message # 1 142

C-08

SW Pumps P-7A ___ P-7B ___ P-7C ___
CCW Pumps P-52A ___ P-52B ___ P-52C ___
FPC Pumps P-51A ___ P-51B ___

CONTAINMENT COOLER RECIRC FANS

V1A ON V2A ON V3A ON V4A ON
V1B ___ V2B ___ V3B ___ V4B ___

C-03

(23) HPSI Pumps P-66A OFF P-66B OFF
(24) LPSI Pumps P-67A OFF P-67B OFF
(18) Containment Spray Pumps
P-54A OFF P-54B OFF P-54C OFF
(27) HPSIA, LPSIA, SPRAY A SUCTION
CV-3057(SIRWT) CV-3029(SUMP)
OPEN CLOSED

(27) HPSIB, LPSIB, SPRAY B SUCTION
CV-3031 (SIRW) CV-3030 (Sump)
OPEN CLOSED

C-02

Intermediate Press Letdown Temp ___ F
Charging Line Temperature ___ F
Letdown Line Temp ___ F
SDCS from PCS (R) ___ F
SDCS to PCS (R) 77 F

C-02

(10) VCT Temp 107 F
(10) VCT Pressure 45 psi
(10) VCT Level 68 %
PCP Control Bleedoff Pressure ___ psig
(26) Letdown Flow 40 gpm
(26) Charging Flow 50 gpm
(9) Quench Tank Temp ___ F
(9) Quench TANK Pressure 4 psig
(9) QUENCH TANK Level 69 %
(7) Pressurizer Pressure (R) 2061 psia
(8) PZR Level (R) LT0102A 47 %
LT0103 46.7 %
(12) PORV PRV-1042B _____ 1043B _____
(12) BLOCK MOV-1042A CLOSED 1043A CLOSED
CHARGING PUMPS
P55A ON P55B OFF P55C OFF
(6) PCPS P50A ON P50B ON P50C ON P50D ON
PZR HTR AMPS LC15 141 LCC 16 141
(1) PCS TAVE (R) LOOP1(TR-0111) 559 F
LOOP2(TR-0121) 559 F
(25) REACTOR POWER LEVEL
NI1 1.00E+0 cps NI3 1.00E+2 % NI7 ___ %
NI2 1.00E+0 cps NI4 1.00E+2 % NI8 ___ %
NI-05 98 % NI-09 ___ %
NI-06 1.00E+2 % NI-10 ___ %

PIP
(DEMAND LOG+CONSTANT,ROD,OR FLUX/TEMP)
Gross MW ____
Net MW ____
(28) Control Rod Position
GP1 131 GP2 131 GP3 131 GP4 131
GP6(A) 131 GP7(B) 131
Stuck Rods NONE # __
Core Exit Temp 584.5 F

SHAVPAL1 T S C S T A T U S P A G E PALEX 91

Time 0841 Scenario Time 0011 Message # 3 140

C-13

Condensate Storage Tank Level T-2 57 %
Instrument Air Pressure ___ psig
(15) Containment Building Pressure ___ psig
(16) S/G A Compartment Temperature ___ F
S/G A COMPARTMENT Humidity ___ %
(16) S/G B Compartment Temperature ___ F
S/G B Humidity ___ %
(16) Dome Temperature 103 F
(11) SIRW Tank Level 96 %
(15) WR Containment Pressure (R) 15 psia
(14) Containment Sump Level 6 %
(14) Containment Water Level (R) ___ %
(22) SI Tank Level (%)
A 56 B 51 C 51 D 47
SI Tank Pressure (psig)
A 215 B 213 C 211 D 210
(21) SIAS Alarm NO

C-12

Concentrated Boric Acid Tank Levels
T53A 97.5 %
T53B 100 %
Reactor Vessel DP ___ psid
(12) PORV Discharge Temperature ___ F
(13) Pzr Safety Valve Discharge Temp (F)
RV-1039 ___ F
RV-1040 ___ F
RV-1041 ___ F

C-12

PCP Current (Amps)
P-50A 621 P-50B 640
P-50C 647 P-50D 623
(6) PCS Flow ___ %
(3) Thot (F) Loop 1 549F
Loop 2 549F
(2) Tcold (F) Loop 1A 540F
Loop 2A 540F
Loop 1B 540F
Loop 2B 540F
(5) Subcooling 79F ___ PSIA
(7) PCS WR Pressure (R) 1884 PSIA
(7) PCS NR PRESSURE (R) 600 PSIA
(30) S/G A LEVEL WR 48 %
(30) S/G A LEVEL (R) ___ %
(30) S/G A PRESS 918 psia
S/G A STM FLW(R) 1.3 X10**6 PPH
S/G A FD FLW (R) 1.4 X10**6 PPH
(30) S/G B LEVEL WR 48 %
(30) S/G B LEVEL (R) ___ %
(30) S/G B PRESS 918 psia
S/G B STM FLW(R) 1.3 X10**6 PPH
S/G B FD FLW (R) 1.4 X10**6 PPH

PANEL K-13

(20) CONTAINMENT HIGH PRESS
NO

(20) Containment High Radiation
NO

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 0841 Scenario Time 0011 Message # 3 141

C-01

MFP Suction Pressure	___ psig
MFP A Discharge Pressure	933 psig
MFP B Discharge Pressure	537 psig
AFW Pump P-8C Amperes	___ AMPS
AFW Disch Press P-8C	15 psig
AFW Pump P-8A Amperes	___ AMPS
AFW PUMP P8-B Steam Pressure	0 psig
AFW Disch Press P-8A & P-8B	15 psig
Moisture SEP Drain Tank Level	___ %
Condensor Hotwell Level	51 %
Condensor Vacuum	28.1 in Hg.
Gland Seal Condensor Vacuum	___ in Hg.
Atmospheric Dump Valves	THROT

AFW Pump P-8A OFF P-8B OFF P-8C OFF
Heater Drain Pump P-10A ___ P-10B ___
Condensate Pump P-2A ON P-2B ON

C-11

(31) AFW FLOW TO SGA
FROM P8A,B 0 From P-8C 165 gpm
(31) AFW FLOW TO SGB
FROM P-8A&B 0 From P-8C 165 gpm

Condensor Vacuum (R)	28 IN.HG.
PCP A Leak-off Flow (R)	___ GPM
PCP B Leak-off Flow (R)	___ GPM
PCP C Leak-off Flow (R)	___ GPM
PCP D Leak-off Flow (R)	___ GPM

C-04

(32) D/G Freq 1-1 ____ 1-2 ____
(32) 1-C BUS VOLTS ____ Amps ____
(32) 1-D BUS VOLTS ____ Amps ____

C-11 BACK C-11A

(17) Containment Area Monitors

RIA-1805	2.55E+2 R/Hr
RIA-1806	2.48E+2 R/Hr
RIA-1807	2.61E+2 R/Hr
RIA-1808	2.68E+2 R/Hr

(17) High Range Containment Monitors

RIA-2321	???? R/Hr
RIA-2322	???? R/Hr

(19) Containment Hydrogen Concentration

AI-2401R	???? (%)
AI-2401L	???? (%)

(30) Main Steam Line Gamma

RIA-2324	2.50E+1 CPM
RIA-2323	2.60E+1 CPM

EQUIPMENT STATUS:

1. SIGNIFICANT EQUIP OUTAGES (INOPERABLE EQUIPMENT)
2. SURVEILLANCE DUE/PROGRESS
3. ABNORMAL ELECTRICAL LINEUPS OR OUTAGES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 0841 Scenario Time 0011 Message # 3 142

C-08

SW Pumps P-7A ___ P-7B ___ P-7C ___
CCW Pumps P-52A ___ P-52B ___ P-52C ___
FPC Pumps P-51A ___ P-51B ___

CONTAINMENT COOLER RECIRC FANS

V1A ON V2A ON V3A ON V4A ON
V1B ___ V2B ___ V3B ___ V4B ___

C-03

(23) HPSI Pumps P-66A OFF P-66B OFF
(24) LPSI Pumps P-67A OFF P-67B OFF
(18) Containment Spray Pumps
P-54A OFF P-54B OFF P-54C OFF
(27) HPSIA, LPSIA, SPRAY A SUCTION
CV-3057(SIRWT) CV-3029(SUMP)
OPEN CLOSED

(27) HPSIB, LPSIB, SPRAY B SUCTION
CV-3031 (SIRW) CV-3030 (Sump)
OPEN CLOSED

C-02

Intermediate Press Letdown Temp ___ F
Charging Line Temperature ___ F
Letdown Line Temp ___ F
SDCS from PCS (R) ___ F
SDCS to PCS (R) 77 F

C-02

(10) VCT Temp 105 F
(10) VCT Pressure 24 psi
(10) VCT Level 38 %
PCP Control Bleedoff Pressure ___ psig
(26) Letdown Flow 0 gpm
(26) Charging Flow 133 gpm
(9) Quench Tank Temp ___ F
(9) Quench TANK Pressure 4 psig
(9) QUENCH TANK Level 69 %
(7) Pressurizer Pressure (R) 1884 psia
(8) PZR Level (R) LT0102A 35 %
LT0103 35.1 %
(12) PORV PRV-1042B _____ 1043B _____
(12) BLOCK MOV-1042A CLOSED 1043A CLOSED
CHARGING PUMPS
P55A ON P55B ON P55C ON
(6) PCPS P50A ON P50B ON P50C ON P50D ON
PZR HTR AMPS LC15 0 LCC 16 0
(1) PCS TAVE (R) LOOP1(TR-0111) 545 F
LOOP2(TR-0121) 545 F
(25) REACTOR POWER LEVEL
NI1 1.00E+0 cps NI3 5.80E-1 % NI7 ___ %
NI2 1.00E+0 cps NI4 5.30E-1 % NI8 ___ %
NI-05 .6 % NI-09 ___ %
NI-06 5.20E-1 % NI-10 ___ %

PIP
(DEMAND LOG+CONSTANT,ROD,OR FLUX/TEMP)
Gross MW ____
Net MW ____
(28) Control Rod Position
GP1 0 GP2 0 GP3 0 GP4 0
GP6(A) 0 GP7(B) 0
Stuck Rods NONE # __
Core Exit Temp 549.4 F

Time 0845 Scenario Time 0015 Message # 5 140

C-13

Condensate Storage Tank Level T-2 64 %
Instrument Air Pressure ___ psig
(15) Containment Building Pressure ___ psig
(16) S/G A Compartment Temperature ___ F
S/G A COMPARTMENT Humidity ___ %
(16) S/G B Compartment Temperature ___ F
S/G B Humidity ___ %
(16) Dome Temperature 106 F
(11) SIRW Tank Level 96 %
(15) WR Containment Pressure (R) 16 psia
(14) Containment Sump Level 11 %
(14) Containment Water Level (R) ___ %
(22) SI Tank Level (%)
A 56 B 51 C 51 D 47
SI Tank Pressure (psig)
A 214 B 213 C 211 D 210
(21) SIAS Alarm NO

C-12

Concentrated Boric Acid Tank Levels
T53A 97.5 %
T53B 100 %
Reactor Vessel DP ___ psid
(12) PORV Discharge Temperature ___ F
(13) Pzr Safety Valve Discharge Temp (F)
RV-1039 ___ F
RV-1040 ___ F
RV-1041 ___ F

C-12

PCP Current (Amps)
P-50A 622 P-50B 642
P-50C 649 P-50D 625
(6) PCS Flow ___ %
(3) Thot (F) Loop 1 535F
Loop 2 535F
(2) Tcold (F) Loop 1A 534F
Loop 2A 534F
Loop 1B 534F
Loop 2B 534F
(5) Subcooling 76F ___ PSIA
(7) PCS WR Pressure (R) 1673 PSIA
(7) PCS NR PRESSURE (R) 600 PSIA
(30) S/G A LEVEL WR 49 %
(30) S/G A LEVEL (R) ___ %
(30) S/G A PRESS 907 psia
S/G A STM FLW(R) .1 X10**6 PPH
S/G A FD FLW (R) 0 X10**6 PPH
(30) S/G B LEVEL WR 49 %
(30) S/G B LEVEL (R) ___ %
(30) S/G B PRESS 907 psia
S/G B STM FLW(R) .1 X10**6 PPH
S/G B FD FLW (R) 0 X10**6 PPH

PANEL K-13

(20) CONTAINMENT HIGH PRESS
NO

(20) Containment High Radiation
NO

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 0845 Scenario Time 0015 Message # 5 141

C-01

MFP Suction Pressure	___ psig
MFP A Discharge Pressure	558 psig
MFP B Discharge Pressure	558 psig
AFW Pump P-8C Amperes	___ AMPS
AFW Disch Press P-8C	1150 psig
AFW Pump P-8A Amperes	___ AMPS
AFW PUMP P8-B Steam Pressure	0 psig
AFW Disch Press P-8A & P-8B	16 psig
Moisture SEP Drain Tank Level	___ %
Condensor Hotwell Level	71 %
Condensor Vacuum	28.1 in Hg.
Gland Seal Condensor Vacuum	___ in Hg.
Atmospheric Dump Valves	CLOSED

AFW Pump P-8A OFF P-8B OFF P-8C ON
Heater Drain Pump P-10A ___ P-10B ___
Condensate Pump P-2A ON P-2B ON

C-11

(31) AFW FLOW TO SGA
FROM P8A,B 0 From P-8C 165 gpm
(31) AFW FLOW TO SGB
FROM P-8A&B 0 From P-8C 165 gpm

Condensor Vacuum (R)	28 IN.HG.
PCP A Leak-off Flow (R)	___ GPM
PCP B Leak-off Flow (R)	___ GPM
PCP C Leak-off Flow (R)	___ GPM
PCP D Leak-off Flow (R)	___ GPM

C-04

(32) D/G Freq 1-1 ____ 1-2 ____
(32) 1-C BUS VOLTS ____ Amps ____
(32) 1-D BUS VOLTS ____ Amps ____

C-11 BACK C-11A

(17) Containment Area Monitors

RIA-1805	3.20E+3 R/Hr
RIA-1806	3.30E+3 R/Hr
RIA-1807	4.50E+3 R/Hr
RIA-1808	3.60E+3 R/Hr

(17) High Range Containment Monitors

RIA-2321	???? R/Hr
RIA-2322	???? R/Hr

(19) Containment Hydrogen Concentration

AI-2401R	???? (%)
AI-2401L	???? (%)

(30) Main Steam Line Gamma

RIA-2324	2.50E+1 CPM
RIA-2323	2.60E+1 CPM

EQUIPMENT STATUS:

1. SIGNIFICANT EQUIP OUTAGES (INOPERABLE EQUIPMENT)
2. SURVEILLANCE DUE/PROGRESS
3. ABNORMAL ELECTRICAL LINEUPS OR OUTAGES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 0845 Scenario Time 0015 Message # 5 142

C-08

SW Pumps P-7A ___ P-7B ___ P-7C ___
CCW Pumps P-52A ___ P-52B ___ P-52C ___
FPC Pumps P-51A ___ P-51B ___

CONTAINMENT COOLER RECIRC FANS

V1A ON V2A ON V3A ON V4A ON
V1B ___ V2B ___ V3B ___ V4B ___

C-03

(23) HPSI Pumps P-66A OFF P-66B OFF
(24) LPSI Pumps P-67A OFF P-67B OFF
(18) Containment Spray Pumps
P-54A OFF P-54B OFF P-54C OFF
(27) HPSIA, LPSIA, SPRAY A SUCTION
CV-3057(SIRWT) CV-3029(SUMP)
OPEN CLOSED

(27) HPSIB, LPSIB, SPRAY B SUCTION
CV-3031 (SIRW) CV-3030 (Sump)
OPEN CLOSED

C-02

Intermediate Press Letdown Temp ___ F
Charging Line Temperature ___ F
Letdown Line Temp ___ F
SDCS from PCS (R) ___ F
SDCS to PCS (R) 77 F

C-02

(10) VCT Temp 103 F
(10) VCT Pressure 20 psi
(10) VCT Level 16 %
PCP Control Bleedoff Pressure ___ psig
(26) Letdown Flow 0 gpm
(26) Charging Flow 133 gpm
(9) Quench Tank Temp ___ F
(9) Quench TANK Pressure 4 psig
(9) QUENCH TANK Level 69 %
(7) Pressurizer Pressure (R) 1673 psia
(8) PZR Level (R) LT0102A 18 %
LT0103 18 %
(12) PORV PRV-1042B _____ 1043B _____
(12) BLOCK MOV-1042A CLOSED 1043A CLOSED
CHARGING PUMPS
P55A ON P55B ON P55C ON
(6) PCPS P50A ON P50B ON P50C ON P50D ON
PZR HTR AMPS LC15 0 LCC 16 0
(1) PCS TAVE (R) LOOP1(TR-0111) 534 F
LOOP2(TR-0121) 534 F
(25) REACTOR POWER LEVEL
NI1 1.00E+0 cps NI3 3.90E-3 % NI7 ___ %
NI2 1.00E+0 cps NI4 3.60E-3 % NI8 ___ %
NI-05 2.4E-2 % NI-09 ___ %
NI-06 3.10E-2 % NI-10 ___ %

PIP
(DEMAND LOG+CONSTANT,ROD,OR FLUX/TEMP)
Gross MW ____
Net MW ____
(28) Control Rod Position
GP1 0 GP2 0 GP3 0 GP4 0
GP6(A) 0 GP7(B) 0
Stuck Rods NONE # __
Core Exit Temp 534.8 F

SHAVPAL1 T S C S T A T U S P A G E PALEX 91

Time 0847 Scenario Time 0017 Message # 7 140

C-13

Condensate Storage Tank Level T-2 65 %
Instrument Air Pressure ___ psig
(15) Containment Building Pressure ___ psig
(16) S/G A Compartment Temperature ___ F
S/G A COMPARTMENT Humidity ___ %
(16) S/G B Compartment Temperature ___ F
S/G B Humidity ___ %
(16) Dome Temperature 106 F
(11) SIRW Tank Level ???? %
(15) WR Containment Pressure (R) 16 psia
(14) Containment Sump Level 12 %
(14) Containment Water Level (R) ___ %
(22) SI Tank Level (%)
A 56 B 51 C ???? D 47
SI Tank Pressure (psig)
A 214 B 213 C ???? D 210
(21) SIAS Alarm YES

C-12

Concentrated Boric Acid Tank Levels
T53A 97.5 %
T53B 100 %
Reactor Vessel DP ___ psid
(12) PORV Discharge Temperature ___ F
(13) Pzr Safety Valve Discharge Temp (F)
RV-1039 ___ F
RV-1040 ___ F
RV-1041 ___ F

C-12

PCP Current (Amps)
P-50A 622 P-50B 641
P-50C 649 P-50D 624
(6) PCS Flow ___ %
(3) Thot (F) Loop 1 535F
Loop 2 535F
(2) Tcold (F) Loop 1A 534F
Loop 2A 534F
Loop 1B 534F
Loop 2B 534F
(5) Subcooling 61F ___ PSIA
(7) PCS WR Pressure (R) 1504 PSIA
(7) PCS NR PRESSURE (R) 600 PSIA
(30) S/G A LEVEL WR 48 %
(30) S/G A LEVEL (R) ___ %
(30) S/G A PRESS 907 psia
S/G A STM FLW(R) .1 X10**6 PPH
S/G A FD FLW (R) 0 X10**6 PPH
(30) S/G B LEVEL WR 48 %
(30) S/G B LEVEL (R) ___ %
(30) S/G B PRESS ???? psia
S/G B STM FLW(R) ???? X10**6 PPH
S/G B FD FLW (R) ???? X10**6 PPH

PANEL K-13

(20) CONTAINMENT HIGH PRESS
NO

(20) Containment High Radiation
NO

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 0847 | Scenario Time 0017 | Message # 7 | 141

C-01

MFP Suction Pressure	___ psig
MFP A Discharge Pressure	558 psig
MFP B Discharge Pressure	558 psig
AFW Pump P-8C Amperes	___ AMPS
AFW Disch Press P-8C	???? psig
AFW Pump P-8A Amperes	___ AMPS
AFW PUMP P8-B Steam Pressure	0 psig
AFW Disch Press P-8A & P-8B	16 psig
Moisture SEP Drain Tank Level	___ %
Condensor Hotwell Level	67 %
Condensor Vacuum	28.1 in Hg.
Gland Seal Condensor Vacuum	___ in Hg.
Atmospheric Dump Valves	CLOSED

AFW Pump	P-8A OFF	P-8B OFF	P-8C ????
Heater Drain Pump	P-10A ___	P-10B ___	
Condensate Pump	P-2A ON	P-2B ON	

C-11

(31) AFW FLOW TO SGA
FROM P8A,B 0 From P-8C ???? gpm

(31) AFW FLOW TO SGB
FROM P-8A&B 0 From P-8C ???? gpm

Condensor Vacuum (R)	28 IN.HG.
PCP A Leak-off Flow (R)	___ GPM
PCP B Leak-off Flow (R)	___ GPM
PCP C Leak-off Flow (R)	___ GPM
PCP D Leak-off Flow (R)	___ GPM

C-04

(32) D/G Freq 1-1	____	1-2	____
(32) 1-C BUS VOLTS	____	Amps	____
(32) 1-D BUS VOLTS	____	Amps	____

C-11 BACK C-11A

(17) Containment Area Monitors

RIA-1805	6.50E+3 R/Hr
RIA-1806	???? R/Hr
RIA-1807	7.30E+3 R/Hr
RIA-1808	6.80E+3 R/Hr

(17) High Range Containment Monitors

RIA-2321	???? R/Hr
RIA-2322	???? R/Hr

(19) Containment Hydrogen Concentration

AI-2401R	???? (%)
AI-2401L	???? (%)

(30) Main Steam Line Gamma

RIA-2324	???? CPM
RIA-2323	???? CPM

EQUIPMENT STATUS:

1. SIGNIFICANT EQUIP OUTAGES (INOPERABLE EQUIPMENT)
2. SURVEILLANCE DUE/PROGRESS
3. ABNORMAL ELECTRICAL LINEUPS OR OUTAGES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 0847 Scenario Time 0017 Message # 7 142

C-08

SW Pumps P-7A ___ P-7B ___ P-7C ___
CCW Pumps P-52A ___ P-52B ___ P-52C ___
FPC Pumps P-51A ___ P-51B ___

CONTAINMENT COOLER RECIRC FANS

V1A ???? V2A ???? V3A ???? V4A ON
V1B ___ V2B ___ V3B ___ V4B ___

C-03

(23) HPSI Pumps P-66A ???? P-66B ON
(24) LPSI Pumps P-67A ???? P-67B ON
(18) Containment Spray Pumps
P-54A ???? P-54B OFF P-54C OFF
(27) HPSIA, LPSIA, SPRAY A SUCTION
CV-3057(SIRWT) CV-3029(SUMP)
???? ????

(27) HPSIB, LPSIB, SPRAY B SUCTION
CV-3031 (SIRW) CV-3030 (Sump)
OPEN CLOSED

C-02

Intermediate Press Letdown Temp ___ F
Charging Line Temperature ___ F
Letdown Line Temp ___ F
SDCS from PCS (R) ___ F
SDCS to PCS (R) 77 F

C-02

(10) VCT Temp 103 F
(10) VCT Pressure 19 psi
(10) VCT Level 14 %
PCP Control Bleedoff Pressure ___ psig
(26) Letdown Flow 0 gpm
(26) Charging Flow 133 gpm
(9) Quench Tank Temp ___ F
(9) Quench TANK Pressure 4 psig
(9) QUENCH TANK Level 69 %
(7) Pressurizer Pressure (R) 1504 psia
(8) PZR Level (R) LT0102A 14 %
LT0103 ???? %
(12) PORV PRV-1042B _____ 1043B _____
(12) BLOCK MOV-1042A CLOSED 1043A ????
CHARGING PUMPS
P55A ???? P55B ???? P55C ON
(6) PCPS P50A ON P50B ON P50C ON P50D ON
PZR HTR AMPS LC15 0 LCC 16 0
(1) PCS TAVE (R) LOOP1(TR-0111) 535 F
LOOP2(TR-0121) ???? F
(25) REACTOR POWER LEVEL
NI1 1.00E+0 cps NI3 2.00E-3 % NI7 ___ %
NI2 ???? cps NI4 1.80E-3 % NI8 ___ %
NI-05 2.2E-2 % NI-09 ___ %
NI-06 ???? % NI-10 ___ %

PIP
(DEMAND LOG+CONSTANT,ROD,OR FLUX/TEMP)
Gross MW ____
Net MW ____
(28) Control Rod Position
GP1 ???? GP2 ???? GP3 ???? GP4 ????
GP6(A) ???? GP7(B) ????
Stuck Rods ???? # __
Core Exit Temp ???? F

Time 0900 Scenario Time 0030 Message # 9 140

C-13

Condensate Storage Tank Level T-2 63 %
Instrument Air Pressure ___ psig
(15) Containment Building Pressure ___ psig
(16) S/G A Compartment Temperature ___ F
S/G A COMPARTMENT Humidity ___ %
(16) S/G B Compartment Temperature ___ F
S/G B Humidity ___ %
(16) Dome Temperature 128 F
(11) SIRW Tank Level ???? %
(15) WR Containment Pressure (R) 17 psia
(14) Containment Sump Level 23 %
(14) Containment Water Level (R) ___ %
(22) SI Tank Level (%)
A 56 B 51 C ???? D 47
SI Tank Pressure (psig)
A 217 B 215 C ???? D 212
(21) SIAS Alarm YES

C-12

Concentrated Boric Acid Tank Levels
T53A 88.1 %
T53B 80.8 %
Reactor Vessel DP ___ psid
(12) PORV Discharge Temperature ___ F
(13) Pzr Safety Valve Discharge Temp (F)
RV-1039 ___ F
RV-1040 ___ F
RV-1041 ___ F

C-12

PCP Current (Amps)
P-50A 0 P-50B 0
P-50C 0 P-50D 0
(6) PCS Flow ___ %
(3) Thot (F) Loop 1 532F
Loop 2 532F
(2) Tcold (F) Loop 1A 525F
Loop 2A 527F
Loop 1B 525F
Loop 2B 527F
(5) Subcooling 35F ___ PSIA
(7) PCS WR Pressure (R) 1203 PSIA
(7) PCS NR PRESSURE (R) 600 PSIA
(30) S/G A LEVEL WR 51 %
(30) S/G A LEVEL (R) ___ %
(30) S/G A PRESS 874 psia
S/G A STM FLW(R) 0 X10**6 PPH
S/G A FD FLW (R) .1 X10**6 PPH
(30) S/G B LEVEL WR 52 %
(30) S/G B LEVEL (R) ___ %
(30) S/G B PRESS ???? psia
S/G B STM FLW(R) ???? X10**6 PPH
S/G B FD FLW (R) ???? X10**6 PPH

PANEL K-13

(20) CONTAINMENT HIGH PRESS
NO

(20) Containment High Radiation
NO

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 0900 Scenario Time 0030 Message # 9 141

C-01

MFP Suction Pressure	___ psig
MFP A Discharge Pressure	15 psig
MFP B Discharge Pressure	15 psig
AFW Pump P-8C Amperes	___ AMPS
AFW Disch Press P-8C	???? psig
AFW Pump P-8A Amperes	___ AMPS
AFW PUMP P8-B Steam Pressure	250 psig
AFW Disch Press P-8A & P-8B	1187 psig
Moisture SEP Drain Tank Level	___ %
Condensor Hotwell Level	70 %
Condensor Vacuum	28.1 in Hg.
Gland Seal Condensor Vacuum	___ in Hg.
Atmospheric Dump Valves	CLOSED
AFW Pump P-8A OFF P-8B ON	P-8C ????
Heater Drain Pump P-10A ___	P-10B ___
Condensate Pump P-2A ON	P-2B OFF

C-11

(31) AFW FLOW TO SGA
FROM P8A,B 170 From P-8C ???? gpm
(31) AFW FLOW TO SGB
FROM P-8A&B 164 From P-8C ???? gpm

Condensor Vacuum (R)	28 IN.HG.
PCP A Leak-off Flow (R)	___ GPM
PCP B Leak-off Flow (R)	___ GPM
PCP C Leak-off Flow (R)	___ GPM
PCP D Leak-off Flow (R)	___ GPM

C-04

(32) D/G Freq 1-1	____	1-2	____
(32) 1-C BUS VOLTS	____	Amps	____
(32) 1-D BUS VOLTS	____	Amps	____

C-11 BACK C-11A

(17) Containment Area Monitors		
RIA-1805	8.90E+3	R/Hr
RIA-1806	????	R/Hr
RIA-1807	9.70E+3	R/Hr
RIA-1808	9.10E+3	R/Hr
(17) High Range Containment Monitors		
RIA-2321	????	R/Hr
RIA-2322	????	R/Hr
(19) Containment Hydrogen Concentration		
AI-2401R	????	(%)
AI-2401L	????	(%)
(30) Main Steam Line Gamma		
RIA-2324	????	CPM
RIA-2323	????	CPM

EQUIPMENT STATUS:

1. SIGNIFICANT EQUIP OUTAGES (INOPERABLE EQUIPMENT)
2. SURVEILLANCE DUE/PROGRESS
3. ABNORMAL ELECTRICAL LINEUPS OR OUTAGES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 0900 Scenario Time 0030 Message # 9 142

C-08

SW Pumps P-7A ___ P-7B ___ P-7C ___
CCW Pumps P-52A ___ P-52B ___ P-52C ___
FPC Pumps P-51A ___ P-51B ___

CONTAINMENT COOLER RECIRC FANS

V1A ???? V2A ???? V3A ???? V4A ON
V1B ___ V2B ___ V3B ___ V4B ___

C-03

(23) HPSI Pumps P-66A ???? P-66B ON
(24) LPSI Pumps P-67A ???? P-67B ON
(18) Containment Spray Pumps
P-54A ???? P-54B OFF P-54C OFF
(27) HPSIA, LPSIA, SPRAY A SUCTION
CV-3057(SIRWT) CV-3029(SUMP)
???? ????

(27) HPSIB, LPSIB, SPRAY B SUCTION
CV-3031 (SIRW) CV-3030 (Sump)
OPEN CLOSED

C-02

Intermediate Press Letdown Temp ___ F
Charging Line Temperature ___ F
Letdown Line Temp ___ F
SDCS from PCS (R) ___ F
SDCS to PCS (R) 77 F

C-02

(10) VCT Temp 96 F
(10) VCT Pressure 20 psi
(10) VCT Level 16 %
PCP Control Bleedoff Pressure ___ psig
(26) Letdown Flow 0 gpm
(26) Charging Flow 127 gpm
(9) Quench Tank Temp ___ F
(9) Quench TANK Pressure 5 psig
(9) QUENCH TANK Level 69 %
(7) Pressurizer Pressure (R) 1203 psia
(8) PZR Level (R) LT0102A 10 %
LT0103 ???? %
(12) PORV PRV-1042B _____ 1043B _____
(12) BLOCK MOV-1042A CLOSED 1043A ????
CHARGING PUMPS
P55A ???? P55B ???? P55C ON
(6) PCPS P50A OFF P50B OFF P50C OFF P50D OFF
PZR HTR AMPS LC15 0 LCC 16 0
(1) PCS TAVE (R) LOOP1(TR-0111) 529 F
LOOP2(TR-0121) ???? F
(25) REACTOR POWER LEVEL
NI1 1.10E+3 cps NI3 9.40E-8 % NI7 ___ %
NI2 ???? cps NI4 8.80E-8 % NI8 ___ %
NI-05 8.6E-8 % NI-09 ___ %
NI-06 ???? % NI-10 ___ %

PIP
(DEMAND LOG+CONSTANT,ROD,OR FLUX/TEMP)
Gross MW ____
Net MW ____
(28) Control Rod Position
GP1 ???? GP2 ???? GP3 ???? GP4 ????
GP6(A) ???? GP7(B) ????
Stuck Rods ???? # __
Core Exit Temp ???? F

SHAVPAL1 T S C S T A T U S P A G E PALEX 91

Time 0915 Scenario Time 0045 Message # 12 140

C-13

Condensate Storage Tank Level T-2 58 %
Instrument Air Pressure ___ psig
(15) Containment Building Pressure ___ psig
(16) S/G A Compartment Temperature ___ F
S/G A COMPARTMENT Humidity ___ %
(16) S/G B Compartment Temperature ___ F
S/G B Humidity ___ %
(16) Dome Temperature 182 F
(11) SIRW Tank Level ???? %
(15) WR Containment Pressure (R) 25 psia
(14) Containment Sump Level 60 %
(14) Containment Water Level (R) ___ %
(22) SI Tank Level (%)
A 56 B 51 C ???? D 47
SI Tank Pressure (psig)
A 224 B 222 C ???? D 218
(21) SIAS Alarm YES

C-12

Concentrated Boric Acid Tank Levels
T53A 70.2 %
T53B 62.6 %
Reactor Vessel DP ___ psid
(12) PORV Discharge Temperature ___ F
(13) Pzr Safety Valve Discharge Temp (F)
RV-1039 ___ F
RV-1040 ___ F
RV-1041 ___ F

C-12

PCP Current (Amps)
P-50A 0 P-50B 0
P-50C 0 P-50D 0
(6) PCS Flow ___ %
(3) Thot (F) Loop 1 513F
Loop 2 513F
(2) Tcold (F) Loop 1A 503F
Loop 2A 506F
Loop 1B 503F
Loop 2B 506F
(5) Subcooling 36F ___ PSIA
(7) PCS WR Pressure (R) 1175 PSIA
(7) PCS NR PRESSURE (R) 600 PSIA
(30) S/G A LEVEL WR 59 %
(30) S/G A LEVEL (R) ___ %
(30) S/G A PRESS 717 psia
S/G A STM FLW(R) .1 X10**6 PPH
S/G A FD FLW (R) .1 X10**6 PPH
(30) S/G B LEVEL WR 65 %
(30) S/G B LEVEL (R) ___ %
(30) S/G B PRESS ???? psia
S/G B STM FLW(R) ???? X10**6 PPH
S/G B FD FLW (R) ???? X10**6 PPH

PANEL K-13

(20) CONTAINMENT HIGH PRESS
YES

(20) Containment High Radiation
YES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 0915 Scenario Time 0045 Message # 12 141

C-01

MFP Suction Pressure	___ psig
MFP A Discharge Pressure	15 psig
MFP B Discharge Pressure	15 psig
AFW Pump P-8C Amperes	___ AMPS
AFW Disch Press P-8C	???? psig
AFW Pump P-8A Amperes	___ AMPS
AFW PUMP P8-B Steam Pressure	250 psig
AFW Disch Press P-8A & P-8B	1156 psig
Moisture SEP Drain Tank Level	___ %
Condensor Hotwell Level	79 %
Condensor Vacuum	-.2 in Hg.
Gland Seal Condensor Vacuum	___ in Hg.
Atmospheric Dump Valves	CLOSED

AFW Pump	P-8A OFF	P-8B ON	P-8C ????
Heater Drain Pump	P-10A ___	P-10B ___	
Condensate Pump	P-2A OFF	P-2B OFF	

C-11

(31) AFW FLOW TO SGA
FROM P8A,B 170 From P-8C ???? gpm
(31) AFW FLOW TO SGB
FROM P-8A&B 165 From P-8C ???? gpm

Condensor Vacuum (R)	0 IN.HG.
PCP A Leak-off Flow (R)	___ GPM
PCP B Leak-off Flow (R)	___ GPM
PCP C Leak-off Flow (R)	___ GPM
PCP D Leak-off Flow (R)	___ GPM

C-04

(32) D/G Freq 1-1	____	1-2	____
(32) 1-C BUS VOLTS	____	Amps	____
(32) 1-D BUS VOLTS	____	Amps	____

C-11 BACK C-11A

(17) Containment Area Monitors

RIA-1805	???? R/Hr
RIA-1806	???? R/Hr
RIA-1807	???? R/Hr
RIA-1808	???? R/Hr

(17) High Range Containment Monitors

RIA-2321	???? R/Hr
RIA-2322	???? R/Hr

(19) Containment Hydrogen Concentration

AI-2401R	???? (%)
AI-2401L	???? (%)

(30) Main Steam Line Gamma

RIA-2324	???? CPM
RIA-2323	???? CPM

EQUIPMENT STATUS:

1. SIGNIFICANT EQUIP OUTAGES (INOPERABLE EQUIPMENT)
2. SURVEILLANCE DUE/PROGRESS
3. ABNORMAL ELECTRICAL LINEUPS OR OUTAGES

_____
_____
_____
_____

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 0915 Scenario Time 0045 Message # 12 142

C-08

SW Pumps P-7A ___ P-7B ___ P-7C ___
CCW Pumps P-52A ___ P-52B ___ P-52C ___
FPC Pumps P-51A ___ P-51B ___

CONTAINMENT COOLER RECIRC FANS

V1A ???? V2A ???? V3A ???? V4A ON
V1B ___ V2B ___ V3B ___ V4B ___

C-03

(23) HPSI Pumps P-66A ???? P-66B ON
(24) LPSI Pumps P-67A ???? P-67B ON
(18) Containment Spray Pumps
P-54A ???? P-54B ON P-54C ON
(27) HPSIA, LPSIA, SPRAY A SUCTION
CV-3057(SIRWT) CV-3029(SUMP)
???? ????

(27) HPSIB, LPSIB, SPRAY B SUCTION
CV-3031 (SIRW) CV-3030 (Sump)
OPEN CLOSED

C-02

Intermediate Press Letdown Temp ___ F
Charging Line Temperature ___ F
Letdown Line Temp ___ F
SDCS from PCS (R) ___ F
SDCS to PCS (R) 77 F

C-02

(10) VCT Temp 95 F
(10) VCT Pressure 20 psi
(10) VCT Level 16 %
PCP Control Bleedoff Pressure ___ psig
(26) Letdown Flow 0 gpm
(26) Charging Flow 127 gpm
(9) Quench Tank Temp ___ F
(9) Quench TANK Pressure 8 psig
(9) QUENCH TANK Level 70 %
(7) Pressurizer Pressure (R) 1175 psia
(8) PZR Level (R) LT0102A 5 %
LT0103 ???? %
(12) PORV PRV-1042B _____ 1043B _____
(12) BLOCK MOV-1042A CLOSED 1043A ????
CHARGING PUMPS
P55A ???? P55B ???? P55C ON
(6) PCPS P50A OFF P50B OFF P50C OFF P50D OFF
PZR HTR AMPS LC15 0 LCC 16 0
(1) PCS TAVE (R) LOOP1(TR-0111) 508 F
LOOP2(TR-0121) ???? F
(25) REACTOR POWER LEVEL
NI1 2.60E+2 cps NI3 1.60E-8 % NI7 ___ %
NI2 ???? cps NI4 1.50E-8 % NI8 ___ %
NI-05 4.4E-2 % NI-09 ___ %
NI-06 ???? % NI-10 ___ %

PIP
(DEMAND LOG+CONSTANT,ROD,OR FLUX/TEMP)
Gross MW ____
Net MW ____
(28) Control Rod Position
GP1 ???? GP2 ???? GP3 ???? GP4 ????
GP6(A) ???? GP7(B) ????
Stuck Rods ???? # __
Core Exit Temp ???? F

SHAVPAL1 T S C S T A T U S P A G E PALEX 91

Time 0930 Scenario Time 0100 Message # 13 140

C-13

Condensate Storage Tank Level T-2 53 %
Instrument Air Pressure ___ psig
(15) Containment Building Pressure ___ psig
(16) S/G A Compartment Temperature ___ F
S/G A COMPARTMENT Humidity ___ %
(16) S/G B Compartment Temperature ___ F
S/G B Humidity ___ %
(16) Dome Temperature 193 F
(11) SIRW Tank Level ???? %
(15) WR Containment Pressure (R) 27 psia
(14) Containment Sump Level 62 %
(14) Containment Water Level (R) ___ %
(22) SI Tank Level (%)
A 56 B 51 C ???? D 47
SI Tank Pressure (psig)
A 232 B 231 C ???? D 227
(21) SIAS Alarm YES

C-12

Concentrated Boric Acid Tank Levels
T53A 70.2 %
T53B 62.6 %
Reactor Vessel DP ___ psid
(12) PORV Discharge Temperature ___ F
(13) Pzr Safety Valve Discharge Temp (F)
RV-1039 ___ F
RV-1040 ___ F
RV-1041 ___ F

C-12

PCP Current (Amps)
P-50A 0 P-50B 0
P-50C 0 P-50D 0
(6) PCS Flow ___ %
(3) Thot (F) Loop 1 492F
Loop 2 492F
(2) Tcold (F) Loop 1A 482F
Loop 2A 485F
Loop 1B 482F
Loop 2B 485F
(5) Subcooling 36F ___ PSIA
(7) PCS WR Pressure (R) 1160 PSIA
(7) PCS NR PRESSURE (R) 600 PSIA
(30) S/G A LEVEL WR 65 %
(30) S/G A LEVEL (R) ___ %
(30) S/G A PRESS 589 psia
S/G A STM FLW(R) .1 X10**6 PPH
S/G A FD FLW (R) .1 X10**6 PPH
(30) S/G B LEVEL WR 76 %
(30) S/G B LEVEL (R) ___ %
(30) S/G B PRESS ???? psia
S/G B STM FLW(R) ???? X10**6 PPH
S/G B FD FLW (R) ???? X10**6 PPH

PANEL K-13

(20) CONTAINMENT HIGH PRESS
YES

(20) Containment High Radiation
YES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 0930 Scenario Time 0100 Message # 13 141

C-01

MFP Suction Pressure ___ psig
MFP A Discharge Pressure 15 psig
MFP B Discharge Pressure 15 psig
AFW Pump P-8C Amperes ___ AMPS
AFW Disch Press P-8C ???? psig
AFW Pump P-8A Amperes ___ AMPS
AFW PUMP P8-B Steam Pressure 250 psig
AFW Disch Press P-8A & P-8B 1152 psig
Moisture SEP Drain Tank Level ___ %
Condensor Hotwell Level 79 %
Condensor Vacuum -.2 in Hg.
Gland Seal Condensor Vacuum ___ in Hg.
Atmospheric Dump Valves CLOSED
AFW Pump P-8A OFF P-8B ON P-8C ????
Heater Drain Pump P-10A ___ P-10B ___
Condensate Pump P-2A OFF P-2B OFF

C-11

(31) AFW FLOW TO SGA
FROM P8A,B 170 From P-8C ???? gpm
(31) AFW FLOW TO SGB
FROM P-8A&B 165 From P-8C ???? gpm
Condensor Vacuum (R) 0 IN.HG.
PCP A Leak-off Flow (R) ___ GPM
PCP B Leak-off Flow (R) ___ GPM
PCP C Leak-off Flow (R) ___ GPM
PCP D Leak-off Flow (R) ___ GPM

C-04

(32) D/G Freq 1-1 ____ 1-2 ____
(32) 1-C BUS VOLTS ____ Amps ____
(32) 1-D BUS VOLTS ____ Amps ____

C-11 BACK C-11A

(17) Containment Area Monitors
RIA-1805 ???? R/Hr
RIA-1806 ???? R/Hr
RIA-1807 ???? R/Hr
RIA-1808 ???? R/Hr
(17) High Range Containment Monitors
RIA-2321 ???? R/Hr
RIA-2322 ???? R/Hr
(19) Containment Hydrogen Concentration
AI-2401R ???? (%)
AI-2401L ???? (%)
(30) Main Steam Line Gamma
RIA-2324 ???? CPM
RIA-2323 ???? CPM

EQUIPMENT STATUS:

1. SIGNIFICANT EQUIP OUTAGES (INOPERABLE EQUIPMENT)
2. SURVEILLANCE DUE/PROGRESS
3. ABNORMAL ELECTRICAL LINEUPS OR OUTAGES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 0930 Scenario Time 0100 Message # 13 142

C-08

SW Pumps P-7A ___ P-7B ___ P-7C ___
CCW Pumps P-52A ___ P-52B ___ P-52C ___
FPC Pumps P-51A ___ P-51B ___

CONTAINMENT COOLER RECIRC FANS

V1A ???? V2A ???? V3A ???? V4A ON
V1B ___ V2B ___ V3B ___ V4B ___

C-03

(23) HPSI Pumps P-66A ???? P-66B ON
(24) LPSI Pumps P-67A ???? P-67B ON
(18) Containment Spray Pumps
P-54A ???? P-54B ON P-54C ON
(27) HPSIA, LPSIA, SPRAY A SUCTION
CV-3057(SIRWT) CV-3029(SUMP)
???? ????

(27) HPSIB, LPSIB, SPRAY B SUCTION
CV-3031 (SIRW) CV-3030 (Sump)
OPEN CLOSED

C-02

Intermediate Press Letdown Temp ___ F
Charging Line Temperature ___ F
Letdown Line Temp ___ F
SDCS from PCS (R) ___ F
SDCS to PCS (R) 77 F

C-02

(10) VCT Temp 95 F
(10) VCT Pressure 20 psi
(10) VCT Level 16 %
PCP Control Bleedoff Pressure ___ psig
(26) Letdown Flow 0 gpm
(26) Charging Flow 127 gpm
(9) Quench Tank Temp ___ F
(9) Quench TANK Pressure 11 psig
(9) QUENCH TANK Level 71 %
(7) Pressurizer Pressure (R) 1160 psia
(8) PZR Level (R) LT0102A 5 %
LT0103 ???? %
(12) PORV PRV-1042B _____ 1043B _____
(12) BLOCK MOV-1042A CLOSED 1043A ????
CHARGING PUMPS
P55A ???? P55B ???? P55C ON
(6) PCPS P50A OFF P50B OFF P50C OFF P50D OFF
PZR HTR AMPS LC15 0 LCC 16 0
(1) PCS TAVE (R) LOOP1(TR-0111) 487 F
LOOP2(TR-0121) ???? F
(25) REACTOR POWER LEVEL
NI1 2.40E+2 cps NI3 1.50E-8 % NI7 ___ %
NI2 ???? cps NI4 1.40E-8 % NI8 ___ %
NI-05 4.7E-9 % NI-09 ___ %
NI-06 ???? % NI-10 ___ %

PIP
(DEMAND LOG+CONSTANT,ROD,OR FLUX/TEMP)
Gross MW ____
Net MW ____
(28) Control Rod Position
GP1 ???? GP2 ???? GP3 ???? GP4 ????
GP6(A) ???? GP7(B) ????
Stuck Rods ???? # __
Core Exit Temp ???? F

SHAVPAL1 T S C S T A T U S P A G E PALEX 91

Time 0945 Scenario Time 0115 Message # 14 140

C-13

Condensate Storage Tank Level T-2 48 %
Instrument Air Pressure ___ psig
(15) Containment Building Pressure ___ psig
(16) S/G A Compartment Temperature ___ F
S/G A COMPARTMENT Humidity ___ %
(16) S/G B Compartment Temperature ___ F
S/G B Humidity ___ %
(16) Dome Temperature 219 F
(11) SIRW Tank Level ???? %
(15) WR Containment Pressure (R) 35 psia
(14) Containment Sump Level 64 %
(14) Containment Water Level (R) ___ %
(22) SI Tank Level (%)
A 56 B 51 C ???? D 47
SI Tank Pressure (psig)
A 235 B 234 C ???? D 230
(21) SIAS Alarm YES

C-12

Concentrated Boric Acid Tank Levels
T53A 70.2 %
T53B 62.6 %
Reactor Vessel DP ___ psid
(12) PORV Discharge Temperature ___ F
(13) Pzr Safety Valve Discharge Temp (F)
RV-1039 ___ F
RV-1040 ___ F
RV-1041 ___ F

C-12

PCP Current (Amps)
P-50A 0 P-50B 0
P-50C 0 P-50D 0
(6) PCS Flow ___ %
(3) Thot (F) Loop 1 450F
Loop 2 450F
(2) Tcold (F) Loop 1A 437F
Loop 2A 440F
Loop 1B 437F
Loop 2B 440F
(5) Subcooling 36F ___ PSIA
(7) PCS WR Pressure (R) 1132 PSIA
(7) PCS NR PRESSURE (R) 600 PSIA
(30) S/G A LEVEL WR 62 %
(30) S/G A LEVEL (R) ___ %
(30) S/G A PRESS 376 psia
S/G A STM FLW(R) .2 X10**6 PPH
S/G A FD FLW (R) .1 X10**6 PPH
(30) S/G B LEVEL WR 83 %
(30) S/G B LEVEL (R) ___ %
(30) S/G B PRESS ???? psia
S/G B STM FLW(R) ???? X10**6 PPH
S/G B FD FLW (R) ???? X10**6 PPH

PANEL K-13

(20) CONTAINMENT HIGH PRESS
YES

(20) Containment High Radiation
YES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 0945 Scenario Time 0115 Message # 14 141

C-01

MFP Suction Pressure	___ psig
MFP A Discharge Pressure	15 psig
MFP B Discharge Pressure	15 psig
AFW Pump P-8C Amperes	___ AMPS
AFW Disch Press P-8C	???? psig
AFW Pump P-8A Amperes	___ AMPS
AFW PUMP P8-B Steam Pressure	250 psig
AFW Disch Press P-8A & P-8B	1152 psig
Moisture SEP Drain Tank Level	___ %
Condensor Hotwell Level	79 %
Condensor Vacuum	-.2 in Hg.
Gland Seal Condensor Vacuum	___ in Hg.
Atmospheric Dump Valves	CLOSED

AFW Pump P-8A OFF P-8B ON P-8C ????
Heater Drain Pump P-10A ___ P-10B ___
Condensate Pump P-2A OFF P-2B OFF

C-11

(31) AFW FLOW TO SGA
FROM P8A,B 170 From P-8C ???? gpm
(31) AFW FLOW TO SGB
FROM P-8A&B 165 From P-8C ???? gpm

Condensor Vacuum (R)	0 IN.HG.
PCP A Leak-off Flow (R)	___ GPM
PCP B Leak-off Flow (R)	___ GPM
PCP C Leak-off Flow (R)	___ GPM
PCP D Leak-off Flow (R)	___ GPM

C-04

(32) D/G Freq 1-1 ____ 1-2 ____
(32) 1-C BUS VOLTS ____ Amps ____
(32) 1-D BUS VOLTS ____ Amps ____

C-11 BACK C-11A

(17) Containment Area Monitors

RIA-1805	???? R/Hr
RIA-1806	???? R/Hr
RIA-1807	???? R/Hr
RIA-1808	???? R/Hr

(17) High Range Containment Monitors

RIA-2321	???? R/Hr
RIA-2322	???? R/Hr

(19) Containment Hydrogen Concentration

AI-2401R	???? (%)
AI-2401L	???? (%)

(30) Main Steam Line Gamma

RIA-2324	???? CPM
RIA-2323	???? CPM

EQUIPMENT STATUS:

1. SIGNIFICANT EQUIP OUTAGES (INOPERABLE EQUIPMENT)
2. SURVEILLANCE DUE/PROGRESS
3. ABNORMAL ELECTRICAL LINEUPS OR OUTAGES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 0945 Scenario Time 0115 Message # 14 142

C-08

SW Pumps P-7A ___ P-7B ___ P-7C ___
CCW Pumps P-52A ___ P-52B ___ P-52C ___
FPC Pumps P-51A ___ P-51B ___

CONTAINMENT COOLER RECIRC FANS

V1A ???? V2A ???? V3A ???? V4A ON
V1B ___ V2B ___ V3B ___ V4B ___

C-03

(23) HPSI Pumps P-66A ???? P-66B ON
(24) LPSI Pumps P-67A ???? P-67B ON
(18) Containment Spray Pumps
P-54A ???? P-54B ON P-54C ON
(27) HPSIA, LPSIA, SPRAY A SUCTION
CV-3057(SIRWT) CV-3029(SUMP)
???? ????

(27) HPSIB, LPSIB, SPRAY B SUCTION
CV-3031 (SIRW) CV-3030 (Sump)
OPEN CLOSED

C-02

Intermediate Press Letdown Temp ___ F
Charging Line Temperature ___ F
Letdown Line Temp ___ F
SDCS from PCS (R) ___ F
SDCS to PCS (R) 77 F

C-02

(10) VCT Temp 95 F
(10) VCT Pressure 20 psi
(10) VCT Level 16 %
PCP Control Bleedoff Pressure ___ psig
(26) Letdown Flow 0 gpm
(26) Charging Flow 127 gpm
(9) Quench Tank Temp ___ F
(9) Quench TANK Pressure 17 psig
(9) QUENCH TANK Level 71 %
(7) Pressurizer Pressure (R) 1132 psia
(8) PZR Level (R) LT0102A 2 %
LT0103 ???? %
(12) PORV PRV-1042B _____ 1043B _____
(12) BLOCK MOV-1042A CLOSED 1043A ????
CHARGING PUMPS
P55A ???? P55B ???? P55C ON
(6) PCPS P50A OFF P50B OFF P50C OFF P50D OFF
PZR HTR AMPS LC15 0 LCC 16 0
(1) PCS TAVE (R) LOOP1(TR-0111) 444 F
LOOP2(TR-0121) ???? F
(25) REACTOR POWER LEVEL
NI1 2.10E+2 cps NI3 1.40E-8 % NI7 ___ %
NI2 ???? cps NI4 1.30E-8 % NI8 ___ %
NI-05 3.8E-9 % NI-09 ___ %
NI-06 ???? % NI-10 ___ %

PIP
(DEMAND LOG+CONSTANT,ROD,OR FLUX/TEMP)
Gross MW ____
Net MW ____
(28) Control Rod Position
GP1 ???? GP2 ???? GP3 ???? GP4 ????
GP6(A) ???? GP7(B) ????
Stuck Rods ???? # __
Core Exit Temp ???? F

SHAVPAL1 T S C S T A T U S P A G E PALEX 91

Time 1000 Scenario Time 0130 Message # 16 140

C-13

Condensate Storage Tank Level T-2 43 %
Instrument Air Pressure ___ psig
(15) Containment Building Pressure ___ psig
(16) S/G A Compartment Temperature ___ F
S/G A COMPARTMENT Humidity ___ %
(16) S/G B Compartment Temperature ___ F
S/G B Humidity ___ %
(16) Dome Temperature 219 F
(11) SIRW Tank Level ???? %
(15) WR Containment Pressure (R) 32 psia
(14) Containment Sump Level 66 %
(14) Containment Water Level (R) ___ %
(22) SI Tank Level (%)
A 56 B 51 C ???? D 47
SI Tank Pressure (psig)
A 244 B 242 C ???? D 238
(21) SIAS Alarm YES

C-12

Concentrated Boric Acid Tank Levels
T53A 70.2 %
T53B 62.6 %
Reactor Vessel DP ___ psid
(12) PORV Discharge Temperature ___ F
(13) Pzr Safety Valve Discharge Temp (F)
RV-1039 ___ F
RV-1040 ___ F
RV-1041 ___ F

C-12

PCP Current (Amps)
P-50A 0 P-50B 0
P-50C 0 P-50D 0
(6) PCS Flow ___ %
(3) Thot (F) Loop 1 421F
Loop 2 421F
(2) Tcold (F) Loop 1A 415F
Loop 2A 421F
Loop 1B 415F
Loop 2B 421F
(5) Subcooling 36F ___ PSIA
(7) PCS WR Pressure (R) 906 PSIA
(7) PCS NR PRESSURE (R) 600 PSIA
(30) S/G A LEVEL WR 61 %
(30) S/G A LEVEL (R) ___ %
(30) S/G A PRESS 299 psia
S/G A STM FLW(R) 0 X10**6 PPH
S/G A FD FLW (R) .1 X10**6 PPH
(30) S/G B LEVEL WR 87 %
(30) S/G B LEVEL (R) ___ %
(30) S/G B PRESS ???? psia
S/G B STM FLW(R) ???? X10**6 PPH
S/G B FD FLW (R) ???? X10**6 PPH

PANEL K-13

(20) CONTAINMENT HIGH PRESS
YES

(20) Containment High Radiation
YES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1000 Scenario Time 0130 Message # 16 141

C-01

MFP Suction Pressure	___ psig
MFP A Discharge Pressure	15 psig
MFP B Discharge Pressure	15 psig
AFW Pump P-8C Amperes	___ AMPS
AFW Disch Press P-8C	???? psig
AFW Pump P-8A Amperes	___ AMPS
AFW PUMP P8-B Steam Pressure	250 psig
AFW Disch Press P-8A & P-8B	1352 psig
Moisture SEP Drain Tank Level	___ %
Condensor Hotwell Level	79 %
Condensor Vacuum	-.2 in Hg.
Gland Seal Condensor Vacuum	___ in Hg.
Atmospheric Dump Valves	CLOSED

AFW Pump P-8A OFF P-8B ON P-8C ????
Heater Drain Pump P-10A ___ P-10B ___
Condensate Pump P-2A OFF P-2B OFF

C-11

(31) AFW FLOW TO SGA
FROM P8A,B 170 From P-8C ???? gpm
(31) AFW FLOW TO SGB
FROM P-8A&B 0 From P-8C ???? gpm

Condensor Vacuum (R)	0 IN.HG.
PCP A Leak-off Flow (R)	___ GPM
PCP B Leak-off Flow (R)	___ GPM
PCP C Leak-off Flow (R)	___ GPM
PCP D Leak-off Flow (R)	___ GPM

C-04

(32) D/G Freq 1-1 ____ 1-2 ____
(32) 1-C BUS VOLTS ____ Amps ____
(32) 1-D BUS VOLTS ____ Amps ____

C-11 BACK C-11A

(17) Containment Area Monitors

RIA-1805	???? R/Hr
RIA-1806	???? R/Hr
RIA-1807	???? R/Hr
RIA-1808	???? R/Hr

(17) High Range Containment Monitors

RIA-2321	???? R/Hr
RIA-2322	???? R/Hr

(19) Containment Hydrogen Concentration

AI-2401R	???? (%)
AI-2401L	???? (%)

(30) Main Steam Line Gamma

RIA-2324	???? CPM
RIA-2323	???? CPM

EQUIPMENT STATUS:

1. SIGNIFICANT EQUIP OUTAGES (INOPERABLE EQUIPMENT)
2. SURVEILLANCE DUE/PROGRESS
3. ABNORMAL ELECTRICAL LINEUPS OR OUTAGES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1000 Scenario Time 0130 Message # 16 142

C-08

SW Pumps P-7A ___ P-7B ___ P-7C ___
CCW Pumps P-52A ___ P-52B ___ P-52C ___
FPC Pumps P-51A ___ P-51B ___

CONTAINMENT COOLER RECIRC FANS

V1A ???? V2A ???? V3A ???? V4A ON
V1B ___ V2B ___ V3B ___ V4B ___

C-03

(23) HPSI Pumps P-66A ???? P-66B ON
(24) LPSI Pumps P-67A ???? P-67B ON
(18) Containment Spray Pumps
P-54A ???? P-54B ON P-54C ON
(27) HPSIA, LPSIA, SPRAY A SUCTION
CV-3057(SIRWT) CV-3029(SUMP)
???? ????

(27) HPSIB, LPSIB, SPRAY B SUCTION
CV-3031 (SIRW) CV-3030 (Sump)
OPEN CLOSED

C-02

Intermediate Press Letdown Temp ___ F
Charging Line Temperature ___ F
Letdown Line Temp ___ F
SDCS from PCS (R) ___ F
SDCS to PCS (R) 77 F

C-02

(10) VCT Temp 95 F
(10) VCT Pressure 20 psi
(10) VCT Level 16 %
PCP Control Bleedoff Pressure ___ psig
(26) Letdown Flow 0 gpm
(26) Charging Flow 113 gpm
(9) Quench Tank Temp ___ F
(9) Quench TANK Pressure 20 psig
(9) QUENCH TANK Level 72 %
(7) Pressurizer Pressure (R) 906 psia
(8) PZR Level (R) LT0102A 33 %
LT0103 ???? %
(12) PORV PRV-1042B _____ 1043B _____
(12) BLOCK MOV-1042A CLOSED 1043A ????
CHARGING PUMPS
P55A ???? P55B ???? P55C ON
(6) PCPS P50A OFF P50B OFF P50C OFF P50D OFF
PZR HTR AMPS LC15 0 LCC 16 0
(1) PCS TAVE (R) LOOP1(TR-0111) 418 F
LOOP2(TR-0121) ???? F
(25) REACTOR POWER LEVEL
NI1 1.90E+2 cps NI3 1.30E-8 % NI7 ___ %
NI2 ???? cps NI4 1.30E-8 % NI8 ___ %
NI-05 6.5E-2 % NI-09 ___ %
NI-06 ???? % NI-10 ___ %

PIP
(DEMAND LOG+CONSTANT,ROD,OR FLUX/TEMP)
Gross MW ____
Net MW ____
(28) Control Rod Position
GP1 ???? GP2 ???? GP3 ???? GP4 ????
GP6(A) ???? GP7(B) ????
Stuck Rods ???? # 0
Core Exit Temp ???? F

Time 1015 Scenario Time 0145 Message # 18 140

C-13

Condensate Storage Tank Level T-2 41 %
Instrument Air Pressure ___ psig
(15) Containment Building Pressure ___ psig
(16) S/G A Compartment Temperature ___ F
S/G A COMPARTMENT Humidity ___ %
(16) S/G B Compartment Temperature ___ F
S/G B Humidity ___ %
(16) Dome Temperature 213 F
(11) SIRW Tank Level ???? %
(15) WR Containment Pressure (R) 24 psia
(14) Containment Sump Level 68 %
(14) Containment Water Level (R) ___ %
(22) SI Tank Level (%)
A 56 B 51 C ???? D 47
SI Tank Pressure (psig)
A 252 B 250 C ???? D 246
(21) SIAS Alarm YES

C-12

Concentrated Boric Acid Tank Levels
T53A 70.2 %
T53B 62.6 %
Reactor Vessel DP ___ psid
(12) PORV Discharge Temperature ___ F
(13) Pzr Safety Valve Discharge Temp (F)
RV-1039 ___ F
RV-1040 ___ F
RV-1041 ___ F

C-12

PCP Current (Amps)
P-50A 0 P-50B 0
P-50C 0 P-50D 0
(6) PCS Flow ___ %
(3) Thot (F) Loop 1 408F
Loop 2 408F
(2) Tcold (F) Loop 1A 400F
Loop 2A 416F
Loop 1B 400F
Loop 2B 416F
(5) Subcooling 36F ___ PSIA
(7) PCS WR Pressure (R) 1141 PSIA
(7) PCS NR PRESSURE (R) 600 PSIA
(30) S/G A LEVEL WR 73 %
(30) S/G A LEVEL (R) ___ %
(30) S/G A PRESS 254 psia
S/G A STM FLW(R) 0 X10**6 PPH
S/G A FD FLW (R) .1 X10**6 PPH
(30) S/G B LEVEL WR 93 %
(30) S/G B LEVEL (R) ___ %
(30) S/G B PRESS ???? psia
S/G B STM FLW(R) ???? X10**6 PPH
S/G B FD FLW (R) ???? X10**6 PPH

PANEL K-13

(20) CONTAINMENT HIGH PRESS
YES

(20) Containment High Radiation
YES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1015 Scenario Time 0145 Message # 18 141

C-01

MFP Suction Pressure	___ psig
MFP A Discharge Pressure	15 psig
MFP B Discharge Pressure	15 psig
AFW Pump P-8C Amperes	___ AMPS
AFW Disch Press P-8C	???? psig
AFW Pump P-8A Amperes	___ AMPS
AFW PUMP P8-B Steam Pressure	250 psig
AFW Disch Press P-8A & P-8B	1352 psig
Moisture SEP Drain Tank Level	___ %
Condensor Hotwell Level	79 %
Condensor Vacuum	-.2 in Hg.
Gland Seal Condensor Vacuum	___ in Hg.
Atmospheric Dump Valves	CLOSED

AFW Pump: P-8A OFF P-8B ON P-8C ????
Heater Drain Pump P-10A ___ P-10B ___
Condensate Pump P-2A OFF P-2B OFF

C-11

(31) AFW FLOW TO SGA
FROM P8A,B 170 From P-8C ???? gpm
(31) AFW FLOW TO SGB
FROM P-8A&B 0 From P-8C ???? gpm

Condensor Vacuum (R)	0 IN.HG.
PCP A Leak-off Flow (R)	___ GPM
PCP B Leak-off Flow (R)	___ GPM
PCP C Leak-off Flow (R)	___ GPM
PCP D Leak-off Flow (R)	___ GPM

C-04

(32) D/G Freq 1-1 ____ 1-2 ____
(32) 1-C BUS VOLTS ____ Amps ____
(32) 1-D BUS VOLTS ____ Amps ____

C-11 BACK C-11A

(17) Containment Area Monitors

RIA-1805	???? R/Hr
RIA-1806	???? R/Hr
RIA-1807	???? R/Hr
RIA-1808	???? R/Hr

(17) High Range Containment Monitors

RIA-2321	???? R/Hr
RIA-2322	???? R/Hr

(19) Containment Hydrogen Concentration

AI-2401R	???? (%)
AI-2401L	???? (%)

(30) Main Steam Line Gamma

RIA-2324	???? CPM
RIA-2323	???? CPM

EQUIPMENT STATUS:

1. SIGNIFICANT EQUIP OUTAGES (INOPERABLE EQUIPMENT)
2. SURVEILLANCE DUE/PROGRESS
3. ABNORMAL ELECTRICAL LINEUPS OR OUTAGES

_____
_____
_____
_____

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1015 Scenario Time 0145 Message # 18 142

C-08

SW Pumps P-7A ___ P-7B ___ P-7C ___
CCW Pumps P-52A ___ P-52B ___ P-52C ___
FPC Pumps P-51A ___ P-51B ___

CONTAINMENT COOLER RECIRC FANS

V1A ???? V2A ???? V3A ???? V4A ON
V1B ___ V2B ___ V3B ___ V4B ___

C-03

(23) HPSI Pumps P-66A ???? P-66B ON
(24) LPSI Pumps P-67A ???? P-67B ON
(18) Containment Spray Pumps
P-54A ???? P-54B ON P-54C ON
(27) HPSIA, LPSIA, SPRAY A SUCTION
CV-3057(SIRWT) CV-3029(SUMP)
???? ????

(27) HPSIB, LPSIB, SPRAY B SUCTION
CV-3031 (SIRW) CV-3030 (Sump)
OPEN CLOSED

C-02

Intermediate Press Letdown Temp ___ F
Charging Line Temperature ___ F
Letdown Line Temp ___ F
SDCS from PCS (R) ___ F
SDCS to PCS (R) 77 F

C-02

(10) VCT Temp 95 F
(10) VCT Pressure 20 psi
(10) VCT Level 16 %
PCP Control Bleedoff Pressure ___ psig
(26) Letdown Flow 0 gpm
(26) Charging Flow 127 gpm
(9) Quench Tank Temp ___ F
(9) Quench TANK Pressure 19 psig
(9) QUENCH TANK Level 72 %
(7) Pressurizer Pressure (R) 1141 psia
(8) PZR Level (R) LT0102A 70 %
LT0103 ???? %
(12) PORV PRV-1042B _____ 1043B _____
(12) BLOCK MOV-1042A CLOSED 1043A ????
CHARGING PUMPS
P55A ???? P55B ???? P55C ON
(6) PCPS P50A OFF P50B OFF P50C OFF P50D OFF
PZR HTR AMPS LC15 0 LCC 16 0
(1) PCS TAVE (R) LOOP1(TR-0111) 404 F
LOOP2(TR-0121) ???? F
(25) REACTOR POWER LEVEL
NI1 1.80E+2 cps NI3 1.30E-8 % NI7 ___ %
NI2 ???? cps NI4 1.30E-8 % NI8 ___ %
NI-05 3.2E-9 % NI-09 ___ %
NI-06 ???? % NI-10 ___ %

PIP
(DEMAND LOG+CONSTANT,ROD,OR FLUX/TEMP)
Gross MW ____
Net MW ____
(28) Control Rod Position
GP1 ???? GP2 ???? GP3 ???? GP4 ????
GP6(A) ???? GP7(B) ????
Stuck Rods ???? # 0
Core Exit Temp ???? F

Time 1030 Scenario Time 0200 Message # 19c 140

C-13

Condensate Storage Tank Level T-2 38 %
Instrument Air Pressure ___ psig
(15) Containment Building Pressure ___ psig
(16) S/G A Compartment Temperature ___ F
S/G A COMPARTMENT Humidity ___ %
(16) S/G B Compartment Temperature ___ F
S/G B Humidity ___ %
(16) Dome Temperature 208 F
(11) SIRW Tank Level ???? %
(15) WR Containment Pressure (R) 21 psia
(14) Containment Sump Level 69 %
(14) Containment Water Level (R) ___ %
(22) SI Tank Level (%)
A 56 B 51 C ???? D 47
SI Tank Pressure (psig)
A 254 B 253 C ???? D 249
(21) SIAS Alarm YES

C-12

Concentrated Boric Acid Tank Levels
T53A 70.2 %
T53B 62.6 %
Reactor Vessel DP ___ psid
(12) PORV Discharge Temperature ___ F
(13) Pzr Safety Valve Discharge Temp (F)
RV-1039 ___ F
RV-1040 ___ F
RV-1041 ___ F

C-12

PCP Current (Amps)
P-50A 0 P-50B 0
P-50C 0 P-50D 0
(6) PCS Flow ___ %
(3) Thot (F) Loop 1 404F
Loop 2 404F
(2) Tcold (F) Loop 1A 396F
Loop 2A 408F
Loop 1B 396F
Loop 2B 408F
(5) Subcooling 36F ___ PSIA
(7) PCS WR Pressure (R) 1142 PSIA
(7) PCS NR PRESSURE (R) 600 PSIA
(30) S/G A LEVEL WR 82 %
(30) S/G A LEVEL (R) ___ %
(30) S/G A PRESS 244 psia
S/G A STM FLW(R) 0 X10**6 PPH
S/G A FD FLW (R) .1 X10**6 PPH
(30) S/G B LEVEL WR 98 %
(30) S/G B LEVEL (R) ___ %
(30) S/G B PRESS ???? psia
S/G B STM FLW(R) ???? X10**6 PPH
S/G B FD FLW (R) ???? X10**6 PPH

PANEL K-13

(20) CONTAINMENT HIGH PRESS
YES

(20) Containment High Radiation
YES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1030 Scenario Time 0200 Message # 19c 141

C-01

MFP Suction Pressure	___ psig
MFP A Discharge Pressure	15 psig
MFP B Discharge Pressure	15 psig
AFW Pump P-8C Amperes	___ AMPS
AFW Disch Press P-8C	???? psig
AFW Pump P-8A Amperes	___ AMPS
AFW PUMP P8-B Steam Pressure	244 psig
AFW Disch Press P-8A & P-8B	1350 psig
Moisture SEP Drain Tank Level	___ %
Condensor Hotwell Level	79 %
Condensor Vacuum	-.2 in Hg.
Gland Seal Condensor Vacuum	___ in Hg.
Atmospheric Dump Valves	CLOSED

AFW Pump P-8A OFF P-8B ON P-8C ????
Heater Drain Pump P-10A ___ P-10B ___
Condensate Pump P-2A OFF P-2B OFF

C-11

(31) AFW FLOW TO SGA
FROM P8A,B 170 From P-8C ???? gpm
(31) AFW FLOW TO SGB
FROM P-8A&B 0 From P-8C ???? gpm

Condensor Vacuum (R)	0 IN.HG.
PCP A Leak-off Flow (R)	___ GPM
PCP B Leak-off Flow (R)	___ GPM
PCP C Leak-off Flow (R)	___ GPM
PCP D Leak-off Flow (R)	___ GPM

C-04

(32) D/G Freq 1-1 ____ 1-2 ____
(32) 1-C BUS VOLTS ____ Amps ____
(32) 1-D BUS VOLTS ____ Amps ____

C-11 BACK C-11A

(17) Containment Area Monitors

RIA-1805	???? R/Hr
RIA-1806	???? R/Hr
RIA-1807	???? R/Hr
RIA-1808	???? R/Hr

(17) High Range Containment Monitors

RIA-2321	???? R/Hr
RIA-2322	???? R/Hr

(19) Containment Hydrogen Concentration

AI-2401R	???? (%)
AI-2401L	???? (%)

(30) Main Steam Line Gamma

RIA-2324	???? CPM
RIA-2323	???? CPM

EQUIPMENT STATUS:

1. SIGNIFICANT EQUIP OUTAGES (INOPERABLE EQUIPMENT)
2. SURVEILLANCE DUE/PROGRESS
3. ABNORMAL ELECTRICAL LINEUPS OR OUTAGES

_____
_____
_____
_____

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1030 Scenario Time 0200 Message # 19c 142

C-08

SW Pumps P-7A ___ P-7B ___ P-7C ___
CCW Pumps P-52A ___ P-52B ___ P-52C ___
FPC Pumps P-51A ___ P-51B ___

CONTAINMENT COOLER RECIRC FANS

V1A ???? V2A ???? V3A ???? V4A ON
V1B ___ V2B ___ V3B ___ V4B ___

C-03

(23) HPSI Pumps P-66A ???? P-66B ON
(24) LPSI Pumps P-67A ???? P-67B ON
(18) Containment Spray Pumps
P-54A ???? P-54B ON P-54C ON
(27) HPSIA, LPSIA, SPRAY A SUCTION
CV-3057(SIRWT) CV-3029(SUMP)
???? ????

(27) HPSIB, LPSIB, SPRAY B SUCTION
CV-3031 (SIRW) CV-3030 (Sump)
OPEN CLOSED

C-02

Intermediate Press Letdown Temp ___ F
Charging Line Temperature ___ F
Letdown Line Temp ___ F
SDCS from PCS (R) ___ F
SDCS to PCS (R) 77 F

C-02

(10) VCT Temp 95 F
(10) VCT Pressure 20 psi
(10) VCT Level 16 %
PCP Control Bleedoff Pressure ___ psig
(26) Letdown Flow 0 gpm
(26) Charging Flow 127 gpm
(9) Quench Tank Temp ___ F
(9) Quench TANK Pressure 17 psig
(9) QUENCH TANK Level 71 %
(7) Pressurizer Pressure (R) 1142 psia
(8) PZR Level (R) LT0102A 70 %
LT0103 ???? %
(12) PORV PRV-1042B _____ 1043B _____
(12) BLOCK MOV-1042A CLOSED 1043A ????
CHARGING PUMPS
P55A ???? P55B ???? P55C ON
(6) PCPS P50A OFF P50B OFF P50C OFF P50D OFF
PZR HTR AMPS LC15 0 LCC 16 0
(1) PCS TAVE (R) LOOP1(TR-0111) 400 F
LOOP2(TR-0121) ???? F
(25) REACTOR POWER LEVEL
NI1 1.80E+2 cps NI3 1.30E-8 % NI7 ___ %
NI2 ???? cps NI4 1.30E-8 % NI8 ___ %
NI-05 2.0E-2 % NI-09 ___ %
NI-06 ???? % NI-10 ___ %

PIP
(DEMAND LOG+CONSTANT,ROD,OR FLUX/TEMP)
Gross MW ____
Net MW ____
(28) Control Rod Position
GP1 ???? GP2 ???? GP3 ???? GP4 ????
GP6(A) ???? GP7(B) ????
Stuck Rods ???? # 0
Core Exit Temp ???? F

Time 1045 Scenario Time 0215 Message # 23 140

C-13

Condensate Storage Tank Level T-2 35 %
Instrument Air Pressure ___ psig
(15) Containment Building Pressure ___ psig
(16) S/G A Compartment Temperature ___ F
S/G A COMPARTMENT Humidity ___ %
(16) S/G B Compartment Temperature ___ F
S/G B Humidity ___ %
(16) Dome Temperature 165 F
(11) SIRW Tank Level ???? %
(15) WR Containment Pressure (R) 16 psia
(14) Containment Sump Level 77 %
(14) Containment Water Level (R) ___ %
(22) SI Tank Level (%)
A 56 B 51 C ???? D 47
SI Tank Pressure (psig)
A 249 B 247 C ???? D 243
(21) SIAS Alarm YES

C-12

Concentrated Boric Acid Tank Levels
T53A 70.2 %
T53B 62.6 %
Reactor Vessel DP ___ psid
(12) PORV Discharge Temperature ___ F
(13) Pzr Safety Valve Discharge Temp (F)
RV-1039 ___ F
RV-1040 ___ F
RV-1041 ___ F

C-12

PCP Current (Amps)
P-50A 0 P-50B 723
P-50C 731 P-50D 0
(6) PCS Flow ___ %
(3) Thot (F) Loop 1 401F
Loop 2 401F
(2) Tcold (F) Loop 1A 401F
Loop 2A 401F
Loop 1B 401F
Loop 2B 401F
(5) Subcooling 36F ___ PSIA
(7) PCS WR Pressure (R) 1045 PSIA
(7) PCS NR PRESSURE (R) 600 PSIA
(30) S/G A LEVEL WR 105 %
(30) S/G A LEVEL (R) ___ %
(30) S/G A PRESS 249 psia
S/G A STM FLW(R) 0 X10**6 PPH
S/G A FD FLW (R) 0 X10**6 PPH
(30) S/G B LEVEL WR 100 %
(30) S/G B LEVEL (R) ___ %
(30) S/G B PRESS ???? psia
S/G B STM FLW(R) ???? X10**6 PPH
S/G B FD FLW (R) ???? X10**6 PPH

PANEL K-13

(20) CONTAINMENT HIGH PRESS
NO

(20) Containment High Radiation
YES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1045 Scenario Time 0215 Message # 23 141

C-01

MFP Suction Pressure	___ psig
MFP A Discharge Pressure	15 psig
MFP B Discharge Pressure	15 psig
AFW Pump P-8C Amperes	___ AMPS
AFW Disch Press P-8C	???? psig
AFW Pump P-8A Amperes	___ AMPS
AFW PUMP P8-B Steam Pressure	0 psig
AFW Disch Press P-8A & P-8B	13 psig
Moisture SEP Drain Tank Level	___ %
Condensor Hotwell Level	79 %
Condensor Vacuum	-.2 in Hg.
Gland Seal Condensor Vacuum	___ in Hg.
Atmospheric Dump Valves	CLOSED
AFW Pump P-8A OFF P-8B OFF P-8C ????	
Heater Drain Pump P-10A ___ P-10B ___	
Condensate Pump P-2A OFF P-2B OFF	

C-11

(31) AFW FLOW TO SGA
FROM P8A,B 0 From P-8C ???? gpm
(31) AFW FLOW TO SGB
FROM P-8A&B 0 From P-8C ???? gpm

Condensor Vacuum (R)	0 IN.HG.
PCP A Leak-off Flow (R)	___ GPM
PCP B Leak-off Flow (R)	___ GPM
PCP C Leak-off Flow (R)	___ GPM
PCP D Leak-off Flow (R)	___ GPM

C-04

(32) D/G Freq 1-1	____	1-2	____
(32) 1-C BUS VOLTS	____	Amps	____
(32) 1-D BUS VOLTS	____	Amps	____

C-11 BACK C-11A

(17) Containment Area Monitors	
RIA-1805	???? R/Hr
RIA-1806	???? R/Hr
RIA-1807	???? R/Hr
RIA-1808	???? R/Hr
(17) High Range Containment Monitors	
RIA-2321	???? R/Hr
RIA-2322	???? R/Hr
(19) Containment Hydrogen Concentration	
AI-2401R	???? (%)
AI-2401L	???? (%)
(30) Main Steam Line Gamma	
RIA-2324	???? CPM
RIA-2323	???? CPM

EQUIPMENT STATUS:

1. SIGNIFICANT EQUIP OUTAGES (INOPERABLE EQUIPMENT)
2. SURVEILLANCE DUE/PROGRESS
3. ABNORMAL ELECTRICAL LINEUPS OR OUTAGES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1045 Scenario Time 0215 Message # 23 142

C-08

SW Pumps P-7A ___ P-7B ___ P-7C ___
CCW Pumps P-52A ___ P-52B ___ P-52C ___
FPC Pumps P-51A ___ P-51B ___

CONTAINMENT COOLER RECIRC FANS

V1A ???? V2A ???? V3A ???? V4A ON
V1B ___ V2B ___ V3B ___ V4B ___

C-03

(23) HPSI Pumps P-66A ???? P-66B OFF
(24) LPSI Pumps P-67A ???? P-67B ON
(18) Containment Spray Pumps
P-54A ???? P-54B OFF P-54C OFF
(27) HPSIA, LPSIA, SPRAY A SUCTION
CV-3057(SIRWT) CV-3029(SUMP)
???? ????

(27) HPSIB, LPSIB, SPRAY B SUCTION
CV-3031 (SIRW) CV-3030 (Sump)
OPEN CLOSED

C-02

Intermediate Press Letdown Temp ___ F
Charging Line Temperature ___ F
Letdown Line Temp ___ F
SDCS from PCS (R) ___ F
SDCS to PCS (R) 77 F

C-02

(10) VCT Temp 95 F
(10) VCT Pressure 20 psi
(10) VCT Level 16 %
PCP Control Bleedoff Pressure ___ psig
(26) Letdown Flow 0 gpm
(26) Charging Flow 0 gpm
(9) Quench Tank Temp ___ F
(9) Quench TANK Pressure 11 psig
(9) QUENCH TANK Level 71 %
(7) Pressurizer Pressure (R) 1045 psia
(8) PZR Level (R) LT0102A 76 %
LT0103 ???? %
(12) PORV PRV-1042B _____ 1043B _____
(12) BLOCK MOV-1042A CLOSED 1043A ????
CHARGING PUMPS
P55A ???? P55B ???? P55C OFF
(6) PCPS P50A OFF P50B ON P50C ON P50D OFF
PZR HTR AMPS LC15 71 LCC 16 71
(1) PCS TAVE (R) LOOP1(TR-0111) 401 F
LOOP2(TR-0121) ???? F
(25) REACTOR POWER LEVEL
NI1 1.80E+2 cps NI3 1.30E-8 % NI7 ___ %
NI2 ???? cps NI4 1.30E-8 % NI8 ___ %
NI-05 2.0E-2 % NI-09 ___ %
NI-06 ???? % NI-10 ___ %

PIP
(DEMAND LOG+CONSTANT,ROD,OR FLUX/TEMP)
Gross MW ____
Net MW ____
(28) Control Rod Position
GP1 ???? GP2 ???? GP3 ???? GP4 ????
GP6(A) ???? GP7(B) ????
Stuck Rods ???? # 0
Core Exit Temp ???? F

Time 1100 Scenario Time 0230 Message # 25 140

C-13

Condensate Storage Tank Level T-2 35 %
Instrument Air Pressure ___ psig
(15) Containment Building Pressure ___ psig
(16) S/G A Compartment Temperature ___ F
S/G A COMPARTMENT Humidity ___ %
(16) S/G B Compartment Temperature ___ F
S/G B Humidity ___ %
(16) Dome Temperature 143 F
(11) SIRW Tank Level ???? %
(15) WR Containment Pressure (R) 16 psia
(14) Containment Sump Level 86 %
(14) Containment Water Level (R) ___ %
(22) SI Tank Level (%)
A 56 B 51 C ???? D 47
SI Tank Pressure (psig)
A 239 B 237 C ???? D 233
(21) SIAS Alarm NO

C-12

Concentrated Boric Acid Tank Levels
T53A 70.2 %
T53B 62.6 %
Reactor Vessel DP ___ psid
(12) PORV Discharge Temperature ___ F
(13) Pzr Safety Valve Discharge Temp (F)
RV-1039 ___ F
RV-1040 ___ F
RV-1041 ___ F

C-12

PCP Current (Amps)
P-50A 0 P-50B 721
P-50C 730 P-50D 0
(6) PCS Flow ___ %
(3) Thot (F) Loop 1 409F
Loop 2 409F
(2) Tcold (F) Loop 1A 408F
Loop 2A 408F
Loop 1B 408F
Loop 2B 408F
(5) Subcooling 36F ___ PSIA
(7) PCS WR Pressure (R) 1000 PSIA
(7) PCS NR PRESSURE (R) 600 PSIA
(30) S/G A LEVEL WR 99 %
(30) S/G A LEVEL (R) ___ %
(30) S/G A PRESS 270 psia
S/G A STM FLW(R) 0 X10**6 PPH
S/G A FD FLW (R) 0 X10**6 PPH
(30) S/G B LEVEL WR 93 %
(30) S/G B LEVEL (R) ___ %
(30) S/G B PRESS ???? psia
S/G B STM FLW(R) ???? X10**6 PPH
S/G B FD FLW (R) ???? X10**6 PPH

PANEL K-13

(20) CONTAINMENT HIGH PRESS
NO

(20) Containment High Radiation
YES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1100 Scenario Time 0230 Message # 25 141

C-01

MFP Suction Pressure	___ psig
MFP A Discharge Pressure	15 psig
MFP B Discharge Pressure	15 psig
AFW Pump P-8C Amperes	___ AMPS
AFW Disch Press P-8C	???? psig
AFW Pump P-8A Amperes	___ AMPS
AFW PUMP P8-B Steam Pressure	0 psig
AFW Disch Press P-8A & P-8B	13 psig
Moisture SEP Drain Tank Level	___ %
Condensor Hotwell Level	79 %
Condensor Vacuum	-.2 in Hg.
Gland Seal Condensor Vacuum	___ in Hg.
Atmospheric Dump Valves	THROT
AFW Pump P-8A OFF P-8B OFF P-8C ????	
Heater Drain Pump P-10A ___ P-10B ___	
Condensate Pump P-2A OFF P-2B OFF	

C-11

(31) AFW FLOW TO SGA
FROM P8A,B 0 From P-8C ???? gpm
(31) AFW FLOW TO SGB
FROM P-8A&B 0 From P-8C ???? gpm
Condensor Vacuum (R) 0 IN.HG.
PCP A Leak-off Flow (R) ___ GPM
PCP B Leak-off Flow (R) ___ GPM
PCP C Leak-off Flow (R) ___ GPM
PCP D Leak-off Flow (R) ___ GPM

C-04

(32) D/G Freq 1-1 ____ 1-2 ____
(32) 1-C BUS VOLTS ____ Amps ____
(32) 1-D BUS VOLTS ____ Amps ____

C-11 BACK C-11A

(17) Containment Area Monitors
RIA-1805 ???? R/Hr
RIA-1806 ???? R/Hr
RIA-1807 ???? R/Hr
RIA-1808 ???? R/Hr
(17) High Range Containment Monitors
RIA-2321 ???? R/Hr
RIA-2322 ???? R/Hr
(19) Containment Hydrogen Concentration
AI-2401R ???? (%)
AI-2401L ???? (%)
(30) Main Steam Line Gamma
RIA-2324 ???? CPM
RIA-2323 ???? CPM

EQUIPMENT STATUS:

1. SIGNIFICANT EQUIP OUTAGES (INOPERABLE EQUIPMENT)
2. SURVEILLANCE DUE/PROGRESS
3. ABNORMAL ELECTRICAL LINEUPS OR OUTAGES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1100 Scenario Time 0230 Message # 25 142

C-08

SW Pumps P-7A ___ P-7B ___ P-7C ___
CCW Pumps P-52A ___ P-52B ___ P-52C ___
FPC Pumps P-51A ___ P-51B ___

CONTAINMENT COOLER RECIRC FANS

V1A ???? V2A ???? V3A ???? V4A ON
V1B ___ V2B ___ V3B ___ V4B ___

C-03

(23) HPSI Pumps P-66A ???? P-66B OFF
(24) LPSI Pumps P-67A ???? P-67B OFF
(18) Containment Spray Pumps
P-54A ???? P-54B OFF P-54C OFF
(27) HPSIA, LPSIA, SPRAY A SUCTION
CV-3057(SIRWT) CV-3029(SUMP)
???? ????

(27) HPSIB, LPSIB, SPRAY B SUCTION
CV-3031 (SIRW) CV-3030 (Sump)
OPEN CLOSED

C-02

Intermediate Press Letdown Temp ___ F
Charging Line Temperature ___ F
Letdown Line Temp ___ F
SDCS from PCS (R) ___ F
SDCS to PCS (R) 77 F

C-02

(10) VCT Temp 95 F
(10) VCT Pressure 20 psi
(10) VCT Level 16 %
PCP Control Bleedoff Pressure ___ psig
(26) Letdown Flow 0 gpm
(26) Charging Flow 0 gpm
(9) Quench Tank Temp ___ F
(9) Quench TANK Pressure 9 psig
(9) QUENCH TANK Level 73 %
(7) Pressurizer Pressure (R) 1000 psia
(8) PZR Level (R) LT0102A 79 %
LT0103 ???? %
(12) PORV PRV-1042B _____ 1043B _____
(12) BLOCK MOV-1042A CLOSED 1043A ????
CHARGING PUMPS
P55A ???? P55B ???? P55C OFF
(6) PCPS P50A OFF P50B ON P50C ON P50D OFF
PZR HTR AMPS LC15 71 LCC 16 71
(1) PCS TAVE (R) LOOP1(TR-0111) 408 F
LOOP2(TR-0121) ???? F
(25) REACTOR POWER LEVEL
NI1 1.90E+2 cps NI3 1.30E-8 % NI7 ___ %
NI2 ???? cps NI4 1.30E-8 % NI8 ___ %
NI-05 2.1E-2 % NI-09 ___ %
NI-06 ???? % NI-10 ___ %

PIP
(DEMAND LOG+CONSTANT,ROD,OR FLUX/TEMP)
Gross MW ____
Net MW ____
(28) Control Rod Position
GP1 ???? GP2 ???? GP3 ???? GP4 ????
GP6(A) ???? GP7(B) ????
Stuck Rods ???? # 0
Core Exit Temp ???? F

Time 1115 Scenario Time 0245 Message # 26 140

C-13

Condensate Storage Tank Level T-2 35 %
Instrument Air Pressure ___ psig
(15) Containment Building Pressure ___ psig
(16) S/G A Compartment Temperature ___ F
S/G A COMPARTMENT Humidity ___ %
(16) S/G B Compartment Temperature ___ F
S/G B Humidity ___ %
(16) Dome Temperature 130 F
(11) SIRW Tank Level ???? %
(15) WR Containment Pressure (R) 16 psia
(14) Containment Sump Level 94 %
(14) Containment Water Level (R) ___ %
(22) SI Tank Level (%)
A 56 B 51 C ???? D 47
SI Tank Pressure (psig)
A 231 B 229 C ???? D 226
(21) SIAS Alarm NO

C-12

Concentrated Boric Acid Tank Levels
T53A 70.2 %
T53B 62.6 %
Reactor Vessel DP ___ psid
(12) PORV Discharge Temperature ___ F
(13) Pzr Safety Valve Discharge Temp (F)
RV-1039 ___ F
RV-1040 ___ F
RV-1041 ___ F

C-12

PCP Current (Amps)
P-50A 0 P-50B 721
P-50C 730 P-50D 0
(6) PCS Flow ___ %
(3) Thot (F) Loop 1 408F
Loop 2 408F
(2) Tcold (F) Loop 1A 407F
Loop 2A 408F
Loop 1B 407F
Loop 2B 408F
(5) Subcooling 36F ___ PSIA
(7) PCS WR Pressure (R) 982 PSIA
(7) PCS NR PRESSURE (R) 600 PSIA
(30) S/G A LEVEL WR 79 %
(30) S/G A LEVEL (R) ___ %
(30) S/G A PRESS 267 psia
S/G A STM FLW(R) 0 X10**6 PPH
S/G A FD FLW (R) 0 X10**6 PPH
(30) S/G B LEVEL WR 78 %
(30) S/G B LEVEL (R) ___ %
(30) S/G B PRESS ???? psia
S/G B STM FLW(R) ???? X10**6 PPH
S/G B FD FLW (R) ???? X10**6 PPH

PANEL K-13

(20) CONTAINMENT HIGH PRESS
NO

(20) Containment High Radiation
YES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1115 Scenario Time 0245 Message # 26 141

C-01

MFP Suction Pressure	___ psig
MFP A Discharge Pressure	15 psig
MFP B Discharge Pressure	15 psig
AFW Pump P-8C Amperes	___ AMPS
AFW Disch Press P-8C	???? psig
AFW Pump P-8A Amperes	___ AMPS
AFW PUMP P8-B Steam Pressure	0 psig
AFW Disch Press P-8A & P-8B	13 psig
Moisture SEP Drain Tank Level	___ %
Condensor Hotwell Level	79 %
Condensor Vacuum	-.2 in Hg.
Gland Seal Condensor Vacuum	___ in Hg.
Atmospheric Dump Valves	THROT

AFW Pump P-8A OFF P-8B OFF P-8C ????
Heater Drain Pump P-10A ___ P-10B ___
Condensate Pump P-2A OFF P-2B OFF

C-11

(31) AFW FLOW TO SGA
FROM P8A,B 0 From P-8C ???? gpm
(31) AFW FLOW TO SGB
FROM P-8A&B 0 From P-8C ???? gpm

Condensor Vacuum (R)	0 IN.HG.
PCP A Leak-off Flow (R)	___ GPM
PCP B Leak-off Flow (R)	___ GPM
PCP C Leak-off Flow (R)	___ GPM
PCP D Leak-off Flow (R)	___ GPM

C-04

(32) D/G Freq 1-1 ____ 1-2 ____
(32) 1-C BUS VOLTS ____ Amps ____
(32) 1-D BUS VOLTS ____ Amps ____

C-11 BACK C-11A

(17) Containment Area Monitors

RIA-1805	???? R/Hr
RIA-1806	???? R/Hr
RIA-1807	???? R/Hr
RIA-1808	???? R/Hr

(17) High Range Containment Monitors

RIA-2321	???? R/Hr
RIA-2322	???? R/Hr

(19) Containment Hydrogen Concentration

AI-2401R	???? (%)
AI-2401L	???? (%)

(30) Main Steam Line Gamma

RIA-2324	???? CPM
RIA-2323	???? CPM

EQUIPMENT STATUS:

1. SIGNIFICANT EQUIP OUTAGES
   (INOPERABLE EQUIPMENT)
2. SURVEILLANCE DUE/PROGRESS
3. ABNORMAL ELECTRICAL LINEUPS
   OR OUTAGES

_____
_____
_____
_____

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1115 Scenario Time 0245 Message # 26 142

C-08

SW Pumps P-7A ___ P-7B ___ P-7C ___
CCW Pumps P-52A ___ P-52B ___ P-52C ___
FPC Pumps P-51A ___ P-51B ___

CONTAINMENT COOLER RECIRC FANS

V1A ???? V2A ???? V3A ???? V4A ON
V1B ___ V2B ___ V3B ___ V4B ___

C-03

(23) HPSI Pumps P-66A ???? P-66B OFF
(24) LPSI Pumps P-67A ???? P-67B OFF
(18) Containment Spray Pumps
P-54A ???? P-54B OFF P-54C OFF
(27) HPSIA, LPSIA, SPRAY A SUCTION
CV-3057(SIRWT) CV-3029(SUMP)
???? ????

(27) HPSIB, LPSIB, SPRAY B SUCTION
CV-3031 (SIRW) CV-3030 (Sump)
OPEN CLOSED

C-02

Intermediate Press Letdown Temp ___ F
Charging Line Temperature ___ F
Letdown Line Temp ___ F
SDCS from PCS (R) ___ F
SDCS to PCS (R) 77 F

C-02

(10) VCT Temp 95 F
(10) VCT Pressure 20 psi
(10) VCT Level 16 %
PCP Control Bleedoff Pressure ___ psig
(26) Letdown Flow 0 gpm
(26) Charging Flow 0 gpm
(9) Quench Tank Temp ___ F
(9) Quench TANK Pressure 6 psig
(9) QUENCH TANK Level 72 %
(7) Pressurizer Pressure (R) 982 psia
(8) PZR Level (R) LT0102A 80 %
LT0103 ???? %
(12) PORV PRV-1042B _____ 1043B _____
(12) BLOCK MOV-1042A CLOSED 1043A ????
CHARGING PUMPS
P55A ???? P55B ???? P55C OFF
(6) PCPS P50A OFF P50B ON P50C ON P50D OFF
PZR HTR AMPS LC15 71 LCC 16 71
(1) PCS TAVE (R) LOOP1(TR-0111) 408 F
LOOP2(TR-0121) ???? F
(25) REACTOR POWER LEVEL
NI1 1.90E+2 cps NI3 1.30E-8 % NI7 ___ %
NI2 ???? cps NI4 1.30E-8 % NI8 ___ %
NI-05 3.3E-9 % NI-09 ___ %
NI-06 ???? % NI-10 ___ %

PIP
(DEMAND LOG+CONSTANT,ROD,OR FLUX/TEMP)
Gross MW ____
Net MW ____
(28) Control Rod Position
GP1 ???? GP2 ???? GP3 ???? GP4 ????
GP6(A) ???? GP7(B) ????
Stuck Rods ???? # 0
Core Exit Temp ???? F

SHAVPAL1 T S C S T A T U S P A G E PALEX 91

Time 1130 Scenario Time 0300 Message # 27b 140

C-13

Condensate Storage Tank Level T-2 34 %
Instrument Air Pressure ___ psig
(15) Containment Building Pressure ___ psig
(16) S/G A Compartment Temperature ___ F
S/G A COMPARTMENT Humidity ___ %
(16) S/G B Compartment Temperature ___ F
S/G B Humidity ___ %
(16) Dome Temperature 121 F
(11) SIRW Tank Level ???? %
(15) WR Containment Pressure (R) 16 psia
(14) Containment Sump Level 102 %
(14) Containment Water Level (R) ___ %
(22) SI Tank Level (%)
A 56 B 51 C ???? D 47
SI Tank Pressure (psig)
A 226 B 224 C ???? D 221
(21) SIAS Alarm NO

C-12

Concentrated Boric Acid Tank Levels
T53A 70.2 %
T53B 62.6 %
Reactor Vessel DP ___ psid
(12) PORV Discharge Temperature ___ F
(13) Pzr Safety Valve Discharge Temp (F)
RV-1039 ___ F
RV-1040 ___ F
RV-1041 ___ F

C-12

PCP Current (Amps)
P-50A 0 P-50B 721
P-50C 730 P-50D 0
(6) PCS Flow ___ %
(3) Thot (F) Loop 1 408F
Loop 2 408F
(2) Tcold (F) Loop 1A 407F
Loop 2A 408F
Loop 1B 407F
Loop 2B 408F
(5) Subcooling 36F ___ PSIA
(7) PCS WR Pressure (R) 980 PSIA
(7) PCS NR PRESSURE (R) 600 PSIA
(30) S/G A LEVEL WR 74 %
(30) S/G A LEVEL (R) ___ %
(30) S/G A PRESS 267 psia
S/G A STM FLW(R) 0 X10**6 PPH
S/G A FD FLW (R) 0 X10**6 PPH
(30) S/G B LEVEL WR 73 %
(30) S/G B LEVEL (R) ___ %
(30) S/G B PRESS ???? psia
S/G B STM FLW(R) ???? X10**6 PPH
S/G B FD FLW (R) ???? X10**6 PPH

PANEL K-13

(20) CONTAINMENT HIGH PRESS
NO

(20) Containment High Radiation
YES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1130 Scenario Time 0300 Message # 27b 141

C-01

MFP Suction Pressure	___ psig
MFP A Discharge Pressure	15 psig
MFP B Discharge Pressure	15 psig
AFW Pump P-8C Amperes	___ AMPS
AFW Disch Press P-8C	???? psig
AFW Pump P-8A Amperes	___ AMPS
AFW PUMP P8-B Steam Pressure	0 psig
AFW Disch Press P-8A & P-8B	13 psig
Moisture SEP Drain Tank Level	___ %
Condensor Hotwell Level	79 %
Condensor Vacuum	-.2 in Hg.
Gland Seal Condensor Vacuum	___ in Hg.
Atmospheric Dump Valves	CLOSED

AFW Pump P-8A OFF P-8B OFF P-8C ????
Heater Drain Pump P-10A ___ P-10B ___
Condensate Pump P-2A OFF P-2B OFF

C-11

(31) AFW FLOW TO SGA
FROM P8A,B 0 From P-8C ???? gpm
(31) AFW FLOW TO SGB
FROM P-8A&B 0 From P-8C ???? gpm

Condensor Vacuum (R)	0 IN.HG.
PCP A Leak-off Flow (R)	___ GPM
PCP B Leak-off Flow (R)	___ GPM
PCP C Leak-off Flow (R)	___ GPM
PCP D Leak-off Flow (R)	___ GPM

C-04

(32) D/G Freq 1-1 ____ 1-2 ____
(32) 1-C BUS VOLTS ____ Amps ____
(32) 1-D BUS VOLTS ____ Amps ____

C-11 BACK C-11A

(17) Containment Area Monitors

RIA-1805	???? R/Hr
RIA-1806	???? R/Hr
RIA-1807	???? R/Hr
RIA-1808	???? R/Hr

(17) High Range Containment Monitors

RIA-2321	???? R/Hr
RIA-2322	???? R/Hr

(19) Containment Hydrogen Concentration

AI-2401R	???? (%)
AI-2401L	???? (%)

(30) Main Steam Line Gamma

RIA-2324	???? CPM
RIA-2323	???? CPM

EQUIPMENT STATUS:

1. SIGNIFICANT EQUIP OUTAGES (INOPERABLE EQUIPMENT)
2. SURVEILLANCE DUE/PROGRESS
3. ABNORMAL ELECTRICAL LINEUPS OR OUTAGES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1130 Scenario Time 0300 Message # 27b 142

C-08

SW Pumps P-7A ___ P-7B ___ P-7C ___
CCW Pumps P-52A ___ P-52B ___ P-52C ___
FPC Pumps P-51A ___ P-51B ___

CONTAINMENT COOLER RECIRC FANS

V1A ???? V2A ???? V3A ???? V4A ON
V1B ___ V2B ___ V3B ___ V4B ___

C-03

(23) HPSI Pumps P-66A ???? P-66B OFF
(24) LPSI Pumps P-67A ???? P-67B OFF
(18) Containment Spray Pumps
P-54A ???? P-54B OFF P-54C OFF
(27) HPSIA, LPSIA, SPRAY A SUCTION
CV-3057(SIRWT) CV-3029(SUMP)
???? ????

(27) HPSIB, LPSIB, SPRAY B SUCTION
CV-3031 (SIRW) CV-3030 (Sump)
OPEN CLOSED

C-02

Intermediate Press Letdown Temp ___ F
Charging Line Temperature ___ F
Letdown Line Temp ___ F
SDCS from PCS (R) ___ F
SDCS to PCS (R) 77 F

C-02

(10) VCT Temp 95 F
(10) VCT Pressure 20 psi
(10) VCT Level 16 %
PCP Control Bleedoff Pressure ___ psig
(26) Letdown Flow 0 gpm
(26) Charging Flow 0 gpm
(9) Quench Tank Temp ___ F
(9) Quench TANK Pressure 5 psig
(9) QUENCH TANK Level 72 %
(7) Pressurizer Pressure (R) 980 psia
(8) PZR Level (R) LT0102A 81 %
LT0103 ???? %
(12) PORV PRV-1042B _____ 1043B _____
(12) BLOCK MOV-1042A CLOSED 1043A ????
CHARGING PUMPS
P55A ???? P55B ???? P55C OFF
(6) PCPS P50A OFF P50B ON P50C ON P50D OFF
PZR HTR AMPS LC15 71 LCC 16 71
(1) PCS TAVE (R) LOOP1(TR-0111) 408 F
LOOP2(TR-0121) ???? F
(25) REACTOR POWER LEVEL
NI1 1.90E+2 cps NI3 1.30E-8 % NI7 ___ %
NI2 ???? cps NI4 1.30E-8 % NI8 ___ %
NI-05 3.3E-9 % NI-09 ___ %
NI-06 ???? % NI-10 ___ %

PIP

(DEMAND LOG+CONSTANT,ROD,OR FLUX/TEMP)
Gross MW ____
Net MW ____
(28) Control Rod Position
GP1 ???? GP2 ???? GP3 ???? GP4 ????
GP6(A) ???? GP7(B) ????
Stuck Rods ???? # 0
Core Exit Temp ???? F

SHAVPAL1 T S C S T A T U S P A G E PALEX 91

Time 1145 Scenario Time 0315 Message # 28 140

C-13

Condensate Storage Tank Level T-2 34 %
Instrument Air Pressure ___ psig
(15) Containment Building Pressure ___ psig
(16) S/G A Compartment Temperature ___ F
S/G A COMPARTMENT Humidity ___ %
(16) S/G B Compartment Temperature ___ F
S/G B Humidity ___ %
(16) Dome Temperature 120 F
(11) SIRW Tank Level ???? %
(15) WR Containment Pressure (R) 16 psia
(14) Containment Sump Level 103 %
(14) Containment Water Level (R) ___ %
(22) SI Tank Level (%)
A 56 B 51 C ???? D 47
SI Tank Pressure (psig)
A 223 B 221 C ???? D 218
(21) SIAS Alarm NO

C-12

Concentrated Boric Acid Tank Levels
T53A 70.2 %
T53B 62.6 %
Reactor Vessel DP ___ psid
(12) PORV Discharge Temperature ___ F
(13) Pzr Safety Valve Discharge Temp (F)
RV-1039 ___ F
RV-1040 ___ F
RV-1041 ___ F

C-12

PCP Current (Amps)
P-50A 0 P-50B 723
P-50C 731 P-50D 0
(6) PCS Flow ___ %
(3) Thot (F) Loop 1 404F
Loop 2 404F
(2) Tcold (F) Loop 1A 402F
Loop 2A 402F
Loop 1B 402F
Loop 2B 402F
(5) Subcooling 36F ___ PSIA
(7) PCS WR Pressure (R) 706 PSIA
(7) PCS NR PRESSURE (R) 600 PSIA
(30) S/G A LEVEL WR 66 %
(30) S/G A LEVEL (R) ___ %
(30) S/G A PRESS 248 psia
S/G A STM FLW(R) .1 X10**6 PPH
S/G A FD FLW (R) 0 X10**6 PPH
(30) S/G B LEVEL WR 65 %
(30) S/G B LEVEL (R) ___ %
(30) S/G B PRESS ???? psia
S/G B STM FLW(R) ???? X10**6 PPH
S/G B FD FLW (R) ???? X10**6 PPH

PANEL K-13

(20) CONTAINMENT HIGH PRESS
NO

(20) Containment High Radiation
YES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1145 Scenario Time 0315 Message # 28 141

C-01

MFP Suction Pressure	___ psig
MFP A Discharge Pressure	15 psig
MFP B Discharge Pressure	15 psig
AFW Pump P-8C Amperes	___ AMPS
AFW Disch Press P-8C	???? psig
AFW Pump P-8A Amperes	___ AMPS
AFW PUMP P8-B Steam Pressure	0 psig
AFW Disch Press P-8A & P-8B	13 psig
Moisture SEP Drain Tank Level	___ %
Condensor Hotwell Level	79 %
Condensor Vacuum	-.2 in Hg.
Gland Seal Condensor Vacuum	___ in Hg.
Atmospheric Dump Valves	THROT
AFW Pump P-8A OFF P-8B OFF P-8C ????	
Heater Drain Pump P-10A ___ P-10B ___	
Condensate Pump P-2A OFF P-2B OFF	

C-11

(31) AFW FLOW TO SGA
FROM P8A,B 0 From P-8C ???? gpm

(31) AFW FLOW TO SGB
FROM P-8A&B 0 From P-8C ???? gpm

Condensor Vacuum (R)	0 IN.HG.
PCP A Leak-off Flow (R)	___ GPM
PCP B Leak-off Flow (R)	___ GPM
PCP C Leak-off Flow (R)	___ GPM
PCP D Leak-off Flow (R)	___ GPM

C-04

(32) D/G Freq 1-1 ____ 1-2 ____
(32) 1-C BUS VOLTS ____ Amps ____
(32) 1-D BUS VOLTS ____ Amps ____

C-11 BACK C-11A

(17) Containment Area Monitors

RIA-1805	???? R/Hr
RIA-1806	???? R/Hr
RIA-1807	???? R/Hr
RIA-1808	???? R/Hr

(17) High Range Containment Monitors

RIA-2321	???? R/Hr
RIA-2322	???? R/Hr

(19) Containment Hydrogen Concentration

AI-2401R	???? (%)
AI-2401L	???? (%)

(30) Main Steam Line Gamma

RIA-2324	???? CPM
RIA-2323	???? CPM

EQUIPMENT STATUS:

1. SIGNIFICANT EQUIP OUTAGES
   (INOPERABLE EQUIPMENT)
2. SURVEILLANCE DUE/PROGRESS
3. ABNORMAL ELECTRICAL LINEUPS
   OR OUTAGES

_____
_____
_____
_____

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1145 Scenario Time 0315 Message # 28 142

C-08

SW Pumps P-7A ___ P-7B ___ P-7C ___
CCW Pumps P-52A ___ P-52B ___ P-52C ___
FPC Pumps P-51A ___ P-51B ___

CONTAINMENT COOLER RECIRC FANS

V1A ???? V2A ???? V3A ???? V4A ON
V1B ___ V2B ___ V3B ___ V4B ___

C-03

(23) HPSI Pumps P-66A ???? P-66B OFF
(24) LPSI Pumps P-67A ???? P-67B OFF
(18) Containment Spray Pumps
P-54A ???? P-54B OFF P-54C OFF
(27) HPSIA, LPSIA, SPRAY A SUCTION
CV-3057(SIRWT) CV-3029(SUMP)
???? ????

(27) HPSIB, LPSIB, SPRAY B SUCTION
CV-3031 (SIRW) CV-3030 (Sump)
OPEN CLOSED

C-02

Intermediate Press Letdown Temp ___ F
Charging Line Temperature ___ F
Letdown Line Temp ___ F
SDCS from PCS (R) ___ F
SDCS to PCS (R) 77 F

C-02

(10) VCT Temp 95 F
(10) VCT Pressure 20 psi
(10) VCT Level 16 %
PCP Control Bleedoff Pressure ___ psig
(26) Letdown Flow 0 gpm
(26) Charging Flow 0 gpm
(9) Quench Tank Temp ___ F
(9) Quench TANK Pressure 5 psig
(9) QUENCH TANK Level 72 %
(7) Pressurizer Pressure (R) 706 psia
(8) PZR Level (R) LT0102A 86 %
LT0103 ???? %
(12) PORV PRV-1042B _____ 1043B _____
(12) BLOCK MOV-1042A CLOSED 1043A ????
CHARGING PUMPS
P55A ???? P55B ???? P55C OFF
(6) PCPS P50A OFF P50B ON P50C ON P50D OFF
PZR HTR AMPS LC15 71 LCC 16 71
(1) PCS TAVE (R) LOOP1(TR-0111) 403 F
LOOP2(TR-0121) ???? F
(25) REACTOR POWER LEVEL
NI1 1.80E+2 cps NI3 1.30E-8 % NI7 ___ %
NI2 ???? cps NI4 1.30E-8 % NI8 ___ %
NI-05 2.0E-2 % NI-09 ___ %
NI-06 ???? % NI-10 ___ %

PIP
(DEMAND LOG+CONSTANT,ROD,OR FLUX/TEMP)
Gross MW ____
Net MW ____
(28) Control Rod Position
GP1 ???? GP2 ???? GP3 ???? GP4 ????
GP6(A) ???? GP7(B) ????
Stuck Rods ???? # 0
Core Exit Temp ???? F

Time 1200 Scenario Time 0330 Message # 29 140

C-13

Condensate Storage Tank Level T-2 33 %
Instrument Air Pressure ___ psig
(15) Containment Building Pressure ___ psig
(16) S/G A Compartment Temperature ___ F
S/G A COMPARTMENT Humidity ___ %
(16) S/G B Compartment Temperature ___ F
S/G B Humidity ___ %
(16) Dome Temperature 120 F
(11) SIRW Tank Level ???? %
(15) WR Containment Pressure (R) 16 psia
(14) Containment Sump Level 104 %
(14) Containment Water Level (R) ___ %
(22) SI Tank Level (%)
A 56 B 51 C ???? D 47
SI Tank Pressure (psig)
A 222 B 220 C ???? D 217
(21) SIAS Alarm NO

C-12

Concentrated Boric Acid Tank Levels
T53A 70.2 %
T53B 62.6 %
Reactor Vessel DP ___ psid
(12) PORV Discharge Temperature ___ F
(13) Pzr Safety Valve Discharge Temp (F)
RV-1039 ___ F
RV-1040 ___ F
RV-1041 ___ F

C-12

PCP Current (Amps)
P-50A 0 P-50B 725
P-50C 734 P-50D 0
(6) PCS Flow ___ %
(3) Thot (F) Loop 1 392F
Loop 2 392F
(2) Tcold (F) Loop 1A 390F
Loop 2A 391F
Loop 1B 390F
Loop 2B 391F
(5) Subcooling 36F ___ PSIA
(7) PCS WR Pressure (R) 698 PSIA
(7) PCS NR PRESSURE (R) 600 PSIA
(30) S/G A LEVEL WR 53 %
(30) S/G A LEVEL (R) ___ %
(30) S/G A PRESS 214 psia
S/G A STM FLW(R) .1 X10**6 PPH
S/G A FD FLW (R) 0 X10**6 PPH
(30) S/G B LEVEL WR 53 %
(30) S/G B LEVEL (R) ___ %
(30) S/G B PRESS ???? psia
S/G B STM FLW(R) ???? X10**6 PPH
S/G B FD FLW (R) ???? X10**6 PPH

PANEL K-13

(20) CONTAINMENT HIGH PRESS
NO

(20) Containment High Radiation
YES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1200 Scenario Time 0330 Message # 29 141

C-01

MFP Suction Pressure	___ psig
MFP A Discharge Pressure	15 psig
MFP B Discharge Pressure	15 psig
AFW Pump P-8C Amperes	___ AMPS
AFW Disch Press P-8C	???? psig
AFW Pump P-8A Amperes	___ AMPS
AFW PUMP P8-B Steam Pressure	214 psig
AFW Disch Press P-8A & P-8B	1329 psig
Moisture SEP Drain Tank Level	___ %
Condensor Hotwell Level	79 %
Condensor Vacuum	-.2 in Hg.
Gland Seal Condensor Vacuum	___ in Hg.
Atmospheric Dump Valves	THROT
AFW Pump P-8A OFF P-8B ON P-8C ????	
Heater Drain Pump P-10A ___ P-10B ___	
Condensate Pump P-2A OFF P-2B OFF	

C-11

(31) AFW FLOW TO SGA
FROM P8A,B 94 From P-8C ???? gpm
(31) AFW FLOW TO SGB
FROM P-8A&B 85 From P-8C ???? gpm
Condensor Vacuum (R) 0 IN.HG.
PCP A Leak-off Flow (R) ___ GPM
PCP B Leak-off Flow (R) ___ GPM
PCP C Leak-off Flow (R) ___ GPM
PCP D Leak-off Flow (R) ___ GPM

C-04

(32) D/G Freq 1-1 ____ 1-2 ____
(32) 1-C BUS VOLTS ____ Amps ____
(32) 1-D BUS VOLTS ____ Amps ____

C-11 BACK C-11A

(17) Containment Area Monitors
RIA-1805 ???? R/Hr
RIA-1806 ???? R/Hr
RIA-1807 ???? R/Hr
RIA-1808 ???? R/Hr
(17) High Range Containment Monitors
RIA-2321 ???? R/Hr
RIA-2322 ???? R/Hr
(19) Containment Hydrogen Concentration
AI-2401R ???? (%)
AI-2401L ???? (%)
(30) Main Steam Line Gamma
RIA-2324 ???? CPM
RIA-2323 ???? CPM

EQUIPMENT STATUS:

1. SIGNIFICANT EQUIP OUTAGES
   (INOPERABLE EQUIPMENT)
2. SURVEILLANCE DUE/PROGRESS
3. ABNORMAL ELECTRICAL LINEUPS
   OR OUTAGES

_____
_____
_____
_____

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1200 Scenario Time 0330 Message # 29 142

C-08

SW Pumps P-7A ___ P-7B ___ P-7C ___
CCW Pumps P-52A ___ P-52B ___ P-52C ___
FPC Pumps P-51A ___ P-51B ___

CONTAINMENT COOLER RECIRC FANS

V1A ???? V2A ???? V3A ???? V4A ON
V1B ___ V2B ___ V3B ___ V4B ___

C-03

(23) HPSI Pumps P-66A ???? P-66B OFF
(24) LPSI Pumps P-67A ???? P-67B OFF
(18) Containment Spray Pumps
P-54A ???? P-54B OFF P-54C OFF
(27) HPSIA, LPSIA, SPRAY A SUCTION
CV-3057(SIRWT) CV-3029(SUMP)
???? ????

(27) HPSIB, LPSIB, SPRAY B SUCTION
CV-3031 (SIRW) CV-3030 (Sump)
OPEN CLOSED

C-02

Intermediate Press Letdown Temp ___ F
Charging Line Temperature ___ F
Letdown Line Temp ___ F
SDCS from PCS (R) ___ F
SDCS to PCS (R) 77 F

C-02

(10) VCT Temp 95 F
(10) VCT Pressure 20 psi
(10) VCT Level 16 %
PCP Control Bleedoff Pressure ___ psig
(26) Letdown Flow 0 gpm
(26) Charging Flow 33 gpm
(9) Quench Tank Temp ___ F
(9) Quench TANK Pressure 5 psig
(9) QUENCH TANK Level 72 %
(7) Pressurizer Pressure (R) 698 psia
(8) PZR Level (R) LT0102A 61 %
LT0103 ???? %
(12) PORV PRV-1042B _____ 1043B _____
(12) BLOCK MOV-1042A CLOSED 1043A ????
CHARGING PUMPS
P55A ???? P55B ???? P55C OFF
(6) PCPS P50A OFF P50B ON P50C ON P50D OFF
PZR HTR AMPS LC15 71 LCC 16 71
(1) PCS TAVE (R) LOOP1(TR-0111) 391 F
LOOP2(TR-0121) ???? F
(25) REACTOR POWER LEVEL
NI1 1.80E+2 cps NI3 1.30E-8 % NI7 ___ %
NI2 ???? cps NI4 1.30E-8 % NI8 ___ %
NI-05 3.3E-9 % NI-09 ___ %
NI-06 ???? % NI-10 ___ %

PIP
(DEMAND LOG+CONSTANT,ROD,OR FLUX/TEMP)
Gross MW ____
Net MW ____
(28) Control Rod Position
GP1 ???? GP2 ???? GP3 ???? GP4 ????
GP6(A) ???? GP7(B) ????
Stuck Rods ???? # 0
Core Exit Temp ???? F

Time 1215 Scenario Time 0345

Message # 30 140

C-13

Condensate Storage Tank Level T-2 30 %
Instrument Air Pressure ___ psig
(15) Containment Building Pressure ___ psig
(16) S/G A Compartment Temperature ___ F
S/G A COMPARTMENT Humidity ___ %
(16) S/G B Compartment Temperature ___ F
S/G B Humidity ___ %
(16) Dome Temperature 121 F
(11) SIRW Tank Level ???? %
(15) WR Containment Pressure (R) 16 psia
(14) Containment Sump Level 104 %
(14) Containment Water Level (R) ___ %
(22) SI Tank Level (%)
A 56 B 51 C ???? D 47
SI Tank Pressure (psig)
A 222 B 220 C ???? D 217
(21) SIAS Alarm NO

C-12

Concentrated Boric Acid Tank Levels
T53A 70.2 %
T53B 62.6 %
Reactor Vessel DP ___ psid
(12) PORV Discharge Temperature ___ F
(13) Pzr Safety Valve Discharge Temp (F)
RV-1039 ___ F
RV-1040 ___ F
RV-1041 ___ F

C-12

PCP Current (Amps)
P-50A 0 P-50B 728
P-50C 737 P-50D 0
(6) PCS Flow ___ %
(3) Thot (F) Loop 1 377F
Loop 2 377F
(2) Tcold (F) Loop 1A 376F
Loop 2A 376F
Loop 1B 376F
Loop 2B 376F
(5) Subcooling 36F ___ PSIA
(7) PCS WR Pressure (R) 665 PSIA
(7) PCS NR PRESSURE (R) 600 PSIA
(30) S/G A LEVEL WR 44 %
(30) S/G A LEVEL (R) ___ %
(30) S/G A PRESS 181 psia
S/G A STM FLW(R) .1 X10**6 PPH
S/G A FD FLW (R) 0 X10**6 PPH
(30) S/G B LEVEL WR 49 %
(30) S/G B LEVEL (R) ___ %
(30) S/G B PRESS ???? psia
S/G B STM FLW(R) ???? X10**6 PPH
S/G B FD FLW (R) ???? X10**6 PPH

PANEL K-13

(20) CONTAINMENT HIGH PRESS
NO

(20) Containment High Radiation
YES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1215 Scenario Time 0345 Message # 30 141

C-01

MFP Suction Pressure	___ psig
MFP A Discharge Pressure	15 psig
MFP B Discharge Pressure	15 psig
AFW Pump P-8C Amperes	___ AMPS
AFW Disch Press P-8C	???? psig
AFW Pump P-8A Amperes	___ AMPS
AFW PUMP P8-B Steam Pressure	181 psig
AFW Disch Press P-8A & P-8B	1274 psig
Moisture SEP Drain Tank Level	___ %
Condensor Hotwell Level	79 %
Condensor Vacuum	-.2 in Hg.
Gland Seal Condensor Vacuum	___ in Hg.
Atmospheric Dump Valves	THROT

AFW Pump P-8A OFF P-8B ON P-8C ????
Heater Drain Pump P-10A ___ P-10B ___
Condensate Pump P-2A OFF P-2B OFF

C-11

(31) AFW FLOW TO SGA
FROM P8A,B 86 From P-8C ???? gpm
(31) AFW FLOW TO SGB
FROM P-8A&B 97 From P-8C ???? gpm

Condensor Vacuum (R)	0 IN.HG.
PCP A Leak-off Flow (R)	___ GPM
PCP B Leak-off Flow (R)	___ GPM
PCP C Leak-off Flow (R)	___ GPM
PCP D Leak-off Flow (R)	___ GPM

C-04

(32) D/G Freq 1-1 ____ 1-2 ____
(32) 1-C BUS VOLTS ____ Amps ____
(32) 1-D BUS VOLTS ____ Amps ____

C-11 BACK C-11A

(17) Containment Area Monitors

RIA-1805	???? R/Hr
RIA-1806	???? R/Hr
RIA-1807	???? R/Hr
RIA-1808	???? R/Hr

(17) High Range Containment Monitors

RIA-2321	???? R/Hr
RIA-2322	???? R/Hr

(19) Containment Hydrogen Concentration

AI-2401R	???? (%)
AI-2401L	???? (%)

(30) Main Steam Line Gamma

RIA-2324	???? CPM
RIA-2323	???? CPM

EQUIPMENT STATUS:

1. SIGNIFICANT EQUIP OUTAGES (INOPERABLE EQUIPMENT)
2. SURVEILLANCE DUE/PROGRESS
3. ABNORMAL ELECTRICAL LINEUPS OR OUTAGES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1215 Scenario Time 0345 Message # 30 142

C-08

SW Pumps P-7A ___ P-7B ___ P-7C ___
CCW Pumps P-52A ___ P-52B ___ P-52C ___
FPC Pumps P-51A ___ P-51B ___

CONTAINMENT COOLER RECIRC FANS

V1A ???? V2A ???? V3A ???? V4A ON
V1B ___ V2B ___ V3B ___ V4B ___

C-03

(23) HPSI Pumps P-66A ???? P-66B OFF
(24) LPSI Pumps P-67A ???? P-67B OFF
(18) Containment Spray Pumps
P-54A ???? P-54B OFF P-54C OFF
(27) HPSIA, LPSIA, SPRAY A SUCTION
CV-3057(SIRWT) CV-3029(SUMP)
???? ????

(27) HPSIB, LPSIB, SPRAY B SUCTION
CV-3031 (SIRW) CV-3030 (Sump)
OPEN CLOSED

C-02

Intermediate Press Letdown Temp ___ F
Charging Line Temperature ___ F
Letdown Line Temp ___ F
SDCS from PCS (R) ___ F
SDCS to PCS (R) 77 F

C-02

(10) VCT Temp 95 F
(10) VCT Pressure 20 psi
(10) VCT Level 16 %
PCP Control Bleedoff Pressure ___ psig
(26) Letdown Flow 0 gpm
(26) Charging Flow 93 gpm
(9) Quench Tank Temp ___ F
(9) Quench TANK Pressure 5 psig
(9) QUENCH TANK Level 72 %
(7) Pressurizer Pressure (R) 665 psia
(8) PZR Level (R) LT0102A 30 %
LT0103 ???? %
(12) PORV PRV-1042B _____ 1043B _____
(12) BLOCK MOV-1042A CLOSED 1043A ????
CHARGING PUMPS
P55A ???? P55B ???? P55C OFF
(6) PCPS P50A OFF P50B ON P50C ON P50D OFF
PZR HTR AMPS LC15 0 LCC 16 0
(1) PCS TAVE (R) LOOP1(TR-0111) 377 F
LOOP2(TR-0121) ???? F
(25) REACTOR POWER LEVEL
NI1 1.70E+2 cps NI3 1.30E-8 % NI7 ___ %
NI2 ???? cps NI4 1.30E-8 % NI8 ___ %
NI-05 1.9E-2 % NI-09 ___ %
NI-06 ???? % NI-10 ___ %

PIP
(DEMAND LOG+CONSTANT,ROD,OR FLUX/TEMP)
Gross MW ____
Net MW ____
(28) Control Rod Position
GP1 ???? GP2 ???? GP3 ???? GP4 ????
GP6(A) ???? GP7(B) ????
Stuck Rods ???? # 0
Core Exit Temp ???? F

Time 1230 Scenario Time 0400 Message # 31 140

C-13

Condensate Storage Tank Level T-2 27 %
Instrument Air Pressure ___ psig
(15) Containment Building Pressure ___ psig
(16) S/G A Compartment Temperature ___ F
S/G A COMPARTMENT Humidity ___ %
(16) S/G B Compartment Temperature ___ F
S/G B Humidity ___ %
(16) Dome Temperature 84 F
(11) SIRW Tank Level 31 %
(15) WR Containment Pressure (R) 14 psia
(14) Containment Sump Level 105 %
(14) Containment Water Level (R) ___ %
(22) SI Tank Level (%)
A 50 B 50 C 48 D 50
SI Tank Pressure (psig)
A 210 B 209 C 212 D 209
(21) SIAS Alarm NO

C-12

Concentrated Boric Acid Tank Levels
T53A 70.2 %
T53B 62.6 %
Reactor Vessel DP ___ psid
(12) PORV Discharge Temperature ___ F
(13) Pzr Safety Valve Discharge Temp (F)
RV-1039 ___ F
RV-1040 ___ F
RV-1041 ___ F

C-12

PCP Current (Amps)
P-50A 0 P-50B 743
P-50C 751 P-50D 0
(6) PCS Flow ___ %
(3) Thot (F) Loop 1 300F
Loop 2 300F
(2) Tcold (F) Loop 1A 299F
Loop 2A 300F
Loop 1B 299F
Loop 2B 300F
(5) Subcooling -119F ___ PSIA
(7) PCS WR Pressure (R) 262 PSIA
(7) PCS NR PRESSURE (R) 262 PSIA
(30) S/G A LEVEL WR 63 %
(30) S/G A LEVEL (R) ___ %
(30) S/G A PRESS 66 psia
S/G A STM FLW(R) 0 X10**6 PPH
S/G A FD FLW (R) 0 X10**6 PPH
(30) S/G B LEVEL WR 63 %
(30) S/G B LEVEL (R) ___ %
(30) S/G B PRESS 66 psia
S/G B STM FLW(R) 0 X10**6 PPH
S/G B FD FLW (R) 0 X10**6 PPH

PANEL K-13

(20) CONTAINMENT HIGH PRESS
NO

(20) Containment High Radiation
NO

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1230 Scenario Time 0400 Message # 31 141

C-01

MFP Suction Pressure	___ psig
MFP A Discharge Pressure	15 psig
MFP B Discharge Pressure	15 psig
AFW Pump P-8C Amperes	___ AMPS
AFW Disch Press P-8C	15 psig
AFW Pump P-8A Amperes	___ AMPS
AFW PUMP P8-B Steam Pressure	0 psig
AFW Disch Press P-8A & P-8B	15 psig
Moisture SEP Drain Tank Level	___ %
Condensor Hotwell Level	88 %
Condensor Vacuum	-.2 in Hg.
Gland Seal Condensor Vacuum	___ in Hg.
Atmospheric Dump Valves	CLOSED

AFW Pump P-8A OFF P-8B OFF P-8C OFF
Heater Drain Pump P-10A ___ P-10B ___
Condensate Pump P-2A OFF P-2B OFF

C-11

(31) AFW FLOW TO SGA
FROM P8A,B 0 From P-8C 0 gpm
(31) AFW FLOW TO SGB
FROM P-8A&B 0 From P-8C 0 gpm

Condensor Vacuum (R)	0 IN.HG.
PCP A Leak-off Flow (R)	___ GPM
PCP B Leak-off Flow (R)	___ GPM
PCP C Leak-off Flow (R)	___ GPM
PCP D Leak-off Flow (R)	___ GPM

C-04

(32) D/G Freq 1-1 ____ 1-2 ____
(32) 1-C BUS VOLTS ____ Amps ____
(32) 1-D BUS VOLTS ____ Amps ____

C-11 BACK C-11A

(17) Containment Area Monitors

RIA-1805	4.20E+2 R/Hr
RIA-1806	???? R/Hr
RIA-1807	5.13E+2 R/Hr
RIA-1808	4.82E+2 R/Hr

(17) High Range Containment Monitors

RIA-2321	???? R/Hr
RIA-2322	???? R/Hr

(19) Containment Hydrogen Concentration

AI-2401R	???? (%)
AI-2401L	???? (%)

(30) Main Steam Line Gamma

RIA-2324	???? CPM
RIA-2323	???? CPM

EQUIPMENT STATUS:

1. SIGNIFICANT EQUIP OUTAGES (INOPERABLE EQUIPMENT)
2. SURVEILLANCE DUE/PROGRESS
3. ABNORMAL ELECTRICAL LINEUPS OR OUTAGES

SHAVPAL1
PALEX 91

T S C S T A T U S P A G E

Time 1230 Scenario Time 0400 Message # 31 142

C-08

SW Pumps P-7A ___ P-7B ___ P-7C ___
CCW Pumps P-52A ___ P-52B ___ P-52C ___
FPC Pumps P-51A ___ P-51B ___

CONTAINMENT COOLER RECIRC FANS

V1A ON V2A ON V3A ON V4A ON
V1B ___ V2B ___ V3B ___ V4B ___

C-03

(23) HPSI Pumps P-66A OFF P-66B OFF
(24) LPSI Pumps P-67A ON P-67B OFF
(18) Containment Spray Pumps
P-54A OFF P-54B OFF P-54C OFF
(27) HPSIA, LPSIA, SPRAY A SUCTION
CV-3057(SIRWT) CV-3029(SUMP)
OPEN CLOSED

(27) HPSIB, LPSIB, SPRAY B SUCTION
CV-3031 (SIRW) CV-3030 (Sump)
OPEN CLOSED

C-02

Intermediate Press Letdown Temp ___ F
Charging Line Temperature ___ F
Letdown Line Temp ___ F
SDCS from PCS (R) ___ F
SDCS to PCS (R) 266 F

C-02

(10) VCT Temp 95 F
(10) VCT Pressure 50 psi
(10) VCT Level 83 %
PCP Control Bleedoff Pressure ___ psig
(26) Letdown Flow 48 gpm
(26) Charging Flow 73 gpm
(9) Quench Tank Temp ___ F
(9) Quench TANK Pressure 4 psig
(9) QUENCH TANK Level 78 %
(7) Pressurizer Pressure (R) 262 psia
(8) PZR Level (R) LT0102A 95 %
LT0103 94.9 %
(12) PORV PRV-1042B _____ 1043B _____
(12) BLOCK MOV-1042A CLOSED 1043A OPEN
CHARGING PUMPS
P55A ON P55B ON P55C OFF
(6) PCPS P50A OFF P50B ON P50C ON P50D OFF
PZR HTR AMPS LC15 0 LCC 16 0
(1) PCS TAVE (R) LOOP1(TR-0111) 300 F
LOOP2(TR-0121) 300 F
(25) REACTOR POWER LEVEL
NI1 1.40E+2 cps NI3 1.40E-6 % NI7 ___ %
NI2 1.40E+2 cps NI4 1.40E-6 % NI8 ___ %
NI-05 2.1E-2 % NI-09 ___ %
NI-06 4.50E-9 % NI-10 ___ %

PIP
(DEMAND LOG+CONSTANT,ROD,OR FLUX/TEMP)
Gross MW ____
Net MW ____
(28) Control Rod Position
GP1 0 GP2 0 GP3 0 GP4 0
GP6(A) 0 GP7(B) 0
Stuck Rods NONE # 0
Core Exit Temp 299.7 F

CFMS RAD DATA

SCENARIO TIME: -0030

TIME: 0800

RADIOLOGICAL

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
150 CPM

SERVICE WATER 0833
666 CPM

RAD WASTE DISCHG 1049
570 CPM

SIM GEN BLOWDOWN 0707
140 CPM

*MIXING BASIN 1323
120 CPM

*FAILED FUEL 0202A
10 CPM

MAIN STEAM A 2324
23 CPM

MAIN STEAM B 2323
25 CPM

*DECADE DEPENDENT ON CR SWITCH POSITION

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1805	.019	R/HR
RIA-1806	.020	R/HR
RIA-1807	.120	R/HR
RIA-1808	.080	R/HR
HI RANGE L	1	R/HR
HI RANGE R	???	R/HR

DIRTY WASTE DRAIN TANKS

T-60W L	LOW	
T-60E L	LOW	

RIA-2326 60 CPM

RIA-2327 0.2 CPM

BACKUP STACK
RIA-2318 5 CPM

RIA-2319 80 CPM

CONTROL ROOM RAD 2310
MON .1 MR/HR

COND OFF GAS
0631 122 CPM

*RAD WASTE PLENUM
NA CPM

*EESC RAD
1810 120 CPM

*WESC RAD
1811 400 CPM

RAD WASTE VENT
1809 150 CPM

SEP NORTH
5709 .128 MR/HR

SEP SOUTH
2313 .152 MR/HR

SCENARIO TIME: 0015

TIME: 0815

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
~~170~~ CPM

SERVICE WATER 0033
450 CPM

RAD WASTE DISCHG 1049
890 CPM

SIM GEN BLOWDOWN 0707
142C CPM

*MIXING BASIN 1323
110 CPM

*FAILED FUEL 0202A
10 CPM

MAIN STEAM A 2324
25 CPM

MAIN STEAM B 2323
23 CPM

*DECADE DEPENDENT ON CR SWITCH POSITION

RADIOLOGICAL

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1805 .020 R/HR

RIA-1806 .018 R/HR

RIA-1807 .115 R/HR

RIA-1808 .082 R/HR

HI RANGE L 1 R/HR

HI RANGE R ??? R/HR

DIRTY WASTE DRAIN TANKS

T-60W L Low

T-60E L Low

RIA-2326 50 CPM

RIA-2327 0.2 CPM

BACKUP STACK
RIA-2318 5 CPM

RIA-2319 85 CPM

CONTROL ROOM RAD 2310
MON .1 MR/HR

COND OFF GAS
0631 127. CPM

*RAD WASTE PLENUM
NA CPM

*EESC RAD
1810 110 CPM

*WESC RAD
1811 450 CPM

RAD WASTE VENT
1809 170 CPM

SEP NORTH
5709 .31 MR/HR

SEP SOUTH
2313 .54 MR/HR

SCENARIO TIME: 0000

TIME: 0830

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
170 CPM

SERVICE WATER 0033
700 CPM

RAD WASTE DISCHG 1049
870 CPM

STM GEN BLOWDOWN 0707
1450 CPM

*MIXING BASIN 1323
120 CPM

*FAILED FUEL 0202A
10 CPM

MAIN STEAM A 2324
24 CPM

MAIN STEAM B 2323
25 CPM

*DECADE DEPENDENT ON CR SWITCH POSITION

RADIOLOGICAL

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1805 .018 R/HR

RIA-1806 .020 R/HR

RIA-1807 .125 R/HR

RIA-1808 .078 R/HR

HI RANGE L 1 R/HR

HI RANGE R ??? R/HR

DIRTY WASTE DRAIN TANKS

T-60W L Low

T-60E L Low

RIA-2326 60 CPM

RIA-2327 0.2 CPM

BACKUP STACK

RIA-2318 5 CPM

RIA-2319 87 CPM

CONTROL ROOM/RAD 2310 MON .1 MR/HR

COND OFF GAS 0631 129 CPM

*RAD WASTE PLENUM NA CPM

*EESC RAD 1810 130 CPM

*WESC RAD 1811 480 CPM

RAD WASTE VENT 1809 150 CPM

SEP NORTH 5709 .30 MR/HR

SEP SOUTH 2313 .54 MR/HR

SCENARIO TIME: 0015

TIME: 0845

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
140 CPM

SERVICE WATER 0833
600 CPM

RAD WASTE DISCHG 1049
850 CPM

SIM GEN BLOWDOWN 0707
1440 CPM

*MIXING BASIN 1323
120 CPM

*FAILED FUEL 0202A
??? CPM

MAIN STEAM A 2324
25 CPM

MAIN STEAM B 2323
26 CPM

*DECADE DEPENDENT ON CR SWITCH POSITION

RADIOLOGICAL

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1805 3.2 R/HR

RIA-1806 3.3 R/HR

RIA-1807 4.5 R/HR

RIA-1808 3.6 R/HR

HI RANGE L 1 R/HR

HI RANGE R ??? R/HR

DIRTY WASTE DRAIN TANKS

T-60W L Low

T-60E L Low

RIA 2326 120 CPM

RIA 2327 0.2 CPM

BACKUP STACK
RIA-2318 5 CPM

RIA-2319 80 CPM

CONTROL ROOM RAD 2310
MON 1 MR/HR

COND OFF GAS
0631 122 CPM

*RAD WASTE PLENUM
NA CPM

*EESC RAD
1810 110 CPM

*WESC RAD
1811 400 CPM

RAD WASTE VENT
1809 130 CPM

SEP NORTH
5709 .31 MR/HR

SEP SOUTH
2313 .51 MR/HR

SCENARIO TIME: 0017

TIME: 0847

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
140 CPM

SERVICE WATER 0833
600 CPM

RAD WASTE DISCHG 1049
850 CPM

SIM GEN BLOWDOWN 0707
1410 CPM

*MIXING BASIN 1323
120 CPM

*FAILED FUEL 0202B
??? CPM

MAIN STEAM A 2324
??? CPM

MAIN STEAM B 2323
??? CPM

*DECADE DEPENDENT ON CR SWITCH POSITION

RADIOLOGICAL

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1805 6.5 R/HR

RIA-1806 ??? R/HR

RIA-1807 7.3 R/HR

RIA-1808 ??? R/HR

HI RANGE L ??? R/HR

HI RANGE R ??? R/HR

DIRTY WASTE DRAIN TANKS

T-60W L Low

T-60E L Low

RIA 2326 190 CPM

RIA 2327 0.2 CPM

BACKUP STACK
RIA-2318 5 CPM

RIA-2319 87 CPM

CONTROL ROOM RAD 2310
MON .1 MR/HR

COND AIR EJ GAS
0631 117 CPM

*RAD WASTE PLENUM
NA CPM

*EESC RAD
1810 120 CPM

*WESC RAD
1811 380 CPM

RAD WASTE VENT
1809 150 CPM

SEP NORTH
5709 .31 MR/HR

SEP SOUTH
2313 .51 MR/HR

SCENARIO TIME: 0030

TIME: 0900

RADIOLOGICAL

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
160 CPM

SERVICE WATER 0833
550 CPM

RAD WASTE DISCHG 1049
860 CPM

STM GEN BLOWDOWN 0707
1390 CPM

*MIXING BASIN 1323
130 CPM

*FAILED FUEL 0202B
??? CPM

MAIN STEAM A 2324
??? CPM

MAIN STEAM B 2323
??? CPM

*DECADE DEPENDENT ON CR SWITCH POSITION

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1005 8.9 R/HR

RIA-1806 ??? R/HR

RIA-1807 9.7 R/HR

RIA-1808 ??? R/HR

HI RANGE L ??? R/HR

HI RANGE R ??? R/HR

DIRTY WASTE DRAIN TANKS

T-60W L Low

T-60E L Low

RIA 2326 100 CPM

RIA 2327 0.2 CPM

BACKUP STACK
RIA-2318 5 CPM

RIA-2319 75 CPM

CONTROL ROOM RAD 2310
MON .1 MR/HR

COND OFF GAS
0631 220 CPM

*RAD WASTE PLENUM
NA CPM

*EESC RAD
1810 120 CPM

*WESC RAD
1811 380 CPM

RAD WASTE VENT
1809 170 CPM

SEP NORTH
5709 .32 MR/HR

SEP SOUTH
2313 .53 MR/HR

SCENARIO TIME: 0045

TIME: 0915

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
150 CPM

SERVICE WATER 0033
600 CPM

RAD WASTE DISCHG 1049
870 CPM

SIM GEN BLOWDOWN 0707
1370 CPM

*MIXING BASIN 1323
140 CPM

*FAILED FUEL 0202B
??? CPM

MAIN STEAM A 2324
??? CPM

MAIN STEAM B 2323
??? CPM

*DECADE DEPENDENT ON CR SWITCH POSITION

RADIOLOGICAL

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1805 ??? R/HR

RIA-1806 ??? R/HR

RIA-1807 ??? R/HR

RIA-1808 ??? R/HR

HI RANGE L ??? R/HR

HI RANGE R ??? R/HR

DIRTY WASTE DRAIN TANKS

T-60W L Low

T-60E L Low

RIA 2326 80 CPM

RIA 2327 0.2 CPM

BACKUP STACK
RIA-2318 5 CPM

RIA-2319 70 CPM

CONTROL ROOM RAD 2310
MON .1 MR/HR

COND OFF GAS
0631 150. CPM

*RAD WASTE PLENUM
NA CPM

*EESC RAD
1810 130 CPM

*WESC RAD
1811 350 CPM

RAD WASTE VENT
1809 190 CPM

SEP NORTH
5709 .30 MR/HR

SEP SOUTH
2313 .52 MR/HR

SCENARIO TIME: 0100

TIME: 0930

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
740 CPM

SERVICE WATER 0833
600 CPM

RAD WASTE DISCHG 1049
870 CPM

STM GEN BLOWDOWN 0707
1390 CPM

*MIXING BASIN 1323
110 CPM

*FAILED FUEL 02028
??? CPM

MAIN STEAM A 2324
??? CPM

MAIN STEAM B 2323
??? CPM

*DECADE DEPENDENT ON CR SWITCH POSITION

RADIOLOGICAL

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1805 ??? R/HR

RIA-1806 ??? R/HR

RIA-1807 ??? R/HR

RIA-1808 ??? R/HR

HI RANGE L ??? R/HR

HI RANGE R ??? R/HR

DIRTY WASTE DRAIN TANKS

T-60W L Low

T-60E L Low

RIA-2326 50 CPM

RIA 2327 0.2 CPM

BACKUP STACK RIA-2318 5 CPM

RIA-2319 76 CPM

CONTROL ROOM RAD 2310 MON .1 MR/HR

COND OFF GAS 0631 122 CPM

*RAD WASTE PLENUM NA CPM

*EESC RAD 1810 130 CPM

*VESC RAD 1811 420 CPM

RAD WASTE VENT 1809 230 CPM

SEP NORTH 5709 .28 MR/HR

SEP SOUTH 2313 .51 MR/HR

SCENARIO TIME: 0115

TIME: 0945

RADIOLOGICAL

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
140 CPM

SERVICE WATER 0833
550 CPM

RAD WASTE DISCHG 1049
880 CPM

STM GEN BLOWDOWN 0707
1420 CPM

*MIXING BASIN 1323
130 CPM

*FAILED FUEL 0202B
??? CPM

MAIN STEAM A 2324
??? CPM

MAIN STEAM B 2323
??? CPM

*DECADE DEPENDENT ON CR SWITCH POSITION

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1805 ??? R/HR

RIA-1806 ??? R/HR

RIA-1807 ??? R/HR

RIA-1808 ??? R/HR

HI RANGE L ??? R/HR

HI RANGE R ??? R/HR

DIRTY WASTE DRAIN TANKS

T-60W L Low

T-60E L Low

RIA 2326 70 CPM

RIA 2327 0.2 CPM

BACKUP STACK
RIA-2318 5 CPM

RIA-2319 85 CPM

CONTROL ROOM RAD 2310
MON .1 MR/HR

COND OFF GAS
0631 127 CPM

*RAD WASTE PLENUM
NA CPM

*EESC RAD
1810 150 CPM

*WESC RAD
1811 460 CPM

RAD WASTE VENT
1809 300 CPM

SEP NORTH
5709 .29 MR/HR

SEP SOUTH
2313 .51 MR/HR

SCENARIO TIME: 0130

TIME: 1000

RADIOLOGICAL

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
130 CPM

SERVICE WATER 0833
500 CPM

RAD WASTE DISCHG 1049
870 CPM

SIM GEN BLOWDOWN 0707
1390 CPM

*MIXING BASIN 1323
120 CPM

*FAILED FUEL 0202A
??? CPM

MAIN STEAM A 2324
??? CPM

MAIN STEAM B 2323
??? CPM

*DECADE DEPENDENT ON CR SWITCH POSITION

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1805 ??? R/HR

RIA-1806 ??? R/HR

RIA-1807 ??? R/HR

RIA-1808 ??? R/HR

HI RANGE L ??? R/HR

HI RANGE R ??? R/HR

DIRTY WASTE DRAIN TANKS

T-60W L Low

T-60E L Low

RIA 2326 60 CPM

RIA 2327 0.2 CPM

BACKUP STACK
RIA-2318 5 CPM

RIA-2319 80 CPM

CONTROL ROOM RAD 2310
MON .1 MR/HR

COND OFF GAS
0631 122 CPM

*RAD WASTE PLENUM
NA CPM

*EESC RAD
1810 130 CPM

*WESC RAD
1811 490 CPM

RAD WASTE VENT
1809 320 CPM

SEP NORTH
5709 .30 MR/HR

SEP SOUTH
2313 .50 MR/HR

SCENARIO TIME: 0145

TIME: 1015

RADIOLOGICAL

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
150 CPM

SERVICE WATER 0833
600 CPM

RAD WASTE DISCHG 1049
~~80~~ CPM

SIM GEN BLOWDOWN 0707
1430 CPM

*MIXING BASIN 1323
100 CPM

*FAILED FUEL 0202B
??? CPM

MAIN STEAM A 2324
??? CPM

MAIN STEAM B 2323
??? CPM

*DECADE DEPENDENT ON CR SWITCH POSITION

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1805 ??? R/HR

RIA-1806 ??? R/HR

RIA-1807 ??? R/HR

RIA-1808 ??? R/HR

HI RANGE L ??? R/HR

HI RANGE R ??? R/HR

DIRTY WASTE DRAIN TANKS

T-60W L Low

T-60E L Low

RIA 2326 40 CPM

RIA 2327 0.2 CPM

BACKUP STACK
RIA-2318 5 CPM

RIA-2319 80 CPM

CONTROL ROOM RAD 2310
MON .1 MR/HR

COND OFF GAS
0631 122. CPM

*RAD WASTE PLENUM
NA CPM

*EESC RAD
1810 110 CPM

*WESC RAD
1811 440 CPM

RAD WASTE VENT
1809 340 CPM

SEP NORTH
5709 .32 MR/HR

SEP SOUTH
2313 .52 MR/HR

SCENARIO TIME: 0200

TIME: 1030

RADIOLOGICAL

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
160 CPM

SERVICE WATER 0833
650 CPM

RAD WASTE DISCHG 1049
850 CPM

SIM GEN BLOWDOWN 0707
1450 CPM

*MIXING BASIN 1323
110 CPM

*FAILED FUEL 0202A
??? CPM

MAIN STEAM A 2324
??? CPM

MAIN STEAM B 2323
??? CPM

*DECADE DEPENDENT ON CR SWITCH POSITION

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1805 ??? R/HR

RIA-1806 ??? R/HR

RIA-1807 ??? R/HR

RIA-1808 ??? R/HR

HI RANGE L ??? R/HR

HI RANGE R ??? R/HR

DIRTY WASTE DRAIN TANKS

1-60W L Low

1-60E L Low

RIA 2326 50 CPM

RIA 2327 0.2 CPM

BACKUP STACK
RIA-2318 5 CPM

RIA-2319 75 CPM

CONTROL ROOM RAD 2310
MON .1 MR/HR

COND OFF GAS
0631 117 CPM

*RAD WASTE PLENUM
NA CPM

*EESC RAD
1810 120 CPM

*WESC RAD
1811 410 CPM

RAD WASTE VENT
1809 300 CPM

SCP NORTH
5709 .32 MR/HR

SCP SOUTH
2313 .53 MR/HR

SCENARIO TIME: 0215

TIME: 1045

RADIOLOGICAL

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
140 CPM

SERVICE WATER 0833
700 CPM

RAD WASTE DISCHG 1099
870 CPM

SIM GEN BLOWDOWN 0707
1400 CPM

*MIXING BASIN 1323
120 CPM

*FAILED FUEL 02028
??? CPM

MAIN STEAM A 2324
??? CPM

MAIN STEAM B 2323
??? CPM

*DECADE DEPENDENT ON CR SWITCH POSITION

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1805 ??? R/HR

RIA-1806 ??? R/HR

RIA-1807 ??? R/HR

RIA-1808 ??? R/HR

HI RANGE L ??? R/HR

HI RANGE R ??? R/HR

DIRTY WASTE DRAIN TANKS

T-60W L Low

T-60E L Low

RIA 2326 60 CPM

RIA 2327 0.2 CPM

BACKUP STACK
RIA-2318 5 CPM

RIA-2319 90 CPM

CONTROL ROOM RAD 2310
MON .1 MR/HR

COND OFF GAS
0631 132 CPM

*RAD WASTE PLENUM
NA CPM

*EESC RAD
1810 130 CPM

*WESC RAD
1811 380 CPM

RAD WASTE VENT
1809 330 CPM

SEP NORTH
5709 .29 MR/HR

SEP SOUTH
2313 .51 MR/HR

SCENARIO TIME: 0230

TIME: 1100

RADIOLOGICAL

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
130 CPM

SERVICE WATER 0833
550 CPM

RAD WASTE DISCHG 1049
870 CPM

STM GEN BLOWDOWN 0707
1390 CPM

*MIXING BASIN 1323
110 CPM

*FAILED FUEL 0202B
??? CPM

MAIN STEAM A 2324
??? CPM

MAIN STEAM B 2323
??? CPM

*DECADE DEPENDENT ON CR SWITCH POSITION

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1805 ??? R/HR

RIA-1806 ??? R/HR

RIA-1807 ??? R/HR

RIA-1808 ??? R/HR

HI RANGE L ??? R/HR

HI RANGE R ??? R/HR

DIRTY WASTE DRAIN TANKS

T-60W L Low

T-60E L Low

RIA 2326 50 CPM

RIA 2327 0.2 CPM

BACKUP STACK
RIA-2318 5 CPM

RIA-2319 85 CPM

CONTROL ROOM RAD 2310
MON .1 MR/HR

COND OFF GAS
0631 127 CPM

*RAD WASTE PLENUM
NA CPM

*EESC RAD
1810 130 CPM

*WESC RAD
1811 360 CPM

RAD WASTE VENT
1809 240 CPM

SEP NORTH
5709 .31 MR/HR

SEP SOUTH
2313 .50 MR/HR

SCENARIO TIME: 0245

TIME: 1115

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
160 CPM

SERVICE WATER 0833
650 CPM

RAD WASTE DISCHG 1049
850 CPM

STM GEN BLOWDOWN 0707
1410 CPM

*MIXING BASIN 1323
120 CPM

*FAILED FUEL 0202A
??? CPM

MAIN STEAM A 2324
??? CPM

MAIN STEAM B 2323
??? CPM

*DEGRADE DEPENDENT ON CR SWITCH POSITION

RADIOLOGICAL

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1805 ??? R/HR

RIA-1806 ??? R/HR

RIA-1807 ??? R/HR

RIA-1808 ??? R/HR

HI RANGE L ??? R/HR

HI RANGE R ??? R/HR

DIRTY WASTE DRAIN TANKS

T-60W L Low

T-60E L Low

RIA 2326 60 CPM

RIA 2327 0.2 CPM

BACKUP STACK
RIA-2318 5 CPM

RIA-2319 80 CPM

CONTROL ROOM RAD 2310
MON .1 MR/HR

COND AIT GAS
0631 122 CPM

*RAD WASTE PLENUM
NA CPM

*EESC RAD
1810 140 CPM

*WESC RAD
1811 480 CPM

RAD WASTE VENT
1809 190 CPM

SEP NORTH
5709 .30 MR/HR

SEP SOUTH
2313 .53 MR/HR

SCENARIO TIME: 0300

TIME: 1130

RADIOLOGICAL

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
150 CPM

SERVICE WATER 0833
500 CPM

RAD WASTE DISCHG 1049
860 CPM

STM GEN BLOWDOWN 0707
1380 CPM

*MIXING BASIN 1323
100 CPM

*FAILED FUEL 0202B
??? CPM

MAIN STEAM A 2324
??? CPM

MAIN STEAM B 2323
??? CPM

*DECADE DEPENDENT ON CR SWITCH POSITION

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1805 ??? R/HR

RIA-1806 ??? R/HR

RIA-1807 ??? R/HR

RIA-1808 ??? R/HR

HI RANGE L ??? R/HR

HI RANGE R ??? R/HR

DIRTY WASTE DRAIN TANKS

T-60W L Low

T-60E L Low

RIA 2326 40 CPM

RIA 2327 0.2 CPM

BACKUP STACK
RIA-2318 5 CPM

RIA-2319 70 CPM

CONTROL ROOM RAD 2310
MON .1 MR/HR

COND OFF GAS
0631 112 CPM

*RAD WASTE PLENUM
NA CPM

*EESC RAD
1810 130 CPM

*WESC RAD
1811 400 CPM

RAD WASTE VENT
1809 170 CPM

SEP NORTH
5709 .29 MR/HR

SEP SOUTH
2313 .52 MR/HR

SCENARIO TIME: 0315

TIME: 1145

RADIOLOGICAL

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
140 CPM

SERVICE WATER 0833
650 CPM

RAD WASTE DISCHG 1049
870 CPM

SIM GEN BLOWDOWN 0707
1380 CPM

*MIXING BASIN 1323
130 CPM

*FAILED FUEL 02028
??? CPM

MAIN STEAM A 2324
??? CPM

MAIN STEAM B 2323
??? CPM

*DECADE DEPENDENT ON CR SWITCH POSITION

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1805 ??? R/HR

RIA-1806 ??? R/HR

RIA-1807 ??? R/HR

RIA-1808 ??? R/HR

HI RANGE L ??? R/HR

HI RANGE R ??? R/HR

DIRTY WASTE DRAIN TANKS

T-60W L Low

T-60E L Low

RIA 2326 70 CPM

RIA 2327 0.2 CPM

BACKUP STACK

RIA-2318 5 CPM

RIA-2319 75 CPM

CONTROL ROOM RAD 2310

MON 1 MR/HR

COND OFF GAS

0631 117 CPM

*RAD WASTE PLENUM

NA CPM

*EESC RAD

1810 120 CPM

*UESC RAD

1811 380 CPM

RAD WASTE VENT

1809 150 CPM

SEP NORTH 5709 1.29 MR/HR

SEP SOUTH 2313 .51 MR/HR

SCENARIO TIME: 0330

TIME: 1200

RADIOLOGICAL

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
130 CPM

SERVICE WATER
0033 650 CPM

RAD WASTE DISCHG
1049 870 CPM

SIM GEN BLOWDOWN
0707 1400 CPM

*MIXING BASIN
1323 130 CPM

*FAILED FUEL
0202A ??? CPM

*MAIN STEAM A 2324
??? CPM

2323

*DELETED ON CR SWITCH POSITION

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1805 ??? R/HR

RIA-1806 ??? R/HR

RIA-1807 ??? R/HR

RIA-1808 ??? R/HR

HI RANGE L ??? R/HR

HI RANGE R ??? R/HR

DIRTY WASTE DRAIN TANKS

T-60W L Low

T-60E L Low

RIA 2326 70 CPM

RIA 2327 0.2 CPM

BACKUP STACK
RIA-2318 5 CPM

RIA-2319 80 CPM

CONTROL ROOM RAD 2310
MON . MR/HR

COND OFF GAS
0631 122 CPM

*RAD WASTE PLENUM
N/A CPM

*EESC RAD
1810 110 CPM

*WESC RAD
1811 350 CPM

RAD WASTE VENT
1809 150 CPM

SEP NORTH
5709 .28 MR/HR

SEP SOUTH
7313 .50 MR/HR

SCENARIO TIME: 0345

TIME: 1215

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
130 CPM

SERVICE WATER 0033
700 CPM

RAD WASTE DISCHG 1049
880 CPM

SIM GEN BLOWDOWN 0707
1410 CPM

*MIXING BASIN 1323
140 CPM

*FAILED FUEL 02028
??? CPM

MAIN STEAM A 2324
??? CPM

MAIN STEAM B 2323
??? CPM

*DECADE DEPENDENT ON CR SWITCH POSITION

RADIOLOGICAL

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1805 ??? R/HR

RIA-1806 ??? R/HR

RIA-1807 ??? R/HR

RIA-1808 ??? R/HR

HI RANGE L ??? R/HR

HI RANGE R ??? R/HR

DIRTY WASTE DRAIN TANKS

T-60W L Low

T-60E L Low

RIA-2326 80 CPM

RIA-2327 0.2 CPM

BACKUP STACK
RIA-2318 5 CPM

RIA-2319 80 CPM

CONTROL ROOM RAD 2310
MON .1 MR/HR

COND OFF GAS
0631 122 CPM

*RAD WASTE PLENUM
NA CPM

*EESC RAD
1810 110 CPM

*UESC RAD
1811 350 CPM

RAD WASTE VENT
1809 160 CPM

SEP NORTH
5709 .30 MR/HR

SEP SOUTH
2313 .50 MR/HR

SCENARIO TIME: 0400

TIME: 1230

RADIOLOGICAL

LIQUID RADIATION MONITORS

*COMPONENT COOLING WATER 0915
160 CPM

SERVICE WATER 0833
650 CPM

RAD WASTE DISCHG 1049
870 CPM

SIM GEN BLOWDOWN 0707
1460 CPM

*MIXING BASIN 1323
120 CPM

*FAILED FUEL 0202B
??? CPM

MAIN STEAM A 2324
??? CPM

MAIN STEAM B 2323
??? CPM

*DECADE DEPENDENT ON CR SWITCH POSITION

FUEL HANDLING AREAS

MON 1 ??? MR/HR

MON 2 ??? MR/HR

CONTAINMENT ISOLATION

RIA-1805 ??? R/HR

RIA-1806 ??? R/HR

RIA-1807 ??? R/HR

RIA-1808 ??? R/HR

HI RANGE L ??? R/HR

HI RANGE R ??? R/HR

DIRTY WASTE DRAIN TANKS

T-60W L Low

T-60E L Low

RIA-2326 60 CPM

RIA 2327 0.2 CPM

BACKUP STACK
RIA-2318 5 CPM

RIA-2319 75 CPM

CONTROL ROOM RAD 2310
MON .1 MR/HR

COND OFF GAS
0631 117. CPM

*RAD WASTE PLENUM
NA CPM

*EESC RAD
1810 130 CPM

*VESC RAD
1811 460 CPM

RAD WASTE VENT
1809 150 CPM

SEP NORTH
5709 .31 MR/HR

SEP SOUTH
2313 .53 MR/HR

RAD MONITOR DATA

TIME	EAST SAFEGRDS mR/h 2300	RW SERV CORRIDOR mR/h 2301	RW CONTROL AREA mR/h 2302	2.4 kV SWITCH-GEAR mR/h 2303	CONTROL'D LAB CORRIDOR mR/h 2304	ACCESS CONTROL STATION mR/h 2305	PERS AIRLOCK OUTSIDE mR/h 2306	CONT PURGE UNIT RM NORTH mR/h 2307	RW DEMIN RM ROOF mR/h 2308	OUTSIDE CTRL RM CORRIDOR mR/h 2309	CRTL RM MAIN ENTRANCE mR/h 2310	EAST TURB OP FLOOR mR/h 2311	OLD LUNCH ROOM mR/h 2312	SPENT FUEL POOL RM mR/h 2313
08:00	7	0.9	0.8	1	0.9	0.2	0.16	OOS	0.4	0.2	0.1	0.4	0.4	0.52
08:15	6.9	0.8	0.7	0.9	1	0.1	0.18		0.3	0.2	0.1	0.3	0.5	0.54
08:30	7.1	1	0.9	1.1	1	0.3	0.18		0.4	0.2	0.1	0.5	0.5	0.54
08:45	6.9	0.8	0.7	0.9	0.9	0.1	0.15		0.3	0.2	0.1	0.3	0.4	0.51
08:47	6.9	0.8	0.7	0.9	0.9	0.1	0.15		0.3	0.2	0.1	0.3	0.4	0.51
09:00	7	0.9	0.8	1	0.9	0.2	0.17		0.8	0.4	0.1	0.4	0.4	0.53
09:15	7	0.9	0.8	1	1.1	0.2	0.16		1.0	0.5	0.1	0.4	0.6	0.52
09:30	6.9	0.8	0.7	0.9	1	0.1	0.15		1.5	0.8	0.1	0.3	0.5	0.51
09:45	7	0.9	0.8	1	1	0.2	0.15		1.8	0.9	0.1	0.4	0.5	0.51
10:00	7.1	1	0.9	1.1	0.9	0.3	0.14		2.0	1.0	0.1	0.5	0.4	0.50
10:15	6.9	0.8	0.7	0.9	0.9	0.1	0.16		2.6	1.3	0.1	0.3	0.4	0.52
10:30	6.9	0.8	0.7	0.9	1	0.1	0.17		3.0	1.5	0.1	0.3	0.5	0.53
10:45	7	0.9	0.8	1	1.1	0.2	0.15		3.1	1.6	0.1	0.4	0.6	0.51
11:00	7.1	1	0.9	1.1	1	0.3	0.14		3.0	1.5	0.1	0.5	0.5	0.50
11:15	7.1	1	0.9	1.1	0.9	0.3	0.17		2.8	1.4	0.1	0.5	0.4	0.53
11:30	7	0.9	0.8	1	1	0.2	0.16		2.3	1.2	0.1	0.4	0.5	0.52
11:45	6.9	0.8	0.7	0.9	1.1	0.1	0.15		1.9	1.0	0.1	0.3	0.6	0.51
12:00	6.9	0.8	0.7	0.9	0.9	0.1	0.14		1.5	0.8	0.1	0.3	0.4	0.50
12:15	7	0.9	0.8	1	1.1	0.2	0.14		1.3	0.7	0.1	0.4	0.6	0.50
12:30	7	0.9	0.8	1	0.9	0.2	0.17		1.2	0.6	0.1	0.4	0.4	0.53

	590' AIR RM	AIRLOCK INSIDE CONT	CONT RAD MON	CONT RAD MON	CONT RAD MON	CONT RAD MON
	mR/h	mR/h	mR/h	mR/h	mR/h	mR/h
TIME	2314	2315	1805	1806	1807	1808
08:00	3.1	2.7	19	20	120	80
08:15	3	2.7	20	18	115	82
08:30	2.9	2.6	18	20	125	78
08:45	3.00E+03	2.20E+03	3.20E+03	3.30E+03	4.50E+03	*3.60E+03
08:47	5.20E+03	3.60E+03	6.50E+03	INOP	7.30E+03	6.80E+03
09:00	7.80E+03	5.40E+03	8.90E+03	INVERTER	9.70E+03	9.10E+03
09:15	OFF	ERRATIC	OFF	Y20	OFF	OFF
09:30	SCALE	RESPONSE	SCALE		SCALE	SCALE
09:45	HIGH		HIGH		HIGH	HIGH
10:00						
10:15						
10:30						
10:45						
11:00						
11:15						
11:30						
11:45						
12:00						
12:15						
12:30						

* AFTER THIS POINT THIS CFMS DATA POINT IS LOST. THIS INFORMATION IS ONLY AVAILABLE LOCALLY IN THE CONTROL ROOM.

	SERVICE WATER DISCHARGE	STEAM GENERATOR BLOWDOWN	COMPONENT COOLING WATER	CIRC WATER DISCHARGE	LIQUID RW MONITOR	TURB BLDG SUMP
	cpm	cpm	cpm	cpm	cpm	cpm
TIME	0833	0707	0915	1323	1049	5211
08:00	600	1.41E+03	150	120	870	150
08:15	650	1.42E+03	170	110	890	100
08:30	700	1.45E+03	170	120	870	150
08:45	600	1.40E+03	140	120	850	200
08:47	600	1.40E+03	140	120	850	200
09:00	550	1.41E+03	160	130	860	250
09:15	600	1.39E+03	150	140	870	150
09:30	600	1.37E+03	140	110	870	150
09:45	550	1.39E+03	140	130	880	100
10:00	500	1.42E+03	130	120	870	200
10:15	600	1.39E+03	150	100	860	250
10:30	650	1.43E+03	160	110	850	100
10:45	700	1.45E+03	140	120	870	150
11:00	550	1.40E+03	130	110	870	100
11:15	650	1.39E+03	160	120	850	50
11:30	500	1.41E+03	150	100	860	150
11:45	650	1.38E+03	140	130	870	200
12:00	650	1.38E+03	130	130	870	250
12:15	700	1.40E+03	130	140	880	150
12:30	650	1.41E+03	160	120	870	75

	STACK GAS GROSS ACTIVITY	STACK GAS SINGLE ISOTOPE	RW VENT	EAST SAFEGRDS VENT	WEST SAFEGRDS VENT	CONT BLDG GAS MONITOR	WASTE GAS MONITOR	CONDENSER OFFGAS	BLOWDOWN TANK VENT MONITOR
	cpm	cpm	cpm	cpm	cpm	cpm	cpm	cpm	cpm
TIME	2318	2319	1809	1810	1811	1817	1113	0631	2320
08:00	5	80	150	120	400	3.90E+03	<100	122	400
08:15	5	85	170	110	450	3.85E+03	<100	127	350
08:30	5	87	150	130	480	3.90E+03	<100	129	400
08:45	5	80	130	110	400	OFF	<100	122	450
08:47	5	87	150	120	380	SCALE	<100	117	450
09:00	5	75	170	120	380	HIGH	<100	220	500
09:15	5	70	190	130	350		<100	150	400
09:30	5	76	230	130	420		<100	122	350
09:45	5	85	300	150	460		<100	127	350
10:00	5	80	320	130	490		<100	122	450
10:15	5	80	340	110	440		<100	122	500
10:30	5	75	300	120	410		<100	117	350
10:45	5	90	330	130	380		<100	132	400
11:00	5	85	240	130	360		<100	127	350
11:15	5	80	190	140	480		<100	122	300
11:30	5	70	170	130	400		<100	112	400
11:45	5	75	150	120	380		<100	117	450
12:00	5	80	150	110	350		<100	122	500
12:15	5	80	160	130	420		<100	122	400
12:30	5	75	150	130	460		<100	117	400

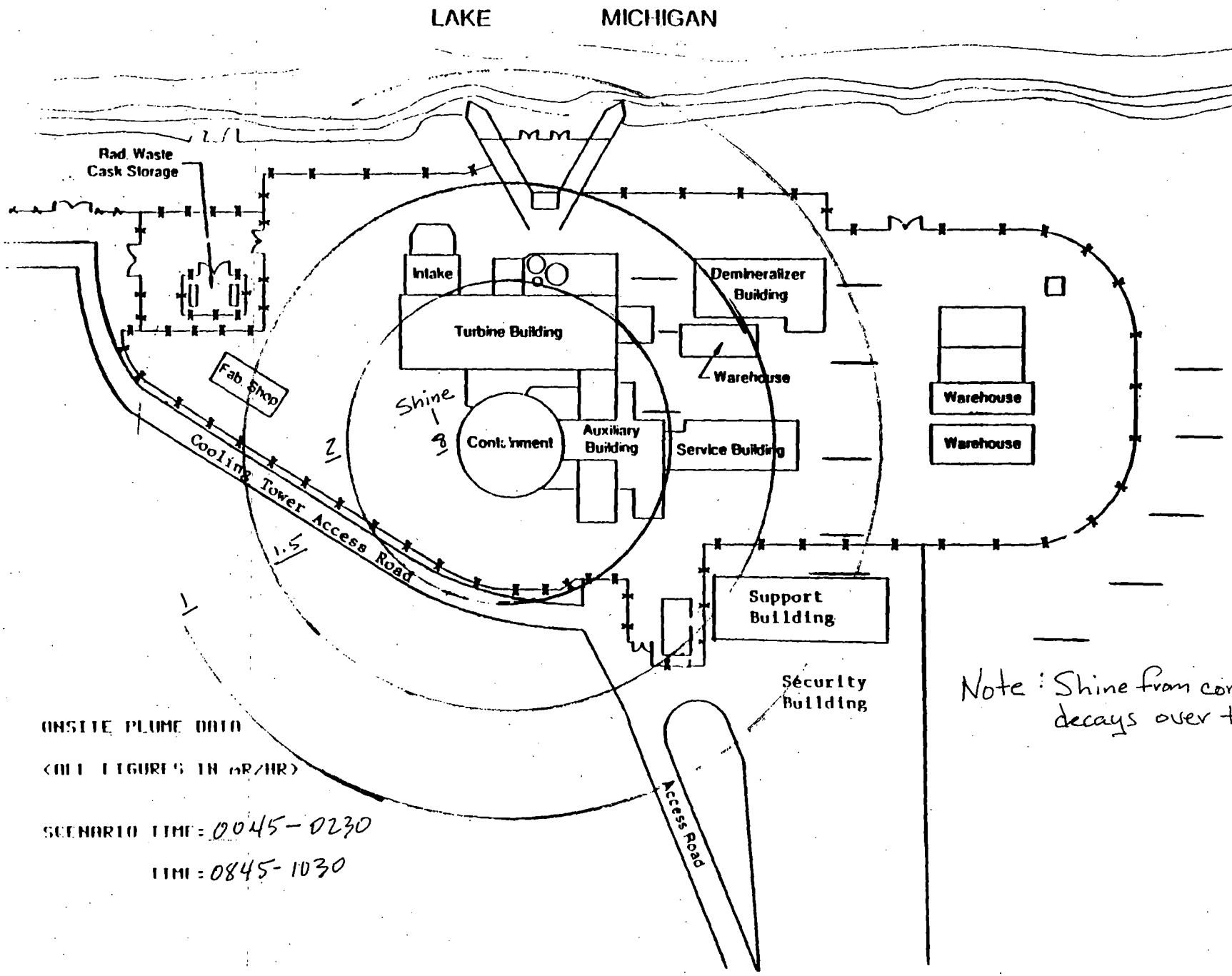
TIME	DECON ROOM mR/h 5701	EVAP A mR/h 5702	EVAP B mR/h 5703	EVAP CONTROL PANEL mR/h 5704	RW DECAY TANKS mR/h 5705	CONTROL'D LAB CORRIDOR mR/h 5706	RW PACKAGING AREA NO mR/h 5707	RW PACKAGING AREA WEST mR/h 5708	SPENT FUEL POOL CRITCALITY mR/h 5709	EXHAUST FAN DUCT mR/h 5710	RW ADDITION VENT cpm 5711	FUEL HANDLING RM VENT cpm 5712
08:00	0.3	0.35	18	0.03	0.2	0.9	0.1	0.13	0.28	OOS	15	18
08:15	0.2	0.37	20	0.05	0.1	0.8	0.1	0.15	0.31		15	18
08:30	0.4	0.37	19	0.05	0.3	1	0.1	0.15	0.3		15	18
08:45	0.2	0.34	21	0.02	0.1	0.8	0.1	0.12	0.31		15	18
08:47	0.2	0.34	21	0.02	0.1	0.8	0.1	0.12	0.31		15	18
09:00	0.3	0.36	22	0.04	0.2	0.9	0.1	0.14	0.32		15	18
09:15	0.3	0.35	20	0.03	0.2	0.9	0.1	0.13	0.3		15	18
09:30	0.2	0.34	19	0.02	0.1	0.8	0.1	0.12	0.28		15	18
09:45	0.3	0.34	18	0.02	0.2	0.9	0.1	0.12	0.29		15	18
10:00	0.4	0.33	21	0.01	0.3	1	0.1	0.11	0.3		15	18
10:15	0.2	0.35	22	0.03	0.1	0.8	0.1	0.13	0.32		15	18
10:30	0.2	0.36	22	0.04	0.1	0.8	0.1	0.14	0.32		15	18
10:45	0.3	0.34	18	0.02	0.2	0.9	0.1	0.12	0.29		15	18
11:00	0.4	0.33	18	0.01	0.3	1	0.1	0.11	0.31		15	18
11:15	0.4	0.36	20	0.04	0.3	1	0.1	0.14	0.3		15	18
11:30	0.3	0.35	19	0.03	0.2	0.9	0.1	0.13	0.29		15	18
11:45	0.2	0.34	21	0.02	0.1	0.8	0.1	0.12	0.29		15	18
12:00	0.2	0.33	22	0.01	0.1	0.8	0.1	0.11	0.28		15	18
12:15	0.3	0.33	20	0.01	0.2	0.9	0.1	0.11	0.3		15	18
12:30	0.3	0.36	19	0.04	0.2	0.9	0.1	0.14	0.31		15	18

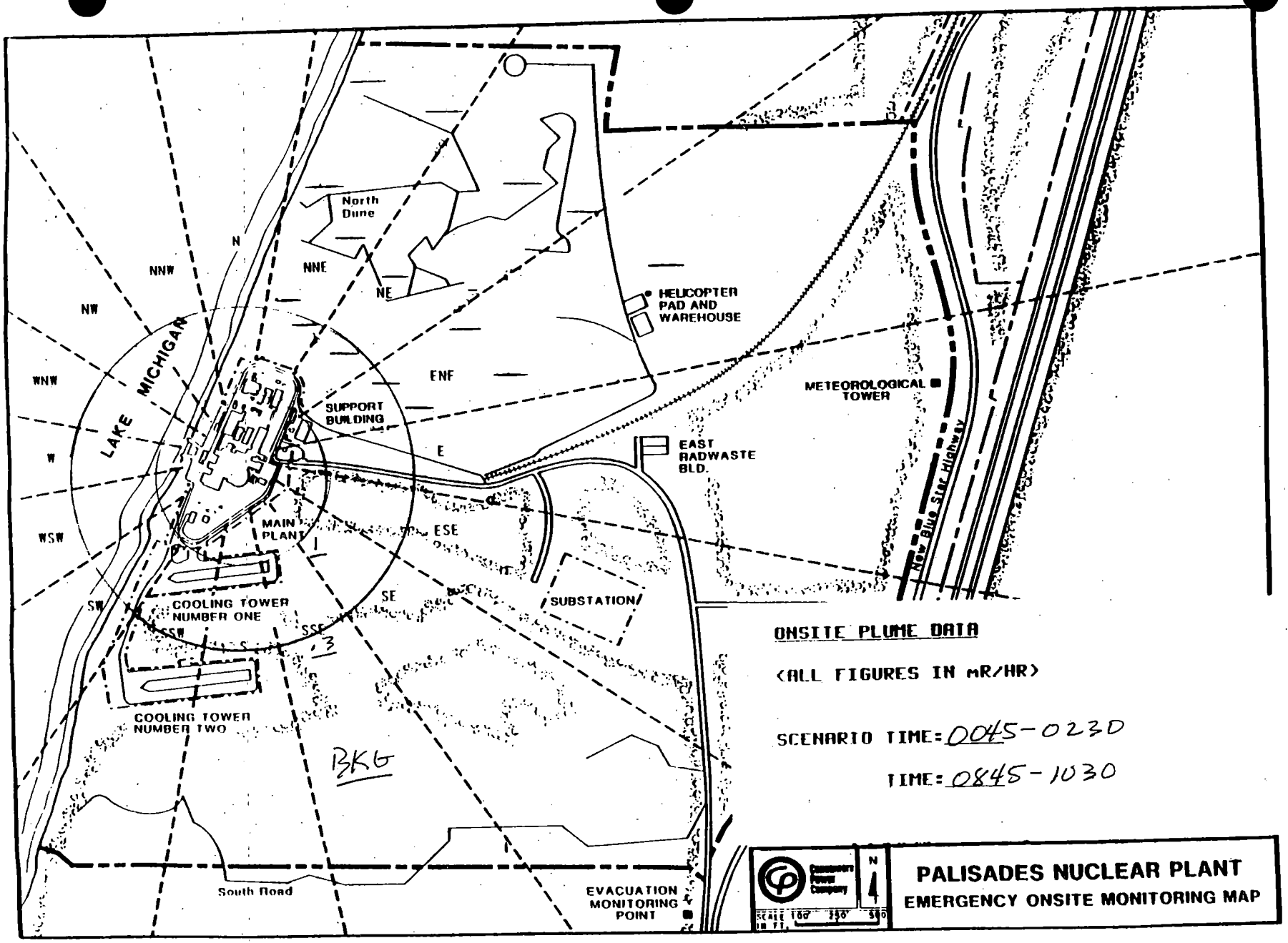
	IODINE/ PART GAS EFF	NORMAL NOBLE GAS EFFLUENT	HIGH RANGE NOBLE GAS	MAIN STEAM GAMMA B	MAIN STEAM GAMMA A	CONT HIGH RANGE	CONT HIGH RANGE	FAILED FUEL MONITOR
	cpm	cpm	mR/h	cpm	cpm	R/h	R/h	%
TIME	2325	2326	2327	2323	2324	2321	2322	0202
08:00	300	60	0.2	25	23	OUT	1	10
08:15	250	50	0.2	23	25	OF	1	10
08:30	300	60	0.2	25	24	SERVICE	1	10
08:45	350	120	0.2	26	25		1	OFF
08:47	390	190	0.2	INOP	INOP		INOP	SCALE
09:00	440	180	0.2	INVERTER	INVERTER		INVERTER	HIGH
09:15	340	200	0.2	Y20	Y20		Y20	
09:30	290	190	0.2					
09:45	290	170	0.2					
10:00	390	190	0.2					
10:15	440	180	0.2					
10:30	290	170	0.2					
10:45	340	200	0.2					
11:00	290	190	0.2					
11:15	240	180	0.2					
11:30	340	200	0.2					
11:45	390	190	0.2					
12:00	440	170	0.2					
12:15	340	190	0.2					
12:30	340	180	0.2					

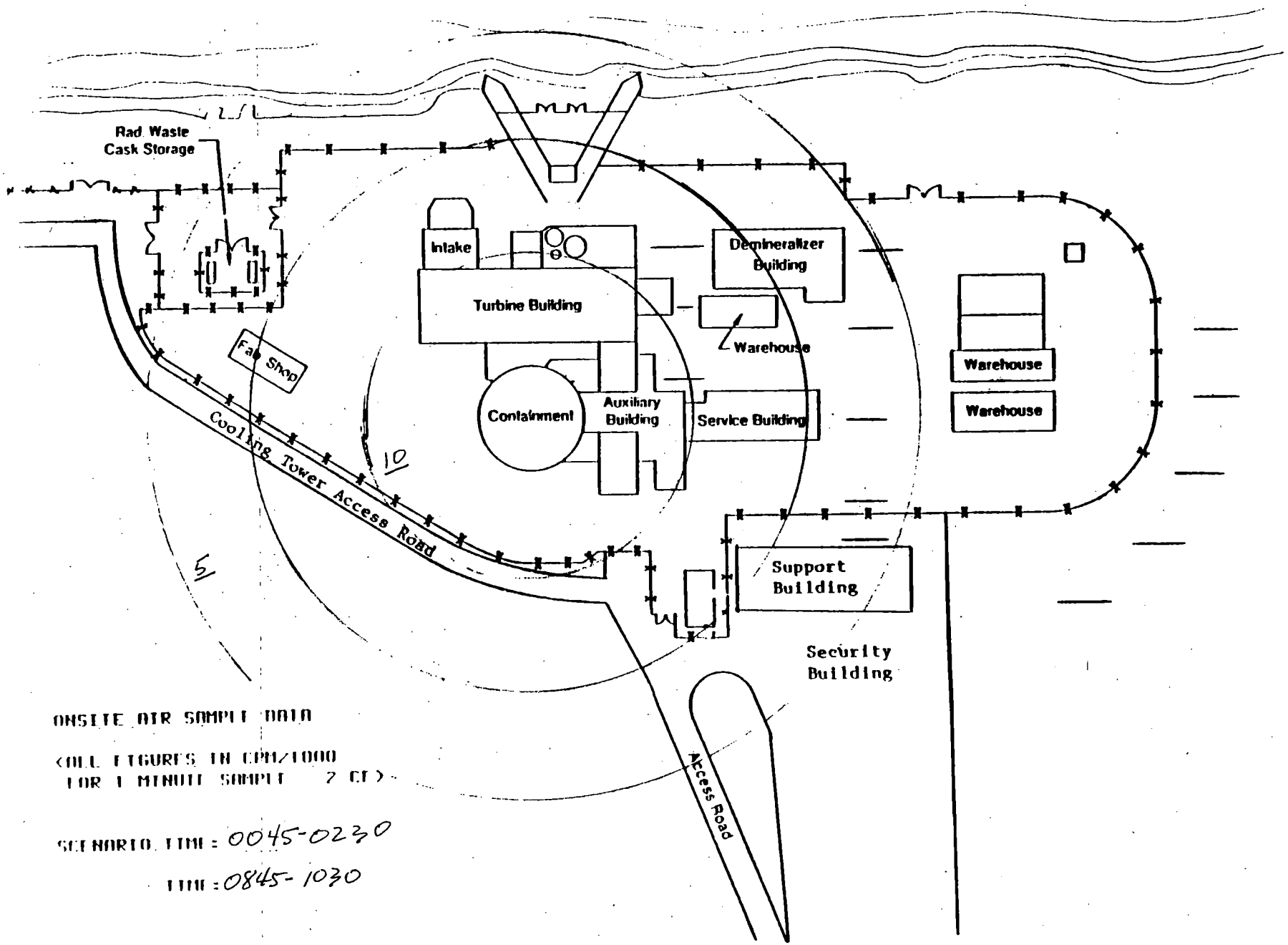
ONSITE RAD DATA

ONSITE RADIATION DATA

RADIATION LEVELS NEAR THE CONTAINMENT WALL ARE THE MAXIMUM LEVELS REACHED AT THE CONTAINMENT WALL FROM CONTAINMENT SHINE. THESE RADIATION LEVELS FALL OFF SHARPLY WITH DISTANCE UNTIL BACKGROUND LEVELS ARE REACHED. RADIATION LEVELS AND AIR SAMPLE DATA ONLY APPLY TO THE DOWNWIND SECTOR(S). THERE IS NO GROUND DEPOSITION, HOWEVER, RADIATION LEVELS EQUAL TO THE PLUME DATA WILL BE SEEN IF GROUND DEPOSITION IS LOOKED FOR WHILE IN THE PLUME. BETWEEN 0800 (0000) AND 0845 (0045) ALL RADIATION LEVELS ARE AS READ. THE RELEASE CEASES AT 1030 (0230).


LAKE MICHIGAN
Rad. Waste
Cask Storage
Intake
Turbine Building
Demineralizer
Building
Warehouse
Fab. Shop
Shine
Containment
Auxiliary
Building
Service Building
Warehouse
Warehouse
Cooling Tower Access Road
Support
Building
Security
Building
Access Road
ONSITE PLUME DATA
(ALL FIGURES IN mR/HR)
SCENARIO TIME: 0045-0230
TIME: 0845-1030
Note: Shine from containment decays over time.


North Dune
N
NNW
NNE
NW
NE
WNW
W
WSW
SW
SSW
SSE
SE
ESE
E
ENE
LAKE MICHIGAN
HELICOPTER PAD AND WAREHOUSE
METEOROLOGICAL TOWER
SUPPORT BUILDING
EAST RADWASTE BLD.
MAIN PLANT
COOLING TOWER NUMBER ONE
SUBSTATION
COOLING TOWER NUMBER TWO
BKG
South Road
EVACUATION MONITORING POINT
Blue Star Highway
ONSITE PLUME DATA
(ALL FIGURES IN mR/HR)
SCENARIO TIME: 0045-0230
TIME: 0845-1030
Consumers Power Company
N
SCALE IN FT. 0 150 300 600
PALISADES NUCLEAR PLANT
EMERGENCY ONSITE MONITORING MAP

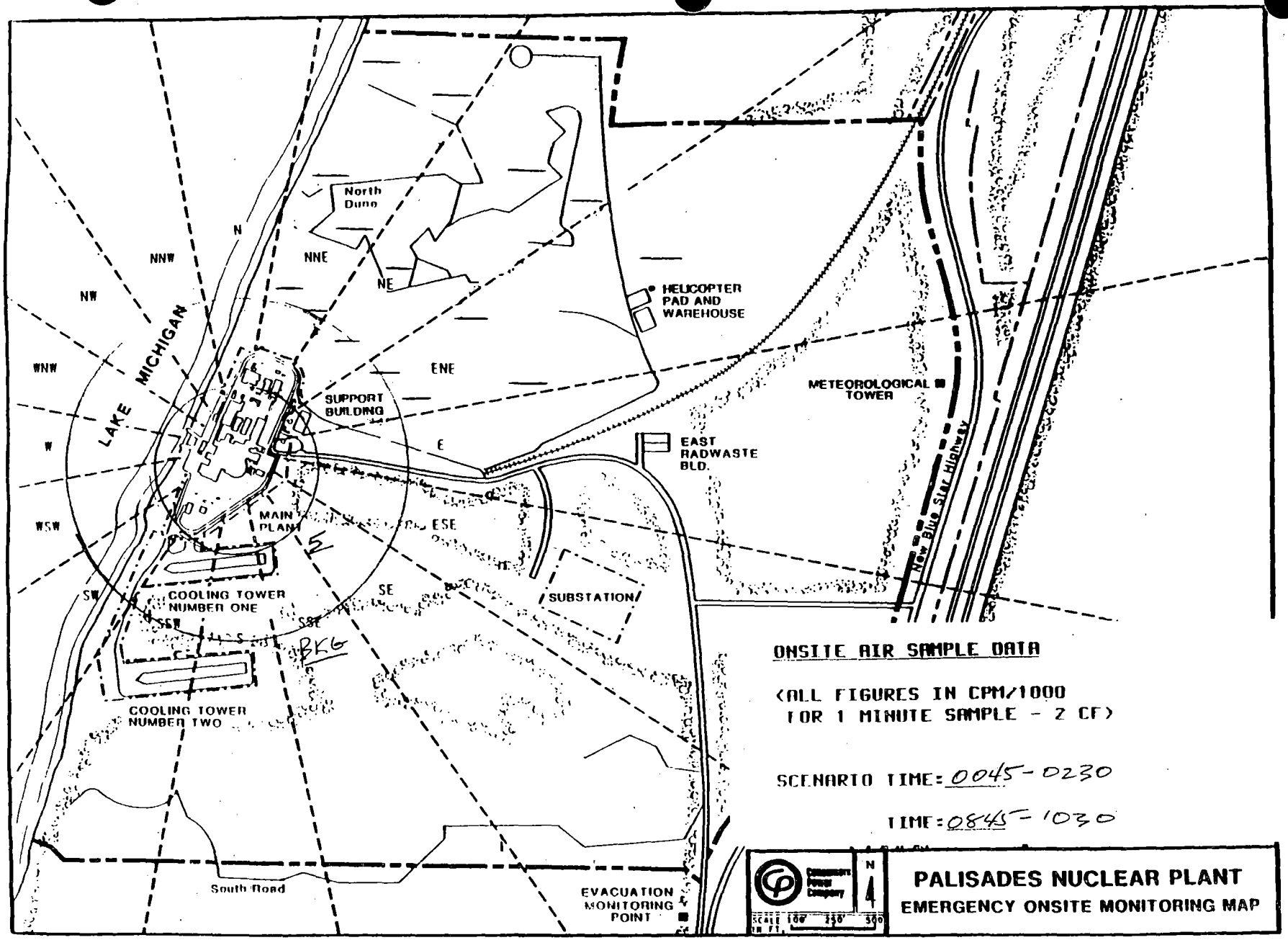


ONSITE AIR SAMPLE DATA

(ALL FIGURES IN CPM/1000
FOR 1 MINUTE SAMPLE 2 CF)

SCENARIO TIME = 0045-0230

TIME = 0845-1030



ONSITE AIR SAMPLE DATA

(ALL FIGURES IN CPM/1000
FOR 1 MINUTE SAMPLE - 2 CF)

SCENARIO TIME: 0045-0230

TIME: 0845-1030

Consumers Power Company

N

SCALE 100' 250' 500' IN FT.

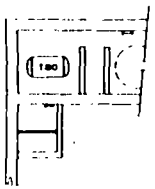
PALISADES NUCLEAR PLANT
EMERGENCY ONSITE MONITORING MAP

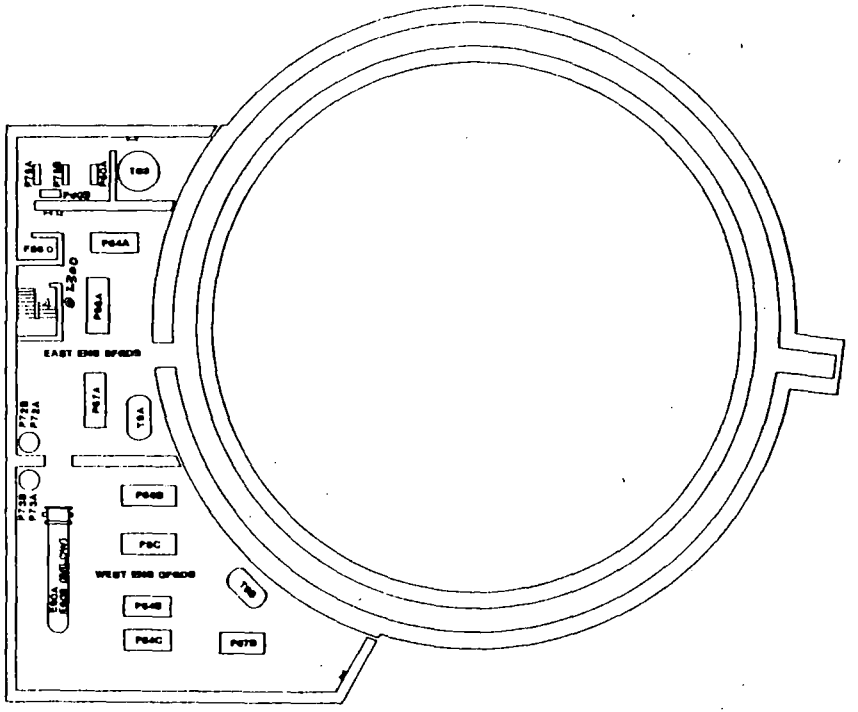
INPLANT RAD DATA

IN PLANT RADIATION DATA

RADIATION LEVELS IN PLANT ARE INDICATED ON THE FOLLOWING DIAGRAMS. RADIATION LEVELS ARE AS READ UNLESS INDICATED OTHERWISE IN THESE DIAGRAMS. RADIATION LEVELS NOT LABELED "NEAR PENETRATIONS" BUT NEAR THE CONTAINMENT WALL ARE THE MAXIMUM LEVELS REACHED AT THE CONTAINMENT WALL FROM CONTAINMENT SHINE. IF IN PLANT AIR SAMPLES ARE TAKEN, INCLUDING THE OSC, THE RESULTS SHOULD BE GIVEN AS APPROXIMATELY 10 CPM/1000 FOR A 1 MINUTE 2 CUBIC FOOT SAMPLE. BETWEEN 0800 (0000) AND 0847 (0047) ALL RADIATION LEVELS ARE AS READ.

COMPONENT DESIGNATIONS	
WEST ENG SFGDS	
E62A&B	SHUTDOWN COOLING HEAT EXCHANGERS
P73A&B	BUMP PUMPS
P54B&C	CTMT SPRAY PUMPS
P66B	HP SAFETY INJECTION PUMP
P67B	LP SAFETY INJECTION PUMP
P9C	AUX FEEDWATER PUMP
T6B	HP AIR RECEIVER
EAST ENG SFGDS	
P73A&B	BUMP PUMPS
P67A	LP SAFETY INJECTION PUMP
P66A	HP SAFETY INJECTION PUMP
P54A	CTMT SPRAY PUMP
T6A	HP AIR RECEIVERS
P60A&B	DIRTY WASTE DRAIN TANK PUMPS
P76A&B	EQUIPMENT DRAIN TANK PUMPS
T60	DIRTY WASTE DRAIN TANK
F64	EQUIPMENT DRAIN TANK FILTER
EL. 679'-0"	
T69	EQUIPMENT DRAIN TANK





As Read

IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

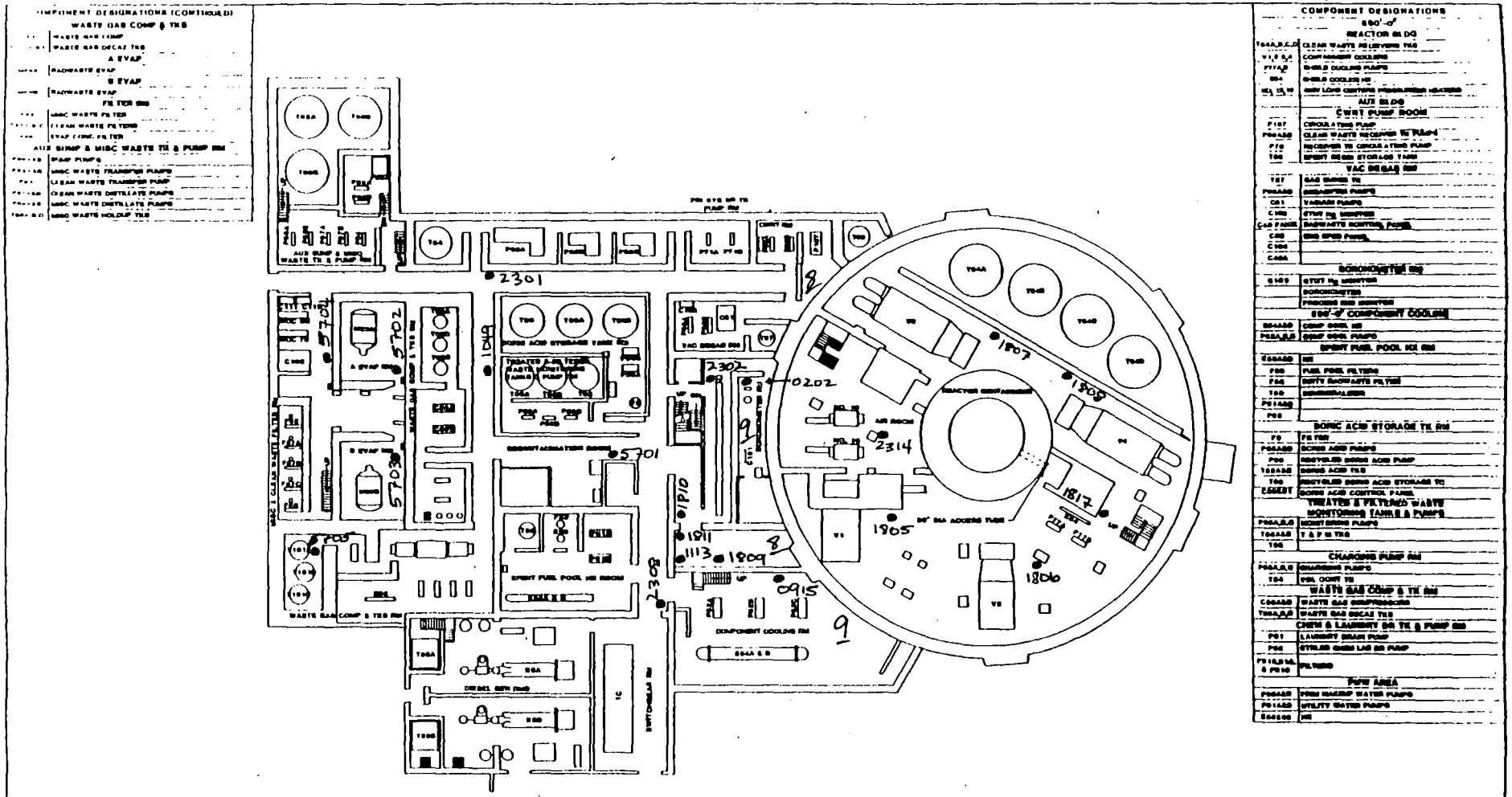
SCENARIO TIME: 0017-0130

TIME: 0847-1000

CONSUMERS POWER COMPANY

PALISADES PLANT

570'



IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0017 - 0130

TIME: 0847 - 1000

CONSUMERS POWER COMPANY

PALISADES PLANT

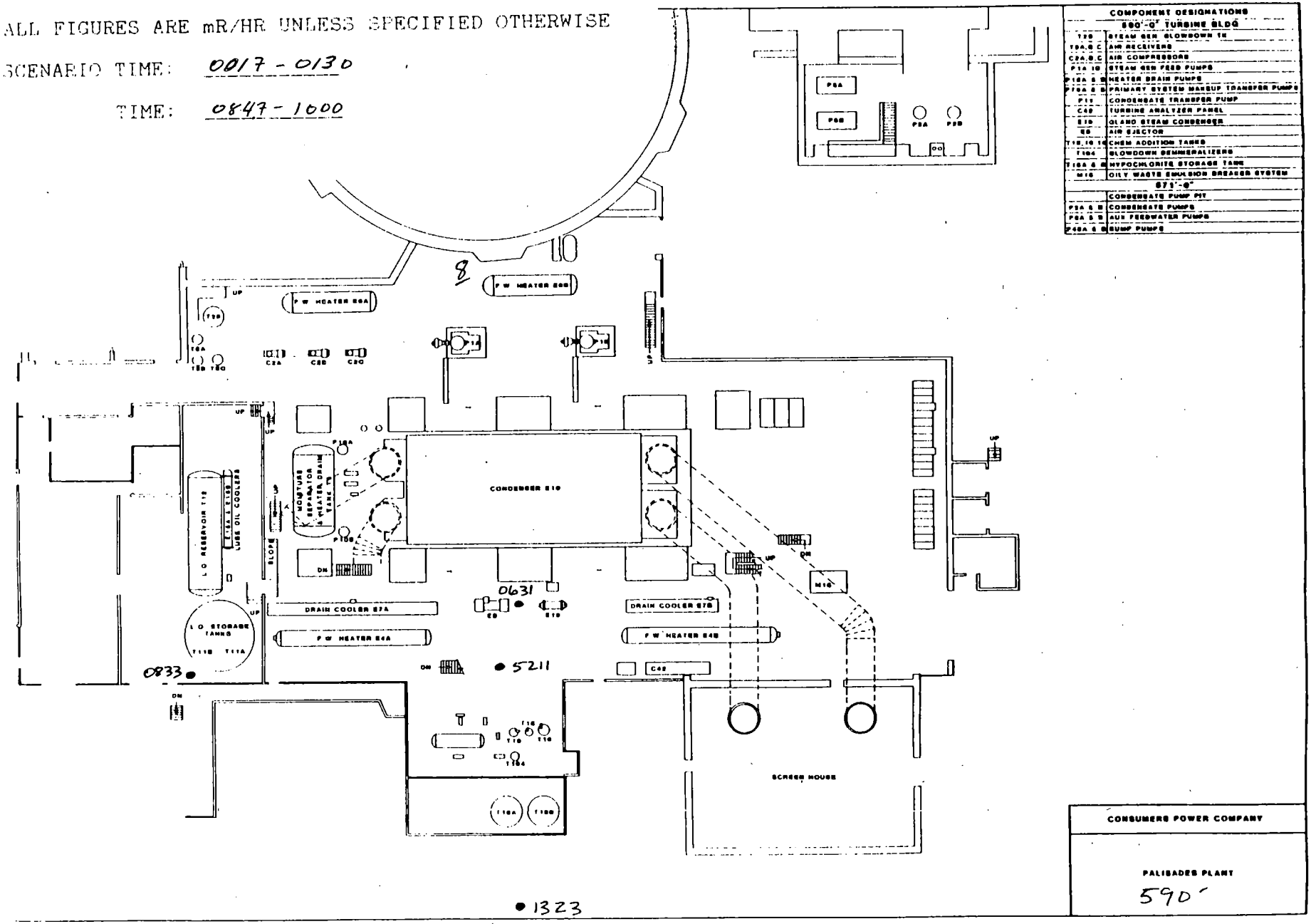
590'

IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0017 - 0130

TIME: 0847 - 1000

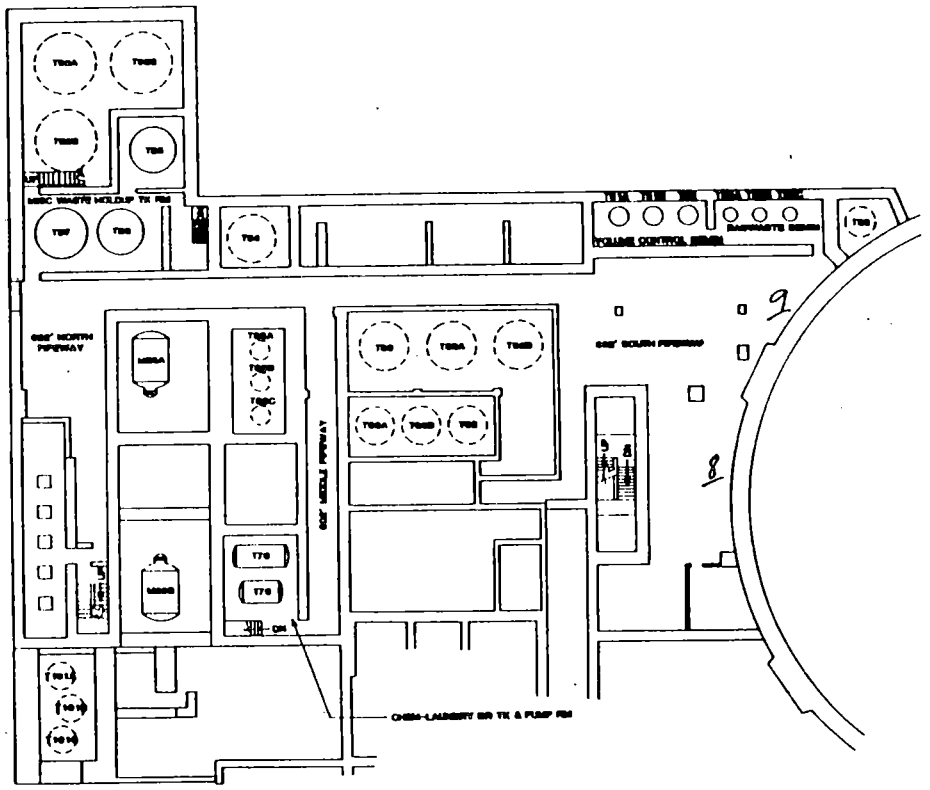


CONSUMERS POWER COMPANY

PALISADES PLANT

590'

COMPONENT DESIGNATIONS	
VOL CTRL & RADW DEMINERALIZER	
T61A&B	PURIFICATION DEMIN
T62	DEBORATING DEMIN
T63A,B&C	RADWASTE DEMINERALIZERS
CHEM - LAUNDRY DR TK & PUMP RM	
	2nd LEVEL
T70	LAUNDRY DR TK
T71	CONTROLLED CHEM LAB DR TK
MISC WASTE HOLDUP TK RM	
T66	CLEAN WASTE HOLDUP TK
T68	CLEAN WASTE DISTILLATE TK
T67	MISC WASTE DISTILLATE TK



IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0017-0130

TIME: 0847-1000

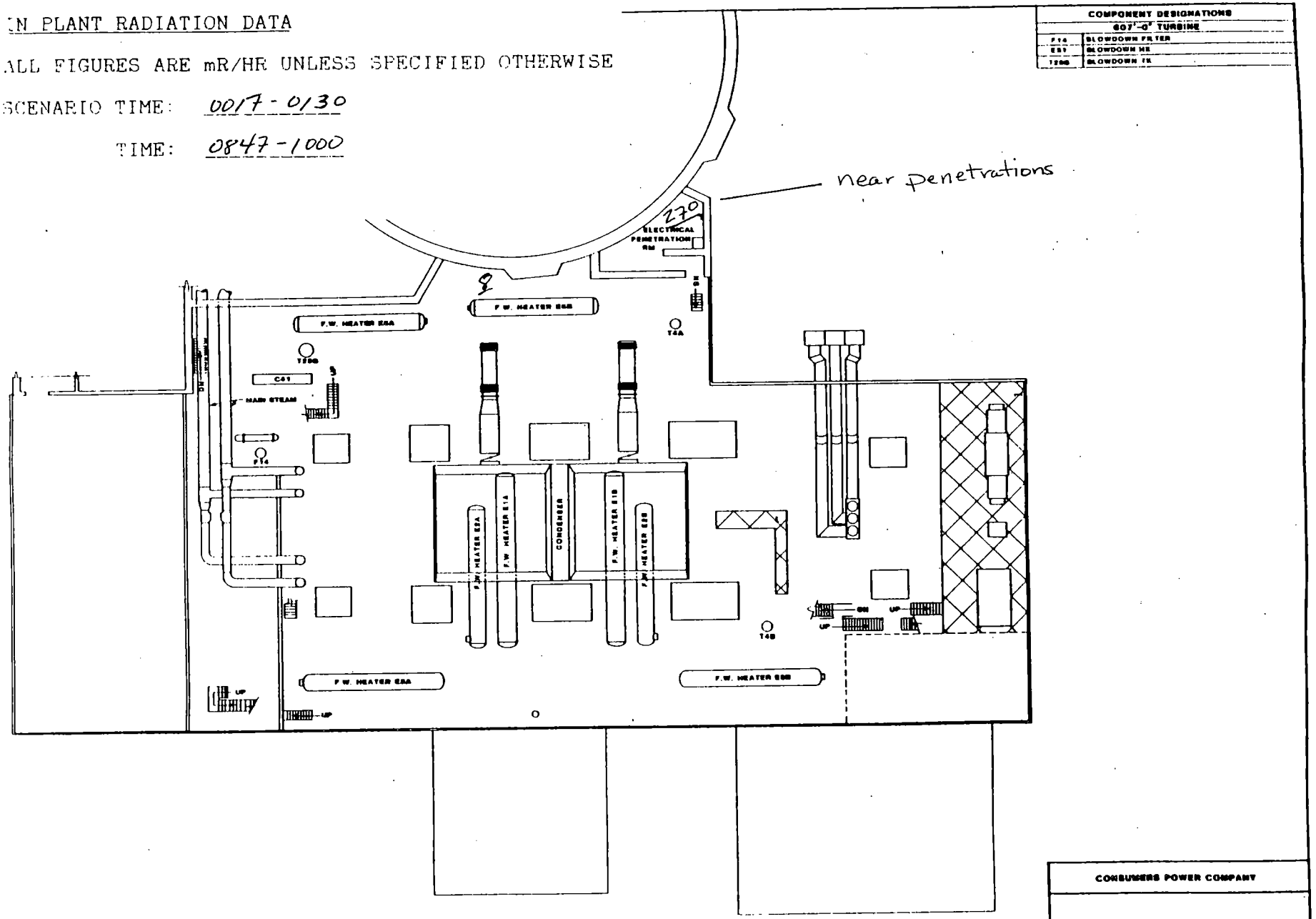
CONSUMERS POWER COMPANY
PALISADES PLANT
602'

IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0017 - 0130

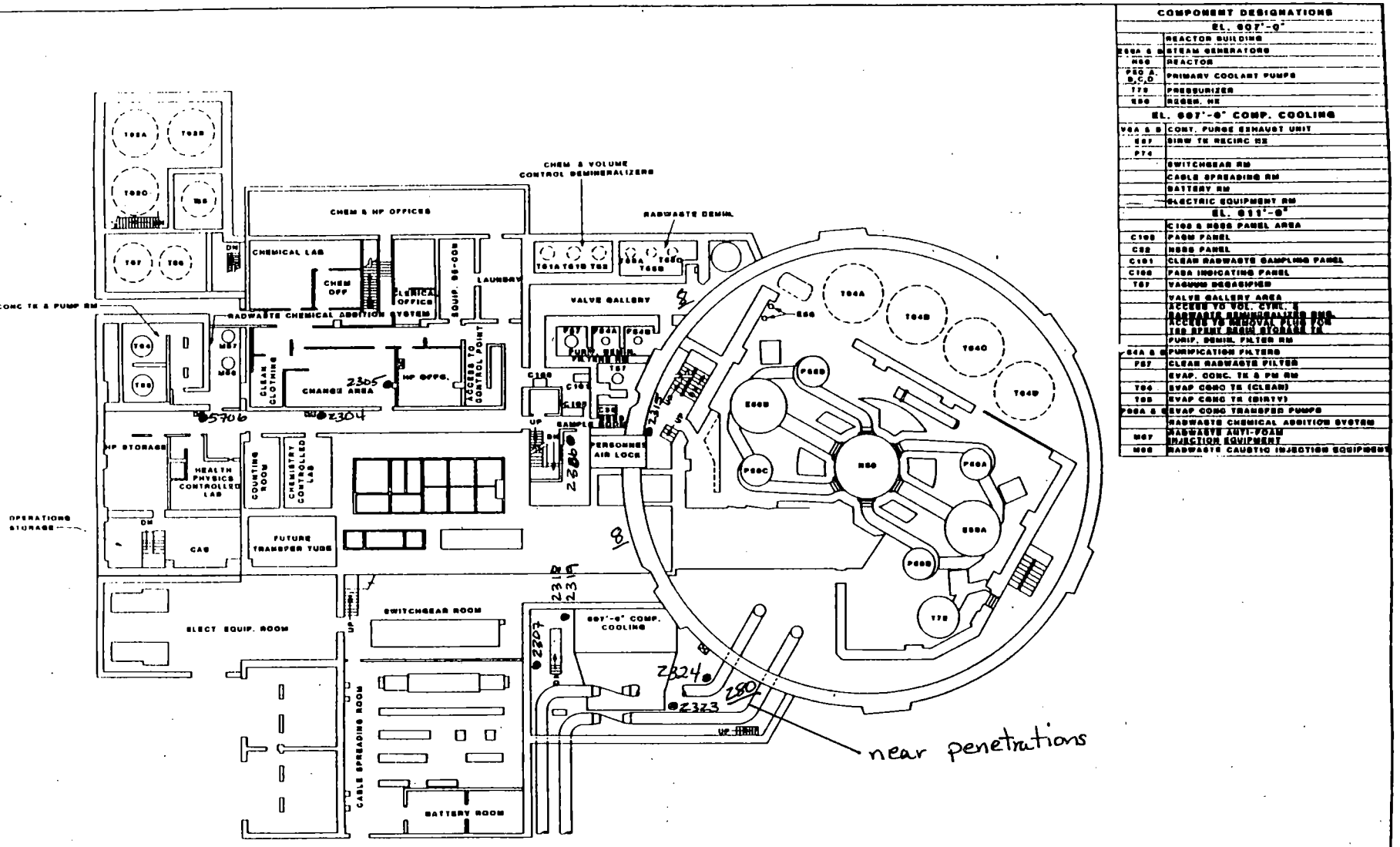
TIME: 0847 - 1000



CONSUMERS POWER COMPANY

PALISADES PLANT

607



COMPONENT DESIGNATIONS	
	EL. 607'-0"
	REACTOR BUILDING
E50A & B	STEAM GENERATORS
M50	REACTOR
P50 A, B, C, D	PRIMARY COOLANT PUMPS
T70	PRESSURIZER
E50	REGEN. HX
	EL. 607'-0" COMP. COOLING
V6A & B	CONT. PURGE EXHAUST UNIT
E67	SIRW TK RECIRC HX
P74	
	SWITCHGEAR RM
	CABLE SPREADING RM
	BATTERY RM
	ELECTRIC EQUIPMENT RM
	EL. 611'-0"
	C100 & M50B PANEL AREA
C100	PASM PANEL
C50	M50B PANEL
C101	CLEAN RADWASTE SAMPLING PANEL
C100	PASA INDICATING PANEL
T67	VACUUM DEGASIFIER
	VALVE GALLERY AREA
	ACCESS TO VOL. CTRL. & RADWASTE DEMINERALIZER RMS.
	ACCESS TO REMOVAL PLUG FOR TRB SPENT RESIN STORAGE TK
	PURIF. DEMIN. FILTER RM
P44A & B	PURIFICATION FILTERS
P67	CLEAN RADWASTE FILTER
	EVAP. CONC. TK & PM RM
T66	EVAP CONC TK (CLEAN)
T65	EVAP CONC TK (DIRTY)
P66A & B	EVAP CONC TRANSFER PUMPS
	RADWASTE CHEMICAL ADDITION SYSTEM
M67	RADWASTE ANTI-FOAM INJECTION EQUIPMENT
M66	RADWASTE CAUSTIC INJECTION EQUIPMENT

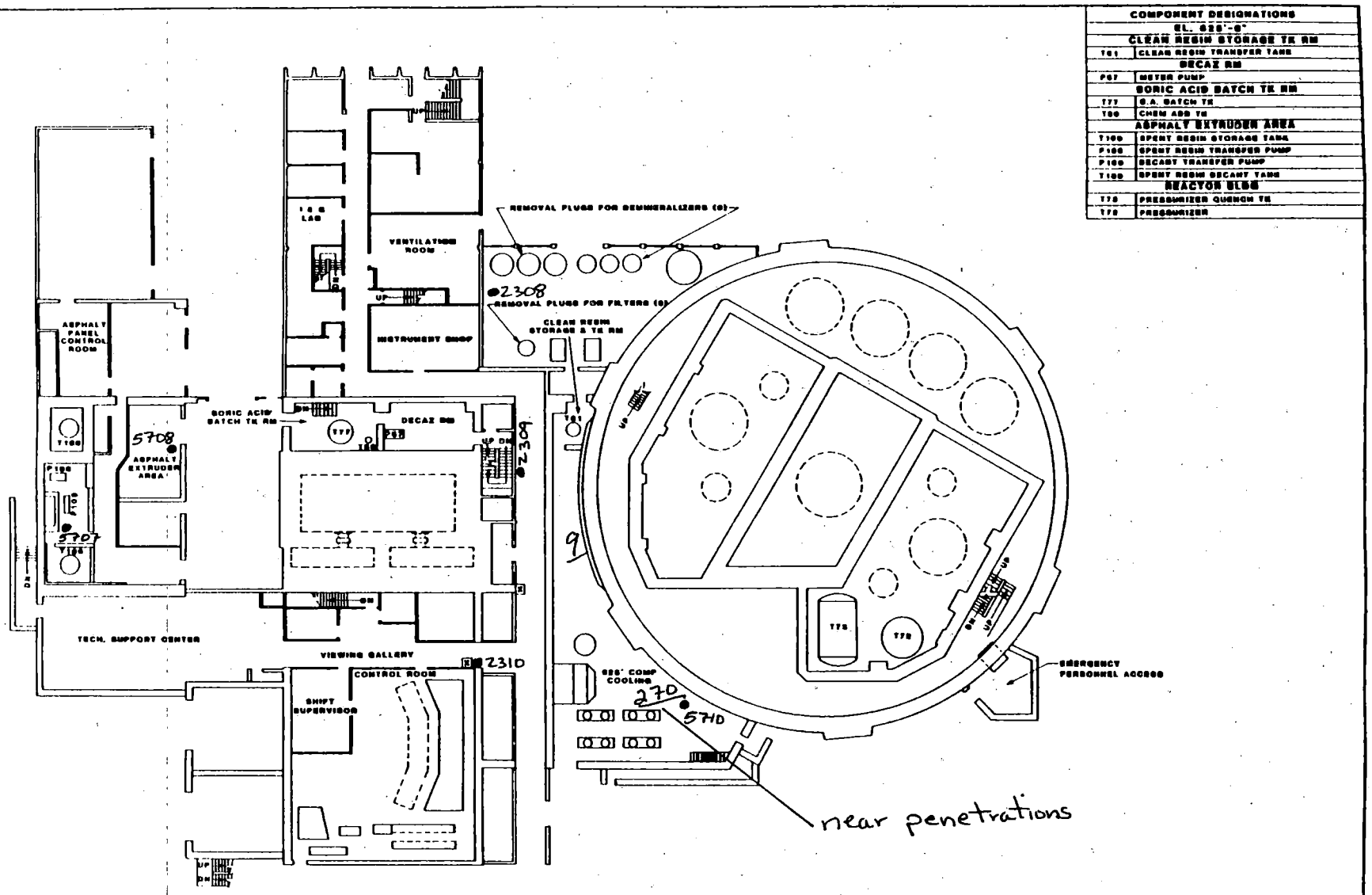
IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0017-0130

TIME: 0847-1000

CONSUMERS POWER COMPANY
PALISADES PLANT
611'



IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

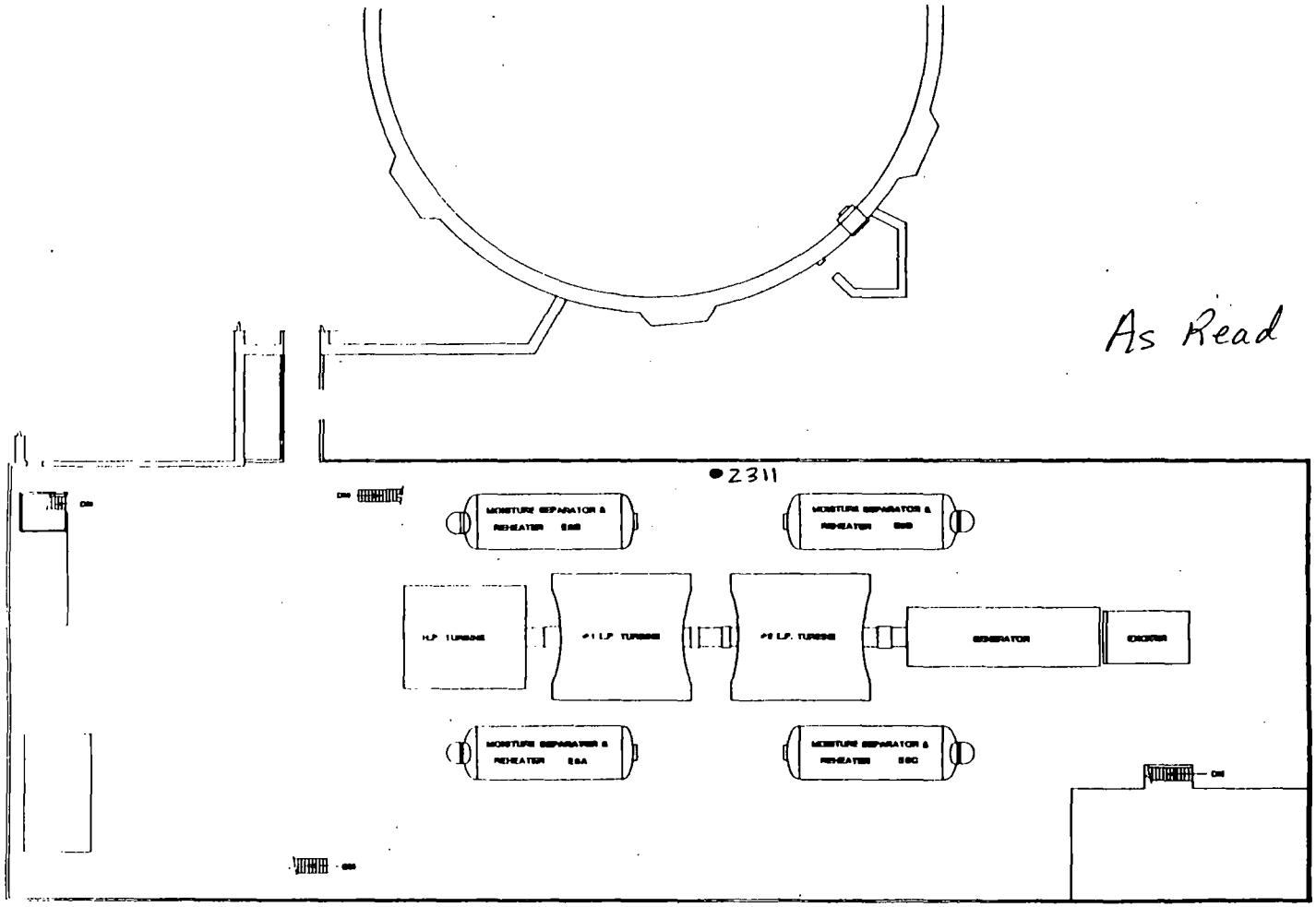
SCENARIO TIME: 0017-0130

TIME: 0847-1000

CONSUMERS POWER COMPANY

PALISADES PLANT

625'



IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

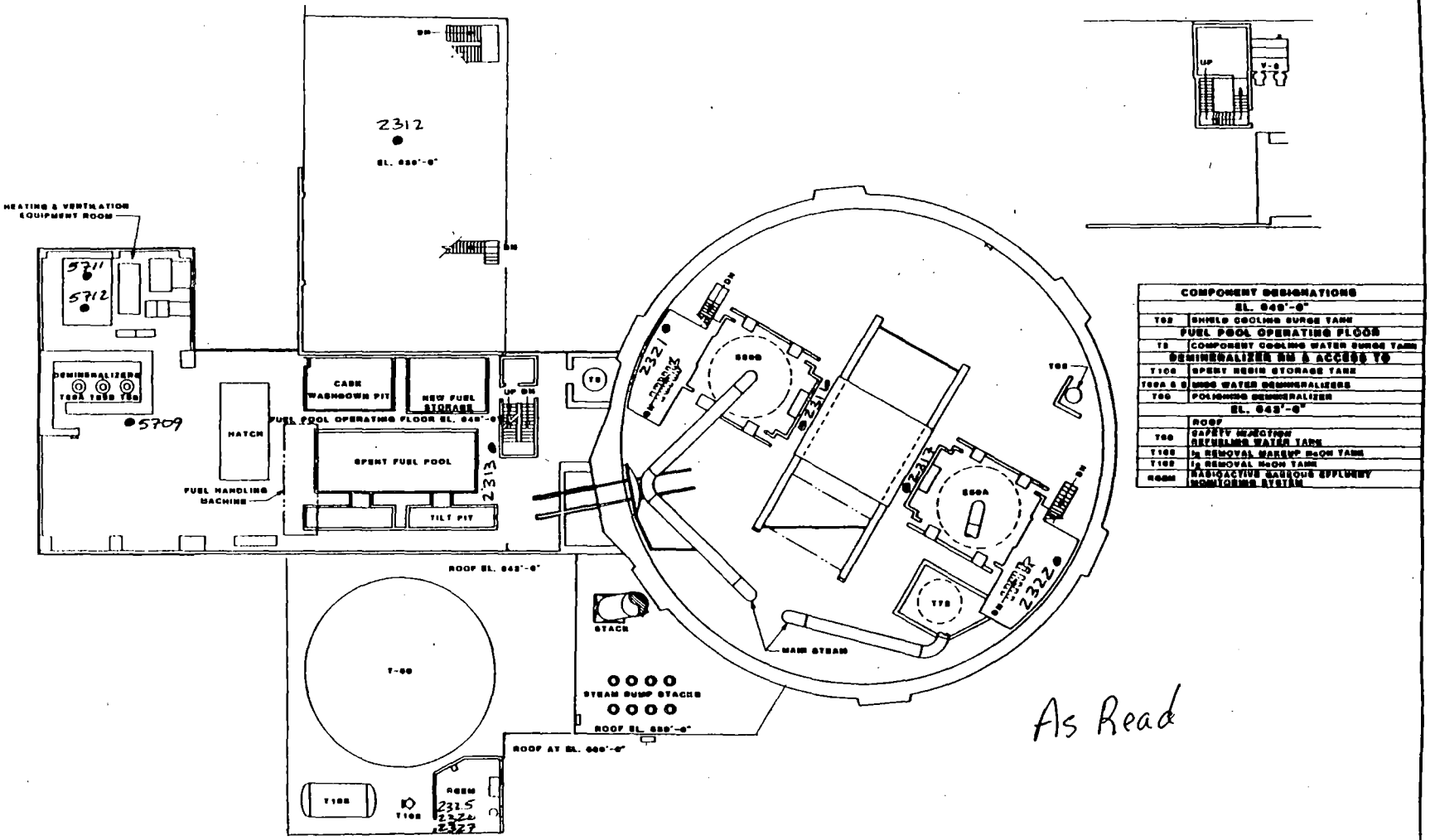
SCENARIO TIME: 0017-0130

TIME: 0847-1000

CONSUMERS POWER COMPANY

PALISADES PLANT

625'



As Read

IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0017 - 0130

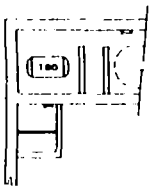
TIME: 0842 - 1000

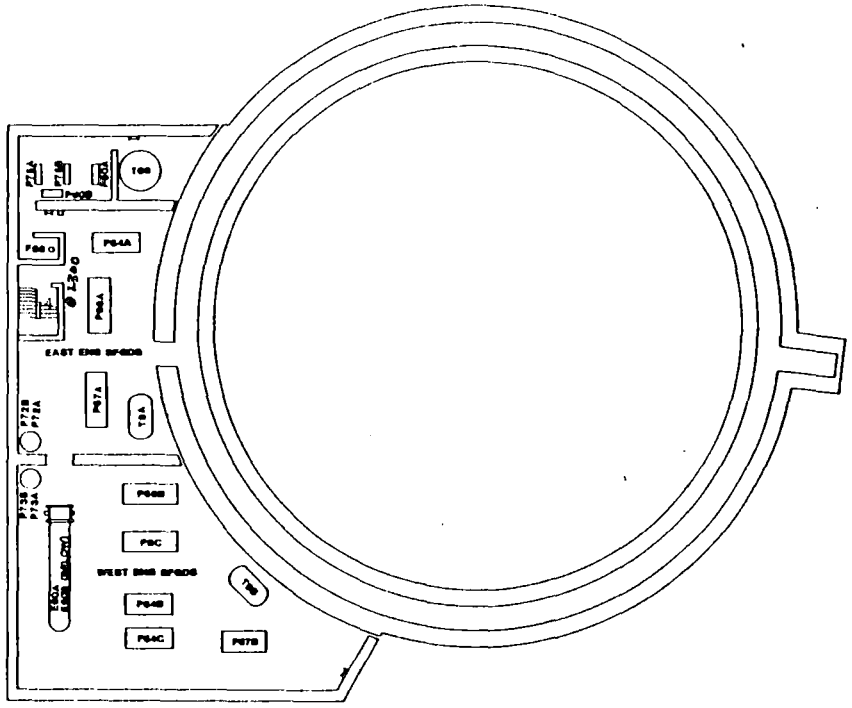
CONSUMERS POWER COMPANY

PALISADES PLANT

649'

COMPONENT DESIGNATIONS	
WEST ENG SFGDS	
E60AAB	SHUTDOWN COOLING HEAT EXCHANGERS
P71AAB	SUMP PUMPS
P54B&C	CNMT SPRAY PUMPS
P66B	HP SAFETY INJECTION PUMP
P67B	LP SAFETY INJECTION PUMP
P8C	AUX FEEDWATER PUMP
T6B	HP AIR RECEIVER
EAST ENG SFGDS	
P71AAB	SUMP PUMPS
P67A	LP SAFETY INJECTION PUMP
P66A	HP SAFETY INJECTION PUMP
P54A	CNMT SPRAY PUMP
T5A	HP AIR RECEIVERS
P60AAB	DIRTY WASTE DRAIN TANK PUMPS
P75AAB	EQUIPMENT DRAIN TANK PUMPS
T6B	DIRTY WASTE DRAIN TANK
F6B	EQUIPMENT DRAIN TANK FILTER
EL. 570'-0"	
T6A	EQUIPMENT DRAIN TANK





As Read

IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

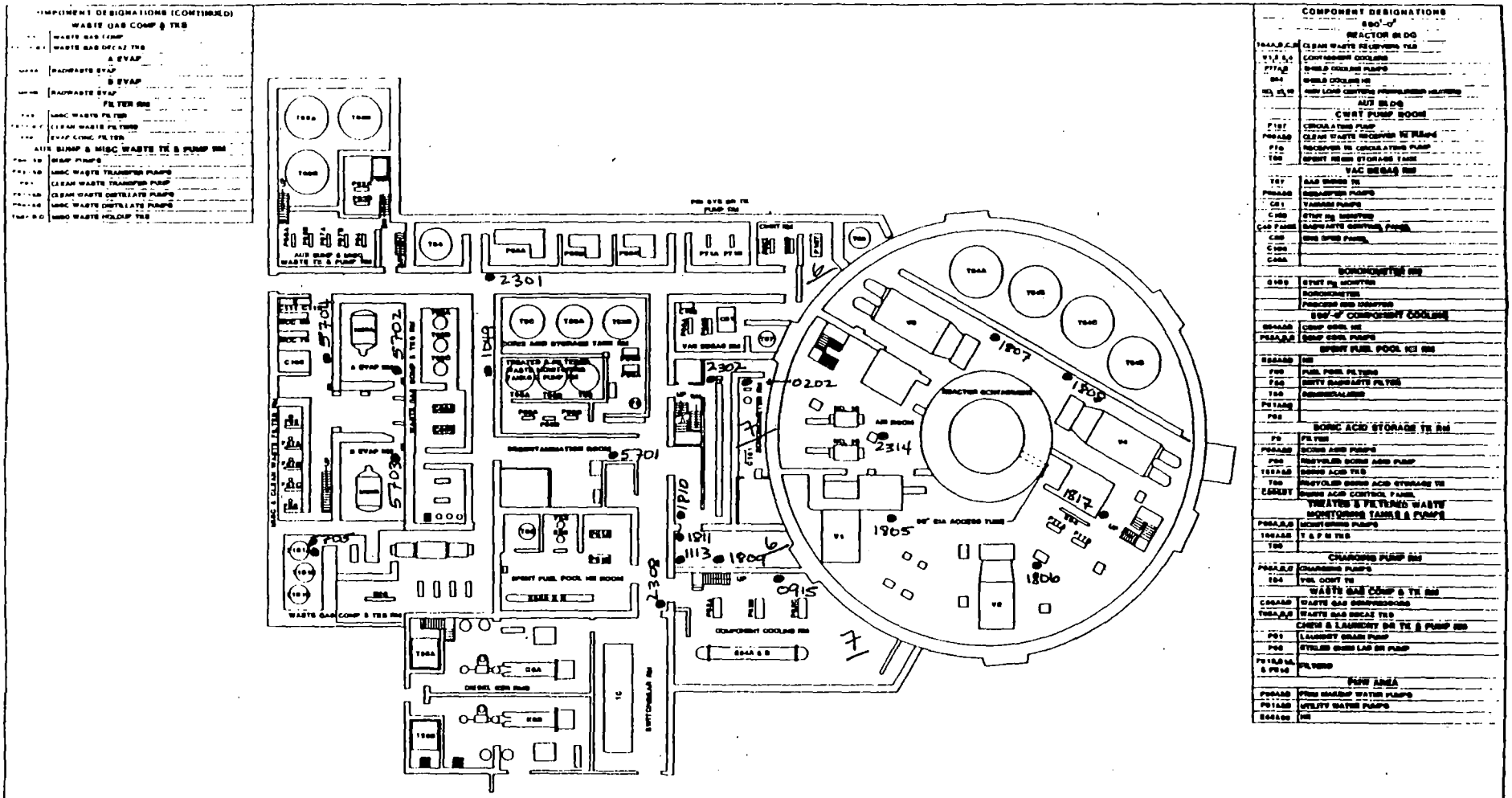
SCENARIO TIME: 0130-0230

TIME: 1000-1100

CONSUMERS POWER COMPANY

PALISADES PLANT

570'



IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0130-0230

TIME: 1000-1100

CONSUMERS POWER COMPANY

PALISADES PLANT

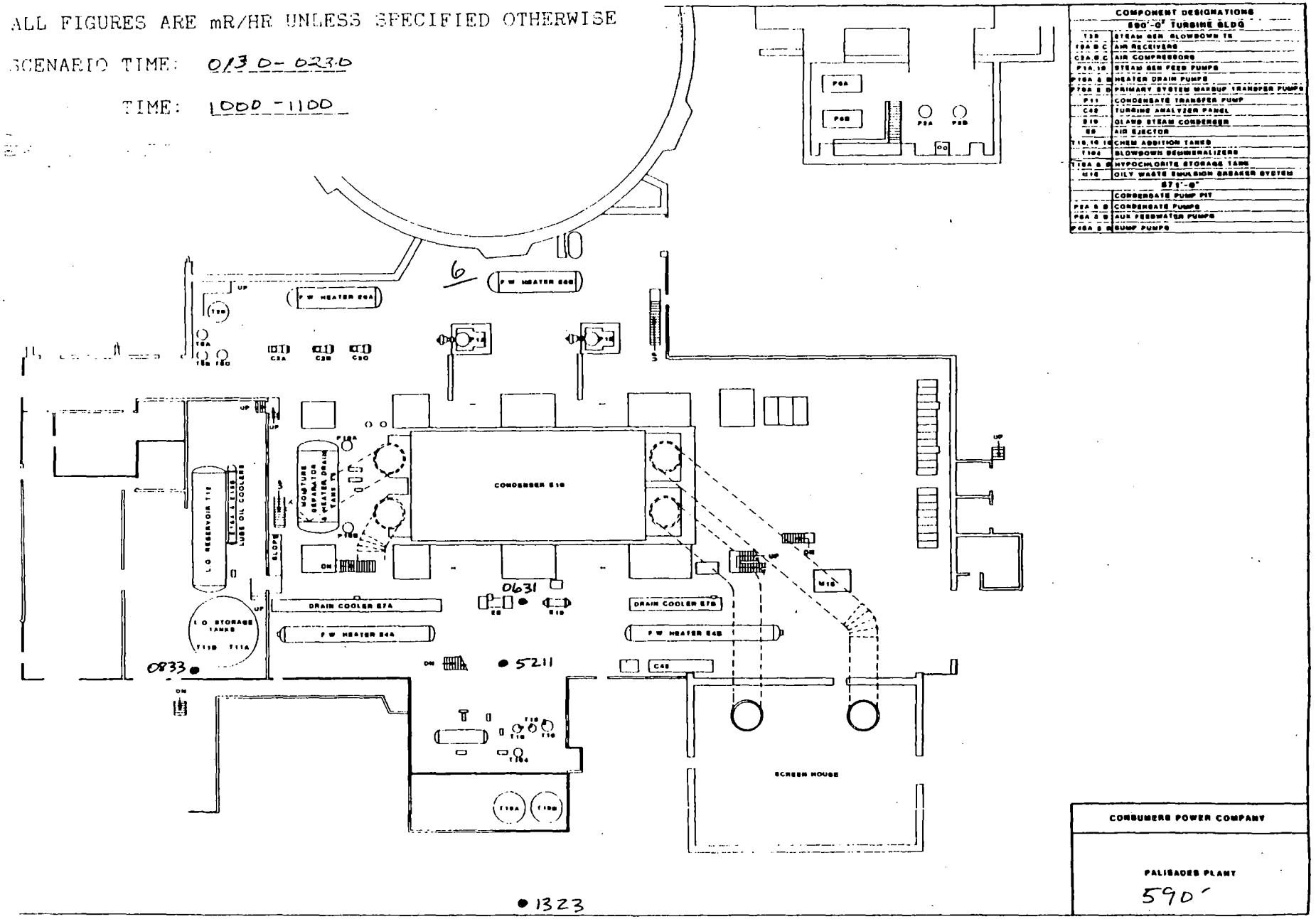
590'

IN PLANT RADIATION DATA

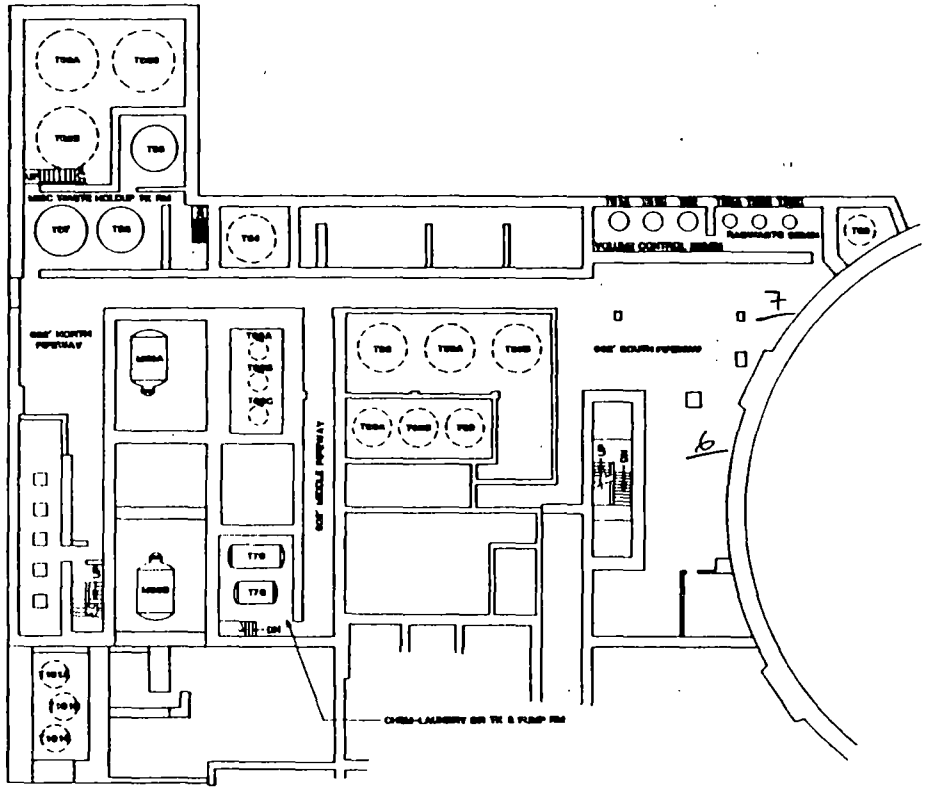
ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0130-0230

TIME: 1000-1100



COMPONENT DESIGNATIONS	
VOL CTRL & RADW DEMINERALIZER	
T81A&B	PURIFICATION DEMIN
T82	DEBORATING DEMIN
T84A,B&C	RADWASTE DEMINERALIZERS
	CHEM - LAUNDRY DR TK & PUMP RM
	2nd LEVEL
T79	LAUNDRY DR TK
T78	CONTROLLED CHEM LAB DR TK
MISC WASTE HOLDUP TK RM	
T86	CLEAN WASTE HOLDUP TK
T85	CLEAN WASTE DISTILLATE TK
T87	MISC WASTE DISTILLATE TK



IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0130-0230

TIME: 1000 - 1100

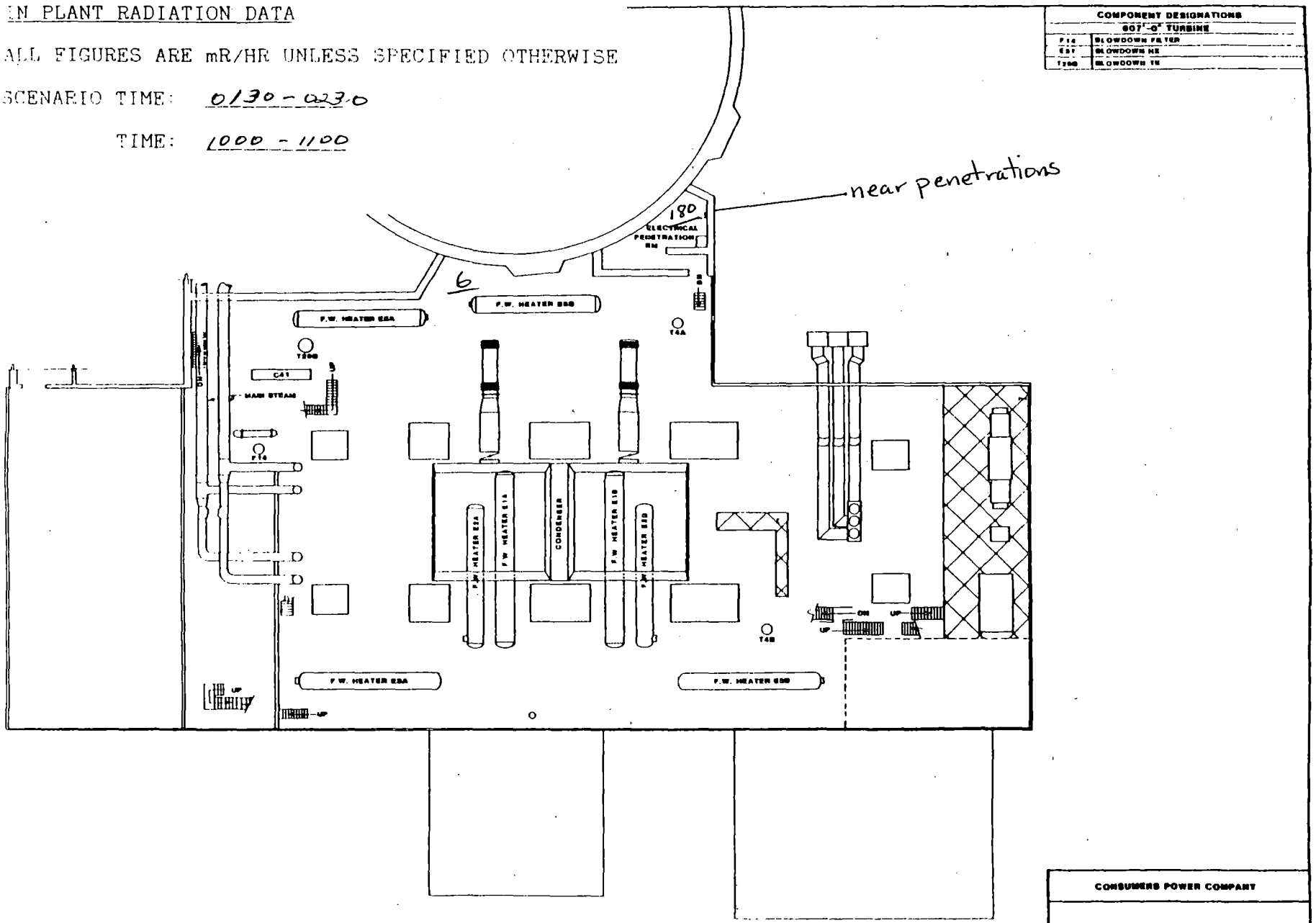
CONSUMERS POWER COMPANY
PALISADES PLANT
602'

IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0130 - 0230

TIME: 1000 - 1100

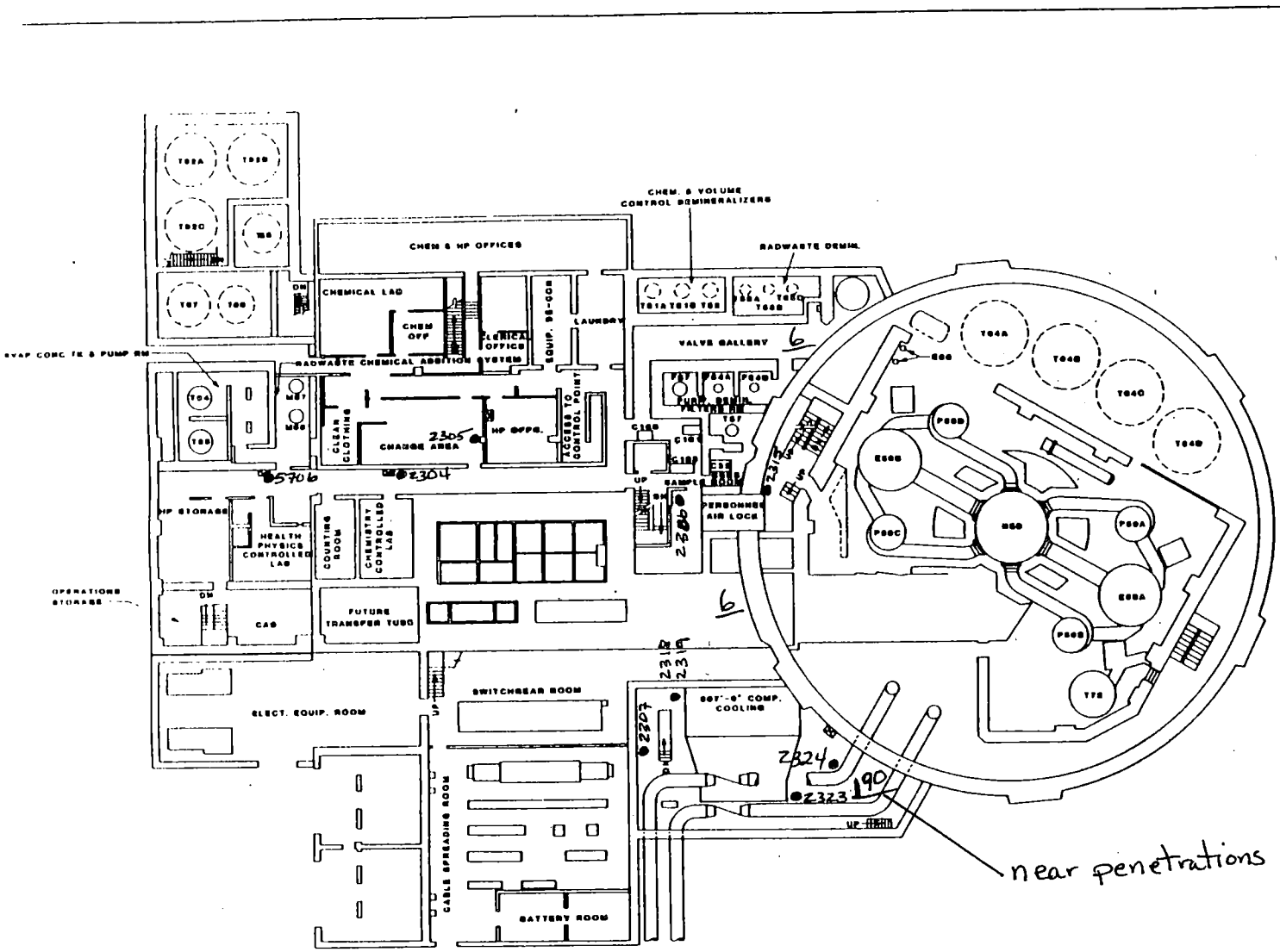


COMPONENT DESIGNATIONS 607'-0" TURBINE	
P16	BLOWDOWN FILTER
E61	BLOWDOWN HX
T16B	BLOWDOWN TK

CONSUMERS POWER COMPANY

PALISADES PLANT

607



COMPONENT DESIGNATIONS	
	EL. 607'-0"
	REACTOR BUILDING
E50A & B	STEAM GENERATORS
M50	REACTOR
P50 A, B,C,D	PRIMARY COOLANT PUMPS
T73	PRESSURIZER
E58	REGEN. HX
	EL. 607'-0" COMP. COOLING
V6A & B	CONT. PURGE EXHAUST UNIT
E67	GIRW TK RECIRC HX
P74	
	SWITCHGEAR RM
	CABLE SPREADING RM
	BATTERY RM
	ELECTRIC EQUIPMENT RM
	EL. 611'-0"
	C10B & M50B PANEL AREA
C10B	PASM PANEL
C5B	M50B PANEL
C10C	CLEAN RADWASTE SAMPLING PANEL
C10B	PASS INDICATING PANEL
T67	VACUUM DEGASIFIER
	VALVE GALLERY AREA
	ACCESS TO VOL. CTRL. & RADWASTE DEMINERALIZER RMS
	ACCESS TO REMOVAL PLUG FOR IRR SPENT RESIN STORAGE TK
	PURIF. DEMIN. FILTER RM
F44A & B	PURIFICATION FILTERS
F67	CLEAN RADWASTE FILTER
	EVAP. CONC. TK & PM RM
T64	EVAP CONC TK (CLEAN)
T65	EVAP CONC TK (DIRTY)
P66A & B	EVAP CONC TRANSFER PUMPS
	RADWASTE CHEMICAL ADDITION SYSTEM
M67	RADWASTE ANTI-FOAM INJECTION EQUIPMENT
M66	RADWASTE CAUSTIC INJECTION EQUIPMENT

IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

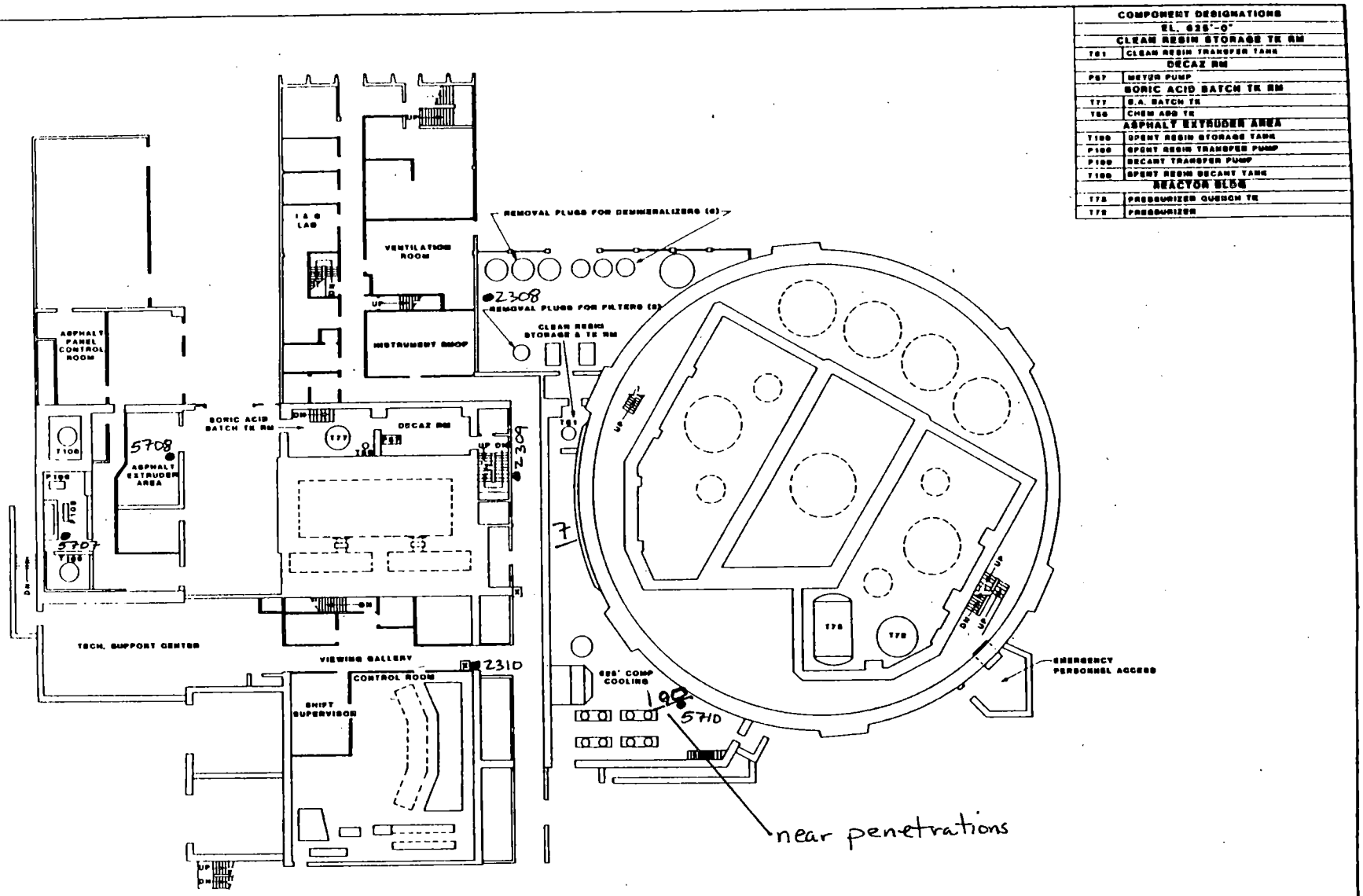
SCENARIO TIME: 0130-0230

TIME: 1000-1100

CONSUMERS POWER COMPANY

PALISADES PLANT

611'



IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

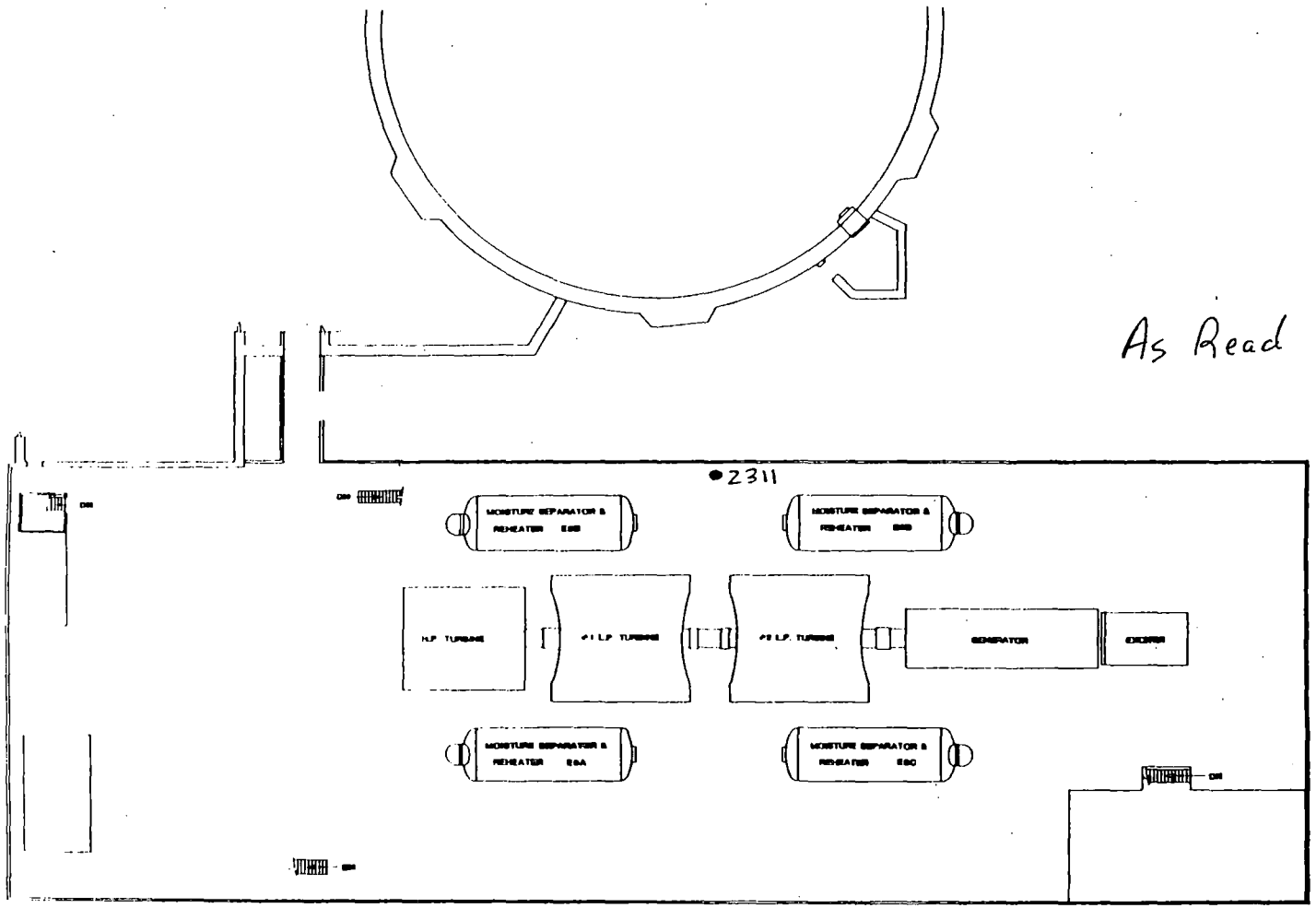
SCENARIO TIME: 0130-0230

TIME: 1000-1100

CONSUMERS POWER COMPANY

PALISADES PLANT

625'



IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

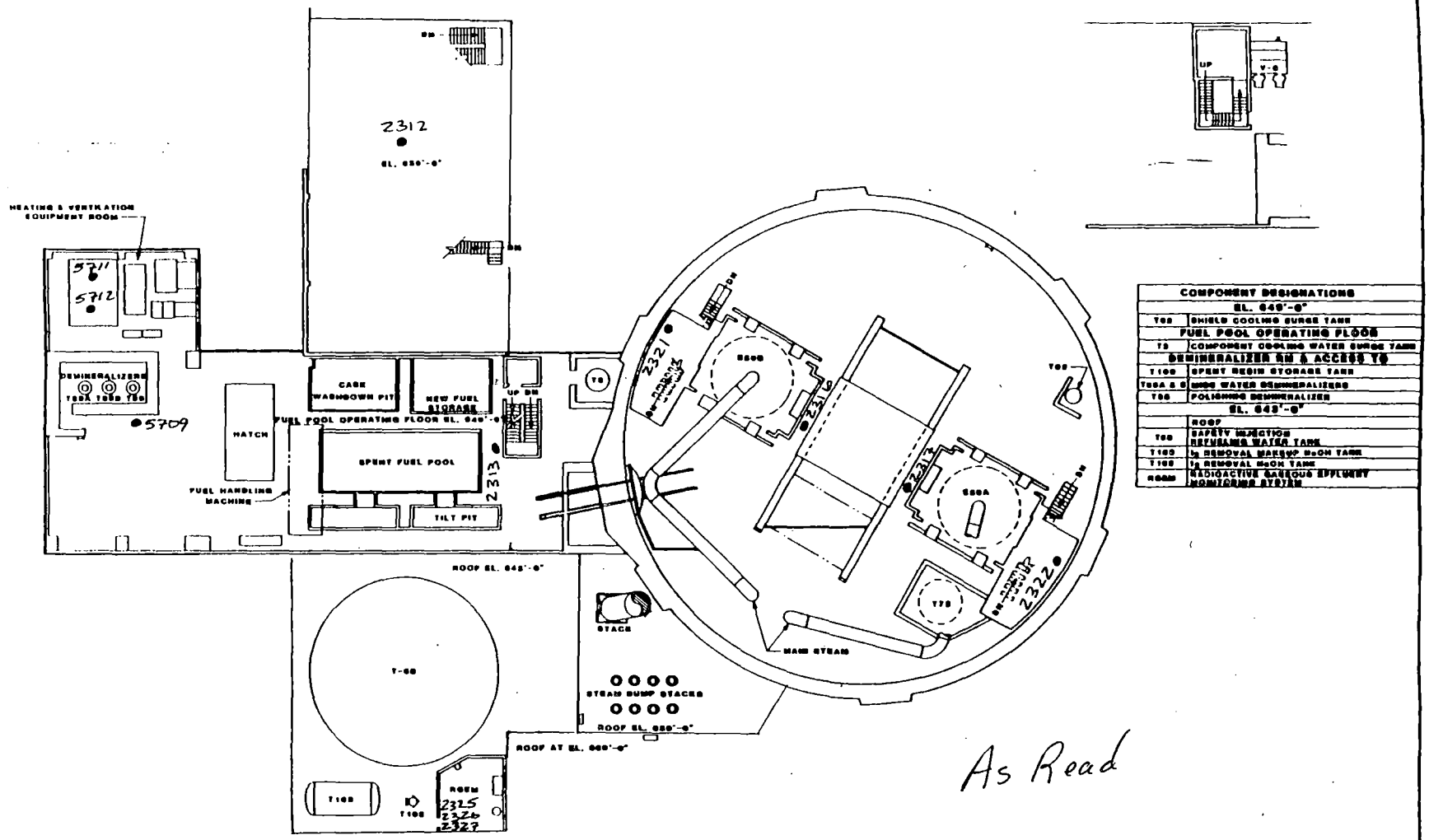
SCENARIO TIME: 0130-0230

TIME: 1000-1100

CONSUMERS POWER COMPANY

PALISADES PLANT

625



As Read

IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0130 - 0230

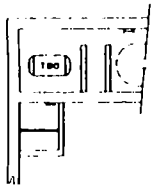
TIME: 1000 - 1100

CONSUMERS POWER COMPANY

PALISADES PLANT

649'

COMPONENT DESIGNATIONS	
WEST ENG SFGDS	
E60AAB	SHUTDOWN COOLING HEAT EXCHANGERS
P71AAB	SUMP PUMPS
P54BC	CTMT SPRAY PUMPS
P66B	HP SAFETY INJECTION PUMP
P67B	LP SAFETY INJECTION PUMP
P8C	AUX FEEDWATER PUMP
T60	HP AIR RECEIVER
EAST ENG SFGDS	
P71AAB	SUMP PUMPS
P67A	LP SAFETY INJECTION PUMP
P66A	HP SAFETY INJECTION PUMP
P54A	CTMT SPRAY PUMP
T5A	HP AIR RECEIVERS
P60AAB	DIRTY WASTE DRAIN TANK PUMPS
P75AAB	EQUIPMENT DRAIN TANK PUMPS
T60	DIRTY WASTE DRAIN TANK
F60	EQUIPMENT DRAIN TANK FILTER
EL. 570'-0"	
T59	EQUIPMENT DRAIN TANK



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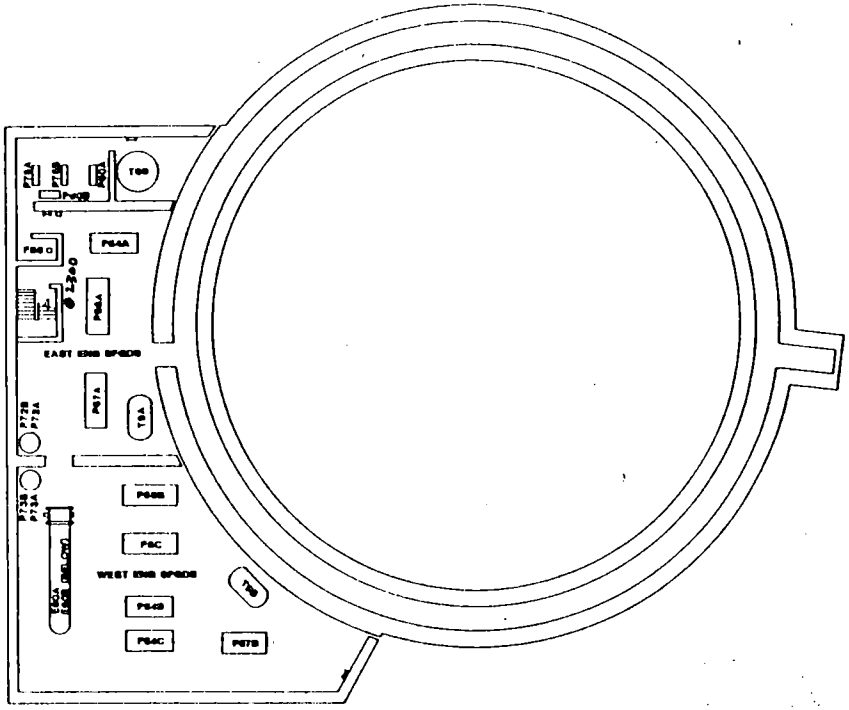


IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

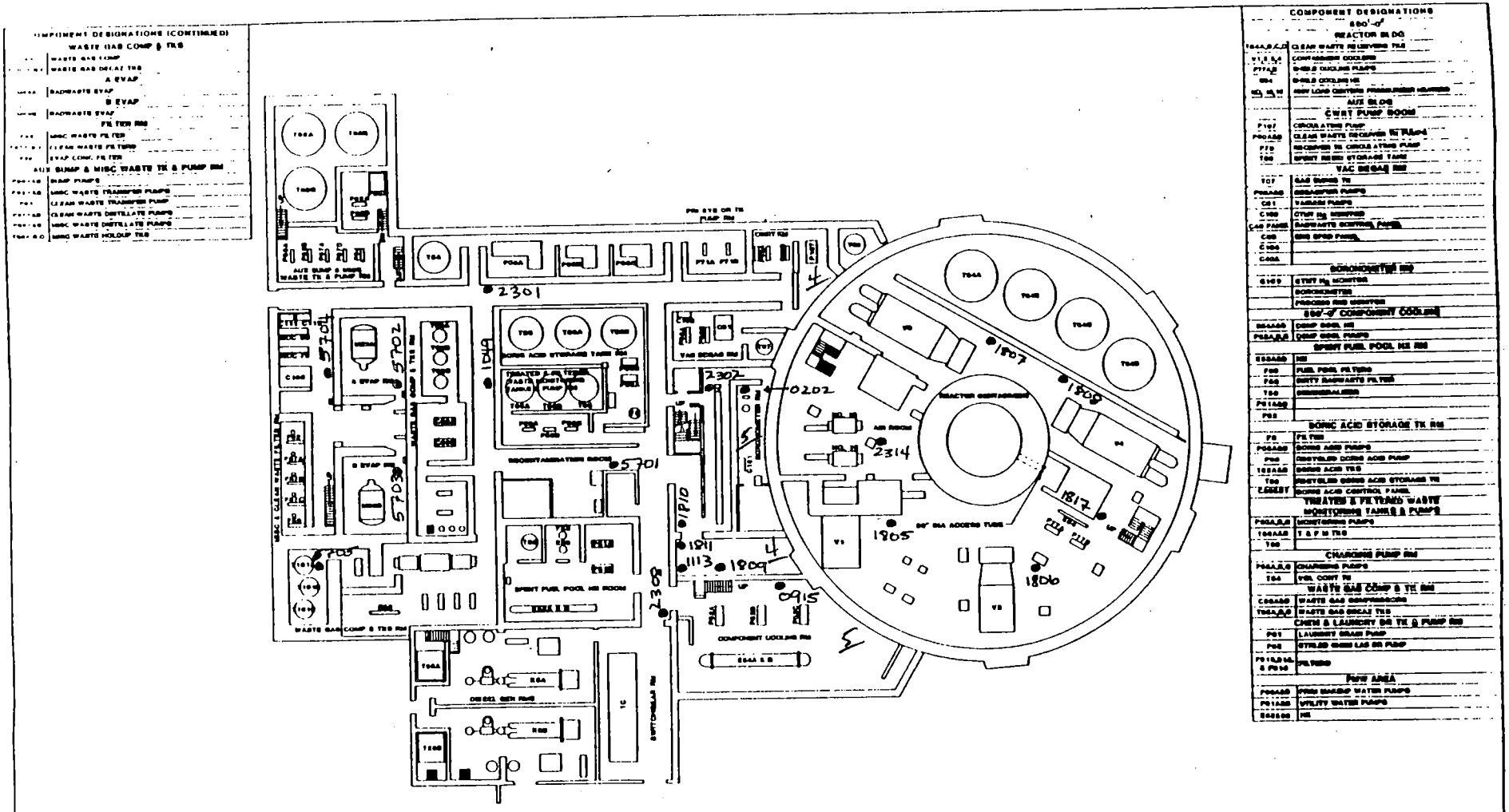
SCENARIO TIME: 0230-0330

TIME: 1100-1200

CONSUMERS POWER COMPANY

PALISADES PLANT

570'



IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE.

SCENARIO TIME: 0230-0330

TIME: 1100-1200

CONSUMERS POWER COMPANY

PALISADES PLANT

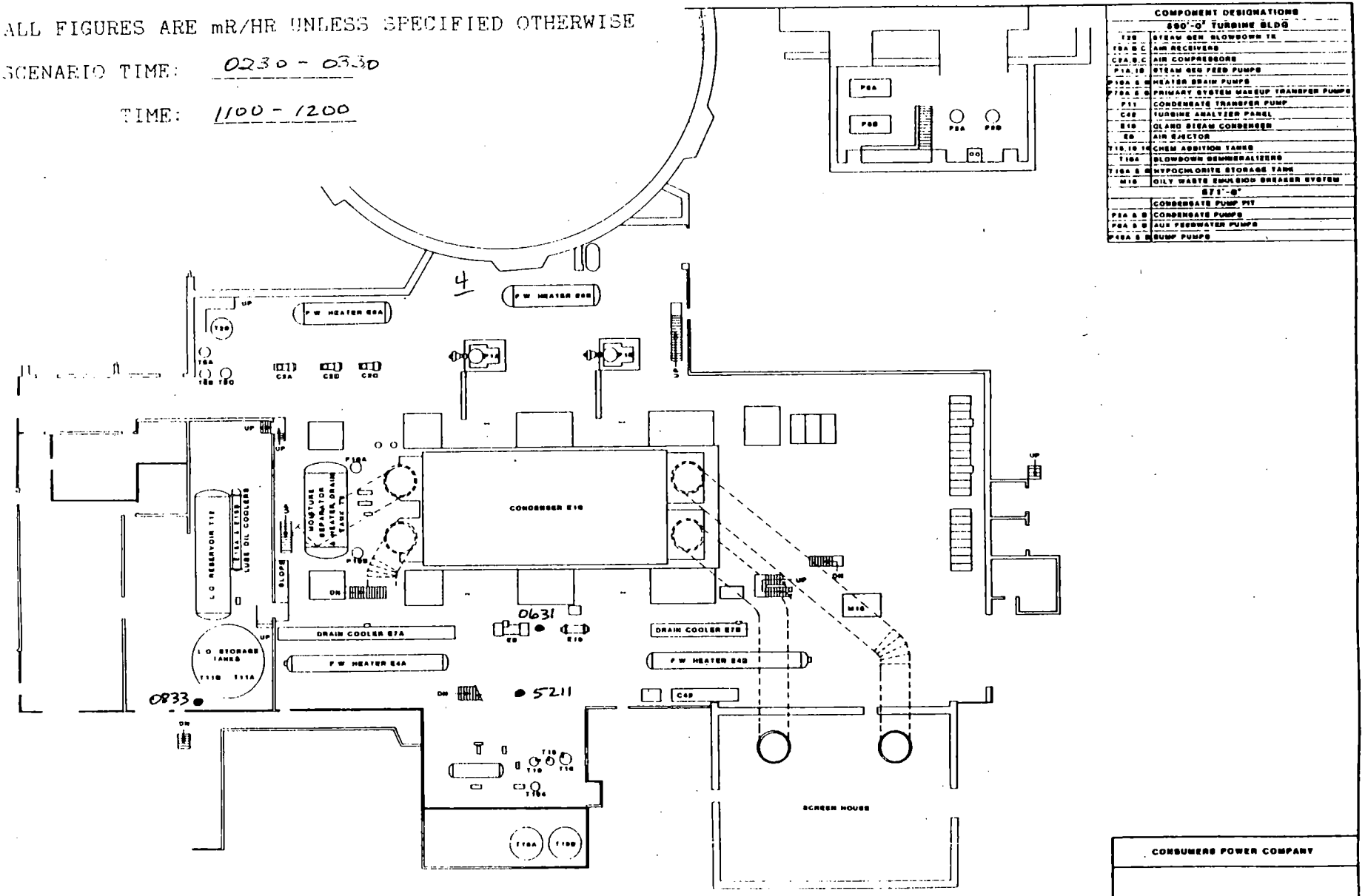
590'

IN PLANT RADIATION DATA

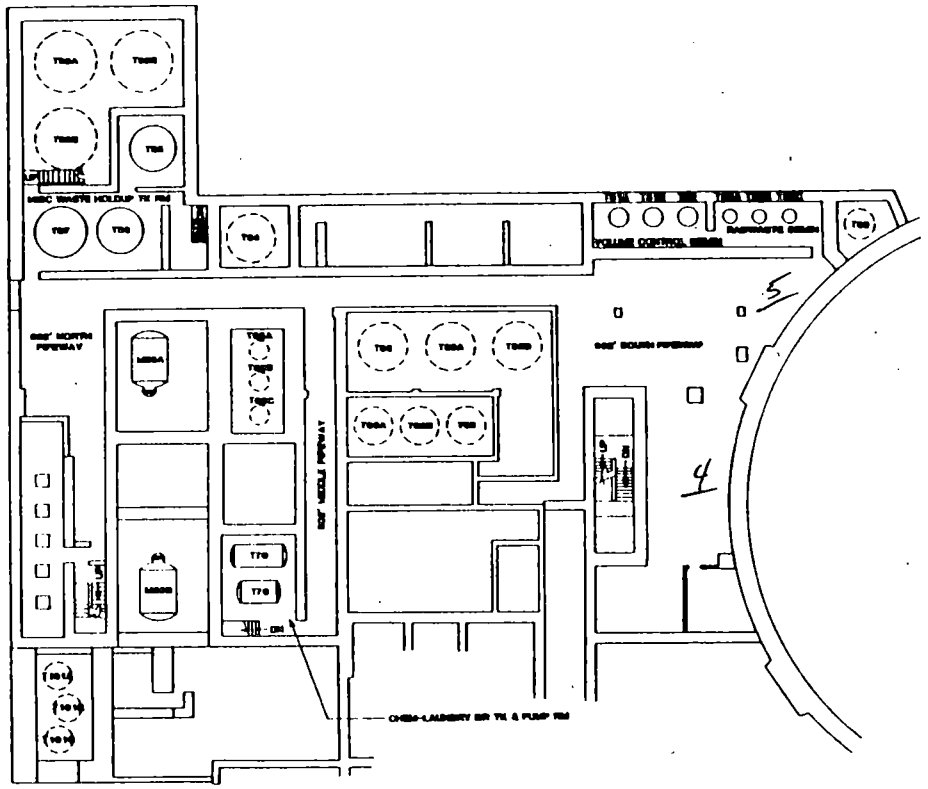
ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0230 - 0330

TIME: 1100 - 1200



COMPONENT DESIGNATIONS	
	VOL CTRL & RADW DEMINERALIZER
T81A&B	PURIFICATION DEMIN
T82	BORATING DEMIN
T84A,B&C	RADWASTE DEMINERALIZERS
	CHEM - LAUNDRY DR TK & PUMP RM
	2nd LEVEL
T79	LAUNDRY DR TK
T78	CONTROLLED CHEM LAB DR TK
	MISC WASTE HOLDUP TK RM
T86	CLEAN WASTE HOLDUP TK
T88	CLEAN WASTE DISTILLATE TK
T87	MISC WASTE DISTILLATE TK



IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0230 -0330

TIME: 1100 -1200

CONSUMERS POWER COMPANY

PALISADES PLANT

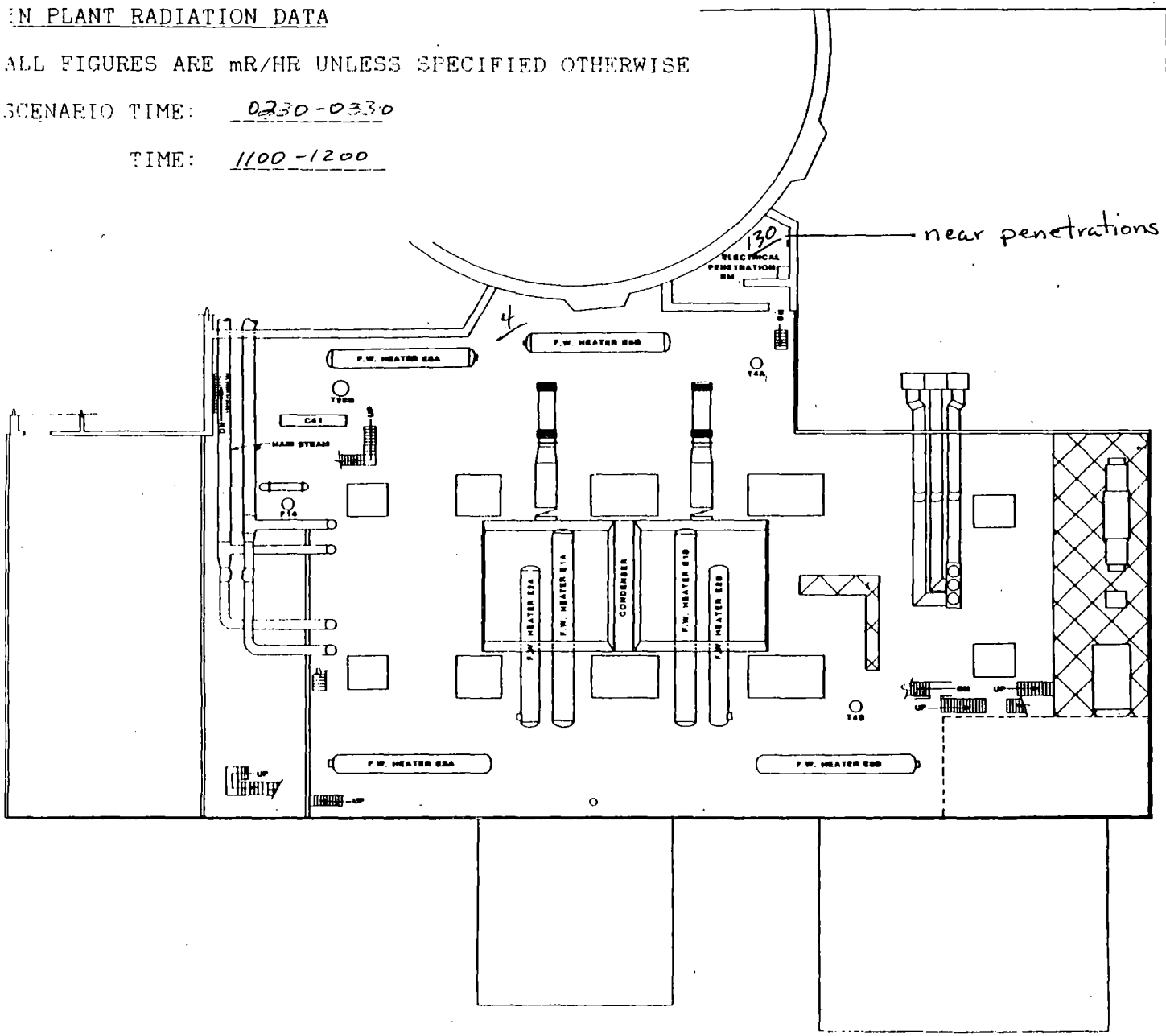
602'

IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0230-0330

TIME: 1100-1200

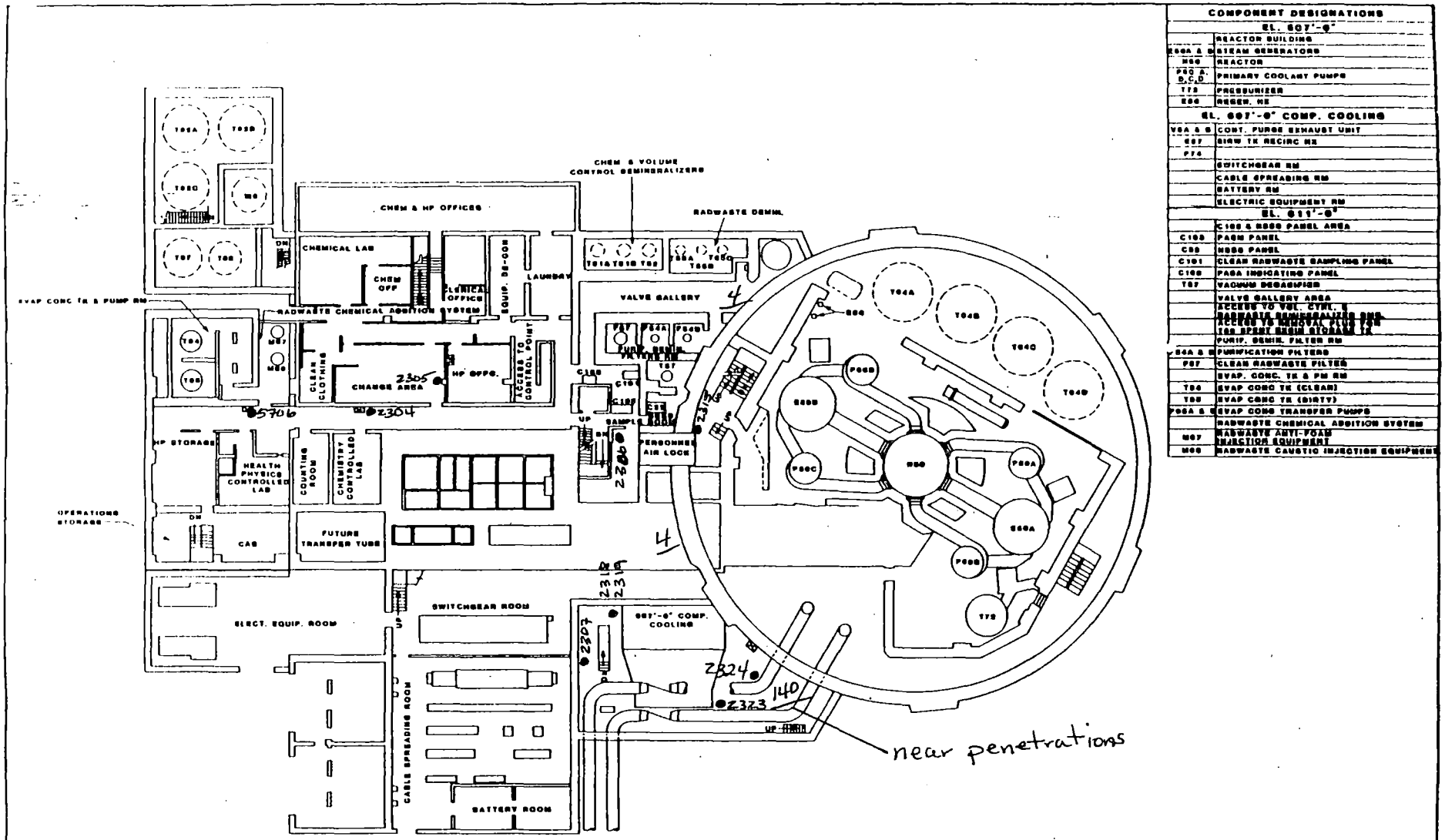


COMPONENT DESIGNATIONS	
607'-0" TURBINE	
F16	BLOWDOWN FILTER
E81	BLOWDOWN HX
T39B	BLOWDOWN TK

CONSUMERS POWER COMPANY

PALISADES PLANT

607



COMPONENT DESIGNATIONS	
	EL. 607'-0"
	REACTOR BUILDING
E60A & B	STEAM GENERATORS
M60	REACTOR
P50 A, B, C, D	PRIMARY COOLANT PUMPS
T59	PRESSURIZER
E66	REGEN. HX
	EL. 607'-0" COMP. COOLING
V6A & B	CONT. PURGE EXHAUST UNIT
E67	SIGW TK RECIRC HX
P74	
	SWITCHGEAR RM
	CABLE SPREADING RM
	BATTERY RM
	ELECTRIC EQUIPMENT RM
	EL. 611'-0"
	C100 & M000 PANEL AREA
C100	PASM PANEL
C99	M000 PANEL
C101	CLEAN RADWASTE SAMPLING PANEL
C102	PASA INDICATING PANEL
T67	VACUUM DEGASIFIER
	VALVE GALLERY AREA
	ACCESS TO VOL. CTRL. & RADWASTE DEMINERALIZERS AND ACCESS TO REMOVAL PLUG FOR T60 SPENT RESIN STORAGE TK
	PURIF. DEMIN. FILTER RM
F64A & B	PURIFICATION FILTERS
F67	CLEAN RADWASTE FILTER
	EVAP. CONC. TK & PM RM
T64	EVAP CONC TK (CLEAN)
T65	EVAP CONC TK (DIRTY)
P66A & B	EVAP CONC TRANSFER PUMPS
	RADWASTE CHEMICAL ADDITION SYSTEM
M67	RADWASTE ANTI-FOAM INJECTION EQUIPMENT
M68	RADWASTE CAUSTIC INJECTION EQUIPMENT

IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

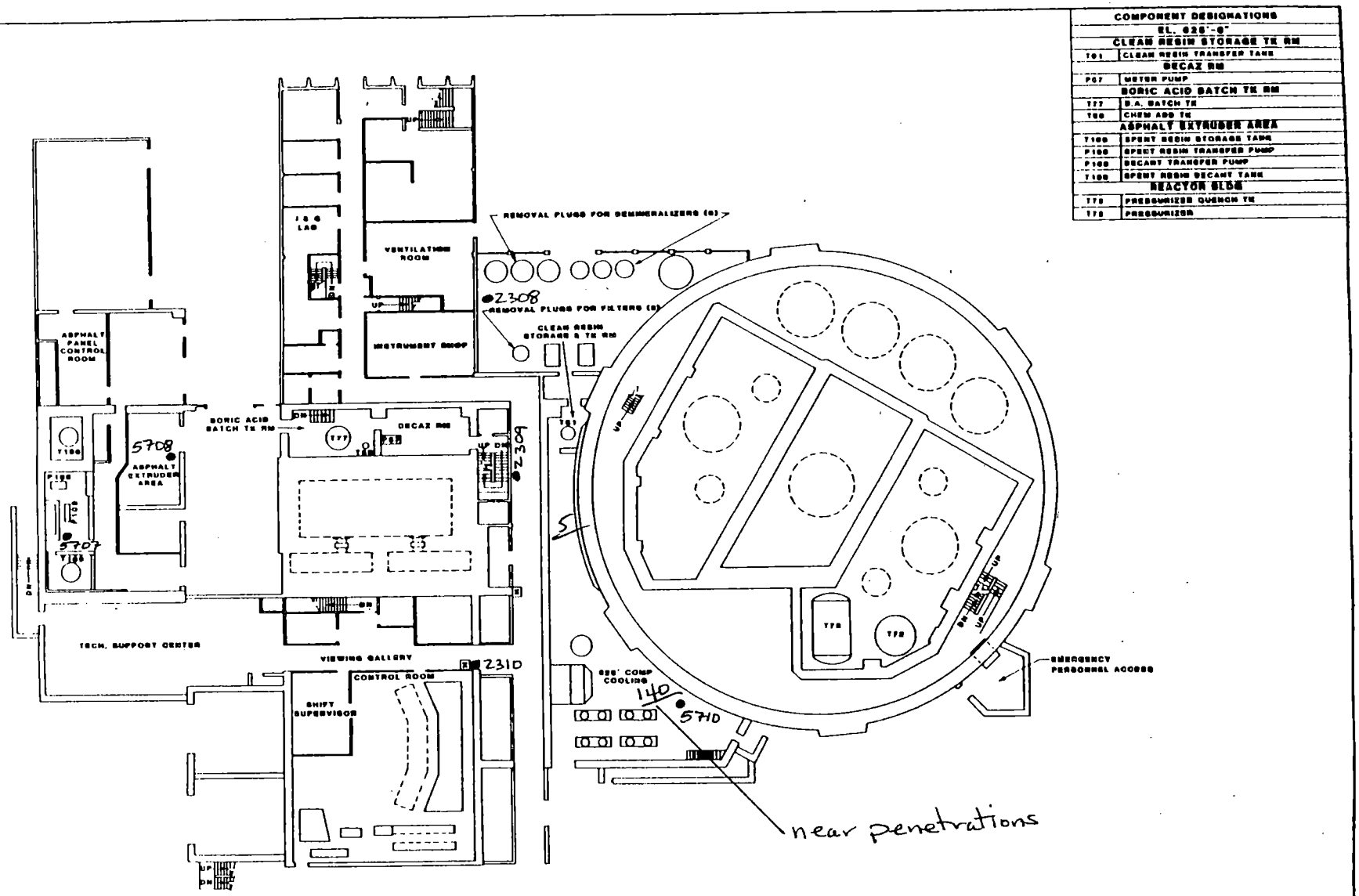
SCENARIO TIME: 0230-0330

TIME: 1100-1200

CONSUMERS POWER COMPANY

PALISADES PLANT

611'



IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

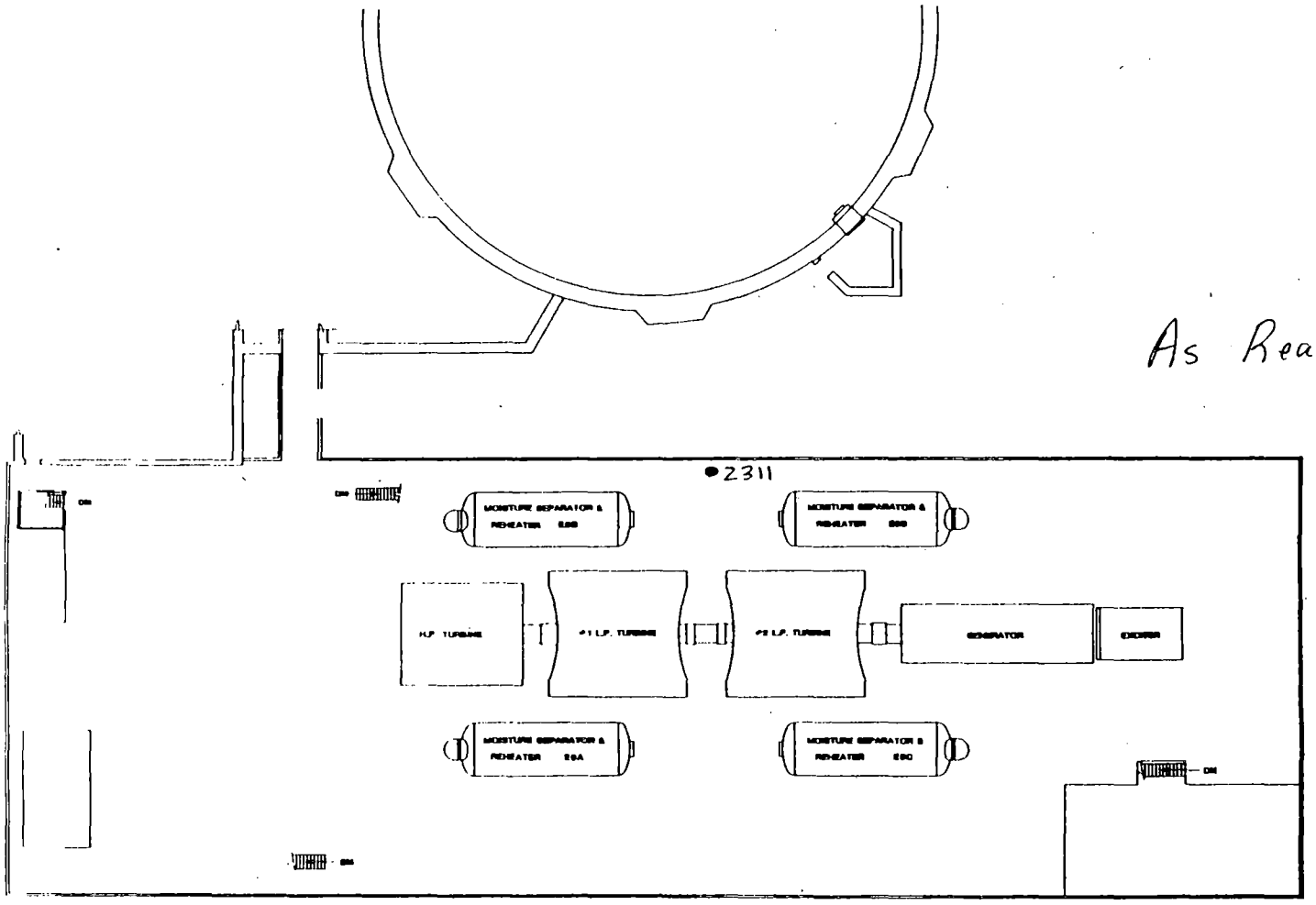
SCENARIO TIME: 0230-0330

TIME: 1100-1200

CONSUMERS POWER COMPANY

PALISADES PLANT

625'



IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

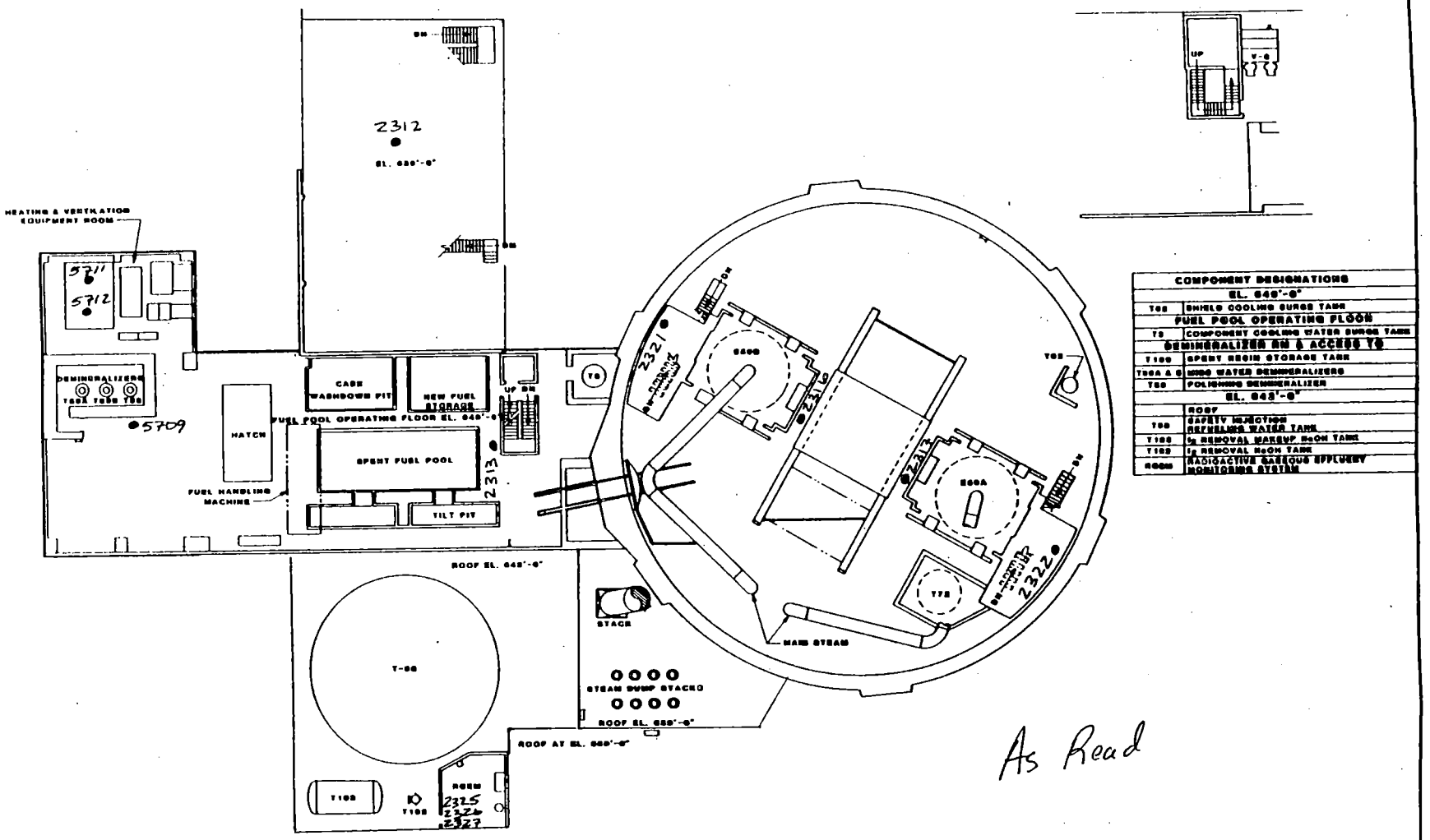
SCENARIO TIME: 0230 - 0330

TIME: 1100 - 1200

CONSUMERS POWER COMPANY

PALISADES PLANT

625



As Read

IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0230-0330

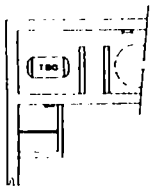
TIME: 1100-1200

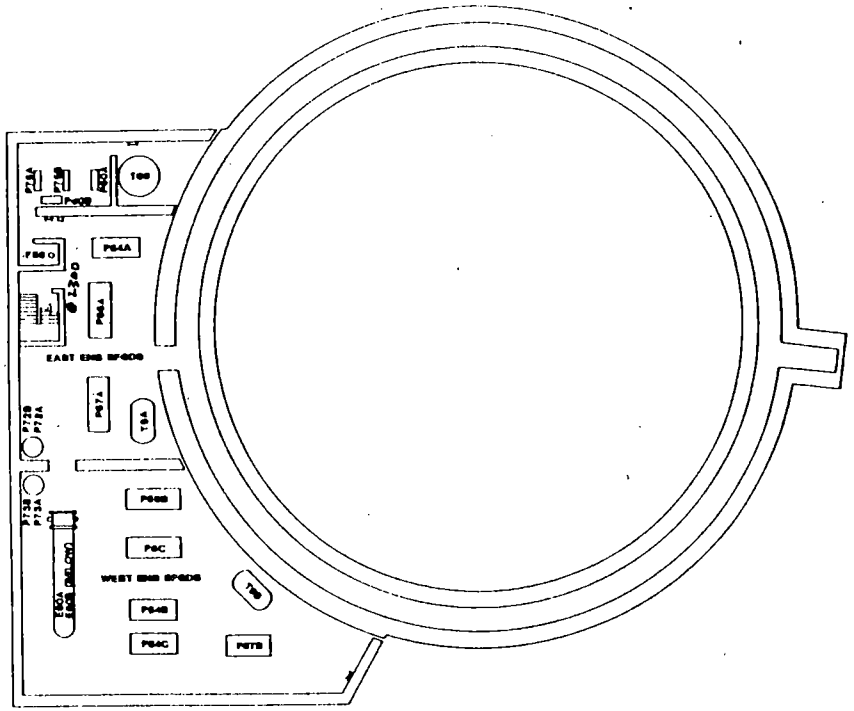
CONSUMERS POWER COMPANY

PALISADES PLANT

649'

COMPONENT DESIGNATIONS	
	WEST ENG SFGDS
E60A&B	SHUTDOWN COOLING HEAT EXCHANGERS
P71A&B	RHR PUMPS
P54B&C	CTMT SPRAY PUMPS
P55B	HP SAFETY INJECTION PUMP
P57B	LP SAFETY INJECTION PUMP
P8C	AUX FEEDWATER PUMP
T60	HP AIR RECEIVER
	EAST ENG SFGDS
P72A&B	RHR PUMPS
P57A	LP SAFETY INJECTION PUMP
P55A	HP SAFETY INJECTION PUMP
P54A	CTMT SPRAY PUMP
T5A	HP AIR RECEIVERS
P60A&B	DIRTY WASTE DRAIN TANK PUMPS
P75A&B	EQUIPMENT DRAIN TANK PUMPS
T60	DIRTY WASTE DRAIN TANK
F50	EQUIPMENT DRAIN TANK FILTER
	EL. 570'-0"
T59	EQUIPMENT DRAIN TANK





As Read

IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

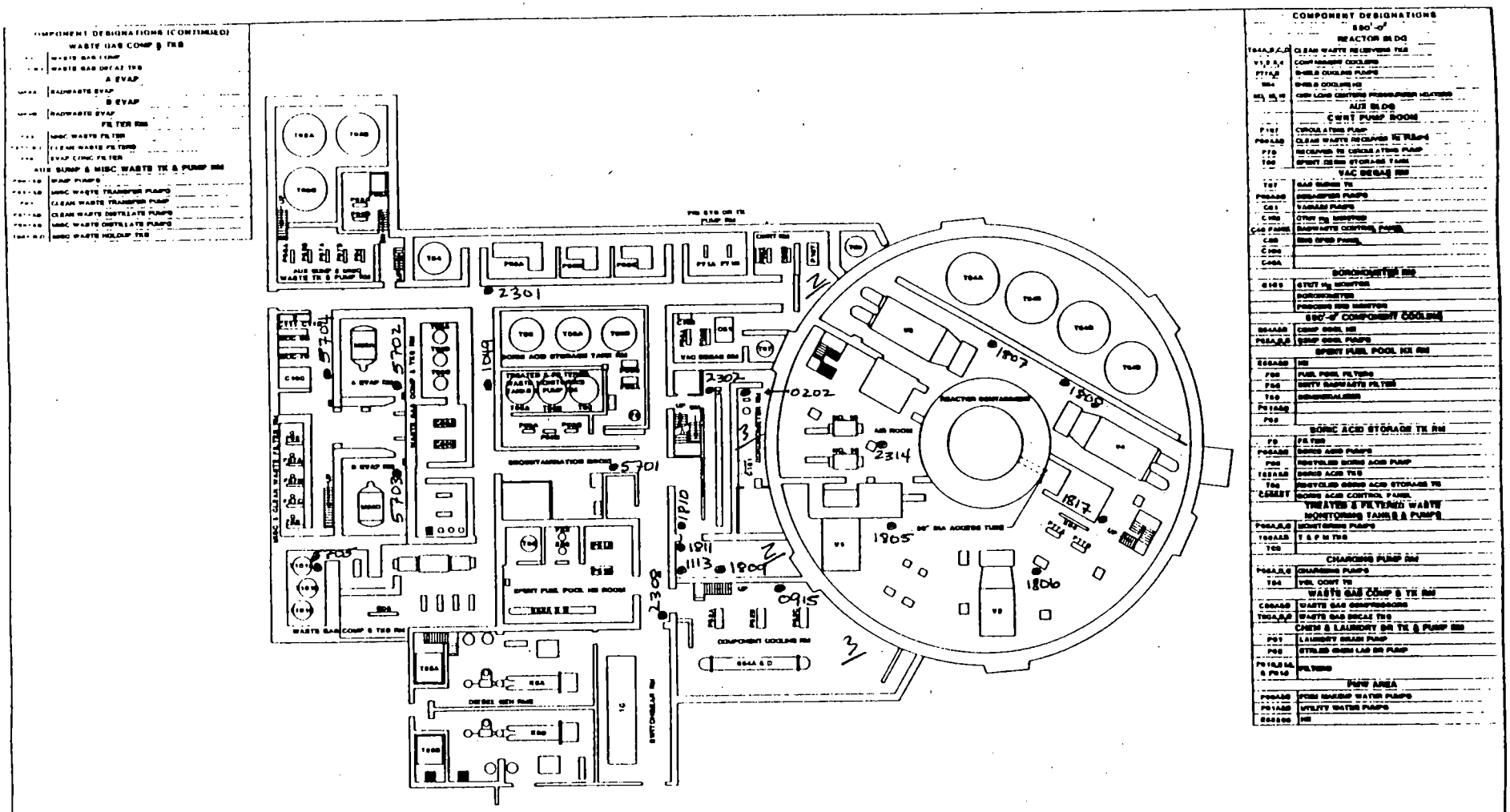
SCENARIO TIME: 0330-0400

TIME: 1200-1230

CONSUMERS POWER COMPANY

PALISADES PLANT

570'



IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0330-0400

TIME: 1200-1230

CONSUMERS POWER COMPANY

PALISADES PLANT

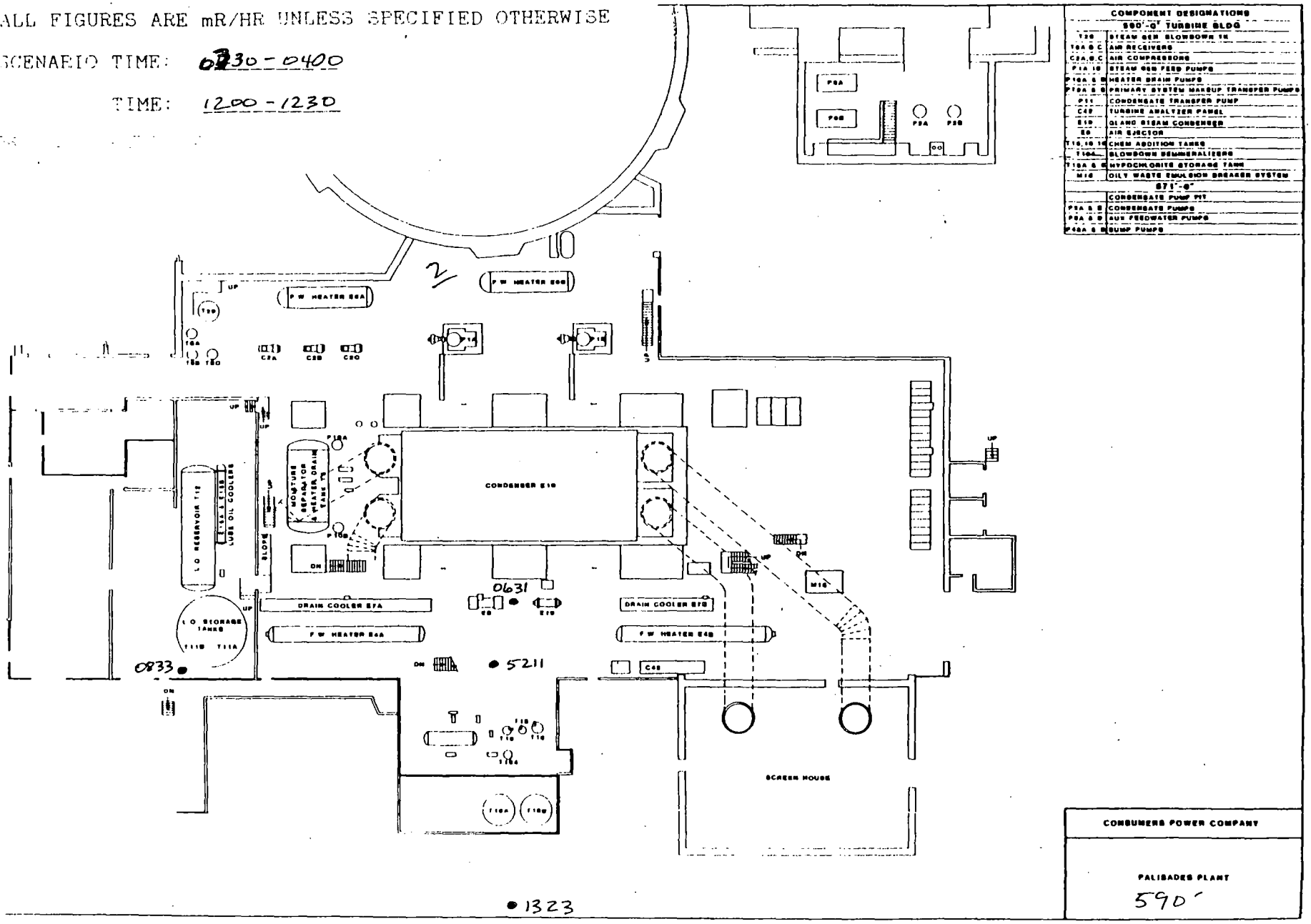
590'

IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0230 - 0400

TIME: 1200 - 1230

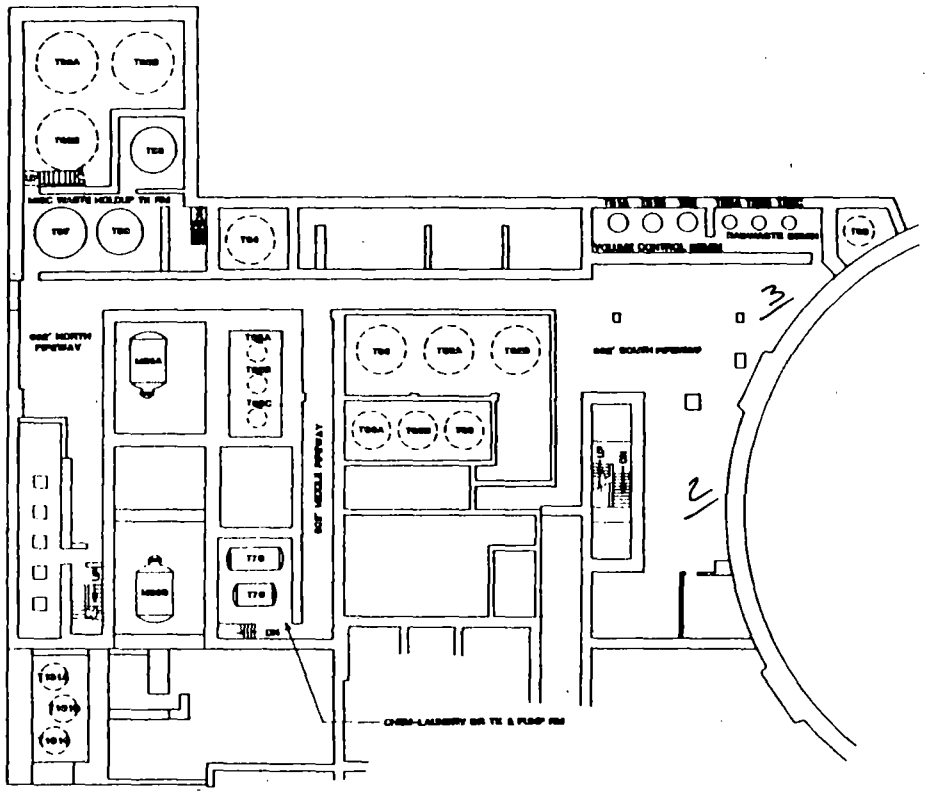


CONSUMERS POWER COMPANY

PALISADES PLANT

590'

COMPONENT DESIGNATIONS	
	VOL CTRL & RADW DEMINERALIZER
T81A&B	PURIFICATION DEMIN
T82	BORATING DEMIN
T86A,B&C	RADWASTE DEMINERALIZERS
	CHEM - LAUNDRY DR TK & PUMP RM
	2nd LEVEL
T79	LAUNDRY DR TK
T78	CONTROLLED CHEM LAB DR TK
	MISC WASTE HOLDUP TK RM
T88	CLEAN WASTE HOLDUP TK
T84	CLEAN WASTE DISTILLATE TK
T87	MISC WASTE DISTILLATE TK



IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0330 - 0400

TIME: 1200 - 1230

CONSUMERS POWER COMPANY

PALISADES PLANT

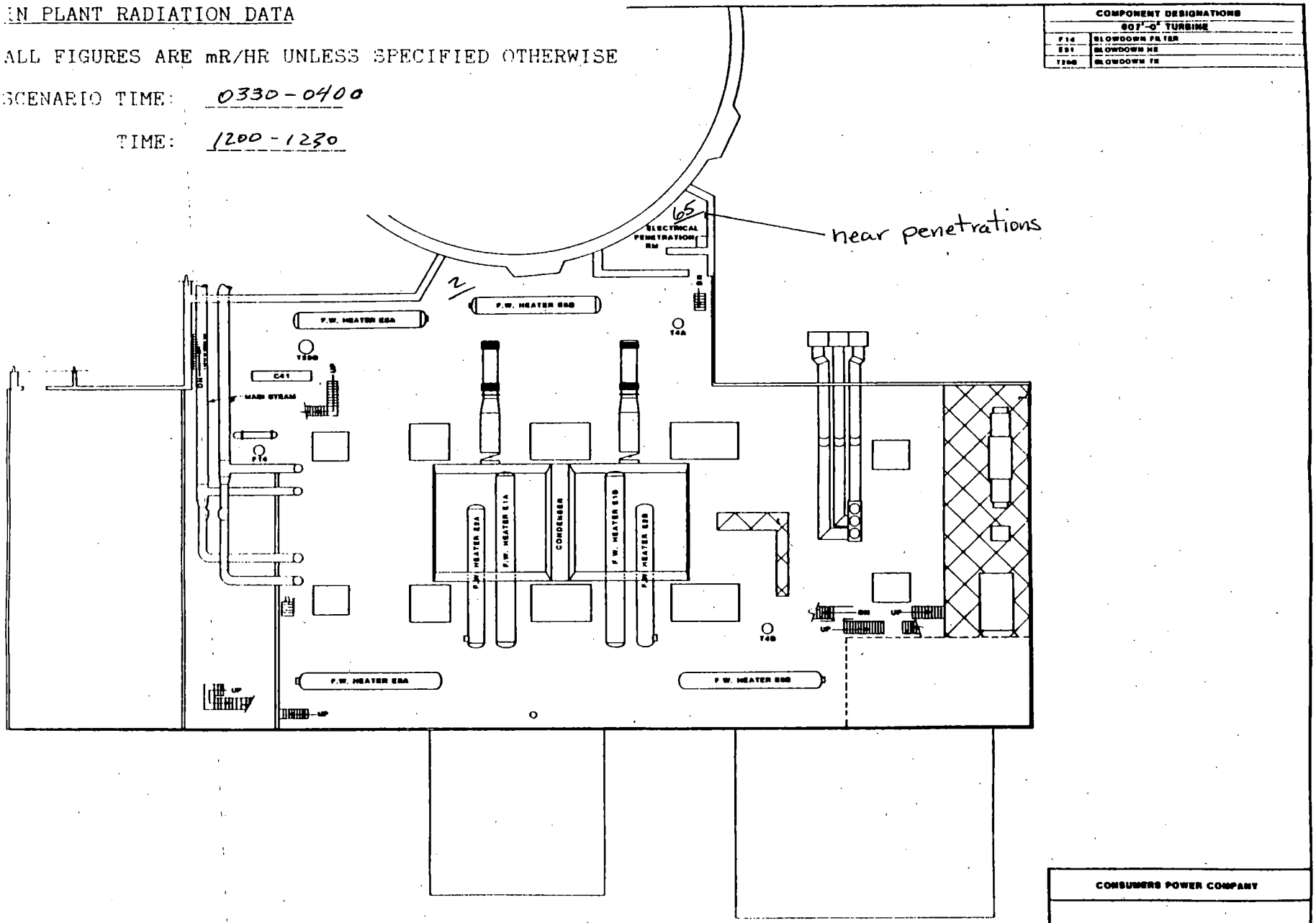
602'

IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0330-0400

TIME: 1200-1230

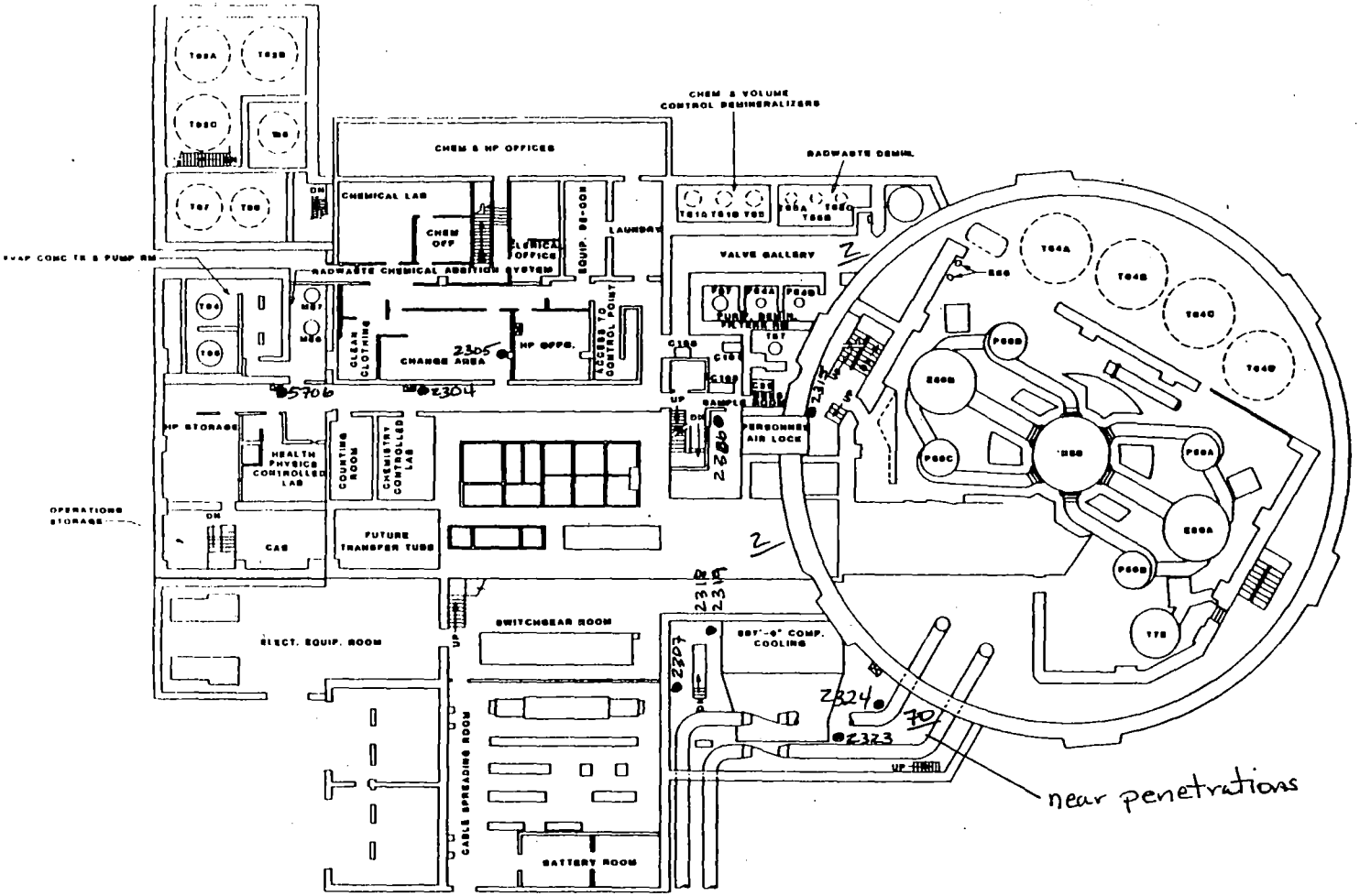


COMPONENT DESIGNATIONS	
607'-0" TURBINE	
P16	BLOWDOWN FILTER
E81	BLOWDOWN HX
T26B	BLOWDOWN TK

CONSUMERS POWER COMPANY

PALISADES PLANT

607



COMPONENT DESIGNATIONS	
	EL. 607'-0"
	REACTOR BUILDING
E50A & B	STEAM GENERATORS
M50	REACTOR
P50 A, B, C, D	PRIMARY COOLANT PUMPS
T51	PRESSURIZER
E56	REGEN. HX
	EL. 607'-0" COMP. COOLING
V9A & B	CONT. PURGE EXHAUST UNIT
E67	SIRW TK RECIRC HX
P74	
	SWITCHGEAR RM
	CABLE SPREADING RM
	BATTERY RM
	ELECTRIC EQUIPMENT RM
	EL. 611'-0"
	C10B & M66B PANEL AREA
C10B	PASM PANEL
C9B	M66B PANEL
C10I	CLEAN RADWASTE SAMPLING PANEL
C10G	PASS INDICATING PANEL
T67	VACUUM DEGASIFIER
	VALVE GALLERY AREA
	ACCESS TO VOL. CTRL. & RADWASTE DEMINERALIZER RMS
	ACCESS TO REMOVAL FILTER FOR TBS SPENT RESIN HYDRANT TK
	PURIF. DEMIN. FILTER RM
F68A & B	PURIFICATION FILTERS
F67	CLEAN RADWASTE FILTER
	EVAP. CONC. TK & P9B RM
T9A	EVAP CONC TK (CLEAN)
T9B	EVAP CONC TK (DIRTY)
P68A & B	EVAP CONC TRANSFER PUMPS
	RADWASTE CHEMICAL ADDITION SYSTEM
M67	RADWASTE ANTI-FOAM INJECTION EQUIPMENT
M66	RADWASTE CAUSTIC INJECTION EQUIPMENT

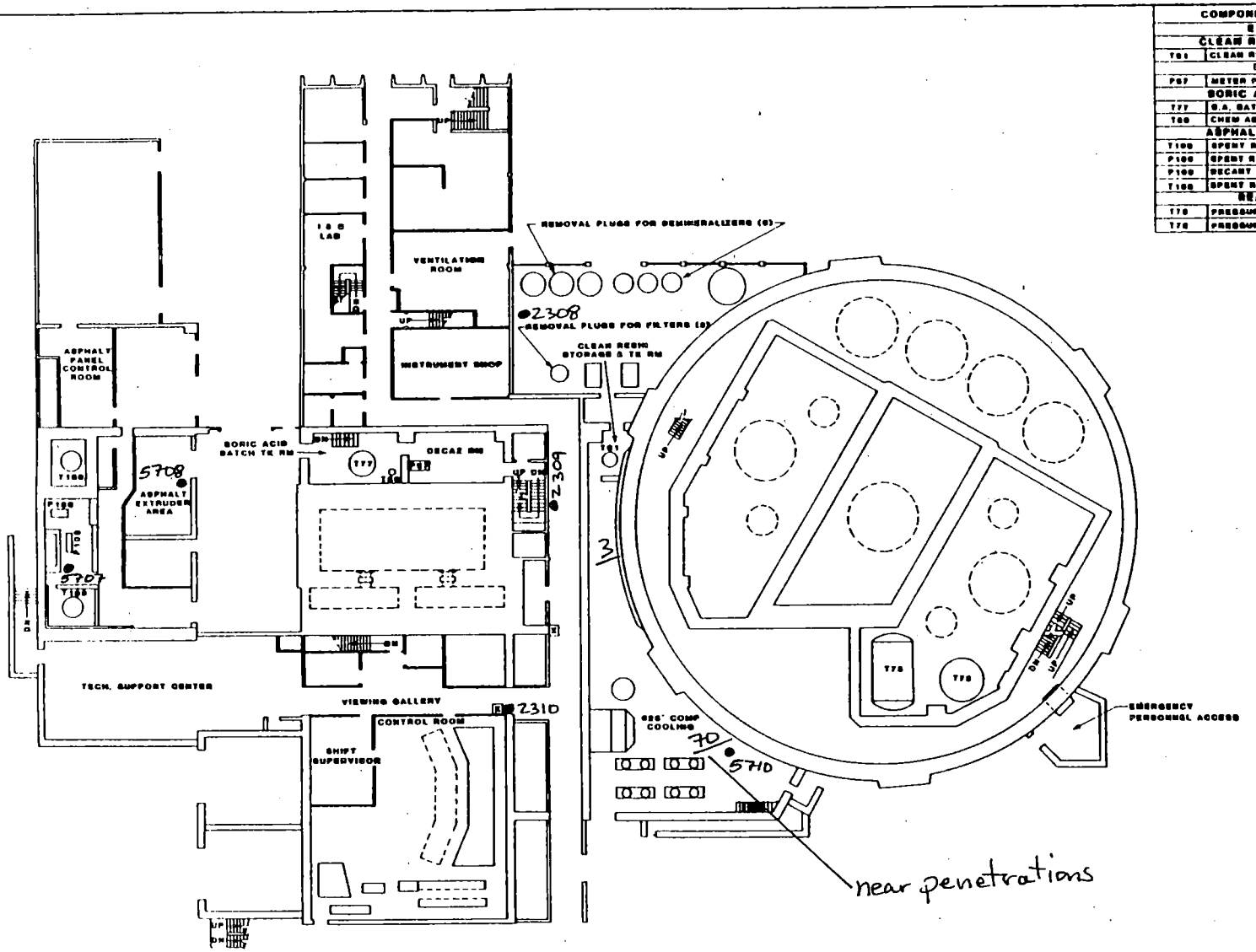
IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0330-0400

TIME: 1200-1230

CONSUMERS POWER COMPANY
PALISADES PLANT
611'



IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

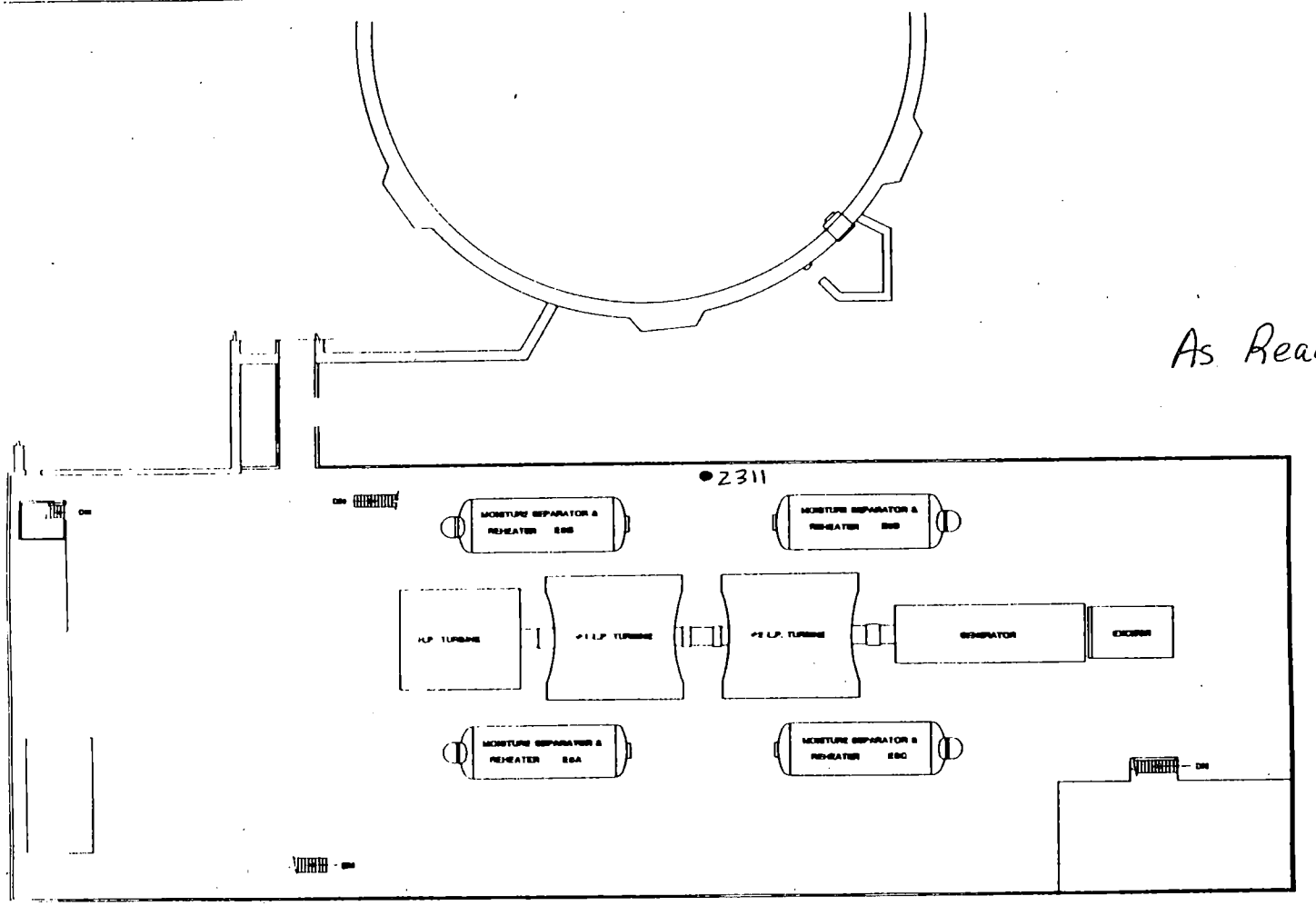
SCENARIO TIME: 0330 - 0400

TIME: 1200 - 1230

CONSUMERS POWER COMPANY

PALISADES PLANT

625'



As Read

EN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

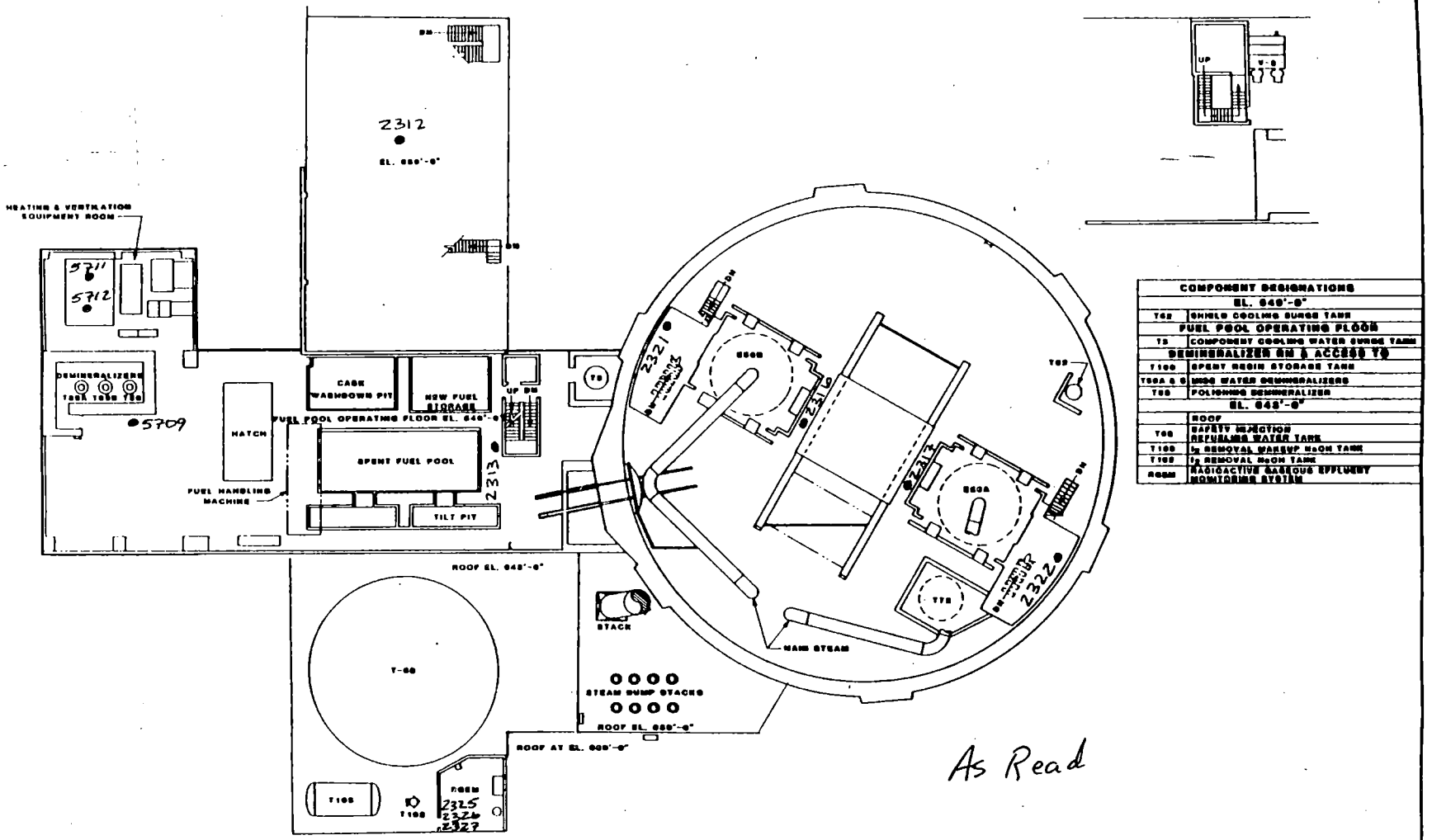
SCENARIO TIME: 0330-0400

TIME: 1200-1230

CONSUMERS POWER COMPANY

PALISADES PLANT

625'



As Read

IN PLANT RADIATION DATA

ALL FIGURES ARE mR/HR UNLESS SPECIFIED OTHERWISE

SCENARIO TIME: 0330-0400

TIME: 1200-1250

CONSUMERS POWER COMPANY

PALISADES PLANT

649'