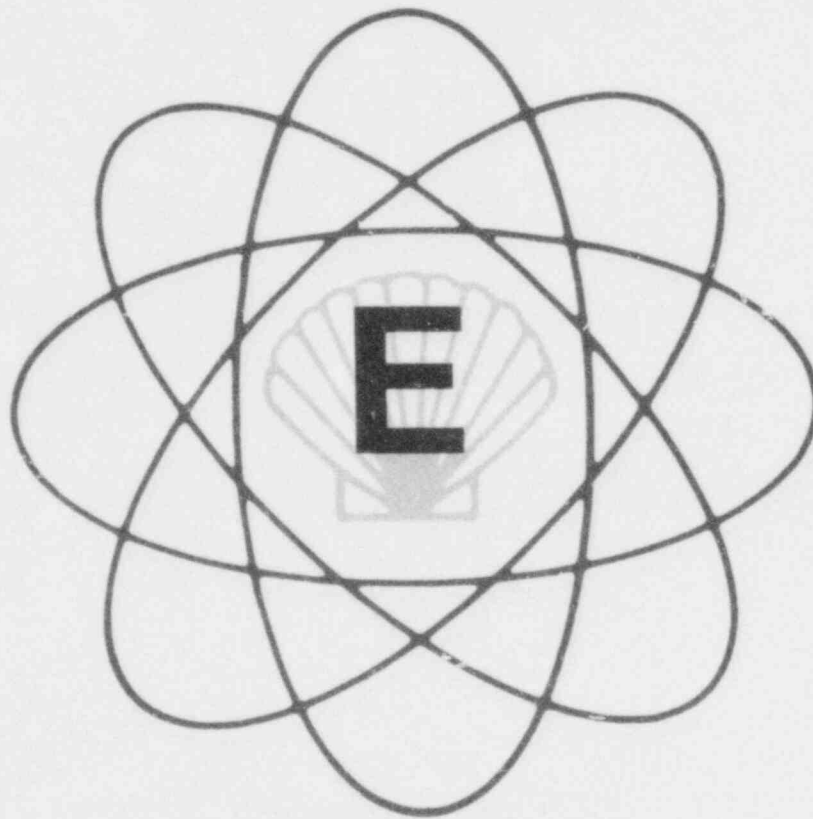


CALVEX 83

BG&E
Emergency Response Exercise
SCENARIO



Calvert Cliffs
Nuclear Power Plant

NRC COPY

CALVERT CLIFFS NUCLEAR POWER PLANT
1983 EMERGENCY RESPONSE EXERCISE
SEPTEMBER 14, 1983

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SUBMITTED:

GF Wall 7/19/83
Scenario Development Team Leader /Date

REVIEWED:

[Signature] 7.18.83
Supervisor - Emergency Planning /Date

APPROVED:

[Signature] 7/18/83
for Plant Superintendent /Date

**CALVERT CLIFFS NUCLEAR POWER PLANT
1983 EMERGENCY RESPONSE EXERCISE
SEPTEMBER 14, 1983**

1.0 INTRODUCTION

1.1 This Exercise shall demonstrate on-going preparedness capabilities of the Baltimore Gas & Electric Company, its personnel and equipment, for maintaining public and plant safety in the unlikely event of a Calvert Cliffs Nuclear Power Plant emergency.

1.2 This Exercise satisfies requirements for:

1.2.1 Annual Health Physics Drill (ERPIP 5.5, section 3.3.4.2).

1.2.2 Annual Radiological Monitoring Drill (ERPIP 5.5, section 3.3.3)

1.2.3 Annual Medical Drill (ERPIP 5.5, section 3.3.2)

1.2.4 Annual, Quarterly and Monthly Communications tests (ERPIP 5.5, section 4.2.3, 4.2.2 and 4.2.1 respectively).

1.2.5 Weekly Dedicated Phone operability test.

1.3 Drill Date: September 14, 1983

Time (approximate): Start: 8:00 a.m.

Terminate: 4:00 p.m.

1.4 Participating Organizations:

1.4.1 Baltimore Gas & Electric

- a. Nuclear Power Department
- b. Production Maintenance Department
- c. Real Estate & Office Services Department
- d. Corporate Communications Department
- e. Transportation Department
- f. Purchasing & Stores Department

- g. Project Management Department
- h. Electric Engineering Department
- i. Quality Assurance Department

1.4.2 State/Local

- a. Maryland Emergency Management & Civil Defense Agency
(includes three (3) plume zone counties and thirteen (13) contiguous counties.
- b. Department of Health and Mental Hygiene, Division of Radiation Control.
- c. Maryland State Police.
- d. Delaware; Division of Emergency Planning & Operations
- e. District of Columbia; Office of Emergency Preparedness
- f. Virginia; Office of Emergency & Energy Services
- g. Calvert Memorial Hospital
- h. Solomon's Volunteer Rescue - Fire Department
- i. Department of Education
- j. Department of Economic and Community Development
- k. The Adjutant General
- l. Maryland Insititute for Emergency Medical Services Systems
- m. American Red Cross, Baltimore Region, and the Chapter in the plume zone counties
- n. State Public Information Office

1.4.3 FEDERAL

- a. Nuclear Regulatory Commission

1.4.4 OTHER

- a. American Nuclear Insurers (ANI)

1.5 Critique

1.5.1 Baltimore Gas & Electric Company

Date: September 15, 1983

Time: 9:30 a.m.

Place: Interim Office Building Classroom

Attendance is requested for the following individuals:

- a. Recovery Manager
- b. Support Managers
- c. Corporate Spokesperson
- d. Site Emergency Coordinator
- e. Plant Superintendent
- f. Radiological Assessment Director
- g. Radiological Protection Director
- h. Technical Support Center Director
- i. Operational Support Center Director
- j. Director, Alternate Emergency Control Center
- k. Shift Supervisor
- l. Chemistry Director
- m. Lead Evaluator
- n. Lead Controller
- o. Nuclear Regulatory Commission Representative

Attendees are persons filling positions on the exercise date. Any exercise participant may attend the critique as an observer.

**CALVERT CLIFFS NUCLEAR POWER PLANT
1983 EMERGENCY RESPONSE EXERCISE
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2.0 OBJECTIVES & GUIDELINES

2.1 OBJECTIVES - BALTIMORE GAS & ELECTRIC COMPANY

2.1.1 Emergency Organization

- a. Demonstrate understanding of Emergency Action Levels (EALs) and proficiency in recognizing and classifying emergency conditions.
- b. Demonstrate proficiency in taking corrective action(s) in response to and recovery from an emergency.
- c. Demonstrate effective and proper procedure for alerting, notifying, and reporting to Federal, State, local, and Corporate, and plant personnel.
- d. Demonstrate proper procedure of on-site and off-site radiological monitoring to include collection and analysis of all sample media (e.g., water, vegetation, soil and air) and provisions for communications and record keeping associated with these survey and monitoring activities.
- e. Demonstrate timely and effective estimation and assessment of radiological releases. Also, demonstrate the radiological consequences of accidents or accidental releases.
- f. Demonstrate familiarity with Radiological Emergency Protective Actions considered for use to protect people and other resources both in-plant and off-site.
- g. Test and demonstrate the adequacy and effectiveness of plant emergency facilities, equipment, and communication networks.

- h. Demonstrate proper procedure for first aid and handling of a contaminated accident victim.
- i. Demonstrate proper procedure for emergency security measures to include control of access and egress, personnel accountability, etc.
- j. Demonstrate precise and clear transfer of command responsibilities to the Recovery Organization (mandatory for Site & General Emergency).

2.1.2 Recovery Organization

- a. Demonstrate that participating organizations can notify, and mobilize emergency response personnel to respond to an emergency in a timely fashion.
- b. Demonstrate primary functional responsibilities and/or problem solving capabilities.
- c. Demonstrate proper procedure for communicating with State and Local governments within the plume exposure emergency planning zone (10 mile EPZ).
- d. Demonstrate the ability to perform radiological assessments, and off-site dose assessment projections necessary for advance warning to Local, State, and Federal agencies, and to the general public.
- e.. Demonstrate that decisions can be made with regard to protective measures for both the plume and ingestion exposure pathway emergency planning zones (EPZ).

- f. Demonstrate the ability to integrate its activities with those of other participating emergency response organizations (County, State, and Federal).
- g. Demonstrate capability to produce public information releases and handle public inquiries.
- h. Demonstrate the ability to maintain continuity of command control throughout the exercise.
- i. Demonstrate recovery techniques in the ability to deescalate (deactivate) corporate and site response activities and the general public.
- j. Demonstrate proper procedure for preparation of reports, messages, and records.
- k. Demonstrate the physical adequacy of the various emergency facilities for individual member working space and communication .

2.2 OBJECTIVES - STATE & COUNTIES

- 2.2.1 Demonstrate the adequacy and capability of State and County radiological emergency response plan implementation.
- 2.2.2 Demonstrate the State and local accident assessment system effectiveness, to include adequacy of equipment, personnel staffing and competency skills with respect to reporting, dose projection, field measurement, actions for coordination, communications and decision(s) for recommended protective actions.

2.2.3 Test and demonstrate the adequacy of the CCNPP notification and alert procedures in the following area:

- a. Notification by CCNPP to State and County government.
- b. Notification by the Maryland Emergency Management and Civil Defense Agency (MEM&CDA) to the Department of Health and Mental Hygiene, Division of Radiation Control (DRC) plume zone and ingestion zone county emergency operations center (EOC), selected State Departments/Agencies, Federal Emergency Management Agency (FEMA), contiguous States, American Red Cross and the U.S. Coast Guard.
- c. Notification by Plume Zone County and State Departments/Agencies of emergency response personnel.

2.2.4 Test and demonstrate the ability to implement notification procedures in the event of an accident at CCNPP, to include continuing notification and coordination.

2.2.5 Demonstrate the ability to alert and notify the public within the plume exposure pathway emergency planning zone for CCNPP. To include operability of the prompt notification system sirens.

2.2.6 Demonstrate the ability to provide the public within the CCNPP plume exposure pathway emergency planning zone emergency status updates.

- 2.2.7 Test and demonstrate the adequacy of external communication systems from CCNPP, State, and County emergency operations centers and field locations. Federal agencies and contiguous States system will also be checked.
- 2.2.8 Demonstrate the ability to initiate and coordinate timely and effective decisions with respect to an accident at CCNPP.
- 2.2.9 Demonstrate the capability to identify and provide resource requirements.
- 2.2.10 Demonstrate the capability to coordinate (internal/external) actions, needs and status of situations between organizations for the purpose of acquiring support and evoking appropriate decisions.
- 2.2.11 Demonstrate the level of support and participation provided by the responsible elected/appointed officials.
- 2.2.12 Demonstrate the capability to make decisions and to implement the following protective actions:
 - a. Take shelter (limited)
 - b. Evacuation (limited)
 - c. Access Control (full activation)
 - d. Food, water, milk, and livestock feed control (limited)
- 2.2.13 Demonstrate the capability to make decisions and to implement emergency medical services.
- 2.2.14 Demonstrate methods and resources for distribution, issuance and administering of potassium iodide (KI) to emergency workers.

- 2.2.15 Demonstrate methods and resources for distribution of dosimetry to emergency workers.
- 2.2.16 Demonstrate personnel monitoring, equipment monitoring, and decontamination procedures.
- 2.2.17 Demonstrate the methods and capability for keeping radiation exposure records.
- 2.2.18 Demonstrate the capability to provide food, clothing and shelter for evacuees to include evacuation center operations.
- 2.2.19 Demonstrate the Public Information Program and the adequacy of the interface of State, County and CCNPP public information systems with the news media.
- 2.2.20 Test and demonstrate the adequacy of the emergency operations center with respect to space, comfort and function for managing a fixed nuclear facility incident.
- 2.2.21 Test and demonstrate the adequacy, appropriateness, and effectiveness of the internal communications system within the EOC, to include maps and displays.
- 2.2.22 Demonstrate the adequacy of staffing and competency of EOC staff.
- 2.2.23 Test and demonstrate the adequacy of access control and security means for EOC.

2.3 GUIDELINES

Guidelines define the participants "extent of play" to meet the aforementioned objectives.

- 2.3.1 Players will not possess prior knowledge of exercise start time. All personnel will follow normal daily routines.
- 2.3.2 The emergency will commence with a postulated plant condition necessitating a declaration of an Unusual Event or higher level emergency.
- 2.3.3 Accident conditions will result in a simulated radiological release necessitating protective action considerations for the general public. Meteorological conditions may be varied.
- 2.3.4 Participants will perform, as appropriate, radiological monitoring, dose assessment, and ingestion pathway sampling activities.
- 2.3.5 Radiological Monitoring Field Teams (including BG&E's Mobile Environmental Monitoring Laboratory as needed) will be dispatched to test response time, communications, and monitoring and sampling procedures. Field teams will gather sample media if called for, and route such samples to plant laboratory facilities for analysis.

Radiological Monitoring Field Teams will be accompanied by a controller/evaluator. Field teams will rendezvous with the controller/evaluator at the Operational Support Center (on-site teams) or the South Processing Building (off-site teams).
- 2.3.6 The Media Center will be manned and perform its prescribed functions. The local press will be invited to participate. Media press releases will be prepared and submitted.

- 2.3.7 Plant medical facilities and capabilities will be tested by evacuating a simulated injured power plant worker for treatment and decontamination. Monitoring and decontamination actions and procedures will be demonstrated at the receiving hospital.
- 2.3.8 Accident conditions may warrant assembly and evacuation of site personnel. When required, the emergency alarm shall be sounded and personnel assembled/evacuated.
- 2.3.9 BG&E on-site personnel directly involved in responding to an emergency shall participate to the fullest extent possible. This includes radiological monitoring teams, deployment, and emergency maintenance team activation.
- 2.3.10 If needed, alternate means of plant access shall be simulated. Security personnel will exercise emergency procedures for site access without redirecting incoming and outgoing personnel.
- 2.3.11 The ^{exercise}drill shall not be initiated until word is received from the Lead Controller who, with concurrence from the Plant Superintendent and Shift Supervisor, is confident that conditions are compatible for its safe performance.
- 2.3.12 All communications related to the ^{exercise}drill shall be identified as such. Verbal communications shall be initiated and closed by the statement, "This is a drill."

- 2.3.7 Plant medical facilities and capabilities will be tested by evacuating a simulated injured power plant worker for treatment and decontamination. Monitoring and decontamination actions and procedures will be demonstrated at the receiving hospital.
- 2.3.8 Accident conditions may warrant assembly and evacuation of site personnel. When required, the emergency alarm shall be sounded and personnel assembled/evacuated.
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- 2.3.11 The exercise shall not be initiated until word is received from the Lead Controller who, with concurrence from the Plant Superintendent and Shift Supervisor, is confident that conditions are compatible for its safe performance.
- 2.3.12 All communications related to the exercise shall be identified as such. Verbal communications shall be initiated and closed by the statement, "This is a exercise."

2.3.13 All communications related to an actual emergency shall be unequivocally identified as such. If at any time a real emergency occurs, or plant operations warrant, all exercise related actions shall cease and response shall be directed to actual operational needs.

CALVERT CLIFFS NUCLEAR POWER PLANT
1983 EMERGENCY RESPONSE EXERCISE
SEPTEMBER 14, 1983

3.0 SCENARIO

3.1 General Description

A. Casualty

Simulated loss of coolant accident (LOCA) on Unit 1 resulting in approximately 11% fuel failure. Radioactivity is released to the environment via leaking containment purge valves and penetrations.

The exercise will be initiated by a fire, involving safety-related equipment, requiring declaration of an Unusual Event. The emergency escalates to an Alert upon request of off-site fire fighting assistance. Subsequent to the fire a LOCA develops with available make-up systems unable to maintain coolant inventory. Core uncover and fuel failure result. Personnel injury and contamination shall occur during response to the plant casualty.

- B. Meteorological conditions will be controlled by this scenario. Actual conditions shall not be used. Initially the wind direction will be from 60⁰ towards California in St. Mary's County and will gradually shift to an easterly direction (from 270⁰), taking the plume towards Dorchester County.

- C. This Exercise shall be conducted so as not to cause any change to actual plant conditions. During the Exercise, only the Lead Controller (BG&E) may authorize scenario changes. All changes must be requested in advance.

3.2 Initial Conditions

- A. Unit 1

MODE 1, operating at approximately 100% power. Steady State Full Power for 43 days. Reactor Coolant System Activity is 0.15 uCi/cc Iodine¹³¹ Dose Equivalent. Scheduled to be shutdown for refueling in six (6) weeks.

- B. Unit 2

MODE 1, operating at approximately 100% power. Steady State Full Power for 29 days. Reactor Coolant System Activity is 0.10 uCi/cc Iodine¹³¹ Dose Equivalent. Preparing to decrease power as a result of anticipated waterbox cleaning.

- C. Related Plant Operating Conditions

#12 HPSI Pump is out-of-service awaiting parts from the manufacturer.

#11 Charging pump is out-of-service for motor replacement.

#22 Intake Traveling Screen is out-of-service.

#13 Salt Water Pump is out-of-service.

Unit 1 Spent Fuel Pool is being cleaned and prepared for new fuel rack installation.

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Time Scenario Actual	Classification	Event	Controller Message No.	Expected Action
S = -00:15 A = 07:45	None	o Initial Conditions	1	
S = 00:00 A = 08:00	None	o Alarm received on Control Room fire panel (1C24B) window SP65 indicating fire in room 225, Rad. Exhaust, Equipment Room.	2A,2B	o Dispatch Operator to confirm fire.
		o Met Conditions: Wind Direction (from) 60° Wind Speed 1 mph Differential Temperature -1.5°F		
S = 00:02 A = 08:02	None	o Operator confirms fire in Rad. Exhaust Vent Equipment Room. Bottled gas explosion reported.	3	o Dispatch fire brigade. o <u>May</u> declare an Unusual Event based on EAL XIII.A.2.
S = 00:07 [±] A = 08:07 [±]	None or Unusual Event	o Fire brigade arrives at the fire scene (Rm. 225)	Actual Event	o Combat fire
S = 00:08 [±] A = 08:08 [±]	None or Unusual Event	o Fire team leader requests off-site assistance.	4	o Declare an Alert based on EAL X.B.
S = 00:15 [±] A = 08:15 [±]	Alert	o Plant parameters normal.	5	o Continue 100% power operation

THIS IS A DRILL

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Time Scenario Actual	Classification	Event	Controller Message No.	Expected Action
S = 00:20 A = 08:20	Alert	o Fire is under control. #11 and #13 HPSI pumps lost power control, and annuciation due to the fire(unknown to operators at this time).	6	o Assess damage.
S = 00:25 A = 08:25	Alert	o Offsite Fire Dept. arrives at South Processing Building.	7	o Distribute dosimetry and escort fire engines to Auxiliary Building.
S = 00:30 A = 08:30	Alert	o Fire is extinguished, preliminary report indicates no structural damage, charred cable trays and no electrical identification numbers legible.	8B	o Continue to assess damage.
		o CEA ejection	8A	o Determine affected electrical equipment.
		o RCS pressure drops.	8C	o May declare a Site Emergency based on EAL III.C.1 or 2.
		o Containment pressure increasing.	8G	o Implement EOP-5, LOCA
		o Containment low range monitors (1-RI-5316) read 6 R/hr.	8H	o RPS Channel D-10 pretrip alarm (containment pressure)
		o Main Vent monitor (RE-5415) reading: Unit 1 = 1.2E3 cpm Unit 2 = 50 cpm	8D	o Initiate assembly and accountability of plant personnel.
		(indicates release to the environment)	8E, 8F	o Sample containment atmosphere
				o 1C17 Alarm "Radiation Monitor Panel".
				o Actual whole body dose rate at site boundary is 0.1mR/hr

3.5 DETAILED SEQUENCE

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Time Scenario Actual	Classification	Event	Controller Message No.	Expected Action
S = 00:33 A = 08:33	Alert or Site Emergency	- o Unit #1 reactor trip on low pressure (thermal margin). - o Sub-cooled margin decreases to 0°F. - o Containment pressure increases to 6.2 psig. - o Aux. feed pumps start. - o MSIV closed. - o Safety Injection Actuation Signal (SIAS) occurs. - o Containment sprays actuate. - o Charging pump flow at 44 gpm (only #12 pump is running). - o Containment fan coolers start. - o No HPSI pump discharge pressure indicated.	9	- o Declare a General Emergency based on EAL III.D.3. - o SIS blocked auto-start. - o Dispatch plant operators to investigate loss of safety injection pumps. - o Trip reactor coolant pumps. - o Plant Superintendent directs Chemistry Director to obtain post-trip RCS sample. - o Dispatch operator to switch-gear for Charging Pumps.
S = 00:35 A = 08:35	General Emergency	- o RCS pressure decreasing. - o Containment water level increasing.	10A,10B,10C,10D	o Control casualty

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Time Scenario Actual	Classification	Event	Controller Message No.	Expected Action
S = 00:40 A = 08:40	General Emergency	- o Only one (1) charging pump is operating. - o Fire engines depart.	11A-F	o Dispatch operator to switch-gear room to switch from ZA to ZB power.
S = 00:44 A = 08:44	General Emergency	o Charging pump #13 switched to ZB power.	12	o #13 charging pump is indicated to be operable.
S = 00:45 A = 08:45	General Emergency	- o Charging pump flow increases to 88 gpm. Not maintaining RCS inventory. - o Unit #1 containment low-range monitors (I-RI-5316) go off-scale. High-range monitors (I-RI-5317) read 45 R/hr.	13A,13B	- o Control casualty. - o 1C17 Alarm "Radiation Monitor panel" - o 2C10 Alarm "High range Rad. Monitor panel".
S = 00:50 ⁺ A = 08:50 [±]	General Emergency	o Plant operators report all HPSI pumps and #11 LPSI pump won't start. #12 LPSI pump motor is running but pump is not.	14	o Dispatch Maintenance Teams to investigate pump losses.

3.5 DETAILED SEQUENCE

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Time Scenario Actual	Classification	Event	Controller Message No.	Expected Action
S = 01:00 A = 09:00	General Emergency	- o Unit #1 containment High-range Monitors (1RI-5317) read 53 R/hr. - o Main Vent monitor (RE-5415) reading: Unit 1 = 5000 cpm Unit 2 = 50cpm - o Met Conditions: Wind Direction (from) 55° Wind Speed 2 mph Differential Temperature -1.1°	15A-G	- o 2C10 Alarm "High-range Rad. Monitor panel" - o Actual whole body dose rate at site boundary is 0.4 mR/h
S = 01:15 ⁺ A = 09:15 [±]	General Emergency	o Maintenance teams report #12 LPSI pump repairs will take approximately 4 to 5 hours.	16A-F	o Begin repairs.
S = 01:30 A = 09:30	General Emergency	- o RCS pressure continues to decrease. - o Containment water level continues to increase.	17A-F	o Control Casualty.
S = 01:45 A = 09:45		o Plant Parameters	18A-E	

THIS IS A DRAFT

3.5 DETAILED SEQUENCE

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Time Scenario Actual	Classification	Event	Controller Message No.	Expected Action
S = 02:00 A = 10:00	General Emergency	- o Recovery Organization in place, - o Containment High-range monitors (1-RI-5317) read 50 R/hr, - o Main Vent monitor (RE-5415) reading: Unit 1 = 4800 cpm Unit 2 = 50 cpm - o Chemistry Technician and HP Technician injured at the Unit 1 sample sink when pipe bursts, - o Met Conditions: Wind Direction (from) 45° Wind Speed 3 mph Differential Temperature -0.6°	Actual Event 19A-F 20 21 22	- o 2 C10 Alarm "High-range Rad. Monitors Panel". - o Actual whole body dose rate at site boundary is 0.8 mR/hr - o Dispatch First Aid Team - o Isolate sample piping leak.
S = 02:10 [±] A = 10:10 [±]	General Emergency	o First Aid Team arrives at scene of injury.		o Provide first aid and assess injuries.
S = 02:15 [±] A = 10:15 [±]	General Emergency	o First Aid Team reports one victim capable of walking to 69' First Aid Room; requests ambulance for transport of other victim to the hospital.	Actual Event 23A-E	o Notify Rescue Squad and Calvert Memorial Hospital.

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3.5 DETAILED SEQUENCE

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Time Scenario Actual	Classification	Event	Controller Message No.	Expected Action
S = 02:20+ A = 10:20+	General Emergency		24 25	
S = 02:30 ⁺ A = 10:30 ⁺	General Emergency	o Ambulance arrives.	Actual Event 26A-F	o Movement of injured person.
S = 02:45 A = 10:45	General Emergency	o Reactor core thermocouple readings indicate core uncover.	27A-E	o Control casualty.
S = 03:00 A = 11:00	General Emergency	o Ambulance departs	Actual Event	
		o Met Conditions:	28A	
		Wind Direction (from) 25°	28B	
		Wind Speed 6 mph	29	
		Differential Temperature +0.4°		
		o Containment High-range Rad. monitors (1-RI-5317) read 39 R/hr.	30	o 2C10 Alarm "High-range Rad. Monitors Panel".
		o Main Vent monitor (RE-5415) reading: Unit 1 = 4700 cpm Unit 2 = 100 cpm		o Actual whole body dose rate site boundary is 019 mR/hr.
		o Injured worker arrives at Calvert Memorial Hospital.	Actual Event	

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3.5 DETAILED SEQUENCE

Time Scenario Actual	Classification	Event	Controller Message No.	Expected Action
S = 03:15 A = 11:15	General Emergency	- o Containment high-range Rad. monitors (1-RI-5317) read 88 R/hr indicating clad failure/gap release (100%). - o Containment air and RCS activity increases. - o Rhodium detectors signal increases due to overheating.	31A-B	- o Request a Post Accident RCS sample. - o Initiate sampling.
S = 03:22 A = 11:22	General Emergency	- o Containment high-range Rad. monitors read 1,6E4 R/hr. - o Fuel melting begins at center of core.		o Consider recommending evacuation to State/Counties.
S = 03:30 A = 11:30	General Emergency	o Main Vent monitor (RE-5415) reading: Unit 1 = 200,000 Unit 2 = 500 cpm	32A-B	o Actual whole body dose rate at site boundary is 47 mR/hr
S = 03:45 A = 11:45	General Emergency	o Core thermocouple temperatures continue to increase.	33	o Control casualty.
THIS IS A DRILL				

3.5 DETAILED SEQUENCE

CONTINUED

Time Scenario Actual	Classification	Event	Controller Message No.	Expected Action
S = 04:00 A = 12:00	General Emergency	- o Containment high-range rad. monitors (1-RI-5317) read 1.3E5 R/hr. - o Main Vent monitor (RE-5415) reading: Unit 1 = offscale Unit 2 = 1000cpm 10 meter dose rate = 20 R/hr - o Met Conditions: Wind Direction (from) 350° Wind Speed 10 mph Differential Temperature +1.6°	34A, 34B, 34C	o Actual whole body dose rate at site boundary is 1675 mR/hr.
S = 04:15 A = 12:15	General Emergency	o Core thermocouple temperatures increase to 1490°F.	35	o Control Casualty.
S = 04:30 A = 12:30	General Emergency	- o Containment high range monitors (1-RI-5317) read 1.3E5 R/hr. - o Main vent monitor (RE-5415) reading: Unit 1 = Offscale Unit 2 = 1000cpm 10 meter dose = 30 R/hr.	36A-B	o Actual whole body dose rate at site boundary is 2150 mR/hr.
S = 04:45 A = 12:45	General Emergency	o Fuel melt continues.	37	

3.5 DETAILED SEQUENCE

CONFIDENTIAL

Time Scenario Actual	Classification	Event	Controller Message No.	Expected Action
S = 05:00 A = 13:00	General Emergency	- o #12 LPSI pump returned to service. - o Maximum fuel failure is approximately 11%. - o Containment high-range monitors (1-RI-5317) read 1.2E5 R/hr. - o Main Vent monitor (RE-5415) reading: Unit 1 = Offscale Unit 2 = 1000cpm 10 meter dose rate = 28 R/hr Met Conditions: Wind Direction (from) 280° Wind Speed 11 mph Differential Temperature +3.2°	38A-C	o Actual whole body dose rate at site boundary is 1975 mR/h
S = 05:15 A = 13:15	General Emergency	o LPSI flow rate is greater than PCS leak	39	o RCS filling.
S = 05:30 A = 13:30	General Emergency	- o Containment high range monitors (1-RI-5317) read 1.25E5 R/hr. - o Main Vent monitor (RE-5415) reading: Unit 1 = 1200 cpm Unit 2 = 100 cpm	40A-B	o Actual whole body dose rate at site boundary is 1.5 mR/h

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3.5 DETAILED SEQUENCE

CONFIDENTIAL

Time Scenario Actual	Classification	Event	Controller Message No.	Expected Action
S = 05:45 A = 13:45	General Emergency	o Core thermocouple temperature decreases.	41	
S = 06:00 A = 14:00	General Emergency	o Containment high-range monitors (1-RI-5317) read 1.1E5 R/hr. o Main Vent monitor (RE-5415) reading: Unit 1 = 50 cpm Unit 2 = 50 cpm (Release to the environment has terminated) o Met Conditions: Wind Direction (from) 270° Wind Speed 9 mph Differential Temperature +3.6°	42A-B	o Actual whole body dose rate at site boundary is 0.0 mR/hr
S = 06:15 A = 14:15	General Emergency		43	
S = 06:30 A = 14:30	General Emergency	o Plant parameters are stabilizing.	44A-B	o Continue recovery measures.
S = 06:45 A = 14:45	General Emergency		45	

THIS IS A DRAFT

3.5 DETAILED SEQUENCE

Time Scenario Actual	Classification	Event	Controller Message No.	Expected Action
S = 07:00 A = 15:00	General Emergency	- o Containment high range mon-itors (1-RI-5317) read $9.5E4$ R/hr. - o Main Vent monitor (PE-5415) reading: Unit 1 = 50 cpm Unit 2 = 50 cpm - o Met Conditions: Wind Direction (from) 270° Wind Speed 7 mph Differential Temperature $+3.0^{\circ}$	46A-B	
S = 07:15 A = 15:15			47	
thru	General Emergency	o Recovery continues.	48A-B	
S = 08:00 A = 16:00			49	
			50	

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>-00:15</u>	Message No.:	<u>1</u>
	Actual:	<u>07:45</u>	Controller:	<u></u>

TO: Shift Supervisor

LOCATION: Control Room

MESSAGE: Initial Conditions

- o Unit 1: 100% steady state power operation for 43 days. RCS activity is 0.15 uCi/cc I-131 Dose Equivalent. Scheduled to be shutdown for refueling in six (6) weeks.
- o Unit 2: 100% steady state power operation for 29 days. RCS activity is 0.10 uCi/cc I-131 Dose Equivalent.
- o Related Plant Conditions:
 - o #12 HPSI pump is out-of-service awaiting parts from the manufacturer.
 - o #22 Intake Traveling Screen is out-of-service.
 - o #13 Salt Water Pump is out-of-service.
 - o Unit 1 Spent Fuel Pool is empty, being cleaned and prepared for new fuel rack installation.
 - o #11 Charging pump is out-of-service for motor replacement.

THIS IS A DRILL

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME: Scenario: 0:00 Message No.: 2A
Actual: 8:00 Controller: _____

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Fire panel (1C24B) alarming: indication of fire in Room 225,
Rad. exhaust vent equipment room.

Meteorological Conditions:

Wind Direction from 30°
Wind Speed: 1 mph
Differential Temperature: -1.5°F

THIS IS A RAIL

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>00:00</u>	Message No.:	<u>2B</u>
	Actual:	<u>08:00</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 850#

RCS T_h : 590°
 T_c : 545°
 Thermocouple: 570°

Pressurizer Pressure: 2225#
 Level : 190"

Subcooled Margin : 56°

 Pressure: 0 psig
Containment Temp. : 109°F
 Level : 0 in.

RWT Level: 468"

THIS IS A DRL

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>00:02</u>	Message No.:	<u>3</u>
	Actual:	<u>08:02</u>	Controller:	<u></u>

TO:	Auxiliary Building Operator
LOCATION:	5 ft. Aux. Bldg.
MESSAGE:	Fire has engulfed room 225, Rad. exhaust vent equipment room. Personnel working in vicinity report an explosion involving bottled gas.

THIS IS A DRILL

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>00:02+</u>	Message No.:	<u>4</u>
	Actual:	<u>08:02+</u>	Controller:	<u></u>
(upon arrival on fire scene)				
TO:	Fire Team Leader			
LOCATION:	Fire scene (Rad. Exhaust Vent Equipment Room)			
MESSAGE:	Damage report: Fire involves an acetylene bottle, rags, and possibly flammable liquid. It is located in an area of the room impacting upon electrical cable trays and conduit. Contingency: Call for off-site assistance.			
THIS IS A DRILL				

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME: Scenario: 00:15 Message No.: 5
Actual: 08:15 Controller:

TO: Control Room Operator
LOCATION: Control Room
MESSAGE: Plant Parameters Unit 1

S/G Pressure: 850#

Th: 590°
RCS Tc: 545°
Thermocouple: 570°F

Pressurizer Pressure: 2225#
Level : 190"

Subcooled Margin : 56°

Pressure: 0 psig
Containment Temp. : 109°F
Level : 0 in.

RWT Level: 468"

THIS IS A DRILL

SEPTEMBER 14, 1983

3-21

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME: Scenario: 00:25 Message No.: 7
Actual: 08:25 Controller: _____

TO: Security Officer
LOCATION: South Processing Building
MESSAGE: Fire Engines arrive. (Simulated)

THIS IS A DRILL

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>00:30</u>	Message No.:	<u>8A</u>
	Actual:	<u>08:30</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 985#

Th: 590°
RCS Tc: 545°
Thermocouple: 540°

Pressurizer Pressure: 1000#
Level : 1.2"

Subcooled Margin : 0

Pressure: 1.3 psig
Containment Temp. : 155°F
Level : 0 "

RWT Level: 468"

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CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>00:30</u>	Message No.:	<u>8B</u>
	Actual:	<u>08:30</u>	Controller:	<u></u>

TO: Fire Team Leader

LOCATION: Fire Scene

MESSAGE: Fire is extinguished.

Preliminary Damage Report:

No structural damage.

Cable trays are charred.

No electrical identification numbers are legible.

THIS IS A DRILL

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CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>00:30</u>	Message No.:	<u>8C</u>
	Actual:	<u>08:30</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE:

- o RPS Channel D-10 pre-trip alarm
- o Volume control tank level decreasing
- o 1C17 alarm "Radiation Monitor Panel"

THIS IS A DRILL

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CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>00:30</u>	Message No.:	<u>8D</u>
	Actual:	<u>08:30</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Radiation Monitor Panel (1C17)

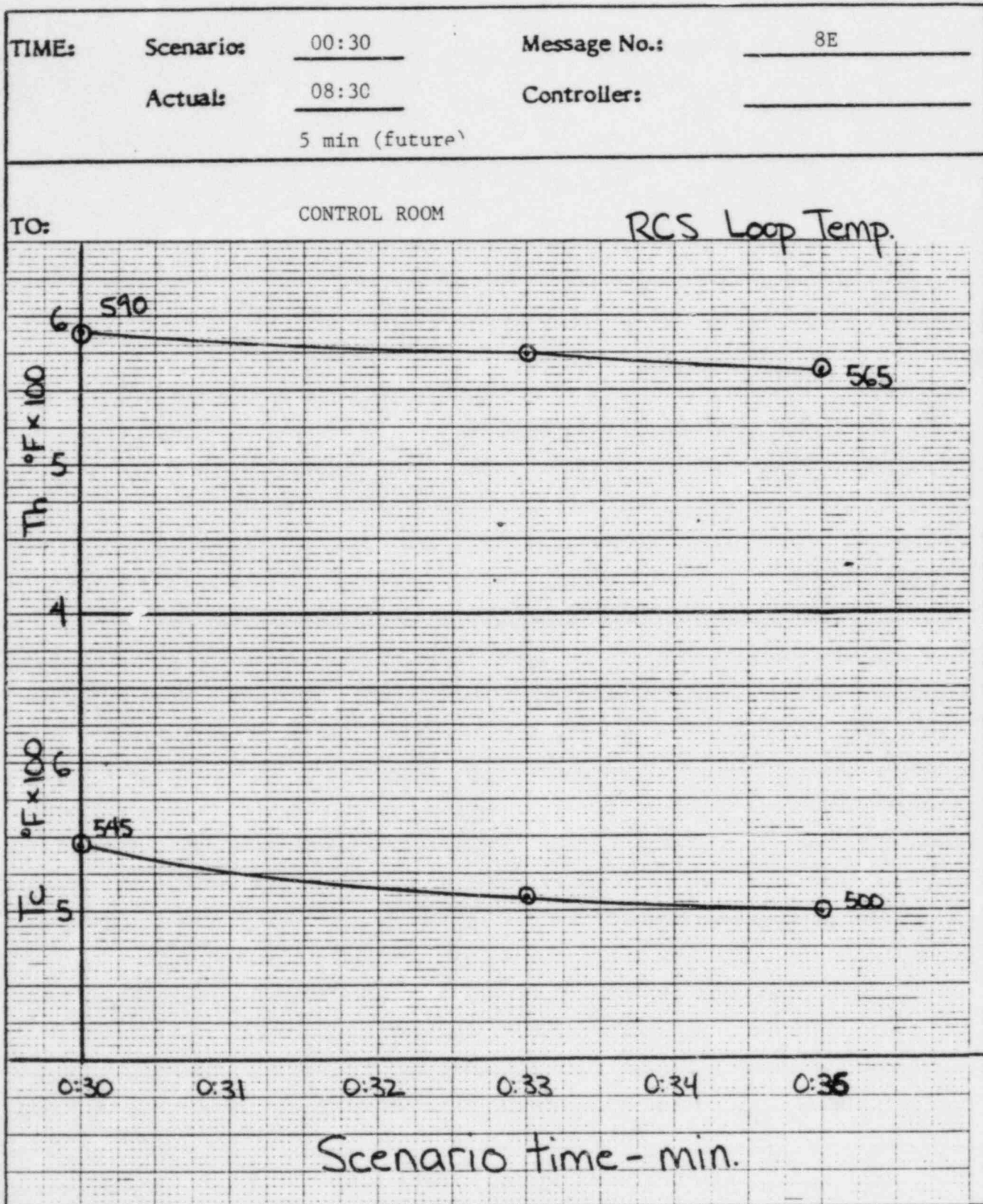
MESSAGE: o Containment low range monitors (1-RI-5316)
are reading 6 R/hr.

THIS IS A DRILL

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983



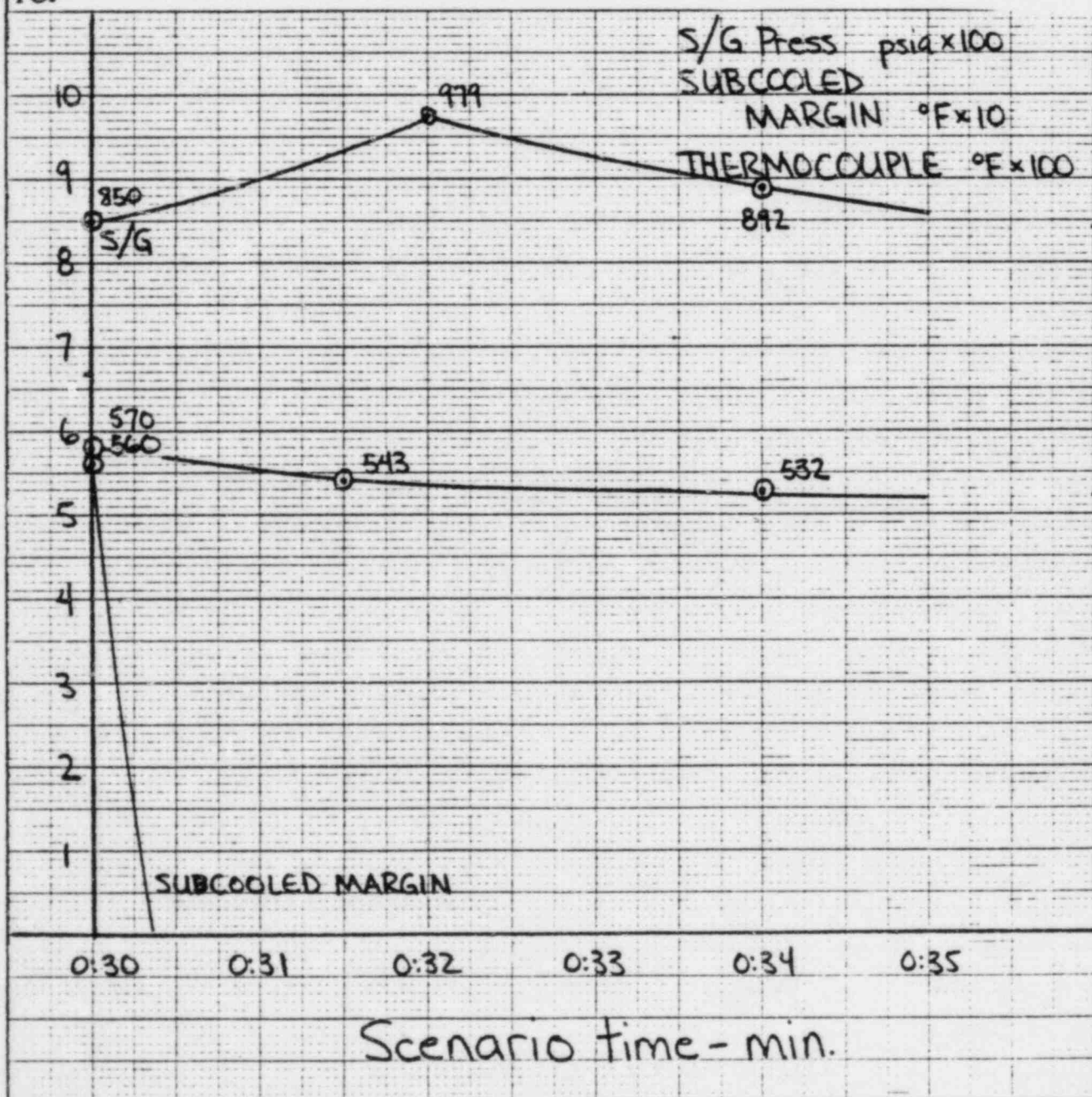
CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	00:30	Message No.:	8F
	Actual:	08:30	Controller:	
	5 min. (future)			

TO: CONTROL ROOM



THIS IS A DRILL

CALVERT CLIFFS NUCLEAR POWER PLANT

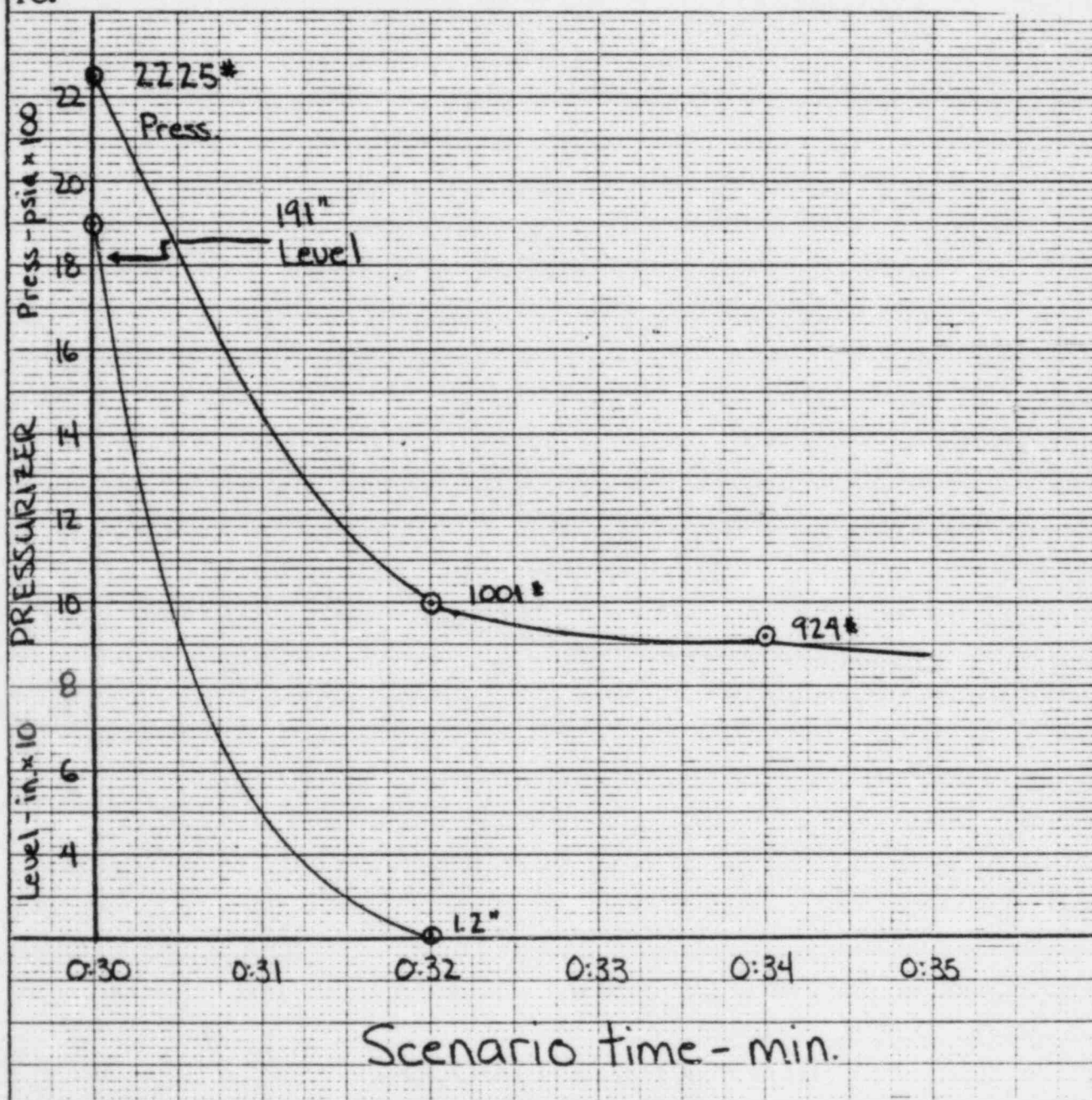
EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	00:30	Message No.:	8G
	Actual:	08:30	Controller:	
		5 min. (future)		

TO:

CONTROL ROOM

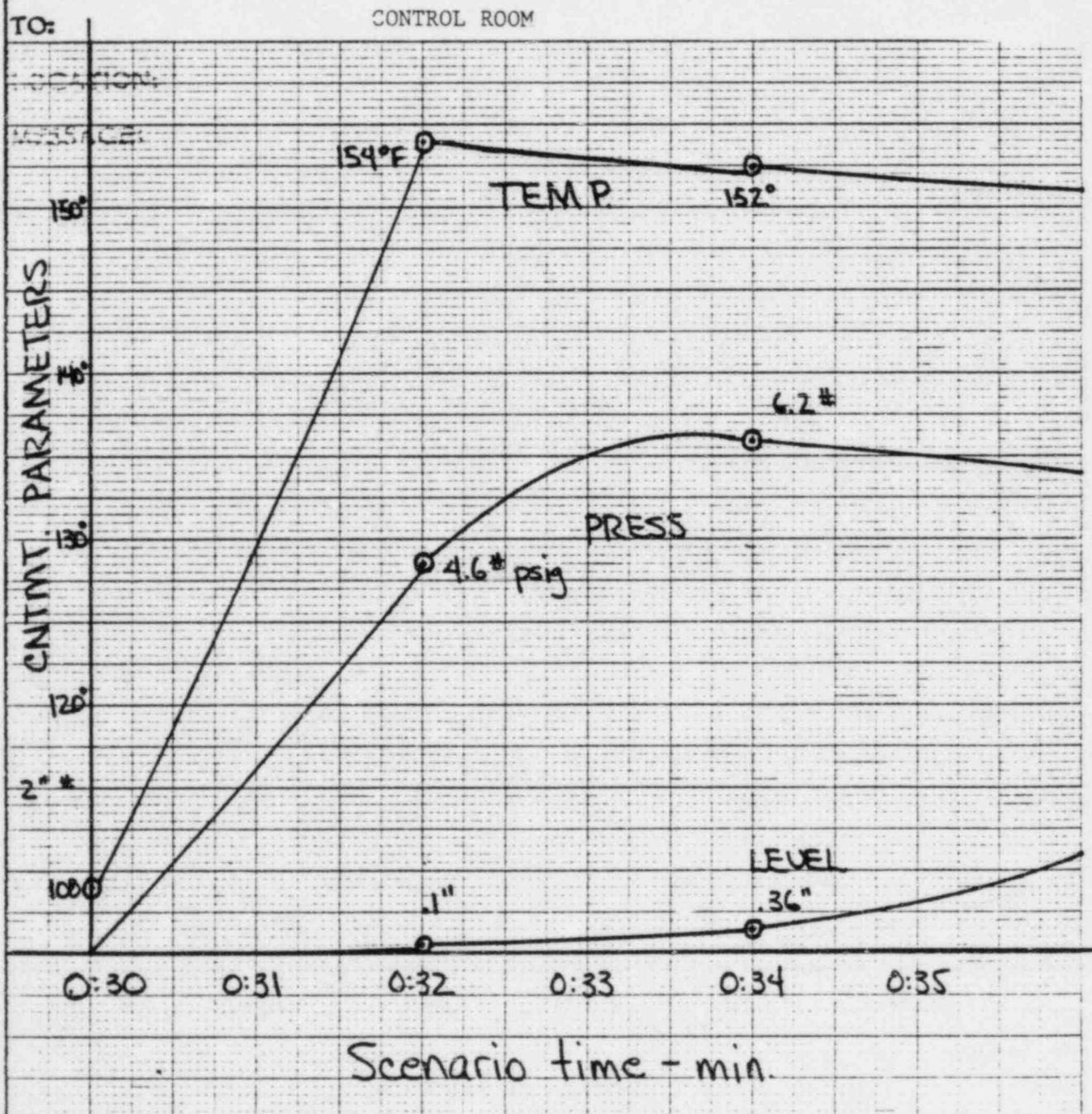


CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>00:30</u>	Message No.:	<u>8H</u>
	Actual:	<u>08:30</u>	Controller:	<u> </u>
	5 min. (future)			



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

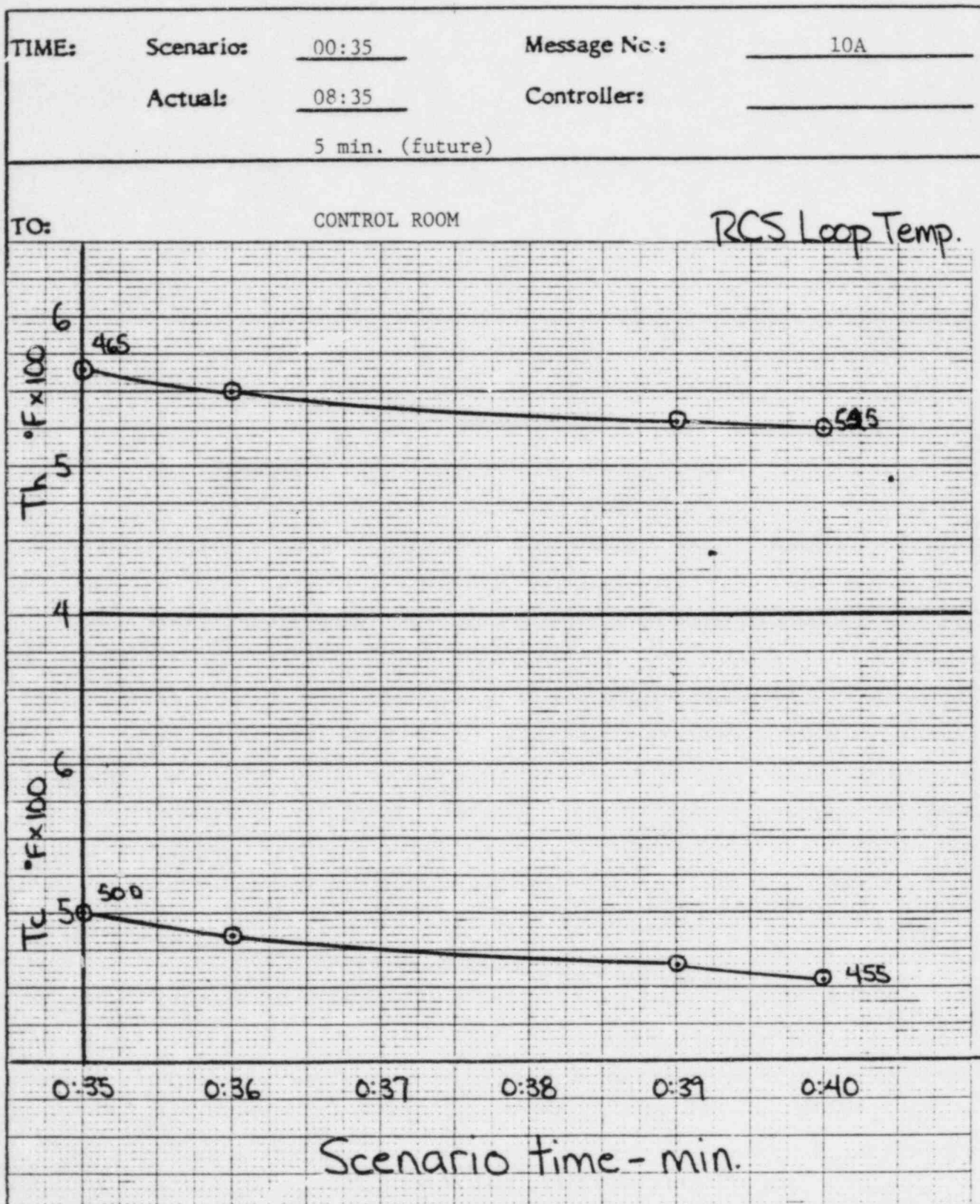
SEPTEMBER 14, 1983

TIME:	Scenario:	<u>00:33</u>	Message No.:	<u>9</u>
	Actual:	<u>08:33</u>	Controller:	<u></u>
TO:	Control Room Operator			
LOCATION:	Control Room			
MESSAGE:	- o Unit 1 Reactor trip occurs - o Safety inspection actuation (SIAS) occurs - o SIS blocked auto-start indication. - o Aux. feed pumps start - o MSIV closed - o Containment sprays actuate - o Charging pump flow @ 44 gpm - o Containment fan coolers on - o No HPSI or LPSI pump discharge pressure indicated			

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

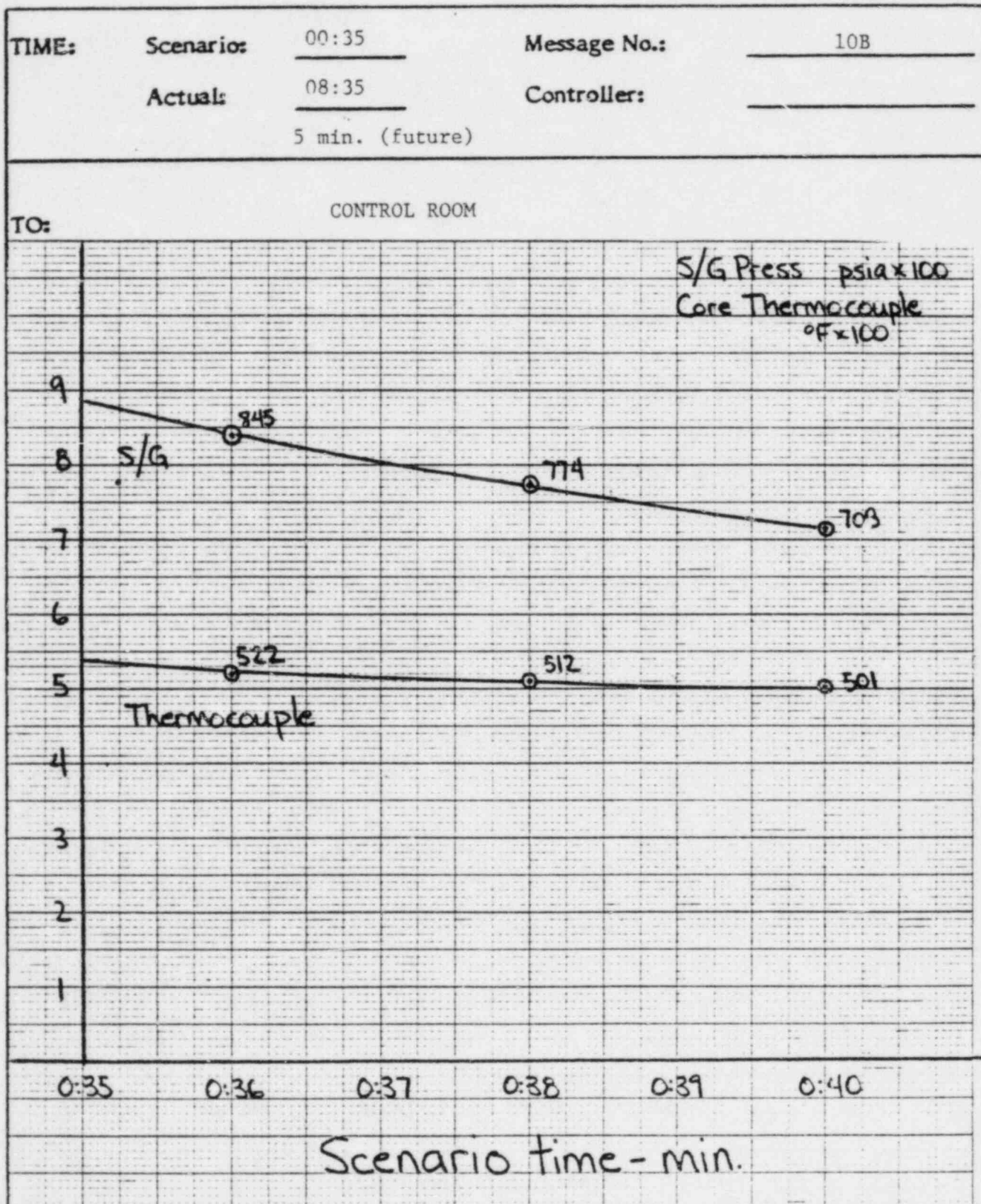
SEPTEMBER 14, 1983



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983



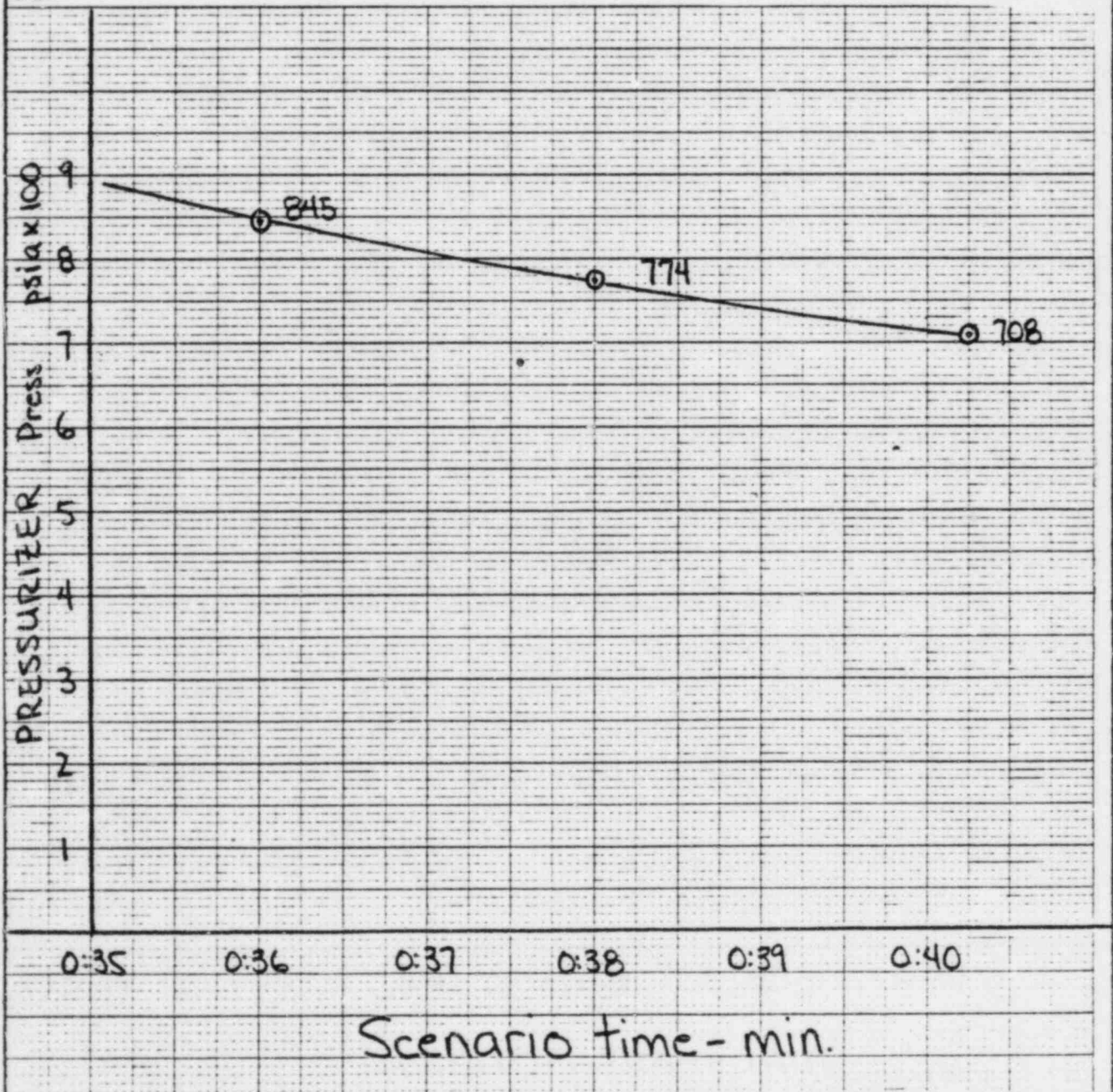
CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>00:35</u>	Message No.:	<u>10C</u>
	Actual:	<u>08:35</u>	Controller:	<u></u>
	5 min. (future)			

TO: CONTROL ROOM



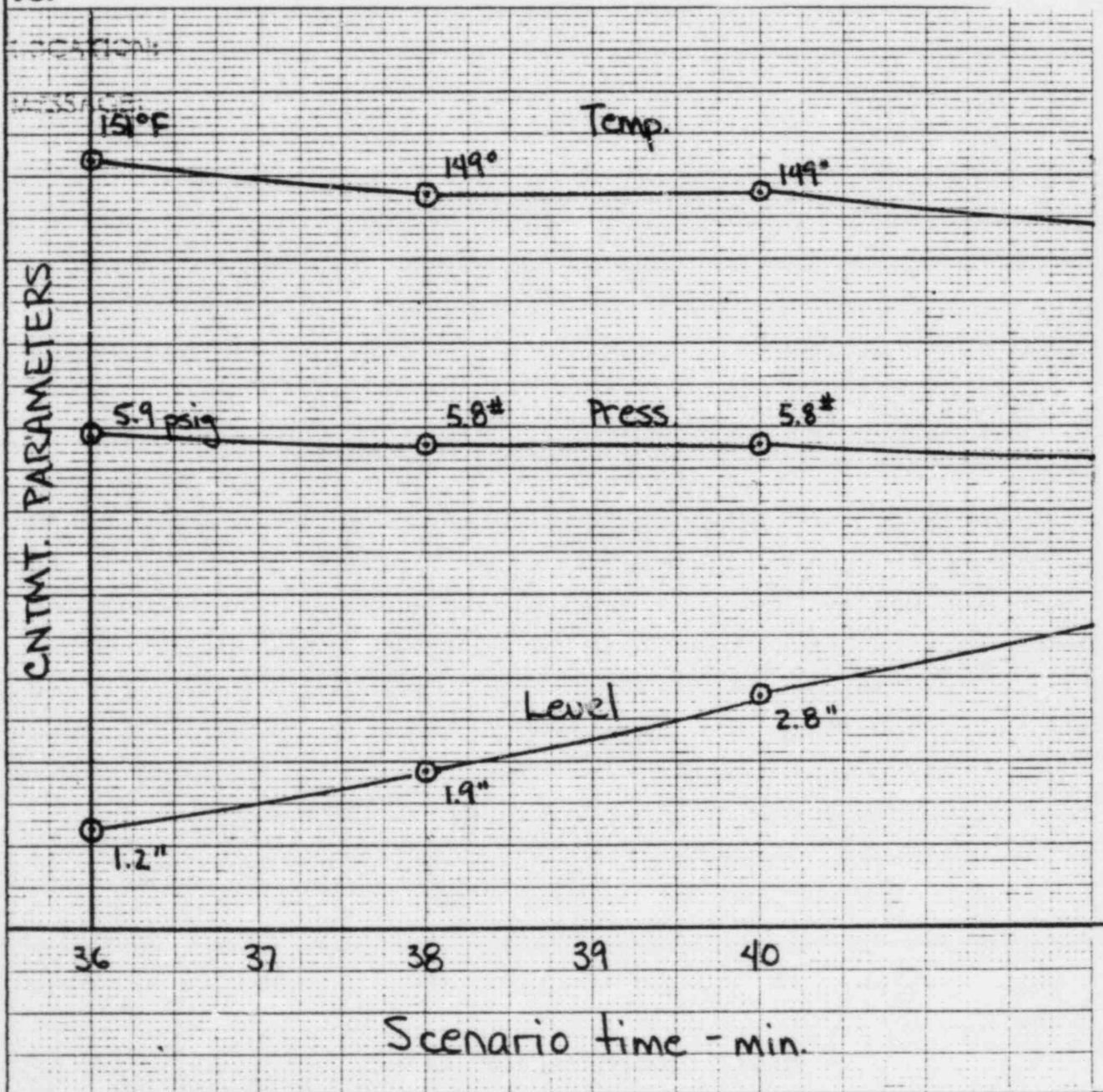
CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	00:35	Message No.:	10D
	Actual:	08:35	Controller:	
		5 min. (future)		

TO: CONTROL ROOM



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

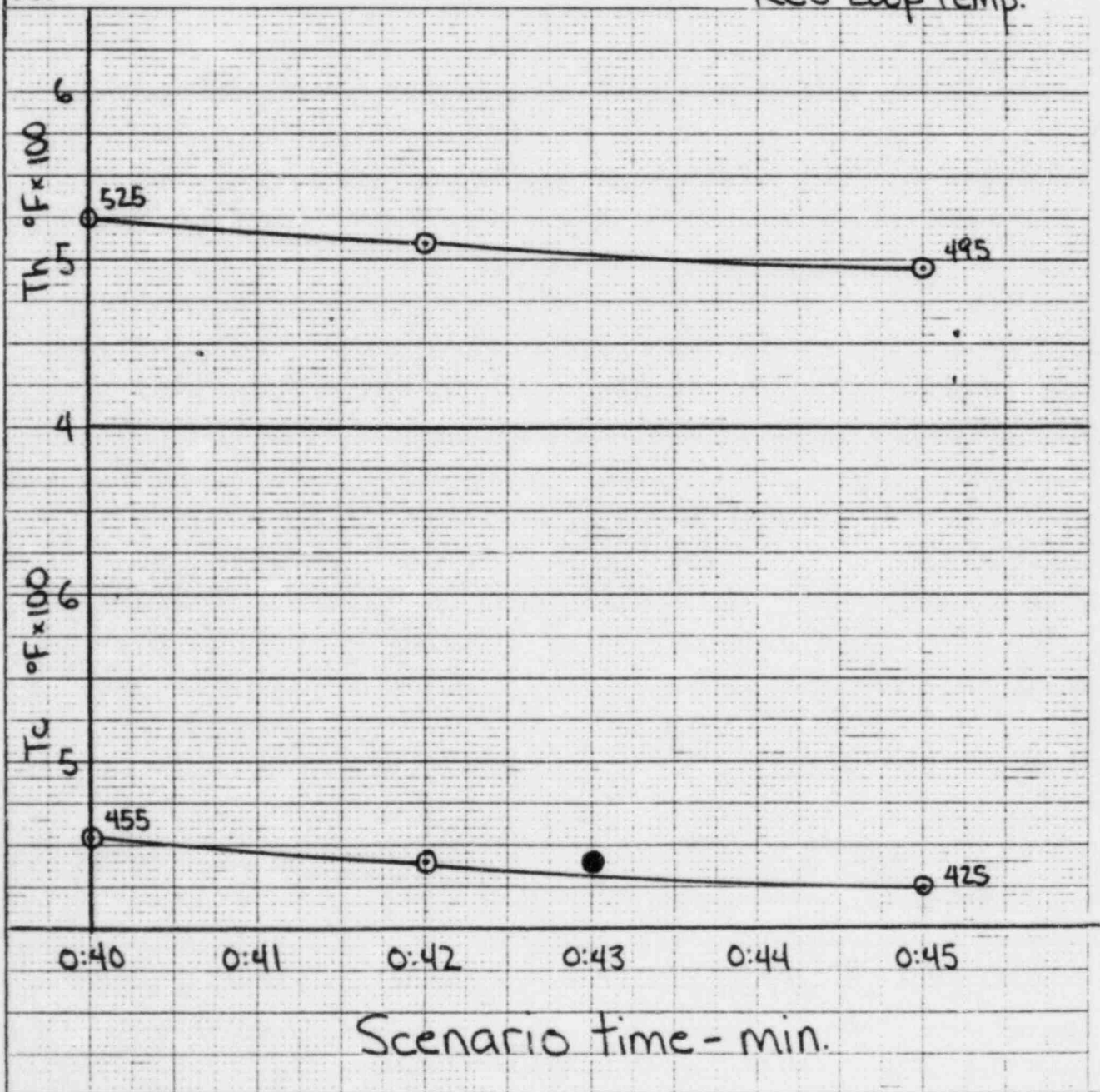
SEPTEMBER 14, 1983

TIME:	Scenario:	00:40	Message No.:	11B
	Actual:	08:40	Controller:	
		5 min. (future)		

TO:

CONTROL ROOM

RCS Loop Temp.



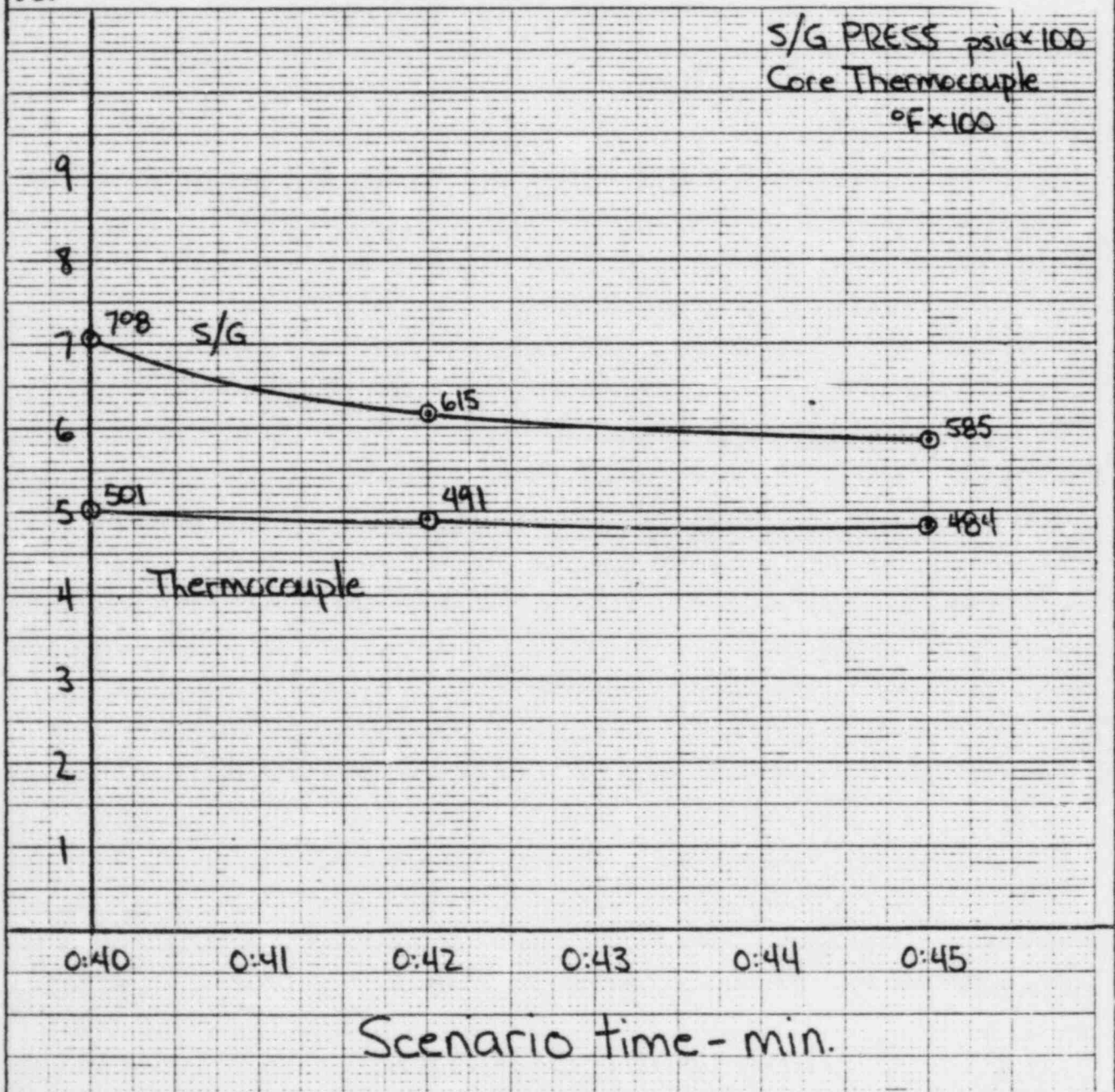
CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	00:40	Message No.:	11C
	Actual:	08:40	Controller:	
5 min. (future)				

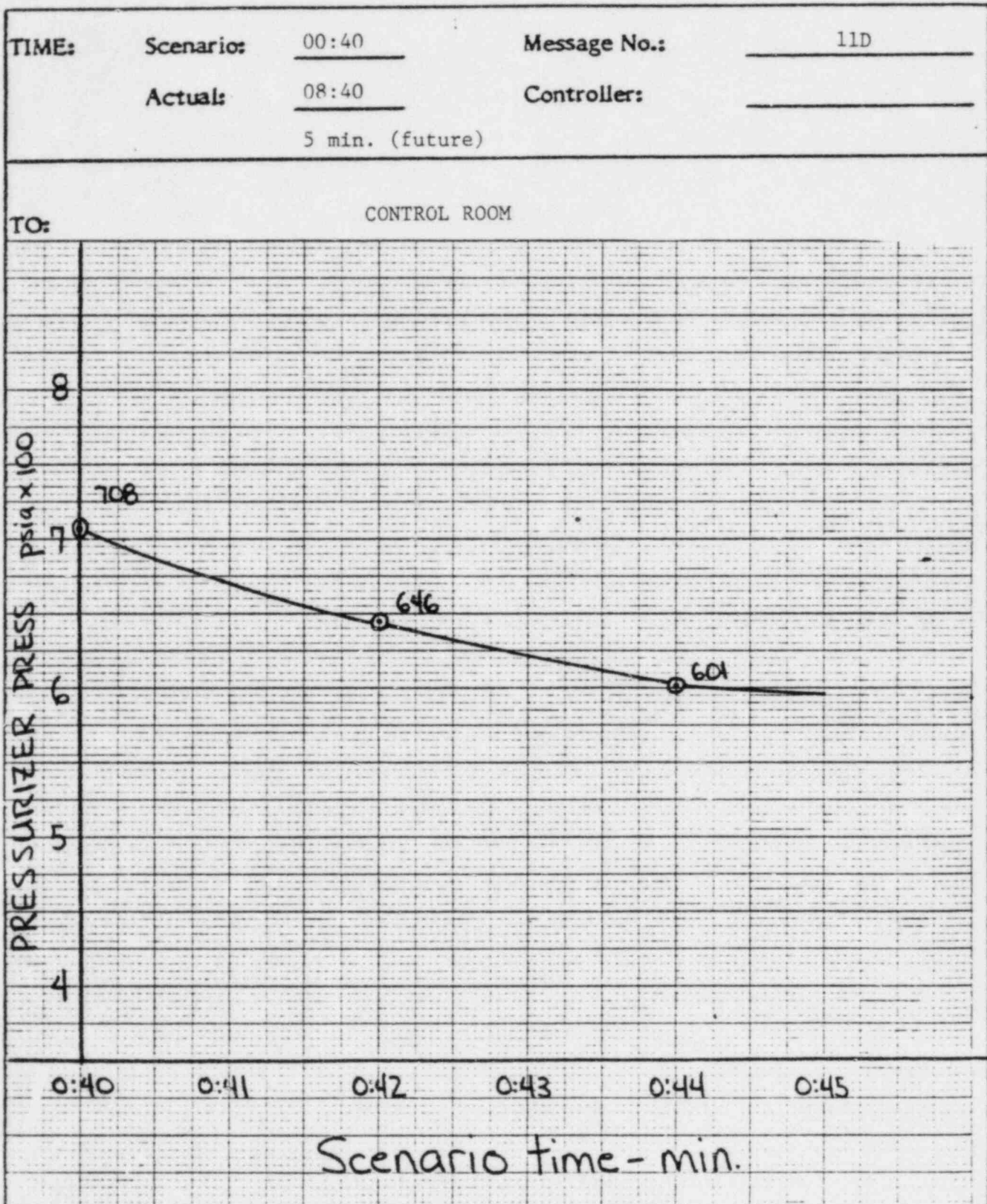
TO: CONTROL ROOM



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

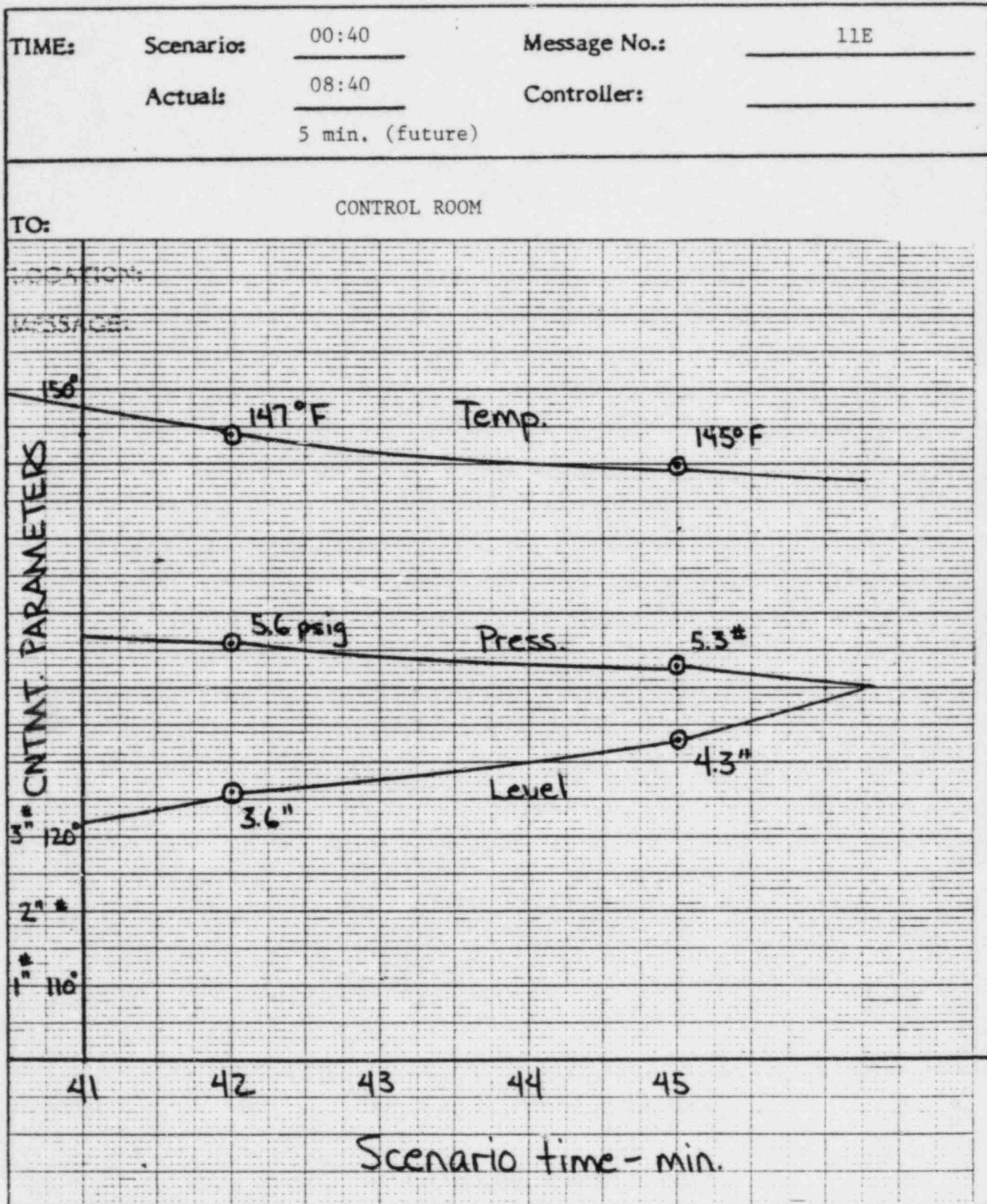
SEPTEMBER 14, 1983



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>00:40</u>	Message No.:	<u>11F</u>
	Actual:	<u>08:40</u>	Controller:	<u></u>
TO:	Security Officer			
LOCATION:	South Processing Building			
MESSAGE:	Fire Engines Depart (Simulated)			

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>00:44</u>	Message No.:	<u>12</u>
	Actual:	<u>08:44</u>	Controller:	<u></u>
TO:	Plant Operator			
LOCATION:	Switchgear Room			
MESSAGE:	Charging pump #13 switched to ZB power, indicates pump is on.			

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>00:45</u>	Message No.:	<u>13A</u>
	Actual:	<u>08:45</u>	Controller:	<u></u>

TO:	Control Room Operator
LOCATION:	Control Room
MESSAGE:	Plant Parameters Unit 1

S/G Pressure: 585#

RCS T_h : 495°
 T_c : 425°
 Thermocouple: 485°

Pressurizer Pressure: 600#
 Level : 0

Subcooled Margin : 0

 Pressure: 5.3 psig
Containment Temp. : 146°F
 Level : 4.5"

RWT Level: 12 ft.

END OF MESSAGE

SEPTEMBER 14, 1983

3-44

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	00:50 ⁺	Message No.:	14
	Actual:	08:50 ⁺	Controller:	

TO:	Plant Operator
LOCATION:	Auxiliary Building (switchgear/ECCS pump room)
MESSAGE:	- o #11 and #13 HPSI pumps are not running, no apparent reason. - o #11 LPSI pump is not running, no apparent reason. - o #12 LPSI pump motor is running but the pump is sitting still.

THIS IS A DRILL

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>01:00</u>	Message No.:	<u>15A</u>
	Actual:	<u>09:00</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 592#

RCS T_h : 485°
 T_c : 425°
 Thermocouple: 484°

Pressurizer Pressure: 600#
 Level : 0

Subcooled Margin : 0

 Pressure: 4.6 psig
Containment Temp. : 141°F
 Level : 10"

RWT Level: 6.5 ft.

THIS IS A DRAFT

CALVERT CLIFFS NUCLEAR POWER PLANT
EMERGENCY RESPONSE EXERCISE
SEPTEMBER 14, 1983

TIME:	Scenario: 01:00	Message No.:	15B
	Actual: 09:00	Controller:	

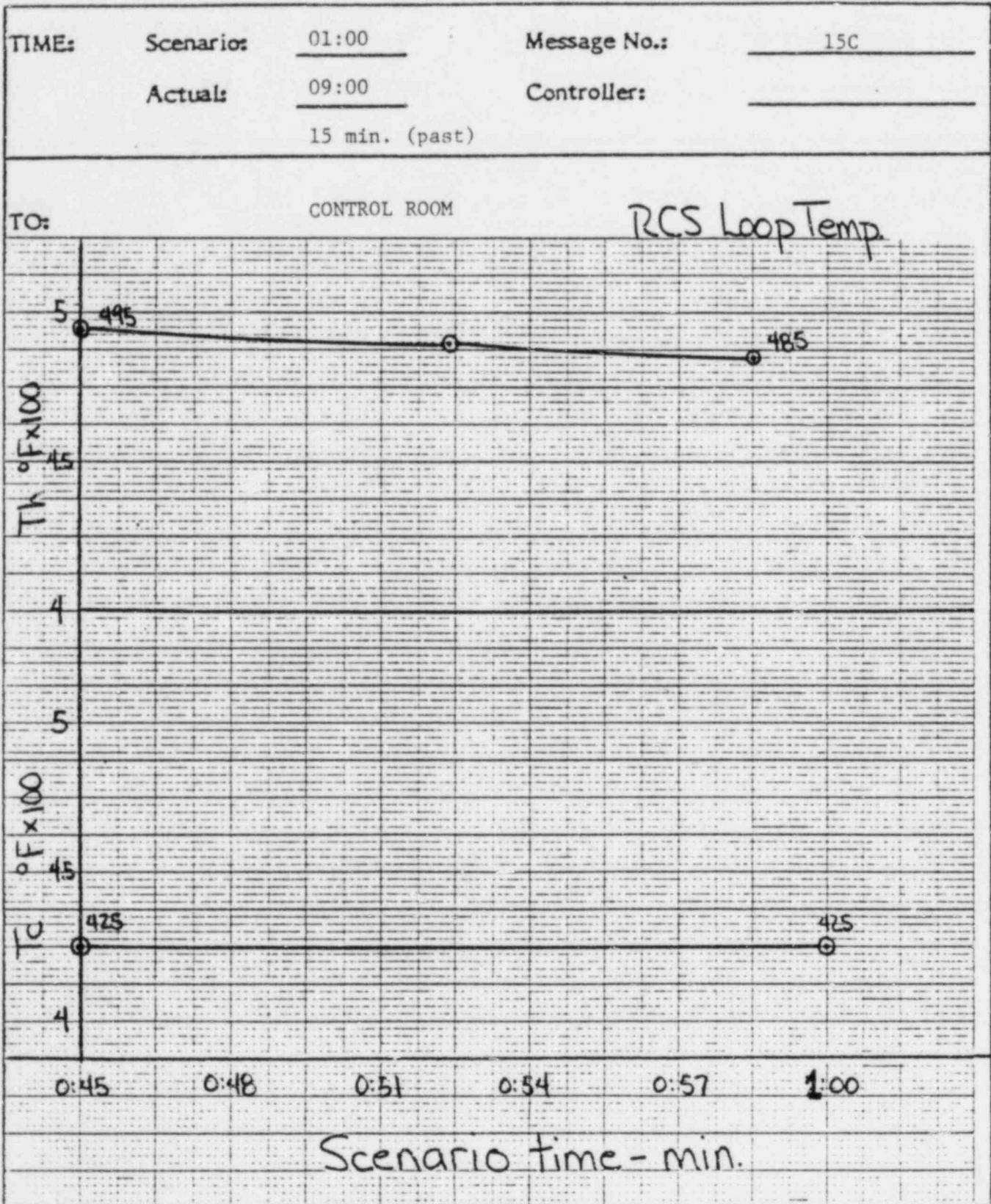
TO:	Control Room Operator
LOCATION:	Radiation Monitor Panels
MESSAGE:	- o Containment high-range monitors (1-RI-5317) reading 53 R/hr. - o Main Vent Monitors (RE-5415) reading: - Unit 1 = 5,000 cpm - Unit 2 = 50 cpm - o Meteorological Conditions: - Wind Direction (from) 55° - Wind Speed 2 mph - Temperature Differential -1.1°F

THIS IS A DRILL

CLYVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983



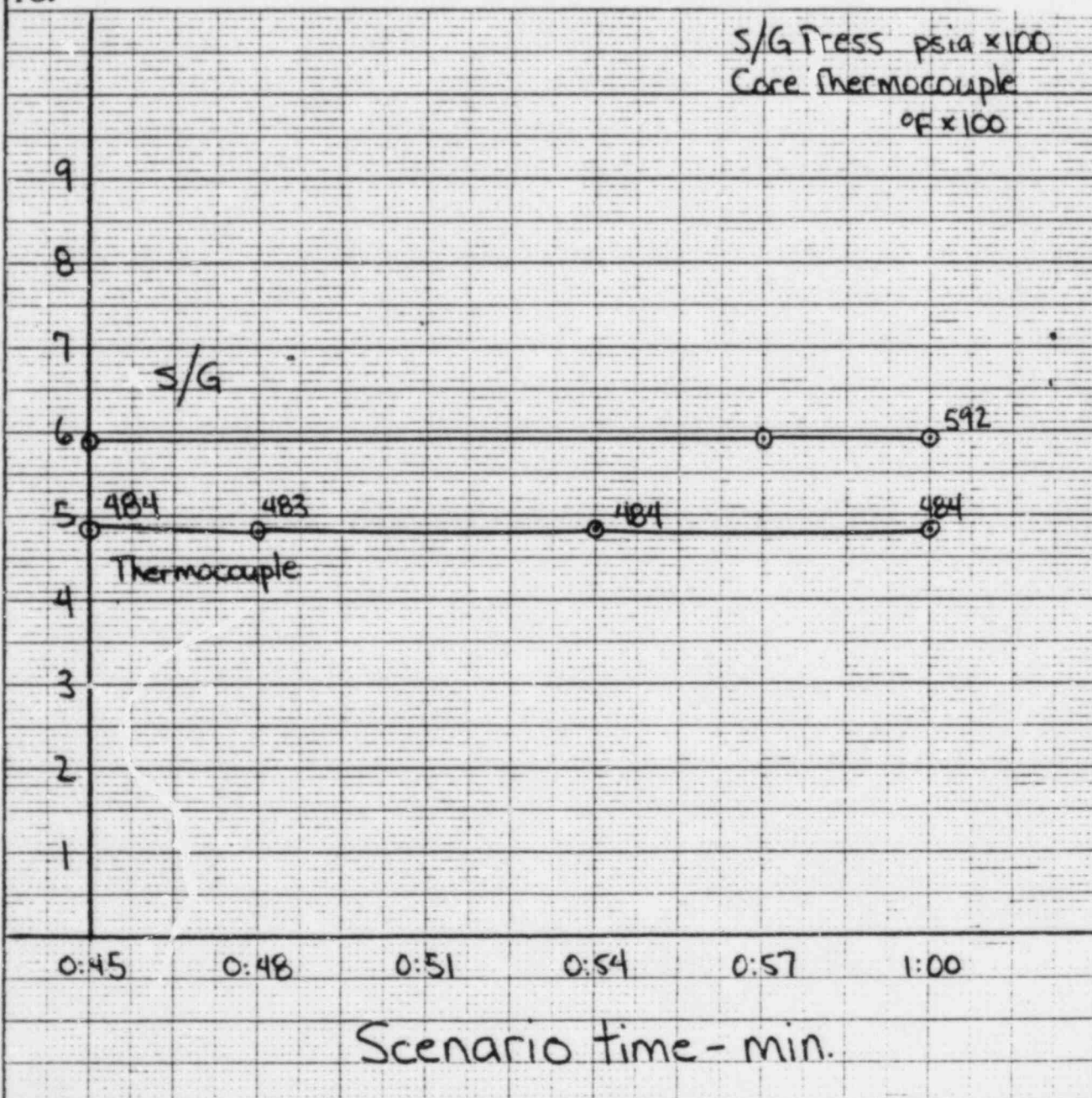
CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	01:00	Message No.:	15D
	Actual:	09:00	Controller:	
15 min. (past)				

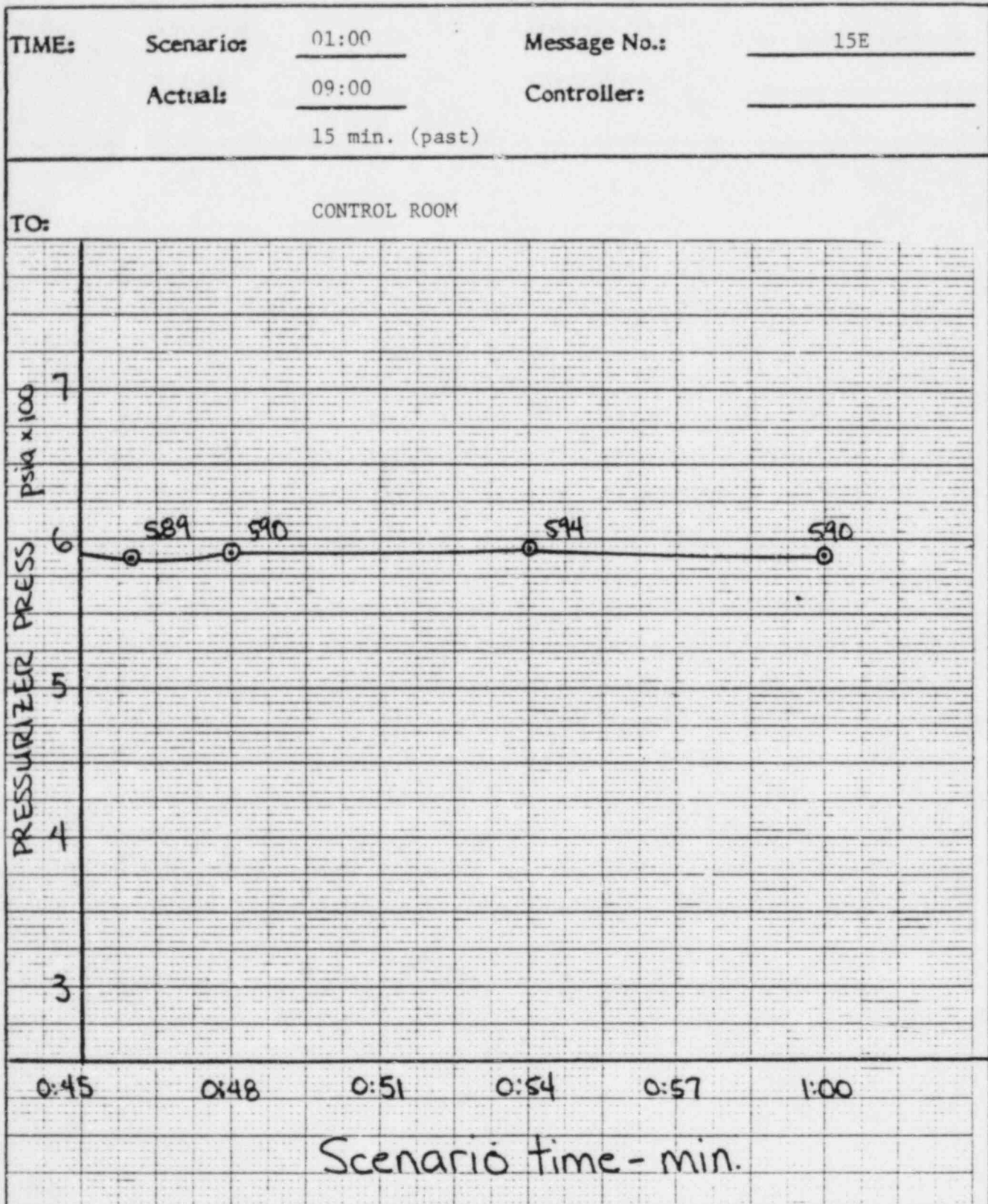
TO: CONTROL ROOM



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

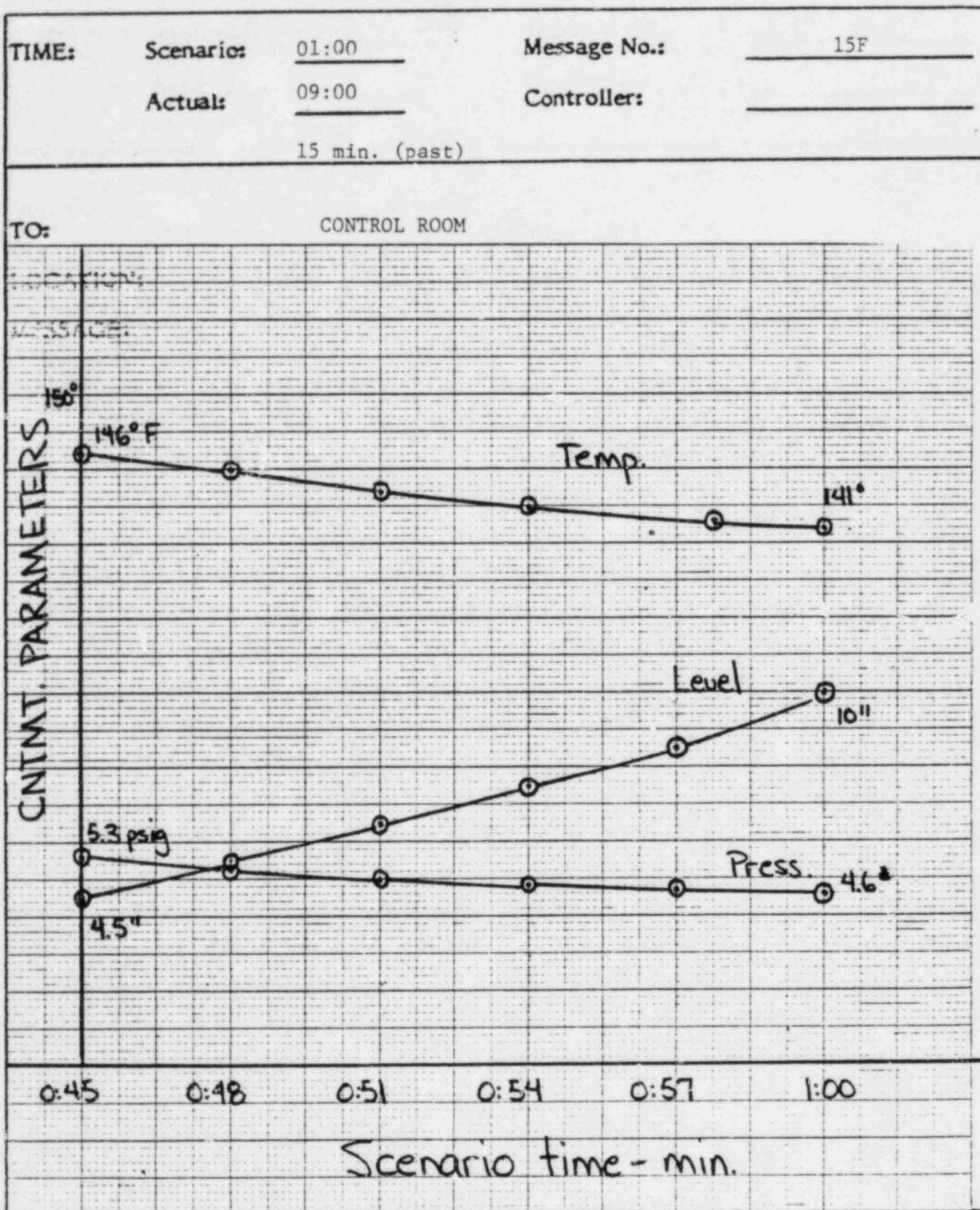
SEPTEMBER 14, 1983



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>01:00</u>	Message No.:	<u>15G</u>
	Actual:	<u>09:00</u>	Controller:	<u></u>

TO:	Radiological Assessment Director
LOCATION:	Control Room/ECC/AECC
MESSAGE:	Corporate Meteorologist Weather Forecast: Low pressure storm system offshore, moving up the East Coast. Expect increasing cloudiness with light rain by 12:00 Noon continuing throughout remainder of the day. Winds gradually shifting from NE to SW by evening.

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CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>01:15</u>	Message No.:	<u>16A</u>
	Actual:	<u>09:15</u>	Controller:	<u></u>

TO:	Control Room Operator
LOCATION:	Control Room
MESSAGE:	Plant Parameters Unit 1

S/G Pressure: 592#

RCS T_h : 470°
 T_c : 427°
 Thermocouple: 475°

Pressurizer Pressure: 540#
 Level : 0

Subcooled Margin : 0

 Pressure: 4.4 psig
Containment Temp. : 139°F
 Level : 15"

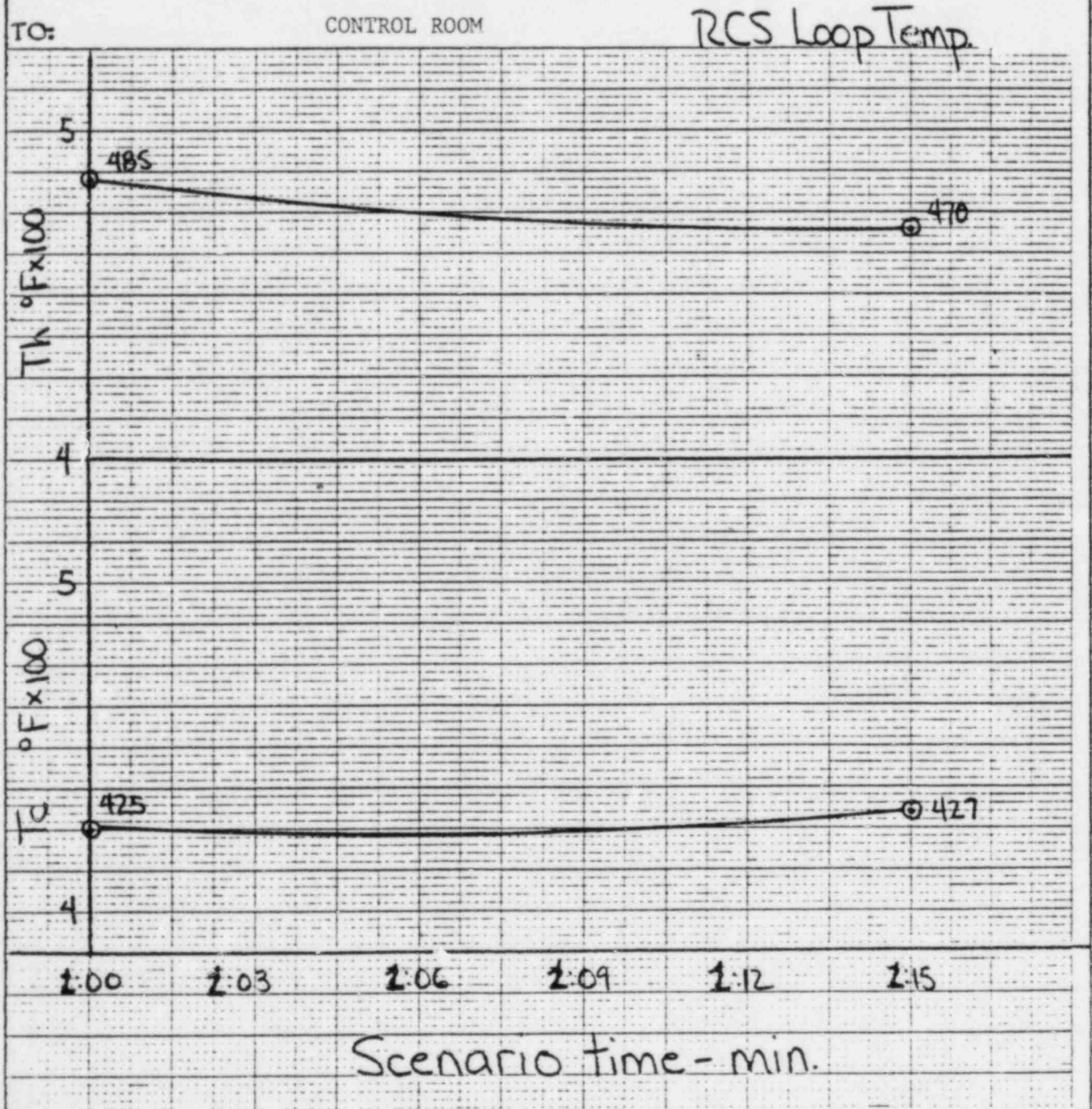
RWT Level: 1.75 ft.

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	01:15	Message No.:	16B
	Actual:	09:15	Controller:	
15 min. (past)				



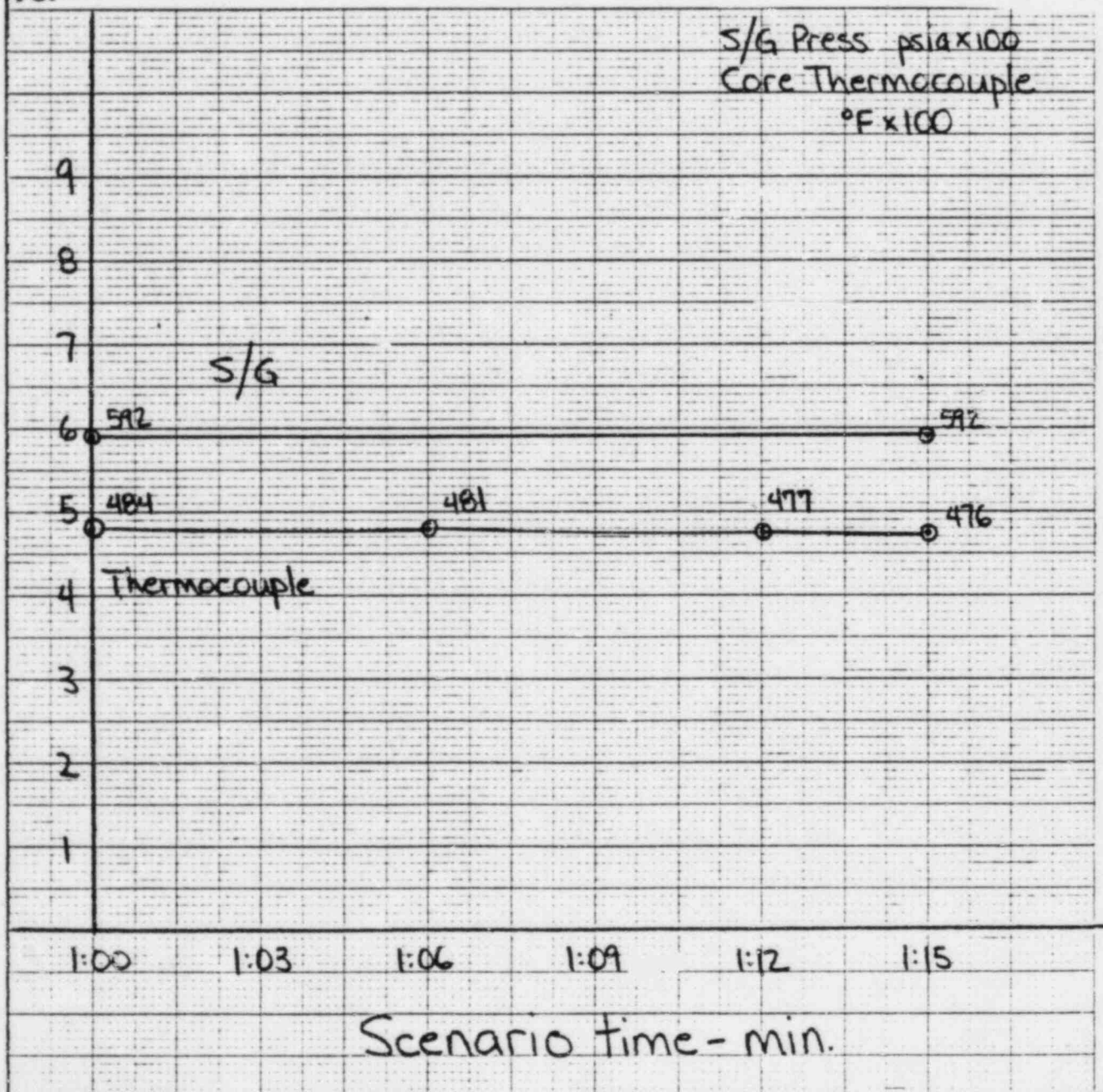
CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>01:15</u>	Message No.:	<u>16C</u>
	Actual:	<u>09:15</u>	Controller:	<u></u>
15 min. (past)				

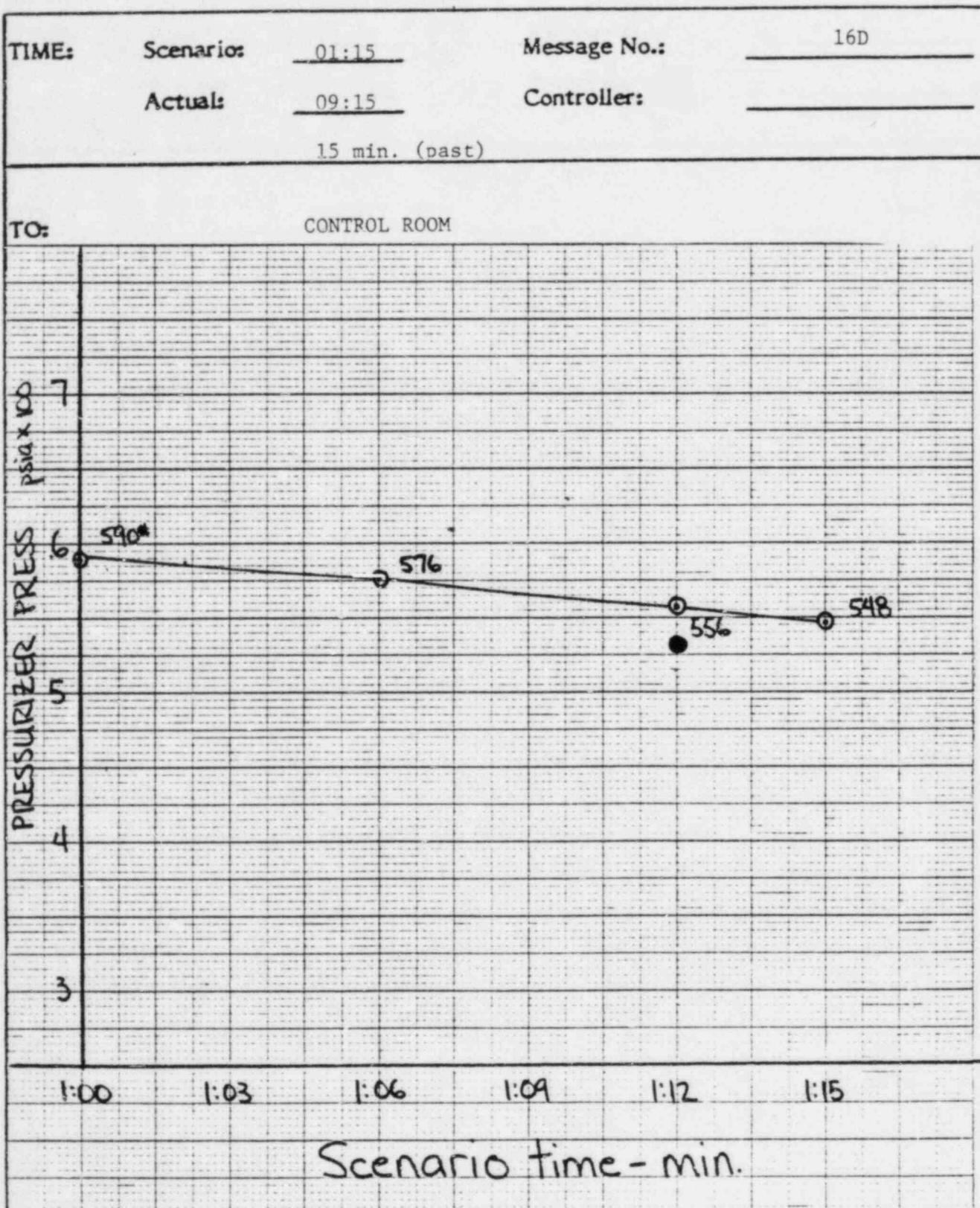
TO: CONTROL ROOM



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983



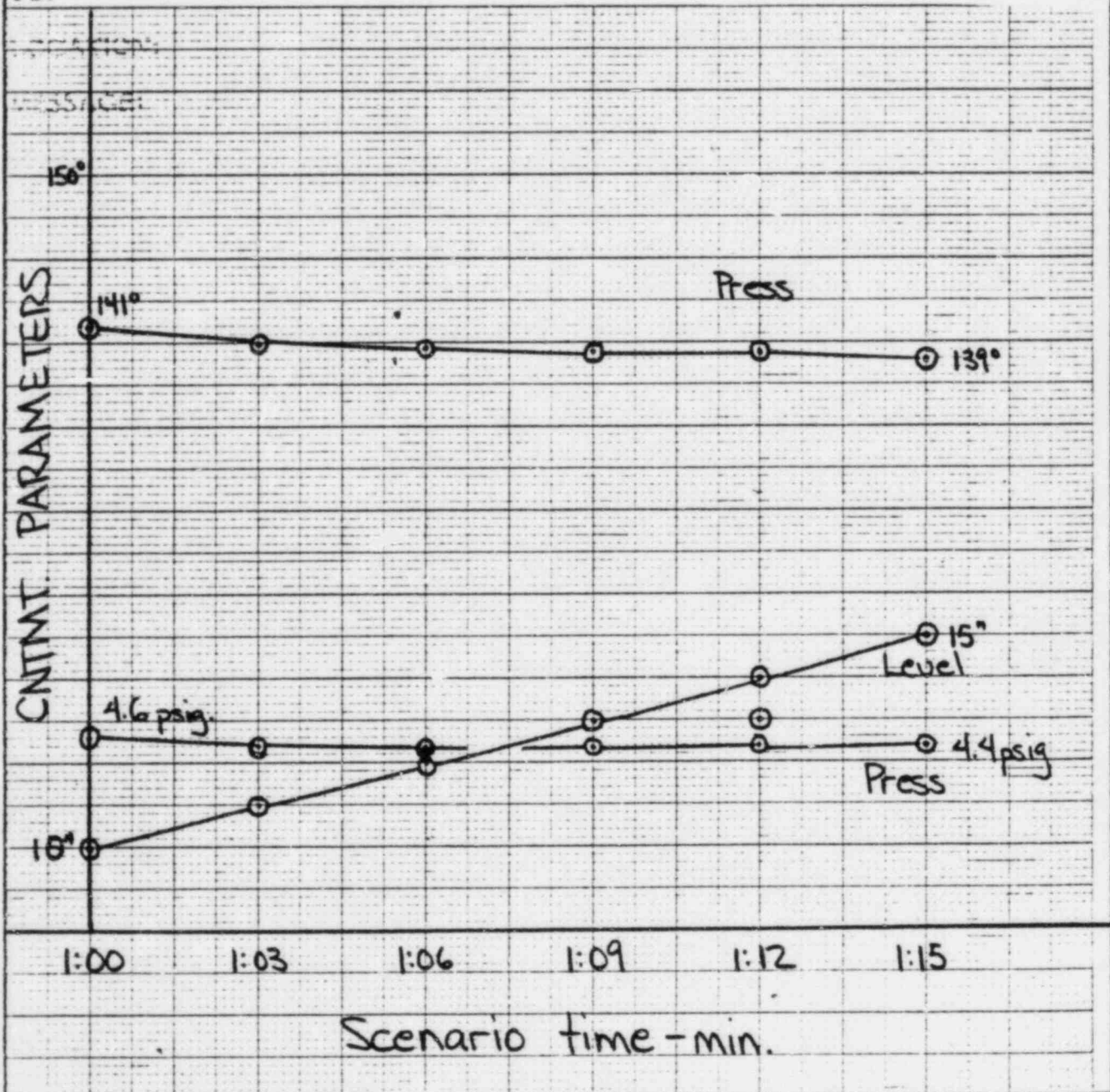
CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	01:15	Message No.:	16E
	Actual:	09:15	Controller:	
		15 min. (past)		

TO: CONTROL ROOM



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>01:15⁺</u>	Message No.:	<u>16F</u>
	Actual:	<u>09:15⁺</u>	Controller:	<u></u>
(Upon arrival at pump)				

TO:	Mechanical Maintenance Team
LOCATION:	#12 LPSI Pump
MESSAGE:	The motor coupling is not keyed to the shaft. The key must have sheared. Repairs expected to take four hours.

END OF MESSAGE

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>01:30</u>	Message No.:	<u>17A</u>
	Actual:	<u>09:30</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 592#

Th: 455°
RCS T_c: 430°
Thermocouple: 465°

Pressurizer Pressure: 480#
Level : 0

Subcooled Margin : 0

Pressure: 4 psig
Containment Temp. : 134°F
Level : 20.5"

RWT Level: 0

THIS IS A DRAFT

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>01:30</u>	Message No.:	<u>17B</u>
	Actual:	<u>09:30</u>	Controller:	<u></u>
TO:	Control Room Operator			
LOCATION:	Radiation Monitor Panels			
MESSAGE:	- o Containment high-range monitors (1-RI-5317) reading 61 R/hr. - o Main Vent Monitors (RE-5415) reading: - Unit 1 = 4,900 cpm - Unit 2 = 50 cpm			

THIS IS A DRILL

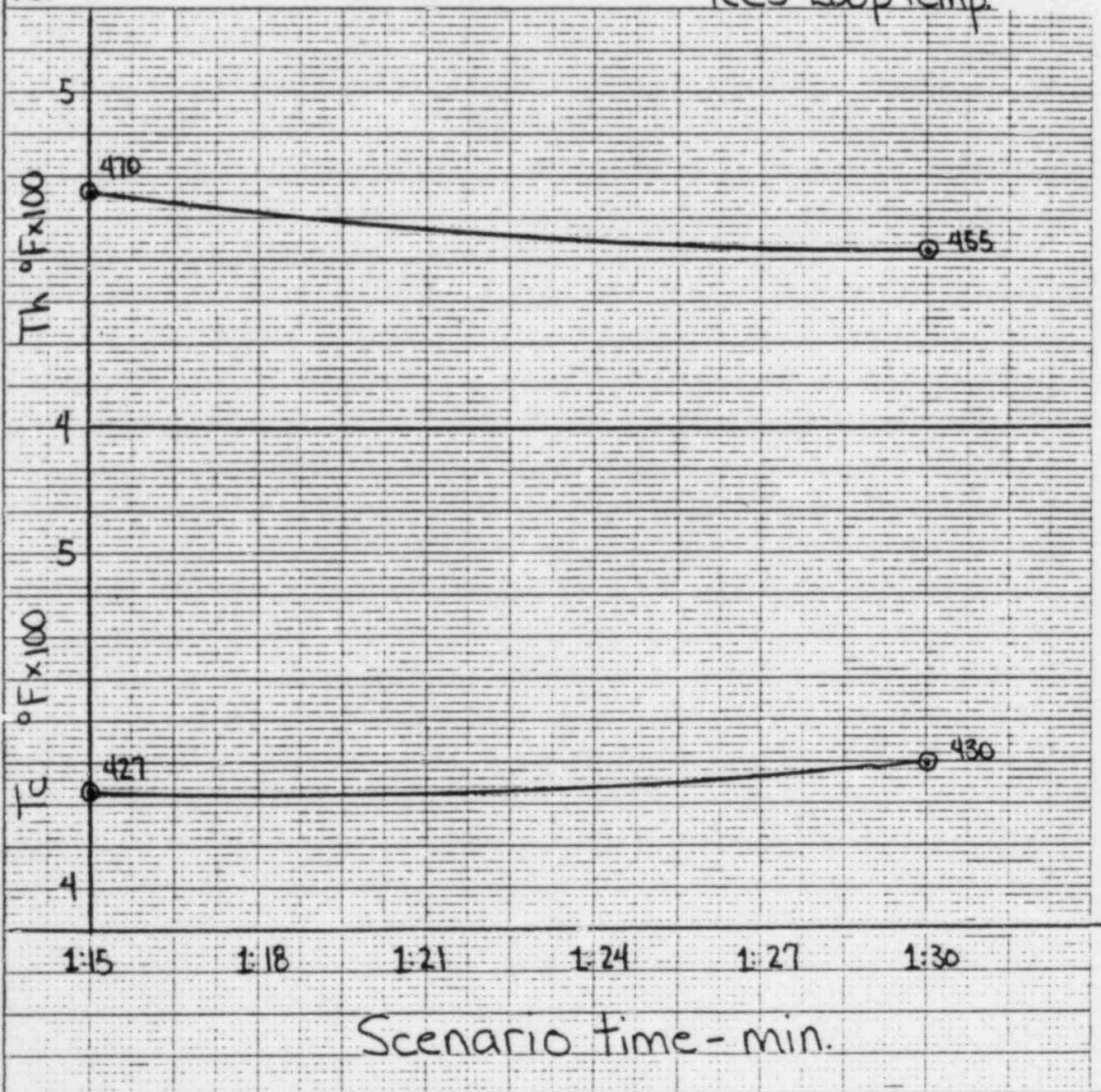
CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	01:30	Message No.:	17C
	Actual:	09:30	Controller:	
		15 min. (past)		

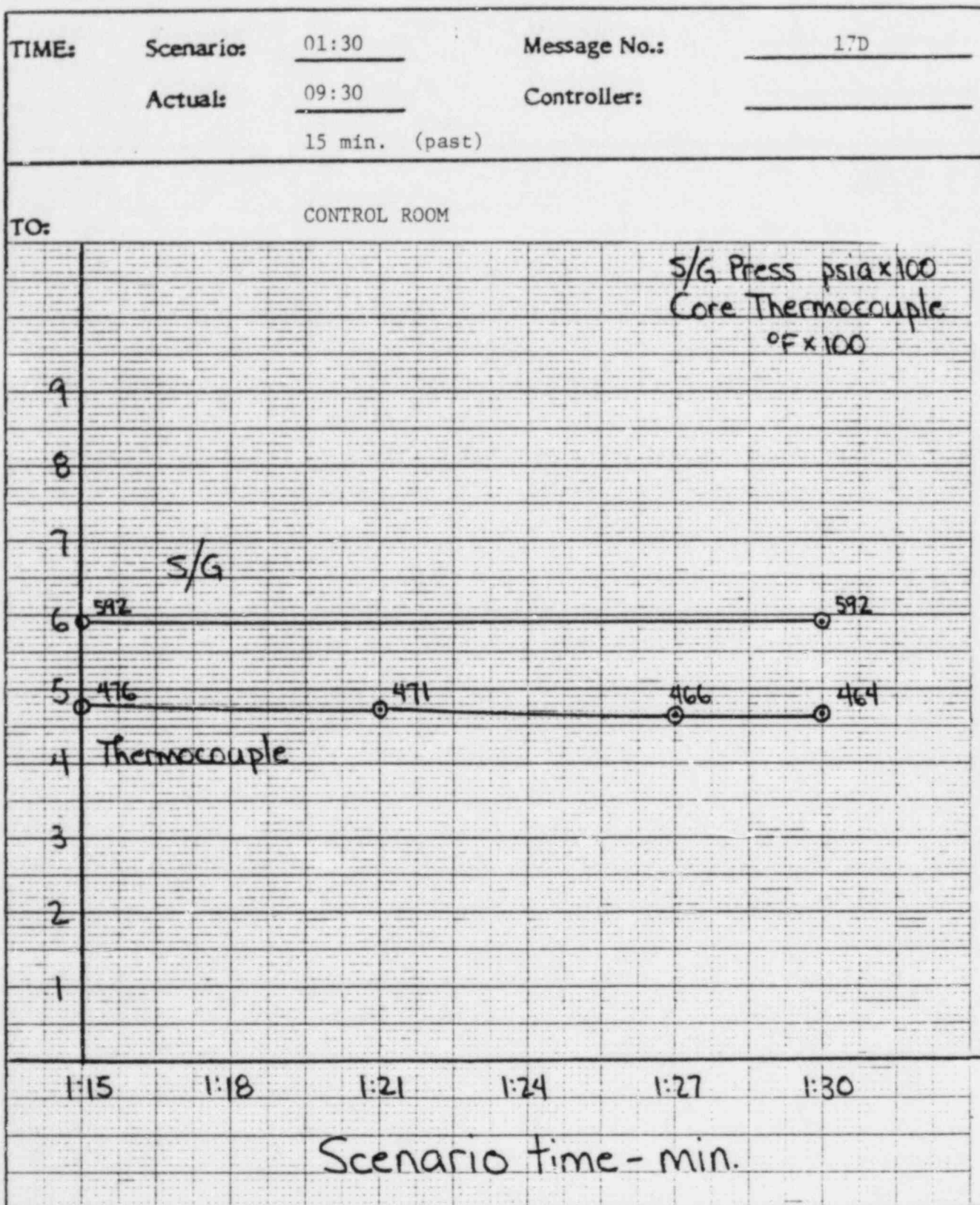
TO: CONTROL ROOM RCS Loop Temp.



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

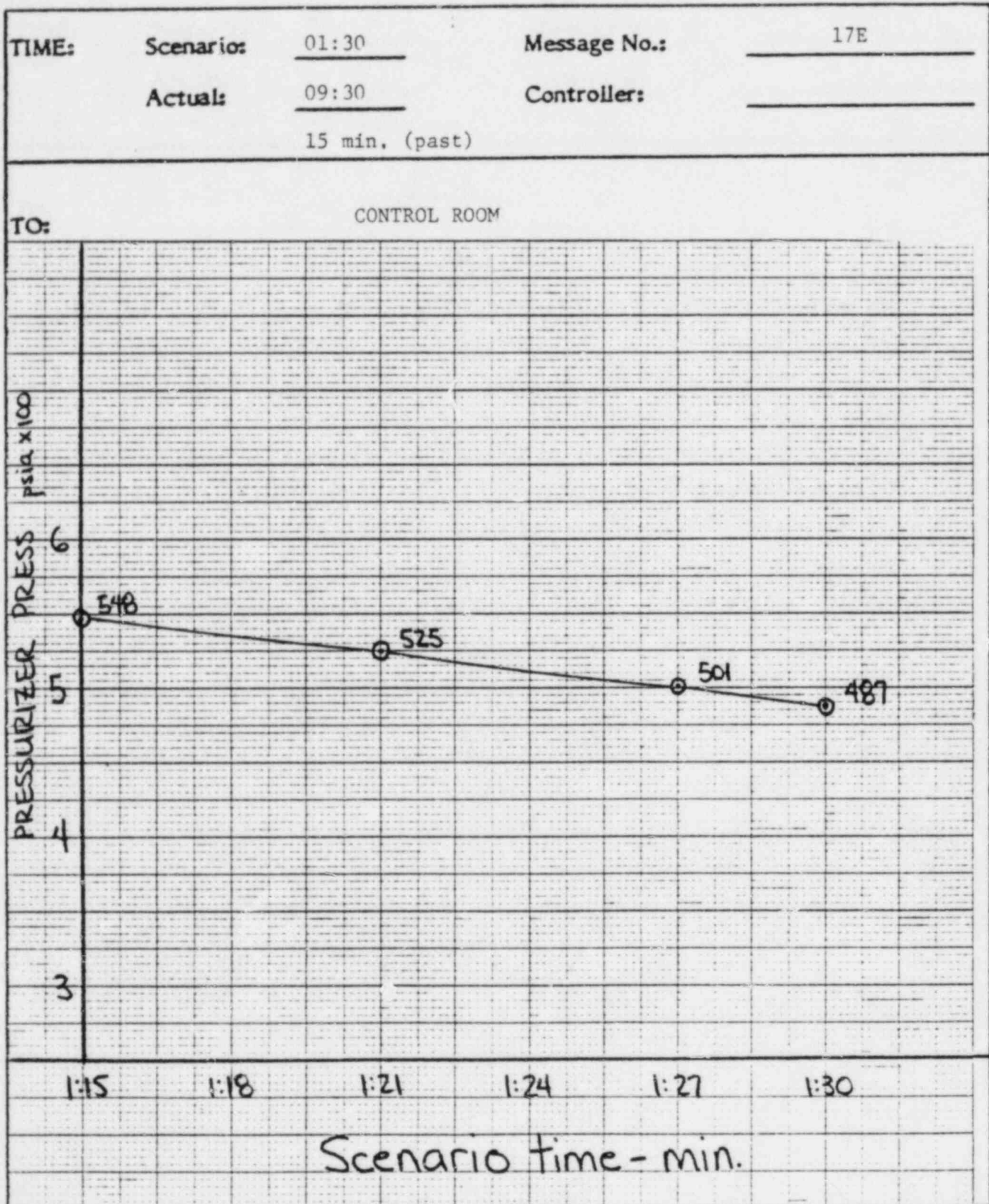
SEPTEMBER 14, 1983



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983



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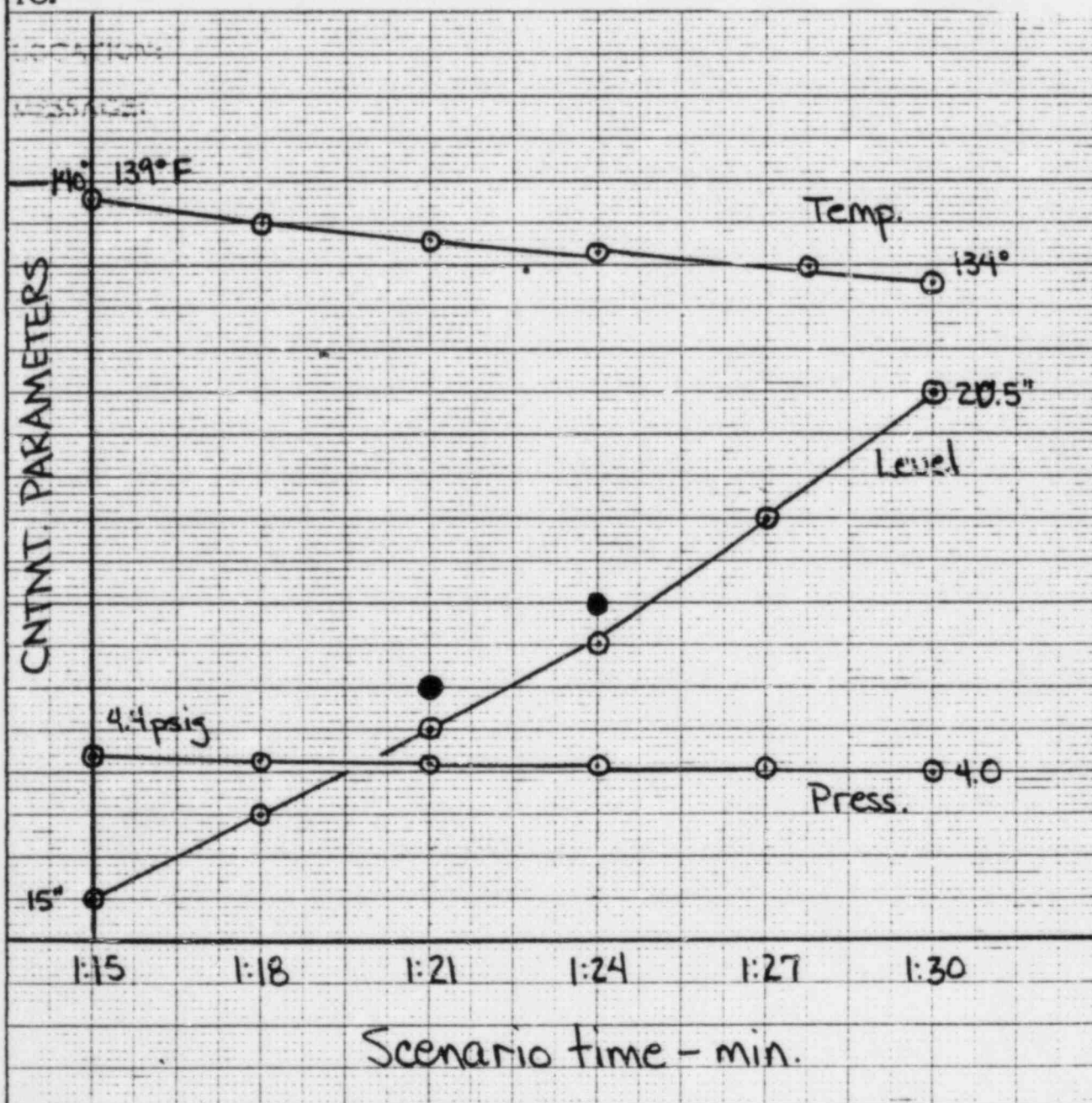
CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	01:30	Message No.:	17F
	Actual:	09:30	Controller:	
	15 min. (past)			

TO: CONTROL ROOM



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>01:45</u>	Message No.:	<u>18A</u>
	Actual:	<u>09:45</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 592#

Th: 450°

RCS T_c: 432°

Thermocouple: 455°

Pressurizer Pressure: 440#

Level : 0

Subcooled Margin : 0

Pressure: 3.5 psig

Containment Temp. : 129°F

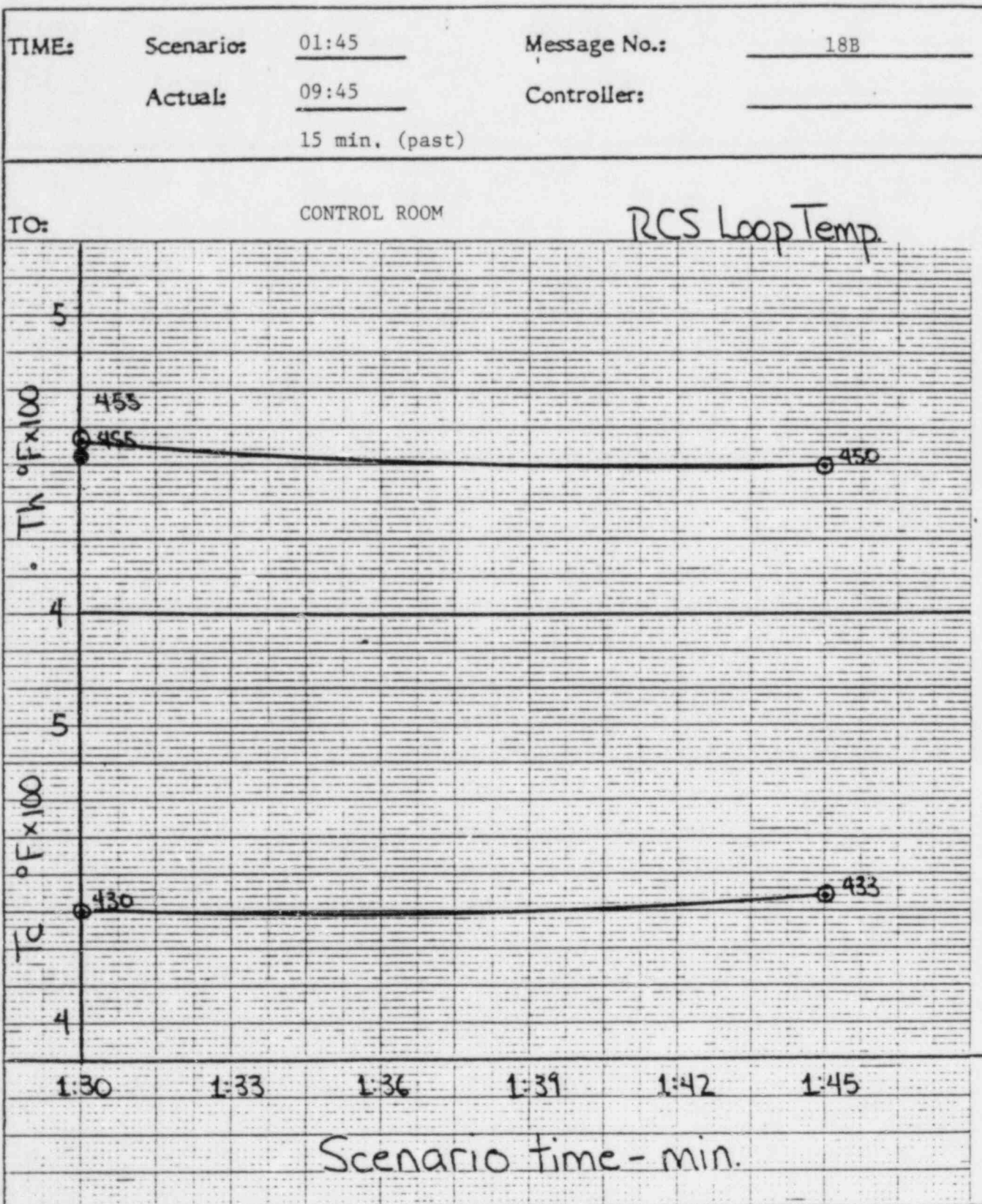
Level : 25.5"

RWT Level: 0

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

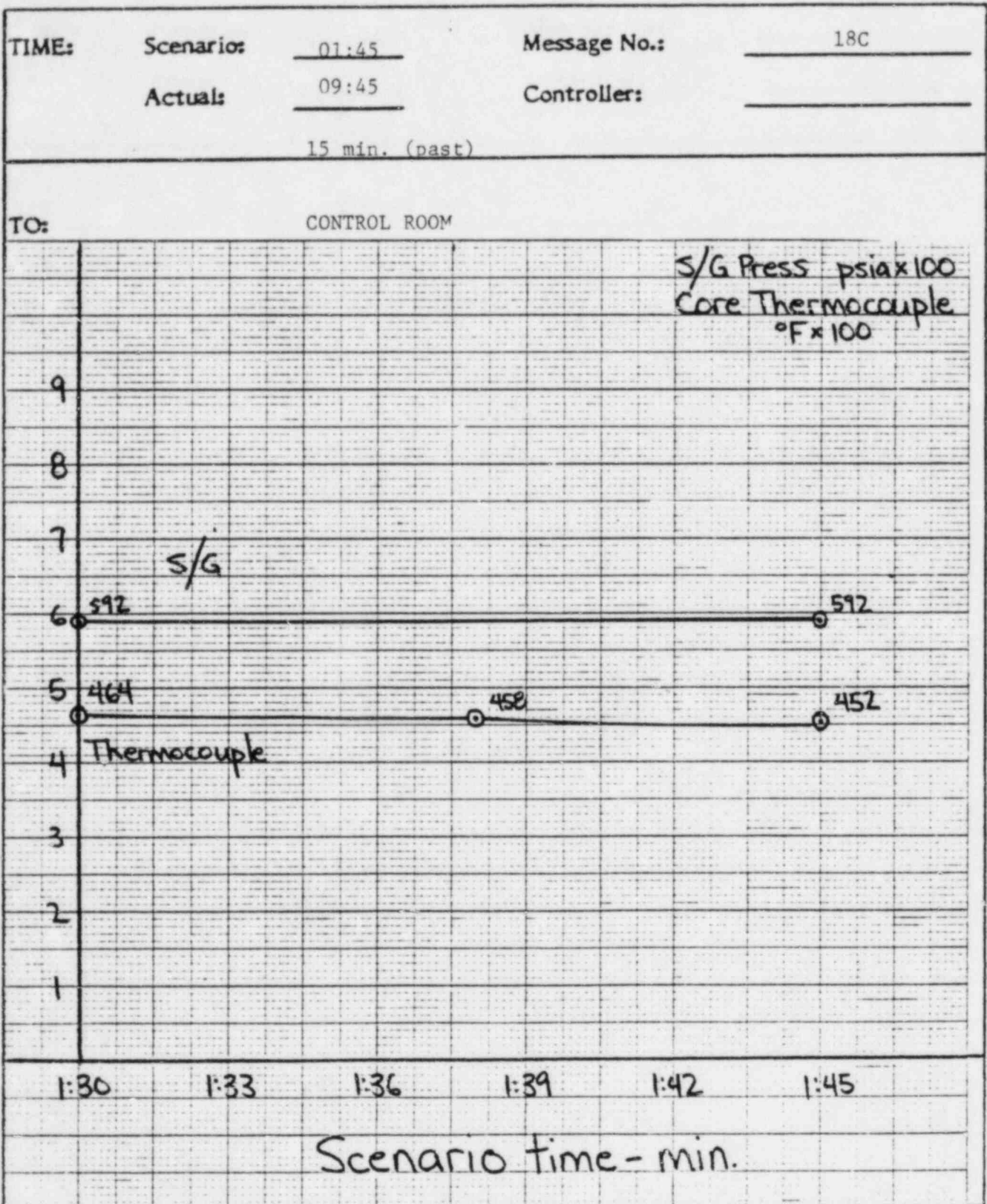
SEPTEMBER 14, 1983



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983



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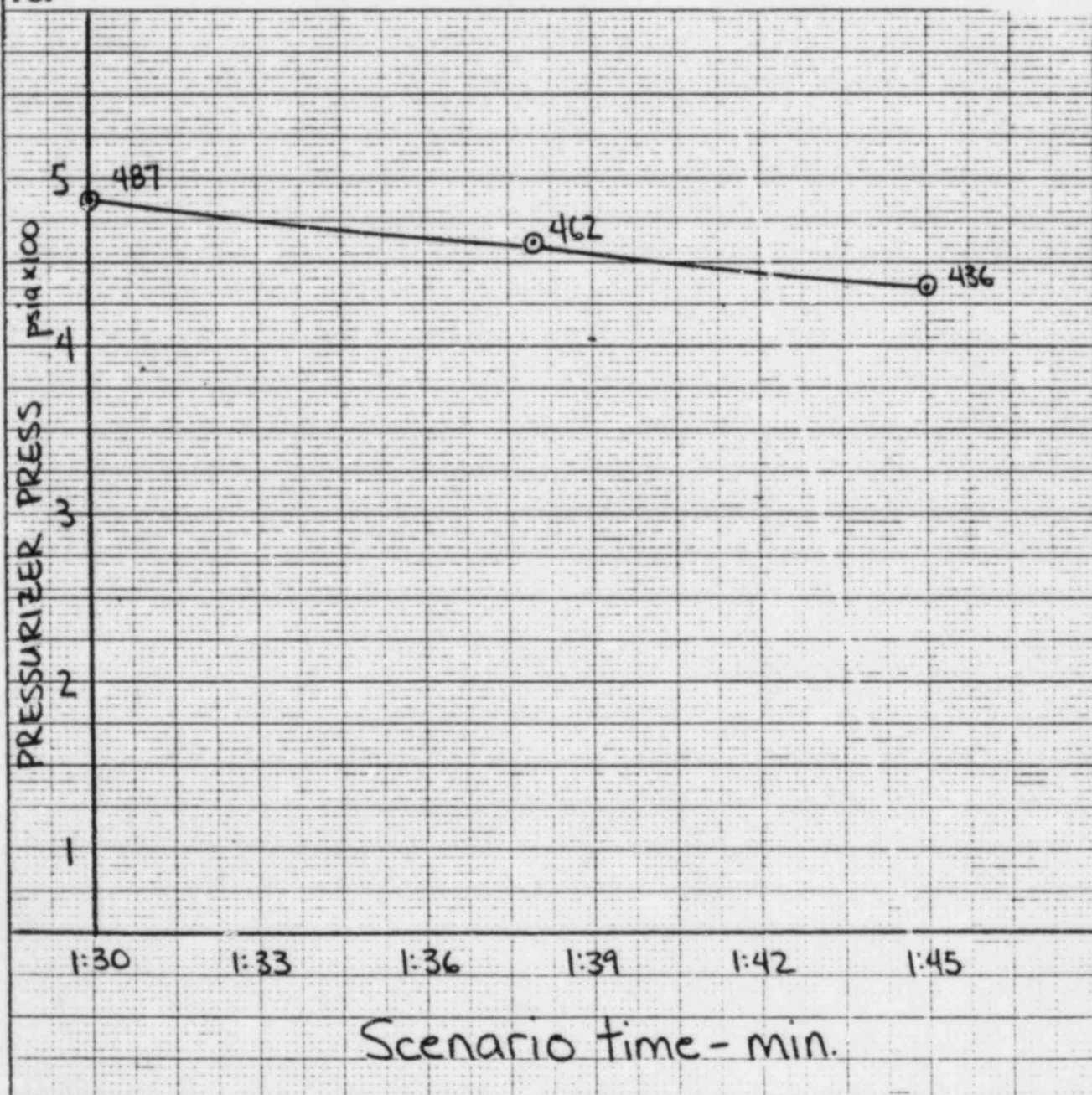
CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	01:45	Message No.:	18D
	Actual:	09:45	Controller:	
		15 min. (past)		

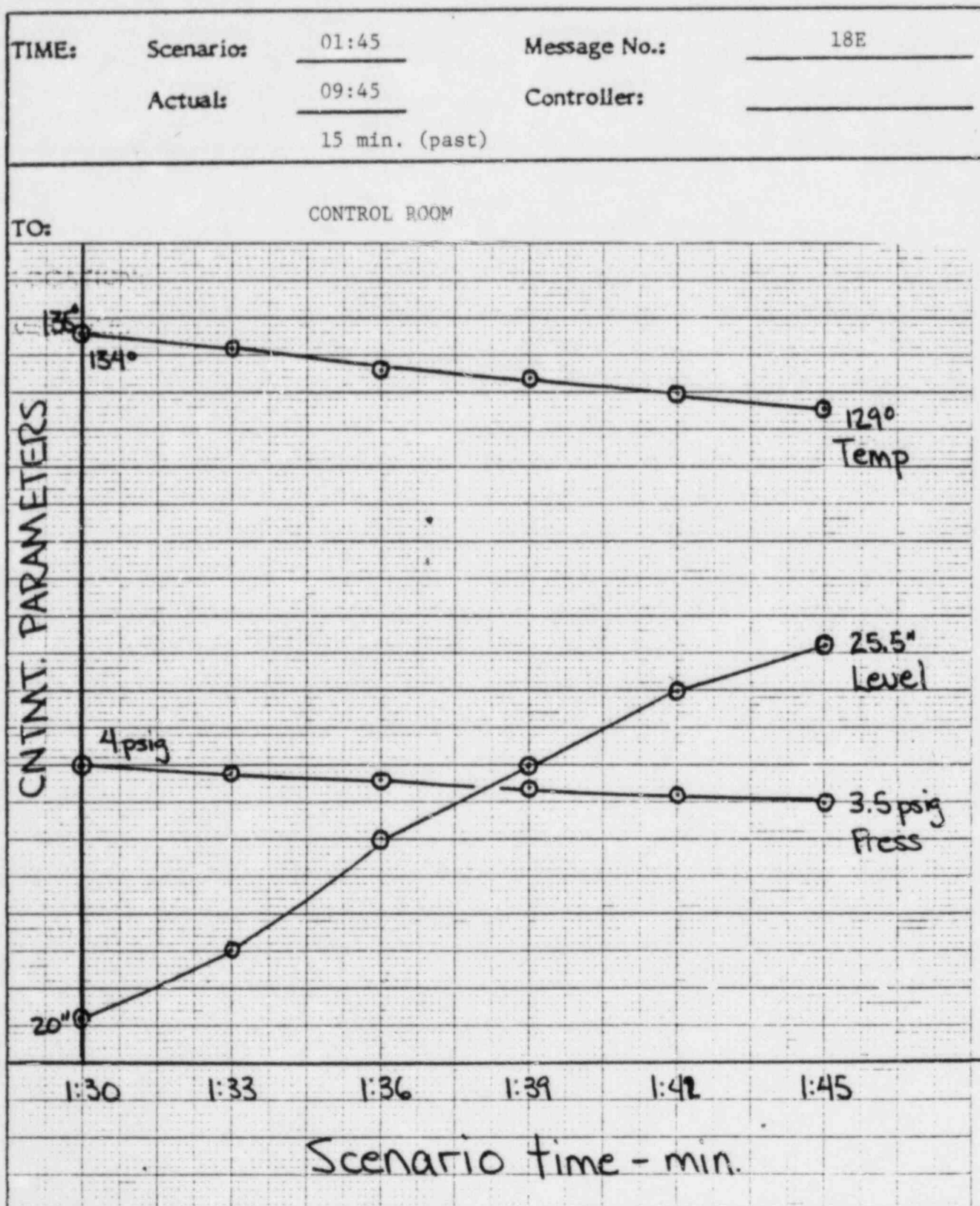
TO: CONTROL ROOM



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>02:00</u>	Message No.:	<u>19A</u>
	Actual:	<u>10:00</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 592#

RCS T_h : 440°
 T_c : 435°
 Thermocouple: 443°

Pressurizer Pressure: 400#
 Level : 0

Subcooled Margin : 0

 Pressure: 3.25 psig
Containment Temp. : 125°F
 Level : 31"

RWT Level: 0

THIS IS A DRILL

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>02:00</u>	Message No.:	<u>19B</u>
	Actual:	<u>10:00</u>	Controller:	<u></u>

TO:	Control Room Operator
LOCATION:	Radiation Monitor Panels
MESSAGE:	- o Containment high-range monitors (I-RI-5317) reading 50 R/hr. - o Main Vent Monitors (RE-5415) reading: - Unit 1 = 4,800 cpm - Unit 2 = 50 cpm - o Meteorological Conditions: - Wind Direction (from) 45° - Wind Speed 3.2 mph - Temperature Differential -0.6°F

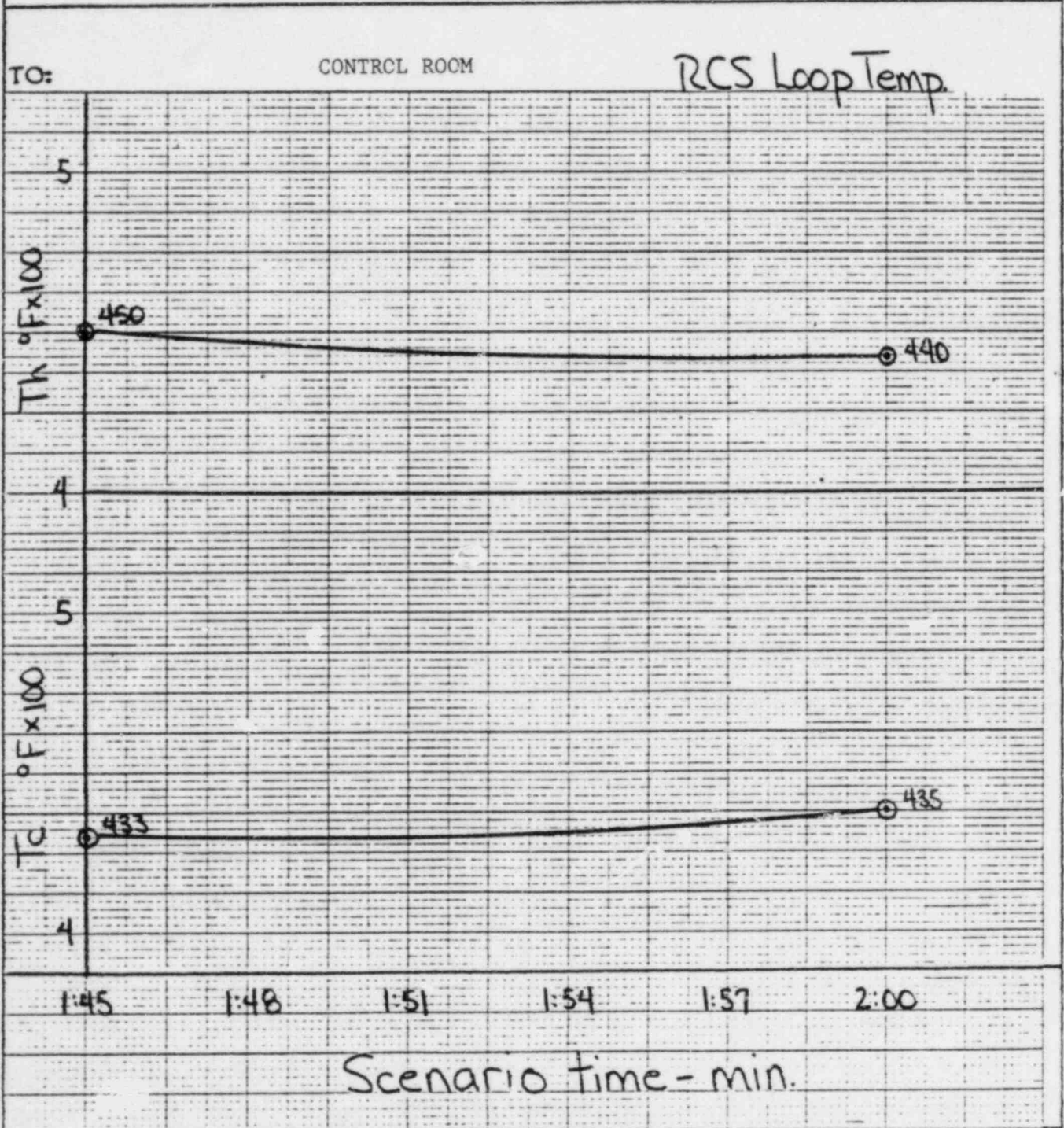
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CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>02:00</u>	Message No.:	<u>19C</u>
	Actual:	<u>10:00</u>	Controller:	<u></u>
		15 min. (past)		



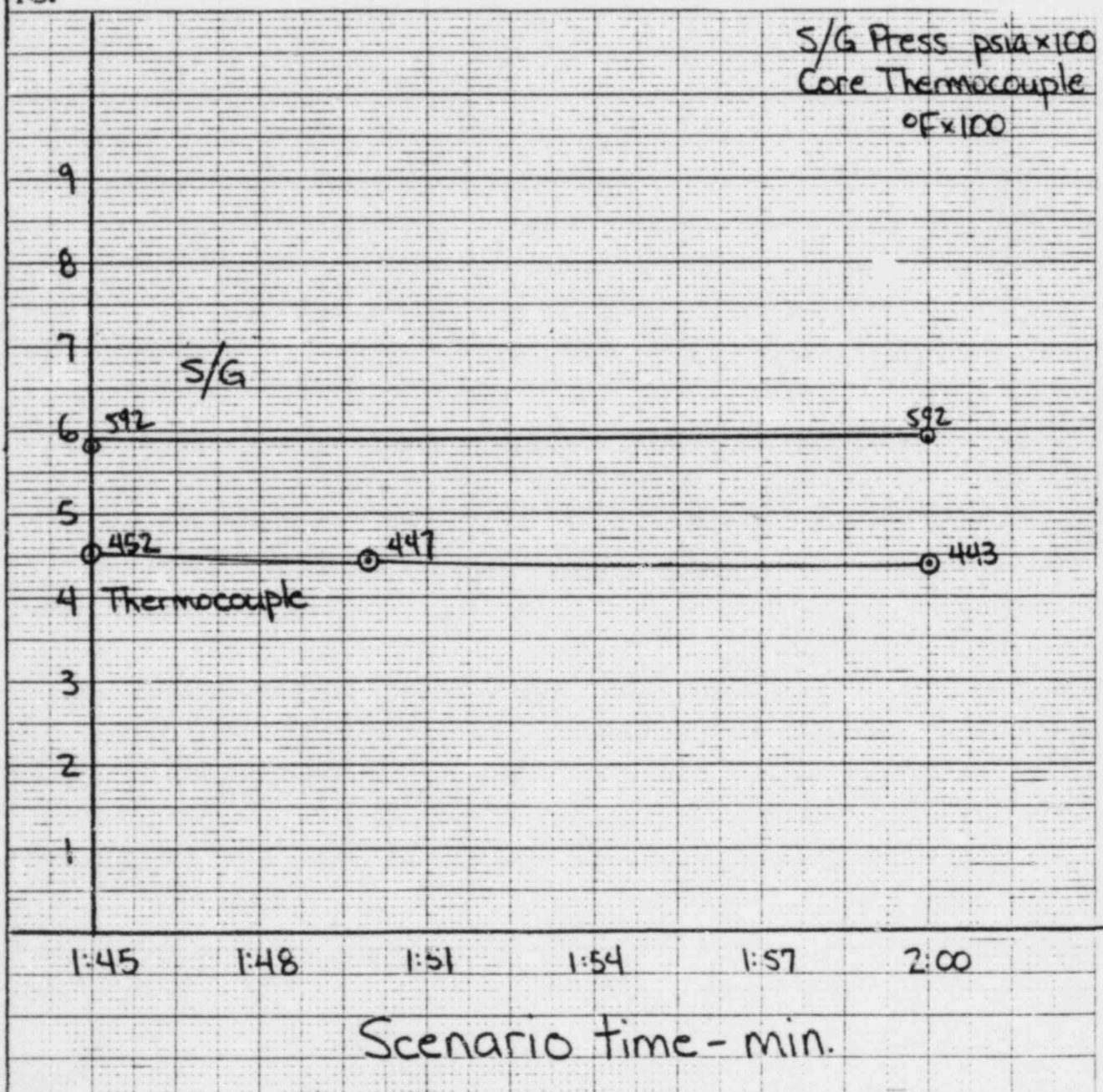
CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	02:00	Message No.:	19D
	Actual:	10:00	Controller:	
		15 min. (past)		

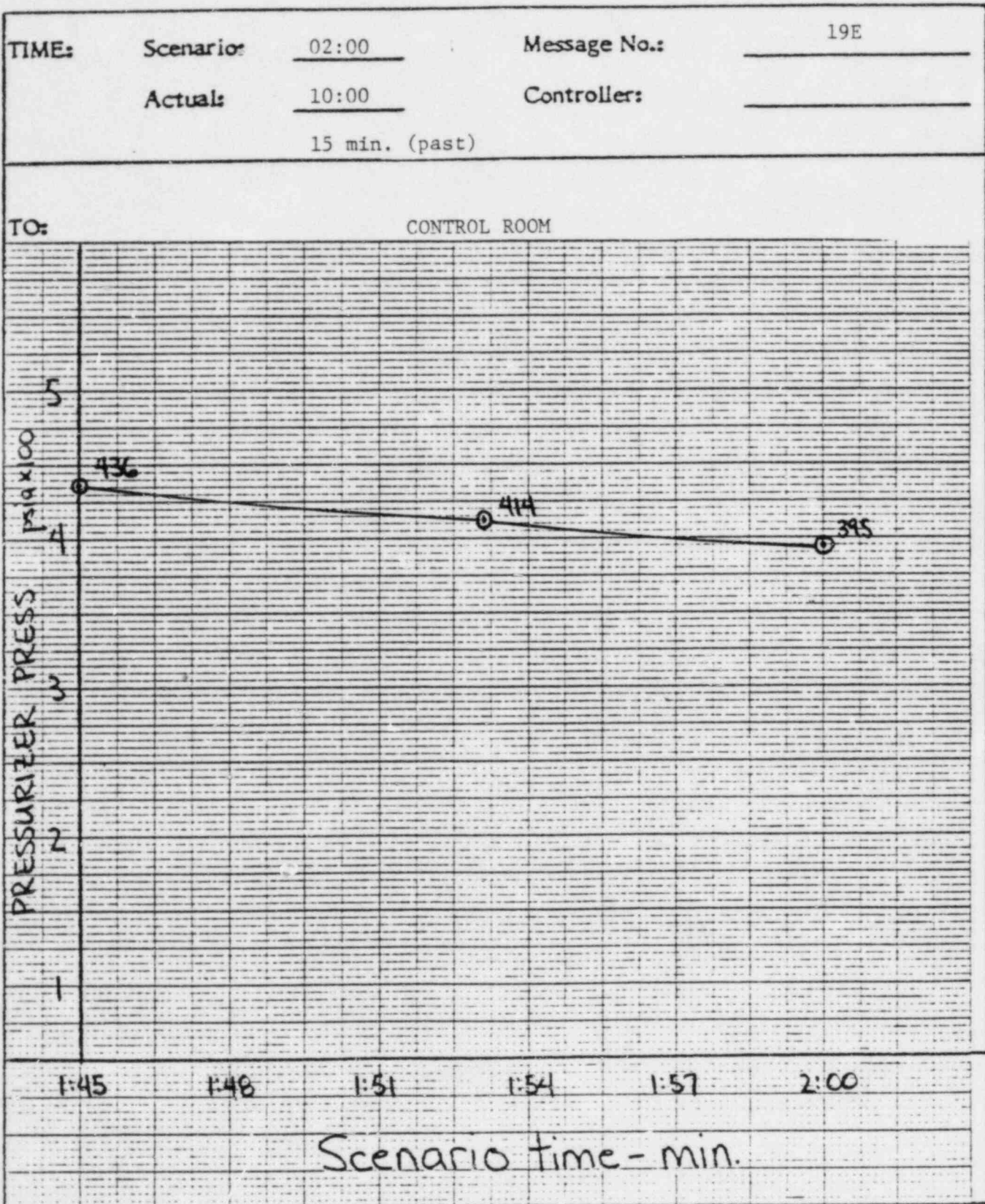
TO: CONTROL ROOM



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

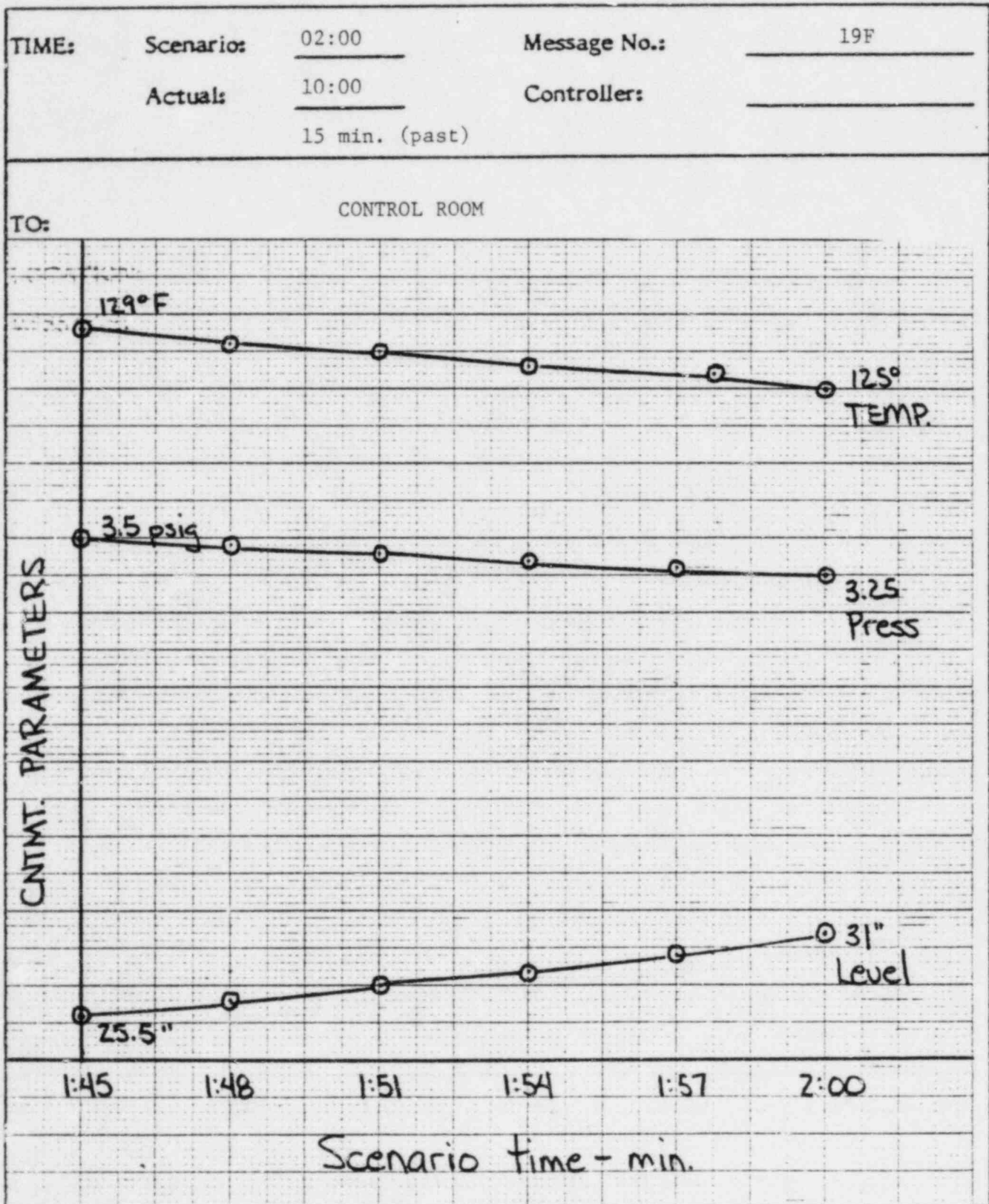
SEPTEMBER 14, 1983



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>02:00+</u>	Message No.:	<u>20</u>
	Actual:	<u>10:00+</u>	Controller:	<u></u>

TO:	First Aid Team
LOCATION:	Accident Scene (Unit 1 Sample Sink)
MESSAGE:	- o Victim #1 lying on floork unconscious. Clothing is soaked from hot sample line water. A piece of metal has penetrated the left forearm and chest. Skin is red and blistered where hot water splashed on the victim. - o Victim #2 is standing. Has been splashed with small amounts of sample ine water. Victim has several small reddened areas on hands and forearms with superficial lacerations.

THIS IS A DRAFT

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>02:00+</u>	Message No.:	<u>21</u>
	Actual:	<u>When requested</u>	Controller:	<u></u>

TO:	First Aid Team
LOCATION:	Accident Scene
MESSAGE:	Vital Signs
	<u>Victim #1</u>
	o BP: 100/60
	o Pulse: 112, thready
	o Respirations: 28, shallow. Little movement on left side at chestwall.
	o Pupils equal and reactive to light.
	<u>Victim #2</u>
	o BP: 134/86
	o Pulse: 92 and regular
	o Respiration: 16

THIS IS A DRAFT

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>02:10+</u>	Message No.:	<u>22</u>
	Actual:	<u>when requested</u>	Controller:	<u></u>
		(10 minutes after previous message)		
TO:	First Aid Team			
LOCATION:	Accident Scene			
MESSAGE:	Vital Signs			
	<u>Victim #1</u>			
	o BP: 90/50			
	o Pulse: 128, thready			
	o Respiration: 24 and shallow			
	<u>Victim #2</u>			
	o No change.			

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>02:15</u>	Message No.:	<u>23A</u>
	Actual:	<u>10:15</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 592#

RCS T_h : 435°
 T_c : 430°
 Thermocouple: 432°

Pressurizer Pressure: 360#
 Level : 0

Subcooled Margin : 0

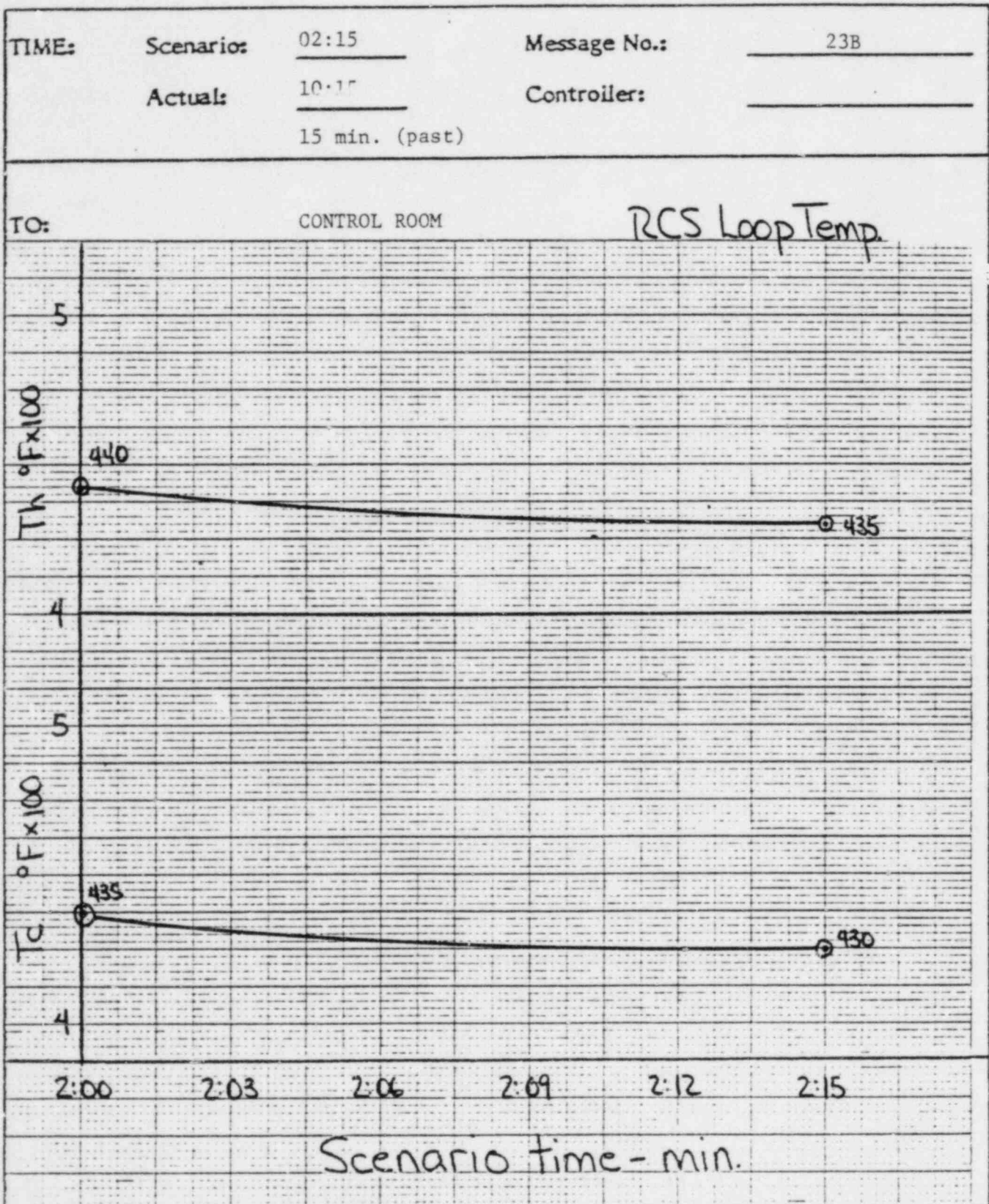
 Pressure: 3 psig
Containment Temp. : 121°F
 Level : 36"

RWT Level: 0

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

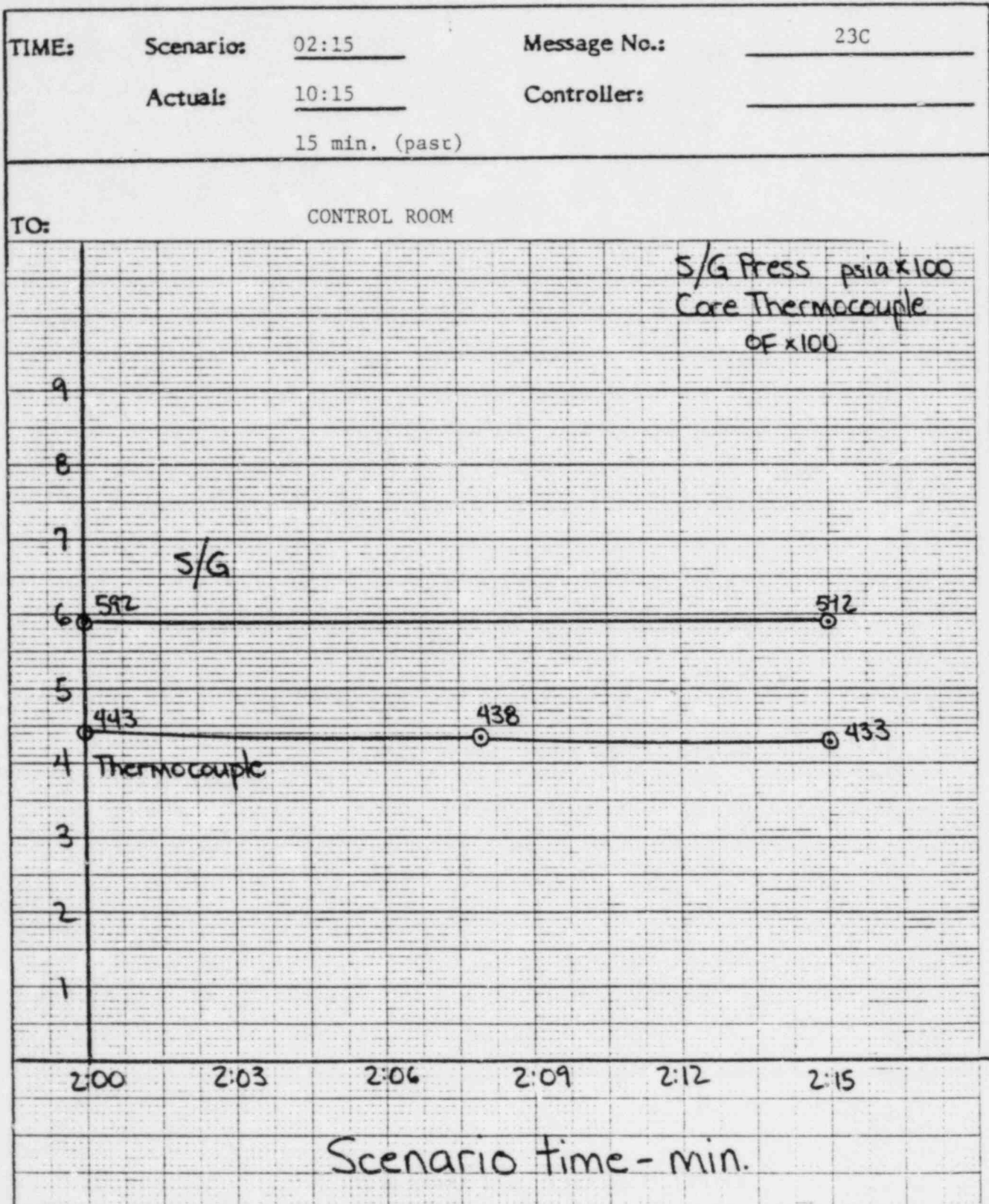
SEPTEMBER 14, 1983



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

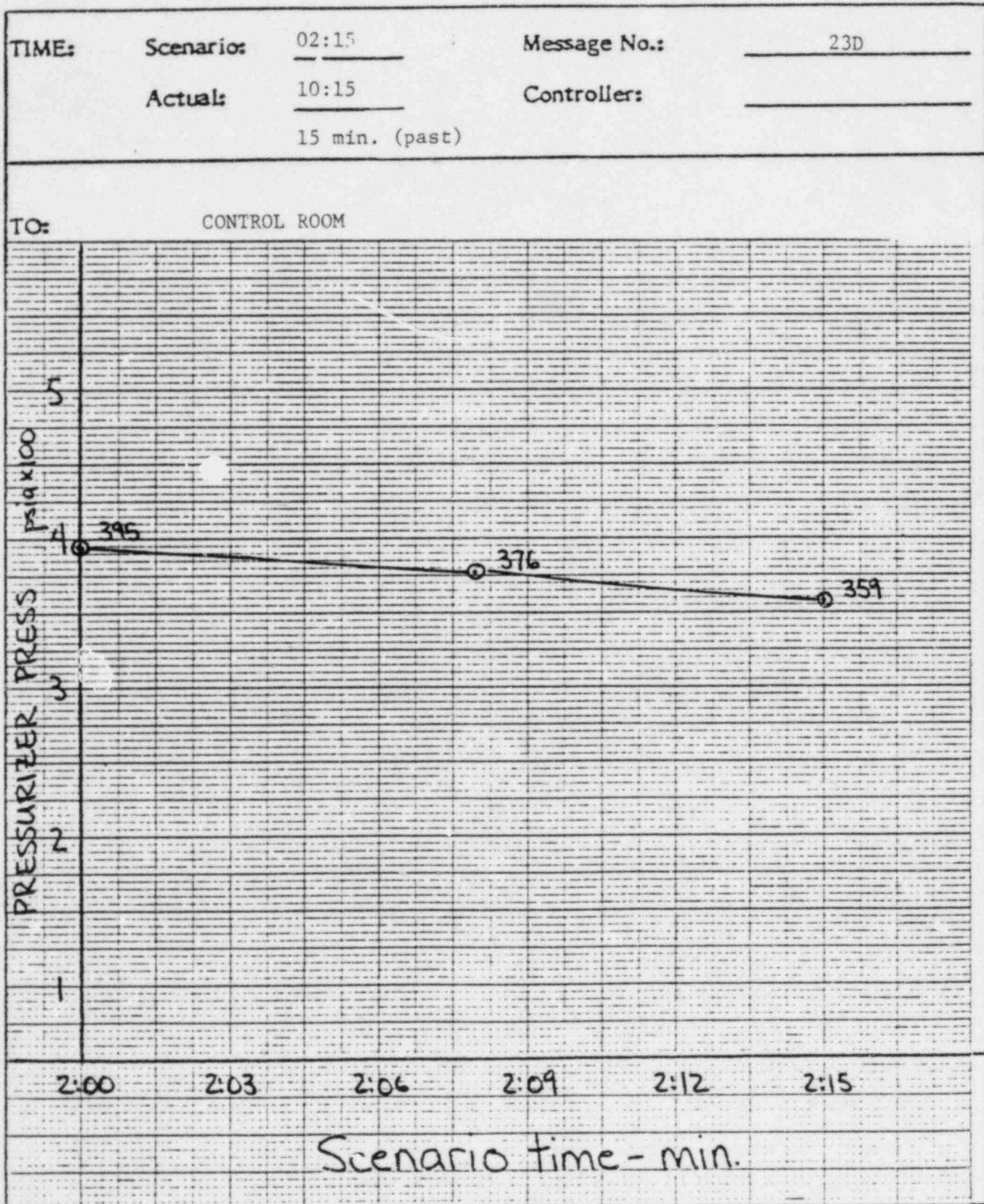
SEPTEMBER 14, 1983



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

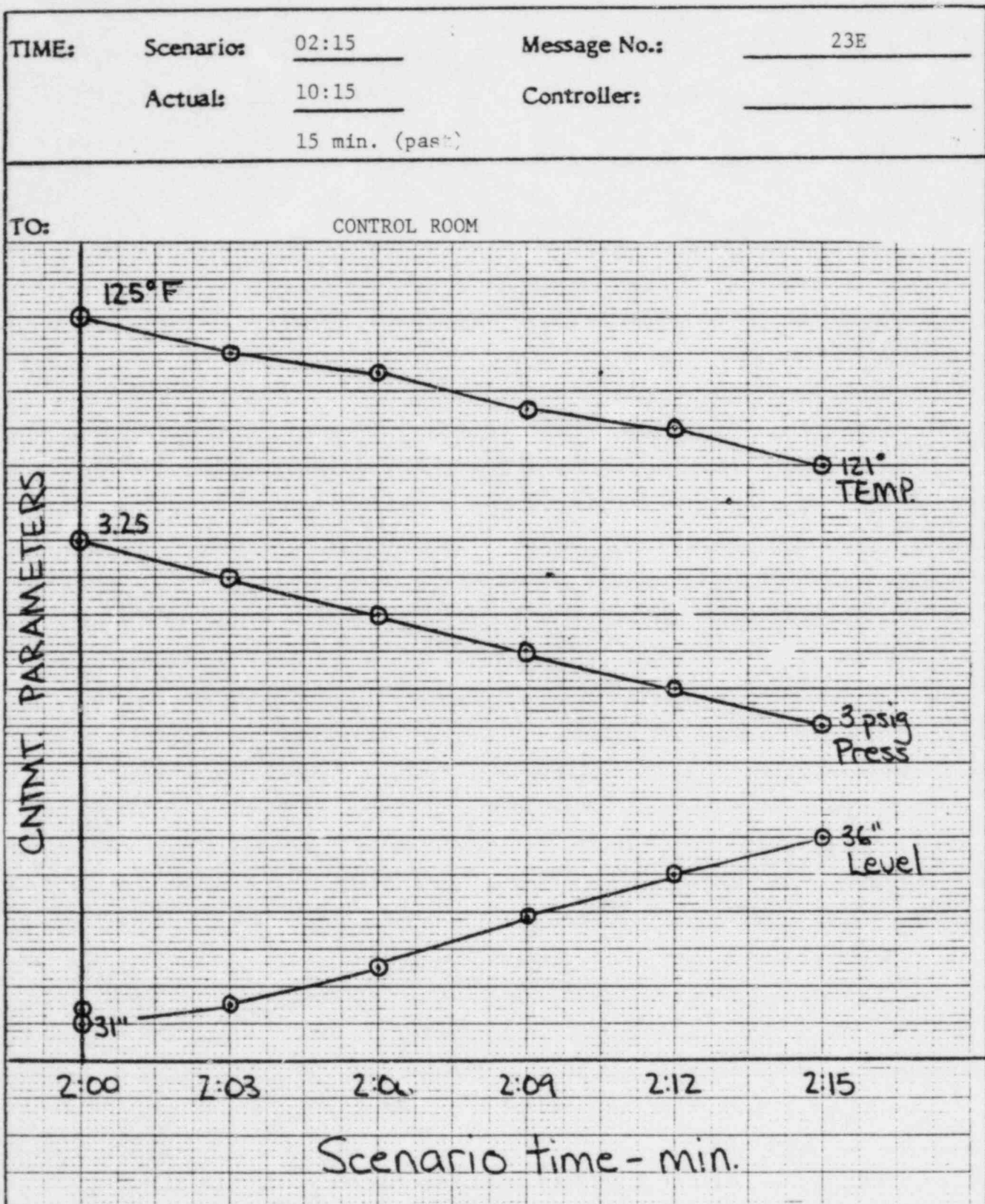
SEPTEMBER 14, 1983



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>02:20+</u>	Message No.:	<u>24</u>
	Actual:	<u>when requested</u>	Controller:	<u></u>
		(10 minutes after previous message)		
TO:	First Aid Team			
LOCATION:	Accident Scene			
MESSAGE:	Vital Signs			
	<u>Victim #1</u>			
	o BP: 90/50			
	o Pulse: 124, thready			
	o Respirations: 24 and shallow			
	* If an I.V. started:			
	o BP: 100/60			
	o Pulse: 112			
	o Respiration: 26 & shallow			
	Becoming responsive.			
	<u>Victim #2</u>			
	o No change.			

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

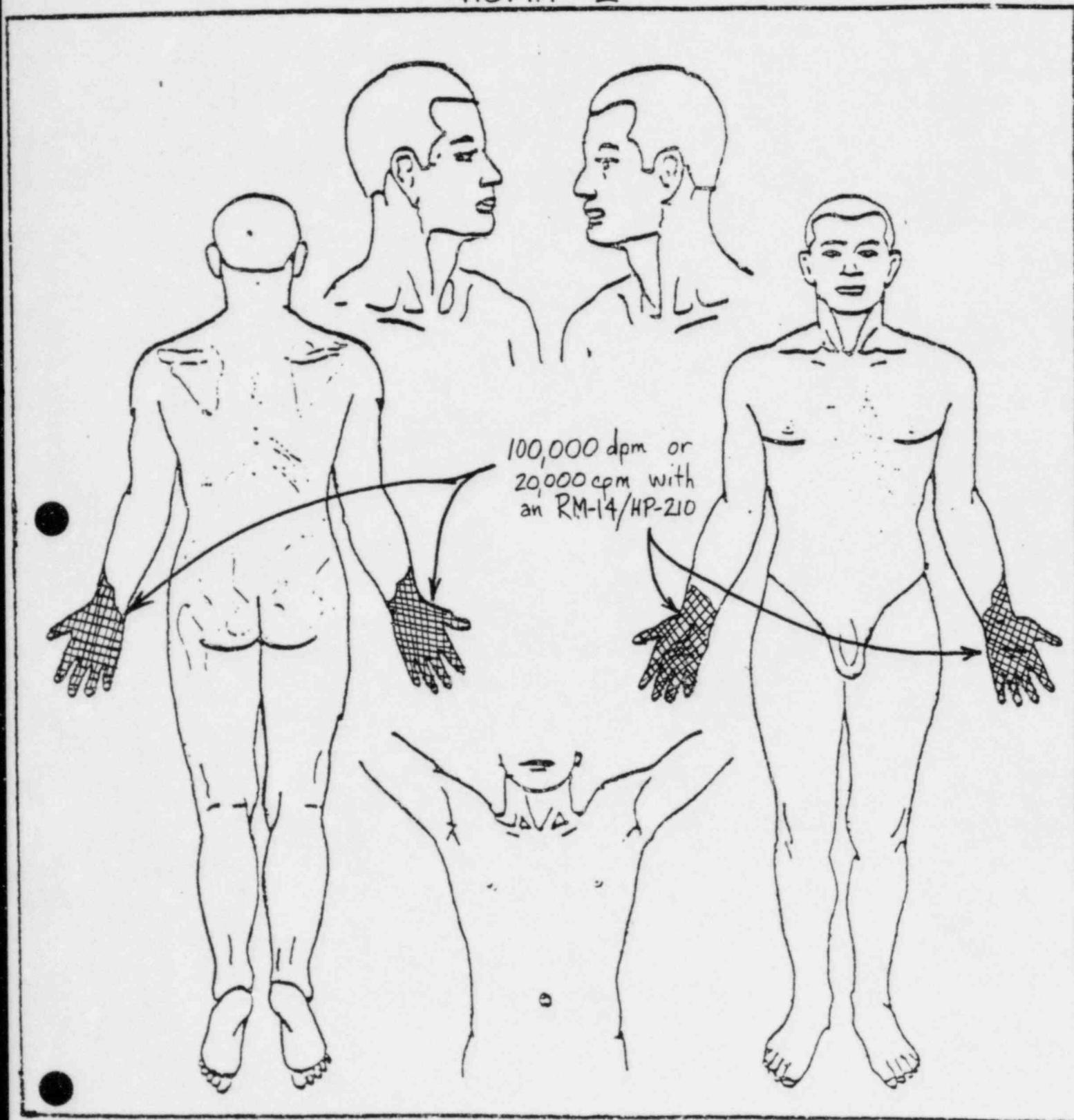
SEPTEMBER 14, 1983

TIME:	Scenario:	<u>02:20±</u>	Message No.:	<u>25</u>
	Actual:	<u>when requested</u>	Controller:	<u></u>
TO:	HP Technician			Do not give message form to HP Tech. Give values as surveys are taken.
LOCATION:	69' Decontamination Room			
MESSAGE:	Injured Victim #2 Contamination Status (See Attached Picture)			
	1st Decontamination 20,000 dpm or 4,000 cpm			
	2nd Decontamination 5,000 dpm or 1,000 cpm			
	Continued decontamination attempts fail.			
	Fixed dose rate = 0.15 m Rad/hr. @ 1/2 inch.			

CONTAMINATED AREAS AS TO LOCATIONS, DEGREE OF CONTAMINATION,

LOCATION OF WOUNDS

VICTIM #2



THIS IS A DRILL

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>02:30</u>	Message No.:	<u>26A</u>
	Actual:	<u>10:30</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 592#

RCS T_h : 430°
 T_c : 425°
 Thermocouple: 436°

Pressurizer Pressure: 360°
 Level : 0

Subcooled Margin : 0

 Pressure: 2.8 psig
Containment Temp. : 120.5°F
 Level : 38"

RWT Level: 0

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>02:30</u>	Message No.:	<u>26B</u>
	Actual:	<u>10:30</u>	Controller:	<u></u>
TO:	Control Room Operator			
LOCATION:	Radiation Monitor Panels			
MESSAGE:	- o Containment high-range monitors (1-RI-5317) reading 45 R/hr. - o Main Vent Monitors (RE-5415) reading: - Unit 1 = 4,800 cpm - Unit 2 = 50 cpm			

THIS IS A DRILL

CALVERT CLIFFS NUCLEAR POWER PLANT

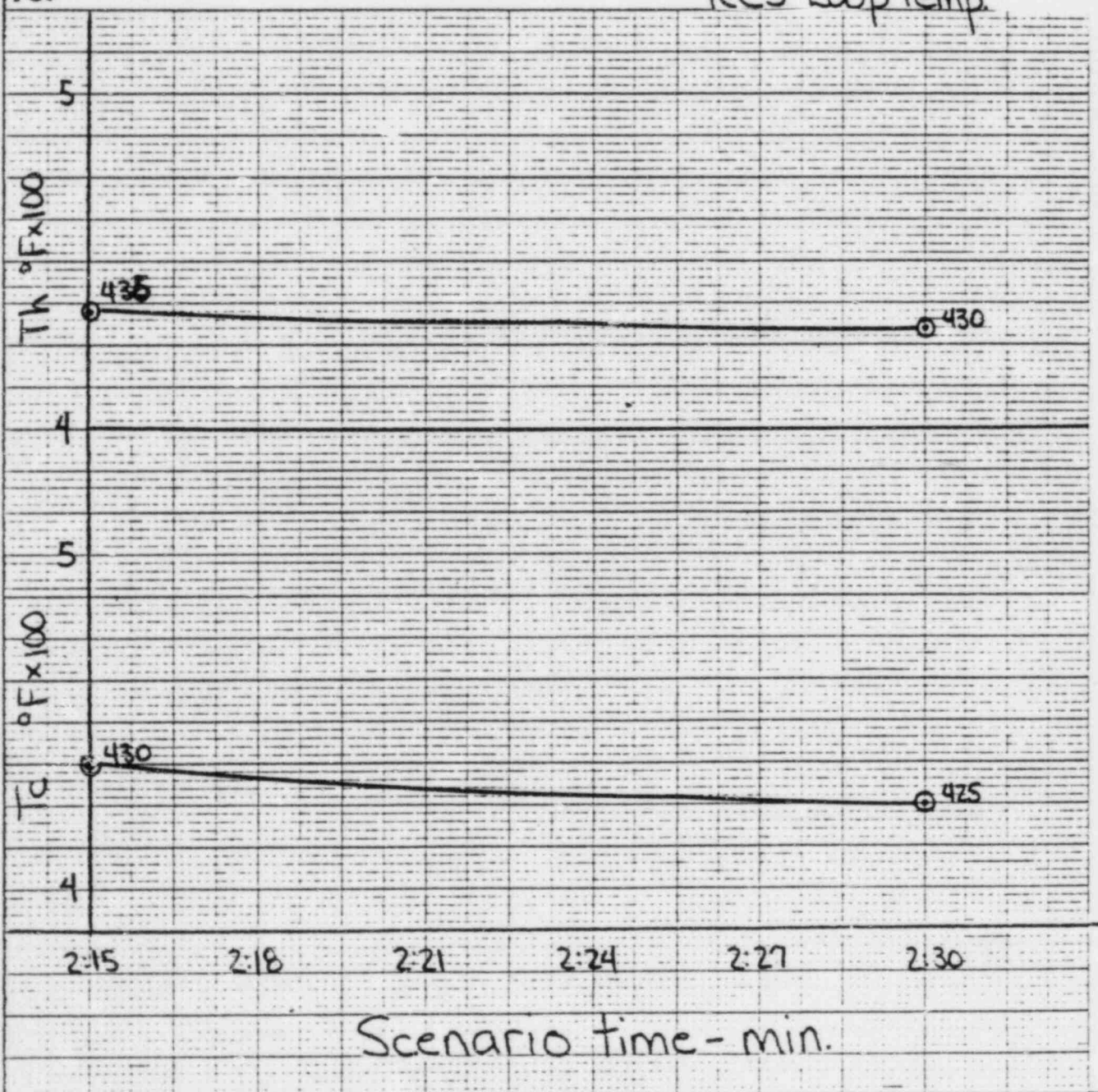
EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	02:30	Message No.:	26C
	Actual:	10:30	Controller:	
		15 min. (past)		

TO: CONTROL ROOM

RCS Loop Temp.

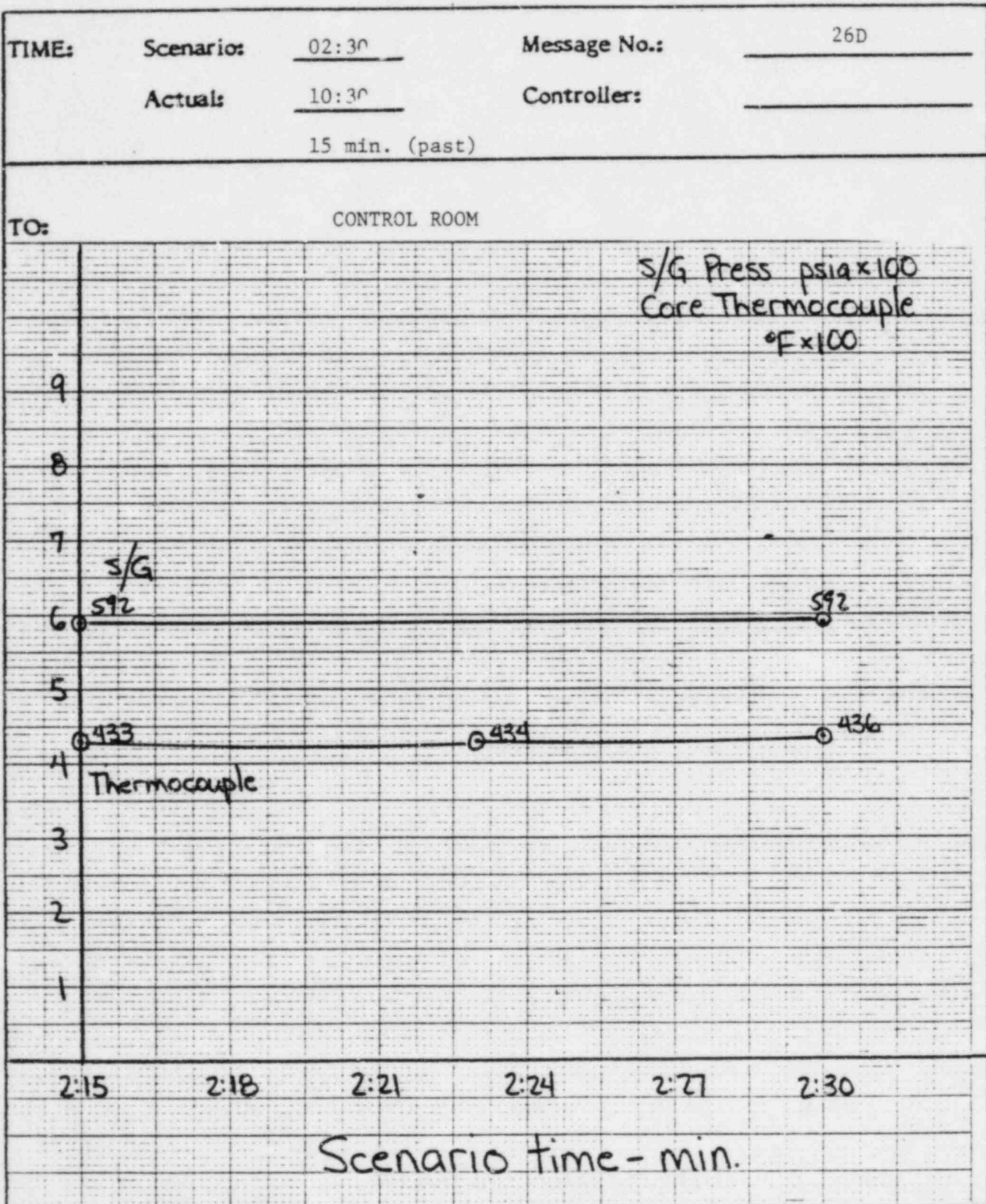


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CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983



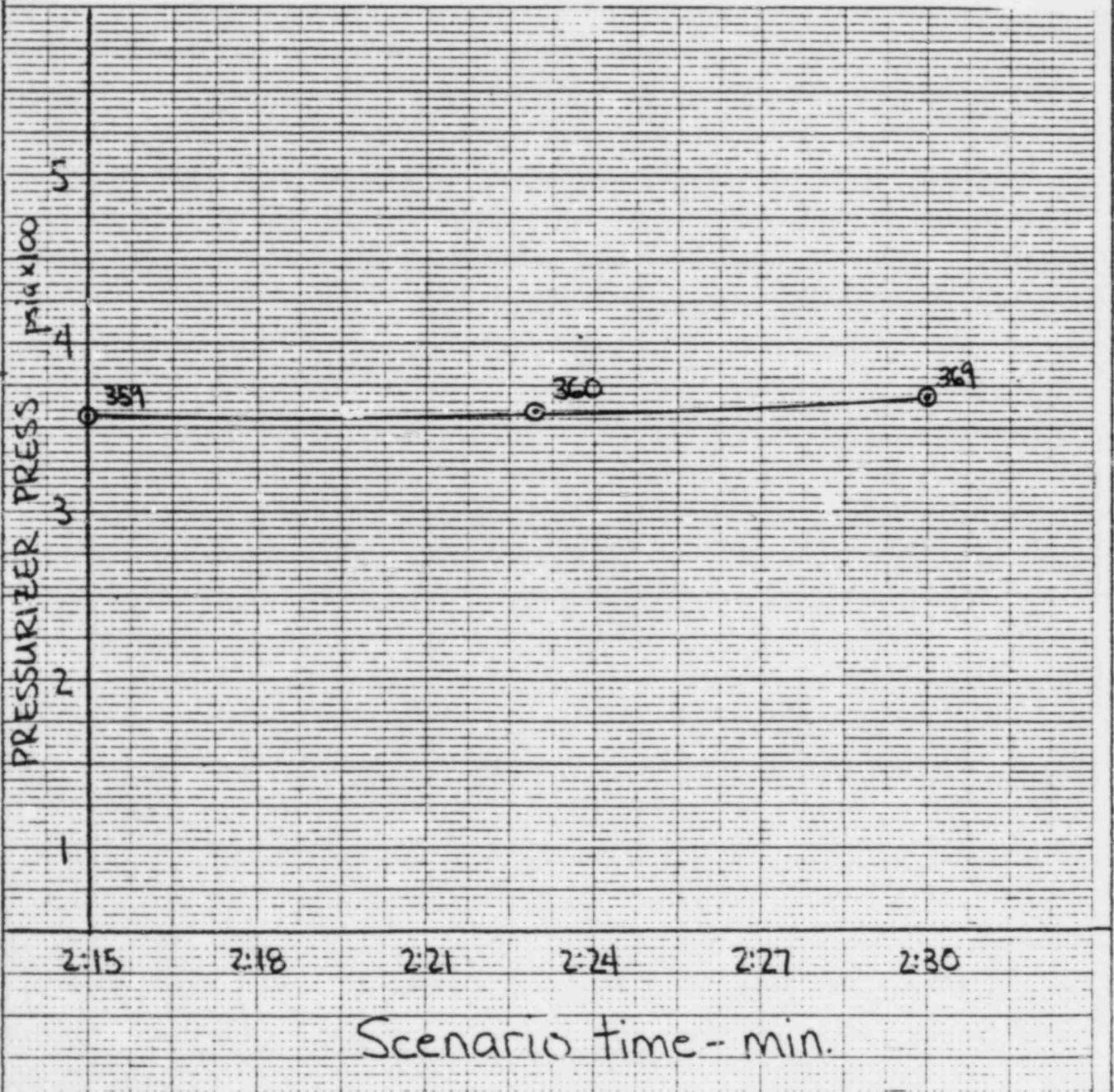
CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>02:30</u>	Message No.:	<u>26E</u>
	Actual:	<u>10:30</u>	Controller:	<u></u>
		15 min. (past)		

TO: CONTROL ROOM



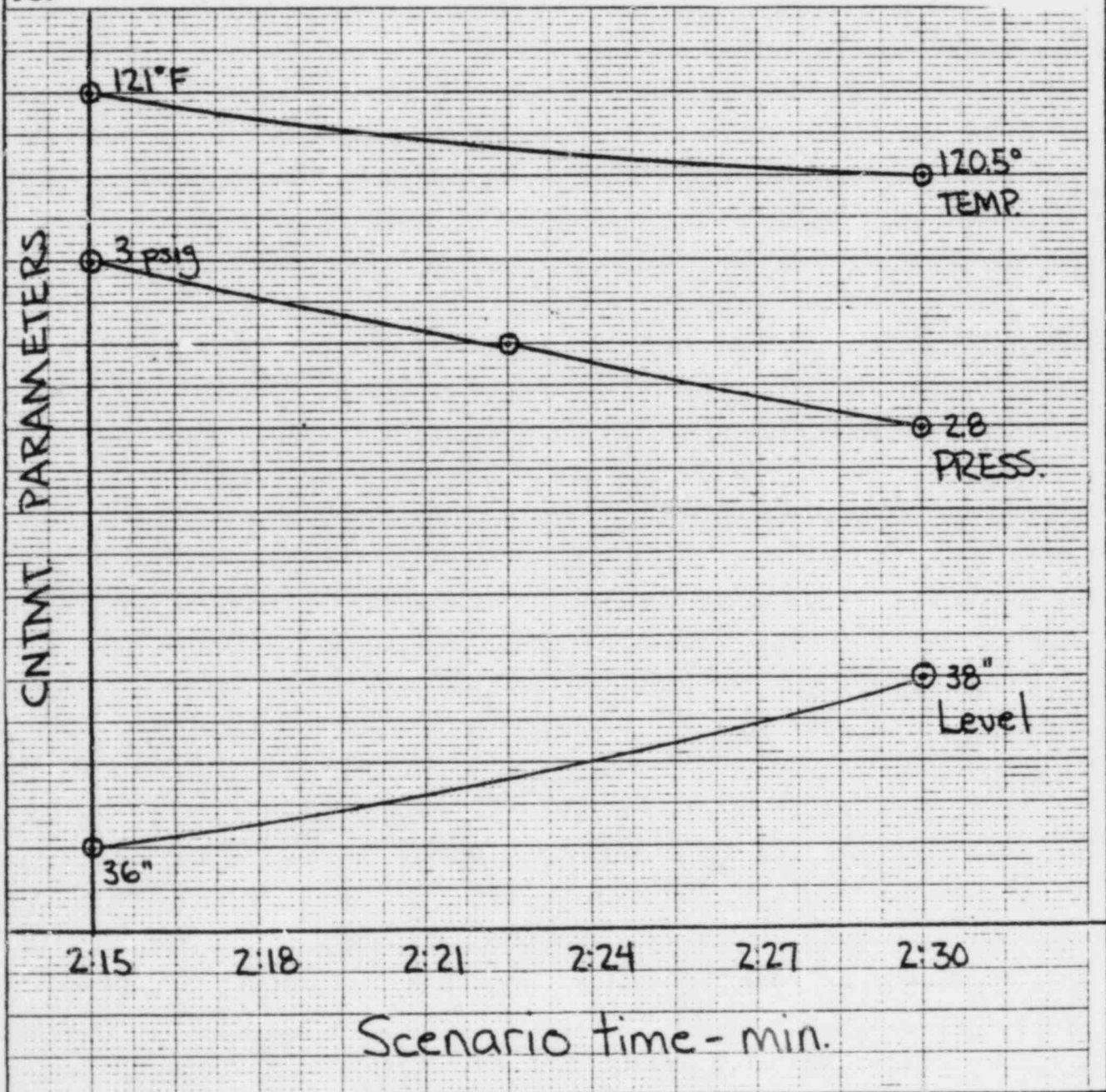
CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	02:30	Message No.:	26F
	Actual:	10:30	Controller:	
		15 min. (past)		

TO: CONTROL ROOM



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>02:45</u>	Message No.:	<u>27A</u>
	Actual:	<u>10:45</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 592#

RCS T_h : 430°
 T_c : 430°
Thermocouple: 612°

Pressurizer Pressure: 390#
Level : 0

Subcooled Margin : 0

Containment Temp. : 120.5°F
Pressure: 2.5 psig
Level : 38.5"

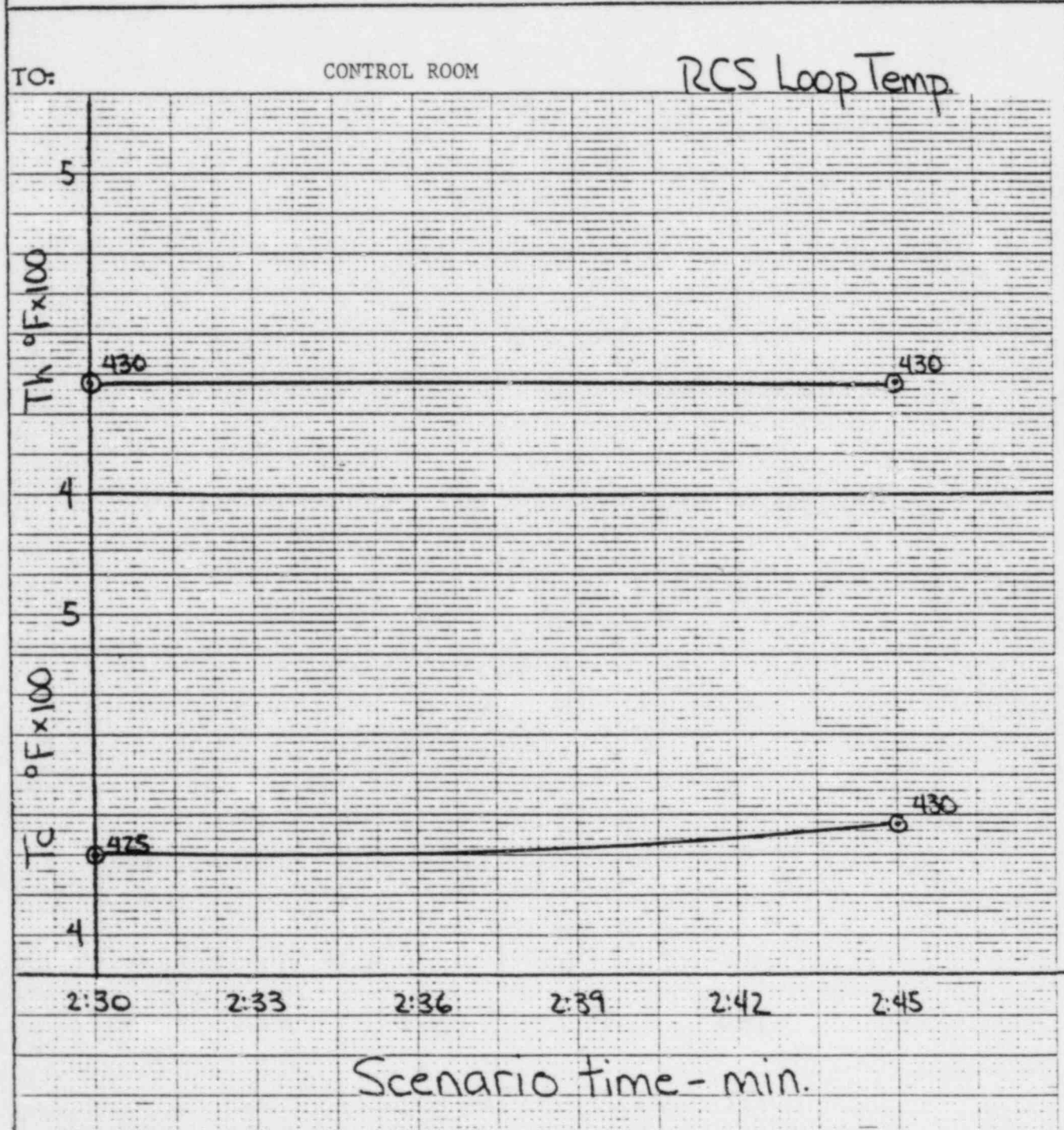
RWT Level: 0

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	02:45	Message No.:	27B
	Actual:	10:45	Controller:	
		15 min. (past)		



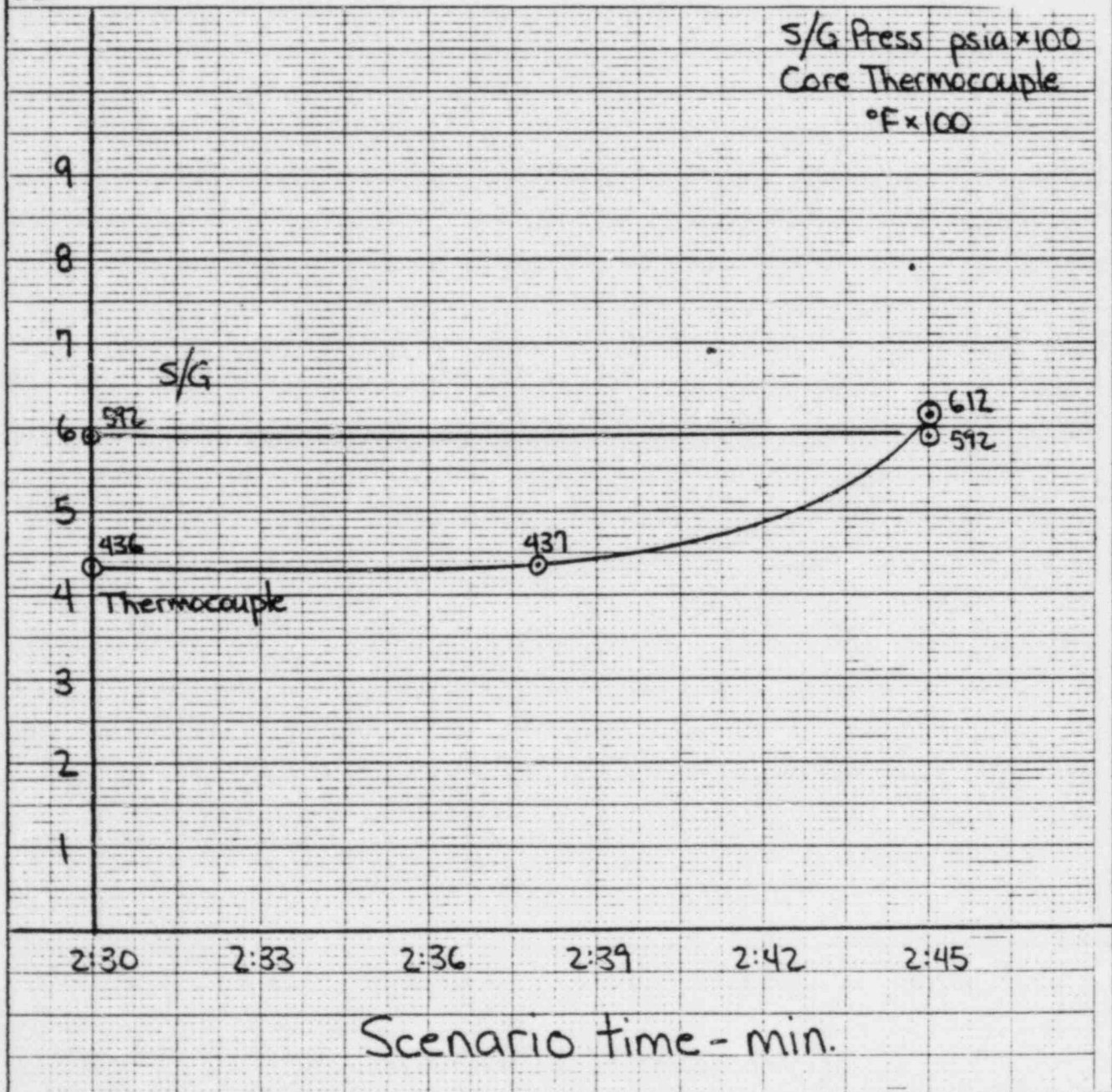
CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	02:45	Message No.:	27C
	Actual:	10:45	Controller:	
		15 min. (past)		

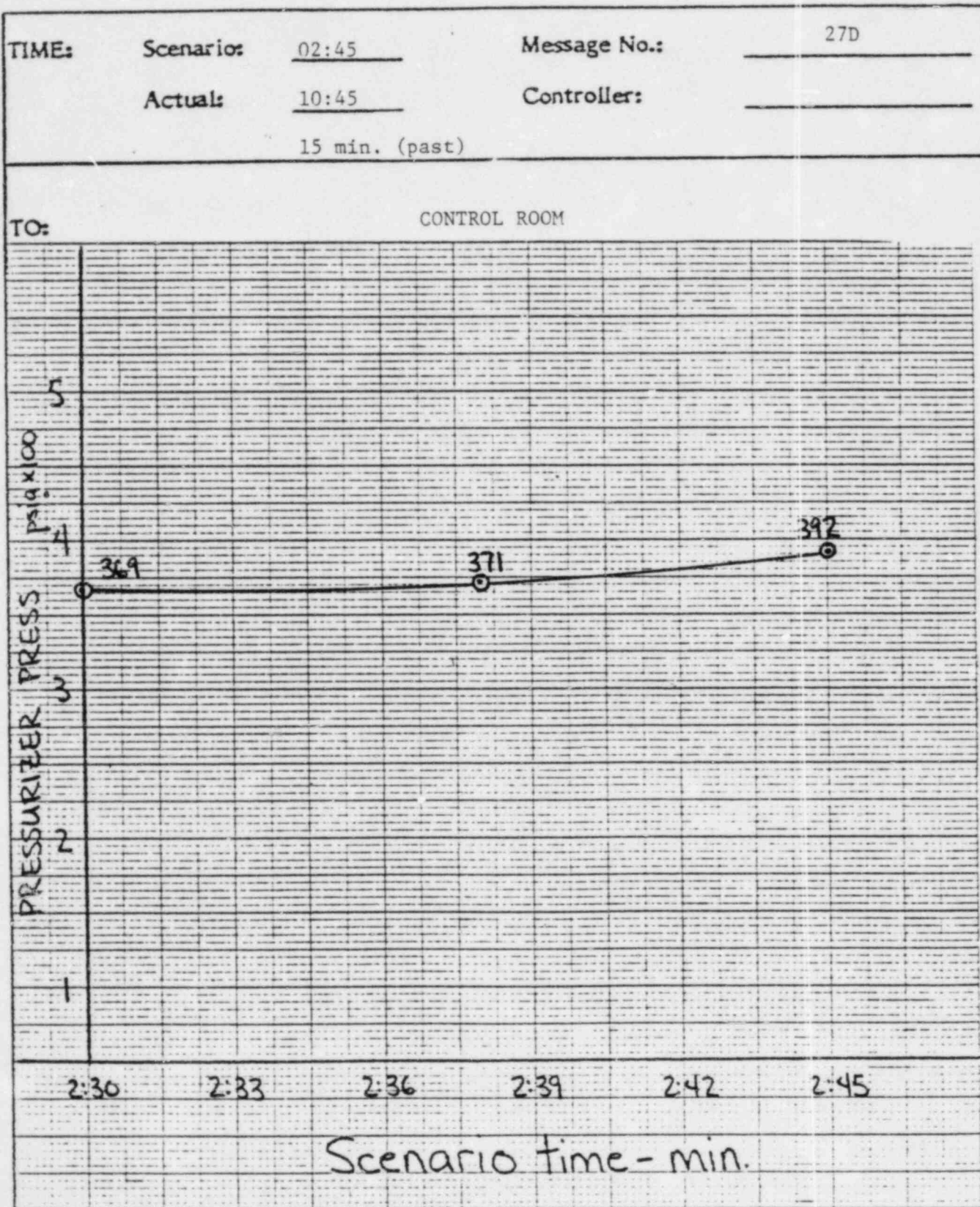
TO: CONTROL ROOM



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

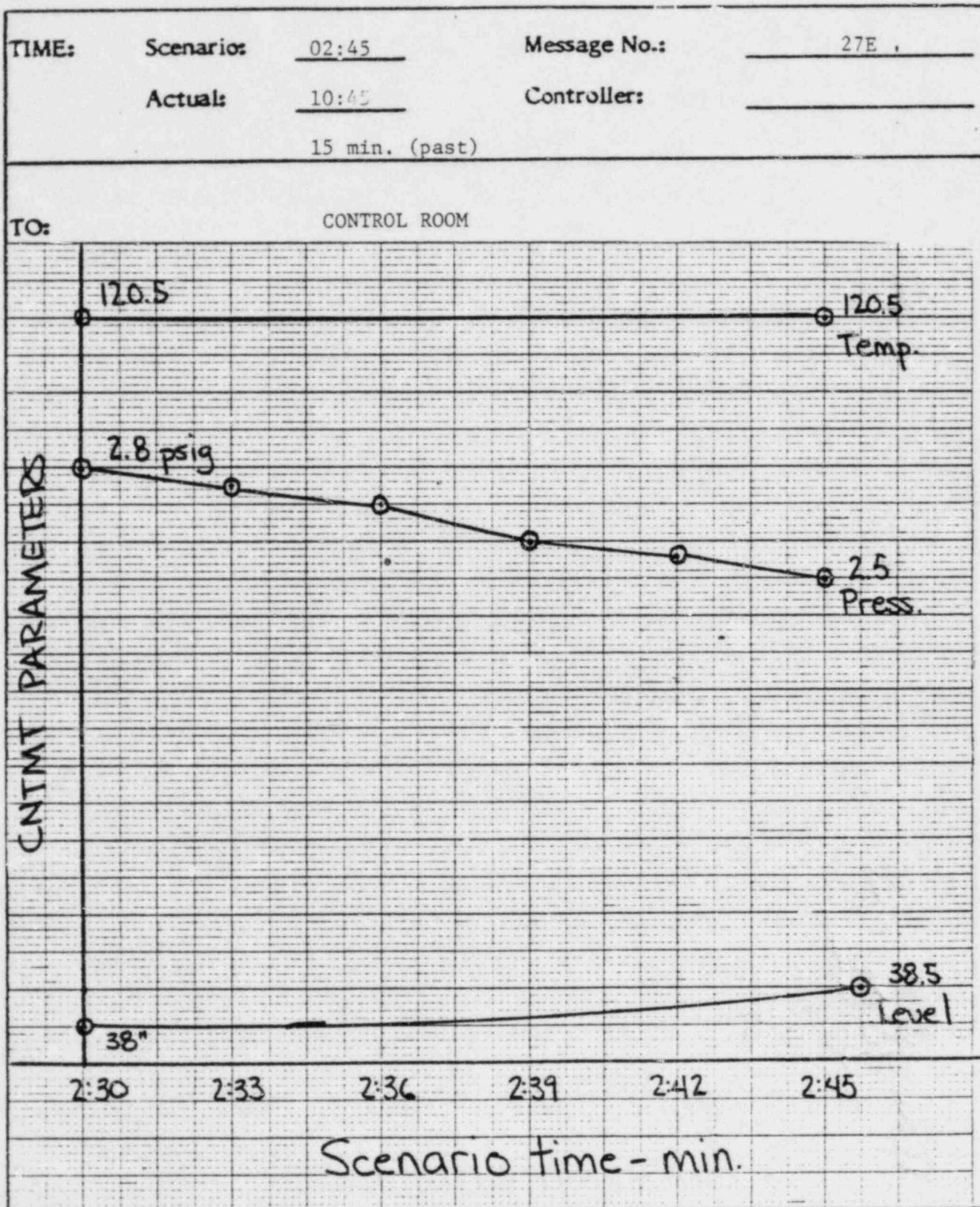
SEPTEMBER 14, 1983



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983



CALVERT CLIFFS NUCLEAR POWER PLANT
EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>03:00</u>	Message No.:	<u>28A</u>
	Actual:	<u>11:00</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 592#

RCS T_h : 428°
 T_c : 440°
 Thermocouple: 940°

Pressurizer Pressure: 220#
 Level : 0

Subcooled Margin : 0

 Pressure: 2.3 psig
Containment Temp. : 121°F
 Level : 38.5"

RWT Level: 0

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CALVERT CLIFFS NUCLEAR POWER PLANT
EMERGENCY RESPONSE EXERCISE
SEPTEMBER 14, 1983

TIME:	Scenario:	<u>03:00</u>	Message No.:	<u>28B</u>
	Actual:	<u>11:00</u>	Controller:	<u></u>

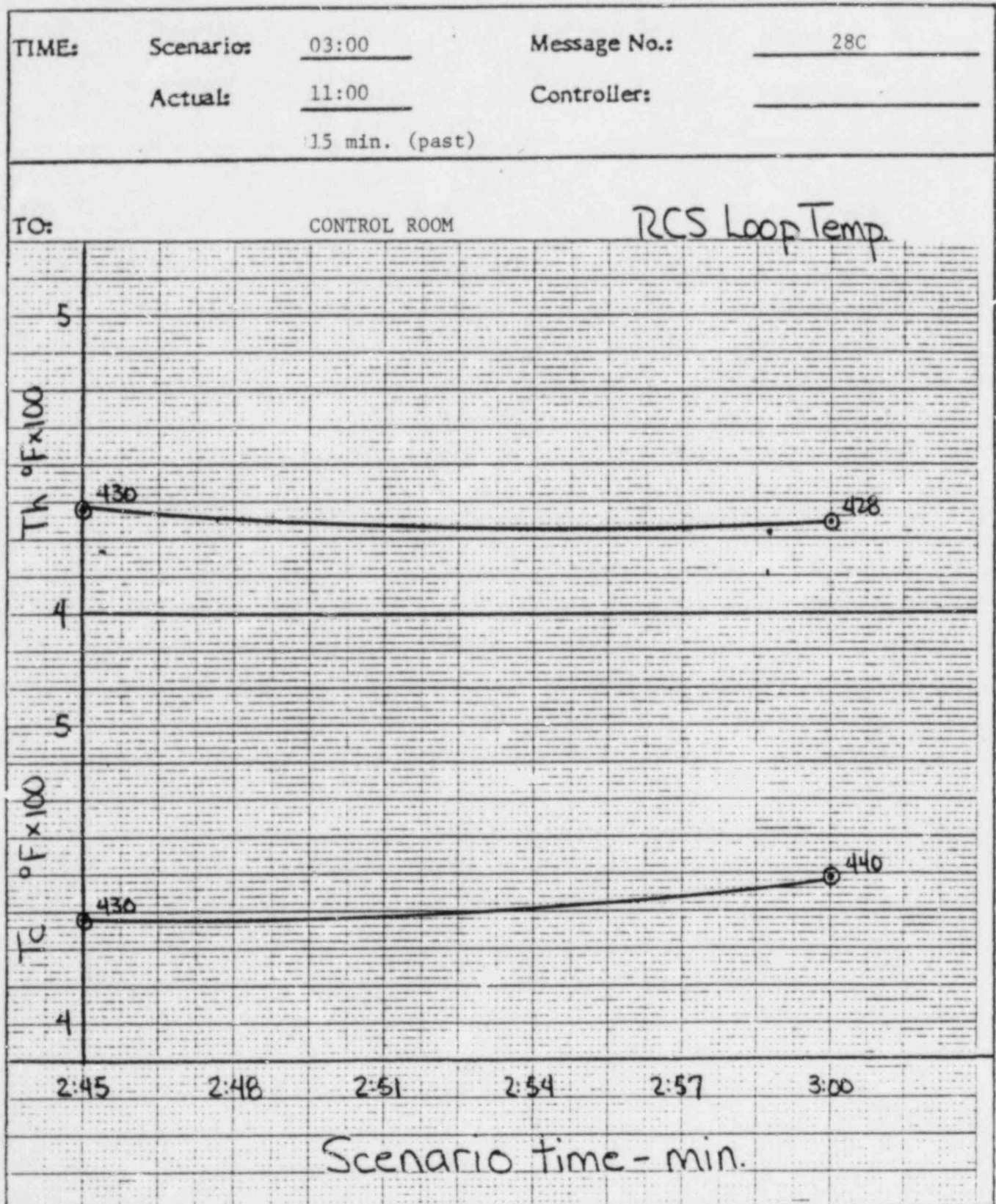
TO:	Control Room Operator
LOCATION:	Radiation Monitor Panels
MESSAGE:	- o Containment high-range monitors (1-RI-5317) reading 39 R/hr. - o Main Vent Monitors (RE-5415) reading: - Unit 1 = 4,700 cpm - Unit 2 = 100 cpm - o Meteorological Conditions: - Wind Direction (from) 25° - Wind Speed 6 mph - Temperature Differential 0.4°F

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CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario: 03:00±	Message No.: 29
	Actual: when requested	Controller:

TO:	HP Technician	Do not give message form to HP Tech. Provide information as surveys are performed.
LOCATION:	Hospital	
MESSAGE:	Injured Victim #1 Contamination Status (See Attached Picture)	

CHEST WOUND (impaled with metal)

RM-14/HP-210 reads offscale.
if technician uses another survey meter:

20 m Rads/hr.

ARM WOUND (impaled with metal)

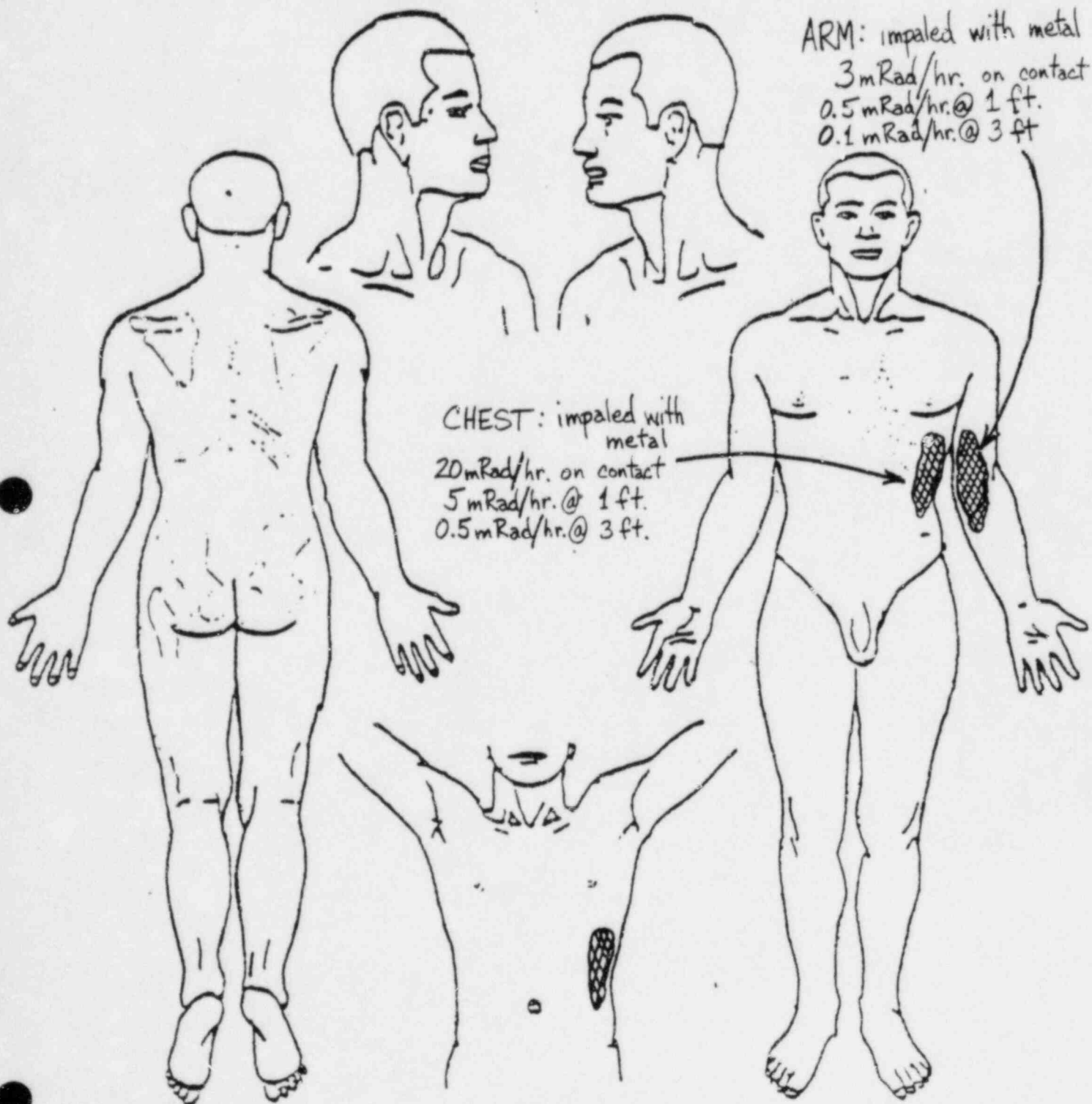
3 m Rads/hr.

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CONTAMINATED AREAS AS TO LOCATIONS, DEGREE OF CONTAMINATION,

LOCATION OF WOUNDS

VICTIM #1



CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	03:05±	Message No.:	30
	Actual:	when requested	Controller:	

TO:	HP Technician	Do not give message form to HP Tech. Provide contamination levels as decontaminations are completed.
LOCATION:	Hospital	
MESSAGE:	Injured Victim #1 Contamination Status (After metal fragments removed from wound)	

CHEST

100,000 dpm
20,000 cpm

1st Decontamination
Flood wound - 4,000 cpm

2nd Decontamination
Flood wound - 1,000 cpm

3rd Decontamination
Flood wound - becomes clean

ARM

80,000 dpm
16,000 cpm

1st Decontamination
Flood wound - 2,000 cpm

2nd Decontamination
Flood wound - 1,000 cpm

Continued decontamination attempts fail.
Fixed dose rate in wound = 0.15 m Rad/hr. @ ½ inch.

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>03:15</u>	Message No.:	<u>31A</u>
	Actual:	<u>11:15</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 592#

RCS T_h : 426°
 T_c : 453°
Thermocouple: 1120°

Pressurizer Pressure: 210#
Level : 0

Subcooled Margin : 0

Containment Pressure: 2.25 psig
Temp. : 121.5°F
Level : 39"

RWT Level: 0

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SEPTEMBER 14, 1983

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CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>03:30</u>	Message No.:	<u>37A</u>
	Actual:	<u>11:30</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 592#

RCS T_h : 425°
 T_c : 465°
 Thermocouple: 1145°

Pressurizer Pressure: 200#
 Level - : 0

Subcooled Margin : 0

 Pressure: 2.2 psig
Containment Temp. : 121.5°F
 Level : 39"

RWT Level: 0

CALVERT CLIFFS NUCLEAR POWER PLANT
EMERGENCY RESPONSE EXERCISE
SEPTEMBER 14, 1983

TIME:	Scenario:	<u>03:45</u>	Message No.:	<u>33</u>
	Actual:	<u>11:45</u>	Controller:	<u></u>

TO:	Control Room Operator
LOCATION:	Control Room
MESSAGE:	Plant Parameters Unit 1
S/G Pressure: 592#	
RCS T_h : 425°	
T_c : 465°	
Thermocouple: 1192°	
Pressurizer Pressure: 230#	
Level : 0	
Subcooled Margin : 0	
Pressure: 2.2 psig	
Containment Temp. : 122°F	
Level : 39.5"	
RWT Level: 0	

CALVERT CLIFFS NUCLEAR POWER PLANT
EMERGENCY RESPONSE EXERCISE
SEPTEMBER 14, 1983

TIME:	Scenario:	<u>04:00</u>	Message No.:	<u>34A</u>
	Actual:	<u>12:00</u>	Controller:	<u></u>
TO:	Control Room Operator			
LOCATION:	Control Room			
MESSAGE:	- o All level four incore rhodium detectors are in low alarm on alarm CRT. - o Meteorological Conditions: Wind Direction from 345° Wind Speed: 10 mph Differential Temperature: +1.6°F			

CALVERT CLIFFS NUCLEAR POWER PLANT
EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>04:00</u>	Message No.:	<u>34B</u>
	Actual:	<u>12:00</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 592#

Th: 424°
RCS Tc: 470°
Thermocouple: 1240°

Pressurizer Pressure: 180#
Level : 0

Subcooled Margin : 0

Pressure: 2.2 psig
Containment Temp. : 122°F
Level : 39.5"

RWT Level: 0

CALVERT CLIFFS NUCLEAR POWER PLANT
EMERGENCY RESPONSE EXERCISE
SEPTEMBER 14, 1983

TIME:	Scenario:	<u>04:00</u>	Message No.:	<u>34C</u>
	Actual:	<u>12:00</u>	Controller:	<u></u>

TO:	Control Room Operator										
LOCATION:	Radiation Monitor Panels										
MESSAGE:	- o Containment high-range monitors (1-RI-5317) reading 1.3E5 - o Main Vent Monitors (RE-5415) reading: - Unit 1 = Offscale - Unit 2 = 1,000 cpm - o Selected Area Monitors:<table border="1"><thead><tr><th><u>Area</u></th><th><u>Reading</u></th></tr></thead><tbody><tr><td>Chem. Lab</td><td>50 mR/hr</td></tr><tr><td>Spent Fuel Pool</td><td>1100 mR/hr</td></tr><tr><td>Drum Storage (45')</td><td>100 mR/hr</td></tr><tr><td>Unit 1 Sample Room</td><td>170 mR/hr</td></tr></tbody></table> - o Meteorological Conditions: - Wind Direction (from) 350° - Wind Speed 10 mph - Temperature Differential +1.6°F	<u>Area</u>	<u>Reading</u>	Chem. Lab	50 mR/hr	Spent Fuel Pool	1100 mR/hr	Drum Storage (45')	100 mR/hr	Unit 1 Sample Room	170 mR/hr
<u>Area</u>	<u>Reading</u>										
Chem. Lab	50 mR/hr										
Spent Fuel Pool	1100 mR/hr										
Drum Storage (45')	100 mR/hr										
Unit 1 Sample Room	170 mR/hr										

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CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>04:15</u>	Message No.:	<u>35</u>
	Actual:	<u>12:15</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 592#

RCS T_h : 424°
 T_c : 473°
 Thermocouple: 1490°

Pressurizer Pressure: 120#
 Level : 0

Subcooled Margin : 0

 Pressure: 2.2 psig
Containment Temp. : 122.5°F
 Level : 40"

RWT Level: 0

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>04:30</u>	Message No.:	<u>36A</u>
	Actual:	<u>12:30</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 592#

RCS T_h : 423°
 T_c : 475°
Thermocouple: 1378°

Pressurizer Pressure: 220#
Level : 0

Subcooled Margin : 0

Containment Temp. : 2.25 psig
Level : 123°F
: 40"

RWT Level: 0

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>04:30</u>	Message No.:	<u>36B</u>
	Actual:	<u>12:30</u>	Controller:	<u></u>
TO:	Control Room Operator			
LOCATION:	Radiation Monitor Panels			
MESSAGE:	- o Containment high-range monitors (1-RI-5317) reading 1.3E5 - o Main Vent Monitors (RE-5415) reading: Unit 1 = Offscale Unit 2 = 1,000 cpm			
THIS IS A COPY				

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>04:45</u>	Message No.:	<u>37</u>
	Actual:	<u>12:45</u>	Controller:	<u> </u>

TO:	Control Room Operator
LOCATION:	Control Room
MESSAGE:	Plant Parameters Unit 1

S/G Pressure: 592#

Th: 420°
RCS Tc: 480°
Thermocouple: 995°

Pressurizer Pressure: 315#
Level : 0

Subcooled Margin : 0

Pressure: 2.2 psig
Containment Temp. : 123°F
Level : 40"

RWT Level: 0

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>05:00</u>	Message No.:	<u>38A</u>
	Actual:	<u>13:00</u>	Controller:	<u></u>

TO:	Control Room Operator
LOCATION:	Control Room
MESSAGE:	Plant Parameters Unit 1

S/G Pressure: 592#

RCS T_h : 420°
 T_c : 485°
 Thermocouple: 1070°

Pressurizer Pressure: 140#
 Level : 0

Subcooled Margin : 0

 Pressure: 2.3 psig
Containment Temp. : 123°F
 Level : 40"

RWT Level: 0

THIS IS A DRILL

CALVERT CLIFFS NUCLEAR POWER PLANT
EMERGENCY RESPONSE EXERCISE
SEPTEMBER 14, 1983

TIME:	Scenario: <u>05:00</u>	Message No.: <u>38B</u>	
	Actual: <u>13:00</u>	Controller: _____	

TO:	Control Room Operator										
LOCATION:	Radiation Monitor Panels										
MESSAGE:	- o Containment high-range monitors (1-RI-5317) reading 1,2 E5 - o Main Vent Monitors (RE-5415) reading: - Unit 1 = Offscale - Unit 2 = 1,000 cpm - o Selected Area Monitors:<table style="margin-left: 40px; border: none;"><thead><tr><th style="text-align: left;"><u>Area</u></th><th style="text-align: left;"><u>Reading</u></th></tr></thead><tbody><tr><td>Chem Lab.</td><td>44 mR/hr</td></tr><tr><td>Spent Fuel Pool</td><td>9680 mR/hr</td></tr><tr><td>Unit 1 Sample Room (45')</td><td>150 mR/hr</td></tr><tr><td>Drum Storage (PASS) (45')</td><td>90 mR/hr</td></tr></tbody></table> - o Meteorological Conditions: - Wind Direction (from) 280° - Wind Speed 11 mph - Temperature Differential +3.2°F	<u>Area</u>	<u>Reading</u>	Chem Lab.	44 mR/hr	Spent Fuel Pool	9680 mR/hr	Unit 1 Sample Room (45')	150 mR/hr	Drum Storage (PASS) (45')	90 mR/hr
<u>Area</u>	<u>Reading</u>										
Chem Lab.	44 mR/hr										
Spent Fuel Pool	9680 mR/hr										
Unit 1 Sample Room (45')	150 mR/hr										
Drum Storage (PASS) (45')	90 mR/hr										

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CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>05:00</u>	Message No.:	<u>38C</u>
	Actual:	<u>13:00</u>	Controller:	<u></u>
TO:	Mechanical Maintenance Team Leader			
LOCATION:	#12 LPSI Pump Repairs			
MESSAGE:	Repairs completed. Pump returned to service.			
THIS IS A DRILL				

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>05:15</u>	Message No.:	<u>39</u>
	Actual:	<u>13:15</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 540#

RCS T_h : 425°
 T_c : 455°
 Thermocouple: 1120°

Pressurizer Pressure: 140#
 Level : 55"

Subcooled Margin : 2.5°

 Pressure: 2.25 psig
Containment Temp. : 122°
 Level : 40"

RWT Level: 0

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CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>05:30</u>	Message No.:	<u>40A</u>
	Actual:	<u>13:30</u>	Controller:	<u></u>

TO:	Control Room Operator
LOCATION:	Control Room
MESSAGE:	Plant Parameters Unit 1

S/G Pressure: 500#

RCS T_h : 440°
 T_c : 425°
Thermocouple: 1150°

Pressurizer Pressure: 150#
Level : 116"

Subcooled Margin : 5°

Containment Temp. : 2.2 psig
Level : 122°
 : 40"

RWT Level: 0

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CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>05:30</u>	Message No.:	<u>40B</u>
	Actual:	<u>13:30</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Radiation Monitor Panels

MESSAGE: o Containment high-range monitors (1-RI-5317) reading 1.25E5 R/hr.

o Main Vent Monitors (RE-5414) reading:
Unit 1 = 1,200 cpm
Unit 2 = 100 cpm

o Selected Area Monitors:

<u>Area</u>	<u>Reading</u>
Chem Lab	30 mR/hr
Spent Fuel Pool	6200 mR/hr
Unit 1 Sample Room (45')	100 mR/hr
45' Drum Storage (PASS)	60 mR/hr

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>05:45</u>	Message No.:	<u>41</u>
	Actual:	<u>13:45</u>	Controller:	<u></u>

TO:	Control Room Operator
LOCATION:	Control Room
MESSAGE:	Plant Parameters Unit 1

S/G Pressure: 463#

Th: 450°
RCS Tc: 400°
Thermocouple: 1130°

Pressurizer Pressure: 170#
Level : 160"

Subcooled Margin : 9°

Pressure: 2.1 psig
Containment Temp. : 121°
Level : 40"

RWT Level: 0

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>06:00</u>	Message No.:	<u>42A</u>
	Actual:	<u>14:00</u>	Controller:	<u> </u>
TO:	Control Room Operator			
LOCATION:	Control Room			
MESSAGE:	Plant Parameters Unit 1			
S/G Pressure: 440#				
Th: 455°				
RCS T _c : 375°				
Thermocouple: 1085°				
Pressurizer Pressure: 200#				
Level : 210"				
Subcooled Margin : 13°				
Pressure: 2 psig				
Containment Temp. : 120°				
Level : 40"				
RWT Level: 0				

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CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>06:00</u>	Message No.:	<u>42B</u>
	Actual:	<u>14:00</u>	Controller:	<u></u>

TO:	Control Room Operator												
LOCATION:	Radiation Monitor Panels												
MESSAGE:	- o Containment high-range monitors (1-RI-5317) reading 1.1E5 R/hr. - o Main Vent Monitors (RE-5415) reading: - Unit 1 = 50 cpm - Unit 2 = 50 cpm - o Selected Area Monitors: <table border="1"> <thead> <tr> <th><u>Area</u></th> <th><u>Reading</u></th> </tr> </thead> <tbody> <tr> <td>Chem Lab</td> <td>140 mR/hr</td> </tr> <tr> <td>Spent Fuel Pool</td> <td>3100 mR/hr</td> </tr> <tr> <td>Unit 1 Sample Room (45')</td> <td>50 mR/hr</td> </tr> <tr> <td>45' Drum Storage (PASS)</td> <td>60 mR/hr</td> </tr> </tbody> </table> - o Meteorological Conditions: - Wind Direction (from) 270° - Wind Speed 9 mph - Temperature Differential +3.6°F			<u>Area</u>	<u>Reading</u>	Chem Lab	140 mR/hr	Spent Fuel Pool	3100 mR/hr	Unit 1 Sample Room (45')	50 mR/hr	45' Drum Storage (PASS)	60 mR/hr
<u>Area</u>	<u>Reading</u>												
Chem Lab	140 mR/hr												
Spent Fuel Pool	3100 mR/hr												
Unit 1 Sample Room (45')	50 mR/hr												
45' Drum Storage (PASS)	60 mR/hr												

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CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>06:15</u>	Message No.:	<u>43</u>
	Actual:	<u>14:15</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 460#

Th: 430°

RCS Tc: 360°

Thermocouple: 935°

Pressurizer Pressure: 240 psia

Level : 255"

Subcooled Margin : 17°

Pressure: 2 psig

Containment Temp. : 120°

Level : 40"

RWT Level: 0

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>06:30</u>	Message No.:	<u>44A</u>
	Actual:	<u>14:30</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 500#

RCS T_h : 385°
 T_c : 340°
 Thermocouple: 805°

Pressurizer Pressure: 260#
 Level : 300"

Subcooled Margin : 22°

 Pressure: 2.05 psig
Containment Temp. : 120°
 Level : 40"

RWT Level: 0

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>06:30</u>	Message No.:	<u>44B</u>
	Actual:	<u>14:30</u>	Controller:	<u></u>

TO:	Control Room Operator												
LOCATION:	Radiation Monitor Panels												
MESSAGE:	- o Containment high-range monitors (1-RI-5317) reading 1.05E5 - o Main Vent Monitors (RE-5415) reading: - Unit 1 = 50 cpm - Unit 2 = 50 cpm - o Selected Area Monitors:<table border="0" style="margin-left: 40px;"><thead><tr><th style="text-align: left;"><u>Area</u></th><th style="text-align: left;"><u>Reading</u></th></tr></thead><tbody><tr><td>Chem Lab</td><td>11 mR/hr</td></tr><tr><td>Spent Fuel Pool</td><td>2400 mR/hr</td></tr><tr><td>Unit 1 Sample Room (45')</td><td>40 mR/hr</td></tr><tr><td>45'Drum Storage (PASS)</td><td>20 mR/hr</td></tr></tbody></table>			<u>Area</u>	<u>Reading</u>	Chem Lab	11 mR/hr	Spent Fuel Pool	2400 mR/hr	Unit 1 Sample Room (45')	40 mR/hr	45'Drum Storage (PASS)	20 mR/hr
<u>Area</u>	<u>Reading</u>												
Chem Lab	11 mR/hr												
Spent Fuel Pool	2400 mR/hr												
Unit 1 Sample Room (45')	40 mR/hr												
45'Drum Storage (PASS)	20 mR/hr												

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CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>06:45</u>	Message No.:	<u>45</u>
	Actual:	<u>14:45</u>	Controller:	<u></u>

TO:	Control Room Operator
LOCATION:	Control Room
MESSAGE:	Plant Parameters Unit 1
S/G Pressure: 450#	
RCS T_h : 350°	
T_c : 320°	
Thermocouple: 720°	
Pressurizer Pressure: 270#	
Level : 350"	
Subcooled Margin : 28°	
Pressure: 1.95 psig	
Containment Temp. : 120°	
Level : 40"	
RWT Level: 0	

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CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>07:00</u>	Message No.:	<u>46A</u>
	Actual:	<u>15:00</u>	Controllers:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 400#

Th: 325°

RCS T_c: 300°

Thermocouple: 640°

Pressurizer Pressure: 280#

Level : 350"

Subcooled Margin : 34°

Pressure: 2 psig

Containment Temp. : 120°

Level : 40"

RWT Level: 0

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>07:00</u>	Message No.:	<u>46B</u>
	Actual:	<u>15:00</u>	Controller:	<u></u>

TO:	Control Room Operator										
LOCATION:	Radiation Montior Panels										
MESSAGE:	- o Containment high-range monitors (1-RI-5317) reading 9.5E4 R/hr - o Main Vent Monitors (RE-5415) reading: - Unit 1 = 50 cpm - Unit 2 = 50 cpm - o Selected Area Monitors:<table border="1"><thead><tr><th><u>Area</u></th><th><u>Reading</u></th></tr></thead><tbody><tr><td>Chem Lab</td><td>10 mR/hr</td></tr><tr><td>Spent Fuel Pool</td><td>2200 mR/hr</td></tr><tr><td>Unit 1 Sample Room (45')</td><td>30 mR/hr</td></tr><tr><td>45' Drum Storage (PASS)</td><td>20 mR/hr</td></tr></tbody></table> - o Meteorological Conditions: - Wind Direction (from) 270° - Wind Speed 7 mph - Temperature Differential +3.0°F	<u>Area</u>	<u>Reading</u>	Chem Lab	10 mR/hr	Spent Fuel Pool	2200 mR/hr	Unit 1 Sample Room (45')	30 mR/hr	45' Drum Storage (PASS)	20 mR/hr
<u>Area</u>	<u>Reading</u>										
Chem Lab	10 mR/hr										
Spent Fuel Pool	2200 mR/hr										
Unit 1 Sample Room (45')	30 mR/hr										
45' Drum Storage (PASS)	20 mR/hr										

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>07:15</u>	Message No.:	<u>47</u>
	Actual:	<u>15:15</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 350#

RCS T_h : 300°
 T_c : 285°
Thermocouple: 570°

Pressurizer Pressure: 260#
Level : 350"

Subcooled Margin : 40°

Containment Temp. : 130°
Level : 40"

RWT Level: 0

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>07:30</u>	Message No.:	<u>48A</u>
	Actual:	<u>15:30</u>	Controller:	<u></u>

TO:	Control Room Operator
LOCATION:	Control Room
MESSAGE:	Plant Parameters Unit 1
S/G Pressure: 310#	
Th: 280°	
RCS	Tc: 275°
Thermocouple: 500°	
Pressurizer Pressure: 240#	
Level : 350"	
Subcooled Margin : 46°	
Pressure: 1.95 psig	
Containment Temp.	: 120°
Level	: 40.5"
RWT Level: 0	

CONFIDENTIAL

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>07:30</u>	Message No.:	<u>48B</u>
	Actual:	<u>15:30</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Radiation Monitor Panels

MESSAGE:

- o Containment high-range monitors (1-RI-5317) reading 8.3E4
- o Main Vent Monitors (RE-5415) reading:
 - Unit 1 = 50 cpm
 - Unit 2 = 50 cpm
- o Meteorological Conditions
 - Wind Direction (from) 270°
 - Wind Speed 6.8 mph
 - Temperature Differential +3.0°F

THIS IS A DRILL

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenarios:	<u>07:45</u>	Message No.:	<u>49</u>
	Actual:	<u>15:45</u>	Controller:	<u></u>

TO:	Control Room Operator
LOCATION:	Control Room
MESSAGE:	Plant Parameters Unit 1
S/G Pressure: 255#	
RCS T_h : 263°	
T_c : 262°	
Thermocouple: 460°	
Pressurizer Pressure: 240#	
Level : 350"	
Subcooled Margin : 51°	
Pressure: 1.95 psig	
Containment Temp. : 120°	
Level : 40.5"	
RWT Level: 0	

CALVERT CLIFFS NUCLEAR POWER PLANT

EMERGENCY RESPONSE EXERCISE

SEPTEMBER 14, 1983

TIME:	Scenario:	<u>08:00</u>	Message No.:	<u>50</u>
	Actual:	<u>16:00</u>	Controller:	<u></u>

TO: Control Room Operator

LOCATION: Control Room

MESSAGE: Plant Parameters Unit 1

S/G Pressure: 230#

Th: 250°
RCS T_c: 250°
Thermocouple: 430°

Pressurizer Pressure: 240#
Level : 350"

Subcooled Margin : 56°

Pressure: 1.95 psig
Containment Temp. : 120°
Level : 40.5"

RWT Level: 0

UNIT 1

[illegible][illegible][illegible]

EMERGENCY RESPONSE EXERCISE

UNIT 1

PLANT RADIATION MONITORS

PLANT RADIATION MONITORS

IN-PLANT AREA SURVEY RESULTS

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UNIT 1

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UNIT 1

[illegible][illegible]

C.S.C.

[illegible]

UNIT 1[illegible][illegible][illegible]

CR/TSC - PLANT PARAMETER REPORT

UNIT 1

Page 2 of 2

METEOROLOGICAL					CONTAINMENT					
1	2	3	4	5	6	7	8	9	10	
TIME	ΔT (200'-30')	Wind Direction At 200'	Wind Direction Variation	Wind Speed	Pressure	Temp.	Structural- Integrity	Am2	MO2	Activity
0945	-0.8	50°		3	3.5	129				

REACTOR COOLANT SYSTEM

11	12	13	14	15	16	17	18	19	
VE	Subcooled Water	T _h	T _c	Pressure	Forced or Natural Circ.	Heatup or Cooldown Rate	Leak Rate	CVCS Circ. Flow (GPM)	CVCS Inject. Start/Stop Times
0945	0	450	432						

REACTOR COOLANT ANALYSIS RESULTSO.S.C.

20	21	22	23	24	25	26	27
TIME	Total Gas Activity	I-131 Dose Equiv.	Boron	Chloride	Personnel Shortages	Personnel Planned into Cold. Area	Personnel Dose. Status

EMERGENCY RESPONSE EXERCISE

UNIT 1

PLANT RADIATION MONITORS

PLANT RADIATION MONITORS

IN-PLANT AREA SURVEY RESULTS

3-141

UNIT 1[illegible]

UNIT 1[illegible]

EMERGENCY RESPONSE EXERCISE

UNIT 1

PLANT RADIATION MONITORS

PLANT RADIATION MONITORS

IN-PLANT AREA SURVEY RESULTS

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UNIT 1

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[illegible]

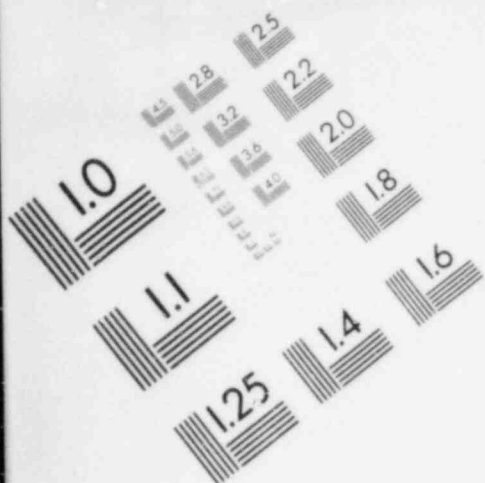
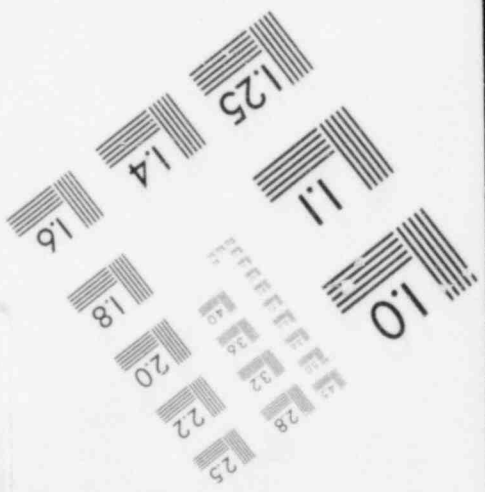
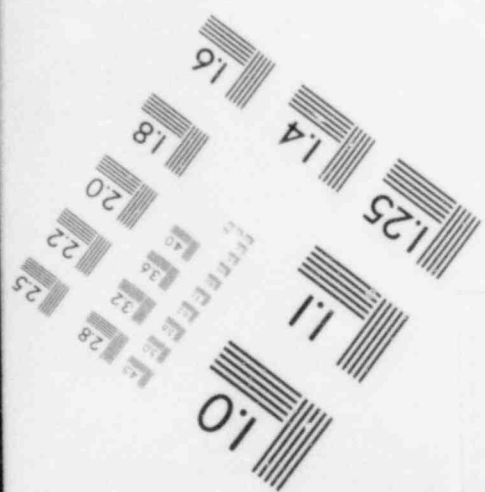
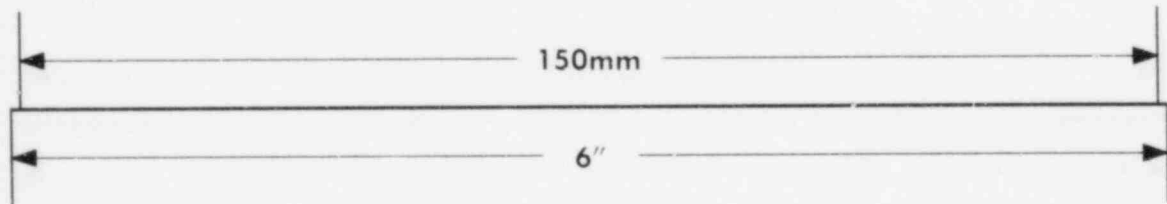
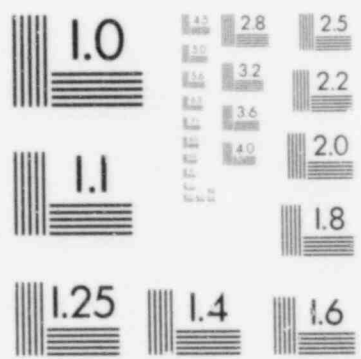
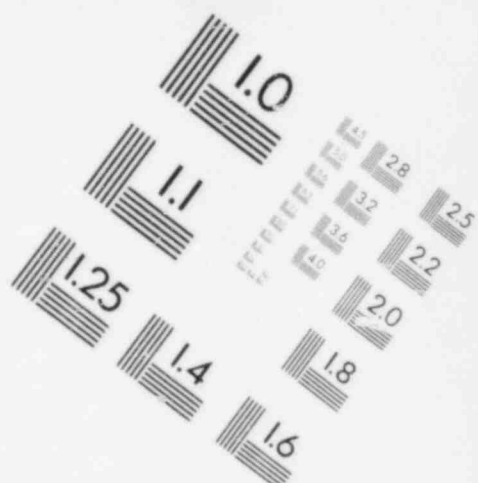


IMAGE EVALUATION
TEST TARGET (MT-3)



UNIT 1

[illegible][illegible]

C.S.C.

3-144A

CR/TSC - PLANT PARAMETER REPORT

UNIT 1

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METEOROLOGICAL					CONTAINMENT					
1	2	3	4	5	6	7	8	9	10	
TIME	ΔT (200'-30')	Wind Direction At 200'	Wind Direction Variation	Wind Speed	Pressure	Temp.	Structural- Integrity	HF ₂	IO ₂	Activity
1100	+0.4	25°		6	2.3	121				

REACTOR COOLANT SYSTEM

11	12	13	14	15	16	17	18	19	
VE	Subcooled Margin	T _h	T _c	Pressure	Forced or Natural Circ.	Heating or Cooldown Rate	Leak Rate	CVCS Comp. Flow (GPM)	CVCS Inject. Start/Stop Times
1100	0	428	440						

REACTOR COOLANT ANALYSIS RESULTSO.S.C.

20	21	22	23	24	25	26	27
TIME	Total Gas Activity	I-131 Dose Equiv.	Boron	Chloride	Personnel Shortages	Personnel Planned Into Cont. Area	Personnel Bo. Status

UNIT 1

[illegible]

EMERGENCY RESPONSE EXERCISE

UNIT 1

PLANT RADIATION MONITORS

PLANT RADIATION MONITORS

IN-PLANT AREA SURVEY RESULTS

UNIT 1

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GR/TSC - PLANT PARAMETER REPORT

UNIT 1

Page 2 of 2

METEOROLOGICAL					CONTAINMENT				
1	2	3	4	5	6	7	8	9	10
TIME	ΔT (200'-30')	Wind Direction At 200'	Wind Direction Variation	Wind Speed	Pressure	Temp.	Structural- Integrity	H ₂	O ₂ Activity
1145	+1.4	360°		9.8	2.2	122			

REACTOR COOLANT SYSTEM

11	12	13	14	15	16	17	18	19	
ME	Subcooled Margin	T ₁	T ₂	Pressure	Forced or Natural Circ.	Heatup or Cooldown Rate	Leak Rate	CVCS Circ. Flow (GPM)	CVCS Inject. Start/Stop Times
1145	0	425	465						

REACTOR COOLANT ANALYSIS RESULTSO.S.C.

20	21	22	23	24	25	26	27
TIME	Total Gas Activity	I-131 Dose Equiv.	Boron	Chloride	Personnel Shortages	Personnel Planned into Grid. Area	Personnel Inv. Status

CR/TSC - PLANT PARAMETER REPORT

UNIT 1

Page 2 of 2

METEOROLOGICAL					CONTAINMENT					
1	2	3	4	5	6	7	8	9	10	
TIME	ΔT (200'-30')	Wind Direction At 200'	Wind Direction Variation	Wind Speed	Pressure	Temp.	Structural- Integrity	2H ₂	2O ₂	Activity
1200	+1.6	350°		10	2.2	122				

REACTOR COOLANT SYSTEM

11	12	13	14	15	16	17	18	19	
TIME	Subcooled Margin	T _{in}	T _o	Pressure	Forced or Natural Circ.	Heating or Cooldown Rate	Leak Rate	CVCS Gng. Flow (GPM)	CVCS Inject. Start/Stop Times
1200	0	424	470						

REACTOR COOLANT ANALYSIS RESULTSO.S.C.

20	21	22	23	24	25	26	27
TIME	Total Gas Activity	I-131 Dose Equiv.	Boron	Chloride	Personnel Shortage	Personnel Planned into Cont. Area	Personnel Ext. Status

UNIT 1

[illegible]

THIS IS A DRILL

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UNIT 1

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CR/TSC - PLANT PARAMETER REPORT

UNIT 1

Page 2 of 2

METEOROLOGICAL					CONTAINMENT					
1	2	3	4	5	6	7	8	9	10	
TIME	ΔT (200-30')	Wind Direction At 200'	Wind Direction Variation	Wind Speed	Pressure	Temp.	Structural- Integrity	CH ₂	CO ₂	Activity
1245	+2.8	310°		11.2	2.2	123				

REACTOR COOLANT SYSTEM

11	12	13	14	15	16	17	18	19	
VE	Subcooled Margin	T _{in}	T _{out}	Pressure	Forced or Natural Circ.	Heatup or Cooldown Rate	Leak Rate	CVCS Comp. Flow (GPM)	CVCS Inject. Start/Stop Times
1245	0	420	480						
		</							

REACTOR COOLANT AND SIS RESULTSO.S.C.

20	21	22	23	24	25	26	27
TIME	Total Gas Activity	I-131 Dose Equiv.	Boron	Chloride	Personnel Shortages	Personnel Planned Into Grid. Area	Personnel Exp. Status

UNIT 1

Page 2 of 2

3-153A

UNIT 1

Page 2 of 2

[illegible]

UNIT 1

Page 2 of 2

THIS IS A DRILL 3-155A

CR/TSC - PLANT PARAMETER REPORT

UNIT 1

Page 2 of 2

METEOROLOGICAL					CONTAINMENT					
1	2	3	4	5	6	7	8	9	10	
TIME	ΔT (200'-30')	Wind Direction At 200'	Wind Direction Variation	Wind Speed	Pressure	Temp.	Structural- Integrity	CH ₂	CO ₂	Activity
1345	+3.5	275°		9.4	2.1	121				

REACTOR COOLANT SYSTEM									
11	12	13	14	15	16	17	18	19	
(ME	Subcooled Margin	T _{in}	T _c	Pressure	Forced or Natural Circ.	Heatup or Cooldown Rate	Leak Rate	CVCS Comp. Flow (GPM)	CVCS Inject. Start/Stop Times
1345	9	450	400						

REACTOR COOLANT ANALYSIS RESULTS					O.S.C.		
20	21	22	23	24	25	26	27
TIME	Total Gas Activity	I-131 Dose Equiv.	Boron	Chloride	Personnel Shortages	Personnel Planned into Cont. Area	Personnel Boo. Status

CR/TSC - PLANT PARAMETER REPORT

UNIT 1

Page 2 of 2

METEOROLOGICAL					CONTAINMENT					
1	2	3	4	5	6	7	8	9	10	
TIME	ΔT (200'-30')	Wind Direction At 200'	Wind Direction Variation	Wind Speed	Pressure	Temp.	Structural- Integrity	CH ₂	CO ₂	Activity
1400	+3.6	270°		9	2	120				

REACTOR COOLANT SYSTEM

11	12	13	14	15	16	17	18	19	
ME	Subcooled Margin	T _{in}	T _o	Pressure	Forced or Natural Circ.	Heatup or Cooldown Rate	Leak Rate	CVCS Comp. Flow (GPM)	CVCS Inj. or Start/Stop Times
1400	13	455	375						

REACTOR COOLANT ANALYSIS RESULTS

O.S.C.

20	21	22	23	24	25	26	27
TIME	Total Gas Activity	I-131 Dose Equiv.	Boron	Chloride	Personnel Shortages	Personnel Planned Into Cold. Area	Personnel Exp. Status

UNIT 1

Page 2 of 2

3-158A

GR/TSC - PLANT PARAMETER REPORT

UNIT 1

Page 2 of 2

METEOROLOGICAL					CONTAINMENT					
1	2	3	4	5	6	7	8	9	10	
TIME	ΔT (200'-30')	Wind Direction At 200'	Wind Direction Variation	Wind Speed	Pressure	Temp.	Structural- Integrity	HI ₂	NO ₂	Activity
1430	+3.4	270°		8	2.05	120				

REACTOR COOLANT SYSTEM

	11	12	13	14	15	16	17	18	19	
(	VS	Subcooled Water	T ₁	T ₂	Pressure	Forced or Natural Circ.	Heating or Cooling Rate	Leak Rate	CVCS Circ. Flow (GPM)	CVCS Inject. Start/Stop Times
1430		22	385	340						

REACTOR COOLANT ANALYSIS RESULTS

O.S.C.

20	21	22	23	24	25	26	27
TIME	Total Gas Activity	I-131 Dose Eqv.	Boron	Chloride	Personnel Shortages	Personnel Planned into Contd. Area	Personnel Inv. Status

GR/TSC - PLANT PARAMETER REPORT

UNIT 1

Page 2 of 2

Page 1 of 1

METEOROLOGICAL					CONTAINMENT					
1	2	3	4	5	6	7	8	9	10	
TIME	ΔT (200'-30')	Wind Direction At 200'	Wind Direction Variation	Wind Speed	Pressure	Temp.	Structural- Integrity	EH ₂	CO ₂	Activity
1445	+3.2	270°		7.6	1.95	120				

REACTOR COOLANT SYSTEM

11	12	13	14	15	16	17	18	19	
TIME	Subcooled Margin	T _h	T _c	Pressure	Forced or Natural Circ.	Heating or Cooldown Rate	Leak Rate	CVCS Circ. Flow (GPM)	CVCS Inject. Start/Stop Times
1445	28	350	320		-				

REACTOR COOLANT ANALYSIS RESULTSO.S.C.

20	21	22	23	24	25	26	27
TIME	Total Gas Activity	I-131 Dose Equiv.	Boron	Chloride	Personnel Shortages	Personnel Planned into Grid. Area	Personnel DO. Status

EMERGENCY RESPONSE EXERCISE

UNIT 1

PLANT RADIATION MONITORS

PLANT RADIATION MONITORS

3-161

CR/TSC - PLANT PARAMETER REPORT

UNIT 1

Page 2 of 2

METEOROLOGICAL					CONTAINMENT					
1	2	3	4	5	6	7	8	9	10	
TIME	ΔT (200'-30')	Wind Direction At 200'	Wind Direction Variation	Wind Speed	Pressure	Temp.	Structural- Integrity	TH ₂	NO ₂	Activity
1500	+3.0	270°		7	2	120				

REACTOR COOLANT SYSTEM

11	12	13	14	15	16	17	18	19	
TIME	Subcooled Margin	T _h	T _c	Pressure	Forced or Natural Circ.	Heating or Cooldown Rate	Leak Rate	CVCS Comp. Flow (GPM)	CVCS Inject. Start/Stop Times
1500	34°	325	300						

REACTOR COOLANT ANALYSIS RESULTS

O.S.C.

20	21	22	23	24	25	26	27
TIME	Total Gas Activity	I-131 Dose Eqv.	Boron	Chloride	Personnel Sources	Personnel Planned into Cont. Area	Personnel R.O. Status

UNIT 1

Page 2 of 2

[illegible]

UNIT 1

[illegible]

UNIT 1

[illegible][illegible]

C.S.C.

3-164A

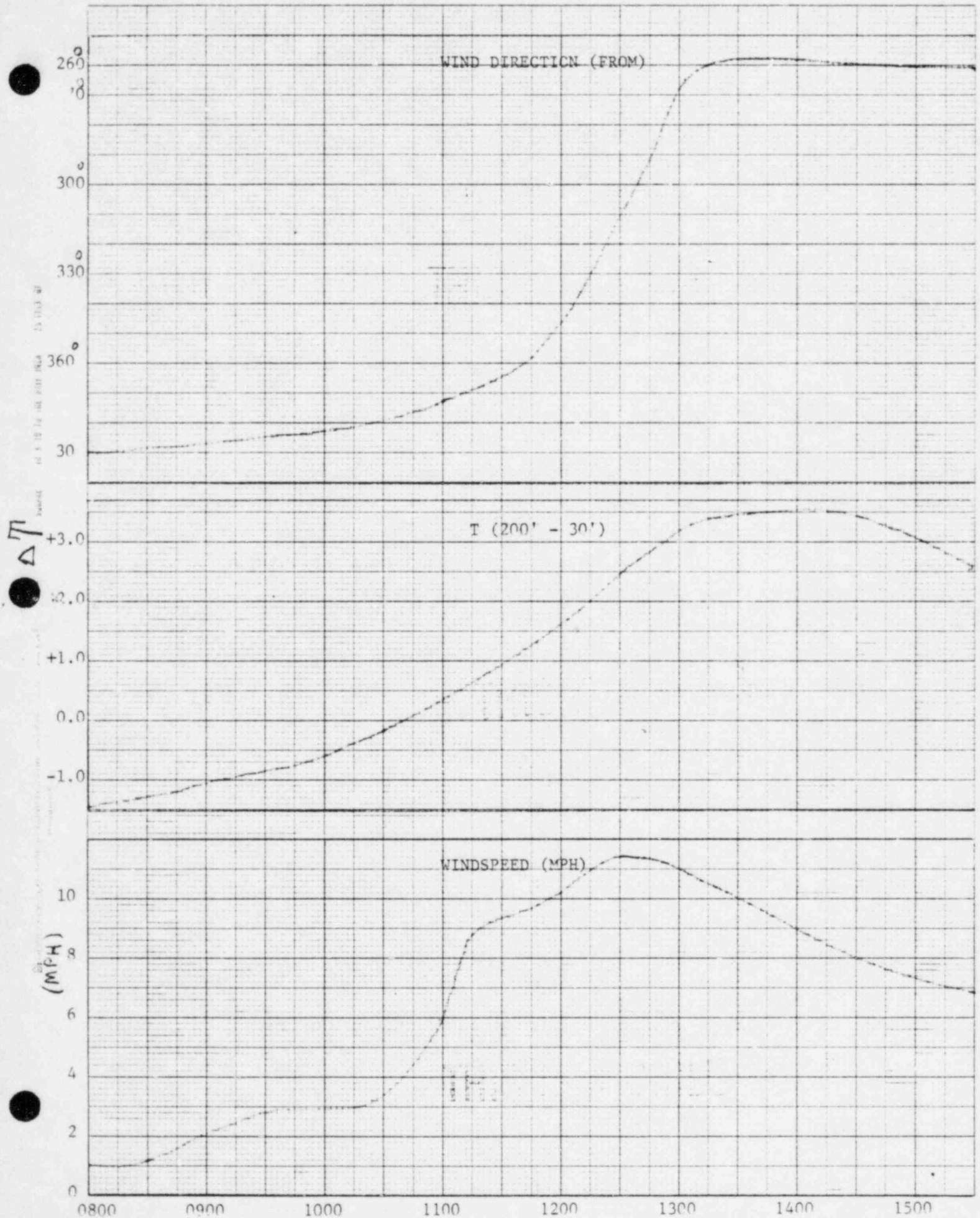
UNIT 1

[illegible][illegible][illegible]

CALVERT CLIFFS NUCLEAR POWER PLANT
1983 EMERGENCY RESPONSE EXERCISE
SEPTEMBER 14, 1983

4.0 PLANT PARAMETERS

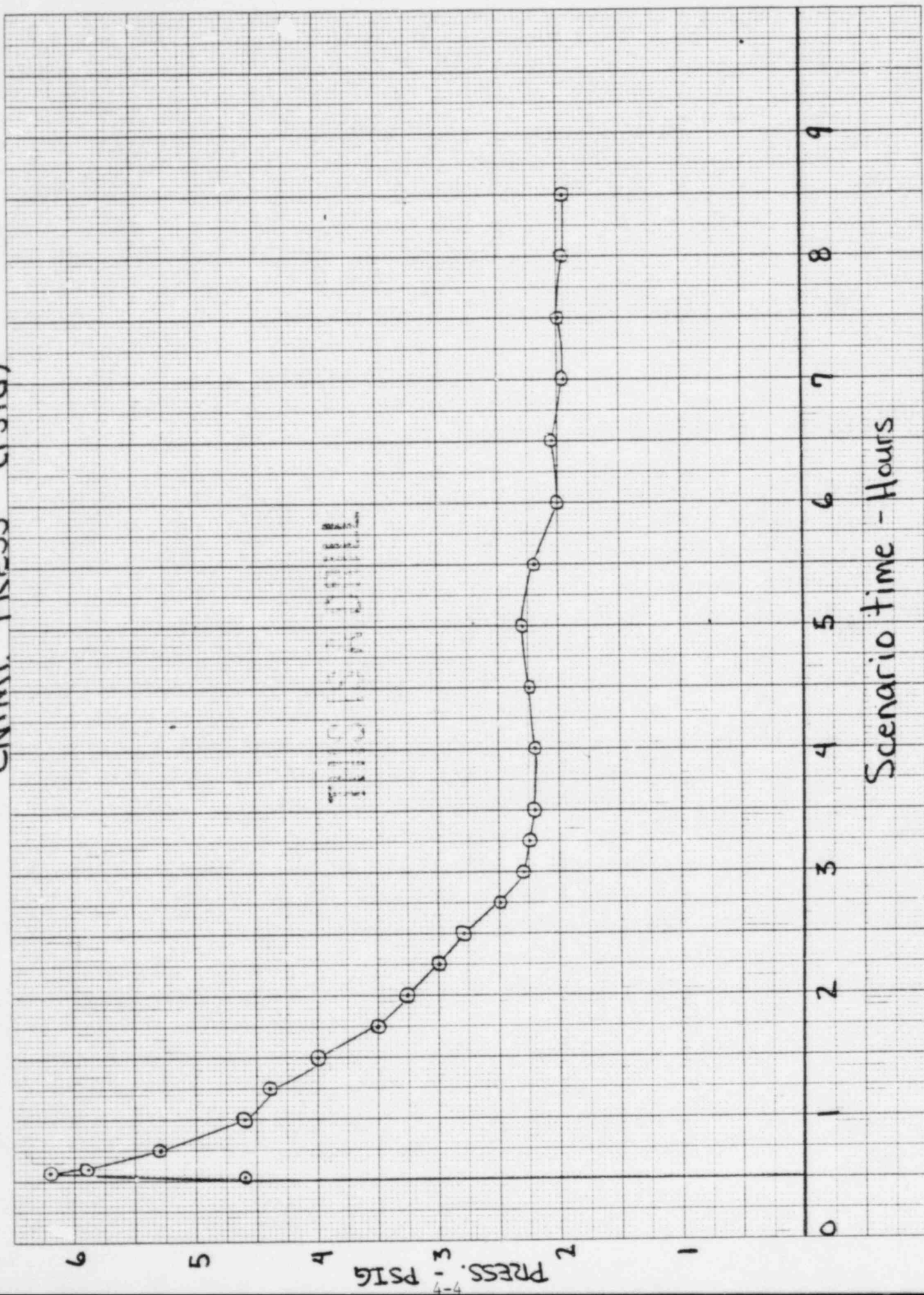
METEOROLOGICAL DATA



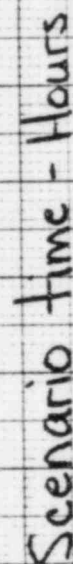
METEOROLOGICAL DATA

Real Time	Scenario Time	Wind Direction	Wind Speed	ΔT	Atmospheric Temperature	Projected Site Boundary mrem/h
0800	00:00	060°	1 mph	-1.5°F	60	
0815	00:15	060°	1	-1.4	61	
0830	00:30	058°	1.2	-1.4	62	
0845	00:45	055°	1.6	-1.2	62	
0900	01:00	055°	2	-1.1	63	
0915	01:15	054°	2.4	-1.0	63	
0930	01:30	052°	2.8	-0.8	64	
0945	01:45	050°	3	-0.8	64	
1000	02:00	045°	3.2	-0.6	65	
1015	02:15	043°	3.4	-0.4	66	
1030	02:30	040°	3.6	-0.2	66	
1045	02:45	035°	4.4	+0.2	67	
1100	03:00	025°	6	+0.4	68	
1115	03:15	015°	9	+0.6	70	
1130	03:30	005°	9.4	+1.0	70	
1145	03:45	360°	9.8	+1.4	71	
1200	04:00	350°	10	+1.6	71	
1215	04:15	340°	11	+2.0	72	
1230	04:30	330°	11.4	+2.5	72	
1245	04:45	310°	11.2	+2.8	73	
1300	05:00	280°	11	+3.2	74	
1315	05:15	275°	10.4	+3.4	74	
1330	05:30	275°	10	+3.5	74	
1345	05:45	275°	9.4	+3.5	74	
1400	06:00	270°	9	+3.6	75	
1415	06:15	270°	8.4	+3.5	75	
1430	06:30	270°	8	+3.4	75	
1445	06:45	270°	7.6	+3.2	75	
1500	07:00	270°	7	+3.0	76	
1515	07:15	270°	7	+3.0	76	
1530	07:30	---	6.8	+3.0	--	
1545	07:45	---	7.0	+3.0	--	
1600	08:00	---	7.1	+3.0	--	

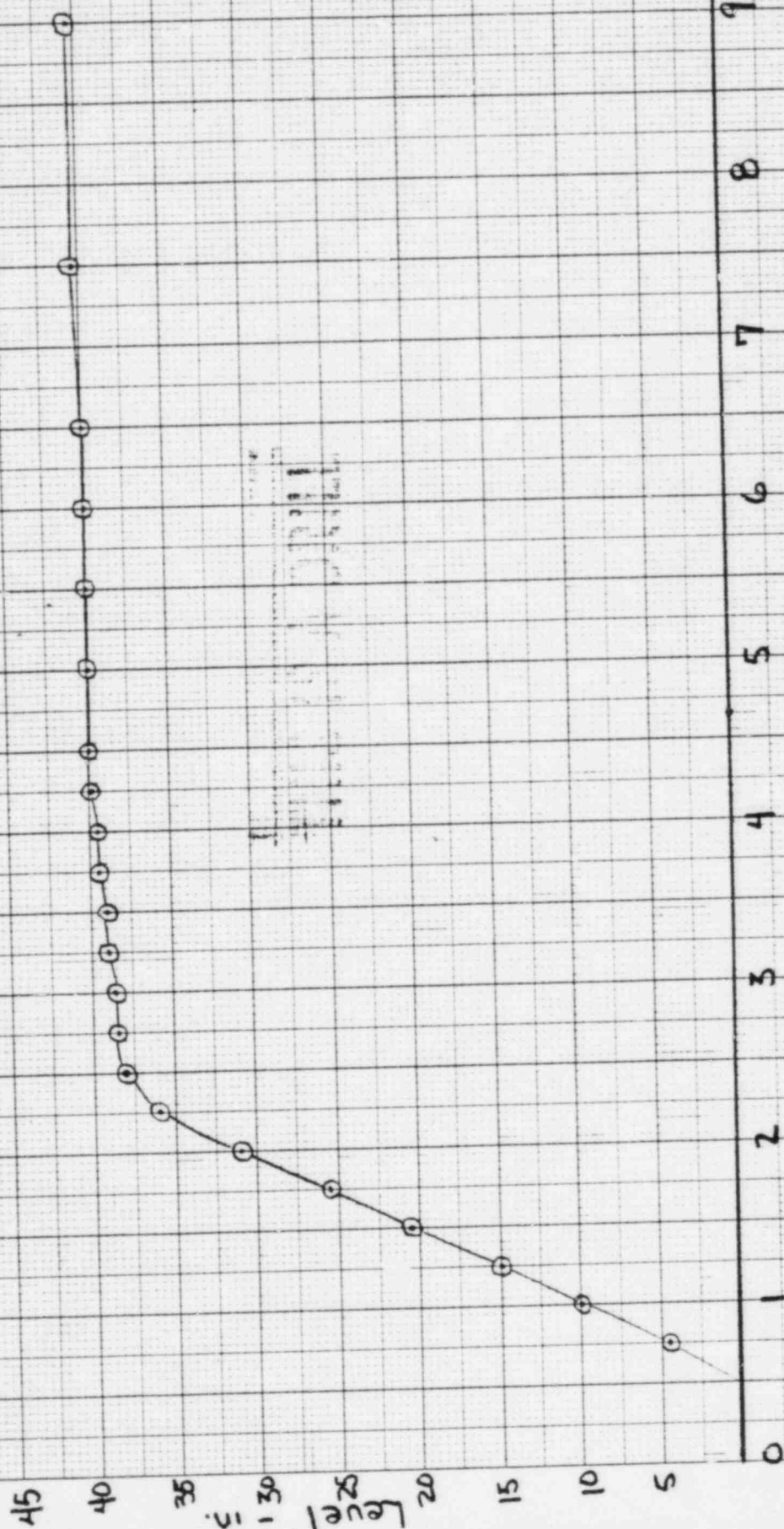
ENTMT. PRESS (PSIG)



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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CNTMT. LEVEL (IN.)



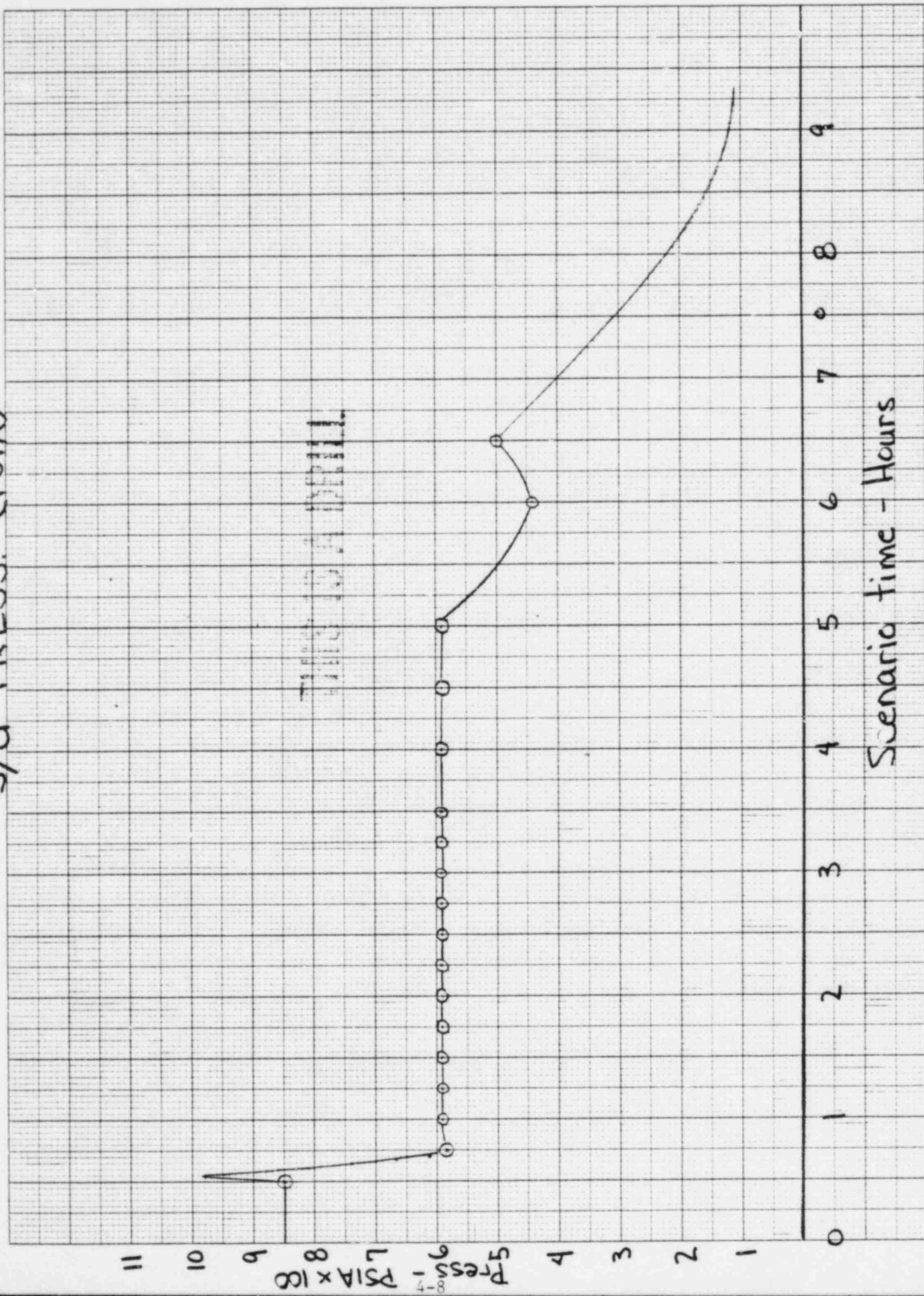
Scenario time - Hours

CALVERT CLIFFS NUCLEAR POWER PLANT
EMERGENCY RESPONSE EXERCISE
SEPTEMBER 14, 1983

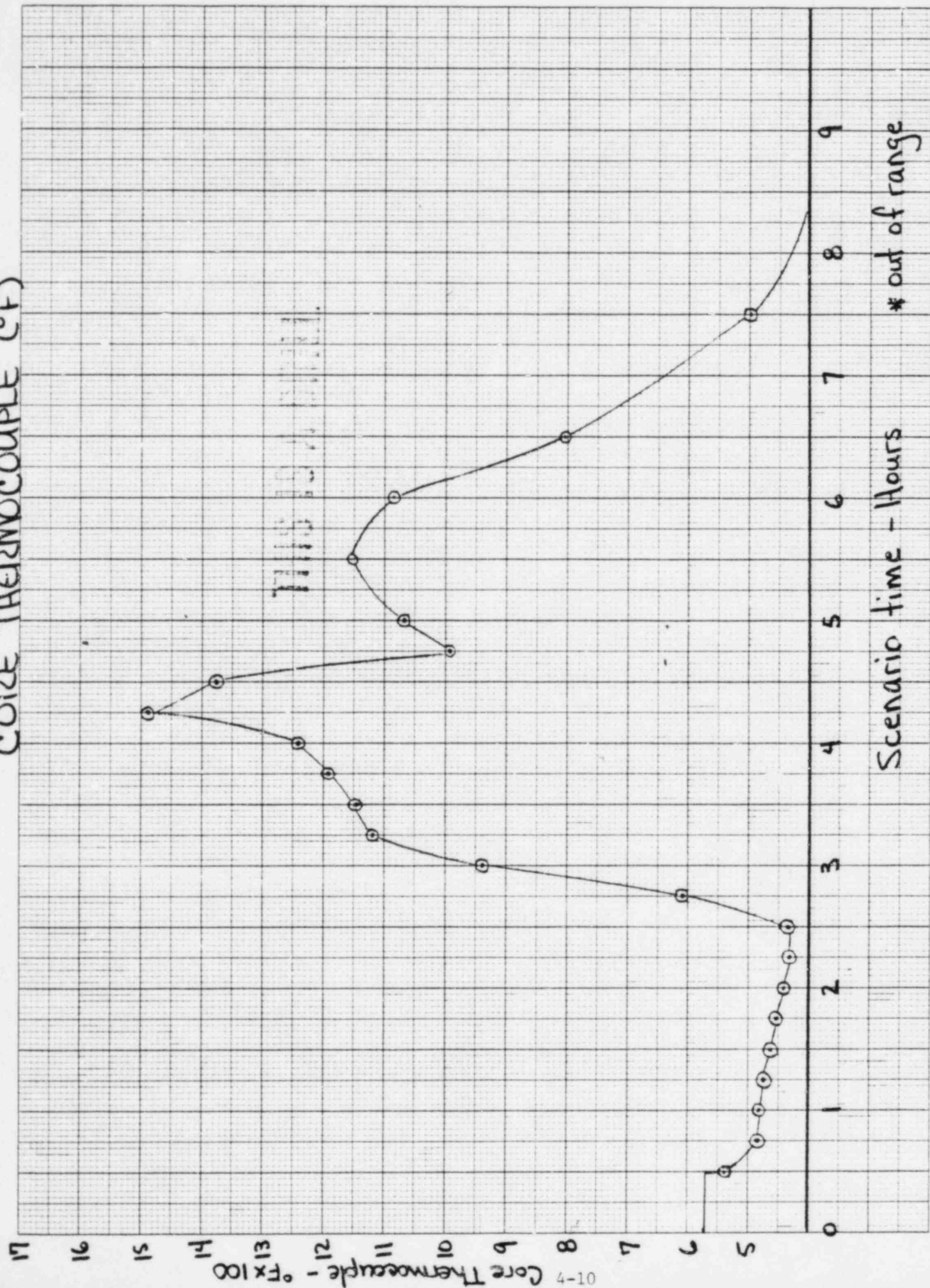
CONTAINMENT

Time		Temp	Press	Level	Time		Temp	Press	Level
Actual	Scenario				Actual	Scenario			
0800	:00	109°F	0 psig	0 in.	1315	5:15	122	2.25	40
0815	:15	109	0	0	1330	5:30	122	2.2	40
0830	:30	155	1.3	0	1345	5:45	121	2.1	40
0845	:45	146	5.3	4.5	1400	6:00	120	2	40
0900	1:00	141	4.6	10	1415	6:15	120	2	40
0915	1:15	139	4.4	15	1430	6:30	120	2.05	40
0930	1:30	134	4	20.5	1445	6:45	120	1.95	40
0945	1:45	129	3.5	25.5	1500	7:00	120	2	40
1000	2:00	127	3.25	31	1515	7:15	120	1.95	40
1015	2:15	121	3	36	1530	7:30	120	1.95	40.5
1030	2:30	120.5	2.8	38	1545	7:45	120	1.95	40.5
1045	2:45	Core uncovered			1600	8:00	120	1.95	40.5
1045	2:45	120.5	2.5	38.5					
1100	3:00	121	2.3	38.5					
1115	3:15	121.5	2.25	39					
1123	3:23	Fuel Failure							
1130	3:30	121.5	2.2	39					
1145	3:45	122	2.2	39.5					
1200	4:00	122	2.2	39.5					
1215	4:15	122.5	2.2	40					
1230	4:30	123	2.25	40					
1245	4:45	123	2.2	40					
1300	5:00	LPSI regained							
1300	5:00	123	2.3	40					

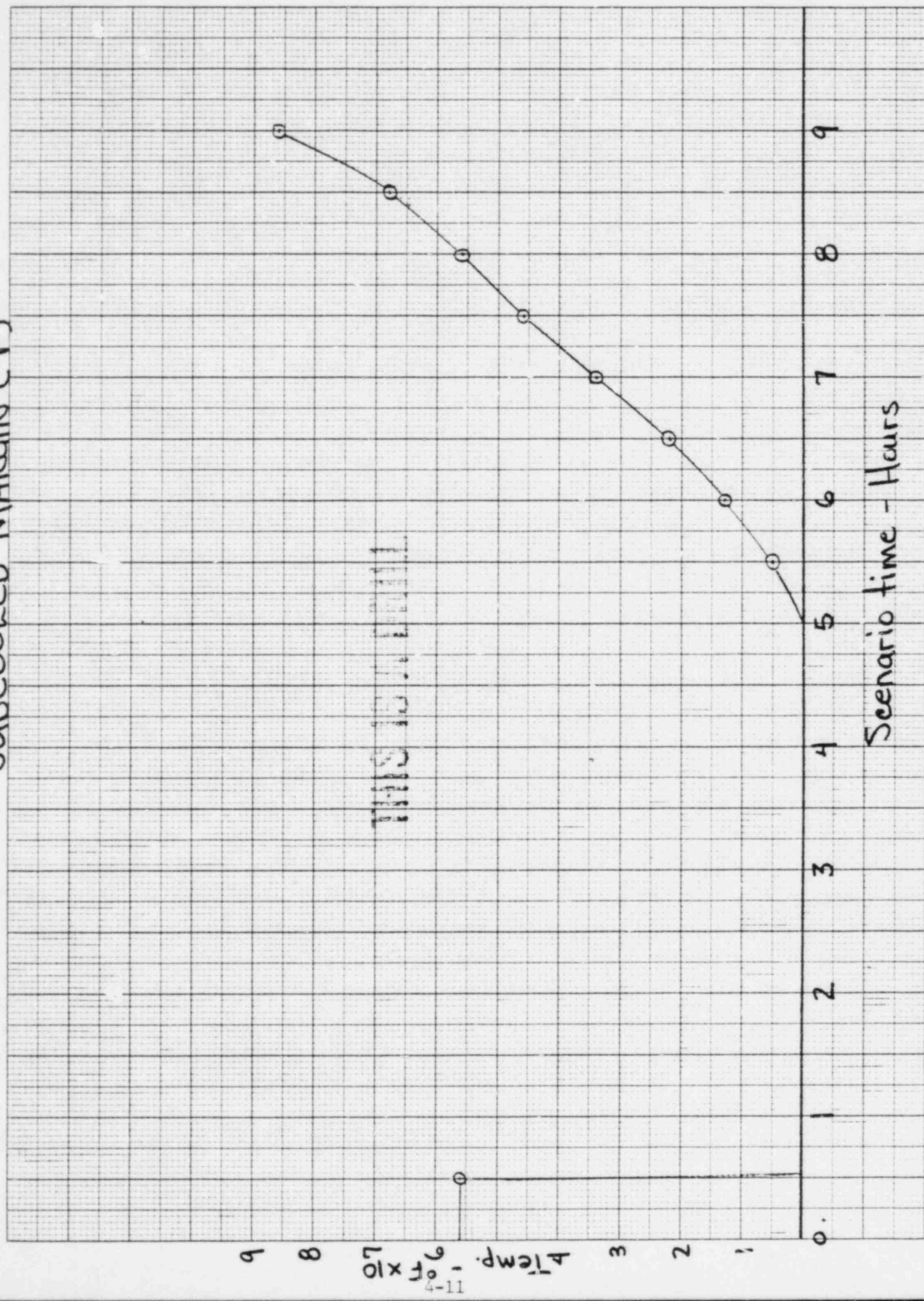
TALIS DRILL

[illegible]

CORE THERMOCOUPLE (°F)

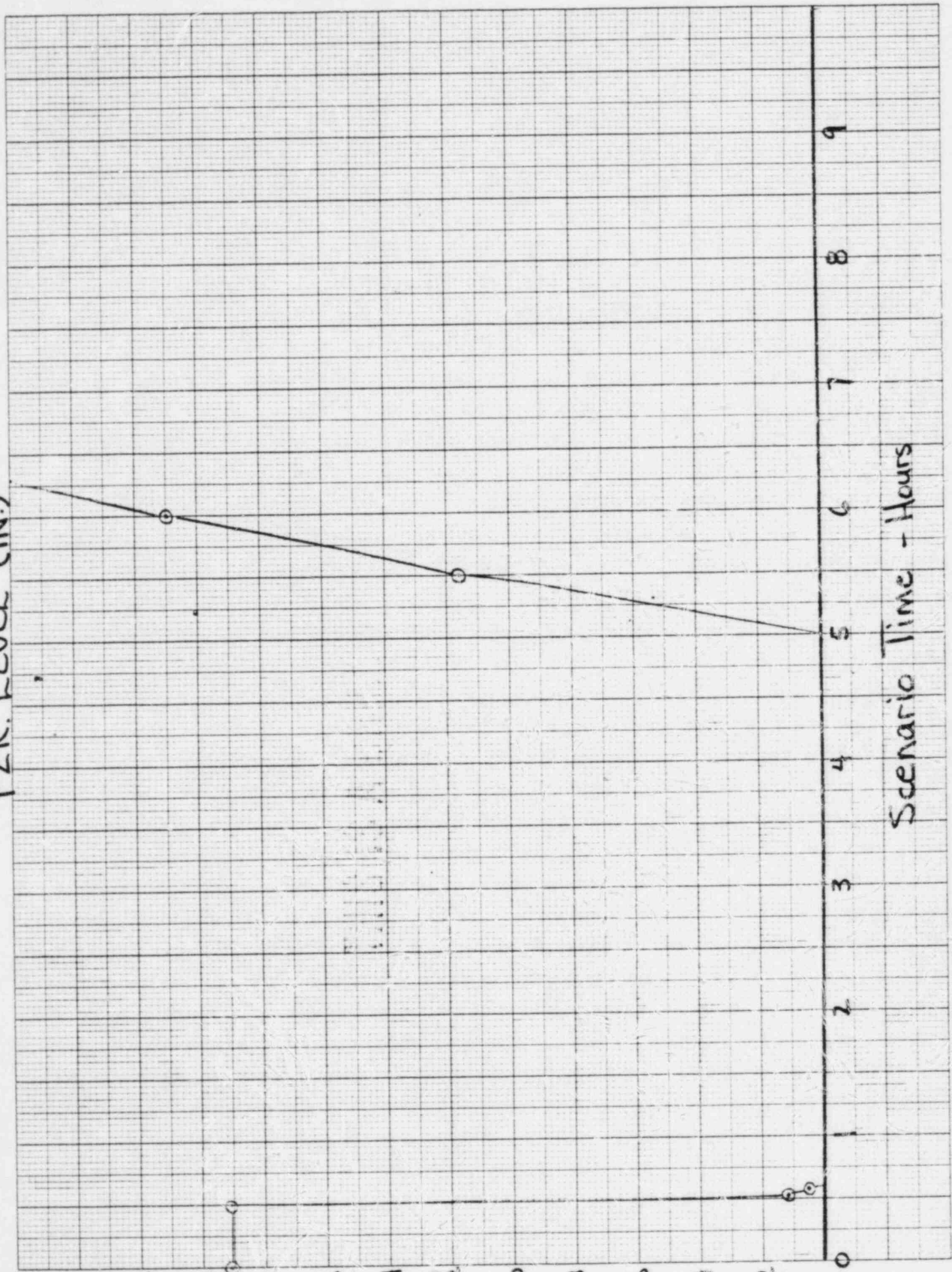


SUBCOOLED MARGIN (°F)



PZR. LEVEL (IN.)

Scenario Time - Hours



Scenario Time - Hours

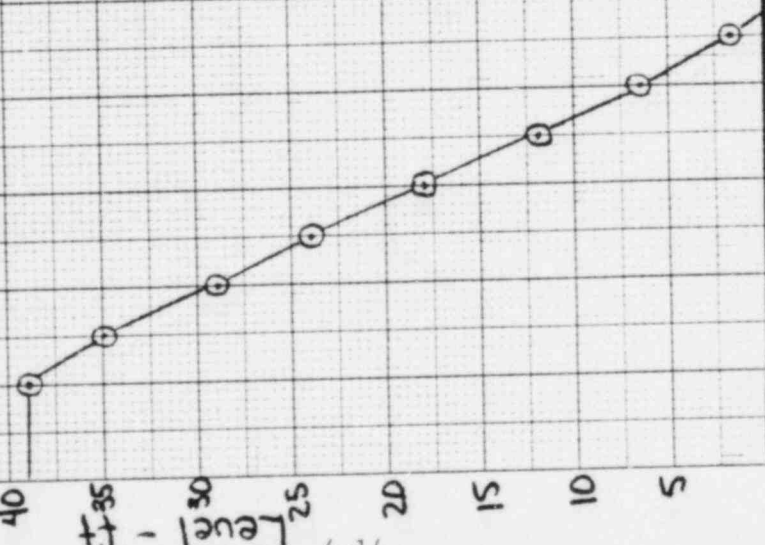
ROOT LEVEL (FT)

THIS IS A TAIL

4-14

0 1 2 3 4 5 6 7 8 9

Scenario time - Hours



CALVERT CLIFFS NUCLEAR POWER PLANT
1983 EMERGENCY RESPONSE EXERCISE
SEPTEMBER 14, 1983

5.0 RADIOLOGICAL INFORMATION

MAIN VENT READINGS

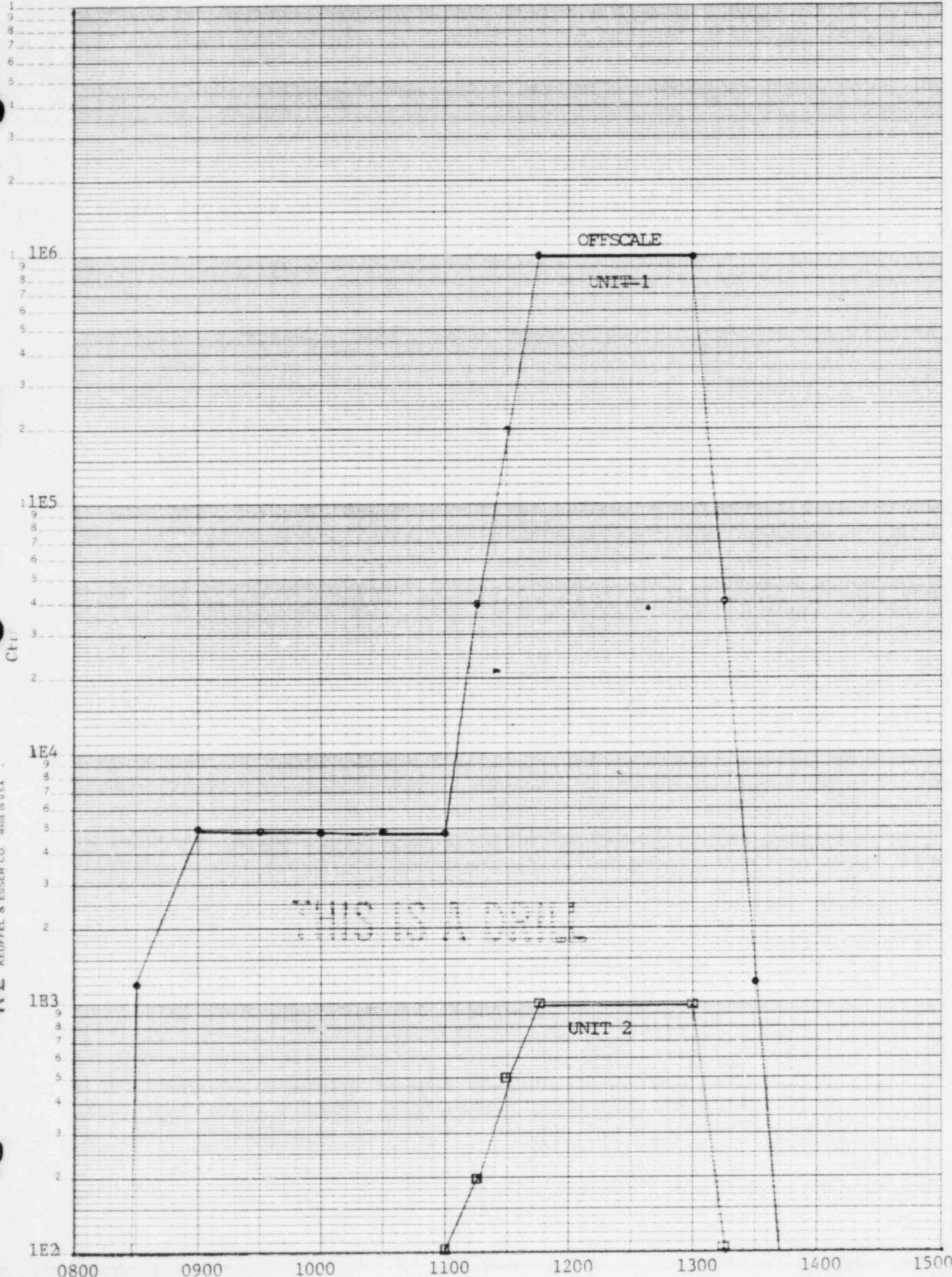
<u>Actual Time</u>	<u>Scenario Time</u>	<u>Unit 1 (CPM)</u>	<u>Unit 2 (CPM)</u>	<u>Unit 1 Dose Rate (R/HR @ 10m from Vent)</u>
08:00	00:00	50	50	---
08:15	00:15	50	50	0.002
08:30	00:30	1,200	50	0.010
08:45	00:45	5,000	50	0.010
09:00	01:00	5,000	50	0.010
09:15	01:15	4,900	50	0.009
09:30	01:30	4,900	50	0.009
09:45	01:45	4,900	50	0.009
10:00	02:00	4,800	50	0.009
10:15	02:15	4,800	50	0.009
10:30	02:30	4,800	50	0.009
10:45	02:45	4,700	50	0.009
11:00	03:00	4,700	100	0.009
11:15	03:15	40,000	200	0.08
11:30	03:30	200,000	500	11
11:45	03:45	Offscale	1,000	20
12:00	04:00	Offscale	1,000	20
12:15	04:15	Offscale	1,000	26
12:30	04:30	Offscale	1,000	30
12:45	04:45	Offscale	1,000	28
13:00	05:00	Offscale	1,000	28
13:15	05:15	40,000	100	0.08
13:30	05:30	1,200	100	0.002
13:45	05:45	50	50	---
14:00	06:00	50	50	---
14:15	06:15	50	50	---
14:30	06:30	50	50	---
14:45	06:45	50	50	---
15:00	07:00	50	50	---

THIS IS A DRILL

MAIN VENT READINGS (CPM) VS. TIME

46 6210

K·E SEMI-LOGARITHMIC 5 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.



U-1 DOSE RATE (R/h) @ 10 METERS VS. TIME

46 6210

SEMI-LOGARITHMIC 5 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.

K·Σ

R/h @ 10 METERS

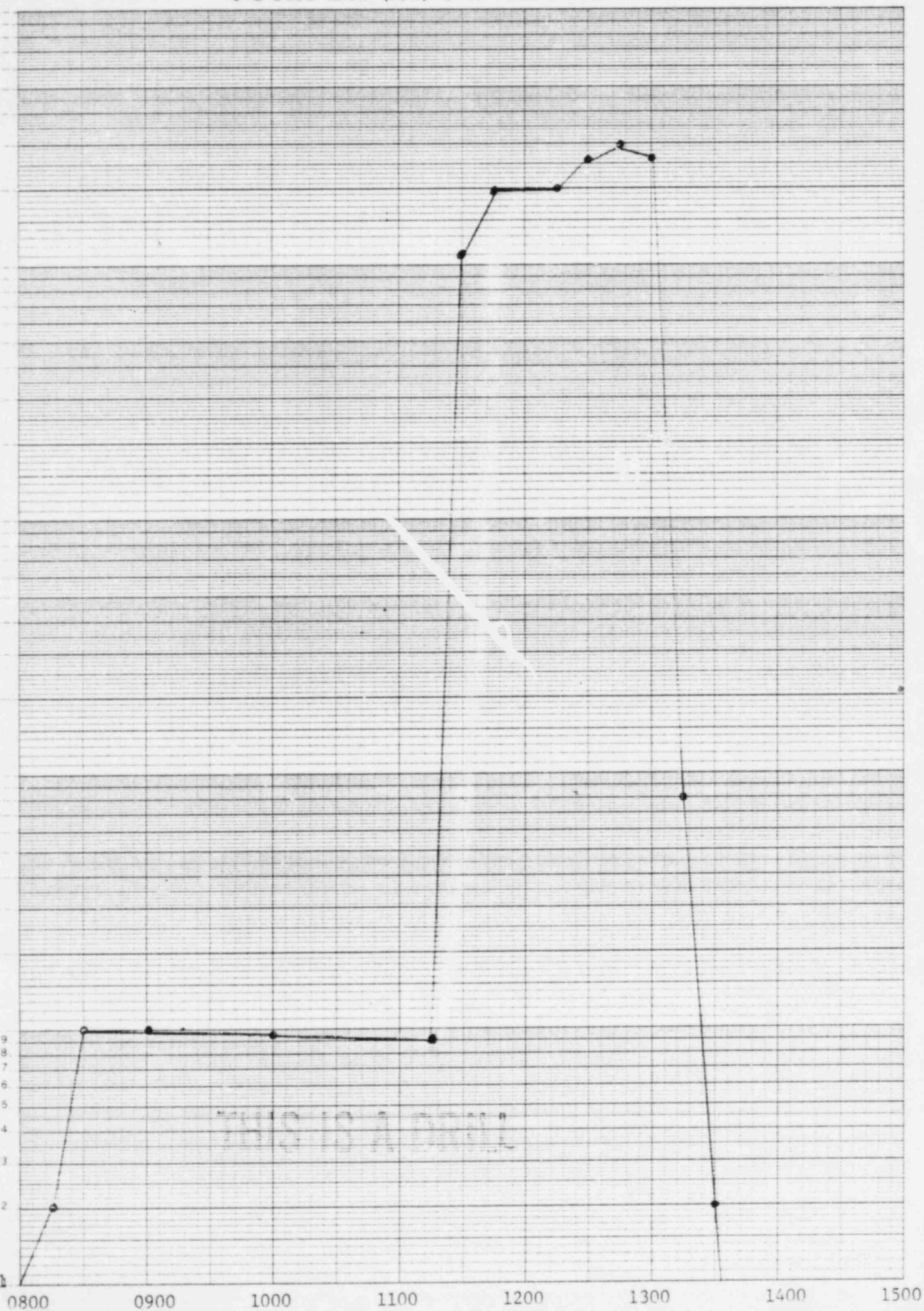
1.0

10.0

0.1

0.01

0.001



MAIN VENT SAMPLE ACTIVITIES

SAMPLE TIME 09:00 SCENARIO TIME 02:00

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Xe-133	1.3E-2
Xe-135	1.3E-3
Kr-85	2.5E-4
Kr-85m	2.5E-4
Xe-131m	5.8E-5
Kr-88	1.0E-14
Kr-87	5.5E-5
Xe-138	6.4E-5
I-131	2.1E-7
I-133	<u>2.1E-7</u>
TOTAL ACTIVITY	1.51E-2

MAIN VENT SAMPLE ACTIVITIES

SAMPLE TIME 11:00

SCENARIO TIME 03:00

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Xe-133	1.2E-2
Xe-135	1.2E-3
Kr-85	2.4E-4
Kr-85m	2.4E-4
Xe-131m	5.6E-5
Kr-88	1E-4
Kr-87	5.3E-5
Xe-138	6.2E-5
I-131	2.0E-7
I-133	2.0E-7
TOTAL ACTIVITY	1.39E-2

THIS IS A DRILL

MAIN VENT SAMPLE ACTIVITIES

SAMPLE TIME 11:15

SCENARIO TIME 03:15

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Xe-133	1E-1
Xe-135	1E-2
Kr-85	2E-3
Kr-85m	2E-3
Xe-131m	4.7E-4
Kr-88	8.4E-4
Kr-87	4.5E-4
Xe-138	5.2E-4
I-131	1.7E-6
I-133	1.7E-6
TOTAL ACTIVITY	1.16E-1

MAIN VENT SAMPLE ACTIVITIES

SAMPLE TIME 11:30

SCENARIO TIME 03:30

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Xe-133	9.900
Xe-135	9.8E-1
Kr-85	1.9E-1
Kr-85m	1.9E-1
Xe-131m	4.4E-2
Kr-88	8E-2
Kr-87	4.3E-2
Xe-138	4.9E-2
I-131	1.6E-4
I-133	<u>1.6E-4</u>
TOTAL ACTIVITY	1.15E1

MAIN VENT SAMPLE ACTIVITIES

SAMPLE TIME 11:45

SCENARIO TIME 03:45

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Xe-133	1.5E1
Xe-135	1.5E00
Kr-85	1.8E-1
Kr-85m	2.8E-1
Xe-131m	6.5E-2
Kr-88	1.2E-1
Kr-87	6.3E-2
Xe-138	7.3E-2
I-131	2.3E-2
I-133	2.4E-2
TOTAL ACTIVITY	1.74E1

MAIN VENT SAMPLE ACTIVITIES

SAMPLE TIME 12:00

SCENARIO TIME 04:00

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Xe-133	2.6E1
Xe-135	2.6E00
Kr-85	5.1E-1
Kr-85m	5.1E-1
Xe-131m	1.2E-1
Kr-88	2.1E-2
Kr-87	1.1E-1
Xe-138	1.3E-1
I-131	4.2E-4
I-133	4.2E-4
TOTAL ACTIVITY	3.00E1

THIS IS A DRILL

MAIN VENT SAMPLE ACTIVITIES

SAMPLE TIME 12:15

SCENARIO TIME 04:15

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Xe-133	3.4E1
Xe-135	3.4E00
Kr-85	6.6E-1
Kr-85m	6.6E-1
Xe-131m	1.5E-1
Kr-88	2.7E-1
Kr-87	1.5E-1
Xe-138	1.7E-1
I-131	5.5E-4
I-133	<u>5.5E-4</u>
TOTAL ACTIVITY	6.95E1

MAIN VENT SAMPLE ACTIVITIES

SAMPLE TIME 12:30

SCENARIO TIME 04:30

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Xe-133	3.9E1
Xe-135	3.900
Kr-85	7.6E-1
Kr-85m	7.6E-1
Xe-131m	1.7E-1
Kr-88	3.1E-1
Kr-87	1.7E-1
Xe-138	1.9E-1
I-131	6.4E-4
I-133	6.4E-4
TOTAL ACTIVITY	4.53E1

MAIN VENT SAMPLE ACTIVITIES

SAMPLE TIME 12:45

SCENARIO TIME 04:45

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Xe-133	3.8E1
Xe-135	3.7E00
Kr-85	7.3E-1
Kr-85m	7.3E-1
Xe-131m	5.8E-1
Kr-88	3.0E-1
Kr-87	1.6E-1
Xe-138	1.9E-1
I-131	6.2E-4
I-133	6.2E-4
TOTAL ACTIVITY	6.45E1

MAIN VENT SAMPLE ACTIVITIES

SAMPLE TIME 13:00

SCENARIO TIME 05:00

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Xe-133	3.7E1
Xe-135	3.7E00
Kr-85	7.1E-1
Kr-85m	7.1E-1
Xe-131m	1.6E-1
Kr-88	2.9E-1
Kr-87	1.6E-1
Xe-138	1.8E-1
I-131	5.9E-4
I-133	5.9E-4
TOTAL ACTIVITY	4.29E1

THIS IS A DRILL

MAIN VENT SAMPLE ACTIVITIES

SAMPLE TIME 13:30

SCENARIO TIME 05:30

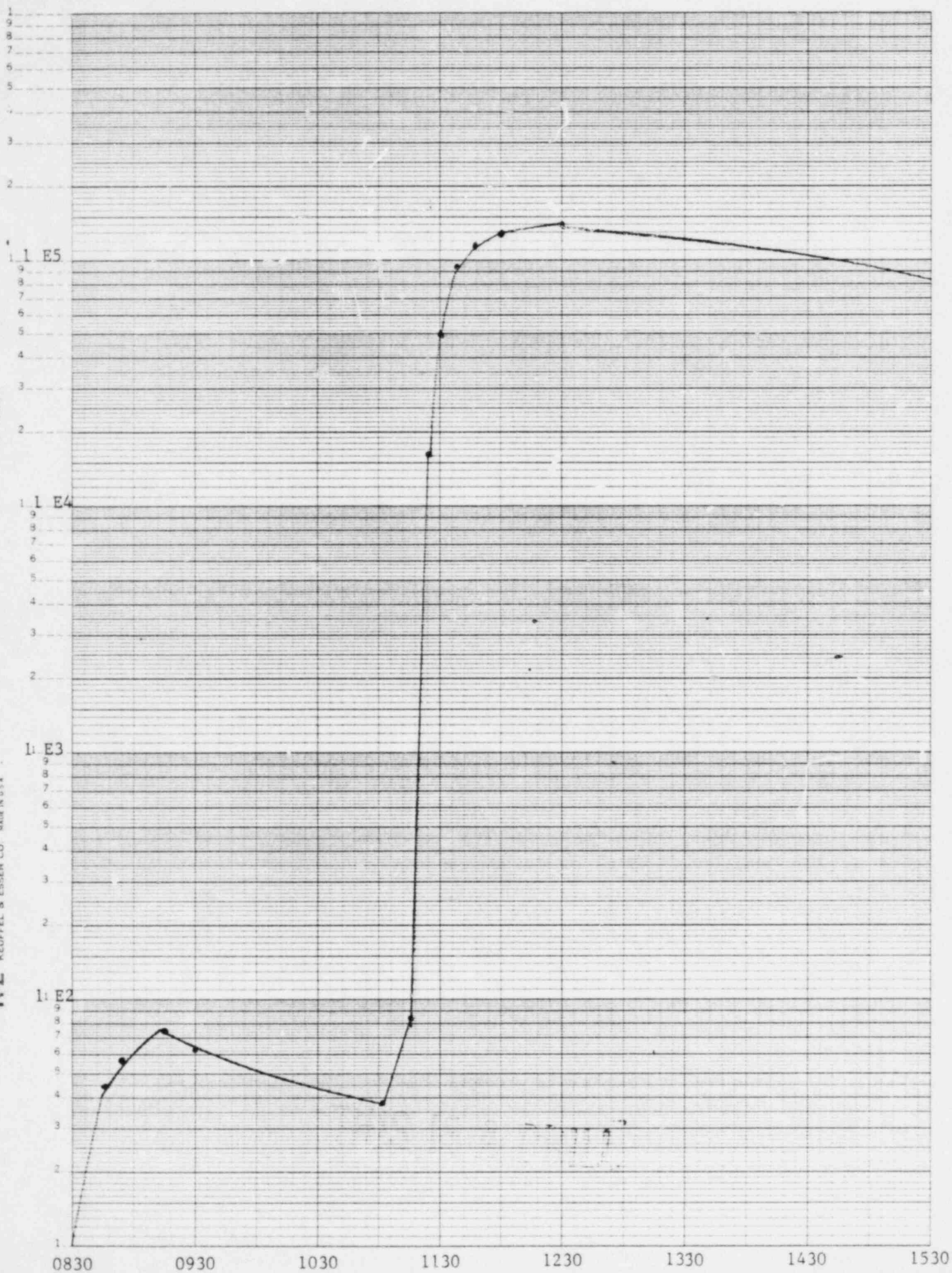
<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Xe-133	3.3E-3
Xe-135	3.3E-4
Kr-85	6.7E-5
Kr-85m	6.7E-5
Xe-131m	1.5E-5
Kr-88	2.8E-5
Kr-87	1.9E-5
Xe-138	3.3E-5
I-131	5.4E-7
I-133	<u>5.4E-7</u>
TOTAL ACTIVITY	7.16E-3

CONTAINMENT HIGH RANGE MONITOR READINGS
(R/hr)

<u>SCENARIO TIME</u>	<u>LOW RANGE RI-5316 B&D</u>	<u>HIGH RANGE RI-5318B RI-5317D</u>		<u>% FUEL FAILURE</u>	
00:00	Normal	Normal	Normal	0	
00:30	6	10	12		
00:45	Offscale	45	42		
01:00		53	50		
01:15		73	70		
01:30		61	59		
01:45		56	54		
02:00		50	49		
02:15		48	46		
02:30		45	43		
02:45		42	41		
03:00		39	38		
03:15		88	87	Gap Released	
03:22		1.6E4	1.6E4	1.1	
03:30		5.1E4	5.1E4	3.4	
03:37		9.3E4	9.3E4	6.2	
03:45		1.2E5	1.2E5	8.25	
03:52		1.3E5	1.3E5	9.44	
04:00		1.3E5	1.3E5	10.12%	
04:30		1.3E5	1.3E5	10.5	
05:00		1.2E5	1.2E5	11	
05:30		1.2E5	1.2E5	11	
06:00		1.2E5	1.2E5	11	
07:00		1.1E5	1.1E5	11	
08:00		1.1E1	1.1E5	11	

CONTAINMENT EXPOSURE RATES vs. TIME

46 6210
R/h in CONTAINMENT
5" MI-LOGARITHMIC 5 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.



CONTAINMENT AIR SAMPLE ACTIVITY

SAMPLE TIME 08:30SCENARIO TIME 00:30

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Kr-85m	1.4E-5
Kr-85	8.0E-6
Kr-87	7.5E-6
Kr-88	2.5E-5
Xe-131m	1.3E-5
Xe-133	1.5E-3
Xe-135	7.0E-5
Xe-138	3.4E-6
Total Gas	<u>1.6E-3</u>
I-131	1.8E-5
I-132	5.0E-6
I-133	2.6E-5
I-134	3.0E-6
I-135	1.2E-5
Total Iodine	<u>6.5E-5</u>
<u>Particulate</u>	
Rb-88	2.3E-5
Cs-138	2.0E-5
Cs-134	1.3E-9
Cs-137	1.2E-9
Total Particulate	<u>4.3E-5</u>
Total Activity	<u>1.7E-3</u>

Dose rate at contact 0.025 R/hrat 1 foot 0.005 R/hr

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CONTAINMENT AIR SAMPLE ACTIVITY

SAMPLE TIME 08:45SCENARIO TIME 00:45

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Kr-85m	6.3E-4
Kr-85	3.6E-4
Kr-87	3.4E-4
Kr-88	1.1E-3
Xe-131m	5.8E-4
Xe-133	6.8E-2
Xe-135	3.2E-3
Xs-138	1.5E-4
Total Gas	<u>7.2E-2</u>
I-131	8.1E-4
I-132	2.2E-4
I-133	1.2E-3
I-134	1.4E-4
I-135	5.4E-4
Total Iodine	<u>2.9E-3</u>
<u>Particulate</u>	
Rb-88	1.0E-3
Cs-138	9.0E-4
Cs-134	5.8E-8
Cs-137	3.2E-7
Total Particulate	<u>1.9E-3</u>
Total Activity	<u>7.7E-2</u>

Dose rate at contact 1.12 R/hrat 1 foot 0.22 R/hr

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CONTAINMENT AIR SAMPLE ACTIVITY

SAMPLE TIME 09:00SCENARIO TIME 01:00

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Kr-85m	7.4E-4
Kr-85	4.2E-4
Kr-87	4.0E-4
Kr-88	1.3E-3
Xe-131m	6.9E-4
Xe-133	8.0E-2
Xe-135	3.7E-3
Xe-138	1.8E-4
Total Gas	<u>8.5E-2</u>
I-131	9.5E-4
I-132	2.6E-4
I-133	1.4E-3
I-134	1.6E-4
I-135	6.4E-4
Total Iodine	<u>3.4E-3</u>
<u>Particulate</u>	
Rb-88	1.2E-3
Cs-138	1.1E-3
Cs-134	6.9E-8
Cs-137	3.8E-7
Total Particulate	<u>2.3E-3</u>
Total Activity	<u>9.1E-2</u>

Dose rate at contact 1.32 R/hrat 1 foot 0.26 R/hr

CONTAINMENT AIR SAMPLE ACTIVITY

SAMPLE TIME 09:30SCENARIO TIME 01:30

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Kr-85m	8.5E-4
Kr-85	4.9E-4
Kr-87	4.6E-4
Kr-88	1.5E-3
Xe-131m	7.9E-4
Xe-133	9.1E-2
Xe-135	4.3E-3
Xe-138	2.1E-4
Total Gas	<u>9.8E-2</u>
I-131	1.1E-3
I-132	3.0E-4
I-133	1.6E-3
I-134	1.8E-4
I-135	7.3E-4
Total Iodine	<u>4.0E-3</u>
<u>Particulate</u>	
Rb-88	1.4E-3
Cs-138	1.2E-3
Cs-134	7.9E-8
Cs-137	4.4E-7
Total Particulate	<u>2.6E-3</u>
Total Activity	<u>1.0E-1</u>

Dose rate at contact 1.52 R/hrat 1 foot 0.30 R/hr

CONTAINMENT AIR SAMPLE ACTIVITY

SAMPLE TIME 10:00SCENARIO TIME 02:00

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Kr-85m	7.0E-4
Kr-85	4.0E-4
Kr-87	3.8E-4
Kr-88	1.2E-3
Xe-131m	6.5E-4
Xe-133	7.5E-2
Xe-135	3.5E-3
Xe-138	<u>1.7E-4</u>
Total Gas	<u>8.0E-2</u>
I-131	9.0E-4
I-132	2.5E-4
I-133	1.3E-3
I-134	1.5E-4
I-135	<u>6.0E-4</u>
Total Iodine	<u>3.2E-3</u>
<u>Particulate</u>	
Rb-88	1.2E-3
Cs-138	1.0E-3
Cs-134	6.5E-8
Cs-137	<u>3.6E-7</u>
Total Particulate	<u>2.2E-3</u>
Total Activity	<u>8.5E-2</u>

Dose rate at contact 1.25 R/hrat 1 foot 0.25 R/hr

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CONTAINMENT AIR SAMPLE ACTIVITY

SAMPLE TIME 10:30

SCENARIO TIME 02:30

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Kr-85m	6.3E-4
Kr-85	3.6E-4
Kr-87	3.4E-4
Kr-88	1.1E-3
Xe-131m	5.8E-4
Xe-133	6.8E-2
Xe-135	3.2E-3
Xe-138	1.5E-4
Total Gas	<u>7.2E-2</u>
I-131	8.1E-4
I-132	2.2E-4
I-133	1.2E-3
I-134	1.4E-4
I-135	5.4E-4
Total Iodine	<u>2.9E-3</u>
<u>Particulate</u>	
Rb-88	1.0E-3
Cs-138	9.0E-4
Cs-134	5.8E-8
Cs-137	3.2E-7
Total Particulate	<u>1.9E-3</u>
Total Activity	<u>7.7E-2</u>

Dose rate at contact 1.12 R/hr

at 1 foot 0.22 R/hr

CONTAINMENT AIR SAMPLE ACTIVITY

SAMPLE TIME 11:00SCENARIO TIME 03:00

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Kr-85m	5.5E-4
Kr-85	3.1E-4
Kr-87	2.9E-4
Kr-88	9.8E-4
Xe-131m	5.1E-4
Xe-133	5.8E-2
Xe-135	2.7E-3
Xe-138	1.3E-4
Total Gas	<u>6.2E-2</u>
I-131	7.0E-4
I-132	2.0E-4
I-133	1.0E-3
I-134	1.2E-4
I-135	4.7E-4
Total Iodine	<u>2.5E-3</u>
<u>Particulate</u>	
Rb-88	9.0E-4
Cs-138	7.8E-4
Cs-134	5.1E-8
Cs-137	2.8E-7
Total Particulate	<u>1.7E-3</u>
Total Activity	<u>6.6E-2</u>

Dose rate at contact 0.98 R/hrat 1 foot 0.20 R/hr

CONTAINMENT AIR SAMPLE ACTIVITY

SAMPLE TIME 11:30SCENARIO TIME 03:30

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Kr-85m	3.9
Kr-85	0.1
Kr-87	6.8
Kr-88	9.8
Xe-131m	0.09
Xe-133	30
Xe-135m	5.7
Xe-135	5.3
Xe-138	2.4
Total Gas	<u>6.4E+1</u>
I-131	6.8
I-132	10.1
I-133	14.0
I-134	1.5
I-135	<u>13.0</u>
Total Iodine	<u>4.6E+1</u>
<u>Particulate</u>	
Rb-88	2E-3
Cs-138	1.7E-3
Cs-134	4.5E-8
Cs-137	<u>7E-8</u>
Total Particulate	<u>3.7E-3</u>
Total Activity	<u>1.1E+2</u>

Dose rate at contact _____ R/hr

at 1 foot _____ R/hr

CONTAINMENT AIR SAMPLE ACTIVITY

SAMPLE TIME 12:00

SCENARIO TIME 04:00

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Kr-85m	34
Kr-85	1.08
Kr-87	62.4
Kr-88	89
Xe-131m	0.93
Xe-133	269
Xe-135m	54
Xe-135	46
Xe-138	216
Total Gas	<u>7.7E+2</u>
I-131	66
I-132	95
I-133	134
I-134	14.5
I-135	125
Total Iodine	<u>4.3E+2</u>
<u>Particulate</u>	
Rb-88	2.0E-2
Cs-138	1.8E-2
Cs-134	6E-7
Cs-137	9E-7
Total Particulate	<u>3.8E-2</u>
Total Activity	<u>1.2E+3</u>

Dose rate at contact _____ R/hr

at 1 foot _____ R/hr

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CONTAINMENT AIR SAMPLE ACTIVITY

SAMPLE TIME 12:30SCENARIO TIME 04:30

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Kr-85m	39
Kr-85	1.09
Kr-87	68
Kr-88	98
Xe-131m	1.00
Xe-133	295
Xe-135m	60
Xe-135	51
Xe-138	231
Total Gas	<u>8.4+2</u>
I-131	72
I-132	104
I-133	147
I-134	15.0
I-135	1.38
Total Iodine	<u>4.8E+2</u>
<u>Particulate</u>	
Rb-88	2.2E-2
Cs-138	2.0E-2
Cs-134	6.2E-7
Cs-137	<u>9.3E-7</u>
Total Particulate	<u>4.2E-2</u>
Total Activity	<u>1.3E+3</u>

Dose rate at contact _____ R/hr

at 1 foot _____ R/hr

CONTAINMENT AIR SAMPLE ACTIVITY

SAMPLE TIME 13:00SCENARIO TIME 05:00

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Kr-85m	36
Kr-85	1.09
Kr-87	52
Kr-88	87
Xe-131m	1.01
Xe-133	297
Xe-135m	16
Xe-135	16
Xe-138	222
Total Gas	<u>7.3E+2</u>
I-131	73
I-132	89
I-133	144
I-134	10.0
I-135	<u>131</u>
Total Iodine	<u>4.5E+2</u>
<u>Particulate</u>	
Rb-88	6.8E-3
Cs-138	1.0E-2
Cs-134	6.3E-7
Cs-137	<u>9.2E-7</u>
Total Particulate	<u>1.7E-2</u>
Total Activity	<u>1.2E+3</u>

Dose rate at contact _____ R/hr

at 1 foot _____ R/hr

CONTAINMENT AIR SAMPLE ACTIVITY

SAMPLE TIME 13:30SCENARIO TIME 05:30

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Kr-85m	33
Kr-85	1.03
Kr-87	39
Kr-88	77
Xe-131m	1.02
Xe-133	293
Xe-135m	4.2
Xe-135	4.7
Xe-138	214
Total Gas	<u>6.7E+2</u>
I-131	72
I-132	77
I-133	142
I-134	6.7
I-135	124
Total Iodine	<u>4.2E+2</u>
<u>Particulate</u>	
Rb-88	2.1E-3
Cs-138	5.5E-3
Cs-134	6.3E-7
Cs-137	9.3E-7
Total Particulate	<u>7.6E-3</u>
Total Activity	<u>1.1E+3</u>

Dose rate at contact _____ R/hr

at 1 foot _____ R/hr

CONTAINMENT AIR SAMPLE ACTIVITY

SAMPLE TIME 14:00SCENARIO TIME 06:00

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Kr-85m	31
Kr-85	1.09
Kr-87	30
Kr-88	68
Xe-131m	1.00
Xe-133	294
Xe-135m	1.1
Xe-135	1.44
Xe-138	206
Total Gas	<u>6.3E+2</u>
I-131	70
I-132	66
I-133	140
I-134	4.5
I-135	<u>118</u>
Total Iodine	<u>4.0E+2</u>
<u>Particulate</u>	
Rb-88	6.6E-4
Cs-138	2.9E-3
Cs-134	6.2E-7
Cs-137	<u>9.4E-7</u>
Total Particulate	<u>3.6E-3</u>
Total Activity	<u>1.0E+3</u>

Dose rate at contact _____ R/hr

at 1 foot _____ R/hr

CONTAINMENT AIR SAMPLE ACTIVITY

SAMPLE TIME 02:30SCENARIO TIME 06:30

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Kr-85m	28
Kr-85	1.10
Kr-87	23
Kr-88	60
Xe-131m	0.98
Xe-133	296
Xe-135m	0.29
Xe-135	0.44
Xe-138	198
Total Gas	<u>6.1E+2</u>
I-131	71
I-132	56
I-133	137
I-134	3.0
I-135	<u>112</u>
Total Iodine	<u>3.8E+2</u>
<u>Particulate</u>	
Rb-88	2.1E-4
Cs-138	1.5E-3
Cs-134	6.1E-7
Cs-137	<u>9.3E-7</u>
Total Particulate	<u>1.7E-3</u>
Total Activity	<u>9.9E+2</u>

Dose rate at contact _____ R/hr

at 1 foot _____ R/hr

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5.1-34

CONTAINMENT AIR SAMPLE ACTIVITY

SAMPLE TIME 15:00SCENARIO TIME 07:00

<u>Isotope</u>	<u>Activity (uCi/cc)</u>
Kr-85m	26
Kr-85	1.09
Kr-87	17
Kr-88	53
Xe-131m	0.99
Xe-133	29
Xe-135m	0.077
Xe-135	0.13
Xe-138	191
Total Gas	<u>5.8E+2</u>
I-131	72
I-132	48
I-133	135
I-134	2.0
I-135	<u>107</u>
Total Iodine	<u>3.6E+2</u>
<u>Particulate</u>	
Rb-88	6.4E-5
Cs-138	7.9E-4
Cs-134	6.1E-7
Cs-137	<u>9.3E-7</u>
Total Particulate	<u>8.5E-4</u>
Total Activity	<u>9.4E+2</u>

Dose rate at contact _____ R/hr

at 1 foot _____ R/hr

REACTOR COOLANT ACTIVITY RESULTS

SAMPLE TIME 11:22

SCENARIO TIME 03:22

<u>Isotope</u>	<u>Activity (uCi/cc)</u>		<u>Activity (uCi/cc)</u>
<u>Noble Gases</u>		<u>Particulates</u>	
Kr-85m	1.8E-3	Co-58	5.7E-4
Kr-85	5.94E-5	Rb-88	2.3E-2
Kr-87	3.2E-3	Nb-95	2.5E-4
Kr-88	4.5E-3	Cs-137	1.0E-4
Xe-131m	4.5E-5	Cs-134	7.0E-4
Xe-133	1.4E-2	Cs-138	2.1E-2
Xe-135m	2.7E-3	Mn-54	6.9E-4
Xe-138	1.2E-2		
Xe-135	2.5E-3		
Total Noble Gas	2.5E-2	Total Particulates	
<u>Iodines</u>		<u>I-131 Dose Equivalent</u>	
I-131	6.8E-3		
I-132	1.0E-2		
I-133	1.2E-2		
I-134	1.4E-2		
I-135	1.3E-2		
Total Iodines	= 5.7E-2		
I 131/133 RATIO	=		
I-131 Dose EQU.	=		
Total Activity	=		
Boron	<u>2470</u>	ppm	
Chloride	<u>5</u>	ppb	

REACTOR COOLANT ACTIVITY RESULTS

SAMPLE TIME 11:30

SCENARIO TIME 03:30

<u>Isotope</u>	<u>Activity (uCi/cc)</u>		<u>Activity (uCi/cc)</u>
<u>Noble Gases</u>		<u>Particulates</u>	
Kr-85m	6.1E-3	Co-58	1.9E-3
Kr-85	1.85E-4	Rb-88	7.8E-2
Kr-87	1.1E-2	Nb-95	8.5E-4
Kr-88	1.5E-2	Cs-137	3.4E-4
Xe-131m	1.5E-4	Cs-134	2.4E-3
Xe-133	4.8E-2	Cs-138	7.1E-2
Xe-135m	9.2E-3	Mn-54	2.2E-3
Xe-138	4.1E-2		
Xe-135	8.5E-3		
Total Noble Gas	8.5E-2	Total Particulates	1.6E-1
<u>Iodines</u>		<u>I-131 Dose Equivalent</u>	
I-131	2.3E-2	2.3E-2	
I-132	3.4E-2	2.3E-4	
I-133	4.1E-2	2.3E-3	
I-134	4.8E-2	1.2E-4	
I-135	4.4E-2	9.2E-4	
Total Iodines	= 1.9E-1	2.7E-2	
I 131/133 RATIO	= .56		
I-131 Dose EQU.	= 2.7E-2		
Total Activity	= 4.4E-1		
Boron	<u>2475</u>	ppm	
Chloride	<u>5</u>	ppb	

REACTOR COOLANT ACTIVITY RESULTS

SAMPLE TIME 11:38

SCENARIO TIME 03:38

<u>Isotope</u>	<u>Activity (uCi/cc)</u>		<u>Activity (uCi/cc)</u>
<u>Noble Gases</u>		<u>Particulates</u>	
Kr-85m	1.1E-2	Co-58	3.6E-3
Kr-85	3.43E-4	Rb-88	1.4E-1
Kr-87	2.0E-2	Nb-95	1.6E-3
Kr-88	2.8E-2	Cs-137	6.3E-4
Xe-131m	2.8E-4	Cs-134	4.4E-3
Xe-133	8.8E-2	Cs-138	1.3E-1
Xe-135m	1.7E-2	Mn-54	4.0E-3
Xe-138	7.6E-2		
Xe-135	1.6E-2		
Total Noble Gas	1.6E-1	Total Particulates	2.8E-1

<u>Iodines</u>		<u>I-131 Dose Equivalent</u>
I-131	4.3E-2	4.3E-2
I-132	6.3E-2	4.3E-4
I-133	7.6E-2	4.3E-3
I-134	8.8E-2	2.2E-4
I-135	8.2E-2	1.7E-3
Total Iodines	= 3.6E-1	5.0E-2
I 131/133 RATIO	= .57	
I-131 Dose EQU.	= 5.0E-2	
Total Activity	= 8.0E-1	

Boron 2485 ppm

Chloride 4 ppb

REACTOR COOLANT ACTIVITY RESULTS

SAMPLE TIME 11:45

SCENARIO TIME 03:45

<u>Isotope</u>	<u>Activity (uCi/cc)</u>		<u>Activity (uCi/cc)</u>
<u>Noble Gases</u>		<u>Particulates</u>	
Kr-85m	1.5E-2	Co-58	4.7E3
Kr-85	4.5E-4	Rb-88	1.9E-1
Kr-87	2.6E-2	Nb-95	2.1E-3
Kr-88	3.7E-2	Cs-137	8.2E-4
Xe-131m	3.7E-4	Cs-134	5.8E-3
Xe-133	1.2E-1	Cs-138	1.7E-1
Xe-135m	2.2E-2	Mn-54	5.3E-3
Xe-138	9.9E-2		
Xe-135	2.1E-2		

Total Noble Gas 2.1E-1

Total Particulates 3.8E-1

<u>Iodines</u>		<u>I-131 Dose Equivalent</u>	
I-131	5.6E-2	5.6E-2	
I-132	8.3E-2	5.6E-4	
I-133	9.9E-2	5.6E-3	
I-134	1.2E-1	2.8E-4	
I-135	1.1E-1	2.2E-3	
Total Iodines	= <u>4.7E-1</u>	6.5E-2	
I 131/133 RATIO	= <u>.57</u>		
I-131 Dose EQU.	= <u>6.5E-2</u>		
Total Activity	= <u>1.06</u>		

Boron 2490 ppm

Chloride 5 ppb

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REACTOR COOLANT ACTIVITY RESULTS

SAMPLE TIME 12:00

SCENARIO TIME 04:00

<u>Isotope</u>	<u>Activity (uCi/cc)</u>		<u>Activity (uCi/cc)</u>
<u>Noble Gases</u>		<u>Particulates</u>	
Kr-85m	1.8E-2	Co-58	5.8E-3
Kr-85	5.5E-4	Rb-88	2.3E-1
Kr-87	3.2E-2	Nb-95	2.5E-3
Kr-88	4.5E-2	Cs-137	1.0E-3
Xe-131m	4.5E-4	Cs-134	7E-3
Xe-133	1.4E-1	Cs-138	2.11E-1
Xe-135m	2.7E-2	Mn-54	6.4E-3
Xe-138	1.2E-1		
Xe-135	2.5E-2		

Total Noble Gas 2.5E-1

Total Particulates 4.6E-1

<u>Iodines</u>		<u>I-131 Dose Equivalent</u>
I-131	6.7E-2	6.7E-2
I-132	1.0E-1	6.7E-4
I-133	1.2E-1	6.7E-3
I-134	1.4E-1	3.4E-4
I-135	1.3E-1	2.7E-3
Total Iodines	= 5.8E-1	7.7E-2
I 131/133 RATIO	= .56	
I-131 Dose EQU.	= 7.7E-2	
Total Activity	= 1.29	

Boron 2500 ppm

Chloride 5 ppb

REACTOR COOLANT ACTIVITY RESULTS

SAMPLE TIME 12:30

SCENARIO TIME 04:30

<u>Isotope</u>	<u>Activity (uCi/cc)</u>		<u>Activity (uCi/cc)</u>
<u>Noble Gases</u>		<u>Particulates</u>	
Kr-85m	2.0E-2	Co-58	6.3E-3
Kr-85	6.0E-4	Rb-88	2.5E-1
Kr-87	3.5E-2	Nb-95	2.8E-3
Kr-88	5.0E-2	Cs-137	1.1E-3
Xe-131m	5.0E-4	Cs-134	7.7E-3
Xe-133	1.5E-1	Cs-138	2.3E-1
Xe-135m	3.0E-2	Mn-54	7.0E-3
Xe-138	1.3E-1		
Xe-135	2.8E-2		
Total Noble Gas	2.8E-1	Total Particulates	5.0E-1
<u>Iodines</u>		<u>I-131 Dose Equivalent</u>	
I-131	7.5E-2		7.5E-2
I-132	1.1E-1		7.5E-4
I-133	1.3E-1		7.5E-3
I-134	1.5E-1		3.8E-4
I-135	1.4E-1		3.0E-3
Total Iodines	= 6.4E-1		8.7E-2
I 131/133 RATIO	= .58		
I-131 Dose EQU.	= 8.7E-2		
Total Activity	= 1.42		

Boron 2480 ppm

Chloride 4 ppb

REACTOR COOLANT ACTIVITY RESULTS

SAMPLE TIME 13:00

SCENARIO TIME 05:00

<u>Isotope</u>	<u>Activity (uCi/cc)</u>		<u>Activity (uCi/cc)</u>
<u>Noble Gases</u>		<u>Particulates</u>	
Kr-85m	1.8E-2	Co-58	6.2E-3
Kr-85	6.1E-4	Rb-88	7.8E-2
Kr-87	2.7E-2	Nb-95	2.8E-3
Kr-88	4.4E-2	Cs-137	1.2E-3
Xe-131m	5.0E-4	Cs-134	7.8E-3
Xe-133	1.5E-1	Cs-138	2.4E-1
Xe-135m	7.9E-3	Mn-54	3.7E-3
Xe-138	4.0E-2		
Xe-135	2.7E-2		
Total Noble Gas	<u>3.2E-1</u>	Total Particulates	<u>3.4E-1</u>
<u>Iodines</u>		<u>I-131 Dose Equivalent</u>	
I-131	7.5E-2	7.5E-2	
I-132	9.4E-2	9.4E-4	
I-133	1.3E-1	1.3E-2	
I-134	1.0E-1	5.0E-4	
I-135	1.3E-1	5.2E-3	
Total Iodines	= <u>5.3E-1</u>	8.9E-2	
I 131/133 RATIO	= <u>.58</u>		
I-131 Dose EQU.	= <u>8.9E-2</u>		
Total Activity	= <u>1.19</u>		

Boron 2550 ppm

Chloride 5 ppb

REACTOR COOLANT ACTIVITY RESULTS

SAMPLE TIME 13:30

SCENARIO TIME 05:30

<u>Isotope</u>	<u>Activity (uCi/cc)</u>		<u>Activity (uCi/cc)</u>
<u>Noble Gases</u>		<u>Particulates</u>	
Kr-85m	1.7E-2	Co-58	6.3E-3
Kr-85	5.9E-4	Rb-88	2.4E-2
Kr-87	2.0E-2	Nb-95	2.8E-3
Kr-88	3.9E-2	Cs-137	1.1E-3
Xe-131m	4.9E-4	Cs-134	7.8E-3
Xe-133	1.4E-1	Cs-138	2.3E-1
Xe-135m	2.1E-3	Mn-54	1.9E-3
Xe-138	1.2E-2		
Xe-135	2.6E-2		
Total Noble Gas	<u>2.6E-1</u>	Total Particulates	<u>2.8E-1</u>
<u>Iodines</u>		<u>I-131 Dose Equivalent</u>	
I-131	7.6E-2	7.6E-2	
I-132	8.1E-2	8.1E-4	
I-133	1.3E-1	1.3E-3	
I-134	6.7E-2	3.4E-5	
I-135	1.3E-1	<u>5.2E-3</u>	
Total Iodines	= <u>4.8E-1</u>	9.0E-2	
I 131/133 RATIO	= <u>.58</u>		
I-131 Dose EQU.	= <u>9.0E-2</u>		
Total Activity	= <u>1.02</u>		

Boron 2470 ppm

Chloride 4 ppb

REACTOR COOLANT ACTIVITY RESULTS

SAMPLE TIME 14:00

SCENARIO TIME 06:00

<u>Isotope</u>	<u>Activity (uCi/cc)</u>		<u>Activity (uCi/cc)</u>
<u>Noble Gases</u>		<u>Particulates</u>	
Kr-85m	1.6E-2	Co-58	6.3E-3
Kr-85	6.0E-4	Rb-88	7.5E-3
Kr-87	1.5E-2	Nb-95	2.7E-3
Kr-88	3.4E-2	Cs-137	1.2E-3
Xe-131m	5.0E-4	Cs-134	7.7E-3
Xe-133	1.5E-1	Cs-138	2.2E-1
Xe-135m	5.5E-4	Mn-54	1.0E-3
Xe-138	3.7E-3		
Xe-135	2.5E-2		

Total Noble Gas	<u>2.5E-1</u>	Total Particulates	<u>2.5E-1</u>
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<u>Iodines</u>		<u>I-131 Dose Equivalent</u>	
I-131	7.5E-2		7.5E-2
I-132	7.6E-2		7.6E-4
I-133	1.2E-1		1.2E-2
I-134	4.5E-2		2.3E-4
I-135	1.2E-1		4.8E-3
Total Iodines	= <u>4.5E-1</u>		8.8E-2
I 131/133 RATIO	= <u>.58</u>		
I-131 Dose EQU.	= <u>8.8E-2</u>		
Total Activity	= <u>0.95</u>		

Boron 2500 ppm

Chloride 5 ppb

THIS IS A DRILL

REACTOR COOLANT ACTIVITY RESULTS

SAMPLE TIME 14:30

SCENARIO TIME 06:30

<u>Isotope</u>	<u>Activity (uCi/cc)</u>		<u>Activity (uCi/cc)</u>
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Noble Gases

Kr-85m	1.5E-2
Kr-85	6.1E-4
Kr-87	1.2E-2
Kr-88	3.0E-2
Xe-131m	4.9E-4
Xe-133	1.4E-1
Xe-135m	1.5E-4
Xe-138	1.1E-3
Xe-135	<u>2.4E-2</u>

Total Noble Gas	<u>2.2E-1</u>
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Particulates

Co-58	6.4E-3
Rb-88	2.3E-3
Nb-95	2.9E-3
Cs-137	1.0E-3
Cs-134	7.6E-3
Cs-138	2.3E-1
Mn-54	<u>5.3E-4</u>

Total Particulates	<u>2.6E-1</u>
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Iodines

I-131	7.4E-2
I-132	6.0E-2
I-133	1.2E-1
I-134	3.0E-2
I-135	1.2E-1

Total Iodines	=	<u>4.0E-1</u>
I 131/133 RATIO	=	<u>.58</u>
I-131 Dose EQU.	=	<u>8.7E-2</u>
Total Activity	=	<u>0.88</u>

I-131 Dose Equivalent

7.4E-2
6.0E-2
1.2E-2
1.5E-4
<u>4.8E-3</u>
8.7E-2

Boron 2460 ppm

Chloride 3 ppb

REACTOR COOLANT ACTIVITY RESULTS

SAMPLE TIME 15:00

SCENARIO TIME 07:00

<u>Isotope</u>	<u>Activity (uCi/cc)</u>		<u>Activity (uCi/cc)</u>
<u>Noble Gases</u>		<u>Particulates</u>	
Kr-85m	1.3E-2	Co-58	6.3E-3
Kr-85	5.9E-4	Rb-88	7.3E-4
Kr-87	8.9E-3	Nb-95	2.8E-3
Kr-88	2.7E-2	Cs-137	1.1E-3
Xe-131m	5.0E-4	Cs-134	7.7E-3
Xe-133	1.4E-1	Cs-138	2.2E-1
Xe-135m	3.8E-5	Mn-54	2.8E-4
Xe-138	3.4E-4		
Xe-135	2.3E-2		

Total Noble Gas

2.1E-1

Total Particulates

2.4E-1

Iodines

I-131	7.5E-2
I-132	5.1E-2
I-133	1.2E-1
I-134	2.0E-2
I-135	1.2E-1

I-131 Dose Equivalent

7.5E-2
5.1E-4
1.2E-2
1.0E-4
4.8E-3
8.8E-2

Total Iodines

=

3.9E-1

I 131/133 RATIO

=

.58

I-131 Dose EQU.

=

8.8E-2

Total Activity

=

0.84

Boron

2440

ppm

Chloride

4

ppb

REACTOR COOLANT ACTIVITY RESULTS

SAMPLE TIME 15:30

SCENARIO TIME 07:30

<u>Isotope</u>	<u>Activity (uCi/cc)</u>		<u>Activity (uCi/cc)</u>
<u>Noble Gases</u>		<u>Particulates</u>	
Kr-85m	1.2E-2	Co-58	6.2E-2
Kr-85	5.8E-4	Rb-88	2.3E-4
Kr-87	6.8E-3	Nb-95	2.7E-3
Kr-88	2.4E-2	Cs-137	1.1E-3
Xe-131m	5.0E-4	Cs-134	7.6E-3
Xe-133	1.3E-1	Cs-138	2.2E-1
Xe-135m	1.0E-5	Mn-54	<u>1.5E-4</u>
Xe-138	1.0E-4		
Xe-135	<u>2.2E-2</u>		
Total Noble Gas	<u>2.0E-1</u>	Total Particulates	<u>2.4E-1</u>
<u>Iodines</u>		<u>I-131 Dose Equivalent</u>	
I-131	7.5E-2	7.5E-2	
I-132	4.4E-2	4.4E-4	
I-133	1.1E-1	1.1E-2	
I-134	1.4E-2	7.0E-5	
I-135	1.1E-1	<u>4.4E-3</u>	
Total Iodines	= <u>3.5E-1</u>	8.6E-2	
I 131/133 RATIO	= <u>.58</u>		
I-131 Dose EQU.	= <u>8.6E-2</u>		
Total Activity	= <u>0.79</u>		

Boron 2480 ppm

Chloride 5 ppb

REACTOR COOLANT ACTIVITY RESULTS

SAMPLE TIME 16:00

SCENARIO TIME 08:00

<u>Isotope</u>	<u>Activity (uCi/cc)</u>		<u>Activity (uCi/cc)</u>
<u>Noble Gases</u>		<u>Particulates</u>	
Kr-85m	1.2E-2	Co-58	6.3E-3
Kr-85	5.9E-4	Rb-88	7.0E-5
Kr-87	5.2E-3	Nb-95	2.7E-3
Kr-88	2.1E-2	Cs-137	1.0E-3
Xe-131m	4.9E-4	Cs-134	7.7E-3
Xe-133	1.4E-1	Cs-138	2.1E-1
Xe-135m	2.7E-6	Mn-54	7.6E-5
Xe-138	3.2E-5		
Xe-135	2.1E-2		
Total Noble Gas	<u>2.0E-1</u>	Total Particulates	<u>2.3E-1</u>
<u>Iodines</u>		<u>I-131 Dose Equivalent</u>	
I-131	7.4E-2	7.4E-2	
I-132	3.8E-2	3.5E-4	
I-133	1.1E-1	1.1E-2	
I-134	9.1E-3	4.6E-5	
I-135	1.0E-1	<u>4.0E-3</u>	
Total Iodines	= <u>3.3E-1</u>	8.5E-2	
I 131/133 RATIO	= <u>.58</u>		
I-131 Dose EQU.	= <u>8.5E-2</u>		
Total Activity	= <u>0.76</u>		

Boron 2490 ppm

Chloride 5 ppb

ONSITE DOSE RATES (R/h) FROM
UNIT 1 EMERGENCY AIRLOCK

	Scenario Time	03:30	04:00	04:30	05:00
	Actual Time	11:30	12:00	12:30	13:00
<u>Location</u>					(0.88)
Contact with Emerg. Airlock		2000	8000	8000	7000
10FT from Emerg. Airlock			1000	1000	880
50FT from Emerg. Airlock			30	30	26
100FT from Emerg. Airlock			8	8	7
At Protected Area Fence (~200FT)			2	2	1.7
On Access Road (~400FT)			0.5	0.5	0.4
In Switchyard (~800FT)			0.120	0.120	0.120

THIS IS A DRILL
5.1-46

ONSITE DOSE RATES (R/h) FROM
UNIT 1 EMERGENCY AIRLOCK

	Scenario Time	05:30	06:00	06:30	07:00
	Actual Time	13:30	14:00	14:30	15:00
<u>Location</u>		(0.56)	(0.28)	(.22)	(.19)
Contact with Emerg. Airlock		4480	2240	1760	1520
10FT from Emerg. Airlock		560	280	220	190
50FT from Emerg. Airlock		16.8	8.4	6.6	6
100FT from Emerg. Airlock		4.5	2.2	1.8	1.5
At Protected Area Fence (~200FT)		1.1	0.6	0.4	0.4
On Access Road (~400FT)		0.3	0.1	0.1	0.1
In Switchyard (~800FT)			0.034	0.026	0.023

ONSITE DOSE RATES (R/h) FROM
UNIT 1 EMERGENCY AIRLOCK

	Scenario Time	07:30		
	Actual Time	15:30		
<u>Location</u>		(.16)		
Contact with Emerg. Airlock		1280		
10FT from Emerg. Airlock		160		
50FT from Emerg. Airlock		4.8		
100FT from Emerg. Airlock		1.3		
At Protected Area Fence (~200FT)		0.3		
On Access Road (~400FT)		0.1		
In Switchyard (~800FT)		0.020		

ONSITE RADIOLOGICAL MEASUREMENTS

ACTUAL TIME 08:30

SCENARIO TIME 00:30

	<u>Measurement</u>
<u>Location:</u> Site Boundary	
Whole Body Dose Rate (mrem/h)	0.1
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> Zone I	
Whole Body Dose Rate (mrem/h)	0.15
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> "Zone II	
Whole Body Dose Rate (mrem/h)	0.07
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min W/MS2-SPA3	---

PLANT PLOT PLAN



PLANT MAP

ZONE I & ZONE II

Plume @ 60°
Scenario Time = 0:00
Actual Time = 8:00

THIS IS A DRILL

ONSITE RADIOLOGICAL MEASUREMENTS

ACTUAL TIME 08:45

SCENARIO TIME 00:45

	<u>Measurement</u>
<u>Location:</u> Site Boundary	
Whole Body Dose Rate (mrem/h)	0.4
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> Zone I	
Whole Body Dose Rate (mrem/h)	0.6
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> Zone II	
Whole Body Dose Rate (mrem/h)	0.05
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min W/MS2-SPA3	---

ONSITE RADIOLOGICAL MEASUREMENTS

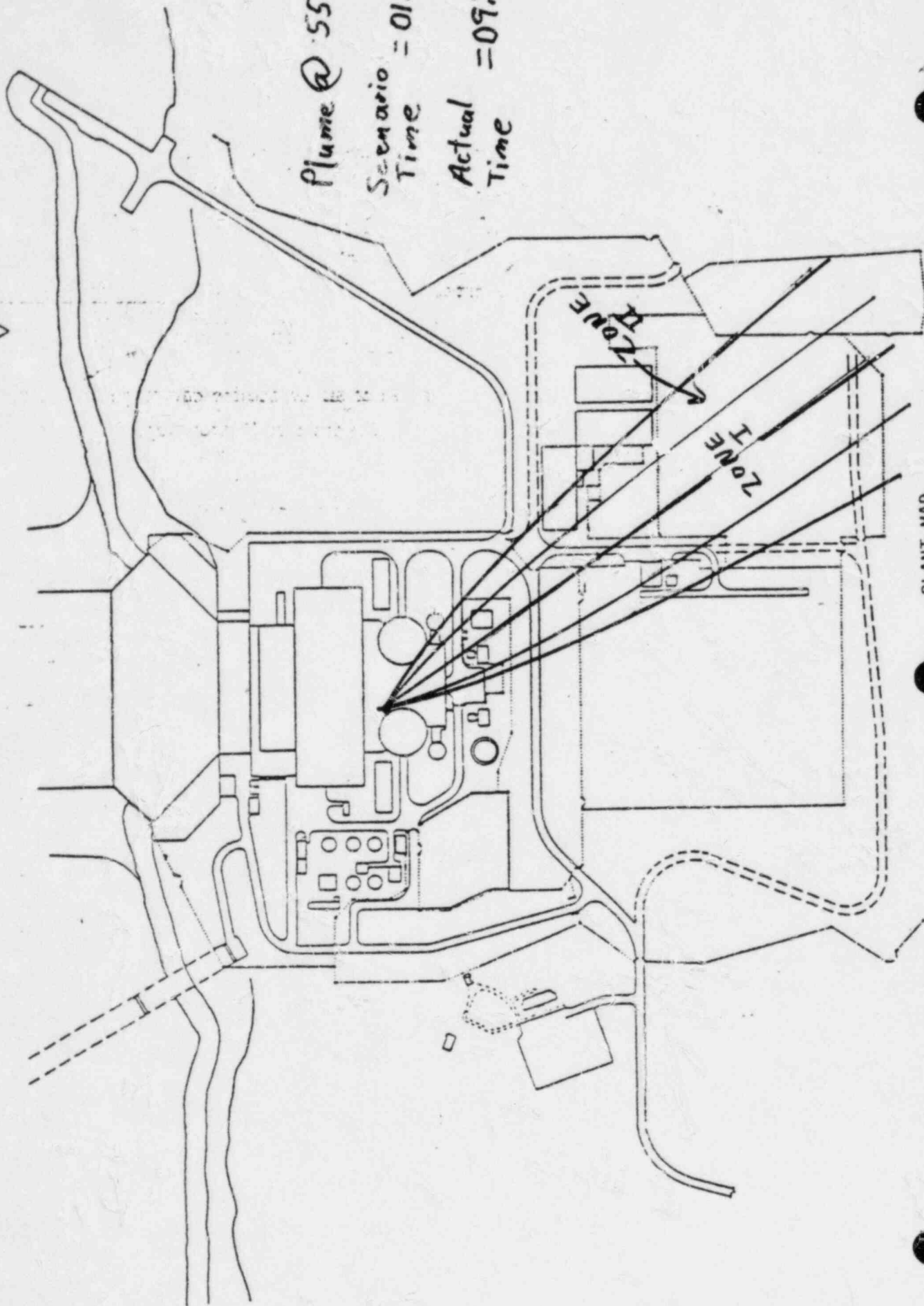
ACTUAL TIME 09:00

SCENARIO TIME 01:00

	<u>Measurement</u>
<u>Location:</u> Site Boundary	
Whole Body Dose Rate (mrem/h)	0.4
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> Zone I	
Whole Body Dose Rate (mrem/h)	0.6
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> Zone II	
Whole Body Dose Rate (mrem/h)	0.08
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min W/MS2-SPA3	---



PLANT PLOT PLAN



Plume @ 55°

Scenario
Time = 01:00

Actual
Time = 09:00

ONSITE RADIOLOGICAL MEASUREMENTS

ACTUAL TIME 09:15

SCENARIO TIME 01:15

	<u>Measurement</u>
<u>Location:</u> Site Boundary	
Whole Body Dose Rate (mrem/h)	0.4
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> Zone I	
Whole Body Dose Rate (mrem/h)	0.6
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> Zone II	
Whole Body Dose Rate (mrem/h)	0.1
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min W/MS2-SPA3	---

THIS IS A DRILL

ONSITE RADIOLOGICAL MEASUREMENTS

ACTUAL TIME 09:30

SCENARIO TIME 01:30

	<u>Measurement</u>
<u>Location:</u> Site Boundary	
Whole Body Dose Rate (mrem/h)	0.5
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> Zone I	
Whole Body Dose Rate (mrem/h)	0.75
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> Zone II	
Whole Body Dose Rate (mrem/h)	0.05
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min W/MS2-SPA3	---

ONSITE RADIOLOGICAL MEASUREMENTS

ACTUAL TIME 09:45

SCENARIO TIME 01:45

	<u>Measurement</u>
<u>Location:</u> Site Boundary	
Whole Body Dose Rate (mrem/h)	0.7
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> Zone I	
Whole Body Dose Rate (mrem/h)	1.0
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> Zone II	
Whole*Body Dose Rate (mrem/h)	0.1
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min W/MS2-SPA3	---

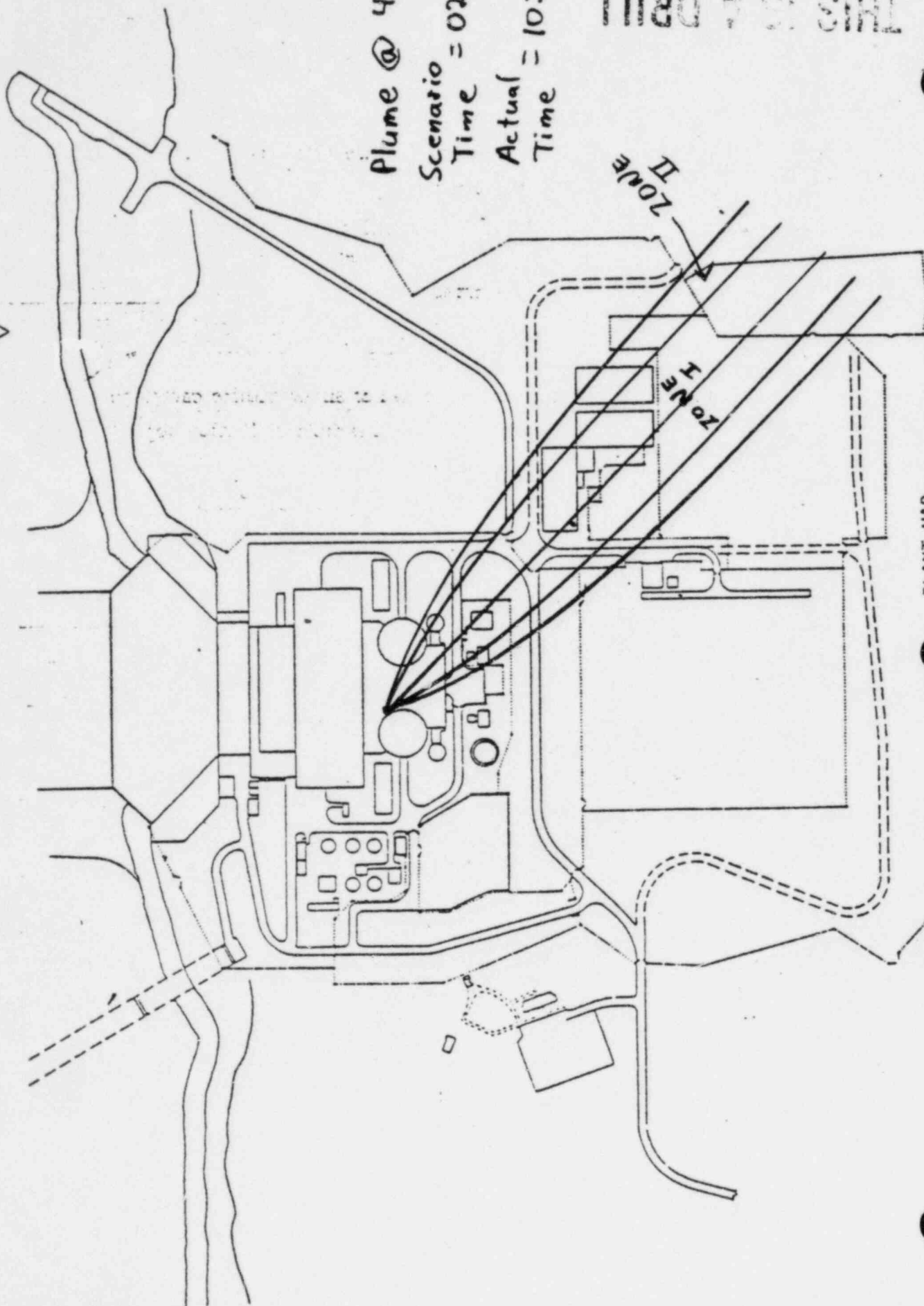
ONSITE RADIOLOGICAL MEASUREMENTS

ACTUAL TIME 10:00

SCENARIO TIME 02:00

	<u>Measurement</u>
<u>Location:</u> Site Boundary	
Whole Body Dose Rate (mrem/h)	0.8
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> Zone I	
Whole Body Dose Rate (mrem/h)	1.0
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> Zone II	
Whole Body Dose Rate (mrem/h)	0.1
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min W/MS2-SPA3	---

PLANT PLOT PLAN



Plume @ 45°
Scenario Time = 02:00
Actual Time = 10:00

THIS IS A DRILL

ONSITE RADIOLOGICAL MEASUREMENTS

ACTUAL TIME 10:15

SCENARIO TIME 02:15

	<u>Measurement</u>
<u>Location:</u> Site Boundary	
Whole Body Dose Rate (mrem/h)	1.0
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> Zone I	
Whole Body Dose Rate (mrem/h)	1.5
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> Zone II	
Whole Body Dose Rate (mrem/h)	0.2
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min W/MS2-SPA3	---

THIS IS A DRILL

ONSITE RADIOLOGICAL MEASUREMENTS

ACTUAL TIME 10:30

SCENARIO TIME 02:30

	<u>Measurement</u>
<u>Location:</u> Site Boundary	
Whole Body Dose Rate (mrem/h)	.1
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> Zone I	
Whole Body Dose Rate (mrem/h)	1.5
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> Zone II	
Whole Body Dose Rate (mrem/h)	0.2
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min W/MS2-SPA3	---

ONSITE RADIOLOGICAL MEASUREMENTS

ACTUAL TIME 10:45

SCENARIO TIME 02:45

	<u>Measurement</u>
<u>Location:</u> Site Boundary	
Whole Body Dose Rate (mrem/h)	0.9
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> Zone I	
Whole Body Dose Rate (mrem/h)	1.0
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min. W/MS2-SPA3	---
<u>Location:</u> Zone II	
Whole Body Dose Rate (mrem/h)	0.1
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min W/MS2-SPA3	---

ONSITE RADIOLOGICAL MEASUREMENTS

ACTUAL TIME 11:00

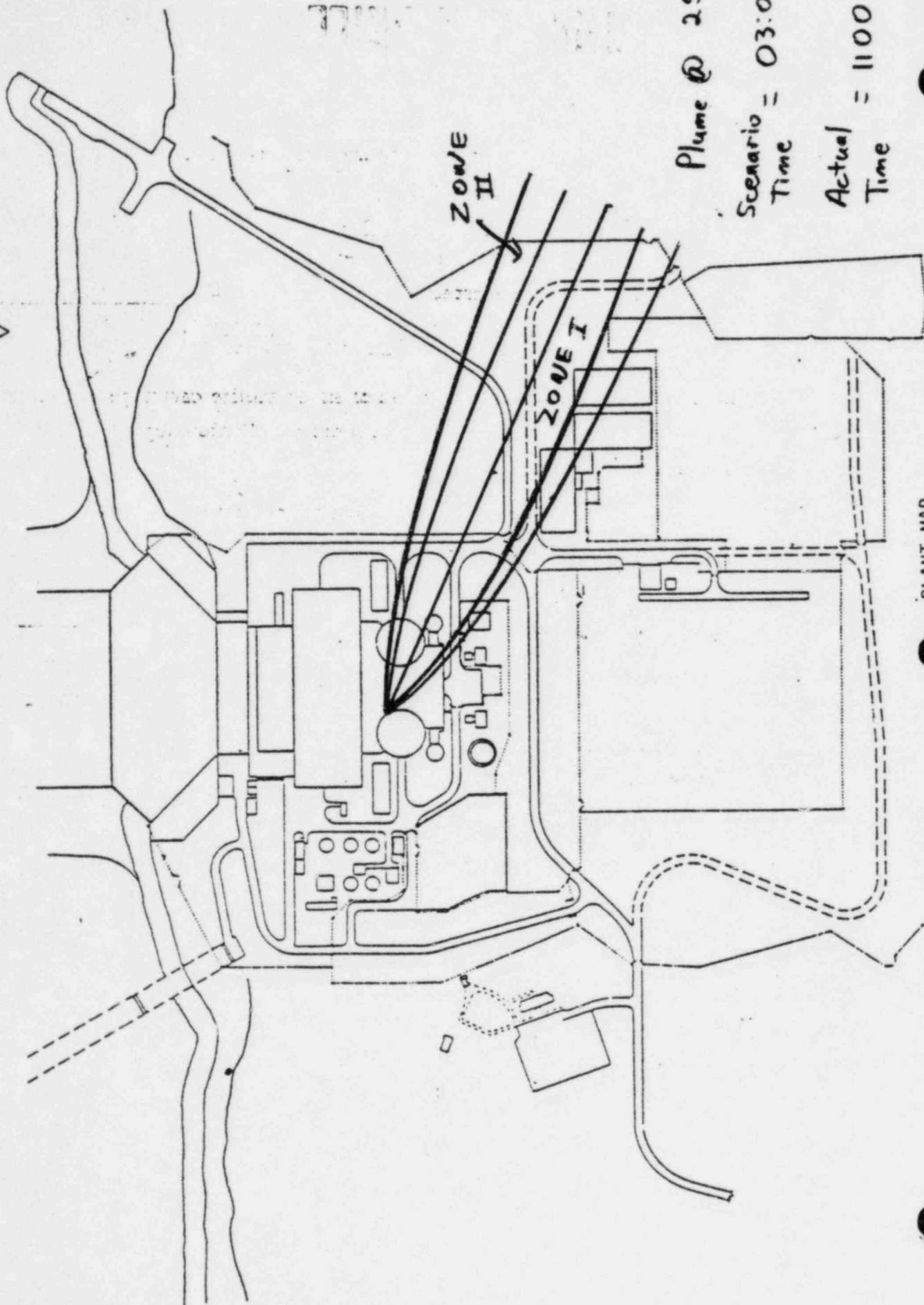
SCENARIO TIME 03:00

	<u>Measurement</u>
<u>Location:</u> Site Boundary	
Whole Body Dose Rate (mrem/h)	0.9
Thyroid Dose Rate (mrem/h)	0.3
Iodine Air Activity (uCi/cc)	1.5E-9
Net Counts/2 min. W/MS2-SPA3	13
<u>Location:</u> Zone I	
Whole Body Dose Rate (mrem/h)	1.0
Thyroid Dose Rate (mrem/h)	0.3
Iodine Air Activity (uCi/cc)	1.5E-9
Net Counts/2 min. W/MS2-SPA3	13
<u>Location:</u> Zone II	
Whole Body Dose Rate (mrem/h)	0.1
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min W/MS2-SPA3	---

THIS IS A DRILL



PLANT PLOT PLAN



5.1-63

Plume @ 25°

Scenario = 03:00
Time

Actual = 1100
Time

ONSITE RADIOLOGICAL MEASUREMENTS

ACTUAL TIME 11:15

SCENARIO TIME 03:15

	<u>Measurement</u>
<u>Location:</u> Site Boundary	
Whole Body Dose Rate (mrem/h)	6
Thyroid Dose Rate (mrem/h)	0.3
Iodine Air Activity (uCi/cc)	1.5E-9
Net Counts/2 min. W/MS2-SPA3	13
<u>Location:</u> Zone I	
Whole Body Dose Rate (mrem/h)	9
Thyroid Dose Rate (mrem/h)	0.5
Iodine Air Activity (uCi/cc)	2.5E-9
Net Counts/2 min. W/MS2-SPA3	21
<u>Location:</u> Zone II	
Whole Body Dose Rate (mrem/h)	0.7
Thyroid Dose Rate (mrem/h)	0.2
Iodine Air Activity (uCi/cc)	1.0E-9
Net Counts/2 min W/MS2-SPA3	8

ONSITE RADIOLOGICAL MEASUREMENTS

ACTUAL TIME 11:30

SCENARIO TIME 03:30

	<u>Measurement</u>
<u>Location:</u> Site Boundary	
Whole Body Dose Rate (mrem/h)	480
Thyroid Dose Rate (mrem/h)	130
Iodine Air Activity (uCi/cc)	6.5E-7
Net Counts/2 min. W/MS2-SPA3	5416
<u>Location:</u> Zone I	
Whole Body Dose Rate (mrem/h)	570
Thyroid Dose Rate (mrem/h)	150
Iodine Air Activity (uCi/cc)	7.5E-7
Net Counts/2 min. W/MS2-SPA3	6250
<u>Location:</u> Zone II	
Whole Body Dose Rate (mrem/h)	60
Thyroid Dose Rate (mrem/h)	15
Iodine Air Activity (uCi/cc)	7.5E-8
Net Counts/2 min W/MS2-SPA3	625

THIS IS A DRILL
5.1-65

ONSITE RADIOLOGICAL MEASUREMENTS

ACTUAL TIME 11:45

SCENARIO TIME 03:45

	<u>Measurement</u>
<u>Location:</u> Site Boundary	
Whole Body Dose Rate (mrem/h)	830
Thyroid Dose Rate (mrem/h)	100
Iodine Air Activity (uCi/cc)	5E-7
Net Counts/2 min. W/MS2-SPA3	4167
<u>Location:</u> Zone I	
Whole Body Dose Rate (mrem/h)	1000
Thyroid Dose Rate (mrem/h)	120
Iodine Air Activity (uCi/cc)	6E-7
Net Counts/2 min. W/MS2-SPA3	5000
<u>Location:</u> Zone II	
Whole Body Dose Rate (mrem/h)	100
Thyroid Dose Rate (mrem/h)	15
Iodine Air Activity (uCi/cc)	7.5E-8
Net Counts/2 min W/MS2-SPA3	625

THIS IS A DRILL

ONSITE RADIOLOGICAL MEASUREMENTS

ACTUAL TIME 12:00

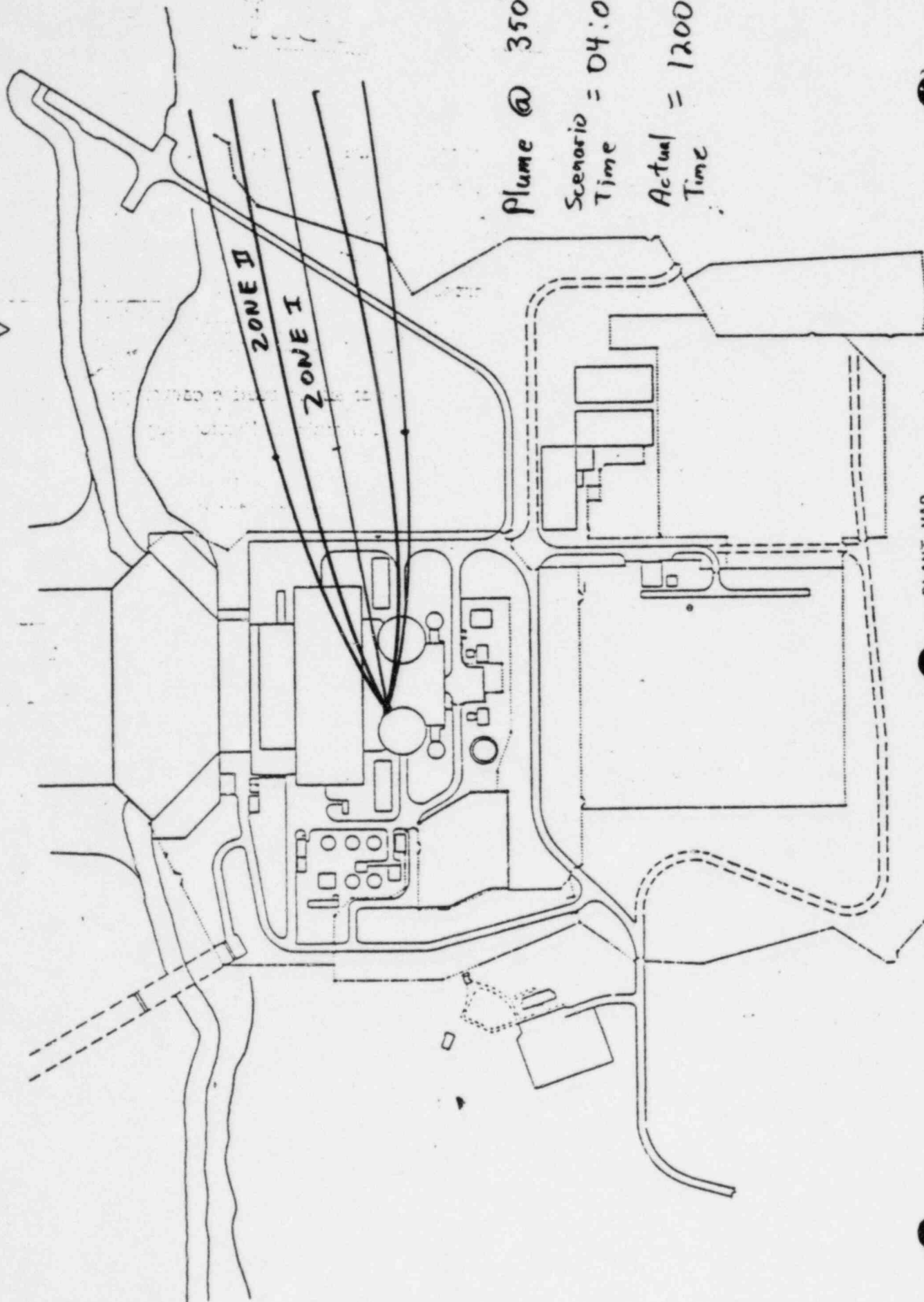
SCENARIO TIME 04:00

	<u>Measurement</u>
<u>Location:</u> Site Boundary	
Whole Body Dose Rate (mrem/h)	1500
Thyroid Dose Rate (mrem/h)	180
Iodine Air Activity (uCi/cc)	9E-7
Net Counts/2 min. W/MS2-SPA3	7500
<u>Location:</u> Zone I	
Whole Body Dose Rate (mrem/h)	1650
Thyroid Dose Rate (mrem/h)	196
Iodine Air Activity (uCi/cc)	9.8E-7
Net Counts/2 min. W/MS2-SPA3	8166
<u>Location:</u> Zone II	
Whole Body Dose Rate (mrem/h)	150
Thyroid Dose Rate (mrem/h)	18
Iodine Air Activity (uCi/cc)	9E-8
Net Counts/2 min W/MS2-SPA3	750

CALVERT CLIFFS NUCLEAR POWER PLANT
Baltimore Gas & Electric Company



PLANT PLOT PLAN



Plume @ 350°

Scenario = 04:00
Time

Actual = 1200
Time

PLANT MAP

ONSITE RADIOLOGICAL MEASUREMENTS

ACTUAL TIME 12:15

SCENARIO TIME 04:15

Measurement

Location: Site Boundary

Whole Body Dose Rate (mrem/h)	1900
Thyroid Dose Rate (mrem/h)	290
Iodine Air Activity (uCi/cc)	1.5E-6
Net Counts/2 min. W/MS2-SPA3	12500

Location: Zone I

Whole Body Dose Rate (mrem/h)	2500
Thyroid Dose Rate (mrem/h)	350
Iodine Air Activity (uCi/cc)	1.8E-6
Net Counts/2 min. W/MS2-SPA3	1458

Location: Zone II

Whole Body Dose Rate (mrem/h)	200
Thyroid Dose Rate (mrem/h)	34
Iodine Air Activity (uCi/cc)	1.7E-7
Net Counts/2 min W/MS2-SPA3	1416

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ONSITE RADIOLOGICAL MEASUREMENTS

ACTUAL TIME 12:30

SCENARIO TIME 04:30

	<u>Measurement</u>
<u>Location:</u> Site Boundary	
Whole Body Dose Rate (mrem/h)	2100
Thyroid Dose Rate (mrem/h)	340
Iodine Air Activity (uCi/cc)	1.7E-6
Net Counts/2 min. W/MS2-SPA3	14167
<u>Location:</u> Zone I	
Whole Body Dose Rate (mrem/h)	2400
Thyroid Dose Rate (mrem/h)	500
Iodine Air Activity (uCi/cc)	2.5E-6
Net Counts/2 min. W/MS2-SPA3	20833
<u>Location:</u> Zone II	
Whole Body Dose Rate (mrem/h)	220
Thyroid Dose Rate (mrem/h)	50
Iodine Air Activity (uCi/cc)	2.5E-7
Net Counts/2 min W/MS2-SPA3	2083

ONSITE RADIOLOGICAL MEASUREMENTS

ACTUAL TIME 12:45

SCENARIO TIME 04:45

	<u>Measurement</u>
<u>Location:</u> Site Boundary	
Whole Body Dose Rate (mrem/h)	2000
Thyroid Dose Rate (mrem/h)	310
Iodine Air Activity (uCi/cc)	1.6E-6
Net Counts/2 min. W/MS2-SPA3	13333
<u>Location:</u> Zone I	
Whole Body Dose Rate (mrem/h)	2500
Thyroid Dose Rate (mrem/h)	380
Iodine Air Activity (uCi/cc)	1.9E-6
Net Counts/2 min. W/MS2-SPA3	15833
<u>Location:</u> Zone II	
Whole Body Dose Rate (mrem/h)	250
Thyroid Dose Rate (mrem/h)	40
Iodine Air Activity (uCi/cc)	2.0E-7
Net Counts/2 min W/MS2-SPA3	1667

THIS IS A DRILL

ONSITE RADIOLOGICAL MEASUREMENTS

ACTUAL TIME 13:00

SCENARIO TIME 05:00

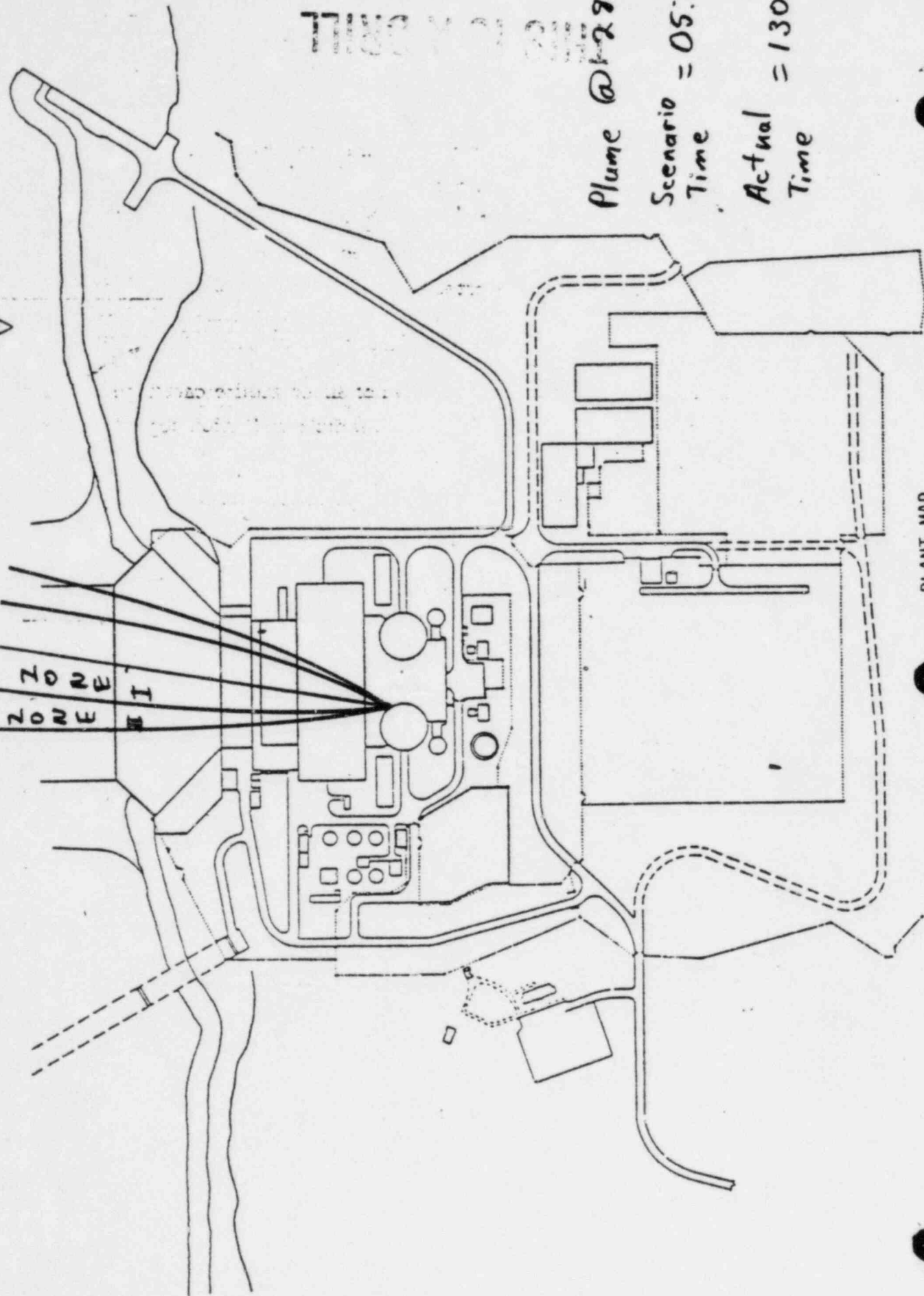
	<u>Measurement</u>
<u>Location:</u> Site Boundary	
Whole Body Dose Rate (mrem/h)	570
Thyroid Dose Rate (mrem/h)	210
Iodine Air Activity (uCi/cc)	1.1E-6
Net Counts/2 min. W/MS2-SPA3	9166
<u>Location:</u> Zone I	
Whole Body Dose Rate (mrem/h)	500
Thyroid Dose Rate (mrem/h)	200
Iodine Air Activity (uCi/cc)	1E-6
Net Counts/2 min. W/MS2-SPA3	8333
<u>Location:</u> Zone II	
Whole Body Dose Rate (mrem/h)	---
Thyroid Dose Rate (mrem/h)	---
Iodine Air Activity (uCi/cc)	---
Net Counts/2 min W/MS2-SPA3	---

CAIVERT CLIFFS NUCLEAR POWER PLANT
Baltimore Gas & Electric Company



PLANT PLOT PLAN

ZONE I
ZONE II



PLANT MAP

THIS MAP IS NOT TO BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS DESIGNED

S.1-1-73

Plume @ 290°

Scenario Time = 05:00

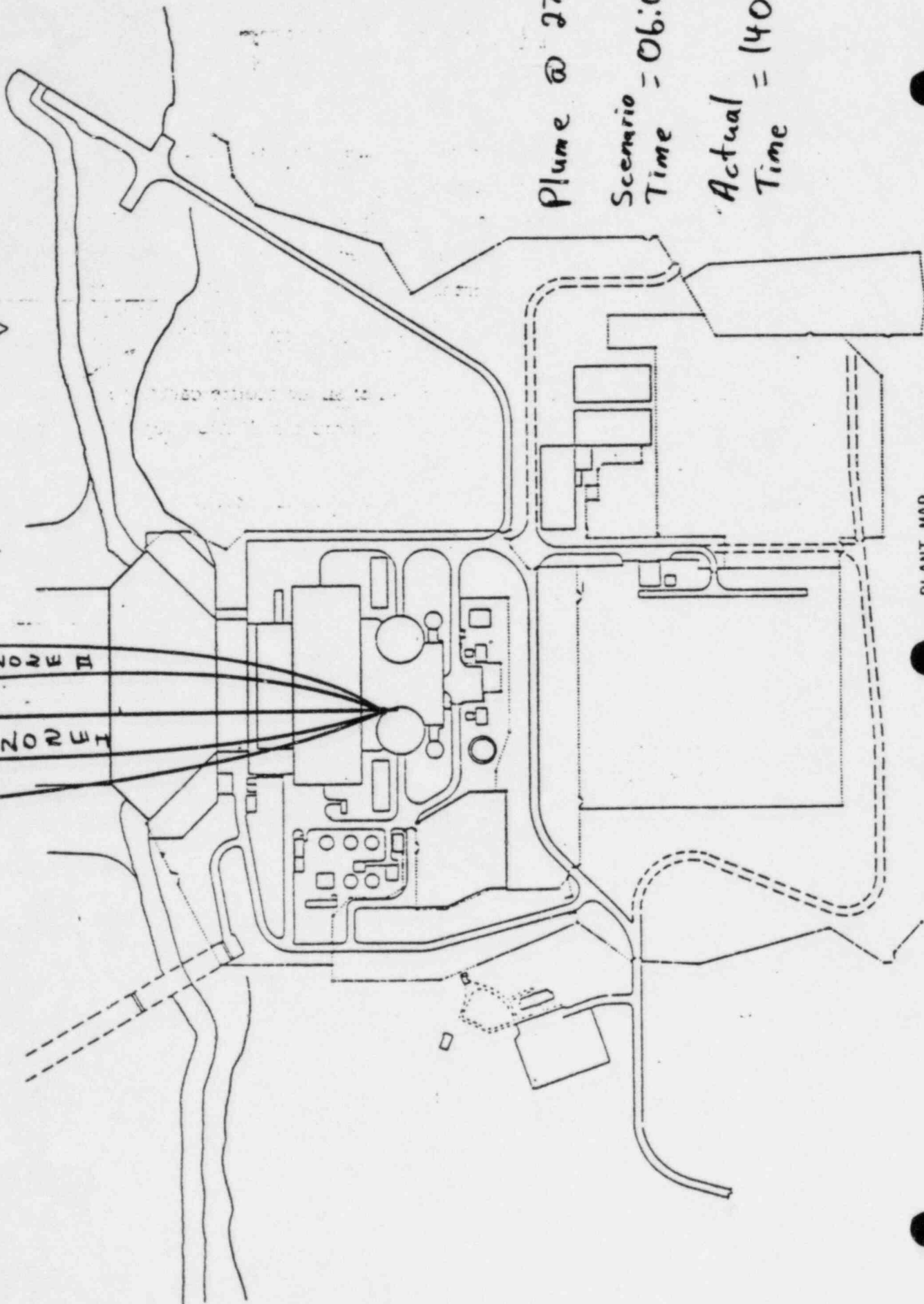
Actual Time = 1300

CALVERT CLIFFS NUCLEAR POWER PLANT
Baltimore Gas & Electric Company



PLANT PLOT PLAN

ZONE II
ZONE I



5.1-74

Plume @ 270°

Scenario
Time = 06:00

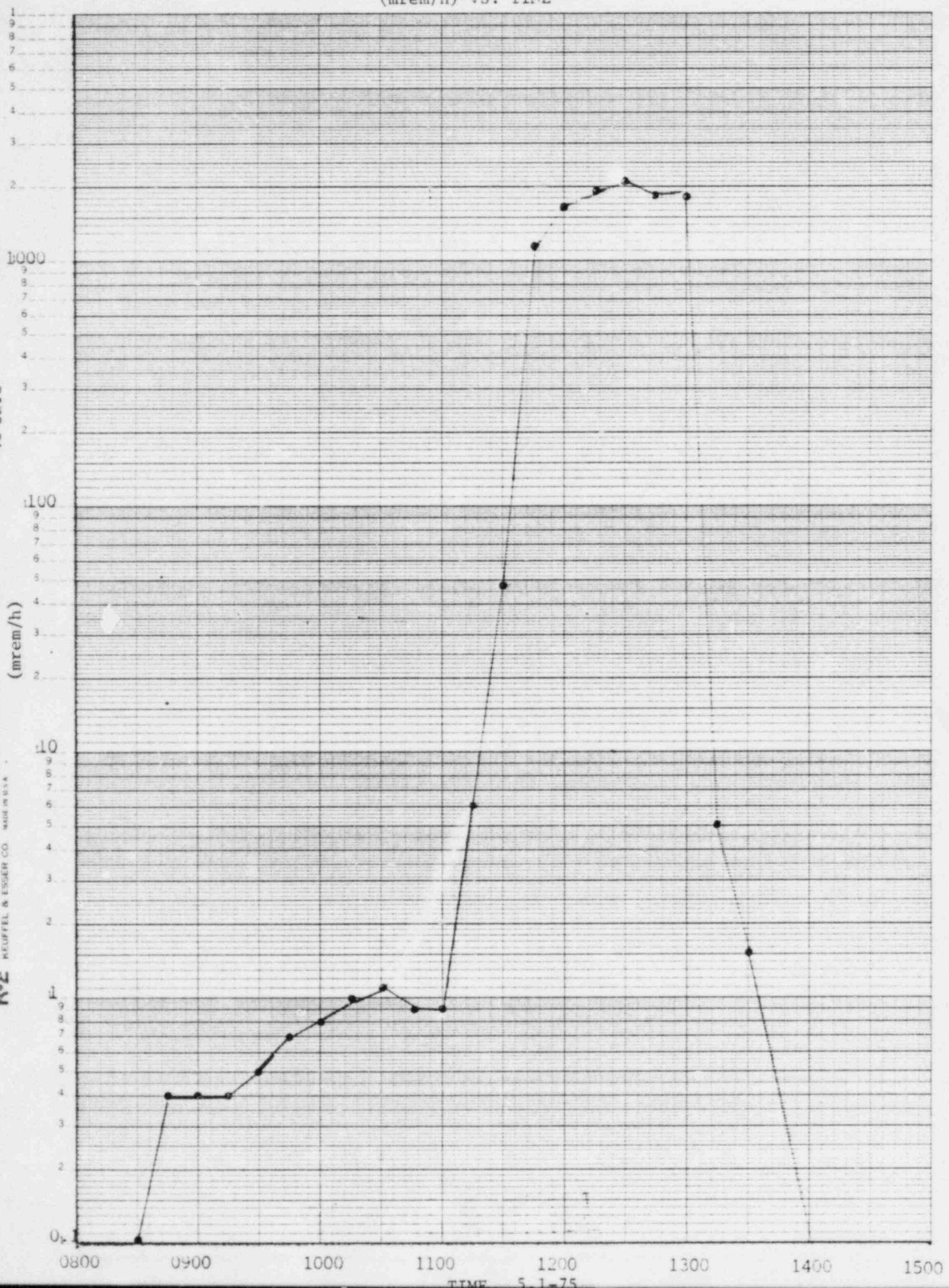
Actual
Time = 1400

PLANT MAP

ACTUAL-WHOLE BODY SITE BOUNDARY DOSE RATE
(mrem/h) VS. TIME

46 6210

K Σ SEMI-LOGARITHMIC 5 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.



WHOLE BODY
SITE BOUNDARY DOSE RATES

(mrem/hr)

<u>Actual Time</u>	<u>Scenario Time</u>	<u>Projected</u>	<u>Actual</u>
08:00	00:00	0.02	0.0
08:15	00:15	0	0.0
08:30	00:30	0.48	0.1
08:45	00:45	2.5	0.4
09:00	01:00	2.5	0.4
09:15	01:15	2.4	0.4
09:30	01:30	2.4	0.5
09:45	01:45	2.3	0.7
10:00	02:00	2.3	0.8
10:15	02:15	9.6	1.0
10:30	02:30	9.6	1.1
10:45	02:45	9.6	0.9
11:00	03:00	9.5	0.9
11:15	03:15	70	6
11:30	03:30	175	47
11:45	03:45	3300	1125
12:00	04:00	6000	1675
12:15	04:15	7800	1925
12:30	04:30	9000	2150
12:45	04:45	8400	1950
13:00	05:00	24	1975
13:15	05:15	7.0	4.8
13:30	05:30	0.5	1.5
13:45	05:45	---	---
14:00	06:00	---	---
14:15	06:15	---	---
14:30	06:30	---	---
14:45	06:45	---	---
15:00	07:00	---	---
16:00	08:00	---	---

GROUND DEPOSITION

Actual Time 1300Scenario Time After 05:00

<u>Location</u>	<u>Avg. CPM with MS-2/SPA-3</u>	<u>Avg. Beta dose Rate mRads/h</u>	<u>CS-137 Deposition</u>	<u>I-131 Dep.(uCi/m²)</u>	<u>PAG</u>
<u>Site Boundary</u>	9750	0.34	2.2E-5	0.65	Preventative
33	21300	0.75	3.2E-5	1.42	Emergency
25	13200	0.45	1E-5	0.95	Preventative
29	18600	0.60	2.8E-5	1.24	Preventative
35	1680	0.05	6E-4	0.112	None
28	810	0.01	3E-6	0.055	None

INPLANT AIR ACTIVITY

ACTUAL TIME 09:00

SCENARIO TIME 01:00

MEASUREMENT	LOCATION				
	69'	45'	27'	5'	-10'
Iodine Activity (uCi/cc)	1E-11	2E-11	2E-10	3E-11	6E-11
I ₂ NCP2M w/ MS2-SPA 3*	0	0	1.7	0.25	0.5
I ₂ CPM w/RM 14-HP210	0	0	1.7	0.25	0.5
I ₂ MPC	1.1E-3	2.2E-3	2.2E-2	3.3E-3	6.7E-3
Particulate Activity (uCi/cc)	1E-11	2E-11	3E-10	2E-11	4.E-11
Particulate NCP2M w/MS2 SPA 3	0	0	3	.17	0.33
Particulate CPM RM 14/ SPA 3	0	0	25*	1.77	3.3
Particulate MPC	1.1E-3	2.2E-3	0.03	3.3E-2	4.4E-3

Major isotopes:

Cs-137, Cs-134
Co-58, Co-60

INPLANT AIR ACTIVITY

ACTUAL TIME 10:00

SCENARIO TIME 02:00

MEASUREMENT	LOCATION				
	69'	45'	27'	5'	-10'
Iodine Activity (uCi/cc)	1E-10	2E-11	5E-9	5E-10	7E-11
I ₂ NCP2M w/ MS2-SPA 3*	10	2.0	41	4.16	0.58
I ₂ CPM w/RM 14-HP210	100	20	417	41.6	5.8
I ₂ MPC	1.1E-2	2.2E-3	0.56	5.6E-2	7.8E-3
Particulate Activity (uCi/cc)	1E-10	2E-10	3E-9	3E-10	8E-10
Particulate NCP2M w/MS2 SPA 3	0	0	25	4.16	6.7
Particulate CPM RM 14/ SPA 3	0	0	250	41.6	66.7
Particulate MPC	1.1E-2	2.2E-2	0.003	5.5E-2	8.8E-2

Major isotopes:

Cs-137, Cs-134
Co-58, Co-60

INPLANT AIR ACTIVITY

ACTUAL TIME 11:00

SCENARIO TIME 03:00

MEASUREMENT	LOCATION				
	69'	45'	27'	5'	-10'
Iodine Activity (uCi/cc)	1E-8	2E-10	5E-8	1E-8	3E-9
I ₂ NCP2M w/ MS2-SPA 3*	83	1.6	416	83.3	25
I ₂ CPM w/RM 14-HP210	830	16	4167	833	250
I ₂ MPC	1.1E-1	2.2E-2	5.56	1.11	0.33
Particulate Activity (uCi/cc)	1E-9	2E-9	5E-9	1E-9	2E-9
Particulate NCP2M w/MS2 SPA 3	0	16	41	8	16.7
Particulate CPM RM 14/ SPA 3	0	160	417	83	167.7
Particulate MPC	0.01	2.2E-1	0.56	0.11	0.22

Major isotopes:

Cs-137, Cs-134
Co-58, Co-60

SELECTED INPLANT AREA DOSE RATES
(Rem/h)

Actual 11:30

Scenario 03:30

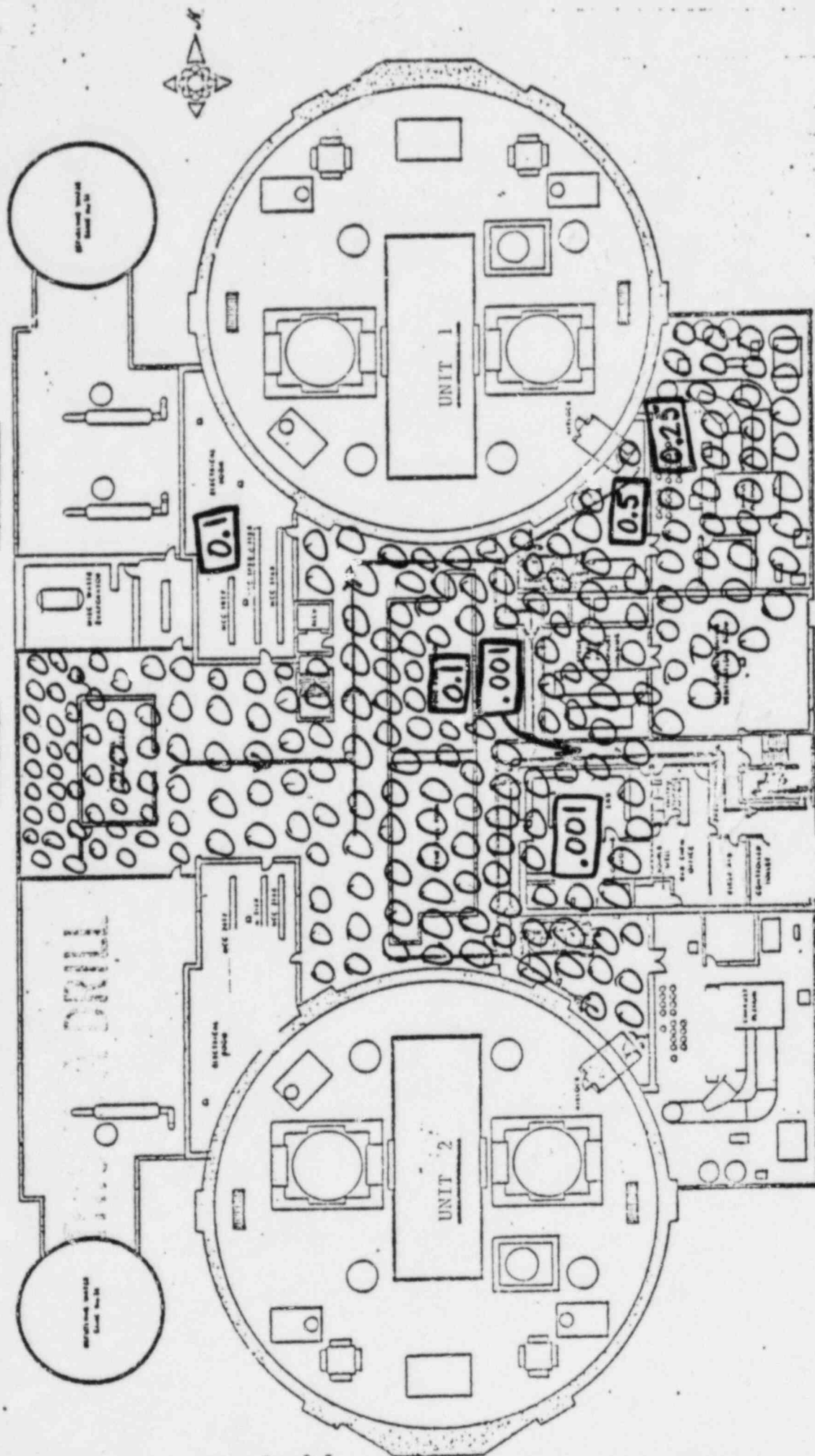
<u>Unit 1 Location</u>	<u>Reading</u>	<u>Unit 1 Location</u>	<u>Reading</u>
69' CTMT. Airlock Rm. (525)	0.500	27' Mainsteam Rm. (315)	7.7E2
69' Exh. Equip. Rm. (524)	.25	27' Switch Gear Rm.	90
69' Access Hall Rm. (521)	0.001	27' Stairwell	1.7
69' Rad. Chem. Off. Rm. (518)	0.001	27' W. Pen. Rm. (326)	3E3
69' Fuel Pool Area	0.100	27' E. Piping Pen. Rm.	5E3
69' Elect. Pen Rm. (532)	0.100	5' N-S Corr. Rm. (212)	80
69' New Fuel Stor. Rm. (533)		5' E-W Corr. Rm. (200)	.5
45' Post Acc. Smpl. Rm. (418)	0.040	5' Hallway against CTMT	3.3E2
45' Cask Loading Rm. (419)	0.020	5' Piping Area Rm. (224)	4.4E2
45' U-1 Sample Rm. (424)	0.020	5' Comp. Cool Rm. (228)	1E2
45' W. Electric Pen. Rm. (423)	500	5' Pen. Rm. (221)	1.1E3
45' Piping Area Rm. (428)	24	5' Rad. Ex. Rm. (225)	80
45' Emer. Airlock	510	5' Serv. Water Rm.	5
45' Diesel Gen. Rm.	9	-15&-10 Stairwell	0.040
45' RWT Pump Rm. (421)	110	-15&-10 Corr. Rm. (103)	5.5
45' Elect. Equip. Rm. (429)	50	-15&-10 Chg. Rm. (115)	3.3
		-10 Hallway	0.3
*During Sampling	.100	-10 Misc. Waste Tank	.02
		-15 SI ECCS Pump Rm.	5.5E2
		Corridor Rm. (100)	2.2

Loose Surface Contamination $\left(\frac{\text{cpm}}{100\text{cm}^2}\right)$

UNITS 1&2 CONTAINMENT AND AUXILIARY BUILDING PLAN AT

69'-0" ELEVATION

DOSE RATES (R/H) AT SCENARIO TIME = 3:30 ACTUAL TIME = 11:30



Loose Surface Contamination

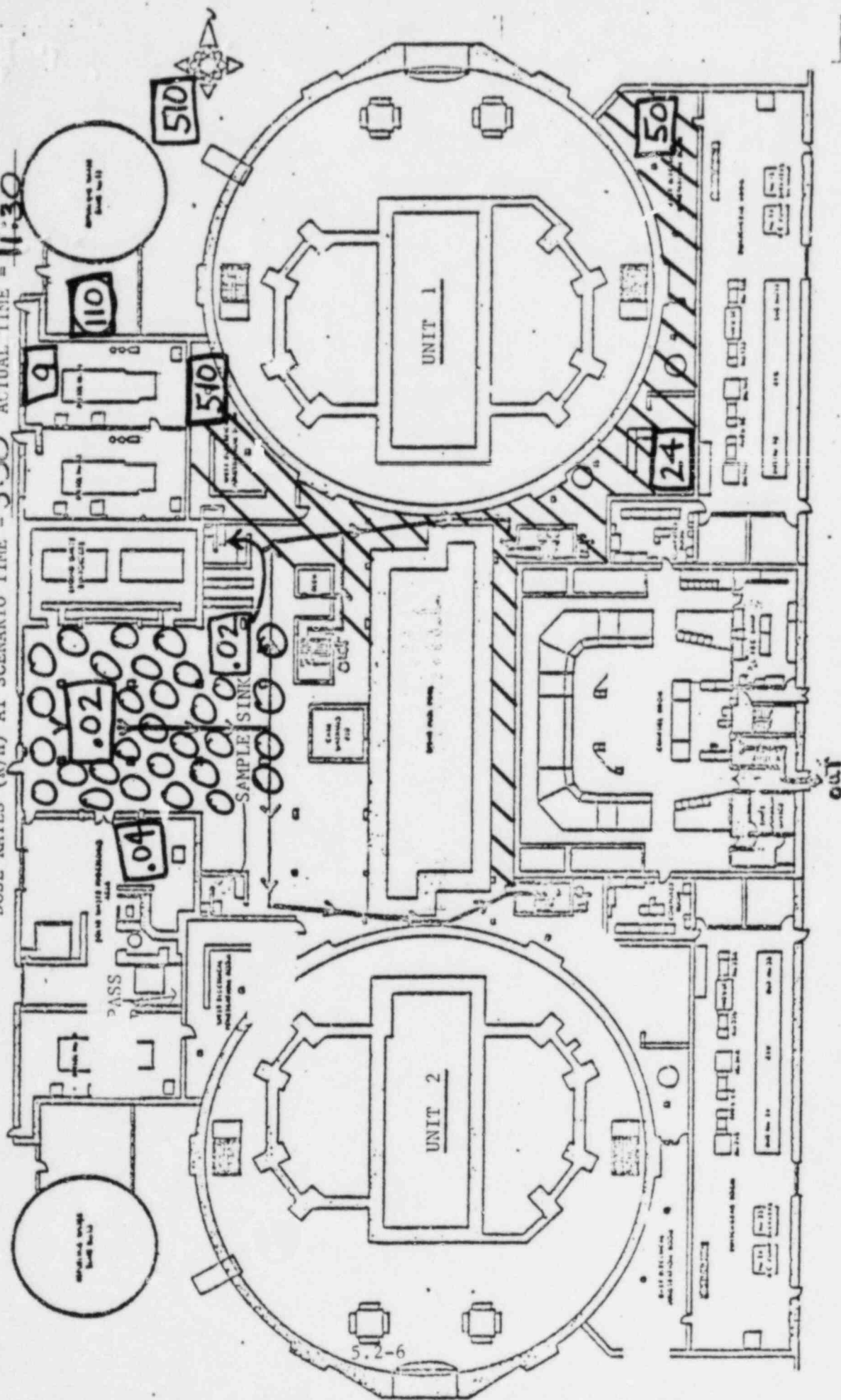
> 1,000,000
> 100,000
> 10,000

DOSE RATES (R/H) AT SCENARIO TIME = 3:30

ACTUAL TIME = 11:30

UNITS 1 & 2 CONTAINMENT AND AUXILIARY BUILDING PLAN AT

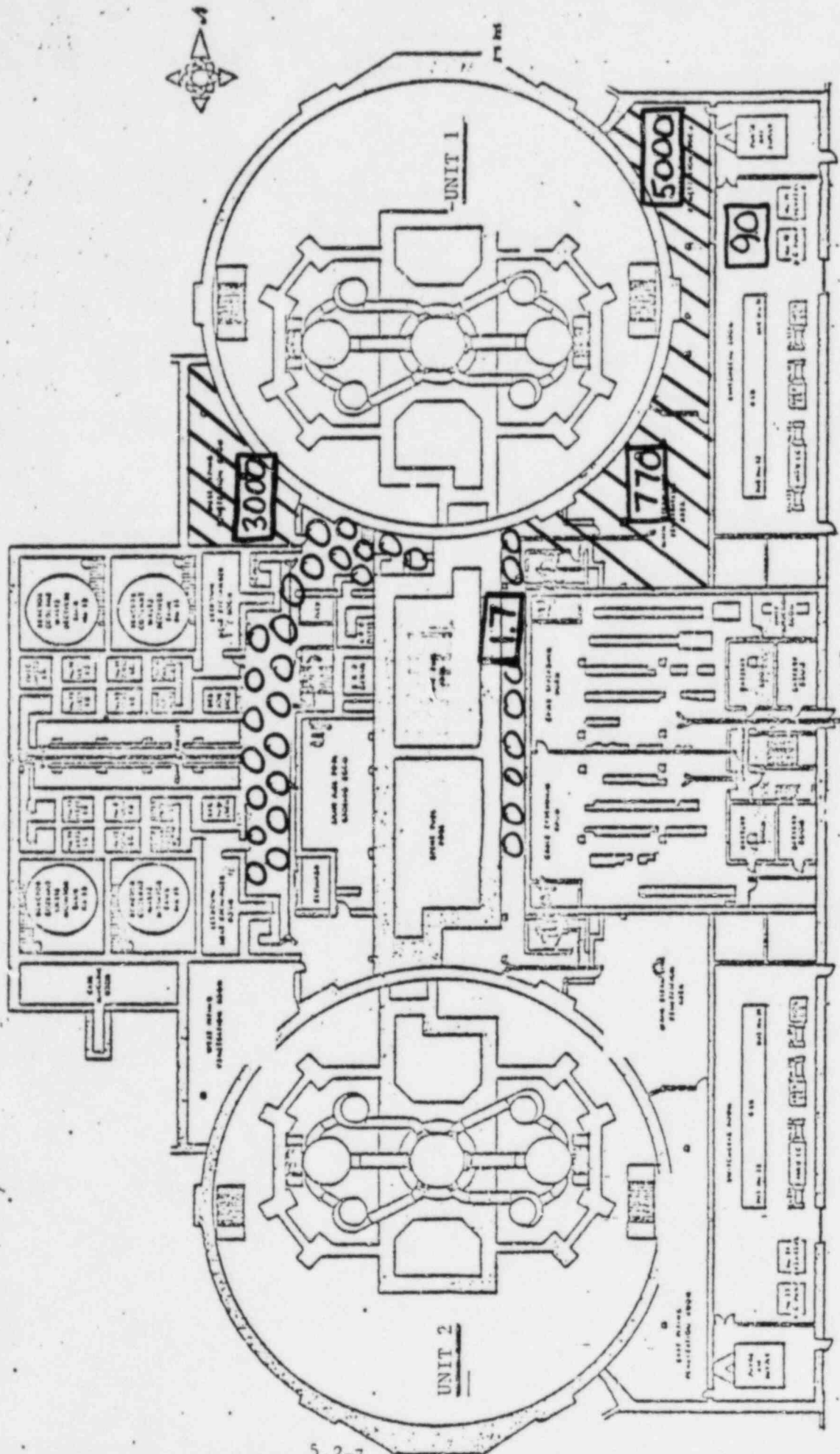
45'-0" ELEVATION



Loose Surface Contamination $\left(\frac{\text{dpm}}{100\text{cm}^2} \right)$

27°-0' ELEVATION

DOSE RATE (R/H) AT SCENARIO TIME =	3:30	ACTUAL TIME =	11:30
100			
200			
300			
400			
500			
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9900			
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CALVERT CLIFFS NUCLEAR POWER PLANT
Baltimore Gas & Electric Company

UNITS 1 & 2 CONTAINMENT AND AUXILIARY BUILDING PLAN AT
5'-0" & 10'-0" ELEVATIONS

DOSE RATES (R/H) AT SCENARIO TIME = 3:30 ACTUAL TIME = 11:30

Loose Surface Contamination ($\frac{\text{dpm}}{100\text{cm}^2}$)

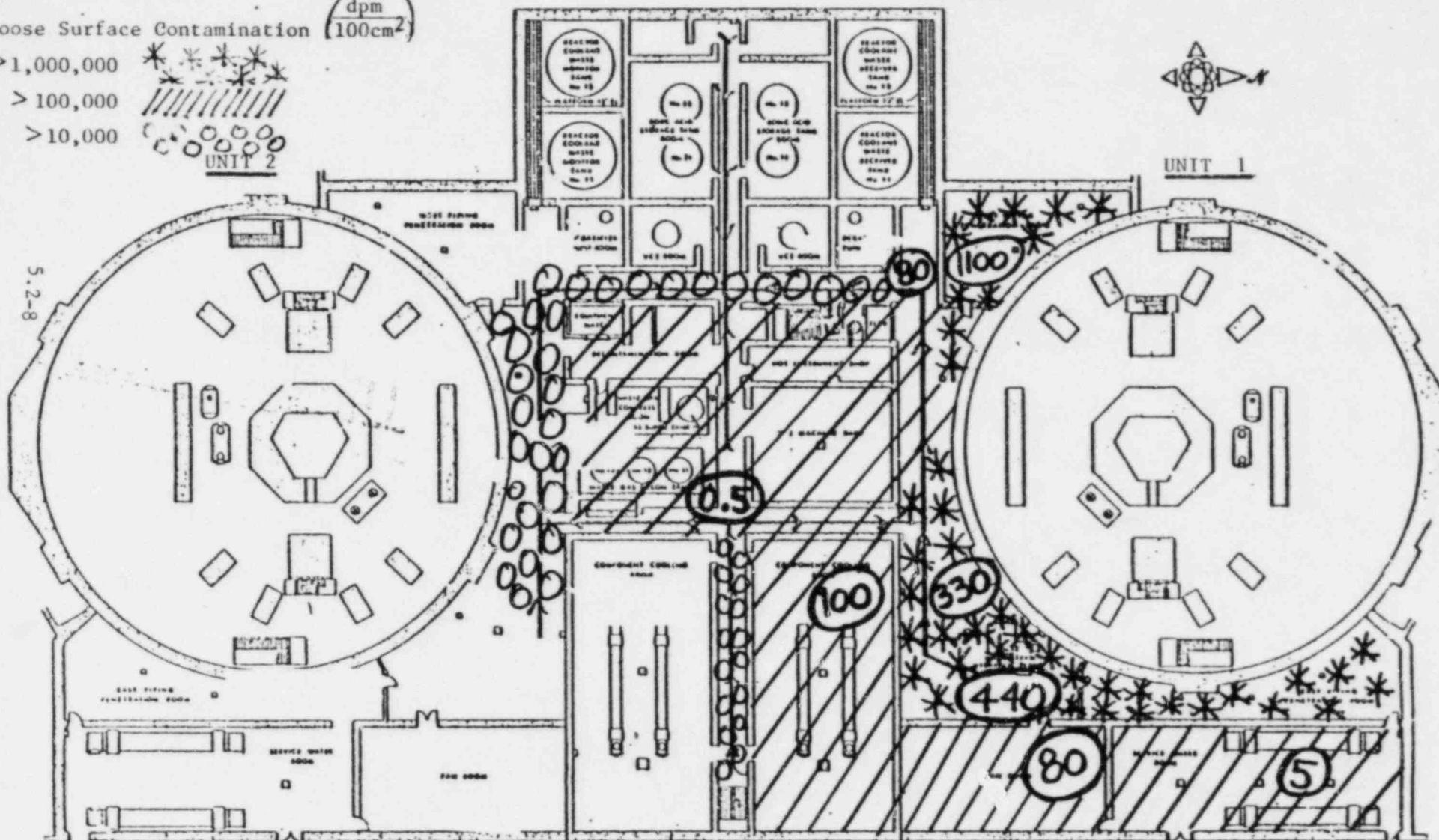
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UNIT 2



UNIT 1



CALVERT CLIFFS NUCLEAR POWER PLANT
Baltimore Gas & Electric Company

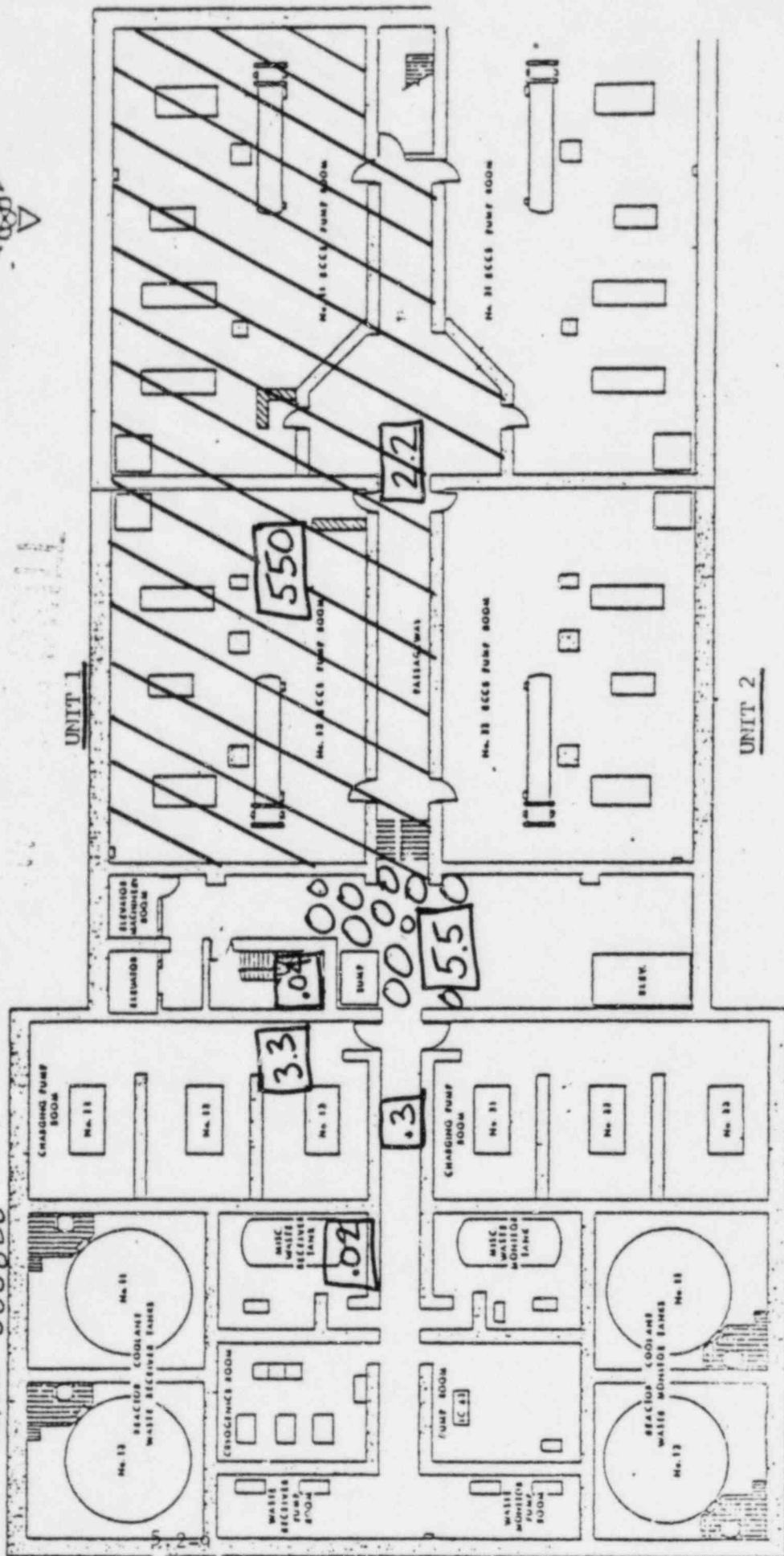
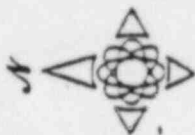
DOSE RATES (mR/hr) AT SCENARIO TIME= 3:30 ACTUAL TIME= 11:30
UNITS 1 & 2 AUXILIARY BUILDING PLAN

($\frac{\text{dpm}}{100\text{cm}^2}$)

Loose surface contamination

> 1,000,000 *****
> 10,000 //////////////
> 1,000 ooooooooo

AT (-) 8'-0" } ELEVATIONS
(-) 10'-0"
(-) 15'-0"



INPLANT AIR ACTIVITY

ACTUAL TIME 12:00

SCENARIO TIME 04:00

MEASUREMENT	LOCATION				
	69'	45'	27'	5'	-10'
Iodine Activity (uCi/cc)	1E-6	5E-9	5E-6	1E-7	3E-8
I ₂ NCP2M w/ MS2-SPA 3*	83	417	4167	833	250
I ₂ CPM w/RM 14. HP210	80000	4167	416677	8333	3500
I ₂ MPC	111	5.6	557	11.1	3.33
Particulate Activity (uCi/cc)	1E-7	3E-8	4E-8	1E-7	2E-8
Particulate NCP2M w/MS2 SPA 3	833	250	333	833	166.7
Particulate CPM RM 14/ SPA 3	8330	2500	3333	8333	1667.7
Particulate MPC	11.1	3.3	4.44	11.1	2.22

Major isotopes:

Cs-137, Cs-134
Co-58, Co-60

SELECTED INPLANT AREA DOSE RATES
(Rem/h)

tual 12:00

Scenario 04:00

<u>Unit 1 Location</u>	<u>Reading</u>
69' CTMT. Airlock Rm. (525)	220
69' Exh. Equip. Rm. (524)	2.5
69' Access Hall Rm. (521)	0.05
69' Rad. Chem. Off. Rm. (518)	0.05
69' Fuel Pool Area	11
69' Elect. Pen Rm. (532)	11
69' New Fuel Stor. Rm. (533)	
45' Post Acc. Smpl. Rm. (418)	0.400
45' Cask Loading Rm. (419)	0.170
45' U-1 Sample Rm. (424)	0.170
45' W. Electric Pen. Rm. (423)	5100
45' Piping Area Rm. (428)	240
45' Emer. Airlock	5100
45' Diesel Gen. Rm.	90
45' RWT Pump Rm. (421)	1100
45' Elect. Equip. Rm. (429)	500
*During Sampling	1.000

<u>Unit 1 Location</u>	<u>Reading</u>
27' Mainsteam Rm. (315)	7.8E3
27' Switch Gear Rm.	9E2
27' Stairwell	17
27' W. Pen. Rm. (326)	3E4
27' E. Piping Pen. Rm.	5E4
5' N-S Corr. Rm. (212)	880
5' E-W Corr. Rm. (200)	5.5
5' Hallway against CTMT	3.3E3
5' Piping Area Rm. (224)	4.4E3
5' Comp. Cool Rm. (228)	1E3
5' Pen. Rm. (221)	1.1E4
5' Rad. Ex. Rm. (225)	8E2
5' Serv. Water Rm.	50
-15&-10 Stairwell	0.44
-15&-10 Corr. Rm. (103)	55
-15&-10 Chg. Rm. (115)	33
-10 Hallway	3
-10 Misc. Waste Tank	0.2
-15 SI ECCS Pump Rm.	5.5E3
Corridor Rm. (100)	22

SELECTED RADIATION AREA & PROCESS MONITOR READING

ACTUAL TIME 12:00

SCENARIO TIME 04:00

<u>Location</u>	<u>Reading R/h</u>
69' Chem Lab	0.050
69' Spent Fuel Pool Area	1.1
69' New Fuel	Failure alarm
45' Drum Storage (PASS)	0.100
45' Drum Storage (PASS) during sampling	0.200
45' Sample Rm (Unit 1)	0.170
45' Unit 1 E, Elec. Pen. Room	Offscale
45' Unit 1 Piping Area	Offscale
Steam Generator Blow Down Monitor	Offscale
5' Unit 1 Component Cooling	Offscale
5' Unit 1 Liquid Monitor	Offscale
5' Unit 1 Containment Monitor	Offscale
5' Unit 1 Service Water	Offscale
5' Unit 1 Liquid Monitor	Offscale

$$\left(\frac{\text{dpm}}{100\text{cm}^2}\right)$$

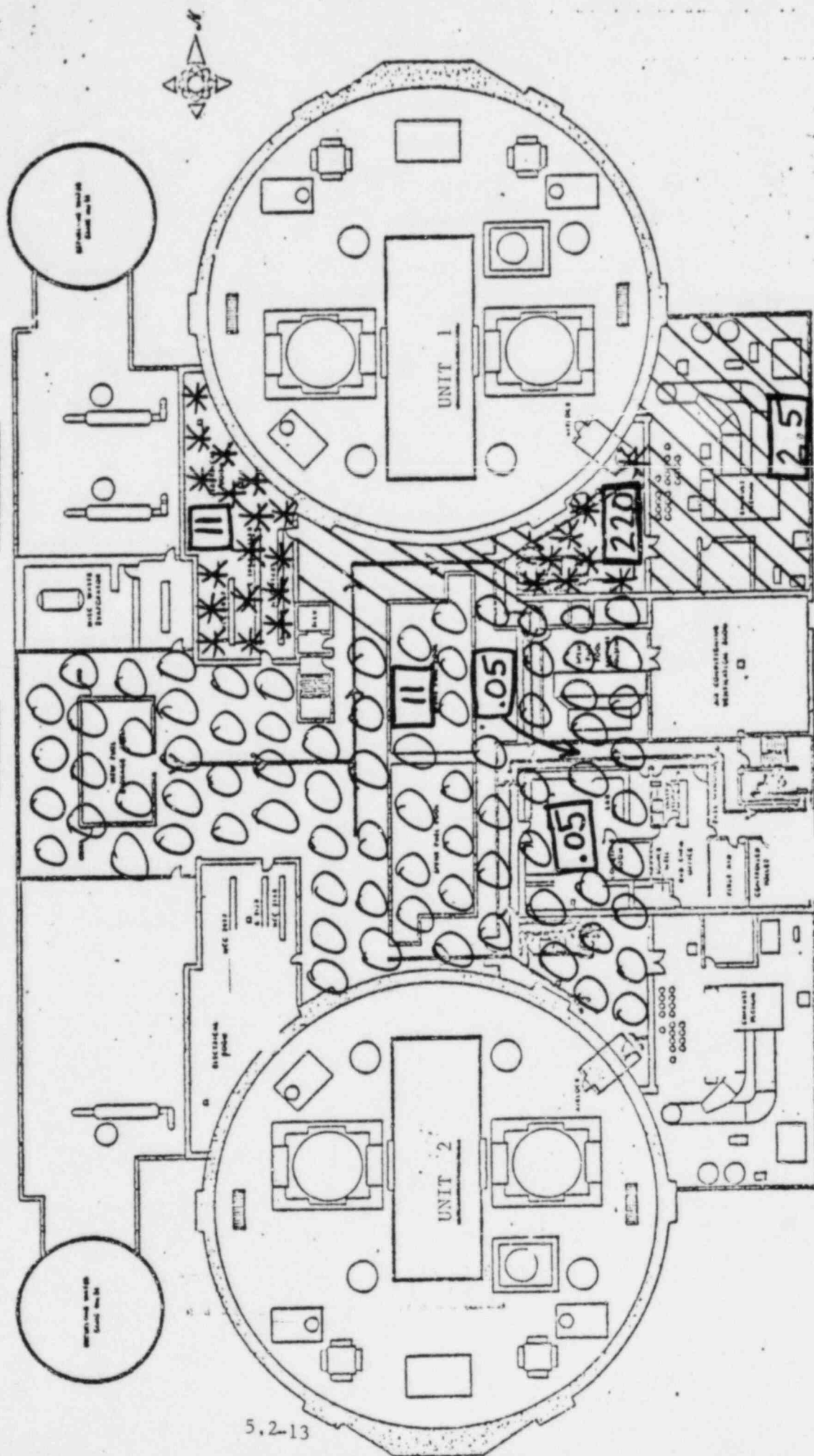
Loose Surface Contamination

> 1,000,000
> 100,000
> 10,000

UNITS 1&2 CONTAINMENT AND AUXILIARY BUILDING PLAN AT

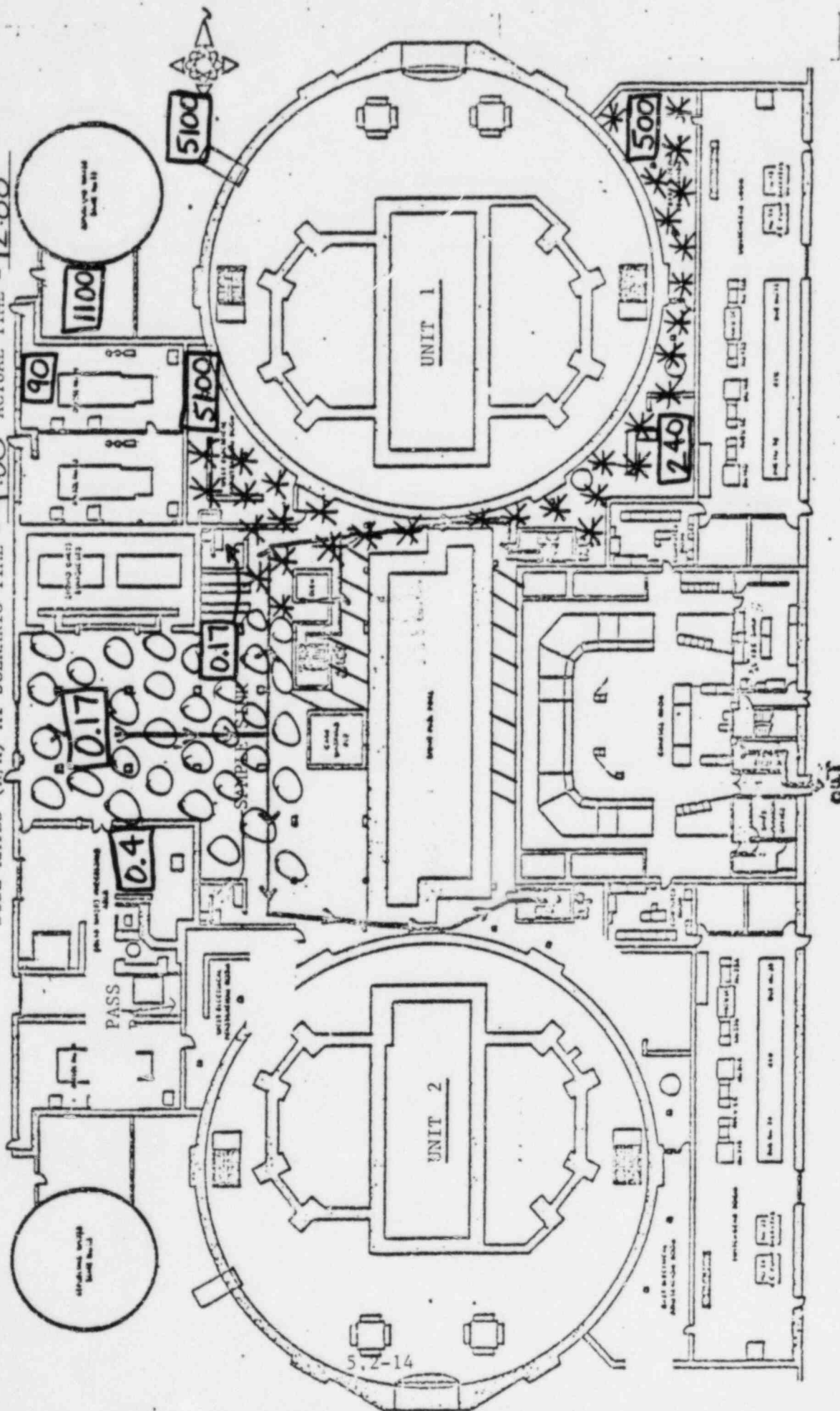
69'-0" ELEVATION

DOSE RATES (R/H) AT SCENARIO TIME = 4:00 ACTUAL TIME = 12:00



45'-0" ELEVATION

DOSE RATES (R/H) AT SCENARIO TIME = 4:00 ACTUAL TIME =



CAVERI CLIFFS NUC., 4 POWER PLANT
Baltimore Gas & Electric Company

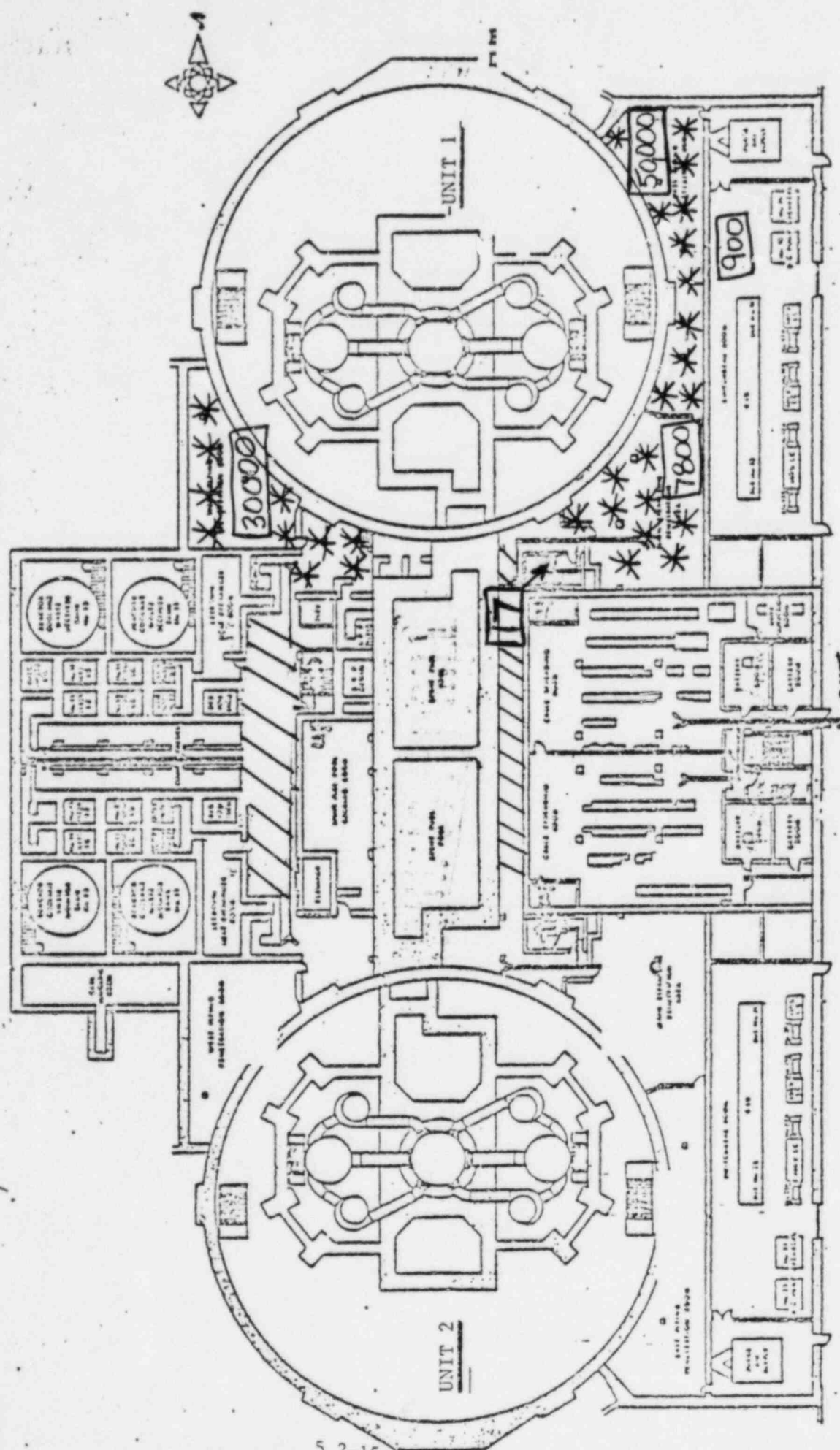
Loose Surface Contam.

>1,000,000

UNITS 12.2 CONTAINMENT AND AUXILIARY BUILDING PLAN AT

27'-0" ELEVATION

DOSE RATE (R/H): AT SCENARIO TIME= 4:00 ACTUAL TIME= 12:00



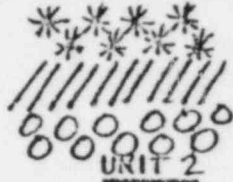
CALVERT CLIFFS NUCLEAR POWER PLANT
Baltimore Gas & Electric Company

UNITS 1&2 CONTAINMENT AND AUXILIARY BUILDING PLAN AT
5'-0" & 10'-0" ELEVATIONS

DOSE RATES (R/H) AT SCENARIO TIME = 4:00 ACTUAL TIME = 12:00

Loose Surface Contamination ($\frac{\text{dpm}}{100\text{cm}^2}$)

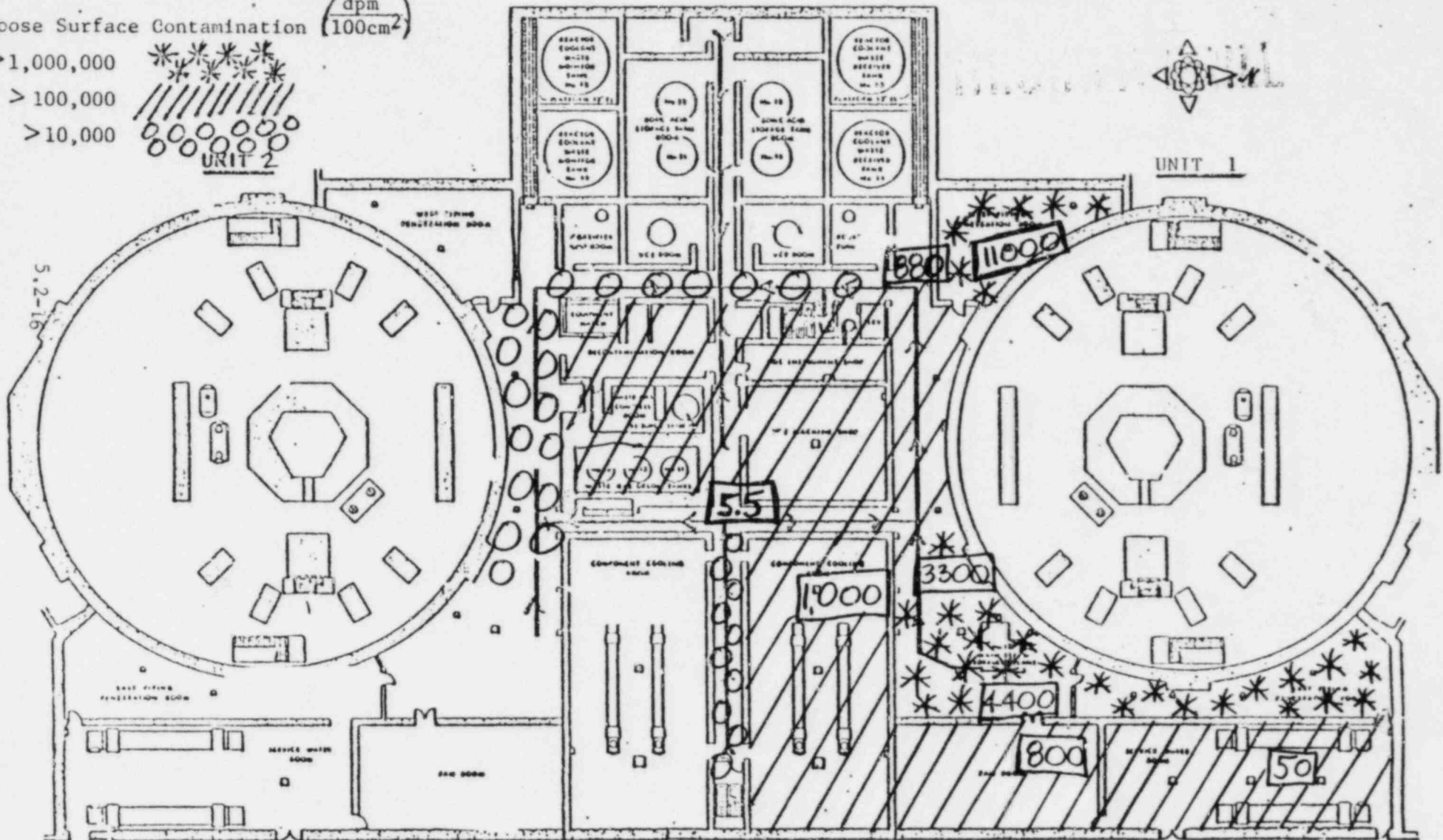
>1,000,000
>100,000
>10,000



UNIT 2



UNIT 1



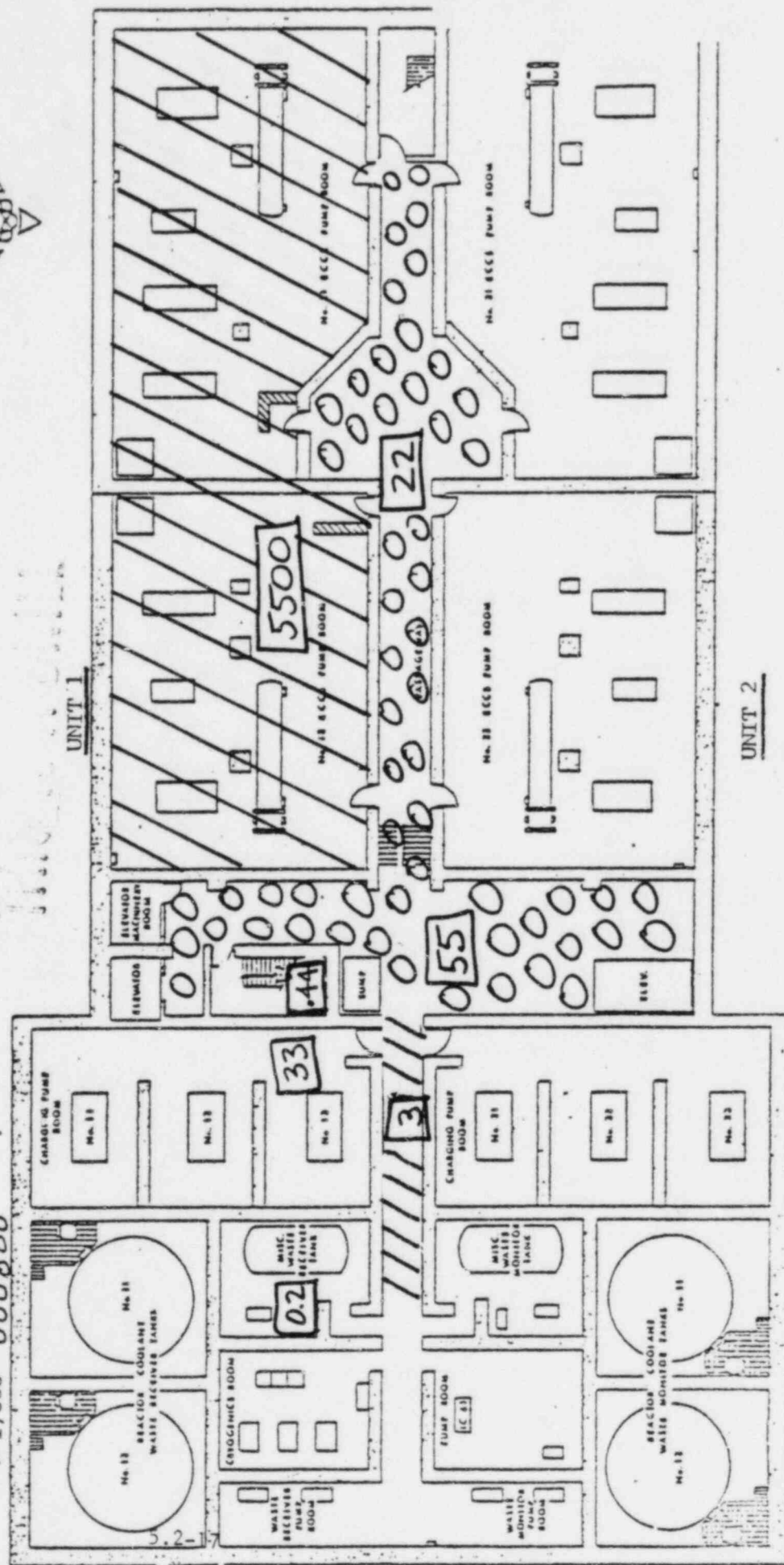
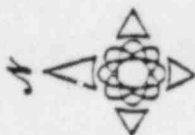
DOSE RATES (RA) AT SCENARIO TIME= 4:00 ACTUAL TIME= 12:00
UNITS 1 & 2 AUXILIARY BUILDING PLAN

Loose surface contamination

$> 1,000,000$
 $> 10,000$
 $> 1,000$

AT

(-) 8'-0"	}	ELEVATIONS
(-) 10'-0"		
(-) 15'-0"		



SELECTED INPLANT AREA DOSE RATES
(Rem/h)

tual 12:30

Scenario 04:30

<u>Unit 1 Location</u>	<u>Reading</u>	<u>Unit 1 Location</u>	<u>Reading</u>
69' CTMT. Airlock Rm. (525)	220	27' Mainsteam Rm. (315)	7.8E3
69' Exh. Equip. Rm. (524)	2.5	27' Switch Gear Rm.	9E2
69' Access Hall Rm. (521)	0.05	27' Stairwell	17
69' Rad. Chem. Off. Rm. (518)	0.05	27' W. Pen. Rm. (326)	3E4
69' Fuel Pool Area	11	27' E. Piping Pen. Rm.	5E4
69' Elect. Pen Rm. (532)	11	5' N-S Corr. Rm. (212)	880
69' New Fuel Stor. Rm. (533)		5' E-W Corr. Rm. (200)	5.5
45' Post Acc. Smpl. Rm. (418)	0.400	5' Hallway against CTMT	3.3E3
45' Cask Loading Rm. (419)	0.170	5' Piping Area Rm. (224)	4.4E3
5' U-1 Sample Rm. (424)	0.170	5' Comp. Cool Rm. (228)	1E3
45' W. Electric Pen. Rm. (423)	5100	5' Pen. Rm. (221)	1.1E4
45' Piping Area Rm. (428)	240	5' Rad. Ex. Rm. (225)	8E2
45' Emer. Airlock	5100	5' Serv. Water Rm.	50
45' Diesel Gen. Rm.	90	-15&-10 Stairwell	0.44
45' RWT Pump Rm. (421)	1100	-15&-10 Corr. Rm. (103)	55
45' Elect. Equip. Rm. (429)	500	-15&-10 Chg. Rm. (115)	33
		-10 Hallway	3
*During Sampling	1.000	-10 Misc. Waste Tank	0.2
		-15 SI ECCS Pump Rm.	5.5E3
		Corridor Rm. (100)	22

THIS IS A DRILL

INPLANT AIR ACTIVITY

ACTUAL TIME 13:00

SCENARIO TIME 05:00

MEASUREMENT	LOCATION				
	69'	45'	27'	5'	-10'
Iodine Activity (uCi/cc)	1E-10	5E-10	1E-10	1E-10	4E-10
I ₂ NCP2M w/ MS2-SPA 3*	8333	0	0	0	3.33
I ₂ CPN w/RM 14-HP210	0	0	0	0	33.3
I ₂ MPC	0.01	0.05	1.1E-2	0.01	4.4E-2
Particulate Activity (uCi/cc)	1E-10	5E-10	1E-9	1E-10	2E-9
Particulate NCP2M w/MS2 SPA 3	0	0	8	1	16.7
Particulate CPN RM 14/ SPA 3	0	0	83	9	167.7
Particulate MPC	0.01	5.6E-2	0.11	0.01	0.22

Major isotopes:

Cs-137, Cs-134
Co-58, Co-60

SELECTED INPLANT AREA DOSE RATES
(Rem/h)

tual 13:00

Scenario 05:00

Unit 1 Location	Reading	Unit 1 Location	Reading
69' CTMT. Airlock Rm. (525)	193	27' Mainsteam Rm. (315)	6.9E3
69' Exh. Equip. Rm. (524)	2.2	27' Switch Gear Rm.	8E2
69' Access Hall Rm. (521)	0.044	27' Stairwell	15
69' Rad. Chem. Off. Rm. (518)	0.044	27' W. Pen. Rm. (326)	2.6E4
69' Fuel Pool Area	9.68	27' E. Piping Pen. Rm.	4.4E4
69' Elect. Pen Rm. (532)	9.68	5' N-S Corr. Rm. (212)	775
69' New Fuel Stor. Rm. (533)		5' E-W Corr. Rm. (200)	5
45' Post Acc. Smpl. Rm. (418)	0.352	5' Hallway against CTMT	3.0E3
45' Cask Loading Rm. (419)	0.150	5' Piping Area Rm. (224)	3.9E3
45' U-1 Sample Rm. (424)	0.150	5' Comp. Cool Rm. (228)	8.8E2
45' W. Electric Pen. Rm. (423)	4480	5' Pen. Rm. (221)	5.9E3
45' Piping Area Rm. (428)	211	5' Rad. Ex. Rm. (225)	704
45' Emer. Airlock	4480	5' Serv. Water Rm.	44
45' Diesel Gen. Rm.	79	-15&-10 Stairwell	0.39
45' RWT Pump Rm. (421)	970	-15&-10 Corr. Rm. (103)	48
45' Elect. Equip. Rm. (429)	440	-15&-10 Chg. Rm. (115)	29
		-10 Hallway	2.6
*During Sampling	0.88	-10 Misc. Waste Tank	0.18
		-15 SI ECCS Pump Rm.	4.8E3
		Corridor Rm. (100)	19.1

THIS IS A DRILL

SELECTED RADIATION AREA & PROCESS MONITOR READING

ACTUAL TIME 13:00

SCENARIO TIME 05:00

<u>Location</u>	<u>Reading R/h</u>
69' Chem Lab	0.044
69' Spent Fuel Pool Area	9.68
69' New Fuel	Failure alarm
45' Drum Storage (PASS)	0.08
45' Drum Storage (PASS) during sampling	0.18
45' Sample Rm (Unit 1)	0.15
45' Unit 1 E. Elec. Pen. Room	Offscale
45' Unit 1 Piping Area	Offscale
Steam Generator Blow Down Monitor	Offscale
5' Unit 1 Component Cooling	Offscale
5' Unit 1 Liquid Monitor	Offscale
5' Unit 1 Containment Monitor	Offscale
5' Unit 1 Service Water	Offscale
5' Unit 1 Liquid Monitor	Offscale

CAVERT CLIFFS NUCLEAR POWER PLANT
 Baltimore Gas & Electric Company

(cpm)
 (100cm²)

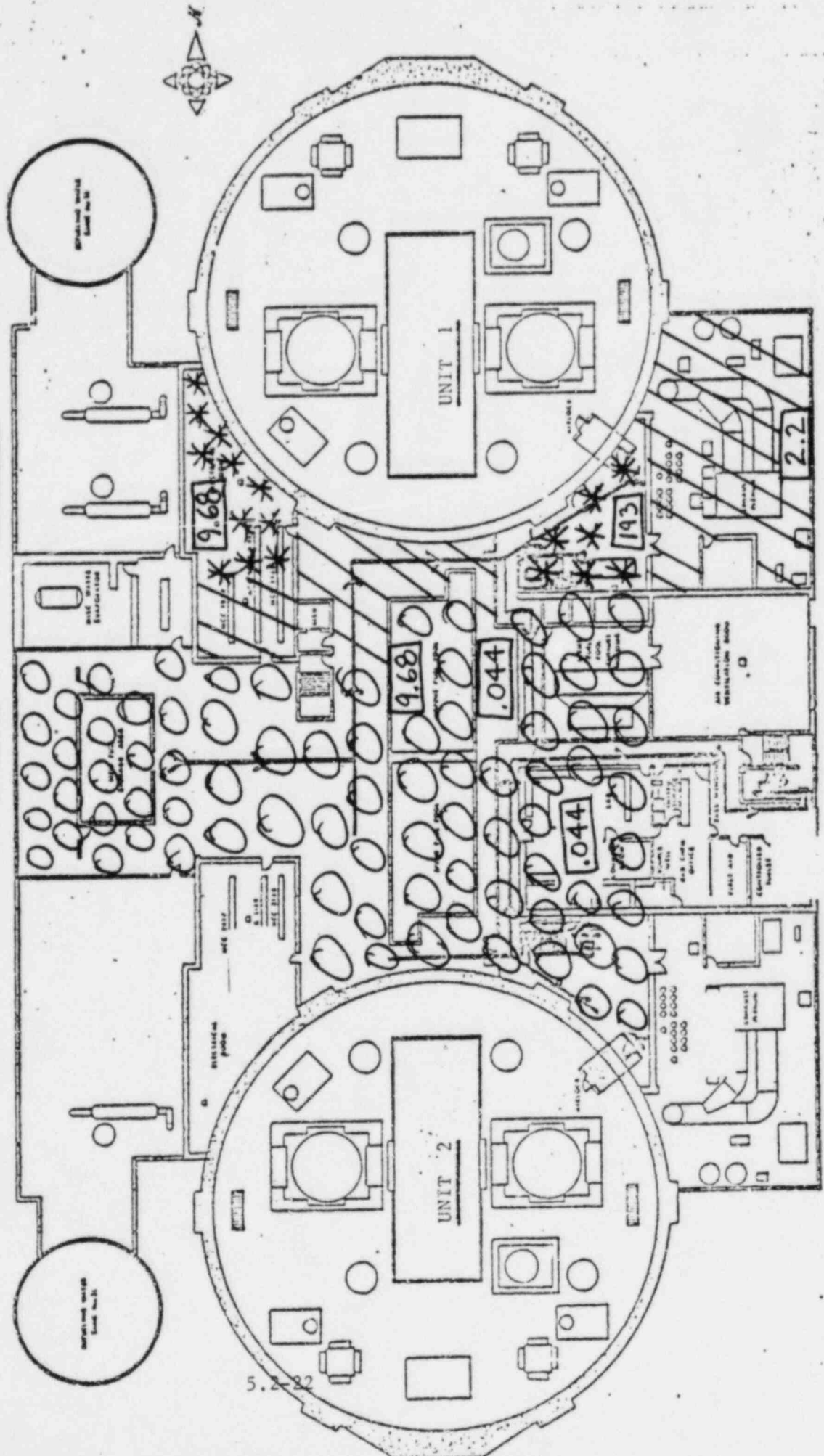
Loose Surface Contamination

> 1,000,000
 > 100,000
 > 10,000

UNITS 1 & 2 CONTAINMENT AND AUXILIARY BUILDING PLAN AT

69'-0" ELEVATION

DOSE RATES (R/H) AT SCENARIO TIME = 5:00 ACTUAL TIME = 13:00



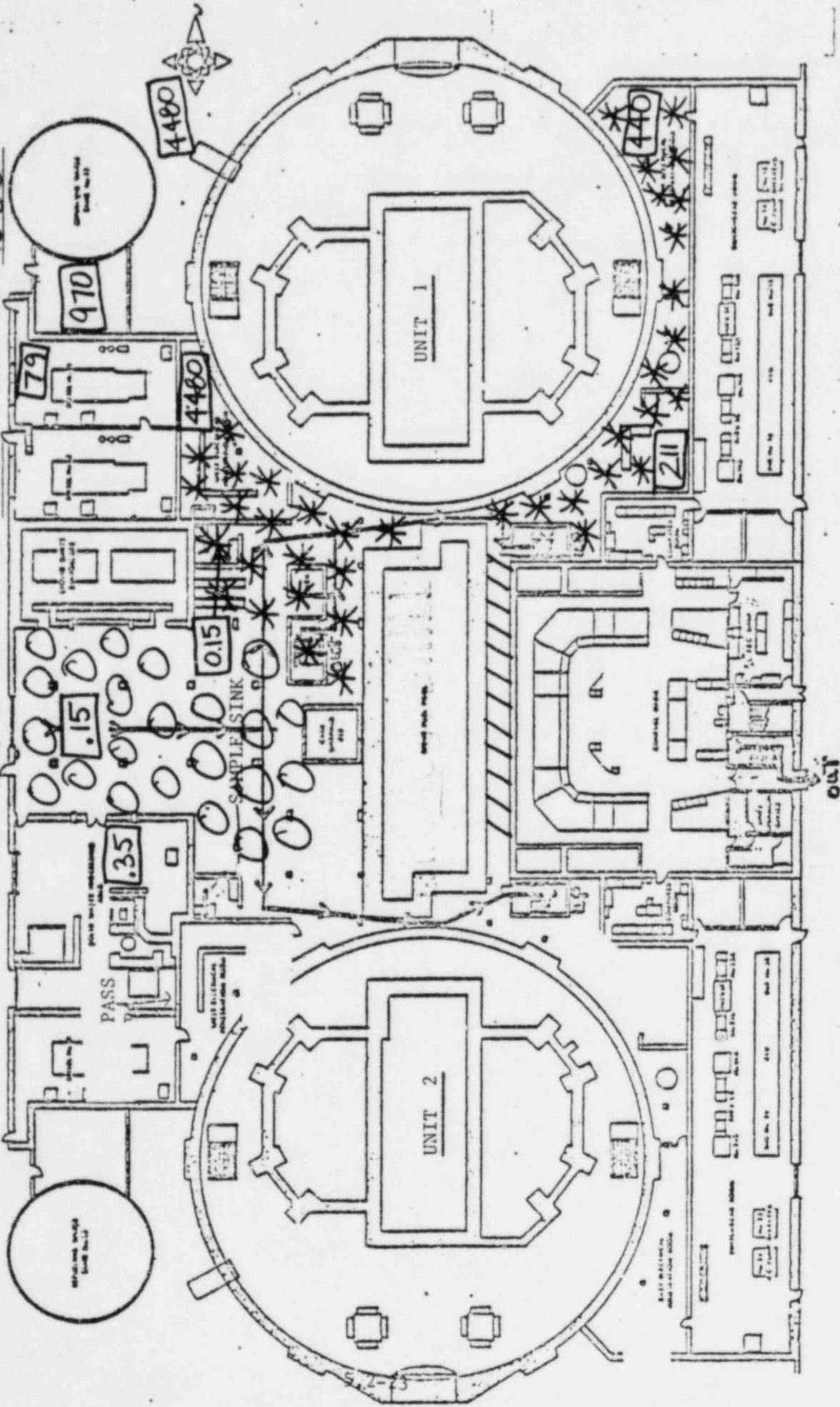
Loose Surface Contamination

> 1,000,000
> 100,000
> 10,000
ACTUAL TIME = 15:00

UNITS 1&2 CONTAINMENT AND AUXILIARY BUILDING PLAN AT

45'-0" ELEVATION

DOSE RATES (R/H) AT SCENARIO TIME = 5:00



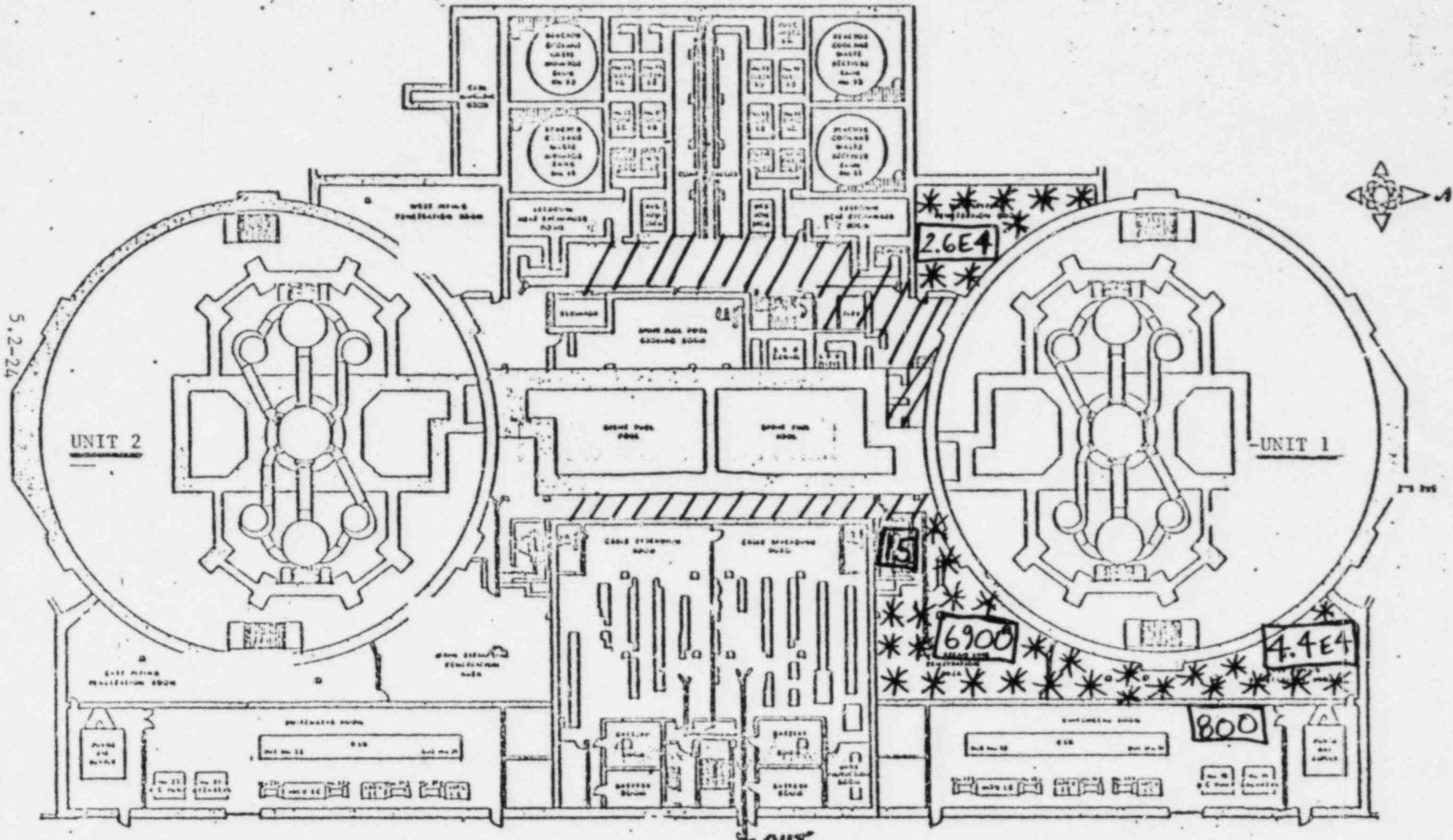
CALVERT CLIFFS NUCLEAR POWER PLANT
Baltimore Gas & Electric Company

Loose Surface Contamination (dpm/100cm²)

>1,000,000	*****
>100,000	////
>10,000	oooo

UNITS 1 & 2 CONTAINMENT AND AUXILIARY BUILDING PLAN AT
27'-0" ELEVATION

DOSE RATE (R/H) AT SCENARIO TIME= 5:00 ACTUAL TIME= 13:00



5.2-25

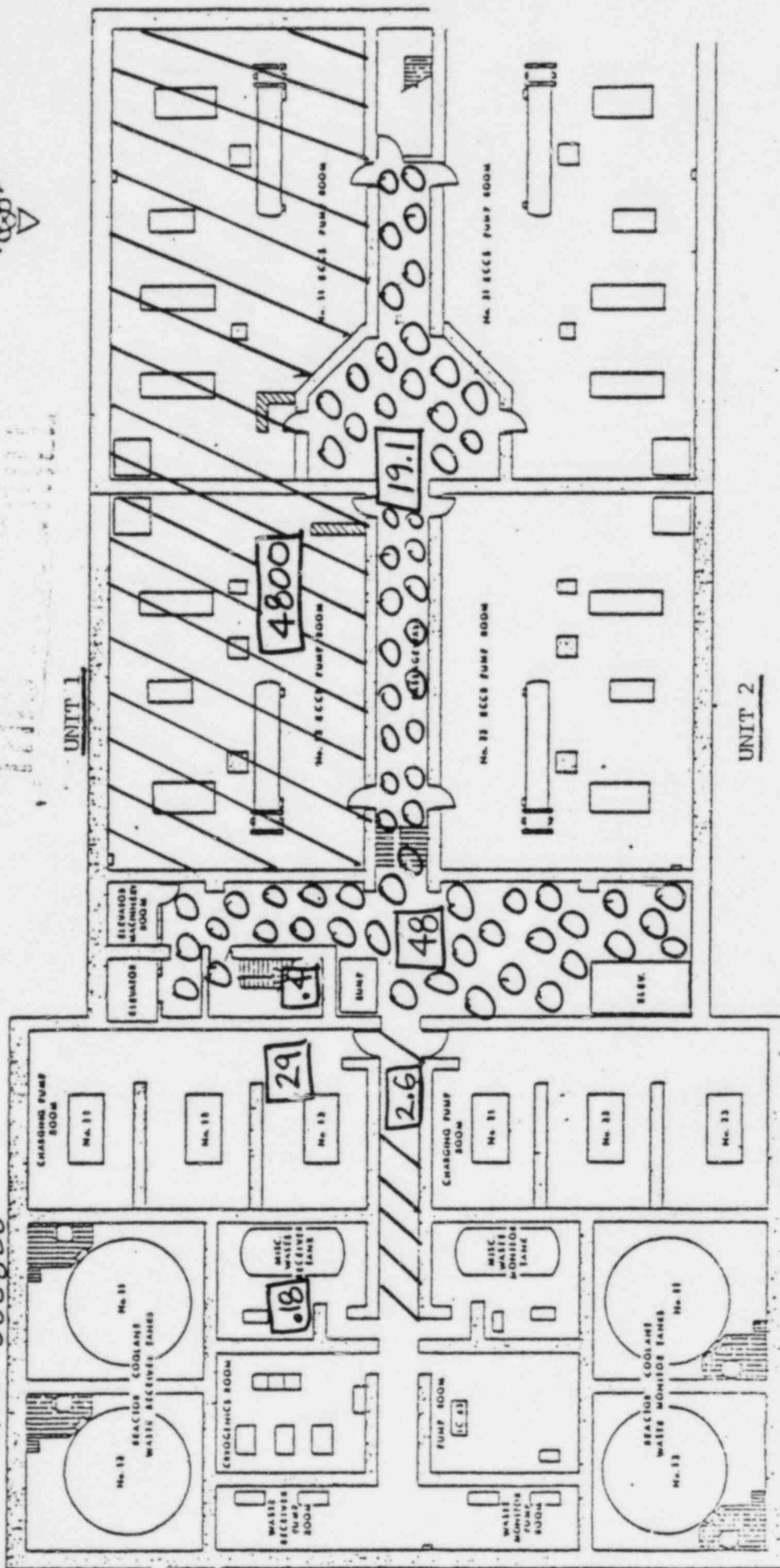
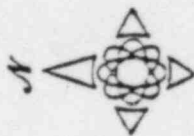
CALVERT CLIFFS NUCLEAR POWER PLANT
Baltimore Gas & Electric Company

DOSE RATES (mR/hr) AT SCENARIO TIME= 5:00 ACTUAL TIME= 1300
UNITS 1 & 2 AUXILIARY BUILDING PLAN

Loose surface contamination ($\frac{\text{cpm}}{100\text{cm}^2}$)

> 1,000,000 ***
> 10,000 **
> 1,000 ooooo

(-) 8'-0" } ELEVATIONS
AT (-) 10'-0"
(-) 15'-0"



SELECTED INPLANT AREA DOSE RATES
(Rem/h)

tual 1330

Scenario 05:30

<u>Unit 1 Location</u>	<u>Reading</u>
69' CTMT. Airlock Rm. (525)	123
69' Exh. Equip. Rm. (524)	1.4
69' Access Hall Rm. (521)	0.03
69' Rad. Chem. Off. Rm. (518)	0.03
69' Fuel Pool Area	6.2
69' Elect. Pen Rm. (532)	6.2
69' New Fuel Stor. Rm. (533)	
45' Post Acc. Smpl. Rm. (418)	0.22
45' Cask Loading Rm. (419)	0.10
45' U-1 Sample Rm. (424)	0.10
45' W. Electric Pen. Rm. (423)	2856
45' Piping Area Rm. (428)	118
45' Emer. Airlock	2856
45' Diesel Gen. Rm.	50
45' RWT Pump Rm. (421)	616
45' Elect. Equip. Rm. (429)	280

*During Sampling .56

<u>Unit 1 Location</u>	<u>Reading</u>
27' Mainsteam Rm. (315)	4400
27' Switch Gear Rm..	504
27' Stairwell	10
27' W. Pen. Rm. (326)	16800
27' E. Piping Pen. Rm.	3E4
5' N-S Corr. Rm. (212)	500
5' E-W Corr. Rm. (200)	3
5' Hallway against CTMT	1848
5' Piping Area Rm. (224)	2.5E3
5' Comp. Cool Rm. (228)	560
5' Pen. Rm. (221)	3.8E3
5' Rad. Ex. Rm. (225)	450
5' Serv. Water Rm.	28
-15&-10 Stairwell	0.25
-15&-10 Corr. Rm. (103)	31
-15&-10 Chg. Rm. (115)	19
-10 Hallway	1.7
-10 Misc. Waste Tank	0.11
-15 SI ECCS Pump Rm.	3.1E3
Corridor Rm. (100)	12.3

SELECTED RADIATION AREA & PROCESS MONITOR READING

ACTUAL TIME 13:30

SCENARIO TIME 05:30

<u>Location</u>	<u>Reading R/h</u>
69' Chem Lab	0.03
69' Spent Fuel Pool Area	6.2
69' New Fuel	Failure alarm
45' Drum Storage (PASS)	0.06
45' Drum Storage (PASS) during sampling	0.11
45' Sample Rm (Unit 1)	0.10
45' Unit 1 E. Elec. Pen. Room	Offscale
45' Unit 1 Piping Area	Offscale
Steam Generator Blow Down Monitor	Offscale
5' Unit 1 Component Cooling	Offscale
5' Unit 1 Liquid Monitor	Offscale
5' Unit 1 Containment Monitor	Offscale
5' Unit 1 Service Water	Offscale
5' Unit 1 Liquid Monitor	Offscale

INPLANT AIR ACTIVITY

ACTUAL TIME 14:00

SCENARIO TIME 06:00

MEASUREMENT	LOCATION				
	69'	45'	27'	5'	-10'
Iodine Activity (uCi/cc)	1E-11	2E-11	1E-11	1E-11	1E-11
I ₂ NCP2M w/ MS2-SPA 3*	0	0	0	0	8.3E-2
I ₂ CPN w/RM 14-HP210	0	0	0	0	8.3E-1
I ₂ MPC	1.1E-3	2.2E-3	1.1E-3	0.001	1.1E-3
Particulate Activity (uCi/cc)	1E-10	1E-10	1E-10	1E-10	1E-10
Particulate NCP2M w/MS2 SPA 3	0	.83	0	0.83	0.83
Particulate CPN RM 14/ SPA 3	0	8.3	0	8.33	8.33
Particulate MPC	1.1E-3	2.2E-3	1.1E-3	0.01	1.1E-2

Major isotopes:

Cs-137, Cs-134
Co-58, Co-60

WIND 1.0011

SELECTED INPLANT AREA DOSE RATES
(Rem/h)

tual 14:00

Scenario 06:00

<u>Unit 1 Location</u>	<u>Reading</u>	<u>Unit 1 Location</u>	<u>Reading</u>
69' CTMT. Airlock Rm. (525)	62	27' Mainsteam Rm. (315)	2200
69' Exh. Equip. Rm. (524)	0.7	27' Switch Gear Rm.	250
69' Access Hall Rm. (521)	0.014	27' Stairwell	5
69' Rad. Chem. Off. Rm. (518)	0.014	27' W. Pen. Rm. (326)	8400
69' Fuel Pool Area	3.1	27' E. Piping Pen. Rm.	1.4E4
69' Elect. Pen Rm. (532)	3.1	5' N-S Corr. Rm. (212)	250
69' New Fuel Stor. Rm. (533)		5' E-W Corr. Rm. (200)	1.5
45' Post Acc. Smpl. Rm. (418)	0.11	5' Hallway against CTMT	924
45' Cask Loading Rm. (419)	0.05	5' Piping Area Rm. (224)	1232
5' U-1 Sample Rm. (424)	0.05	5' Comp. Cool Rm. (228)	280
45' W. Electric Pen. Rm. (423)	1428	5' Pen. Rm. (221)	1876
45' Piping Area Rm. (428)	59	5' Rad. Ex. Rm. (225)	224
45' Emer. Airlock	1428	5' Serv. Water Rm.	14
45' Diesel Gen. Rm.	25	-15&-10 Stairwell	0.12
45' RWT Pump Rm. (421)	308	-15&-10 Corr. Rm. (103)	15
45' Elect. Equip. Rm. (429)	140	-15&-10 Chg. Rm. (115)	9
		-10 Hallway	0.8
*During Sampling	.28	-10 Misc. Waste Tank	0.06
		-15 SI ECCS Pump Rm.	1.53
		Corridor Rm. (100)	6.2

SELECTED RADIATION AREA & PROCESS MONITOR READING

ACTUAL TIME 14:00

SCENARIO TIME 06:00

<u>Location</u>	<u>Reading R/h</u>
69' Chem Lab	0.014
69' Spent Fuel Pool Area	3.1
69' New Fuel	Failure alarm
45' Drum Storage (PASS)	0.06
45' Drum Storage (PASS) during sampling	0.28
45' Sample Rm (Unit 1)	0.05
45' Unit 1 E. Elec. Pen. Room	Offscale
45' Unit 1 Piping Area	Offscale
Steam Generator Blow Down Monitor	Offscale
5' Unit 1 Component Cooling	Offscale
5' Unit 1 Liquid Monitor	Offscale
5' Unit 1 Containment Monitor	Offscale
5' Unit 1 Service Water	Offscale
5' Unit 1 Liquid Monitor	Offscale

THIS DOCUMENT IS UNCLASSIFIED

CALVERT CLIFFS NUCLEAR POWER PLANT
Baltimore Gas & Electric Company

(cpr
100cm²)

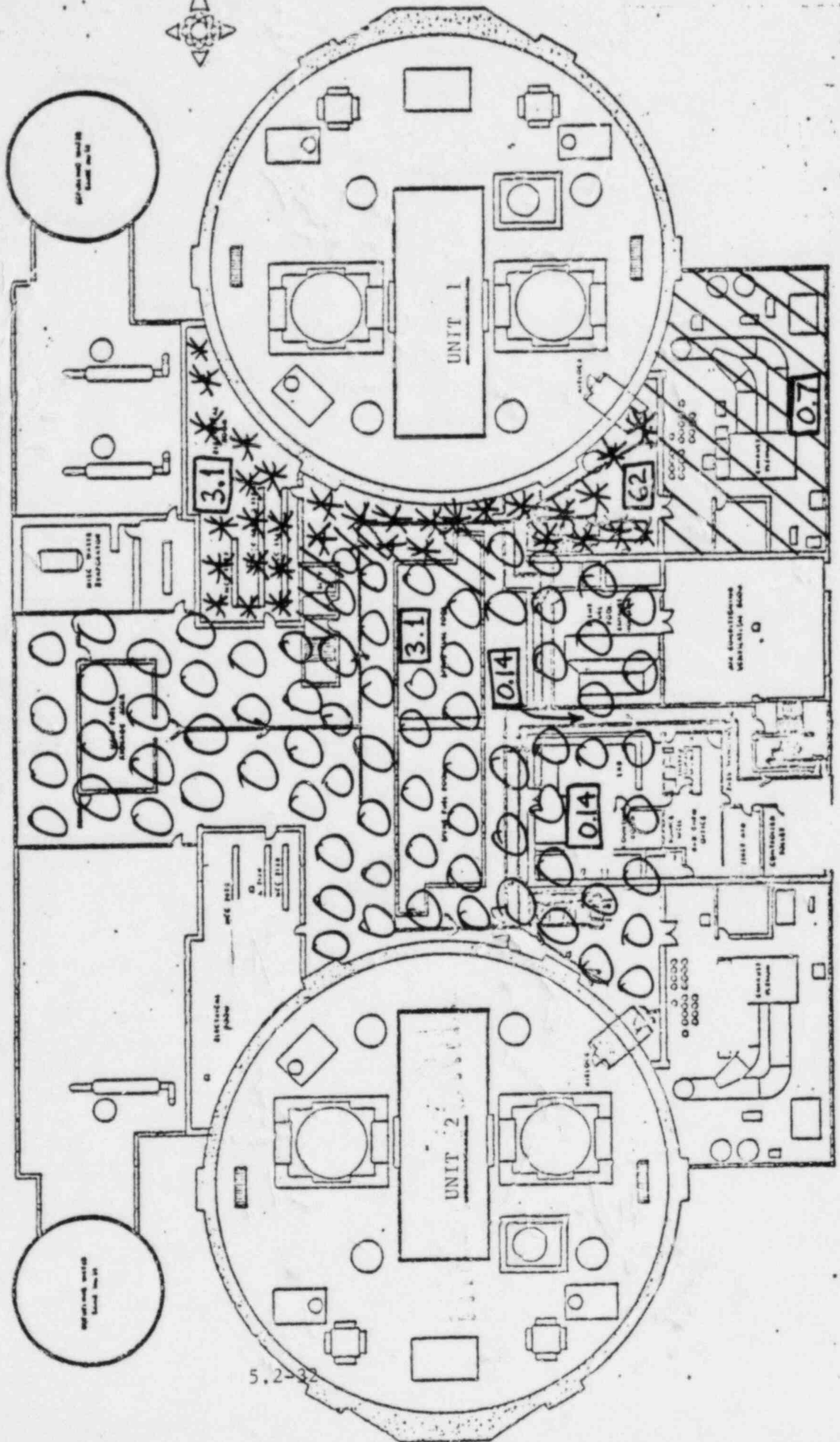
Loose Surface Contamination

> 1,000,000
> 100,000
> 10,000

UNITS 1 & 2 CONTAINMENT AND AUXILIARY BUILDING PLAN AT

69'-0" ELEVATION

DOSE RATES (R/H) AT SCENARIO TIME = 6:00 ACTUAL TIME = 14:00



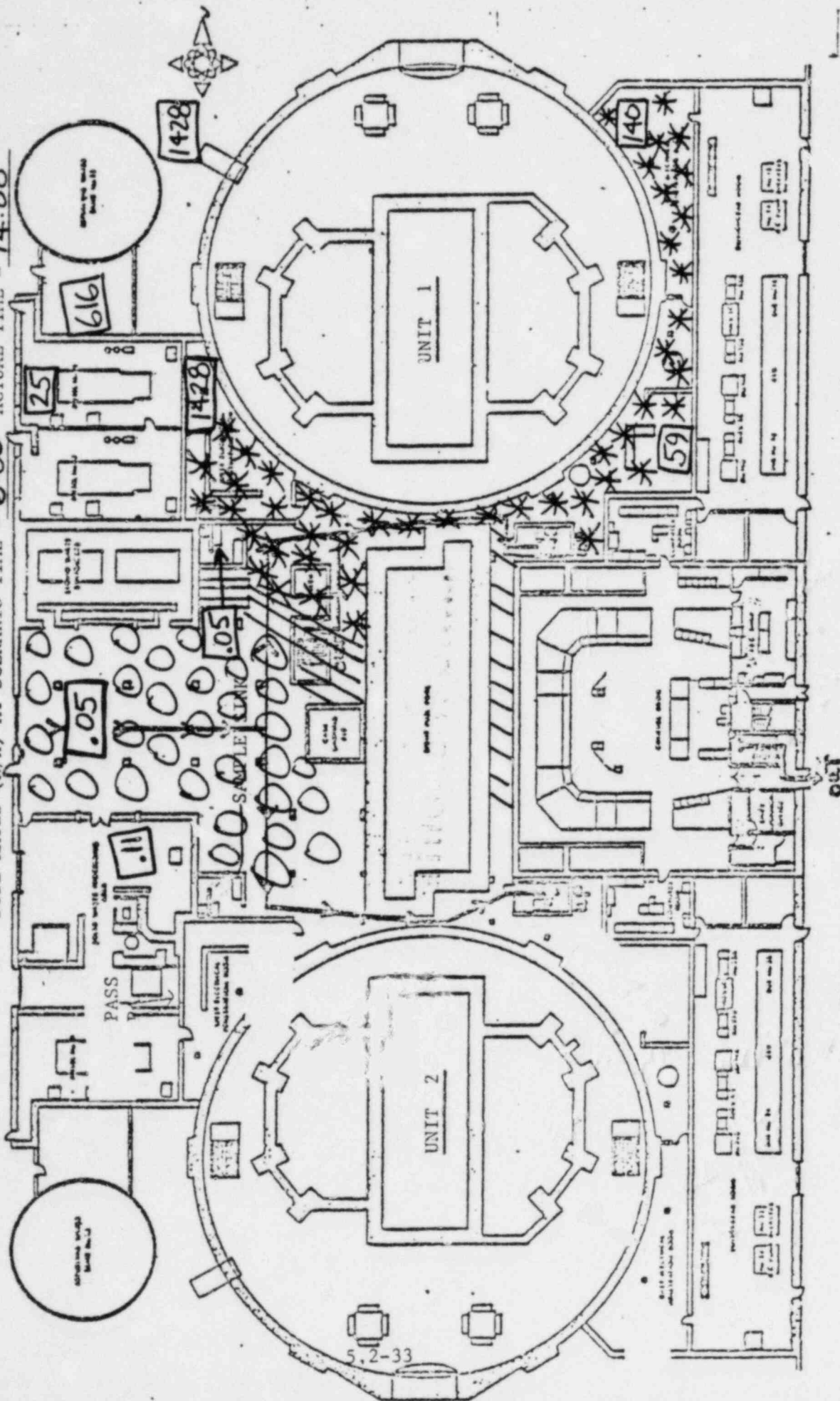
Loose Surface Contamination

> 1,000,000
 > 100,000
 > 10,000
 ACTUAL TIME = 14:00

UNITS 1 & 2 CONTAINMENT AND AUXILIARY BUILDING PLAN AT

45'-0" ELEVATION

DOSE RATES (R/H) AT SCENARIO TIME = 6:00



CAVERST CLIFFS P.W.C. - POWER PLANT
 Sulphur Gas & Electrical Company

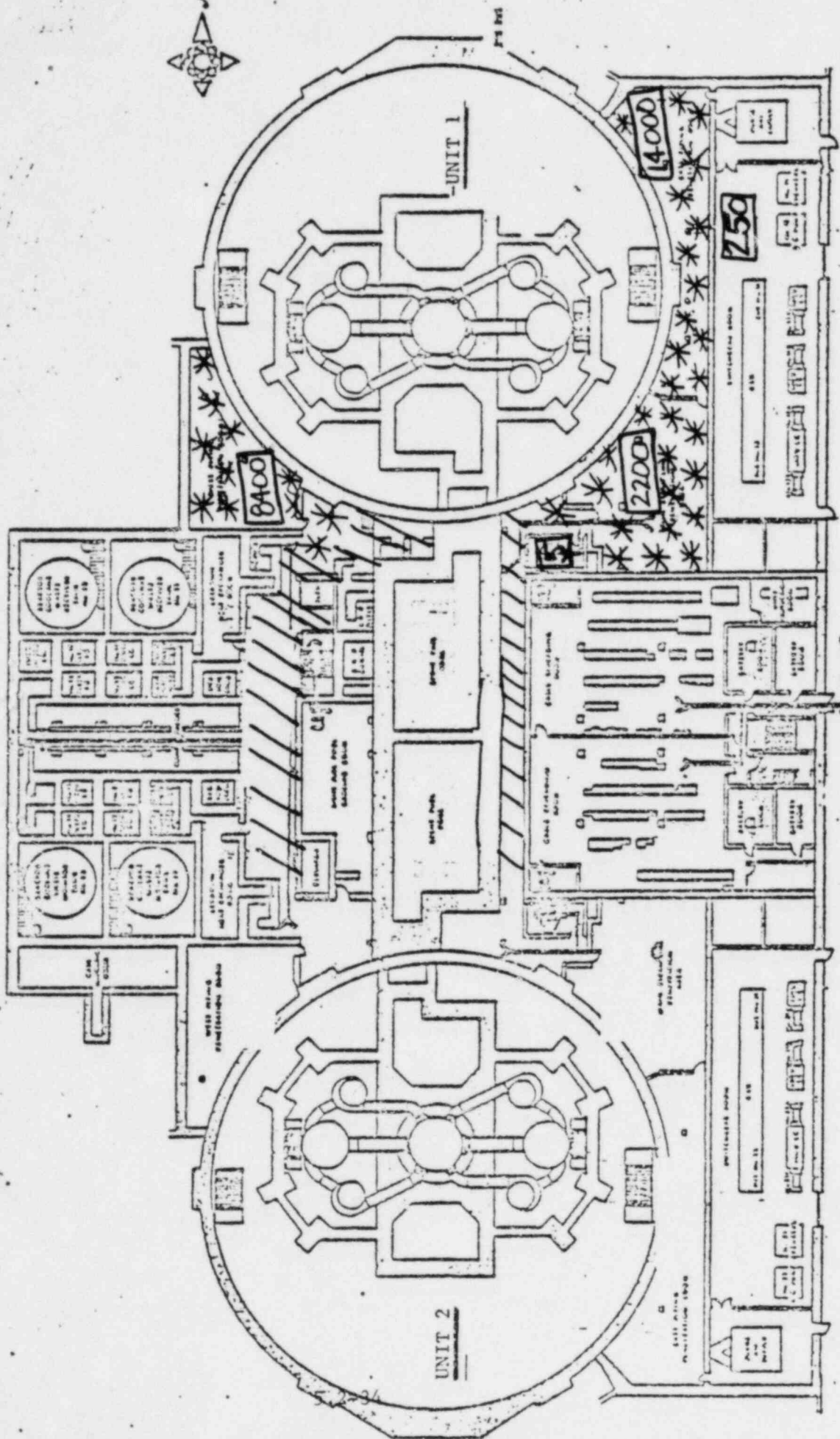
Loose Surface Contamination (dpm / 100cm²)

> 1,000,000
 > 100,000
 > 10,000

UNIT 12.2 CONTAINMENT AND AUXILIARY BUILDING PLAN AT

27'-0" ELEVATION

DOSE RATE (R/H) AT SCENARIO TIME = 6:00 ACTUAL TIME = 14:00



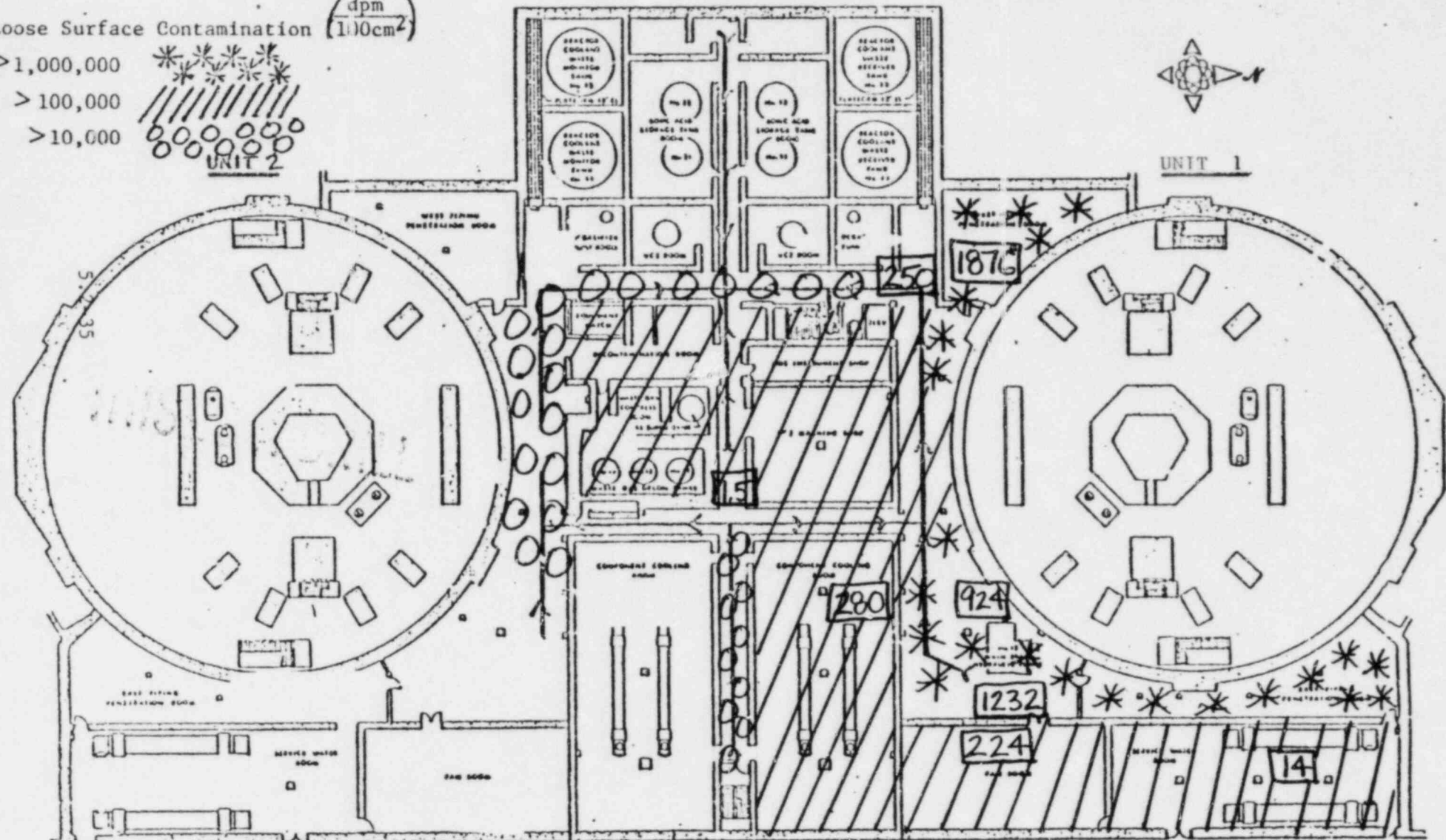
CALVERT CLIFFS NUCLEAR POWER PLANT
Baltimore Gas & Electric Company

UNITS 1 & 2 CONTAINMENT AND AUXILIARY BUILDING PLAN AT
5'-0" & 10'-0" ELEVATIONS

DOSE RATES (R/H) AT SCENARIO TIME = 6:00 ACTUAL TIME = 14:00

Loose Surface Contamination ($\frac{\text{dpm}}{100\text{cm}^2}$)

>1,000,000
>100,000
>10,000



CAVERT CLIFFS NUCLEAR POWER PLANT
Baltimore Gas & Electric Company

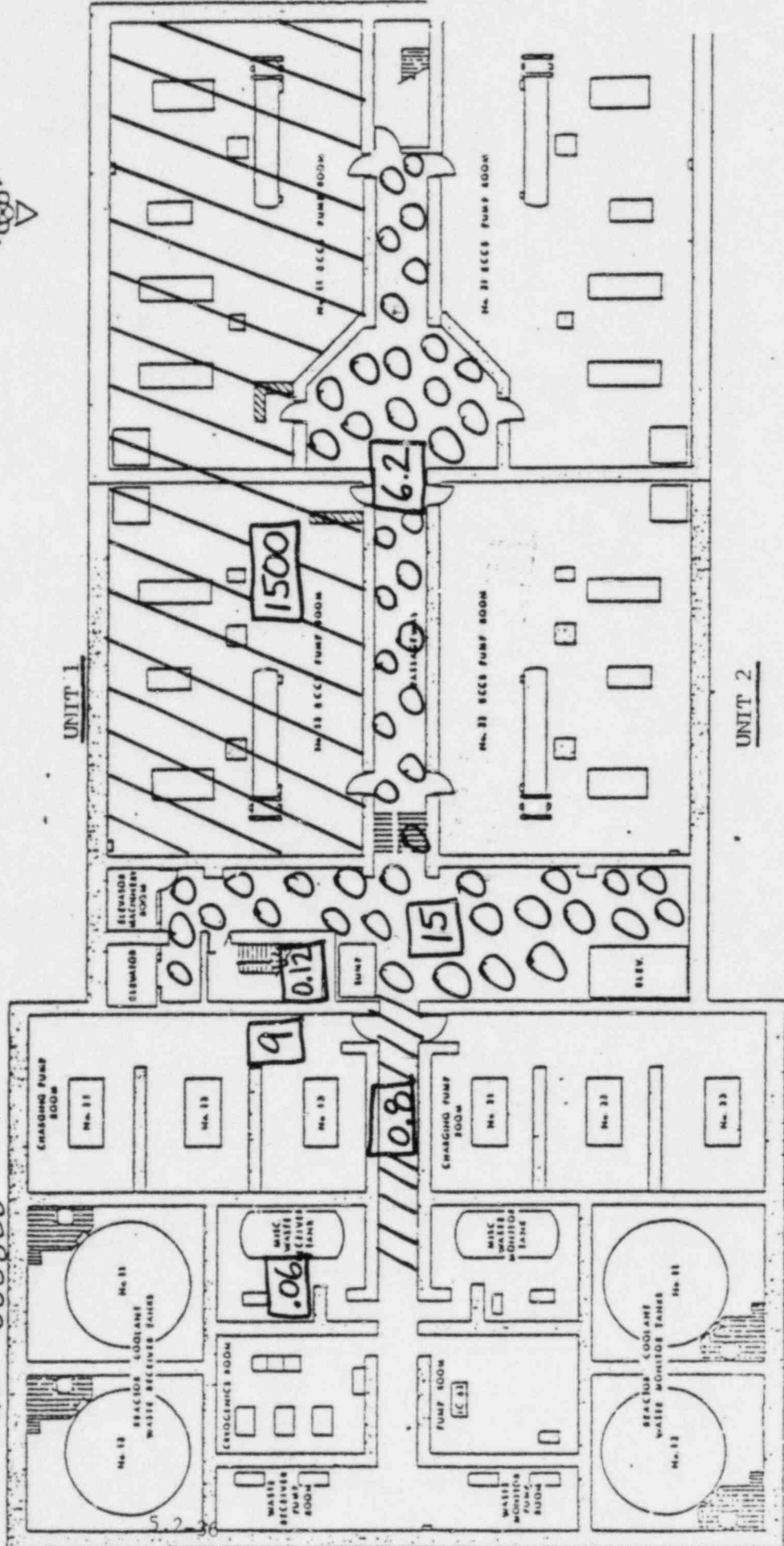
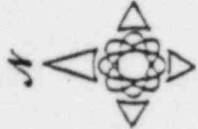
DOSE RATES (R/H) AT SCENARIO TIME= 6:00 ACTUAL TIME= 14:00
UNITS 1 & 2 AUXILIARY BUILDING PLAN

($\frac{\text{dpm}}{100\text{cm}^2}$)

Loose surface contamination

> 1,000,000 *****
> 10,000 //////////////
> 1,000 ooooooooo

AT ELEVATIONS
(-) 8'-0"
(-) 10'-0"
(-) 15'-0"



UNIT 2

SELECTED INPLANT AREA DOSE RATES
(Rem/h)

tual 14:30

Scenario 06:30

<u>Unit 1 Location</u>	<u>Reading</u>	<u>Unit 1 Location</u>	<u>Reading</u>
69' CTMT. Airlock Rm. (525)	48	27' Mainsteam Rm. (315)	1700
69' Exh. Equip. Rm. (524)	0.6	27' Switch Gear Rm.	200
69' Access Hall Rm. (521)	0.011	27' Stairwell	4
69' Rad. Chem. Off. Rm. (518)	0.011	27' W. Pen. Rm. (326)	6600
69' Fuel Pool Area	2.4	27' E. Piping Pen. Rm.	1.1E4
69' Elect. Pen Rm. (532)	2.4	5' N-S Corr. Rm. (212)	200
69' New Fuel Stor. Rm. (533)		5' E-W Corr. Rm. (200)	1.2
45' Post Acc. Smpl. Rm. (418)	0.10	5' Hallway against CTMT	726
45' Cask Loading Rm. (419)	0.04	5' Piping Area Rm. (224)	968
45' U-1 Sample Rm. (424)	0.04	5' Comp. Cool Rm. (228)	220
45' W. Electric Pen. Rm. (423)	1220	5' Pen. Rm. (221)	1474
45' Piping Area Rm. (428)	46	5' Rad. Ex. Rm. (225)	176
45' Emer. Airlock	1122	5' Serv. Water Rm.	11
45' Diesel Gen. Rm.	20	-15&-10 Stairwell	0.10
45' RWT Pump Rm. (421)	242	-15&-10 Corr. Rm. (103)	12
45' Elect. Equip. Rm. (429)	110	-15&-10 Chg. Rm. (115)	7
		-10 Hallway	0.7
*During Sampling	.22	-10 Misc. Waste Tank	0.04
		-15 SI ECCS Pump Rm.	1.2E3
		Corridor Rm. (100)	4.8

SELECTED RADIATION AREA & PROCESS MONITOR READING

ACTUAL TIME 14:30

SCENARIO TIME 06:30

<u>Location</u>	<u>Reading R/h</u>
69' Chem Lab	0.011
69' Spent Fuel Pool Area	2.4
69' New Fuel	Failure alarm
45' Drum Storage (PASS)	.02
45' Drum Storage (PASS) during sampling	.04
45' Sample Rm (Unit 1)	.04
43' Unit 1 E. Elec. Pen. Room	Offscale
45' Unit 1 Piping Area	Offscale
Steam Generator Blow Down Monitor	Offscale
5' Unit 1 Component Cooling	Offscale
5' Unit 1 Liquid Monitor	Offscale
5' Unit 1 Containment Monitor	Offscale
5' Unit 1 Service Water	Offscale
5' Unit 1 Liquid Monitor	Offscale

SELECTED INPLANT AREA DOSE RATES
(Rem/h)

tual 15:00

Scenario 07:00

<u>Unit 1 Location</u>	<u>Reading</u>	<u>Unit 1 Location</u>	<u>Reading</u>
69' CTMT. Airlock Rm. (525)	44	27' Mainsteam Rm. (315)	1560
69' Exh. Equip. Rm. (524)	0.5	27' Switch Gear Rm.	180
69' Access Hall Rm. (521)	0.01	27' Stairwell	3
69' Rad. Chem. Off. Rm. (518)	0.01	27' W. Pen. Rm. (326)	6000
69' Fuel Pool Area	2.2	27' E. Piping Pen. Rm.	1E4
69' Elect. Pen Rm. (532)	2.2	5' N-S Corr. Rm. (212)	176
69' New Fuel Stor. Rm. (533)		5' E-W Corr. Rm. (200)	1.1
45' Post Acc. Smpl. Rm. (418)	0.8	5' Hallway against CTMT	660
45' Cask Loading Rm. (419)	0.03	5' Piping Area Rm. (224)	880
45' U-1 Sample Rm. (424)	0.03	5' Comp. Cool Rm. (228)	200
45' W. Electric Pen. Rm. (423)	1020	5' Pen. Rm. (221)	1340
45' Piping Area Rm. (428)	42	5' Rad. Ex. Rm. (225)	160
45' Emer. Airlock	1020	5' Serv. Water Rm.	10
45' Diesel Gen. Rm.	18	-15&-10 Stairwell	0.09
45' RWT Pump Rm. (421)	220	-15&-10 Corr. Rm. (103)	11
45' Elect. Equip. Rm. (429)	100	-15&-10 Chg. Rm. (115)	7
		-10 Hallway	0.6
*During Sampling	.20	-10 Misc. Waste Tank	0.04
		-15 SI ECCS Pump Rm.	1100
		Corridor Rm. (100)	4.4

THIS IS A DRAFT

SELECTED RADIATION AREA & PROCESS MONITOR READING

ACTUAL TIME 15:00

SCENARIO TIME 07:00

<u>Location</u>	<u>Reading R/h</u>
69' Chem Lab	0.01
69' Spent Fuel Pool Area	2.2
69' New Fuel	Failure alarm
45' Drum Storage (PASS)	.02
45' Drum Storage (PASS) during sampling	.04
45' Sample Rm (Unit 1)	.03
45' Unit 1 E. Elec. Pen. Room	Offscale
45' Unit 1 Piping Area	Offscale
Steam Generator Blow Down Monitor	Offscale
5' Unit 1 Component Cooling	Offscale
5' Unit 1 Liquid Monitor	Offscale
5' Unit 1 Containment Monitor	Offscale
5' Unit 1 Service Water	Offscale
5' Unit 1 Liquid Monitor	Offscale

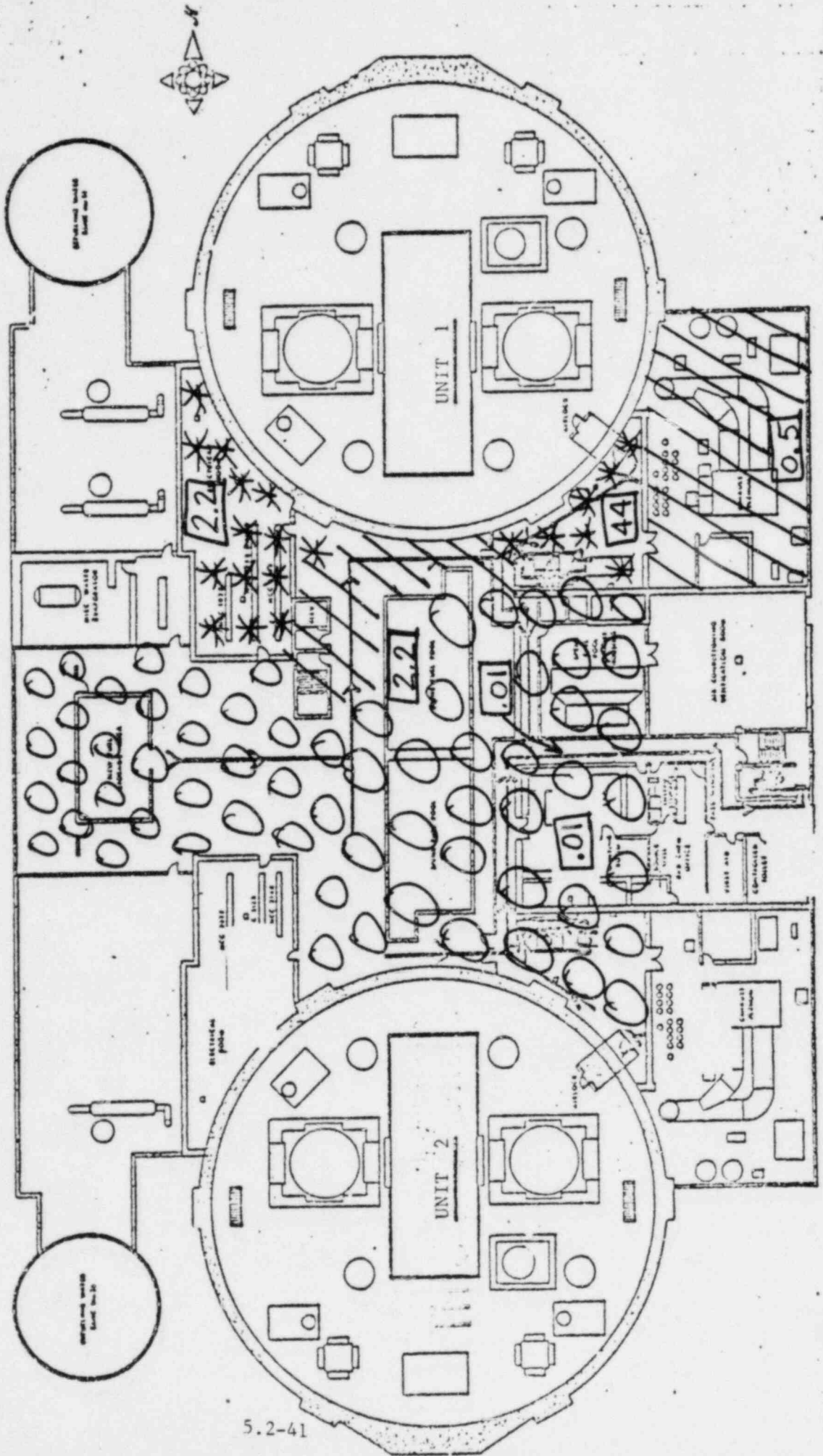
CAVERLY CLIFFS NUCLEAR POWER PLANT
 Baltimore Gas & Electric Company

Loose Surfa. Contamination (cpm/100cm²)

> 1,000,000 *****
 > 100,000 //////////////
 > 10,000 ooooooooo

UNITS 1 & 2 CONTAINMENT AND AUXILIARY BUILDING PLAN AT
 69'-0" ELEVATION

DOSE RATES (R/H) AT SCENARIO TIME = 7:00 ACTUAL TIME = 15:00



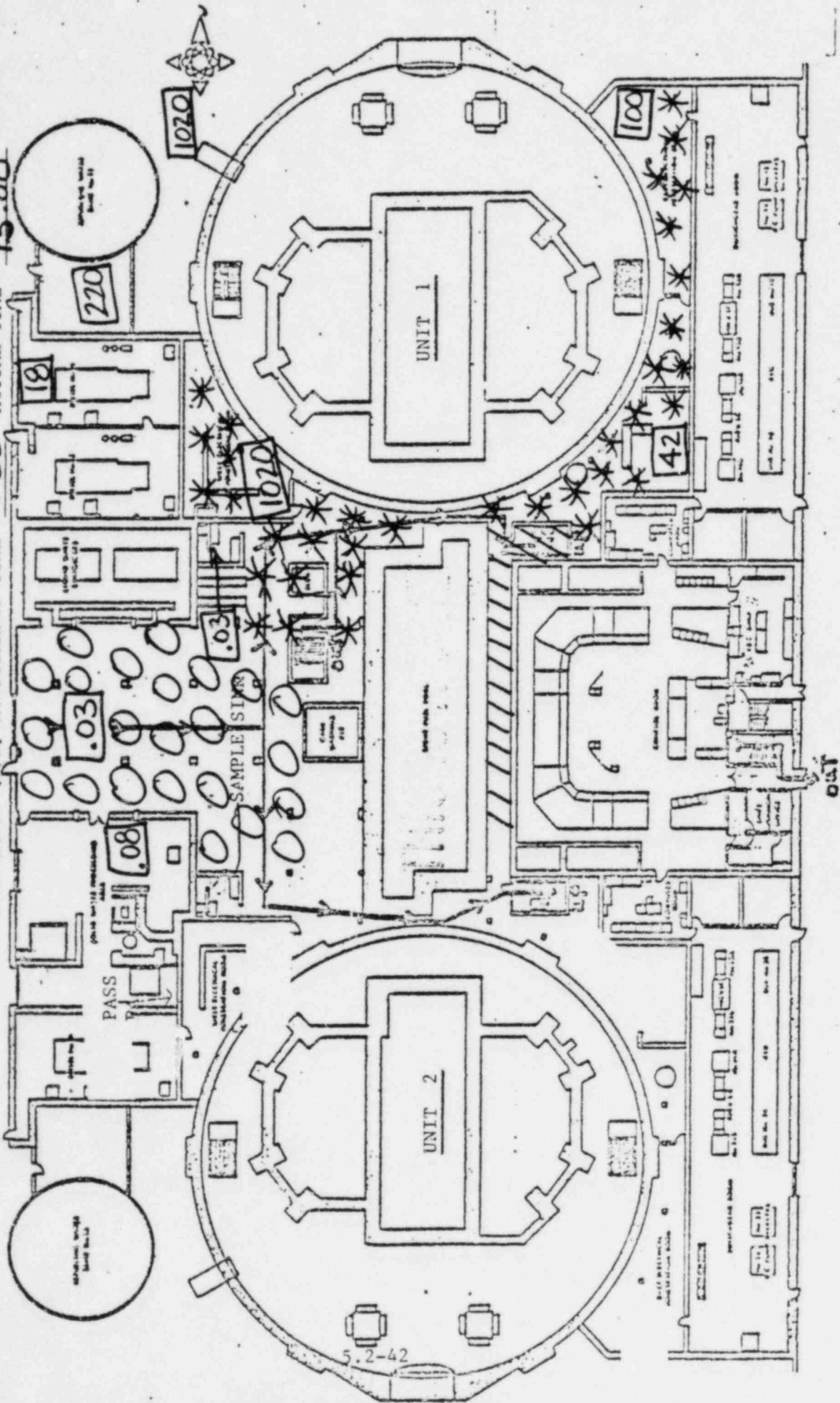
Loose Surface Contamination

> 1,000,000
 > 100,000
 > 10,000

ACTUAL TIME = 15:00

UNITS 1 & 2 CONTAINMENT AND AUXILIARY BUILDING PLAN AT
 45'-0" ELEVATION

DOSE RATES (R/H) AT SCENARIO TIME = 7:00



CALVERT CLIFFS NUC. - POWER PLANT
Baltimore Gas & Electric Company

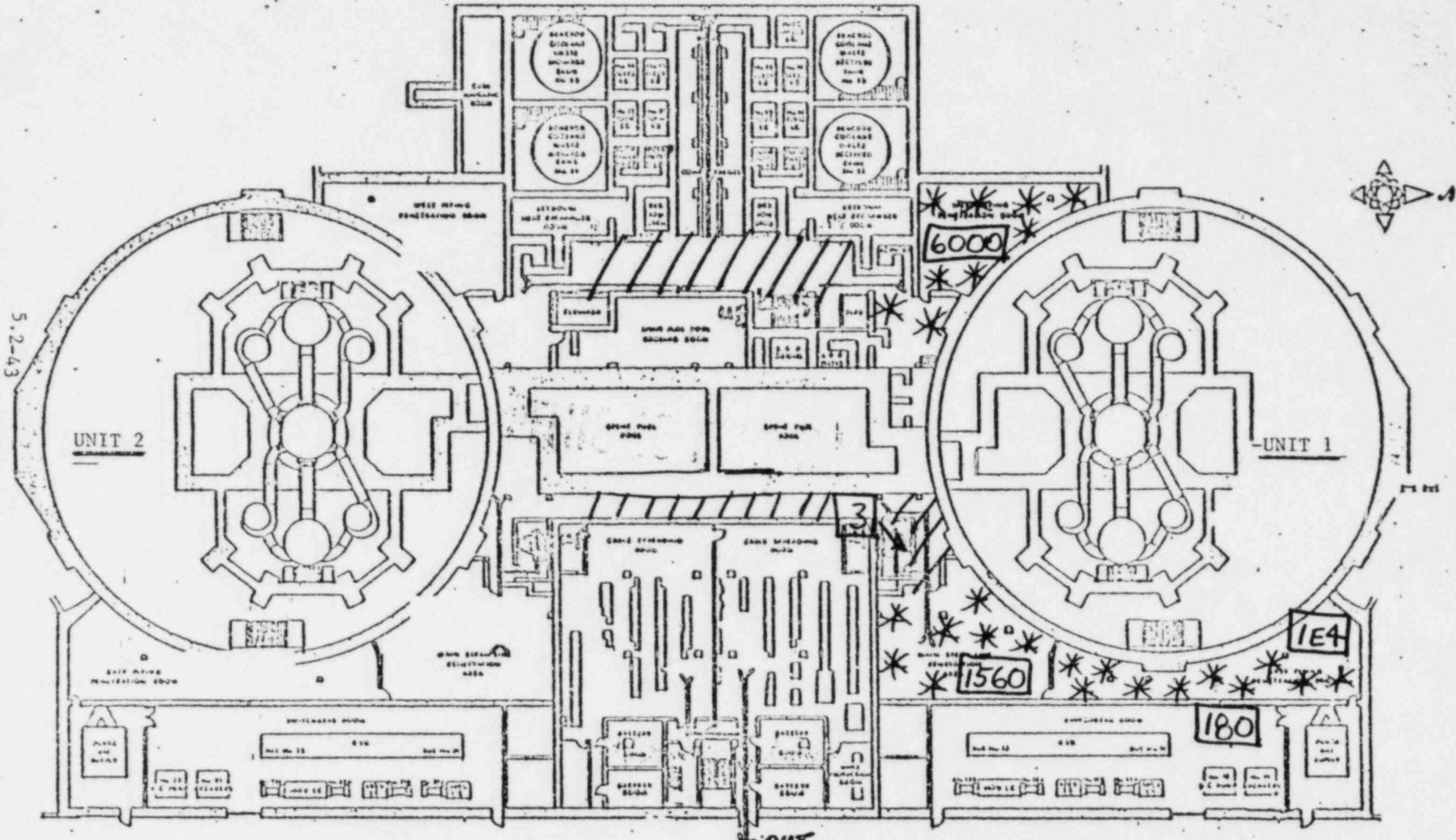
Loose Surface Contamination (dpm / 100cm²)

>1,000,000 *****
>100,000 ///////////////
>10,000 oooooooooo

UNITS 1 & 2 CONTAINMENT AND AUXILIARY BUILDING PLAN AT

27'-0" ELEVATION

DOSE RATE (R/H) AT SCENARIO TIME= 7:00 ACTUAL TIME= 15:00



UNITS 1&2 CONTAINMENT AND AUXILIARY BUILDING PLAN AT

5'-0" & 10'-0" ELEVATIONS

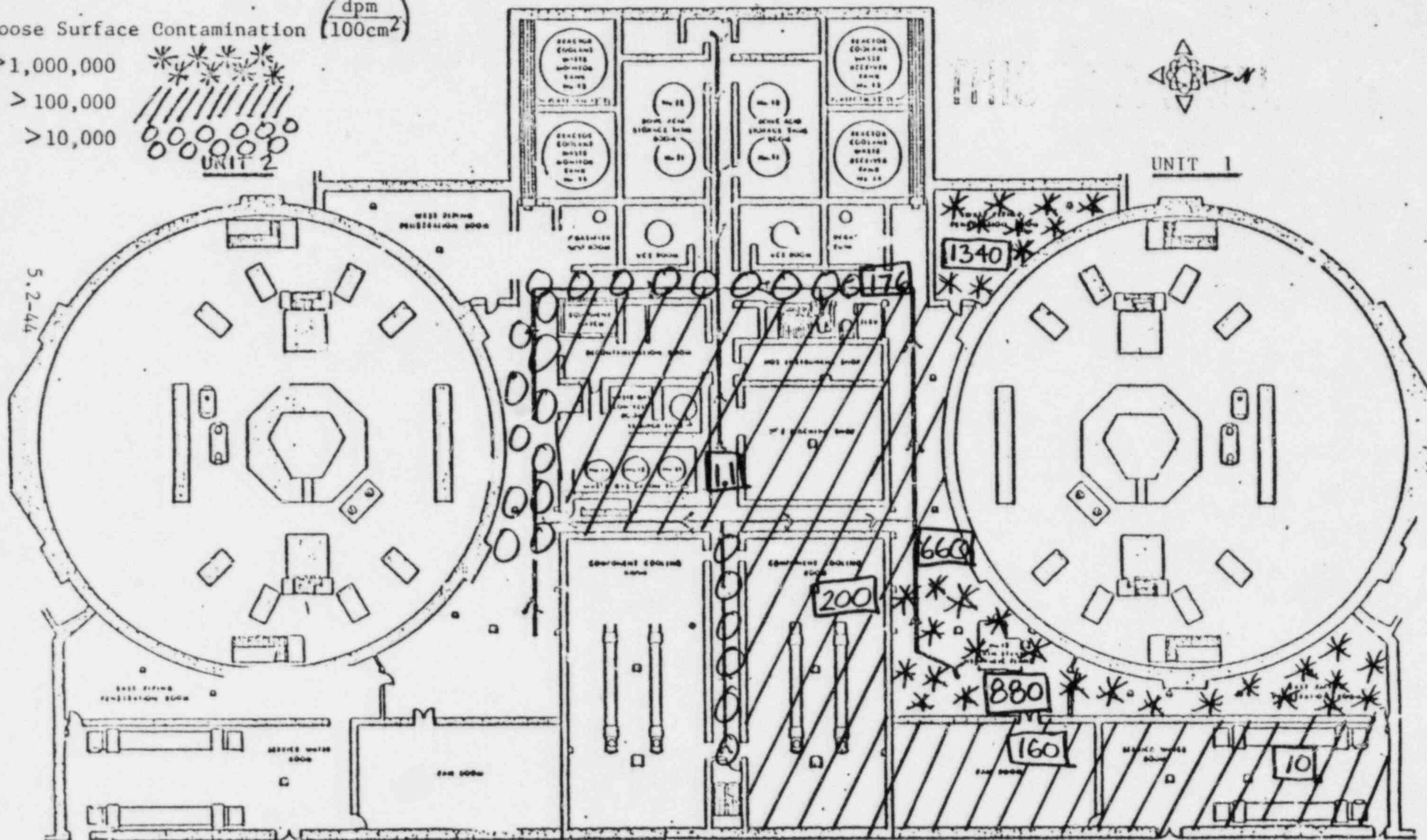
DOSE RATES (R/H) AT SCENARIO TIME = 7:00 ACTUAL TIME = 15:00

Loose Surface Contamination $\left(\frac{\text{dpm}}{100\text{cm}^2}\right)$

>1,000,000

> 100,000

> 10,000



CAVERT CLIFFS NUCLEAR POWER PLANT
Baltimore Gas & Electric Company

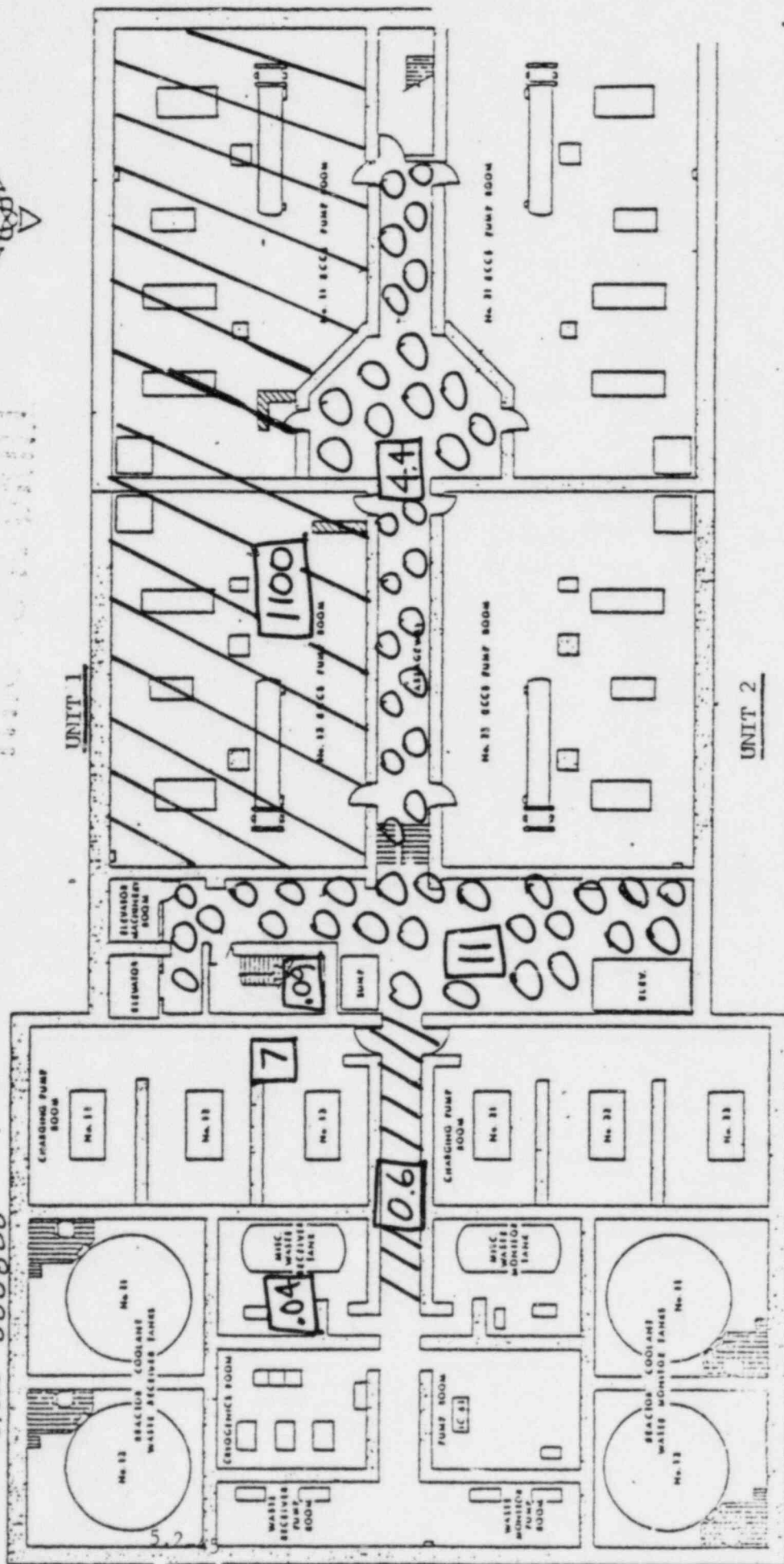
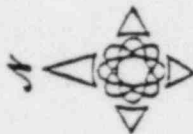
DOSE RATES (R/H) AT SCENARIO TIME= 7:00 ACTUAL TIME= 15:00
UNITS 1 & 2 AUXILIARY BUILDING PLAN

Loose surface contamination

$\left(\frac{\text{dpm}}{100\text{cm}^2}\right)$

> 1,000,000 *****
> 10,000 //////////////
> 1,000 ooooooooo

(-) 8'-0"
AT (-) 10'-0"
(-) 15'-0" } ELEVATIONS



SELECTED INPLANT AREA DOSE RATES
(Rem/h)

Actual 15:30

Scenario 07:30

Unit 1 Location	Reading	Unit 1 Location	Reading
69' CTMT. Airlock Rm. (525)	42	27' Mainsteam Rm. (315)	1500
69' Exh. Equip. Rm. (524)	0.5	27' Switch Gear Rm.	170
69' Access Hall Rm. (521)	0.01	27' Stairwell	3
69' Rad. Chem. Off. Rm. (518)	0.01	27' W. Pen. Rm. (326)	5700
69' Fuel Pool Area	2.1	27' E. Piping Pen. Rm.	9500
69' Elect. Pen Rm. (532)	2.1	5' N-S Corr. Rm. (212)	167
69' New Fuel Stor. Rm. (533)		5' E-W Corr. Rm. (200)	1
45' Post Acc. Smpl. Rm. (418)	0.08	5' Hallway against CTMT	627
45' Cask Loading Rm. (419)	0.03	5' Piping Area Rm. (224)	836
3' U-1 Sample Rm. (424)	0.03	5' Comp. Cool Rm. (228)	190
45' W. Electric Pen. Rm. (423)	969	5' Pen. Rm. (221)	1273
45' Piping Area Rm. (428)	40	5' Rad. Ex. Rm. (225)	152
45' Emer. Airlock	969	5' Serv. Water Rm.	9.5
45' Diesel Gen. Rm.	17	-15&-10 Stairwell	0.08
45' RWT Pump Rm. (421)	209	-15&-10 Corr. Rm. (103)	10
45' Elect. Equip. Rm. (429)	95	-15&-10 Chg. Rm. (115)	6
		-10 Hallway	0.6
*During Sampling	.19	-10 Misc. Waste Tank	0.06
		-15 SI ECCS Pump Rm.	1045
		Corridor Rm. (100)	4.2

END OF DRILL

SELECTED RADIATION AREA & PROCESS MONITOR READING

ACTUAL TIME 15:30

SCENARIO TIME 07:30

<u>Location</u>	<u>Reading R/h</u>
69' Chem Lab	0.01
69' Spent Fuel Pool Area	2.1
69' New Fuel	Failure alarm
45' Drum Storage (PASS)	0.2
45' Drum Storage (PASS) during sampling	0.4
45' Sample Rm (Unit 1)	0.3
45' Unit 1 E. Elec. Pen. Room	Offscale
45' Unit 1 Piping Area	Offscale
Steam Generator Blow Down Monitor	Offscale
5' Unit 1 Component Cooling	Offscale
5' Unit 1 Liquid Monitor	Offscale
5' Unit 1 Containment Monitor	Offscale
5' Unit 1 Service Water	Offscale
5' Unit 1 Liquid Monitor	Offscale

$$\left(\frac{\text{dpm}}{100\text{cm}^2}\right)$$

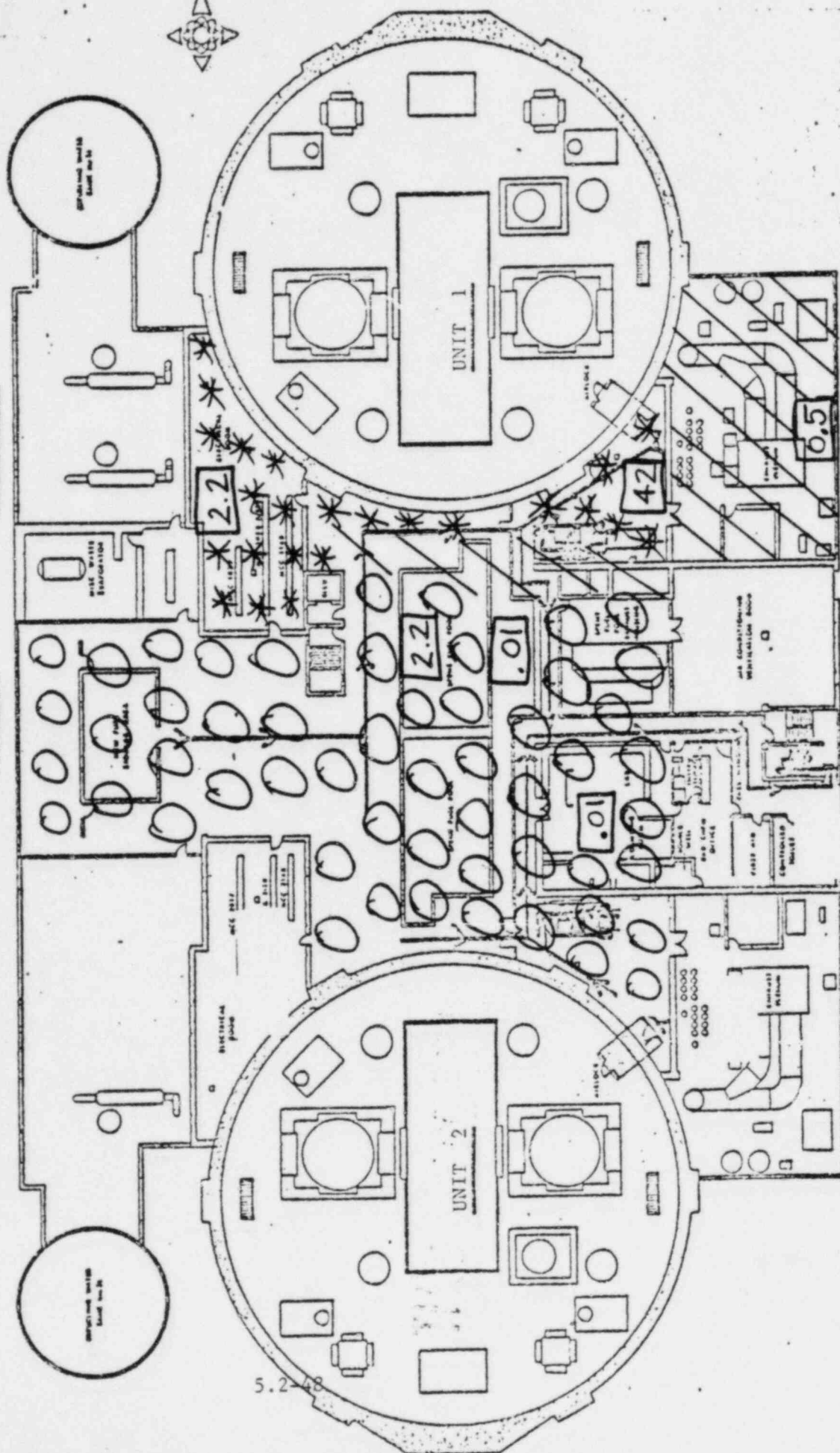
Loose Surface Contamination

> 1,000,000
 > 100,000
 > 10,000

UNITS 1&2 CONTAINMENT AND AUXILIARY BUILDING PLAN AT

69'-0" ELEVATION

DOSE RATES (R/H) AT SCENARIO TIME = 7:30 ACTUAL TIME = 15:30

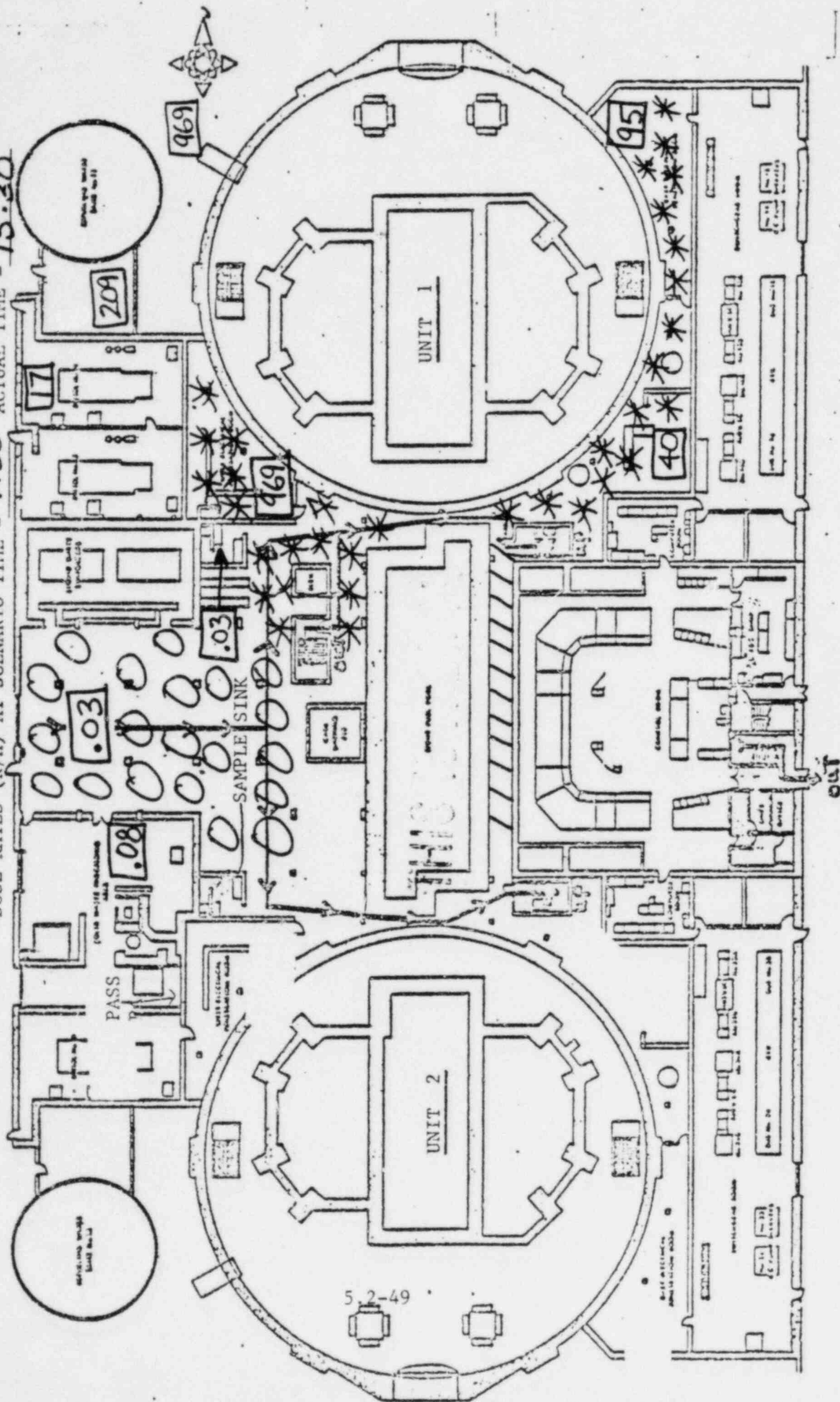


Baltimore Gas & Electric Company

> 1,000,000

> 100,000

DOSE RATES (R/H) AT SCENARIO TIME = 7:30 ACTUAL TIME = 15:30 > 10,000 00000000



CALVERT CLIFFS NUC. 1 POWER PLANT
Baltimore Gas & Electric Company

Loose Surface Contamination $\left(\frac{\text{dpm}}{100\text{cm}^2}\right)$

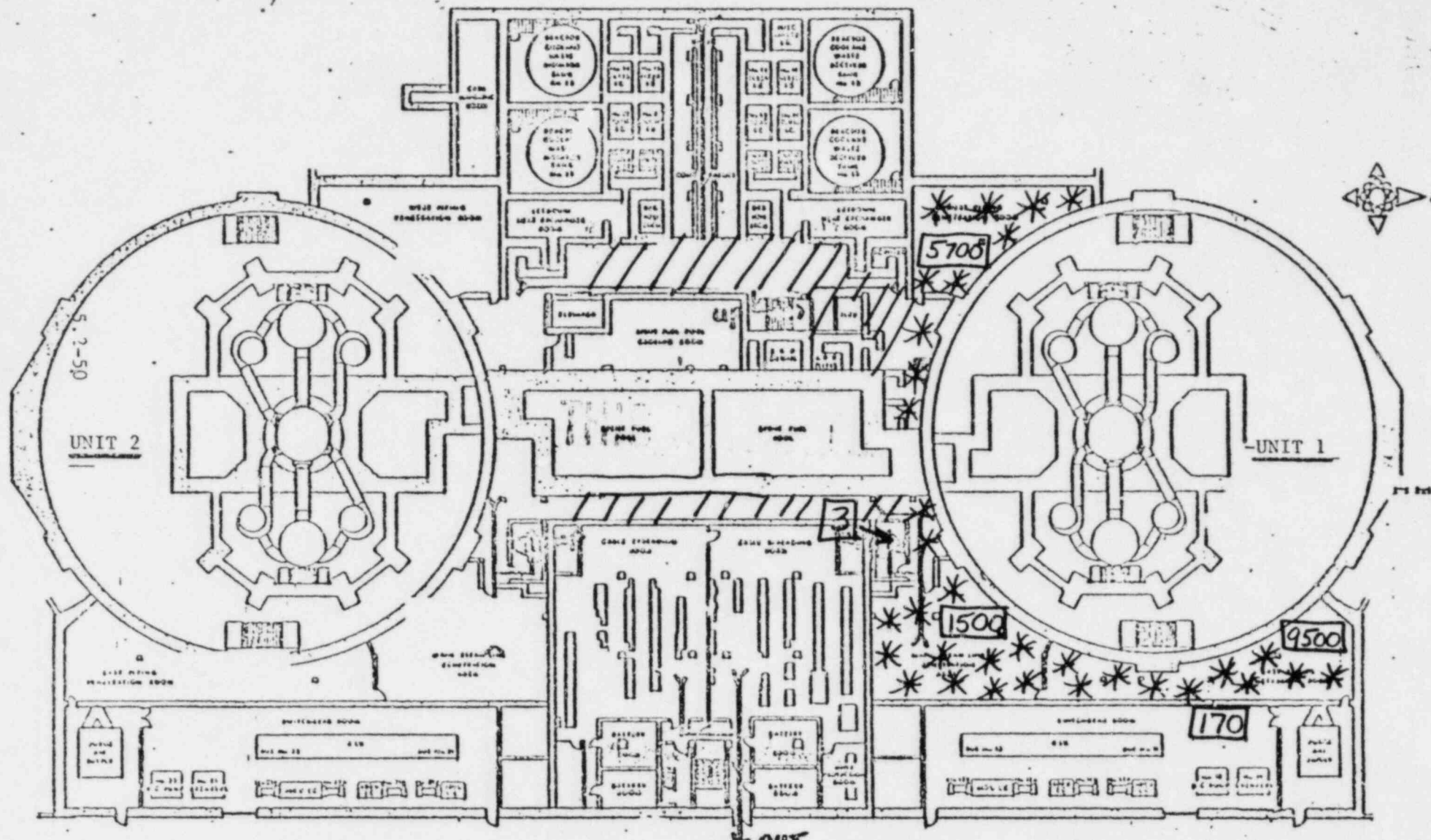
>1,000,000

>100,000

>10,000

UNITS 1 & 2 CONTAINMENT AND AUXILIARY BUILDING PLAN AT
27'-0" ELEVATION

DOSE RATE (R/H) AT SCENARIO TIME= 7:30 ACTUAL TIME= 15:30



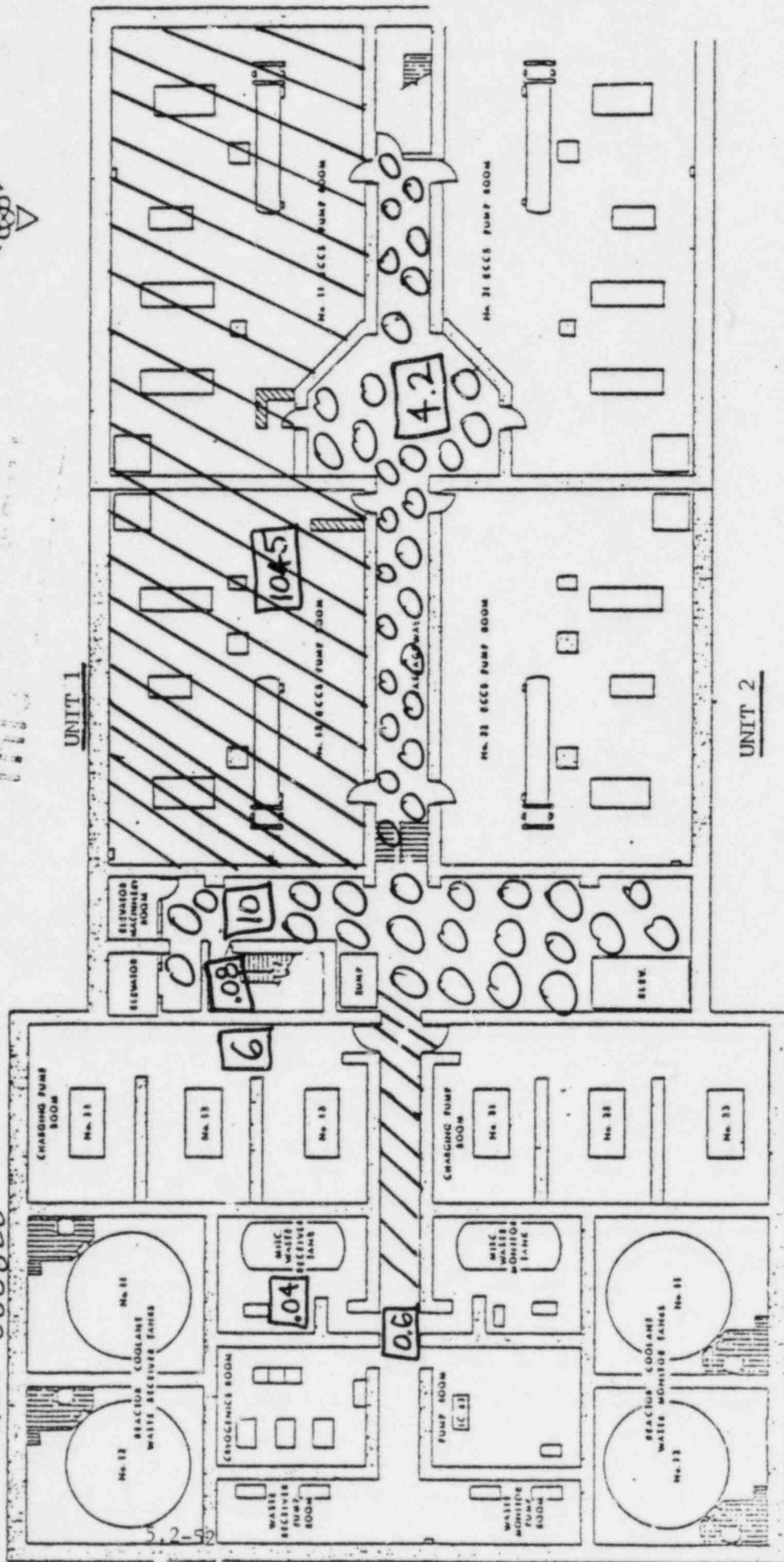
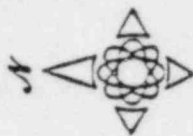
CALVERT CLIFFS NUCLEAR POWER PLANT
Baltimore Gas & Electric Company

DOSE RATES (RM) AT SCENARIO TIME= 7:30 ACTUAL TIME= 15:30
UNITS 1 & 2 AUXILIARY BUILDING PLAN

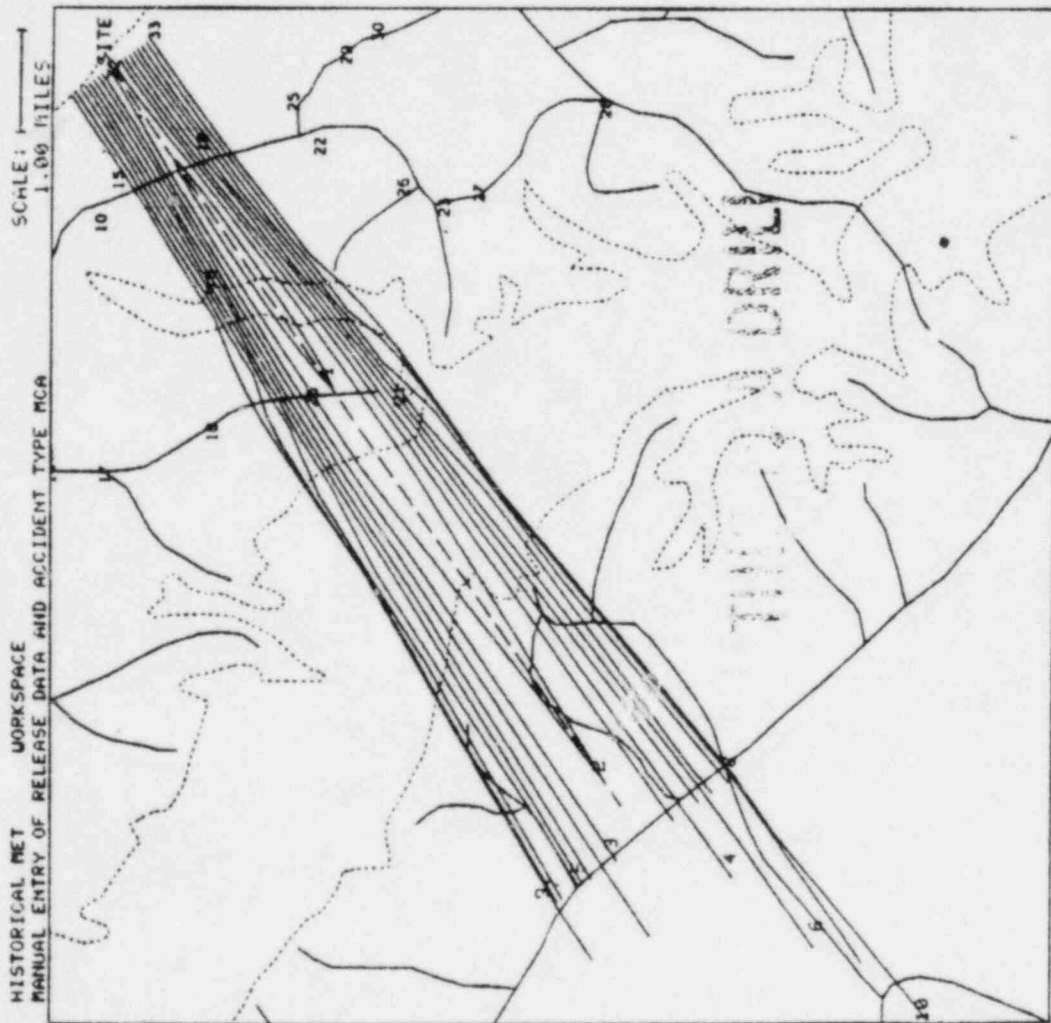
Loose surface contamination ($\frac{\text{dpm}}{100\text{cm}^2}$)

> 1,000,000 *****
> 10,000 //////////////
> 1,000 ooooooooo

(-) 8'-0" }
AT (-) 10'-0" } ELEVATIONS
(-) 15'-0" }



WIND DIRECTION LOSS RATES @ T = 0:45



TIME AFTER ACCIDENT 0.00 HOURS
GAMMA DOSE (ADJ. FACTOR) 1.00
DATE OF MET 8309140745
RELEASE PT 1 2 4
SPEED(MPH) 2 2 2
DIR FROM 55 55 55
VERT STAB D(0) D(0) D(0)
HOPIZ STAB D(0) D(0) D(0)
RELEASE TYPE USP USP GND
E/FL CFM/1000 131 118 0
MIXED MODE 0.00 0.00 0.00
PLUME HGT(M) 203 188 0
PEAK (PEN/HR) 4.74E-04
DST TO PK 3.5E 03(M), 2.2(MI)
TERMIN AT PEAK(M) 2.40E 01
DECAYED FELSE(CI/SEC) 8.94E-01

LEGEND

PER/HR
1 3.00E-04
2 1.00E-04
3 3.00E-05
4 1.00E-05
5 3.00E-06
6 1.00E-06
7 3.00E-07
8 1.00E-07
9 3.00E-08
10 1.00E-08

ISOTOPIC REL.

CI/SEC
XE133 7.50E-01
XE135 7.43E-02
KR85M 1.46E-02
KR85 1.46E-02
KR28 6.01E-03
XE138 3.73E-03
XE131M 3.35E-03
KR87 3.22E-03
II31 1.20E-02
II33 1.22E-02

*** EAL IS: NO EMERGENCY ***

WHOLE BODY DOSE RATE @ T = 2:00

TIME AFTER ACCIDENT 0.0 HOURS
 GAMMA DOSE (ADJ. FACTOR) 1.60
 DATE OF NET 8309140900
 RELEASE PT 1 2 4
 SPEED(MPH) 3 3 3
 DIR FROM 45 45 45
 VERT STAB D(D) D(D) D(D)
 HORIZ STAB D(D) D(D) D(D)
 RELEASE TYPE USP USP GND
 EXFL CFM/1000 131 118 0
 MIXED MODE 0.00 0.00 0.00
 PLUME HGT(M) 125 118 0
 PEAK (PEM/HR) 6.95E-04
 DST TO PK 1.4E 03(M), .9(M)
 TERRAIN AT PEAK(M) 2.40E 01
 DECAYED PULSE(CI/SEC) 8.76E-01

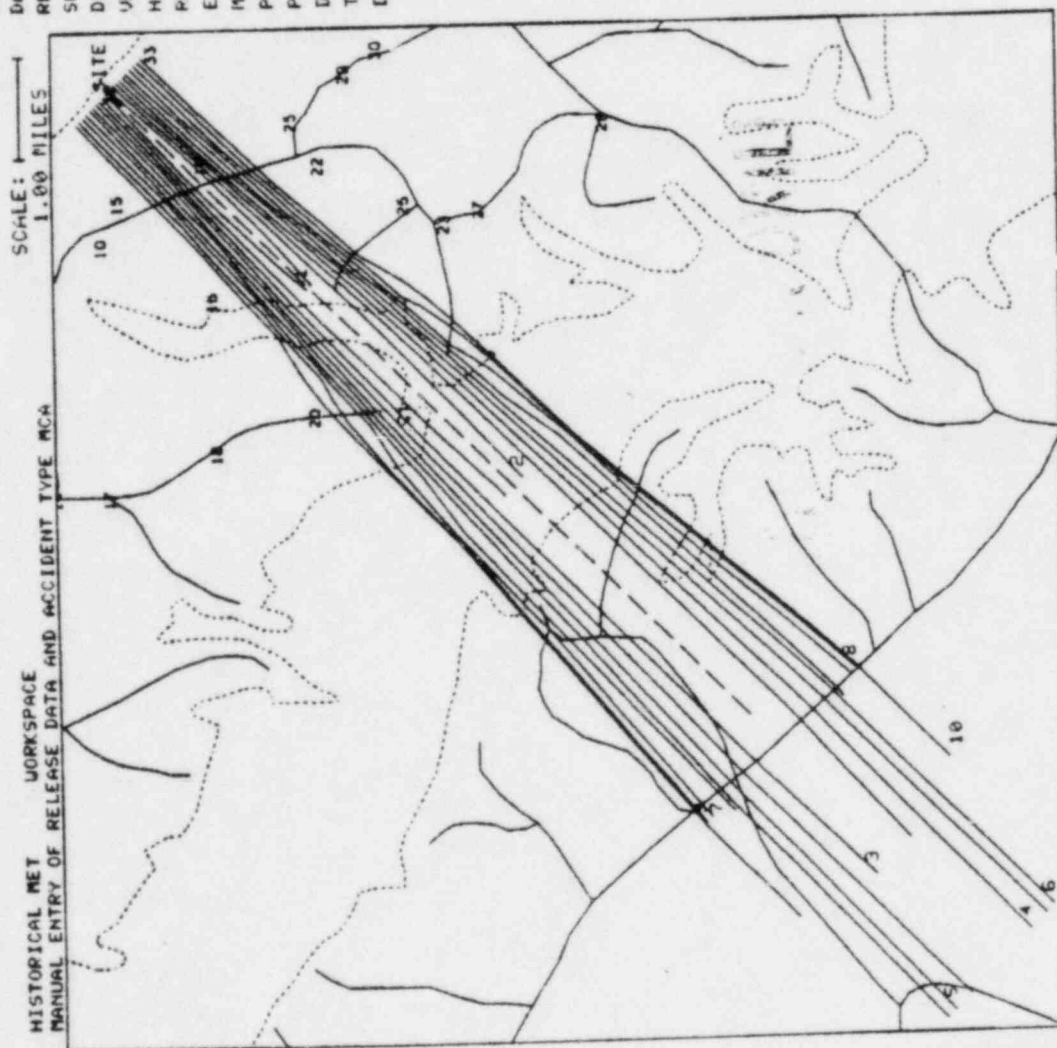
LEGEND

PEM/HR
1 3.00E-04
2 1.00E-04
3 3.00E-05
4 1.00E-05
5 3.00E-06
6 1.00E-06
7 3.00E-07
8 1.00E-07
9 3.00E-08
10 1.00E-08

ISOTOPIC PEL.

CI/SEC
XE133 7.35E-01
YE135 7.28E-02
KB85M 1.43E-02
KB85 1.43E-02
KB88 5.89E-03
XE138 3.65E-03
XE131M 3.29E-03
KB87 3.16E-03
II131 1.18E-02
II133 1.20E-02

*** EAL IS: ALERT ***



OFFSITE RADIOLOGICAL MEASUREMENTS

SAMPLE TIME 09:00SCENARIO TIME 02:00

<u>Location</u>	<u>Description</u>	<u>Distance from Plant (mi)</u>	<u>Whole Dose Rate (mrem/h)</u>	<u>Thyroid Dose Rate (mrem/h)</u>	<u>Iodine Air Activity (uCi/cc)</u>	<u>NCP2 M W/MS2-SPA3</u>
Site Boundary		SB	0.5	---	---	---
2 miles		2	0.2	---	---	---
5 miles		5	0.1	---	---	---
10 miles		10	0.005	---	---	---
<u>Survey Point</u>						
19	Bellaire Nursery	1	0.3	---	---	---

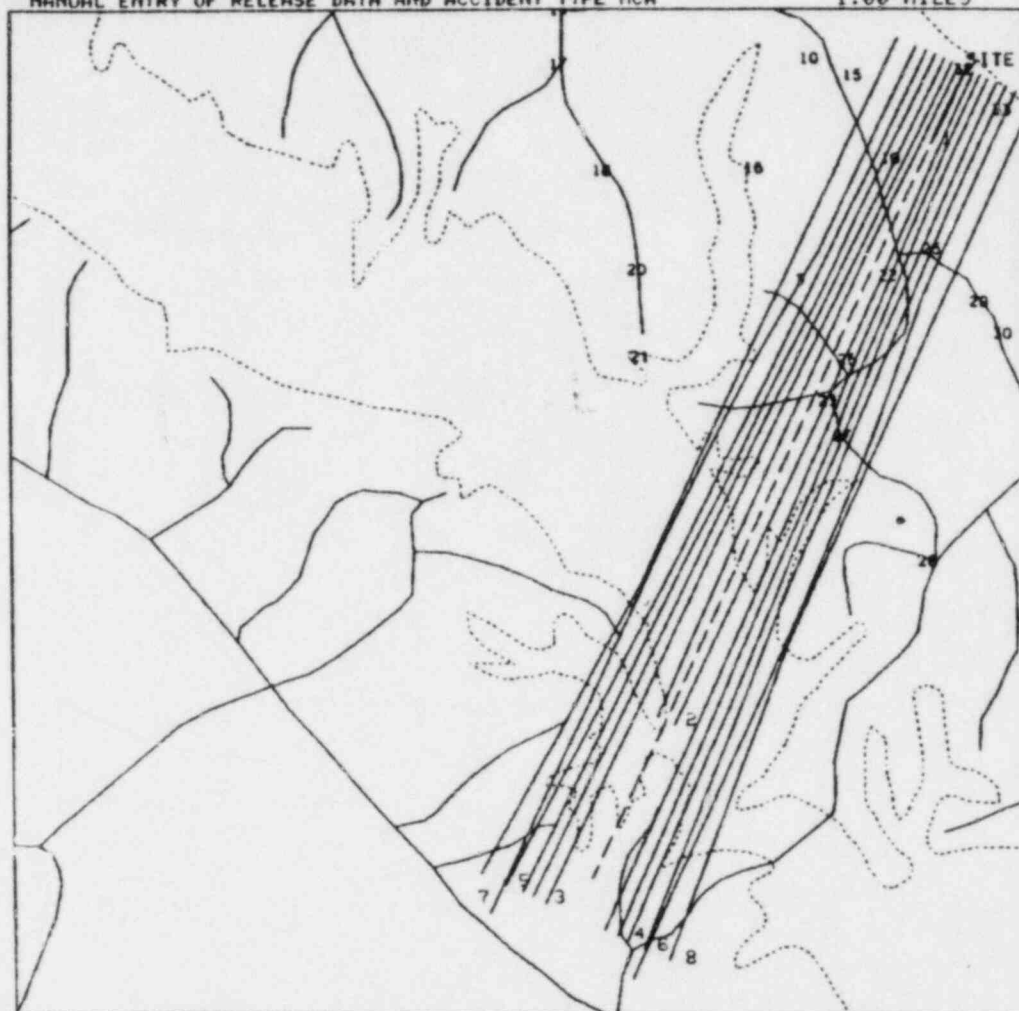
5.3-3

THIS IS A DRAFT

WHOLE BODY DOSE RATES @ T = 3:00

HISTORICAL MET WORKSPACE
MANUAL ENTRY OF RELEASE DATA AND ACCIDENT TYPE MCA

SCALE: 1.00 MILES



TIME AFTER ACCIDENT 0.0 HOURS
GAMMA DOSE (ADJ. FACTOR) 1.00
DATE OF MET 8309141000
RELEASE PT 1 2 4
SPEED(MPH) 6 6 6
DIR FROM 25 25 25
VERT STAB E(D) E(D) E(D)
HORIZ STAB E(D) E(D) E(D)
RELEASE TYPE USP USP GND
EXFL CFM/1000 131 118 0
MIXED MODE 0.00 0.00 0.00
PLUME HGT(M) 72 77 0
PEAK (REM/HR) 9.37E-04
DST TO PK 1.6E 03(M), 1.0(MI)
TEPRIN AT PEAK(M) 2.55E 01
DECAYED RELSE(CI/SEC) 2.41E-01

LEGEND

REM/HR

- 1 1.00E-03
- 2 1.00E-04
- 3 1.00E-05
- 4 1.00E-06
- 5 1.00E-07
- 6 1.00E-02
- 7 1.00E-09
- 8 1.00E-10

ISOTOPIC REL.

CI/SEC

- XE133 7.06E-01
- XE135 6.99E-02
- KR85M 1.37E-02
- KR25 1.37E-02
- KR28 5.66E-03
- XE138 3.51E-03
- XE131M 3.15E-03
- KR27 3.03E-03
- I131 1.13E-02 -05
- I133 1.15E-02 -05

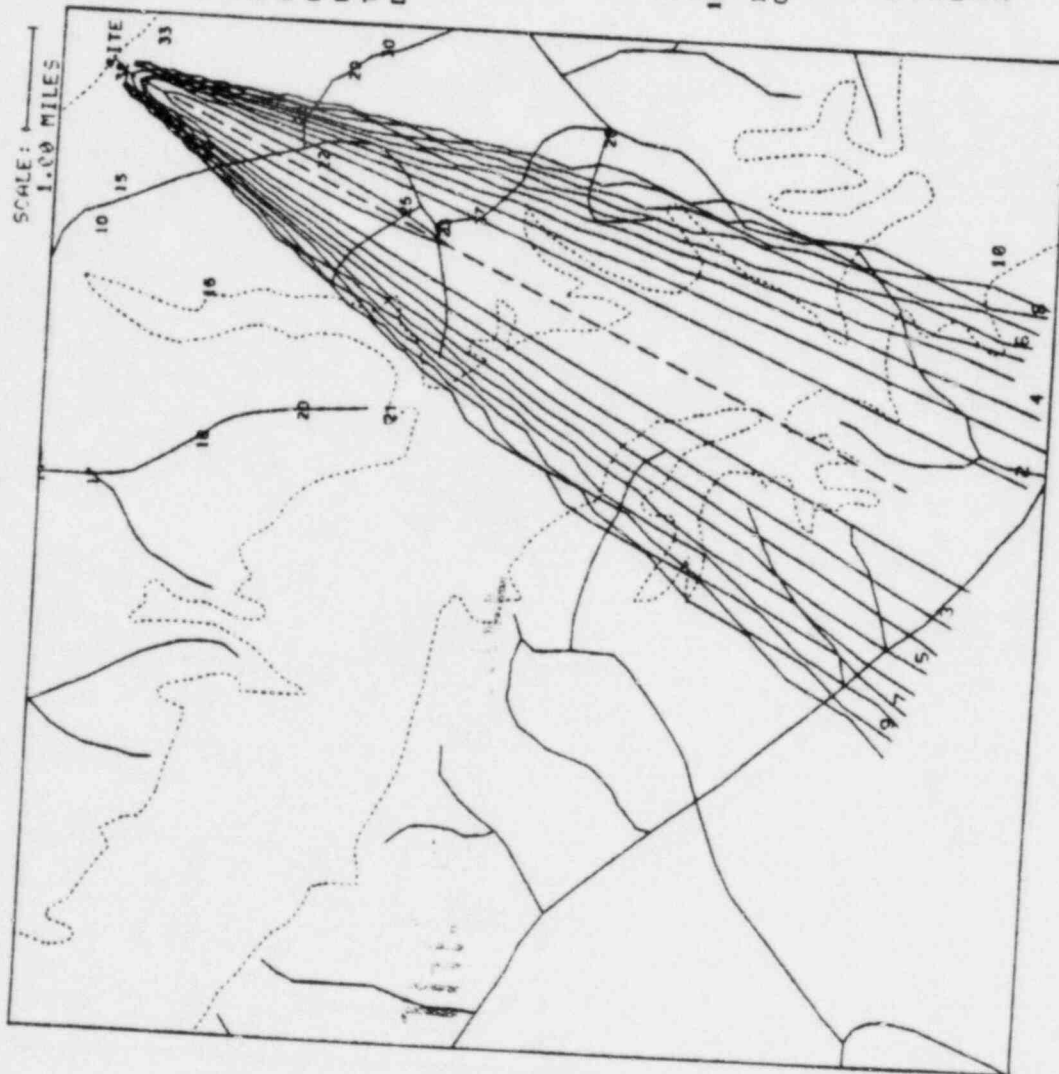
*** EAL IS: ALERT ***

THYROID DOSE RATES @ T = 3:00

TIME AFTER ACCIDENT 0.0 HOURS
 THYROID DOSE (ADJ. FACTOR) 1.00
 DATE OF MET 8309141000
 RELEASE PT 1 2 4
 SPEED (MPH) 6 6 6
 DIR FROM 25 25 25
 VERT STAB E(D) E(D) E(D)
 HORIZ STAB E(D) E(D) E(D)
 RELEASE TYPE USP USP GND
 EXFL CFM/1000 131 118 0
 MIXED MODE 0.00 0.00 0.00
 PLUME HGT (M) 72 77 0
 PEAK (MPM/HR) 2.72E-01
 DST TO PK 1.8E 03 (M), 1.1 (MI)
 TERRAIN AT PEAK (M) 2.56E 01
 DECAYED PULSE (CI/SEC) 8.41E-01

LEGEND

MPM/HR	ISOTOPIC REL. CI/SEC
1 1.00E-01	XE133 7.06E-01
2 1.00E-02	XE135 6.92E-02
3 1.00E-03	KR25M 1.37E-02
4 1.00E-04	KR85 1.37E-02
5 1.00E-05	KR88 5.66E-03
6 1.00E-06	XE138 3.51E-03
7 1.00E-07	XE131M 3.15E-03
8 1.00E-08	KR87 3.03E-03
9 1.00E-09	I131 1.13E-02
10 1.00E-10	I133 1.15E-02



SITE CC
EFFLUENT DATA SUMMARY

*** DOSE CALCULATIONS SUMMARY PRINT ***
TIME OF RUN: 8307131323

MONITOR ID
CURRENT READING
CONU FACTOR TO
UNITS UCI/CC (UCI/CC)

UING 4.7E 03 A 7.6E-07 1.3E-02 1.3E 05 8.0E 05 2.2E 04
UING 1.0E 02 A 7.6E-07 2.6E-04 1.2E 05 1.4E 04 3.9E 02
NONE MON 3.8E 04 E 1.0E 00 2.5E-02 1.0E-01 1.0E 00 1.5E-01

UNIT DESIGNATOR FOR CURRENT READING
A = CPM, B = UCI/CC, C = UCI/SEC, D = MREM/HR

METEOROLOGICAL DATA: TIME OF MET USED: 8309141000

RPT1 RPT2 RPT3 RPT4

RELEASE TYPE
WIND SPD AT REF HT(M/SEC)
WIND DIRECTION TOWARD:
PASQUILL CATEGORY VERT
PASQUILL CATEGORY HORIZ

USP 2.4
SSU 2.4
E 2.7
E 2.7
E 2.7

GND 2.7
SSU 2.7
E 2.7
E 2.7
E 2.7

PEAK OFFSITE U BOD DOSE RATE (MREM/HR)
DOSE IS BETWEEN (MREM/HR)
EMERGENCY ACTION LEVEL

5.0E-01 & 2.5E 02
ALERT !!!

DISPERSION DATA
BY RELEASE PT

RPT1 RPT2 RPT3 RPT4

SB X/Q(SEC/M3) 1.5E-05 1.1E-05 0.0E 00 3.3E-05
SB DIST(M) 1.6E 03 1.6E 03 0.0E 00 1.6E 03
X/Q AT 2 MILES 1.1E-05 1.0E-05 0.0E 00 1.4E-05
X/Q AT 5 MILES 4.2E-06 4.0E-06 0.0E 00 4.2E-06
X/Q AT 10 MILES 2.0E-06 2.0E-06 0.0E 00 2.0E-06
PEAK X/Q(SEC/M3) 1.5E-05 1.2E-05 0.0E 00 3.3E-05
DIST TO PEAK(M) 1.8E 03 2.0E 03 0.0E 00 1.6E 03
PK NOBLE GAS CONC(UCI/CC) 5.5E-06 8.9E-02 0.0E 00 6.9E-12
PK 1 + PART CONC(UCI/CC) 3.4E-07 4.7E-09 0.0E 00 5.1E-12
X/Q AT PEAK CONCENTRATION 1.5E-05 1.2E-05 0.0E 00 3.3E-05
DIST TO PEAK CONC(M) 1.8E 03 1.8E 03 0.0E 00 1.8E 03

DOSE RESULTS OFFSITE
BY RELEASE PT(MREM/HR)

RPT1 RPT2 RPT3 RPT4 TOTALS

PEAK U BOD FOR EACH PP 9.2E-04 1.5E-05 0.0E 00 3.2E-03
DIST TO PEAK(M) 1.6E 03 1.6E 03 0.0E 00 1.6E 03
U BOD AT TOTAL PK LOC 9.2E-04 1.5E-05 0.0E 00 3.2E-03
DIST TO TOT PK U BOD(M) 1.6E 03 1.6E 03 0.0E 00 1.6E 03
U BOD SITE BOUNDARY 9.2E-04 1.5E-05 0.0E 00 3.2E-03
U BOD AT 2 MILES 5.1E-04 8.6E-06 0.0E 00 6.8E-10
U BOD AT 5 MILES 1.8E-04 3.1E-06 0.0E 00 1.3E-10
U BOD AT 10 MILES 8.6E-05 1.5E-06 0.0E 00 6.7E-11
PK THYRD FOR EACH PP 2.7E-01 3.7E-03 0.0E 00 6.2E-06
DIST TO PEAK(M) 1.8E 03 2.0E 03 0.0E 00 1.6E 03
THYRD AT TOTAL PK LOC 2.7E-01 3.6E-03 0.0E 00 6.2E-06
DIST TO TOT PK THYRD(M) 1.8E 03 1.8E 03 0.0E 00 1.8E 03
THYRD SITE BOUNDARY 2.6E-01 3.3E-03 0.0E 00 6.2E-06
THYRD AT 2 MILES 2.0E-01 3.0E-03 0.0E 00 2.5E-06
THYRD AT 5 MILES 7.2E-02 1.2E-03 0.0E 00 7.4E-02
THYRD AT 10 MILES 3.5E-02 5.9E-04 0.0E 00 3.6E-07

ENTER: (RETURN) TO CONTINUE

OFFSITE RADIOLOGICAL MEASUREMENTS

SAMPLE TIME 11:00

SCENARIO TIME 03:00

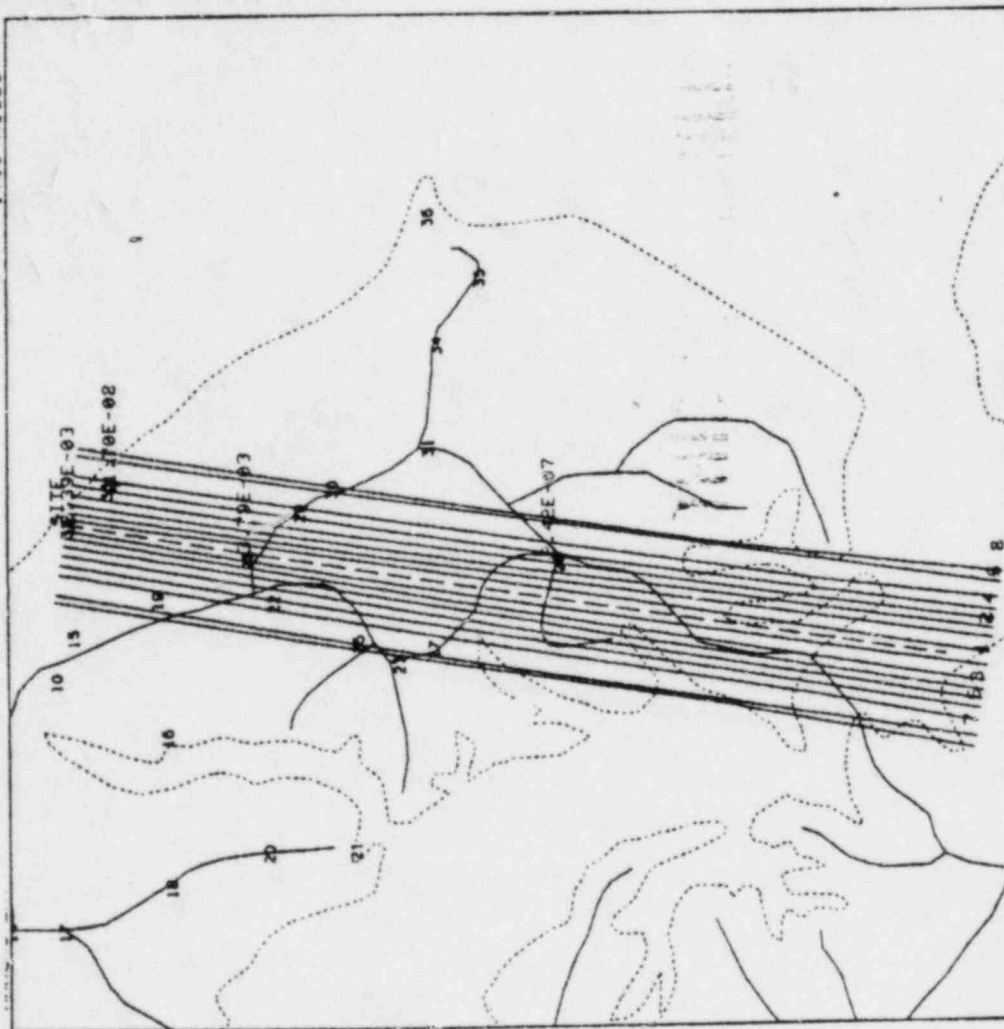
<u>Location</u>	<u>Description</u>	<u>Distance from Plant (mi)</u>	<u>Whole Dose Rate (mrem/h)</u>	<u>Thyroid Dose Rate (mrem/h)</u>	<u>Iodine Air Activity (uCi/cc)</u>	<u>NCP2 M W/MS2-SPA3</u>
Site Boundary		SB	0.9	0.3	1.5E-9	13
2 miles		2	0.5	0.2	1E-9	8
5 miles		5	0.2	0.1	5E-10	4
10 miles		10	0.1	0.1	---	---
<u>Survey Point</u>						
19	Bellair Nursery	1	0.01	---	---	---
25	Smiths Gen. Store	2	0.05	---	---	---
26	Int. Sollers & McQueen Rds.	3	0.03	---	---	---

5.3-7

THOMSON

WIOLE BODY DOSE RATES @ T = 3:15

SCALE: 1.00 MILES



TIME AFTER ACCIDENT 0.0 HOURS
 GAMMA DOSE (ADJ. FACTOR) 1.00
 DATE OF MET 8309141015
 RELEASE PT 1 2 4
 SPEED(MPH) 9 9 70
 DIR FROM 9 9 9
 (EPT STAB F(D) F(D) F(D)
 HORIZ STAB F(D) F(D) F(D)
 RELEASE TYPE USP USP GND
 EXFL CFM/1000 131 118 0
 MIXED MODE .05 .02 0.00
 PLUME HGT(M) 67 71 0
 PEAK (PEM/HR) 6.17E-03
 DST TO PK 1.5E 03(M), .9(MI)
 TERRAIN AT PEAK(M) 2.00E 01
 DECAYED RELSE(CI/SEC) 7.06E 00

LEGEND

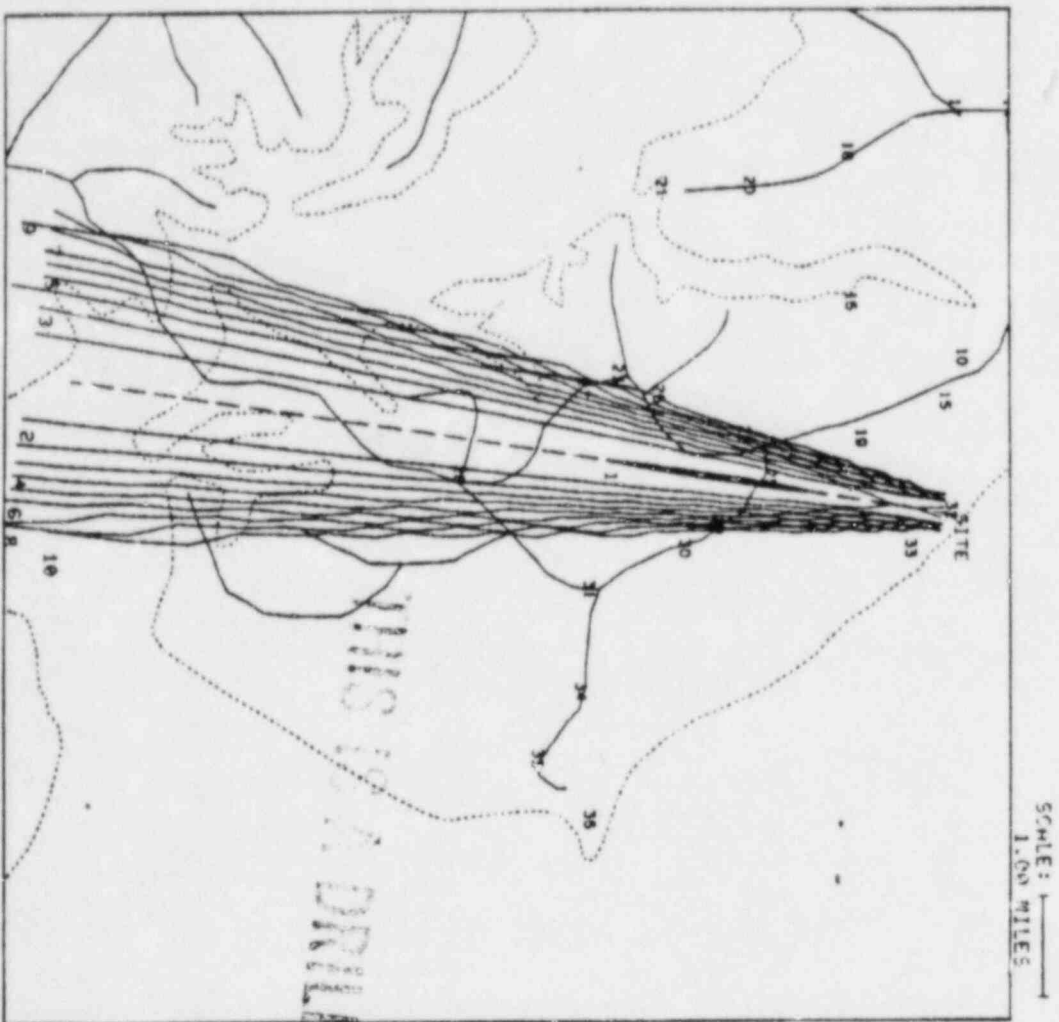
PER/HR
1 1.00E-03
2 1.00E-04
3 1.00E-05
4 1.00E-06
5 1.00E-07
6 1.00E-08
7 1.00E-09
8 1.00E-10

ISOTOPIC PEL.

CI/SEC
XE133 5.93E 00
XE135 5.87E-01
KR85M 1.15E-01
KR85 1.15E-01
YR28 4.75E-02
XE138 2.94E-02
XE131M 2.65E-02
KR27 2.55E-02
II131 9.50E-02 -05
II133 9.63E-02 -05

*** EAL IS: ALERT ***

THYROID DOSE RATES @ T = 3:15



TIME AFTER ACCIDENT 0.00HOURS
 THYROID DOSE (ADJ. FACTOR) 1.00
 DATE OF RET 830914015
 RELEASE PT 1 2 4
 SPEED/MPH 9 9 70
 DIP FROM 9 9 9
 WEPT STAB F(D) F(D) F(D)
 WOPIZ STAB F(D) F(D) F(D)
 RELEASE TYPE USP USP GND
 ENFL CFM/1000 131 112 0
 MIXED MODE .45 .02 0.00
 PLURE HGT/M 67 71 0
 PEW/MPH/MP 1.12E 00
 DST TO PV 3.0E 03(M), 1.2(M)
 TEPHIN AT PEW/M 2.44E 01
 RECEIVED PULSE(CI/SEC) 7.06E 00

LEGEND

MPER/MP
 1 1.00E 00
 2 1.00E-01
 3 1.00E-02
 4 1.00E-03
 5 1.00E-04
 6 1.00E-05
 7 1.00E-06
 8 1.00E-07
 9 1.00E-08
 10 1.00E-09

ISOTOPIC REL.

CI/SEC
 XE133 5.93E 00
 XE135 5.87E-01
 KPR8M 1.15E-01
 KPR5 1.15E-01
 KPR8 4.75E-02
 XE138 2.94E-02
 XE131M 2.65E-02
 KPR7 2.55E-02
 I131 9.50E-02 05
 I133 9.63E-02 05

SITE CC
EFFLUENT DATA SUMMARY:
TIME OF RUN: 830711226

MONITOR ID
CURRENT READING
CONV FACTOR
TO
UNITS UCI/CC
CURRENT READING
FLOW (CFM)
CURRENT READING
MODEL GAS TOTTIME
(CI/SEC) (CI/SEC)

4.0E-04 A 7.6E-07 1.1E-01 1.3E-05 6.9E-06 1.9E-05
1.0E-02 A 7.6E-07 2.6E-04 1.2E-05 1.4E-04 3.9E-02
DOSE MON 8.8E-04 E 1.0E-00 5.7E-02 1.0E-01 2.3E-00 3.5E-01

UNIT DESIGNATOR FOR CURRENT READING
A = CPM, B = UCI/CC, C = UCI/SEC, D = MPHM/HR

METEOROLOGICAL DATA:
TIME OF MET USED: 8309141015

RPT1 RPT2 RPT3 RPT4

RELEASE TYPE USP USP
WIND SPD AT REF HT(M/SEC) 3.6 3.6
WIND DIRECTION TOWARD: S S
PASQUILL CATEGORY: F F
PASQUILL CATEGORY HORIZ F F

PEAK OFFSITE W BOD DOSE RATE (MPHM/HR) 6.2E-00
DOSE IS BETWEEN (MPHM/HR) 5.0E-01 & 2.5E-02
EMERGENCY ACTION LEVEL 4LEPT ***

DISPERSION DATA
BY RELEASE PT

58 X/G(SEC/M3) 2.0E-06 1.3E-06 0.0E-00 6.1E-06
58 DIST(M) 1.5E-03 1.5E-03 0.0E-00 1.5E-03
X/G AT 2 MILES 3.0E-06 6.0E-06 0.0E-00 2.8E-06
X/G AT 5 MILES 5.2E-06 4.6E-06 0.0E-00 9.5E-07
X/G AT 10 MILES 2.9E-06 2.6E-06 0.0E-00 4.6E-07

PEAK X/G(SEC/M3) 3.0E-06 6.2E-06 0.0E-00 6.1E-06
DIST TO PEAK(M) 3.0E-03 4.0E-03 0.0E-00 1.5E-03

PK NOBLE GAS CONC(UCI/CC) 1.4E-05 3.0E-02 0.0E-00 3.9E-12
PK 1 + PAPT CONC(UCI/CC) 1.5E-06 2.4E-09 0.0E-00 2.1E-12

X/G AT PEAK CONCENTRATION 2.0E-06 6.2E-06 0.0E-00 6.1E-06
DIST TO PEAK CONC(M) 3.0E-03 3.0E-03 0.0E-00 3.0E-03

DOSE RESULTS OFFSITE
BY RELEASE PT(MPH) RPT1 RPT2 RPT3 RPT4 TOTALS

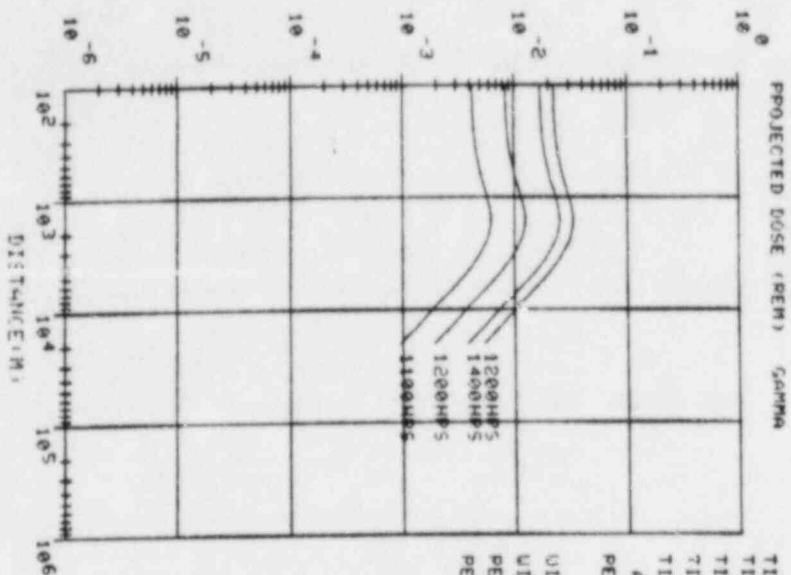
PEAK W BOD FOR EACH PP 6.2E-03 1.1E-05 0.0E-00 1.9E-09
DIST TO PEAK(M) 1.5E-03 1.7E-03 0.0E-00 1.5E-03
U BOD AT TOTAL PK LOC 6.2E-03 1.1E-05 0.0E-00 1.9E-03
DIST TO TOT PK W BOD(M) 1.5E-03 1.5E-03 0.0E-00 1.5E-03

W BOD SITE BOUNDARY 6.2E-03 1.1E-05 0.0E-00 1.9E-03
U BOD AT 2 MILES 4.9E-03 9.3E-06 0.0E-00 9.3E-10
U BOD AT 5 MILES 2.3E-03 4.4E-06 0.0E-00 4.7E-10
U BOD AT 10 MILES 1.2E-03 2.3E-06 0.0E-00 2.2E-10

PP THYRD FOR EACH PP 1.2E-00 1.9E-03 0.0E-00 2.7E-06
DIST TO PEAK(M) 3.0E-03 4.0E-03 0.0E-00 1.5E-03
THYRD AT TOTAL PK LOC 1.2E-00 1.2E-03 0.0E-00 2.7E-06
DIST TO TOT PK THYRD(M) 3.0E-03 3.0E-03 0.0E-00 3.0E-03

THYRD SITE BOUNDARY 3.0E-01 3.8E-04 0.0E-00 2.7E-06
THYRD AT 2 MILES 1.2E-00 1.8E-03 0.0E-00 1.2E-00
THYRD AT 5 MILES 7.7E-01 1.4E-03 0.0E-00 4.1E-07
THYRD AT 10 MILES 4.2E-01 7.2E-04 0.0E-00 2.1E-07

ENTER: (RETURNS) TO CONTINUE



0.5 1 2 5 10 20 50 100
DISTANCE(MILES)

11 12 14 18

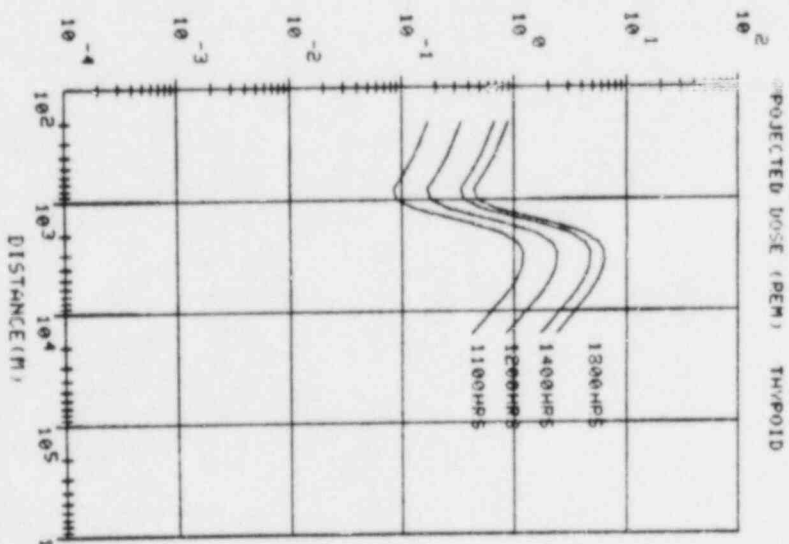
HP WHEN FRONT ARRIVES

TIME OF PLOT: 8307111243 ST
TIME OF PLOT: 8307111226 ST
TIME OF ACCIDENT: 8309140730 ST
TIME OF RET USED: 2309141015 ST
TIME BEFORE RELEASE STARTS
AFTER ACCIDENT: 0.0 (HRS)
PERMANENT DURATION (HOURS) 5.3

WIND TOWARD DIRECTION SECTOR 5
WIND SPD AT REF HT(M/SEC): 12.23
RELEASE FT 1 2 4
RELEASE TYPE USP USP GUD

ISOTOPIC PEL.
CI/SEC
FE133 5.93E-00
FE135 5.87E-01
FP25M 1.15E-01
FP25 1.15E-01
FP28 4.75E-02
FE138 2.34E-02
FE13M 2.65E-02
FP27 2.55E-02
FE131 2.50E-02
FE133 9.63E-02

EAL IS: ALEPT
U BODY PAG OF 1.0 REM
PEACHED AT GT 24 HOURS
THYROID PAG OF 5.0 REM
PEACHED AT 1426 EST



0.5 1 2 5 10 20 50 100
DISTANCE(MILES)

11 12 14 18

HP WHEN FRONT ARRIVES

OFFSITE RADIOLOGICAL MEASUREMENTS

SAMPLE TIME 11:15

SCENARIO TIME 03:15

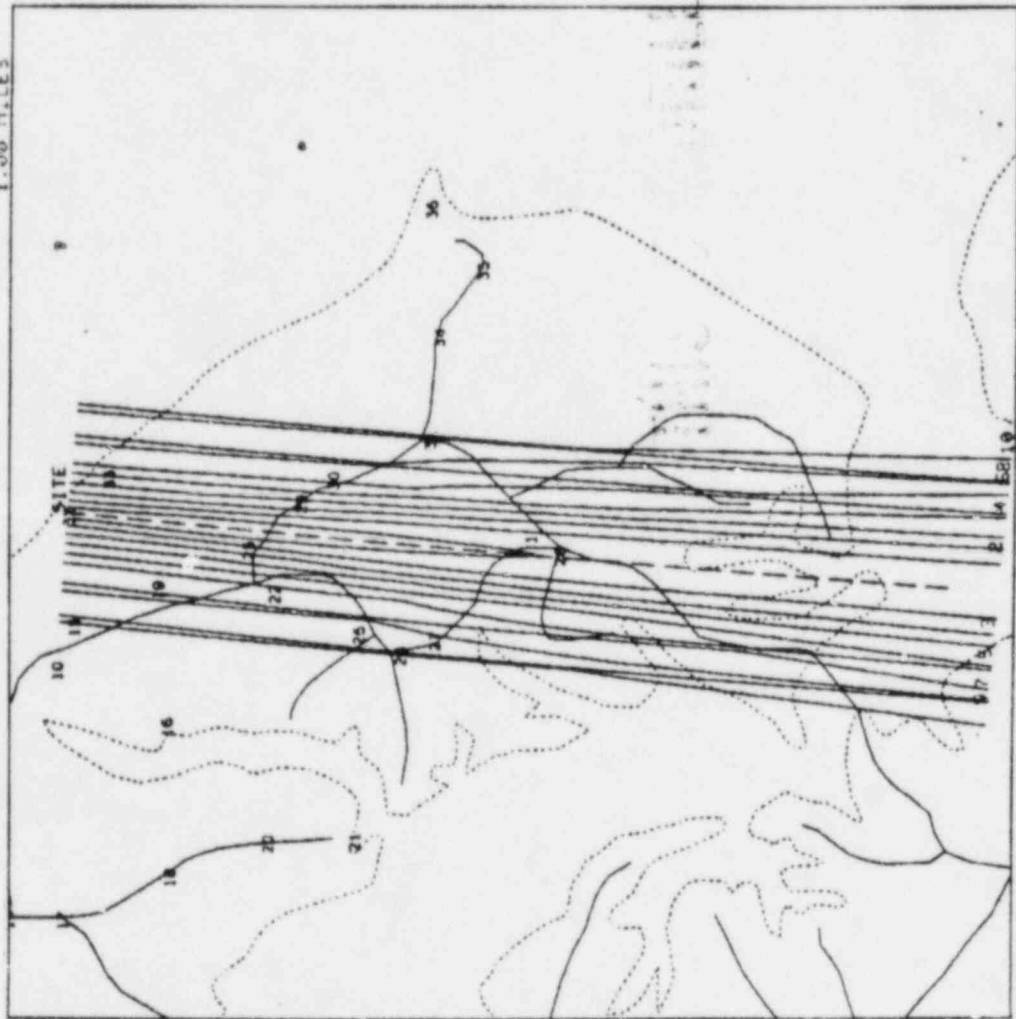
<u>Location</u>	<u>Description</u>	<u>Distance from Plant (mi)</u>	<u>Whole Dose Rate (mrem/h)</u>	<u>Thyroid Dose Rate (mrem/h)</u>	<u>Iodine Air Activity (uCi/cc)</u>	<u>NCP2 M W/MS2-SPA3</u>
Site Boundary		SB	6	0.3	1.5E-9	13
2 miles		2	5	1.2	6E-9	50
5 miles		5	2	0.8	4E-9	33
10 miles		10	1	0.4	2E-9	17
<u>Survey Point</u>						
19	Bellaire Nursery	1	0.05	---	---	---
25	Smiths General Store	2	4	---	---	---
26	Int. Sollers & McQueen Rds.	3	1	---	---	---
32	Air Sampling Sta. & Camp Canoy	1/4	2	---	---	---

5.3-12

THIS IS A DRAFT

WHOLE BODY DOSE RATES @ T = 3-30

SCALE: 1.00 MILES



TIME AFTER ACCIDENT 0.00 HOURS
 GAMMA DOSE (ADJ. FACTOR) 1.00
 DATE OF MEY 2309141030
 RELEASE PT 1 2 4
 SPEED(MPH) 9 9 9
 DIR FROM 5 5 5
 VEPT STAB EID) EID) EID)
 HOR12 STAB EID) EID) EID)
 RELEASE TYPE USP GND
 EXFL GFM/1000 131 112 0
 MIXED MODE .06 .03 0.00
 PLUME HGT(M) 69 73 0
 PEAK (PER-MP) 4.77E-01
 DST TO PY 1.5E 03(M), .94(M)
 TERRAIN AT PEAK(M) 2.00E 01
 DECAYED PULSE(CI/SEC) 6.70E 02

LEGEND

PER-MP
1 1.00E-01
2 1.00E-02
3 1.00E-03
4 1.00E-04
5 1.00E-05
6 1.00E-06
7 1.00E-07
8 1.00E-08
9 1.00E-09
10 1.00E-10

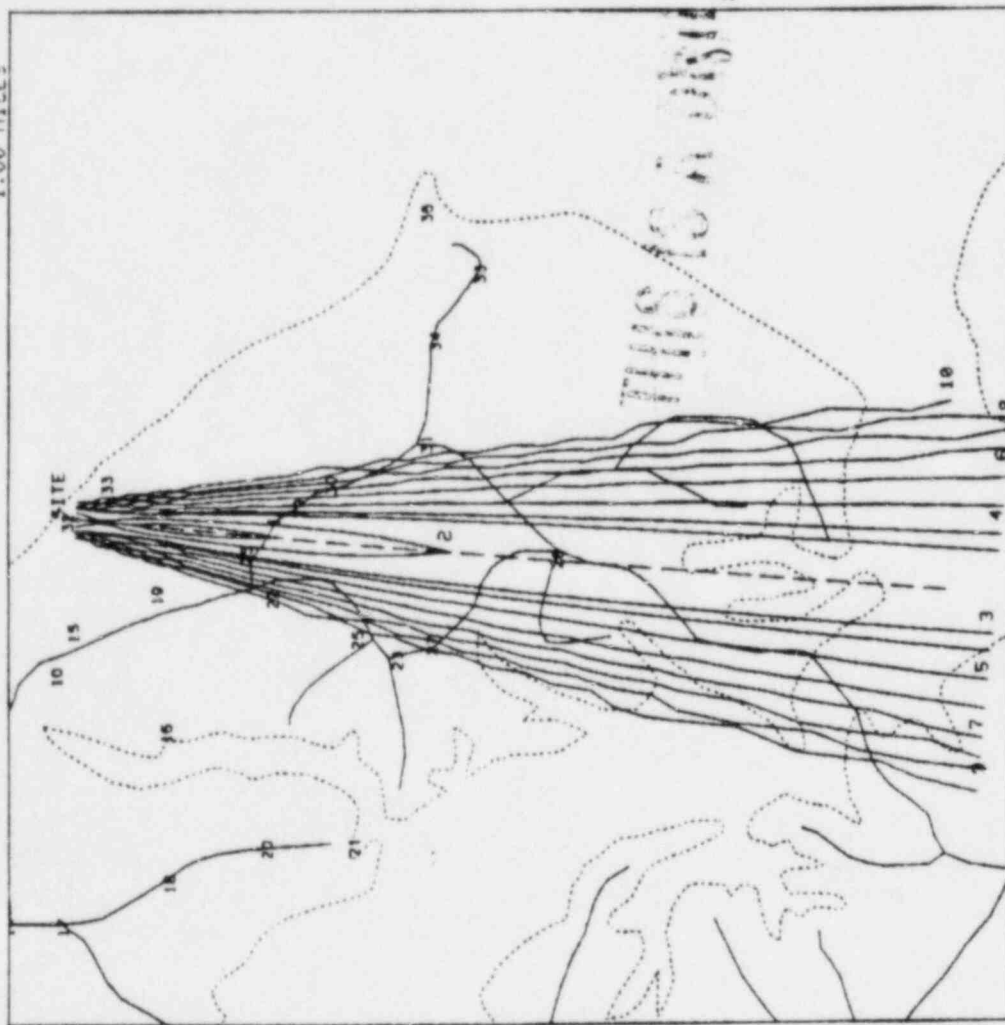
ISOTOPIC REL.

CI/SEC
XE133 5.62E 02
XE135 5.57E 01
KR25M 1.09E 01
KR85 1.00E 01
KR82 4.51E 00
XE138 2.79E 00
XE131M 2.51E 00
KR87 2.42E 00
I131 9.01E 00
I133 9.14E 00

*** EAL IS: SITE EMERGENCY ***

THYROID LOSE RATES @ T = 3:30

SCALE: 1.00 MILES



TIME AFTER ACCIDENT 0.000000
 THYROID LOSE (ADJ. FACTOR) 1.00
 DATE OF RET 2302141030
 RELEASE PT 1 2 4
 SPEED/MPH: 9 9 9
 DIR FROM 5 5 5
 DEPT STAB E(D) E(D) E(D)
 HORIZ STAB E(D) E(D) E(D)
 RELEASE TYPE USP USP GND
 EXFL CFM/1000 131 118 0
 MIXED MODE .06 .09 0.00
 PLUME HGTM: 63 73 0
 PEAK (MPH/MP) 1.42E 02
 DST TO PK 2.0E 03(M), 1.2(M)
 TERRAIN AT PEAK(M) 2.22E 01
 DECAYED PULSE(CI/SEC) 6.70E 02

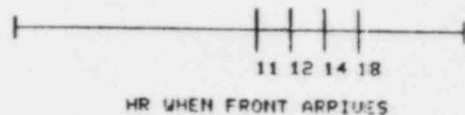
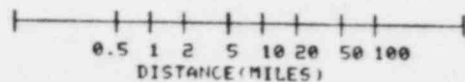
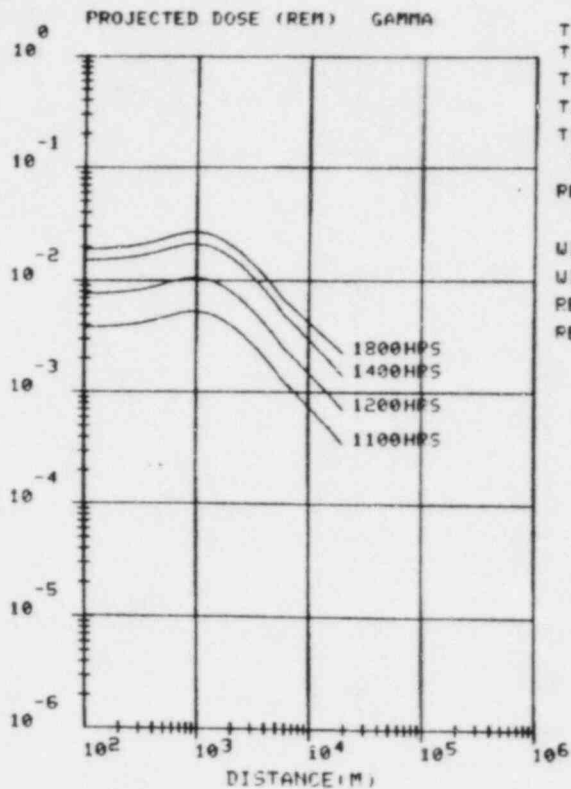
LEGEND

PER/MP
 1 1.00E 02
 2 5.00E 01
 3 1.00E 01
 4 5.00E 00
 5 1.00E 00
 6 1.00E-01
 7 1.00E-02
 8 1.00E-03
 9 1.00E-04
 10 1.00E-05

ISOTOPIC PEL.

CI/SEC
 YE133 5.62E 02
 YE135 5.57E 01
 KP85M 1.09E 01
 KP85 1.09E 01
 KP88 4.51E 00
 YE132 2.79E 00
 YE131M 2.51E 00
 KP87 2.42E 00
 I131 9.01E 00 - 03
 I133 9.14E 00 - 03

ENTER: [RETURN] SUMMARY PRINT REPORT,
 [END] SKIP, [ES0] START OVER

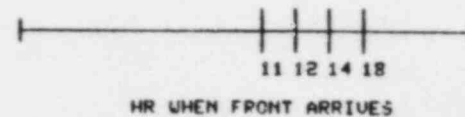
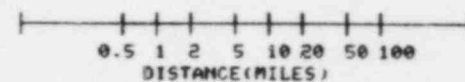
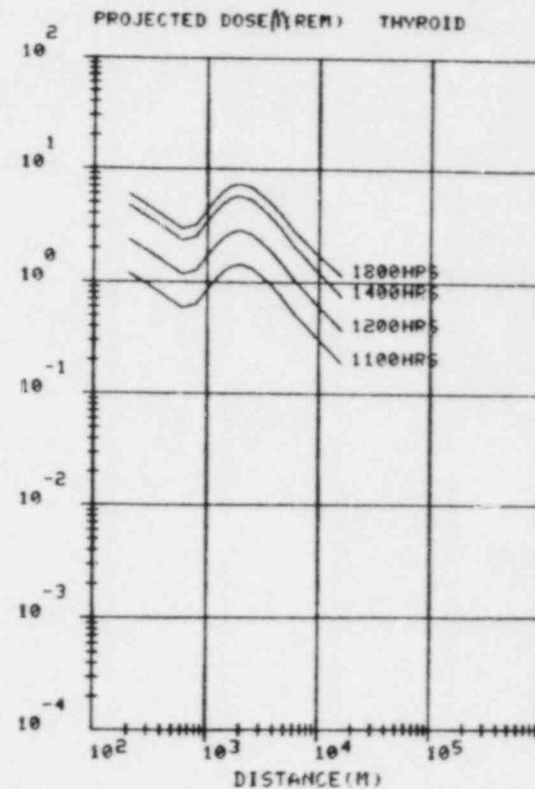


TIME OF PLOT: 8307131312 ST
 TIME OF RUN: 8307131307 ST
 TIME OF ACCIDENT: 8309140730 ST
 TIME OF MET USED: 8309141030 ST
 TIME BEFORE RELEASE STARTS
 AFTER ACCIDENT: 0.0 (HRS)
 REMAINING DURATION (HOURS) 5.0

WIND TOWARD DIRECTION SECTOR 5
 WIND SPD AT REF HT (M/SEC): 3.91
 RELEASE PT 1 2 4
 RELEASE TYPE USP USP GND

ISOTOPIC REL.
 CI/SEC
 XE133 5.64E-00
 XE135 5.59E-01
 KP85M 1.10E-01
 KP85 1.10E-01
 KP88 4.53E-02
 XE132 2.84E-02
 XE131M 2.52E-02
 KP87 2.44E-02
 I131 9.07E-02 OS
 I133 9.12E-02 OS

 EAL IS: ALEPT
 W BODY PAG OF 1.0 REM
 REACHED AT GT 24 HOURS
 THYROID PAG OF 5.0 REM
 REACHED AT 1300 EST



OFFSITE RADIOLOGICAL MEASUREMENTS

SAMPLE TIME 11:30

SCENARIO TIME 03:30

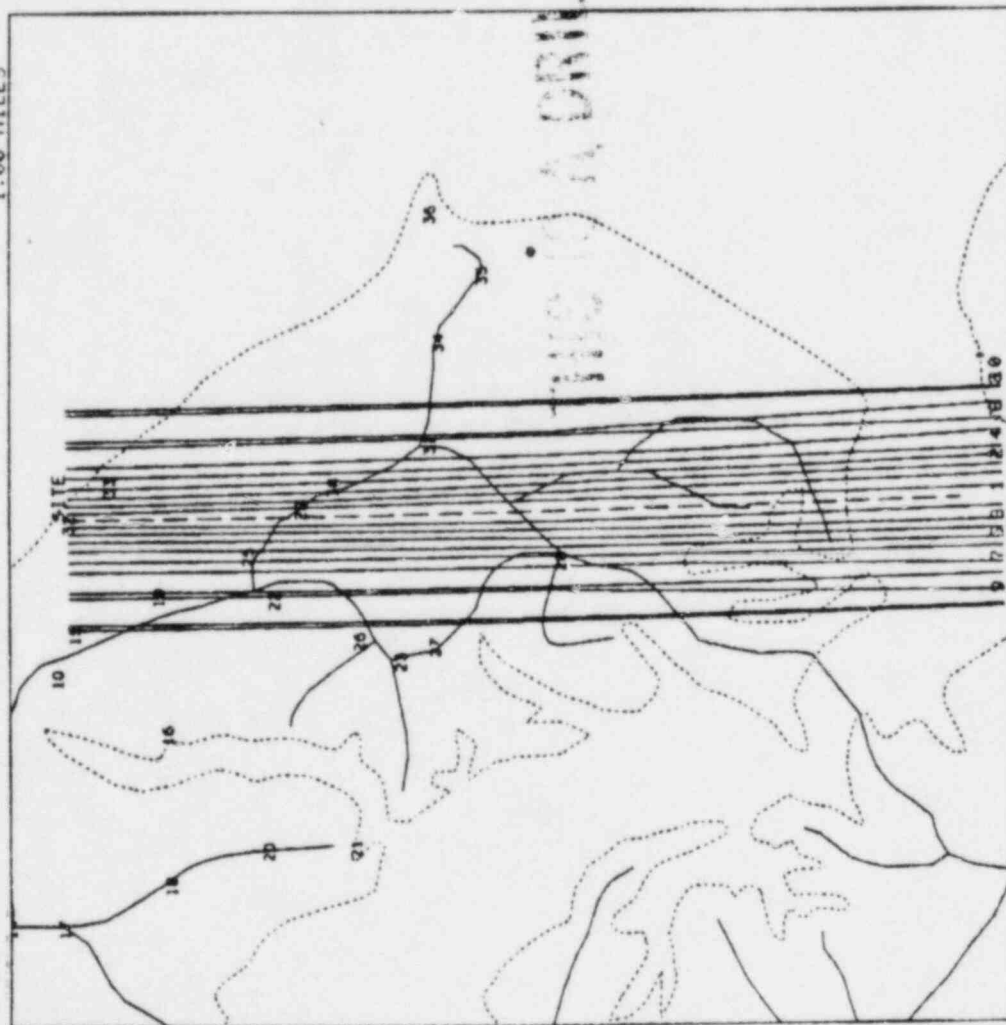
<u>Location</u>	<u>Description</u>	<u>Distance from Plant (mi)</u>	<u>Whole Dose Rate (mrem/h)</u>	<u>Thyroid Dose Rate (mrem/h)</u>	<u>Iodine Air Activity (uCi/cc)</u>	<u>NCP2 M W/MS2-SPA3</u>
Site Boundary		SB	480	130	6.5E-7	5416
2 miles		2	260	110	5.5E-7	4583
5 miles		5	90	38	1.9E-7	1583
10 miles		10	45	18	9E-8	750
<u>Survey Point</u>						
25	Smiths General Store	2	7	0.1	5E-10	4
28	Int. Coster & Rt. 2	5	8	3	1.5E-8	130

THIS IS A DRILL

WHOLE BODY DOSE RATES @ T = 3:45

TIME AFTER ACCIDENT 0.0 HOURS
 GAMMA DOSE (ADJ. FACTOR) 1.00
 DATE OF MET 8309141045
 RELEASE PT 1 2 4
 SPEED(MPH) 10 10 10
 DIR FROM 359 359 359
 VEPT STAB F(D) F(D) F(D)
 HORIZ STAB F(D) F(D) F(D)
 RELEASE TYPE USP USP GND
 EXFL CFM/1000 131 118 0
 MIXED MODE .07 .09 0.00
 PLUME HGT(M) 66 70 0
 PEAK (PEM/HP) 2.34E-01
 DST TO PK 1.5E 03(M), .9(MI)
 TERRAIN AT PEAK(M) 2.00E 01
 DECAYED PULSE(CI/SEC) 9.87E 02

SCALE: 1.00 MILES



LEGEND

REM/HR	
1	1.00E-01
2	1.00E-02
3	1.00E-03
4	1.00E-04
5	1.00E-05
6	1.00E-06
7	1.00E-07
8	1.00E-08
9	1.00E-09
10	1.00E-10

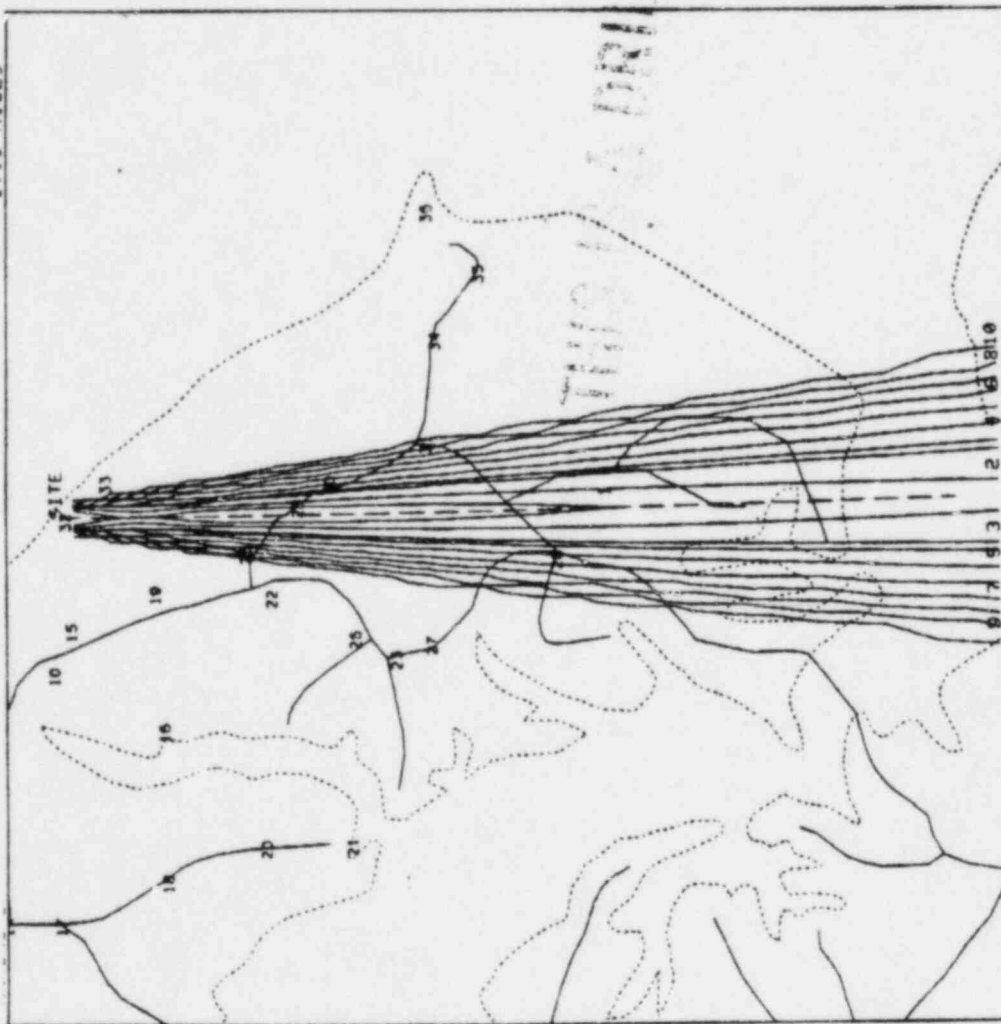
ISOTOPIIC REL.

CI/SEC	
XE133	8.28E 02
XE135	8.20E 01
KR85M	1.61E 01
YR25	1.61E 01
KP88	6.64E 00
XE138	4.12E 00
XE131M	3.70E 00
KP87	3.56E 00
II31	1.33E 01
II33	1.35E 01

*** EAL IS: SITE EMERGENCY ***

THYROID DOSE RATES @ T = 3:45

SCALE: 1.00 MILES



TIME AFTER ACCIDENT 0.0 HOURS
 THYROID DOSE (ADJ. FACTOR) 1.00
 DATE OF MET 8309141045
 RELEASE PT 1 2 4
 SPEED(MPH) 10 10 10
 DIR FROM 359 359 359
 UPT STAB F(D) F(D) F(D)
 HORIZ STAB F(D) F(D) F(D)
 RELEASE TYPE USP USP GND
 EXFL CFM/1000 131 112 0
 MIXED MODE .07 .09 0.00
 PLUME HGT(M) 66 70 0
 PEAK(APEM/HP) 1.84E 02
 DST TO PK 3.0E 03(M), 1.9(MI)
 TERRAIN AT PEAK(M) 2.44E 01
 DECAYED PULSE(CI/SEC) 9.87E 02

LEGEND

(%) PEM/HP
 1 1.00E 02
 2 5.00E 01
 3 1.00E 01
 4 5.00E 00
 5 1.00E 00
 6 1.00E-01
 7 1.00E-02
 8 1.00E-03
 9 1.00E-04
 10 1.00E-05

ISOTOPIC REL.

CI/SEC
 XE133 8.28E 02
 XE135 8.20E 01
 KP85M 1.61E 01
 KP85 1.61E 01
 KP88 6.64E 00
 XE138 4.12E 00
 XE131M 3.70E 00
 KP87 3.56E 00
 I131 1.33E 01 -02
 I133 1.35E 01 -02

SITU CC
EFFLUENT DATA SUMMARY:
222 DOSE CALCULATIONS SUMMARY PRINT 222
TIME OF RUN: 8307131250

MONITOR ID	CURRENT READING	CONV FACTOR	CURRENT READING TO UCI/CC	FLOW (CFM)	CURRENT READING NOBL GAS IODINE (CI/SEC)	CURRENT READING NOBL GAS IODINE (CI/SEC)
UING	5.6E 06	A	7.6E-07	1.3E 05	9.6E 08	2.7E 07
UZHNG	2.0E 02	A	7.6E-07	5.4E-04	2.9E 04	8.2E 02
DOMO MON	1.1E 08	E	1.0E 00	7.1E 01	1.0E-01	2.9E 03

UNIT DESIGNATOR FOR CURRENT READING
A = CFM, B = UCI/CC, C = UCI/SEC, D = MREM/HR

METEOROLOGICAL DATA:
TIME OF MET USED: 8309141045

RELEASE TYPE	USP	RPT1	RPT2	RPT3	RPT4
WIND SPD AT REF HT(M/SEC)	3.9	USP	USP		GND
WIND DIRECTION TOWARD:	S	S	S		4.4
PASQUILL CATEGORY VERT	F	F	F		S
PASQUILL CATEGORY HORIZ	F	F	F		F

PEAK OFFSITE U BOD DOSE RATE (MREM/HR) 2.3E 02
DOSE IS BETWEEN (MREM/HR) 2.5E 02 & 1.0E 03
EMERGENCY ACTION LEVEL SITE EMERGENCY

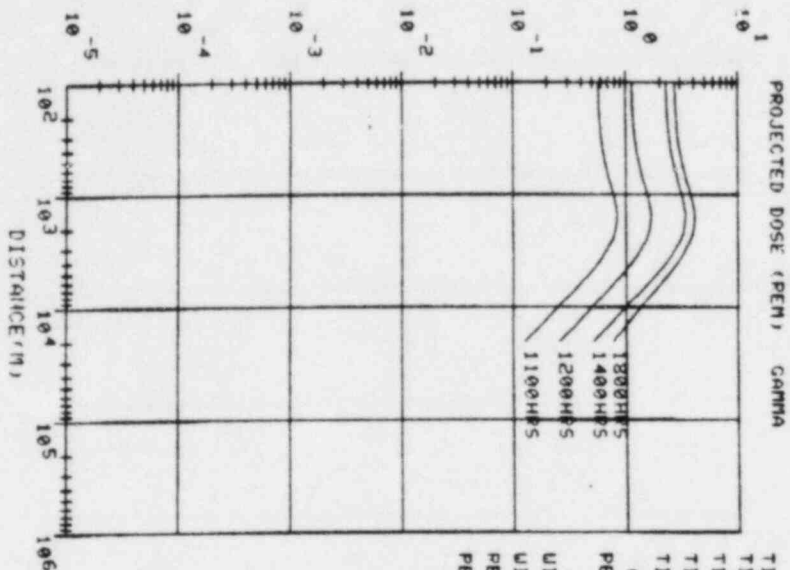
DISPERSION DATA BY RELEASE PT	RPT1	RPT2	RPT3	RPT4
SB X/Q (SEC/M3)	4.8E-06	4.9E-06	0.0E 00	4.3E-05
SB DIST(M)	1.5E 03	1.5E 03	0.0E 00	1.5E 03
X/Q AT 2 MILES	8.7E-06	7.4E-06	0.0E 00	2.0E-05
X/Q AT 5 MILES	5.2E-06	4.7E-06	0.0E 00	6.8E-06
X/Q AT 10 MILES	2.8E-06	2.7E-06	0.0E 00	3.3E-06
PEAK X/Q (SEC/M3)	8.8E-06	7.4E-06	0.0E 00	4.3E-05
DIST TO PEAK(M)	3.0E 03	3.0E 03	0.0E 00	1.5E 03
PK NOBLE GAS CONC(UCI/CC)	4.6E-03	1.5E-07	0.0E 00	1.3E-07
PK I + PART CONC(UCI/CC)	2.4E-04	6.1E-09	0.0E 00	1.9E-08
X/Q AT PEAK CONCENTRATION	8.8E-06	7.4E-06	0.0E 00	4.3E-05
DIST TO PEAK CONC(M)	3.0E 03	3.0E 03	0.0E 00	3.0E 03

DOSE RESULTS OFFSITE
BY RELEASE PT(MREM/HR)

	RPT1	RPT2	RPT3	RPT4	TOTALS
PEAK U BOD FOR EACH PP	8.3E-01	2.3E-05	0.0E 00	1.3E-05	
DIST TO PEAK(M)	1.5E 03	1.7E 03	0.0E 00	1.5E 03	
U BOD AT TOTAL PK LOC	8.3E-01	2.3E-05	0.0E 00	1.3E-05	8.3E-01
DIST TO TOT PK U BOD(M)	1.5E 03	1.5E 03	0.0E 00	1.5E 03	1.5E 03
U BOD SITE BOUNDARY	8.3E-01	2.3E-05	0.0E 00	1.3E-05	8.3E-01
U BOD AT 2 MILES	6.6E-01	1.9E-05	0.0E 00	4.9E-06	6.6E-01
U BOD AT 5 MILES	3.1E-01	9.2E-06	0.0E 00	5.3E-07	3.1E-01
U BOD AT 10 MILES	1.6E-01	4.8E-06	0.0E 00	2.9E-07	1.6E-01
PK THYRD FOR EACH PP	1.8E 02	4.7E-03	0.0E 00	2.4E-02	
DIST TO PEAK(M)	3.0E 03	3.0E 03	0.0E 00	1.5E 03	
THYRD AT TOTAL PK LOC	1.8E 02	4.7E-03	0.0E 00	2.4E-02	1.8E 02
DIST TO TOT PK THYRD(M)	3.0E 03	3.0E 03	0.0E 00	3.0E 03	3.0E 03
THYRD SITE BOUNDARY	1.8E 02	4.7E-03	0.0E 00	2.4E-02	1.8E 02
THYRD AT 2 MILES	1.2E 02	4.7E-03	0.0E 00	1.1E-02	1.1E 02
THYRD AT 5 MILES	1.1E 02	3.0E-03	0.0E 00	3.7E-03	1.1E 02
THYRD AT 10 MILES	5.8E 01	1.7E-03	0.0E 00	1.8E-03	5.8E 01

ENTER: [RETURN] TO CONTINUE

ENTER: [RETURN] SUMMARY PRINT REPORT,
[END] SKIP, [F50] START OVER



0.5 1 2 5 10 20 50 100
DISTANCE(MILES)

11 12 14 18

HR WHEN FRONT ARRIVES

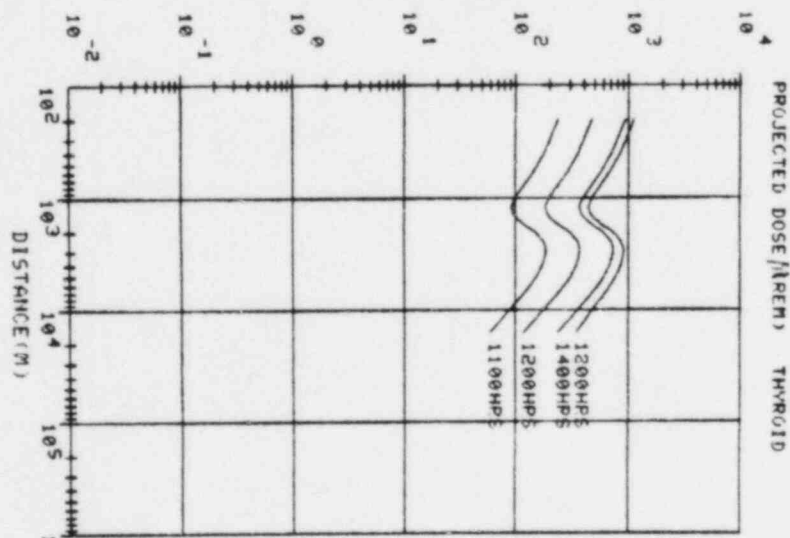
TIME OF PLUT: 8307131303 ST
TIME OF RUN: 8307131250 ST
TIME OF ACCIDENT: 8309140730 ST
TIME OF MET USED: 8309141045 ST
TIME BEFORE RELEASE STARTS
AFTER ACCIDENT: 0.0 (HPS)
REMAINING DURATION (HOURS) 4.8
WIND TOWARD DIRECTION SECTOR 5
WIND SPD AT REF HTN/SEC: 4.08
RELEASE PT 1 2 4
RELEASE TYPE USP USP GND

ISOTOPIC REL.

CI/SEC
XE133 2.28E 02
XE135 8.20E 01
XP85M 1.61E 01
XP85 1.61E 01
XP88 6.64E 00
XE138 4.12E 00
XE131M 3.70E 00
XP87 3.56E 00
I131 1.33E 01
I133 1.35E 01

8309140730

EAL IS: SITE EMERGENCY
U BODY PAG OF 1.0 REM
PEACHED AT 1156 EST
THYROID PAG OF 5.0 REM
REACHED AT 1045 EST



0.5 1 2 5 10 20 50 100
DISTANCE(MILES)

11 12 14 18

HR WHEN FRONT ARRIVES

OFFSITE RADIOLOGICAL MEASUREMENTS

SAMPLE TIME 11:45SCENARIO TIME 03:45

5.3-23

<u>Location</u>	<u>Description</u>	<u>Distance from Plant (mi)</u>	<u>Whole Dose Rate (mrem/h)</u>	<u>Thyroid Dose Rate (mrem/h)</u>	<u>Iodine Air Activity (uCi/cc)</u>	<u>NCP2 M W/MS2-SPA3</u>
Site Boundary		SB	830	100	5E-7	4167
2 miles		2	660	180	9E-7	7500
5 miles		5	310	110	5.5E-7	4583
10 miles		10	160	58	2.9E-7	2416
<u>Survey Point</u>						
25	Smiths General Store	2	0.01	---	---	---
29	Int. Camp Canoy & Rt. 2	1/2	473	0.5	2.5E-9	21

THIS IS A DRAFT

WHOLE BODY DOSE RATES @ T = 4:00

TIME AFTER ACCIDENT 0.0 HOURS
 GAMMA DOSE (ADJ. FACTOR) 1.00
 DATE OF MET 8309141100
 RELEASE PT 1 2 4
 SPEED (MPH) 10 10 10
 DIR FROM 350 350 350
 VERT STAB F(D) F(D) F(D)
 HORIZ STAB F(D) F(D) F(D)
 RELEASE TYPE USP USP GND
 EXFL CFM/1000 131 118 0
 MIXED MODE .02 -10 0.00
 PLUME HGT(M) 66 70 0
 PEAK (PEM/HR) 1.46E 00
 DST TO PK 1.5E 03(M), .9(MI)
 TERPAH AT PEAK(M) 2.00E 01
 DECAYED RELSE(CI/SEC) 1.76E 03

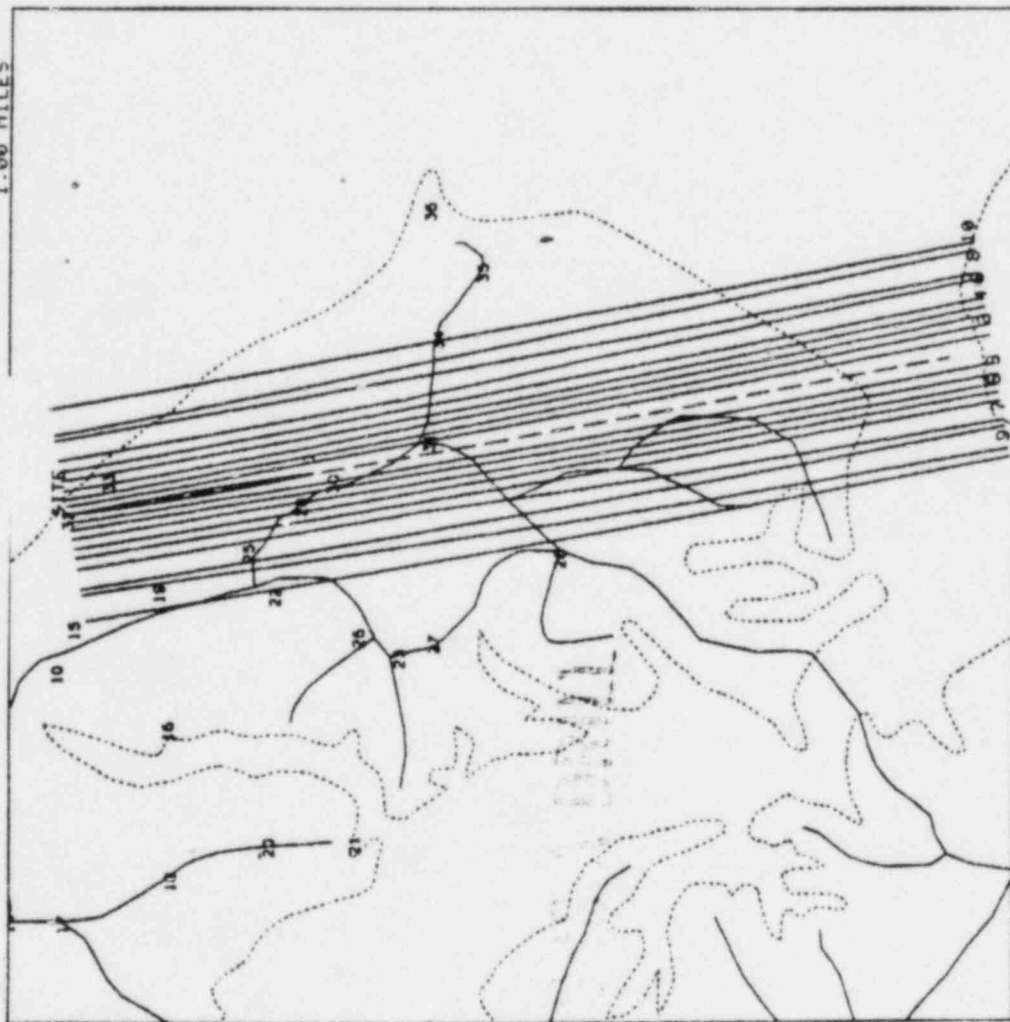
LEGEND
 PEM/HR
 1 1.00E 00
 2 1.00E-01
 3 1.00E-02
 4 1.00E-03
 5 1.00E-04
 6 1.00E-05
 7 1.00E-06
 8 1.00E-07
 9 1.00E-08
 10 1.00E-09

ISOTOPIC REL.

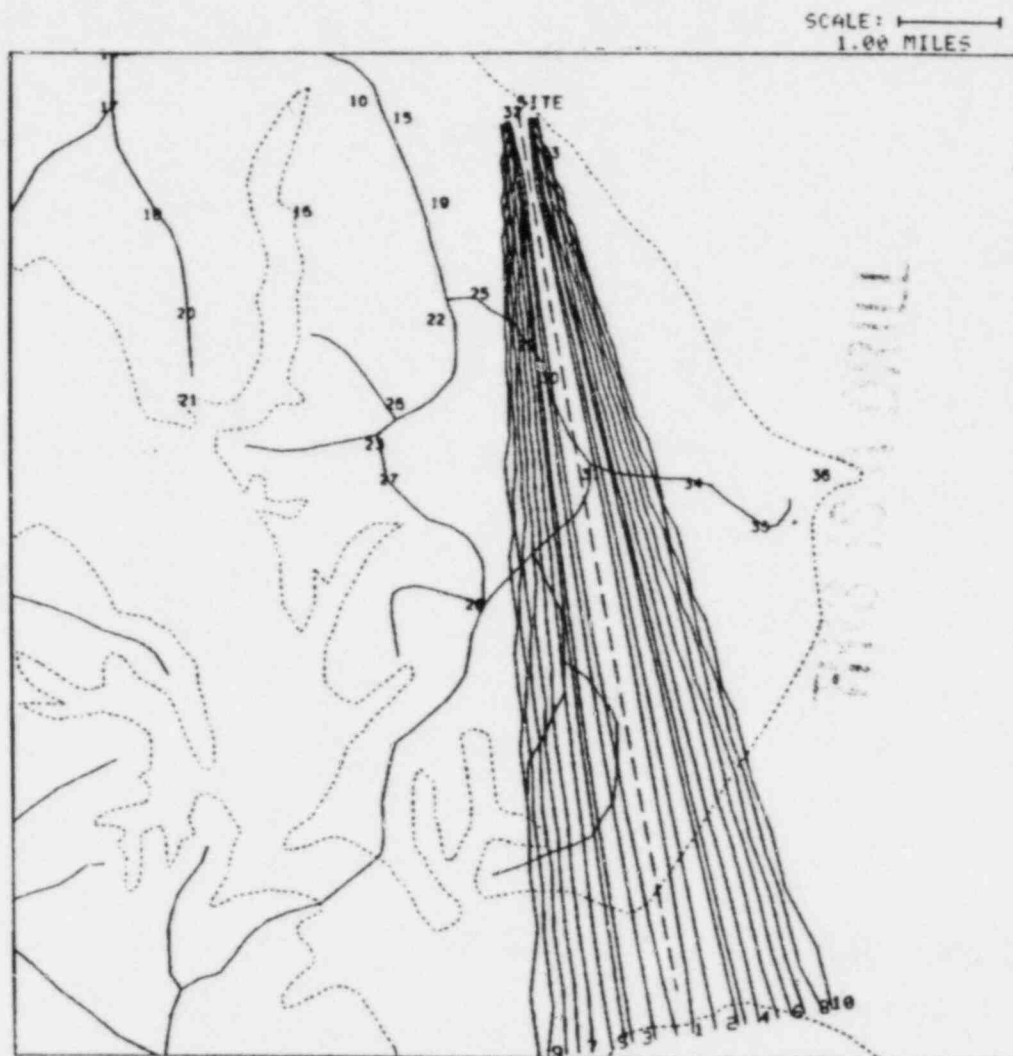
CI/SEC
 XE133 1.48E 03
 XE135 1.47E 02
 KR85M 2.87E 01
 KR85 2.87E 01
 KR82 1.19E 01
 XE138 7.35E 00
 XE131M 6.61E 00
 KR87 6.36E 00
 I131 2.37E 01
 I133 2.40E 01

*** EAL IS: GENERAL EMERGENCY ***

SCALE: 1.00 MILES



THYROID DOSE RATES @ T * 4:00



TIME AFTER ACCIDENT 0.0HOURS
 THYROID DOSE (ADJ. FACTOR) 1.00
 DATE OF MET 8309141100
 RELEASE PT 1 2 4
 SPEED(MPH) 10 10 10
 DIR FROM 350 350 350
 WPT STAB F(D) F(D) F(D)
 HOPIZ STAB F(D) F(D) F(D)
 RELEASE TYPE WSP WSP GND
 EXFL CFM/1000 131 118 0
 MIXED MODE .08 .10 0.00
 PLUME HGT(M) 66 70 0
 PEAK(TREM/HP) 3.27E 02
 DST TO PK 3.0E 03(M), 1.9(MI)
 TERRAIN AT PEAK(M) 2.44E 01
 DECAYED RELSE(CI/SEC) 1.76E 03

LEGEND
 (T)REM/HP
 1 1.00E 02
 2 5.00E 01
 3 1.00E 01
 4 5.00E 00
 5 1.00E 00
 6 1.00E-01
 7 1.00E-02
 8 1.00E-03
 9 1.00E-04
 10 1.00E-05

ISOTOPIC REL.
 CI/SEC
 XE133 1.48E 03
 YE135 1.47E 02
 KR85M 2.87E 01
 KR85 2.87E 01
 KR88 1.19E 01
 XE138 7.35E 00
 XE131M 6.61E 00
 KR87 6.36E 00
 I131 2.37E 01 -02
 I133 2.40E 01 -02

SITE CC EFFLUENT DATA SUMMARY: *** DOSE CALCULATIONS SUMMARY PRINT ***
TIME OF RUN: 8307131235

MONITOR ID	CURRENT READING	CONU FACTOR TO	CURRENT READING (CFM)	FLOW (CFM)	CURRENT READING (CI/SEC)	NOBL GAS IODINE (CI/SEC)
U10G	1.0E 02	7.6E-07	2.9E 01	1.3E 05	1.7E 02	4.8E 07
U20G	5.0E 02	7.6E-07	1.4E-03	1.2E 05	7.6E 04	2.1E 03
DONE MON	1.3E 08	1.0E 00	8.4E 01	1.0E-01	3.4E 03	5.2E 02

UNIT DESIGNATOR FOR CURRENT READING:
A - CPM, B - UCI/CC, C - UCI/SEC, D - MREM/HR

METEOROLOGICAL DATA: TIME OF MET USED: 8309141100

RELEASE TYPE	USP	RPT1	RPT2	RPT3	RPT4
WIND SPD AT REF HT(M/SEC)	4.0				
WIND DIRECTION TOWARD:	S				
PASQUILL CATEGORY VERT	F				
PASQUILL CATEGORY HORIZ	F				

PEEK OFFSITE U BOD DOSE RATE(MREM/HR) 1.5E 03
RELEASE IS GREATER THAN (MREM/HR) 1.0E 03
EMERGENCY ACTION LEVEL GENERAL EMERGENCY ***

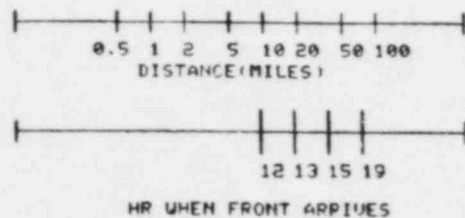
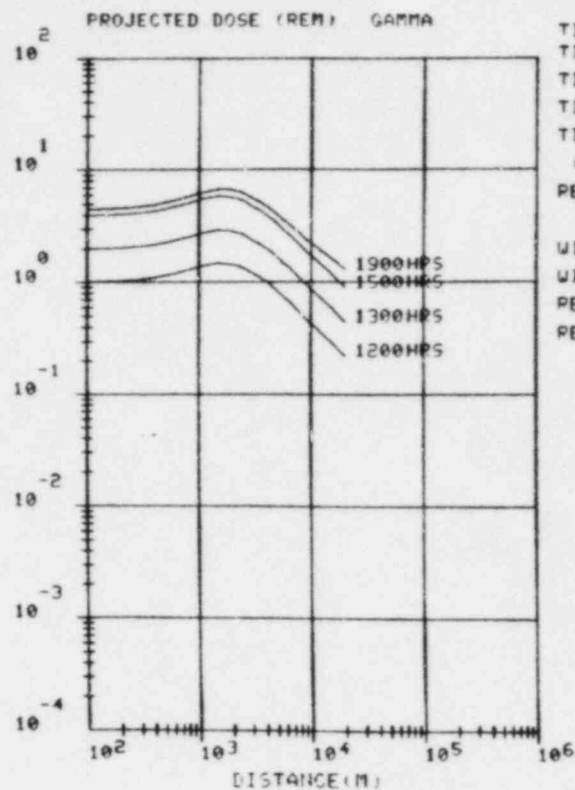
DISPERSION DATA BY RELEASE PT	RPT1	RPT2	RPT3	RPT4
SB X/O(SEC/M3)	5.0E-06	5.0E-06	0.0E 00	4.3E-05
SB DIST(M)	1.5E 03	1.5E 03	0.0E 00	1.5E 03
X/O AT 2 MILES	8.7E-06	7.3E-06	0.0E 00	2.0E-05
X/O AT 5 MILES	5.1E-06	4.7E-06	0.0E 00	6.6E-06
X/O AT 10 MILES	2.8E-06	2.6E-06	0.0E 00	3.2E-06
PEAK X/O(SEC/M3)	8.8E-06	7.4E-06	0.0E 00	4.3E-05
DIST TO PEAK(M)	3.0E 03	3.0E 03	0.0E 00	1.5E 03
PK MOBLE GAS CONC(UCI/CC)	8.4E-03	4.0E-07	0.0E 00	4.0E-08
PK 1 + PART CONC(UCI/CC)	4.2E-04	1.6E-02	0.0E 00	2.2E-08
X/O AT PEAK CONCENTRATION	8.8E-06	7.4E-06	0.0E 00	4.3E-05
DIST TO PEAK CONC(M)	3.0E 03	3.0E 03	0.0E 00	3.0E 03

DOSE RESULTS OFFSITE BY RELEASE PT(MREM/HR)

RPT1	RPT2	RPT3	RPT4	TOTALS
PEAK U BOD FOR EACH PP	1.5E 00	5.9E-05	0.0E 00	1.5E-05
DIST TO PEAK(M)	1.5E 03	1.7E 03	0.0E 00	1.5E 03
U BOD AT TOTAL PK LOC	1.5E 00	5.9E-05	0.0E 00	1.5E-05
DIST TO TOT PK U BOD(M)	1.5E 03	1.5E 03	0.0E 00	1.5E 03
U BOD SITE BOUNDARY	1.5E 00	5.9E-05	0.0E 00	1.5E-05
U BOD AT 2 MILES	1.5E 00	4.9E-05	0.0E 00	5.7E-06
U BOD AT 5 MILES	5.4E-01	2.3E-05	0.0E 00	6.4E-07
U BOD AT 10 MILES	2.8E-01	1.2E-05	0.0E 00	3.3E-07
PK THYRD FOR EACH PP	3.3E 02	1.2E-02	0.0E 00	2.7E-02
DIST TO PEAK(M)	3.0E 03	3.0E 03	0.0E 00	1.5E 03
THYRD AT TOTAL PK LOC	3.3E 02	1.2E-02	0.0E 00	2.7E-02
DIST TO TOT PK THYRD(M)	3.0E 03	3.0E 03	0.0E 00	3.3E 03
THYRD SITE BOUNDARY	1.8E 02	8.3E-03	0.0E 00	2.7E-02
THYRD AT 2 MILES	3.2E 02	1.2E-02	0.0E 00	1.9E 02
THYRD AT 5 MILES	1.9E 02	7.7E-03	0.0E 00	4.3E-03
THYRD AT 10 MILES	1.0E 02	4.3E-03	0.0E 00	2.0E-03

ENTER: (RETURN) TO CONTINUE

ENTER: [RETURN] SUMMARY PRINT REPORT,
[N] SKIP, [SO] START OVER

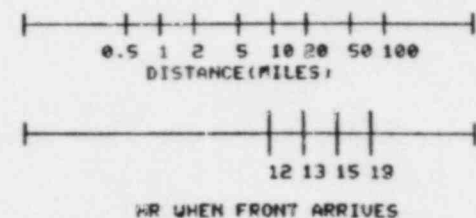
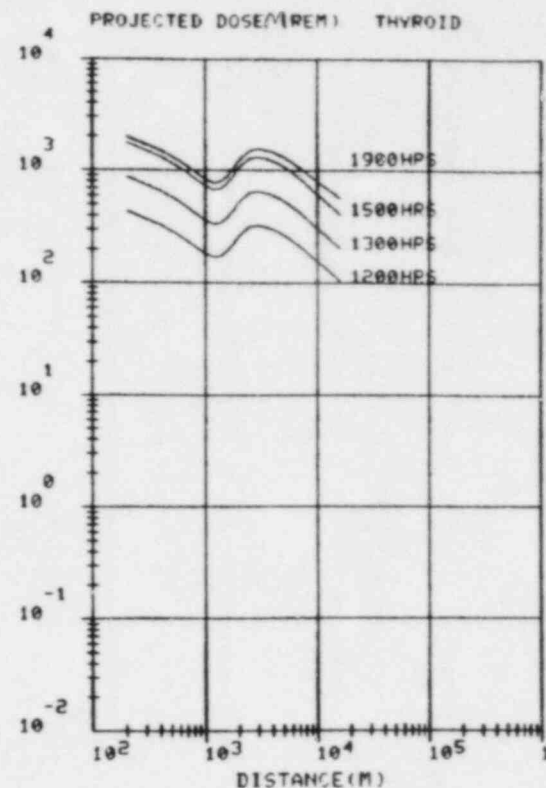


TIME OF PLOT: 8307131246 ST
TIME OF RUN: 8307131235 ST
TIME OF ACCIDENT: 8309140730 ST
TIME OF NET USED: 8309141100 ST
TIME BEFORE RELEASE STARTS
AFTER ACCIDENT: 0.0 (HRS)
REMAINING DURATION (HOURS) 4.5

WIND TOWARD DIRECTION SECTOR S
WIND SPD AT REF HT(M/SEC): 4.16
RELEASE PT 1 2 4
RELEASE TYPE USP USP GND

ISOTOPIC REL.
CI/SEC
YE133 1.48E 03
XE135 1.47E 02
KP85M 2.87E 01
KP85 2.87E 01
KP88 1.19E 01
YE138 7.35E 00
XE131M 6.61E 00
KP87 6.36E 00
I131 2.37E 01
I133 2.40E 01

EAL IS: GENERAL EMERGENCY #
U BODY PAG OF 1.0 REM #
REACHED AT 1141 EST #
THYROID PAG OF 5.0 REM #
REACHED AT 1100 EST #
#####



OFFSITE RADIOLOGICAL MEASUREMENTS

SAMPLE TIME 12:00SCENARIO TIME 04:00

<u>Location</u>	<u>Description</u>	<u>Distance from Plant (mi)</u>	<u>Whole Dose Rate (mrem/h)</u>	<u>Thyroid Dose Rate (mrem/h)</u>	<u>Iodine Air Activity (uCi/cc)</u>	<u>NCP2 M W/MS2-SPA3</u>
Site Boundary		SB	1500	180	9E-7	7500
2 miles		2	1200	320	1.6E-6	13330
5 miles		5	540	190	9.5E-7	7917
10 miles		10	280	100	5E-7	4167
<u>Survey Point</u>						
29	Int. Camp Canoy Rd. & Rt. 2	2 1/2	1.3	0.8	4E-9	30
30	Middleham Chapel	2 1/2	35	7.2	3.6E-8	300
31	Int. Cove Pt. Rd. & Rt. 2	3 1/2	133	133	6.7E-7	5583
33	Fence ent. to Camp Canoy	1/2	1.1	---	---	---

5.3-28

7/11/11 10:11 AM

WHOLE BODY DOSE RATES @ T= 4:15

TIME AFTER ACCIDENT 0.0 HOURS
 GAMMA DOSE (ADJ. FACTOR) 1.00
 DATE OF MET 8309141115
 RELEASE PT 1 2 4
 SPEED(MPH) 11 11 11
 DIR FROM 340 340 340
 VERT STAB F(D) F(D) F(D)
 HORIZ STAB F(D) F(D) F(D)
 RELEASE TYPE USP USP GND
 EXFL CFM/1000 131 118 0
 MIXED MOLE .10 .12 0.00
 PLUME HGT(M) 66 69 0
 PEAK (PEM/HR) 1.22E 00
 DST TO PK 1.3E 03(M), .2(M)
 TERRAIN AT PEAK(M) 2.30E 01
 DECAYED PULSE(CI/SEC) 2.29E 03

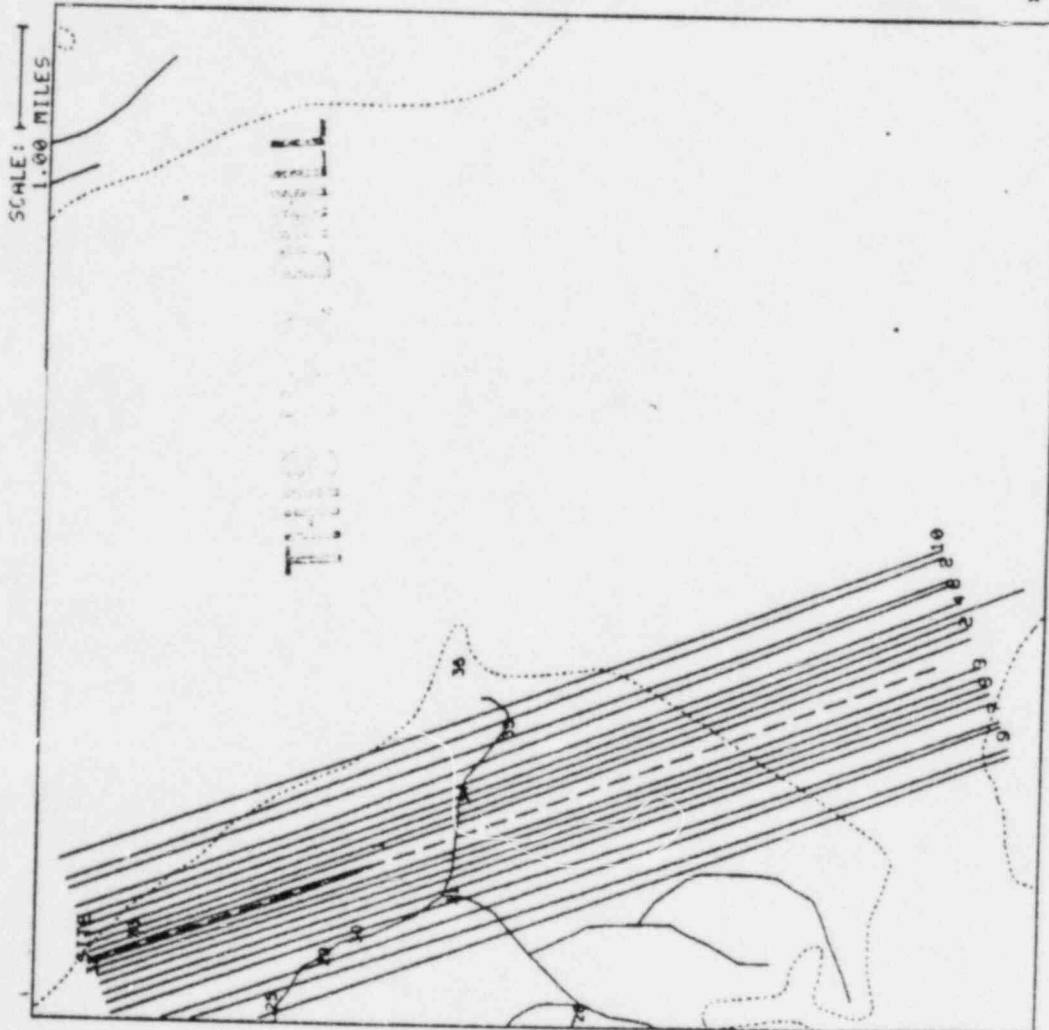
LEGEND

PEM/HR
 1 1.00E 00
 2 1.00E-01
 3 1.00E-02
 4 1.00E-03
 5 1.00E-04
 6 1.00E-05
 7 1.00E-06
 8 1.00E-07
 9 1.00E-08
 10 1.00E-09

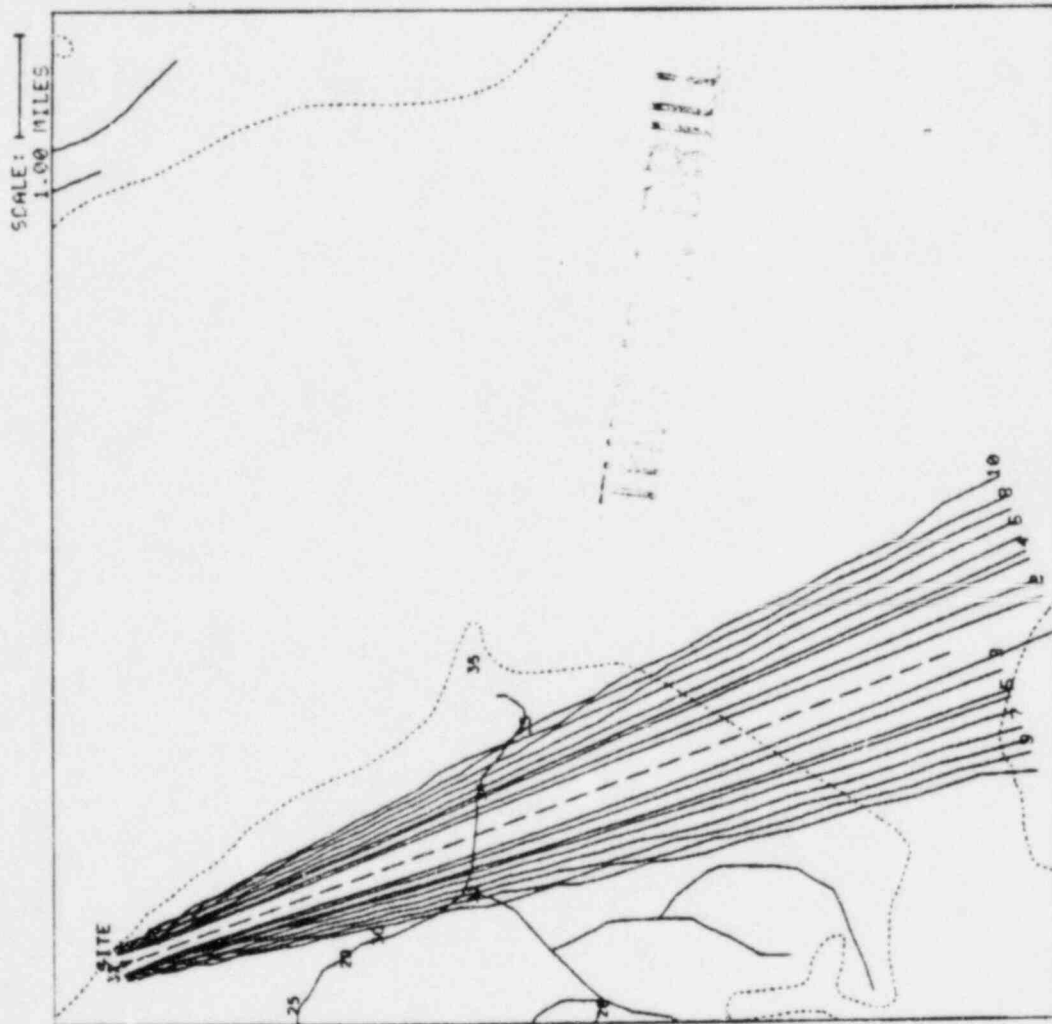
ISOTOPIC REL.

CI/SEC
 XE133 1.92E 03
 XE135 1.90E 02
 KR85M 3.73E 01
 KR85 3.73E 01
 KR88 1.54E 01
 XE138 9.55E 00
 XE131M 8.59E 00
 KR87 8.27E 00
 I131 3.08E 01
 I133 3.13E 01

*** EAL IS: GENERAL EMERGENCY ***



THYROID DOSE RATES @ T = 4:15



TIME AFTER ACCIDENT 0.0 HOURS
 THYROID DOSE (ADJ. FACTOR) 1.00
 DATE OF MET 3302141115
 RELEASE FT 1 2 4
 SPEED(MPH) 11 11 11
 DIR FROM 340 340 340
 VERT STAB F(D) F(D) F(D)
 HORIZ STAB F(D) F(D) F(D)
 RELEASE TYPE WSP WSP GND
 EXFL CFM/1000 131 118 0
 MIXED MODE .10 .12 0.00
 PLUME HGT(M) 66 69 0
 PEAK(MPH/HR) 3.22E 02
 DST TO PK 3.0E 03(M), 1.9(M)
 TERRAIN AT PEAK(M) 2.30E 01
 DECAYED PULSE(CI/SEC) 2.20E 03

LEGEND

MPH/MP	
1	5.00E 02
2	1.00E 02
3	5.00E 01
4	1.00E 01
5	5.00E 00
6	1.00E 00
7	1.00E-01
8	1.00E-02
9	1.00E-03
10	1.00E-04

ISOTOPIC REL.

CI/SEC	
XE133	1.92E 03
XE135	1.90E 02
KR85M	3.73E 01
KR85	3.73E 01
KR88	1.54E 01
XE138	9.55E 00
XE131M	8.59E 00
KR87	8.27E 00
II131	3.02E 01 -02
II133	3.13E 01 -02

5-2-5

SITE CC EFFLUENT DATA SUMMARY: *** DOSE CALCULATIONS SUMMARY PRINT *** TIME OF RUN: 8307131222

MONITOR ID	CURRENT READING	CONV FACTOR	CURRENT READING (CFM)	FLOW (CFM)	CURRENT READING (CI/SEC)	NOBL GAS IODINE (CI/SEC)
U1NG	1.3E 07	A 7.6E-07	3.7E 01	1.3E 05	2.2E 09	6.0E 07
U2NG	1.0E 03	A 7.6E-07	2.8E-03	1.2E 05	1.5E 05	4.3E 03
DOMO MON	1.4E 08	E 1.0E 00	9.0E 01	1.0E-01	3.7E 03	5.6E 02

UNIT DESIGNATOR FOR CURRENT READING
A = CPM, B = UCI/CC, C = UCI/SEC, D = MREM/HP

METEOROLOGICAL DATA: TIME OF MET USED: 2309141115

RELEASE TYPE	WSP	USP	RPT1	RPT2	RPT3	RPT4
WIND SPD AT REF HT(M/SEC)	4.4	4.4				
WIND DIRECTION TOWARD:	SSE	SSE				
PASQUILL CATEGORY VERT	F	F				
PASQUILL CATEGORY HORIZ	F	F				

PEAK OFFSITE U BOD DOSE RATE (MREM/HP)
PELEASE IS GREATER THAN (MREM/HR)
EMERGENCY ACTION LEVEL
GENERAL EMERGENCY

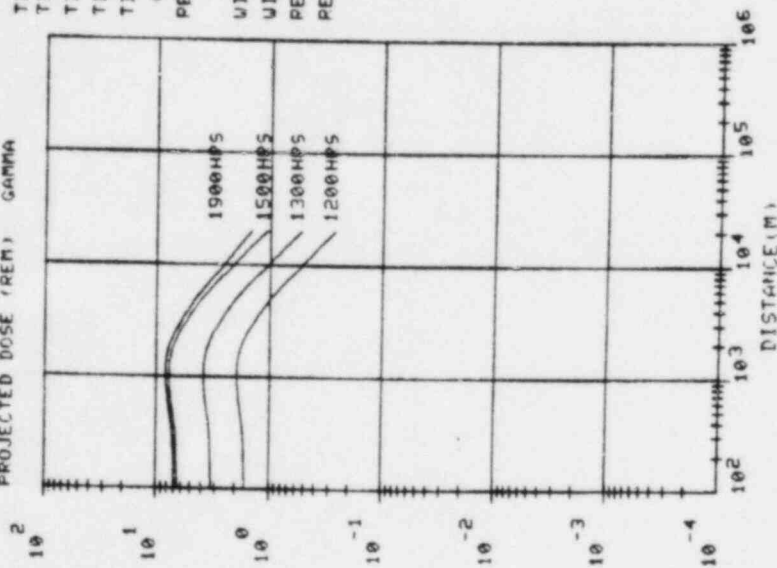
DISPERSION DATA BY RELEASE PT	RPT1	RPT2	RPT3	RPT4
SB X/Q (SEC/M3)	6.0E-06	6.0E-06	0.0E 00	4.4E-05
SB DIST (M)	1.3E 03	1.3E 03	0.0E 00	1.3E 03
X/Q AT 2 MILES	7.7E-06	6.7E-06	0.0E 00	1.8E-05
X/Q AT 5 MILES	5.1E-06	4.8E-06	0.0E 00	6.0E-06
X/Q AT 10 MILES	2.7E-06	2.6E-06	0.0E 00	2.9E-06
PEAK X/Q (SEC/M3)	7.9E-06	6.8E-06	0.0E 00	4.4E-05
DIST TO PEAK (M)	3.0E 03	3.0E 03	0.0E 00	1.3E 03
PK MOBILE GAS CONC (UCI/CC)	1.6E-02	9.5E-07	0.0E 00	4.4E-08
PK I + PART CONC (UCI/CC)	4.9E-04	2.9E-02	0.0E 00	2.5E-08
X/Q AT PEAK CONCENTRATION	7.9E-06	6.8E-06	0.0E 00	4.4E-05
DIST TO PEAK CONC (M)	3.0E 03	3.0E 03	0.0E 00	3.0E 03

DOSE RESULTS OFFSITE BY RELEASE PT (REM/HR)	RPT1	RPT2	RPT3	RPT4	TOTALS
PEAK U BOD FOR EACH RP	1.9E 00	1.2E-04	0.0E 00	1.7E-05	
DIST TO PEAK (M)	1.3E 03	1.3E 03	0.0E 00	1.3E 03	
U BOD AT TOTAL PK LOC	1.9E 00	1.2E-04	0.0E 00	1.7E-05	1.9E 00
DIST TO TOT PK U BOD (M)	1.3E 03	1.3E 03	0.0E 00	1.3E 03	1.3E 03
U BOD SITE BOUNDARY	1.9E 00	1.2E-04	0.0E 00	1.7E-05	1.9E 00
U BOD AT 2 MILES	1.3E 00	8.8E-05	0.0E 00	6.1E-06	1.3E 00
U BOD AT 5 MILES	6.4E-01	4.3E-05	0.0E 00	6.1E-07	6.4E-01
U BOD AT 10 MILES	3.3E-01	2.3E-05	0.0E 00	3.3E-07	3.3E-01
PK THYRD FOR EACH PP	3.8E 02	2.3E-02	0.0E 00	3.1E-02	
DIST TO PEAK (M)	3.0E 03	3.0E 03	0.0E 00	1.3E 03	
THYRD AT TOTAL PK LOC	3.8E 02	2.3E-02	0.0E 00	3.1E-02	3.8E 02
DIST TO TOT PK THYRD (M)	3.0E 03	3.0E 03	0.0E 00	3.0E 03	3.0E 03
THYRD SITE BOUNDARY	3.9E 02	2.0E-02	0.0E 00	3.1E-02	2.9E 02
THYRD AT 2 MILES	3.7E 02	2.2E-02	0.0E 00	1.2E-02	3.7E 02
THYRD AT 5 MILES	2.5E 02	1.6E-02	0.0E 00	4.2E-03	2.5E 02
THYRD AT 10 MILES	1.3E 02	8.4E-03	0.0E 00	2.0E-03	1.3E 02

ENTER: [RETURN] TO CONTINUE

ENTER: [RETURN] SUMMARY PRINT REPORT,
 [END] SKIP, [50] START OVER

PROJECTED DOSE (REM) GAMMA



0.5 1 2 5 10 20 50 100
 DISTANCE(MILES)

12 13 15 19

HR WHEN FRONT ARRIVES

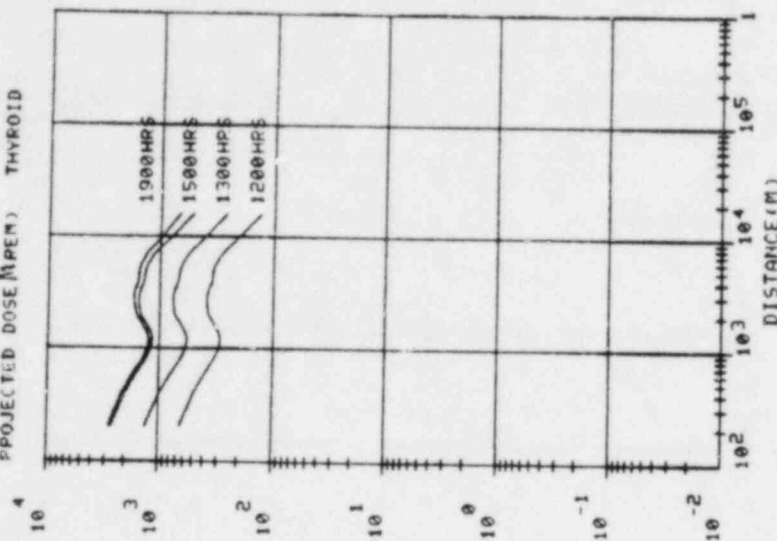
TIME OF PLOT: 8307131232 ST
 TIME OF RUN: 8307131222 ST
 TIME OF ACCIDENT: 8309140730 ST
 TIME OF MET USED: 8309141115 ST
 TIME BEFORE RELEASE STARTS
 AFTER ACCIDENT: 0.0 (HRS)
 REMAINING DURATION (HOURS) 4.3

WIND TOWARD DIRECTION SECTOR SSE
 WIND SPD AT REF HT/SEC: 4.52
 RELEASE PT 1 2 4
 RELEASE TYPE USP USP GND

ISOTOPIC PEL.

CI/SEC	ISOTOPIC PEL.
XE133	1.92E 03
XE135	1.90E 02
XP25M	3.73E 01
XP25	3.73E 01
XP28	1.54E 01
XE138	9.55E 00
XE131M	8.59E 00
XP27	8.27E 00
I131	3.02E 01
I133	3.13E 01

PROJECTED DOSE (REM) THYROID



0.5 1 2 5 10 20 50 100
 DISTANCE(MILES)

12 13 15 19

HR WHEN FRONT ARRIVES

```

*****
# EAL IS: GENERAL EMERGENCY #
#
# U BODY PAG OF 1.0 REM #
# PEACHED AT 1146 EST #
#
# THYROID PAG OF 5.0 REM #
# PEACHED AT 1115 EST #
*****
  
```

OFFSITE RADIOLOGICAL MEASUREMENTS

SAMPLE TIME 12:15

SCENARIO TIME 04:15

<u>Location</u>	<u>Description</u>	<u>Distance from Plant (mi)</u>	<u>Whole Dose Rate (mrem/h)</u>	<u>Thyroid Dose Rate (mrem/h)</u>	<u>Iodine Air Activity (uCi/cc)</u>	<u>NCP2 M W/MS2-SPA3</u>
Site Boundary		SB	1900	290	1.5E-6	12500
2 miles		2	1300	370	1.9E-6	15833
5 miles		5	640	250	1.3E-6	10833
10 miles		10	330	130	6.5E-7	5416
<u>Survey Point</u>						
31	Int. Cove Pt. Rd. & Rt. 2	3 1/2	---	---	---	---
33	Fence ent. to Camp Canoy	1/2	22	3.1	1.6E-8	133
34	Int. Cove Pt. & Little Cove Pt.	4	0.4	---	---	---

5.
5.3-33

WHOLE BODY DOSE RATES @ T = 4:30

TIME AFTER ACCIDENT 0.00 HOURS
 GAMMA DOSE (ADJ. FACTOR) 1.00
 DATE OF NET 8309141130
 RELEASE PT 1 2 4
 SPEED(MPH) 11 11 11
 DIR FROM 330 330 330
 VERT STAB FID FID FID
 HORIZ STAB FID FID FID
 RELEASE TYPE USP USP GND
 EXFL CFM/1000 131 118 0
 MIXED MODE .10 .12 0.00
 PLUME HGT(M) 65 69 0
 PEAK (PM/HR) 2.15E 00
 DST TO PK 1.3E 03(M) .2(MI)
 TERRAIN AT PEAK(M) 2.30E 01
 DECAYED RELSE(CI/SEC) 2.64E 03

LEGEND

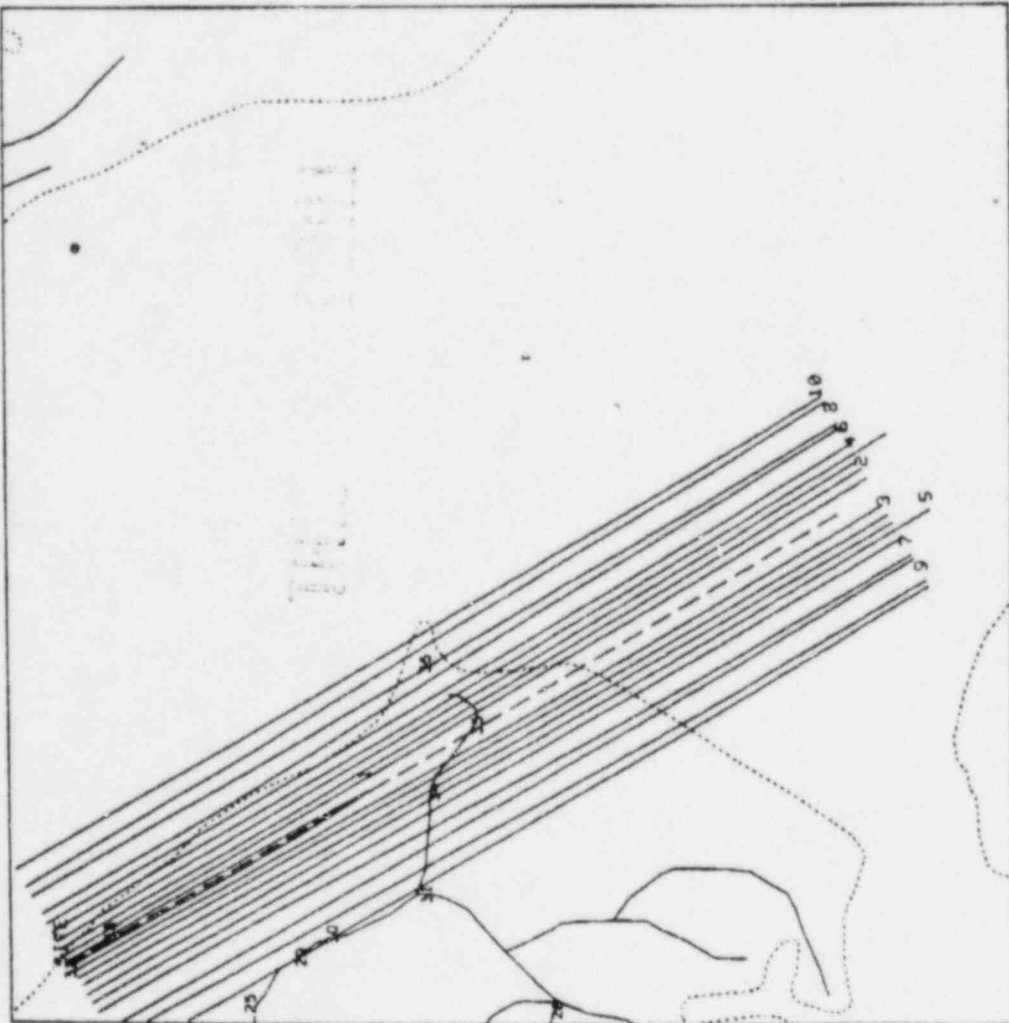
PER/HR
1 1.00E 00
2 1.00E-01
3 1.00E-02
4 1.00E-03
5 1.00E-04
6 1.00E-05
7 1.00E-06
8 1.00E-07
9 1.00E-08
10 1.00E-09

ISOTOPIC REL.

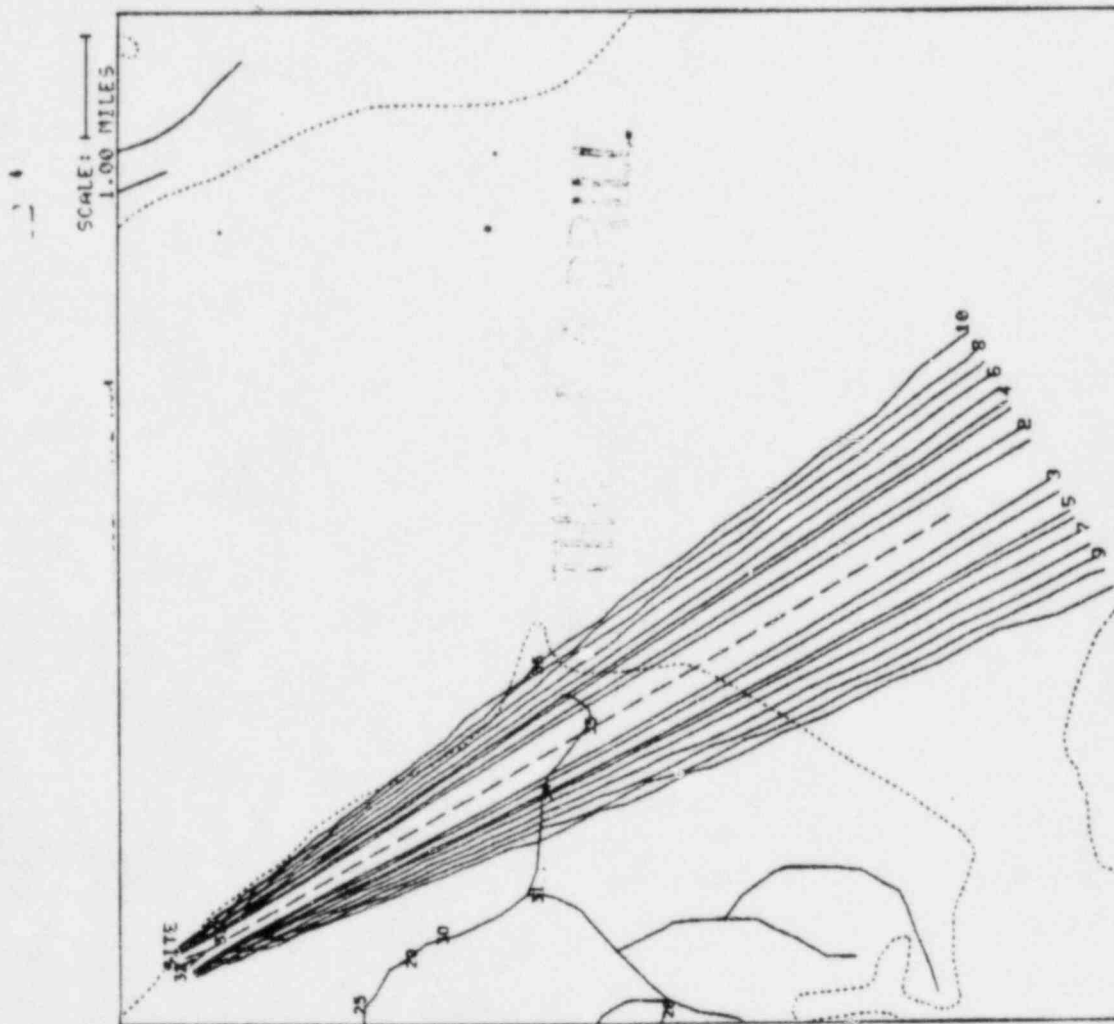
CI/SEC
XE133 2.20E 03
XE135 2.20E 02
KR25M 4.31E 01
KR25 4.30E 01
KP88 1.78E 01
XE138 1.10E 01
XE131M 9.91E 00
KP87 9.54E 00
II31 3.56E 01
II33 3.61E 01

*** EAL IS: GENERAL EMERGENCY ***

SCALE: 1.00 MILES



THYROID DOSE RATES @ T = 4:30



TIME AFTER ACCIDENT 0.00 HOURS
 THYROID DOSE (ADJ. FACTOR) 1.00
 DATE OF MEET 8309141130
 RELEASE PT 1 2 4
 SPEED(MPH) 11 11 11
 DIP FROM 330 330 330
 WEPT STAB F(D) F(D) F(D)
 WOPIZ STAB F(D) F(D) F(D)
 RELEASE TYPE USP USP GND
 EXFL CFM/1000 131 118 0
 MIXED MODE .10 .12 0.00
 PLUME HGT(M) 65 69 0
 PEAK(RPM/MP) 4.36E-02
 DST TO PK 2.5E-03(M), 1.6(MI)
 TERRAIN AT PEAK(M) 2.30E-01
 DECAYED PULSE(CI/SEC) 2.64E-03

LEGEND

PIPEM/HP
 1 5.00E-02
 2 1.00E-02
 3 5.00E-01
 4 1.00E-01
 5 5.00E-00
 6 1.00E-00
 7 1.00E-01
 8 1.00E-02
 9 1.00E-03
 10 1.00E-04

ISOTOPIC REL.

CI/SEC
 YE133 2.22E-03
 YE135 2.20E-02
 KP85M 4.31E-01
 KP85 4.30E-01
 KP88 1.72E-01
 YE138 1.10E-01
 YE131M 9.51E-00
 KP87 9.54E-00
 I131 3.56E-01 -0.2
 I133 3.61E-01 -0.2

SITE CC EFFLUENT DATA SUMMARY: TIME OF RUN: 8307131210

MONITOR ID	CURRENT READING	CONU FACTOR TO	CURRENT READING (CFM)	FLOW READING (CFM)	CURRENT READING (CFM)	MOBL GAS IODINE (CI/SEC)	UNIT'S UCI/CC (CI/SEC)
UING	1.5E 07	A	7.6E-07	4.3E 01	1.2E 05	2.6E 09	7.2E 07
U2NG	1.0E 03	A	7.6E-07	2.8E-03	1.2E 05	1.5E 05	4.3E 03
DOMG	1.3E 08	E	1.0E 00	8.4E 01	1.0E-01	3.4E 03	5.2E 02

UNIT DESIGNATOR FOR CURRENT READING
A = CPM, B = UCI/CC, C = UCI/SEC, D = MREM/HR

METEOROLOGICAL DATA:

TIME OF NET USED: 8309141130

RELEASE TYPE	WIND SPD AT REF HT(M/SEC)	WIND DIRECTION TOWARD	PASQUILL CATEGORY UERT	PASQUILL CATEGORY HORIZ	RPT1	RPT2	RPT3	RPT4
USP	4.6	USP	4.6	USP	USP	USP	USP	USP
SSE	5.1	SSE	5.1	SSE	SSE	SSE	SSE	SSE
F	F	F	F	F	F	F	F	F

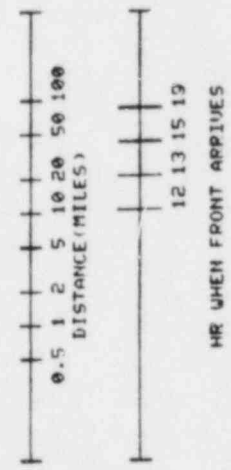
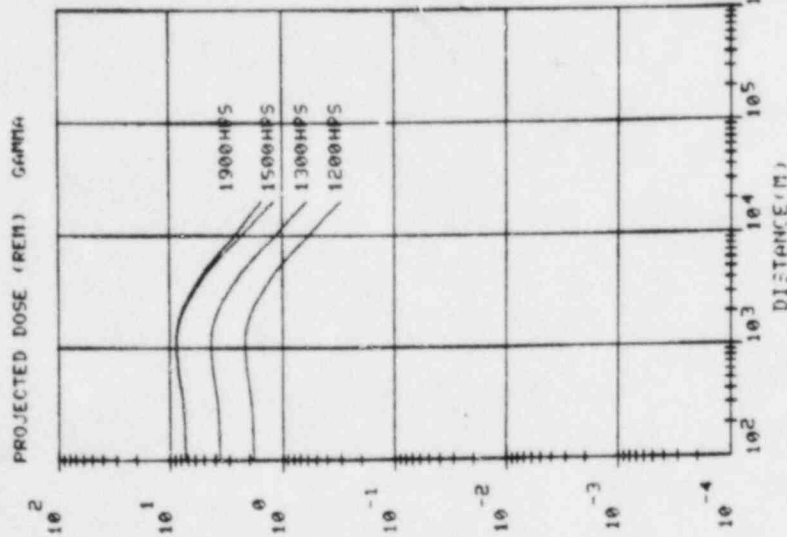
DISPERSION DATA BY RELEASE PT	RPT1	RPT2	RPT3	RPT4
SB X/Q(SEC/M3)	6.2E-06	6.2E-06	0.0E 00	4.3E-05
SB DIST(M)	1.3E 03	1.3E 03	0.0E 00	1.3E 03
X/O AT 2 MILES	7.6E-06	6.8E-06	0.0E 00	1.7E-05
X/O AT 5 MILES	5.0E-06	4.7E-06	0.0E 00	5.2E-06
X/O AT 10 MILES	2.6E-06	2.5E-06	0.0E 00	2.8E-06
PEAK X/Q(SEC/M3)	7.8E-06	6.9E-06	0.0E 00	4.3E-05
DIST TO PEAK(M)	2.5E 03	3.0E 03	0.0E 00	1.3E 03
PK MOBLE GAS CONC(UCI/CC)	1.8E-02	2.5E-07	0.0E 00	3.2E-02
PY 1 + PART CONC(UCI/CC)	5.6E-04	2.9E-08	0.0E 00	2.2E-08
X/O AT PEAK CONCENTRATION	7.8E-06	6.9E-06	0.0E 00	4.3E-05
DIST TO PEAK CONC(M)	2.5E 03	2.5E 03	0.0E 00	2.5E 03

DOSE RESULTS OFFSITE BY RELEASE PT(MREM/HR)

RPT1	RPT2	RPT3	RPT4	TOTALS
PEAK U BOD FOR EACH RP	2.1E 00	1.2E-04	0.0E 00	1.5E-05
DIST TO PEAK(M)	1.3E 03	1.3E 03	0.0E 00	1.3E 03
U BOD AT TOTAL PK LOC	2.1E 00	1.2E-04	0.0E 00	1.5E-05
DIST TO TOT PK U BOD(M)	1.3E 03	1.3E 03	0.0E 00	1.3E 03
U BOD SITE BOUNDARY	2.1E 00	1.2E-04	0.0E 00	1.5E-05
U BOD AT 2 MILES	1.5E 00	8.6E-05	0.0E 00	5.5E-06
U BOD AT 5 MILES	7.2E-01	4.2E-05	0.0E 00	5.5E-07
U BOD AT 10 MILES	3.7E-01	2.2E-05	0.0E 00	3.0E-07
PY THYRD FOR EACH PP	4.4E 02	2.3E-02	0.0E 00	2.7E-02
DIST TO PEAK(M)	2.5E 03	3.0E 03	0.0E 00	1.3E 03
THYRD AT TOTAL PK LOC	4.4E 02	2.3E-02	0.0E 00	2.7E-02
DIST TO TOT PK THYRD(M)	2.5E 03	2.5E 03	0.0E 00	2.5E 03
THYRD SITE BOUNDARY	3.4E 02	2.1E-02	0.0E 00	2.7E-02
THYRD AT 2 MILES	4.2E 02	2.2E-02	0.0E 00	1.1E-02
THYRD AT 5 MILES	2.8E 02	1.6E-02	0.0E 00	3.7E-03
THYRD AT 10 MILES	1.4E 02	8.2E-03	0.0E 00	1.8E-03

ENTER: [RETURN] TO CONTINUE

ENTER: [RETURN] SUMMARY PRINT REPORT.
[N] SKIP. [S] START OVER



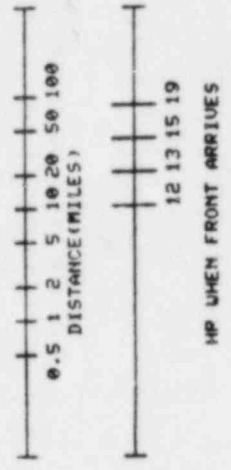
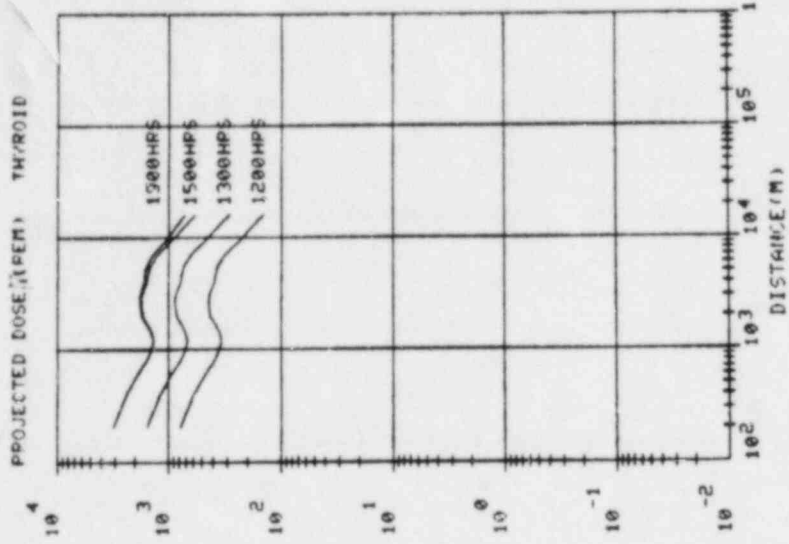
TIME OF PLOT: 8307111402 ST
TIME OF PUN: 8307111350 ST
TIME OF ACCIDENT: 8309140730 ST
TIME OF MET USED: 8307141130 ST
TIME BEFORE RELEASE STARTS
AFTER ACCIDENT: 0.0 (HPS)
REMAINING DURATION (HOURS): 4.0

WIND TOWARD DIPERCTION SECTOR SSE
WIND SPD AT REF HT/SEC: 4.74
RELEASE PT 1 2 4
RELEASE TYPE USP USP GND

ISOTOPIC REL.
CI/SEC
YE133 2.22E 03
YE135 2.20E 02
YR235 4.31E 01
YR238 4.30E 01
YR238 1.72E 01
YE138 1.10E 01
YE131M 9.91E 00
YR237 9.54E 00
I131 3.55E 01
I133 3.61E 01

12 13 15 19
HR WHEN FRONT ARRIVES

EAL IS: GENERAL EMERGENCY
U BODY PAG OF 1.0 REM
PEACHED AT 1157 EST
THYROID PAG OF 5.0 REM
REACHED AT 1130 EST



OFFSITE RADIOLOGICAL MEASUREMENTS

SAMPLE TIME 12:30SCENARIO TIME 04:30

<u>Location</u>	<u>Description</u>	<u>Distance from Plant (mi)</u>	<u>Whole Dose Rate (mrem/h)</u>	<u>Thyroid Dose Rate (mrem/h)</u>	<u>Iodine Air Activity (uCi/cc)</u>	<u>NCP2 M W/MS2-SPA3</u>
Site Boundary		SB	2100	340	1.7E-6	14167
2 miles		2	1500	420	2.1E-6	17500
5 miles		5	720	280	1.4E-6	11667
10 miles		10	370	140	7E-7	5833
<u>Survey Point</u>						
33	Fence ent. to Camp Canoy	1/2	300	0.8	4E-9	33
34	Int. Cove Pt. & Little Cove Pt.	4	0.8	8	4E-8	333
35	At "Cove Lake" sign	4 1/2	690	200	1E-6	2

5.3-38

1110 10 11 11

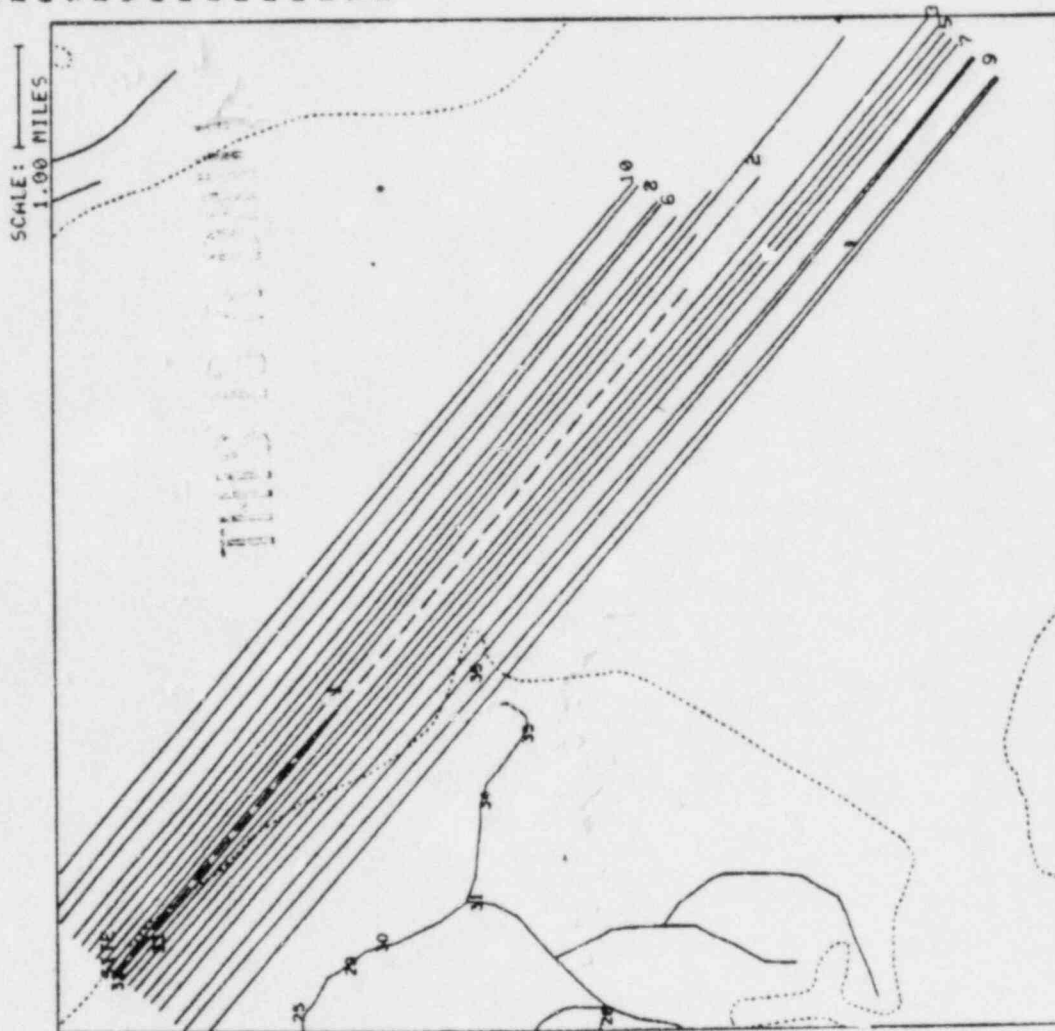
WHOLE BODY DOSE RATE @ T * 4:45

TIME AFTER ACCIDENT 0.0 HOURS
 GAMMA DOSE (ADJ. FACTOR) 1.00
 DATE OF MET 8309141145
 RELEASE PT 1 2 4
 SPEED(MPH) 11 11 11
 DIR FROM 310 310 310
 VERT STAB FID FID FID
 HORIZ STAB FID FID FID
 RELEASE TYPE USP USP GND
 EXFL CFM/1000 131 118 0
 MIXED MODE .10 .12 0.00
 PLUME HGT(M) 66 69 0
 PEAK (PER/HR) 2.02E 00
 DST TO PK 1.3E 03(M), .2(MI)
 TERRAIN AT PEAK(M) 2.16E 01
 DECAYED RELE(CI/SEC) 2.56E 03

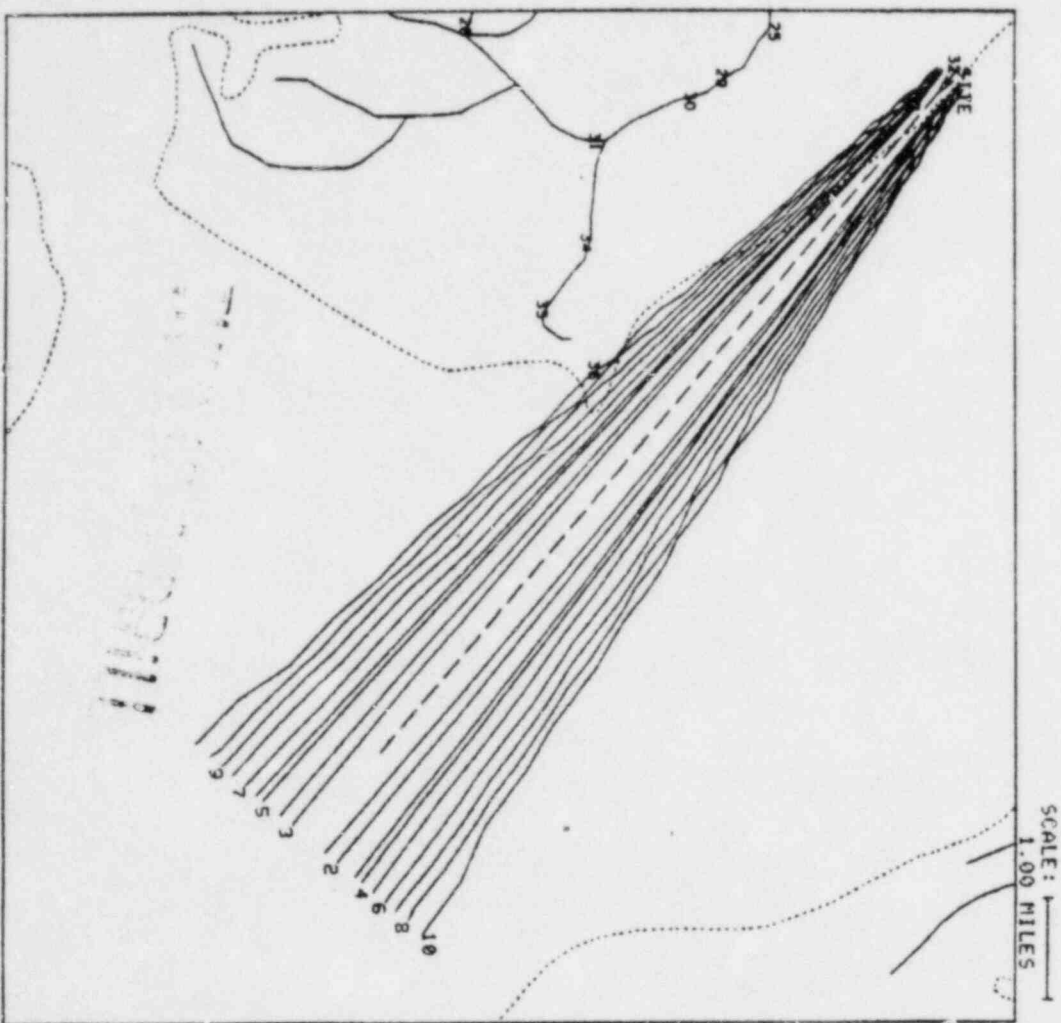
LEGEND
 PER/HR
 1 1.00E 00
 2 1.00E-01
 3 1.00E-02
 4 1.00E-03
 5 1.00E-04
 6 1.00E-05
 7 1.00E-06
 8 1.00E-07
 9 1.00E-08
 10 1.00E-09

ISOTOPIC REL.
 CI/SEC
 XE133 2.14E 03
 XE135 2.12E 02
 KR85M 4.16E 01
 KR85 4.16E 01
 KR88 1.72E 01
 XE138 1.07E 01
 XE131M 9.58E 00
 KR87 9.22E 00
 I131 3.44E 01
 I133 3.49E 01

*** EAL IS: GENERAL EMERGENCY ***



THYROID DOSE RATE @ T = 4:45



TIME AFTER ACCIDENT 0.00HOURS
 THYROID DOSE (ADJ. FACTOR) 1.00
 DATE OF NET 8309141145
 RELEASE PT 1 2 4
 SPEED(MPH) 11 11 11
 DIR FROM 310 310 310
 VERT STAB F(D) F(D) F(D)
 HORIZ STAB F(D) F(D) F(D)
 RELEASE TYPE USP USP GND
 EYFL CFM/1000 131 112 0
 MIXED MODE .10 .12 0.00
 PLUME HGT(M) 66 62 0
 PEAK(MPH/HP) 4.84E 02
 DST TO PX 4.0E 03(M), 2.5(MI)
 TERRAIN AT PEAK(M) 2.23E 01
 DECAYED RELE(CI/SEC) 2.56E 03

LEGEND

MPHM/HP
 1 5.00E 02
 2 1.00E 02
 3 5.00E 01
 4 1.00E 01
 5 5.00E 00
 6 1.00E 00
 7 1.00E 01
 8 1.00E 02
 9 1.00E 03
 10 1.00E 04

ISOTOPIC REL.

CI/SEC
 XE133 2.14E 03
 XE135 2.12E 02
 KR85M 4.16E 01
 KR85 4.16E 01
 KR88 1.72E 01
 XE138 1.07E 01
 XE131M 9.58E 00
 KR87 9.22E 00
 I131 3.44E 07
 I133 3.49E 07

SITE CC EFFLUENT DATA SUMMARY: 888 DOSE CALCULATIONS SUMMARY PRINT 888
TIME OF RUN: 1807131155

MONITOR ID	CURRENT READING	CONU FACTOR TO UCI/CC	CURRENT READING (CFM)	FLOW READING (CI/SEC)	CURRENT READING (CI/SEC)	NOBL GAS IODINE (CI/SEC)
UING 1.4E 07	A	7.6E-07	4.1E 01	1.3E 05	2.5E 09	6.9E 07
U2NG 1.0E 03	A	7.6E-07	2.8E-03	1.2E 05	1.5E 05	4.3E 03
DOMO MON 1.2E 08	E	1.0E 00	7.7E 01	1.0E-01	3.2E 03	4.8E 02

UNIT DESIGNATOR FOR CURRENT READING
A = CPM, B = UCI/CC, C = UCI/SEC, D = MREM/HR

METEOROLOGICAL DATA: TIME OF MET USED: 1809141145

RPT1	RPT2	RPT3	RPT4
USP	USP	USP	GNL
4.5	4.5	4.5	5.0
SE	SE	SE	SE
F	F	F	F
F	F	F	F

RELEASE TYPE: USP
WIND SPD AT REF HT(M/SEC): 4.5
WIND DIRECTION TOWARD: SE
PASQUILL CATEGORY VERT: F
PASQUILL CATEGORY HORIZ: F

UNIT DESIGNATOR FOR CURRENT READING
A = CPM, B = UCI/CC, C = UCI/SEC, D = MREM/HR

PEAK OFFSITE U BOD DOSE RATE(MREM/HR): 2.0E 03
RELEASE IS GREATER THAN (MREM/HR): 1.0E 03
EMERGENCY ACTION LEVEL: GENERAL EMERGENCY

PEAK U BOD FOR EACH PP: 2.0E 00 1.1E-04 0.0E 00 1.4E-05
DIST TO PEAK(M): 1.3E 03 1.5E 03 0.0E 00 1.3E 03
U BOD AT TOTAL PK LOC: 2.0E 00 1.1E-04 0.0E 00 1.4E-05
DIST TO TOT PK U BOD(M): 1.3E 03 1.5E 03 0.0E 00 1.3E 03

U BOD SITE BOUNDARY: 2.0E 00 1.1E-04 0.0E 00 1.4E-05
U BOD AT 2 MILES: 1.5E 00 9.0E-05 0.0E 00 5.2E-06
U BOD AT 5 MILES: 7.1E-01 4.3E-05 0.0E 00 5.2E-07
U BOD AT 10 MILES: 3.6E-01 2.2E-05 0.0E 00 2.6E-07

PK THYRD FOR EACH PP: 4.8E 02 2.7E-02 0.0E 00 2.6E-02
DIST TO PEAK(M): 4.0E 03 4.0E 03 0.0E 00 1.3E 03
THYRD AT TOTAL PK LOC: 4.8E 02 2.7E-02 0.0E 00 2.6E-02
DIST TO TOT PK THYRD(M): 4.0E 03 4.0E 03 0.0E 00 4.0E 03

THYRD SITE BOUNDARY: 3.1E 02 2.0E-02 0.0E 00 2.6E-02
THYRD AT 2 MILES: 4.8E 02 2.6E-02 0.0E 00 1.0E-02
THYRD AT 5 MILES: 2.7E 02 1.6E-02 0.0E 00 3.5E-03
THYRD AT 10 MILES: 1.4E 02 8.3E-03 0.0E 00 1.7E-03

ENTER: [RETURN] TO CONTINUE

DISPERSION DATA BY RELEASE PT

RPT1	RPT2	RPT3	RPT4
5.7E-06	5.9E-06	0.0E 00	4.4E-05
1.3E 03	1.3E 03	0.0E 00	1.3E 03
8.8E-06	7.7E-06	0.0E 00	1.8E-05
5.1E-06	4.7E-06	0.0E 00	5.9E-06
2.6E-06	2.5E-06	0.0E 00	2.9E-06

PEAK X/Q(SEC/M3): 3.0E-06 8.0E-06 0.0E 00 4.4E-05
DIST TO PEAK(M): 4.0E 03 4.0E 03 0.0E 00 1.3E 03

PK NOBLE GAS CONC(UCI/CC): 2.0E-02 8.8E-07 0.0E 00 3.7E-02
PK I + PAFT CONC(UCI/CC): 6.2E-04 3.4E-08 0.0E 00 2.1E-08

X/Q AT PEAK CONCENTRATION: 9.0E-06 8.0E-06 0.0E 00 4.4E-05
DIST TO PEAK CONC(M): 4.0E 03 4.0E 03 0.0E 00 4.0E 03

DOSE RESULTS OFFSITE BY RELEASE PT(MREM/HR)

RPT1	RPT2	RPT3	RPT4	TOTALS
2.0E 00	1.1E-04	0.0E 00	1.4E-05	
1.3E 03	1.5E 03	0.0E 00	1.3E 03	
2.0E 00	1.1E-04	0.0E 00	1.4E-05	2.0E 00
1.3E 03	1.5E 03	0.0E 00	1.3E 03	1.3E 03

U BOD SITE BOUNDARY: 2.0E 00 1.1E-04 0.0E 00 1.4E-05
U BOD AT 2 MILES: 1.5E 00 9.0E-05 0.0E 00 5.2E-06
U BOD AT 5 MILES: 7.1E-01 4.3E-05 0.0E 00 5.2E-07
U BOD AT 10 MILES: 3.6E-01 2.2E-05 0.0E 00 2.6E-07

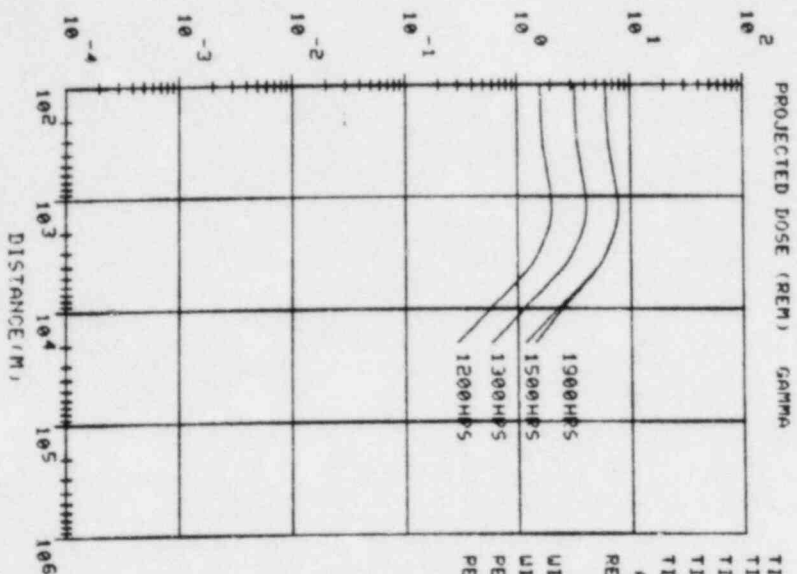
PK THYRD FOR EACH PP: 4.8E 02 2.7E-02 0.0E 00 2.6E-02
DIST TO PEAK(M): 4.0E 03 4.0E 03 0.0E 00 1.3E 03
THYRD AT TOTAL PK LOC: 4.8E 02 2.7E-02 0.0E 00 2.6E-02
DIST TO TOT PK THYRD(M): 4.0E 03 4.0E 03 0.0E 00 4.0E 03

THYRD SITE BOUNDARY: 3.1E 02 2.0E-02 0.0E 00 2.6E-02
THYRD AT 2 MILES: 4.8E 02 2.6E-02 0.0E 00 1.0E-02
THYRD AT 5 MILES: 2.7E 02 1.6E-02 0.0E 00 3.5E-03
THYRD AT 10 MILES: 1.4E 02 8.3E-03 0.0E 00 1.7E-03

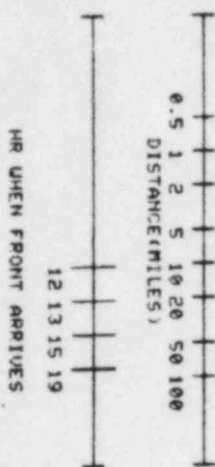
ENTER: [RETURN] TO CONTINUE

ENTER: RETURN SUMMARY PRINT
END SKIP, ESOJ START OVER

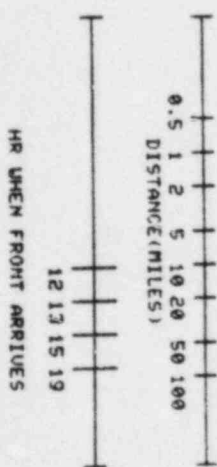
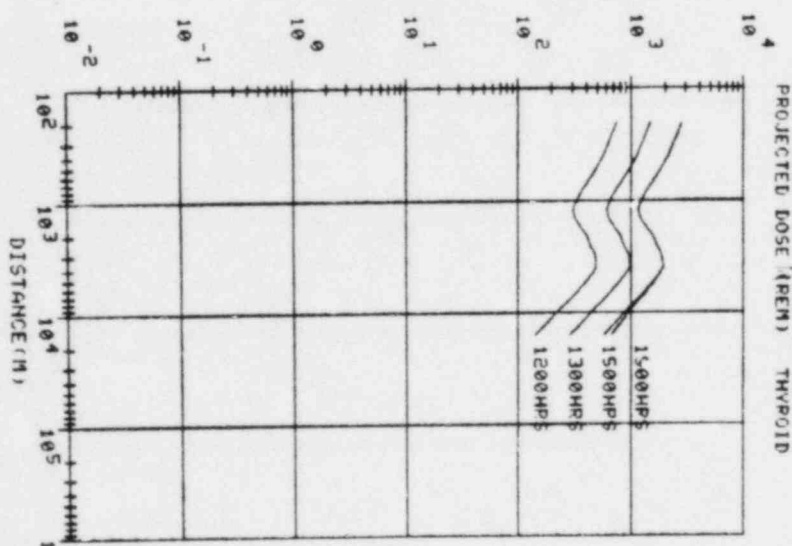
REPORT,



TIME OF PLOT: 2307131207 ST
TIME OF PUN: 8307131155 ST
TIME OF ACCIDENT: 2309140730 ST
TIME OF NET USED: 8309141145 ST
TIME BEFORE RELEASE STAPTS
AFTER ACCIDENT: 0.0 (HRS)
REMAINING DURATION (HOURS) 3.8
WIND TOUARD DIRECTION SECTOR SE
WIND SPD AT REF HTM/SEC: 4.66
RELEASE PT 1 2 4
RELEASE TYPE USP USP GND
ISOTOPIC REL.
C1/SEC
NE133 2.14E 03.
NE135 2.12E 02
KP85M 4.16E 01
KP85 4.16E 01
KP88 1.72E 01
NE138 1.07E 01
NE13M 9.52E 00
KP87 9.22E 00
1131 3.44E 01
1133 3.49E 01



EOL IS: GENERAL EMERGENCY
U BODY PAG OF 1.0 REM
REACHED AT 1214 EST
THYROID PAG OF 5.0 REM
REACHED AT 1145 EST



OFFSITE RADIOLOGICAL MEASUREMENTS

SAMPLE TIME 12:45

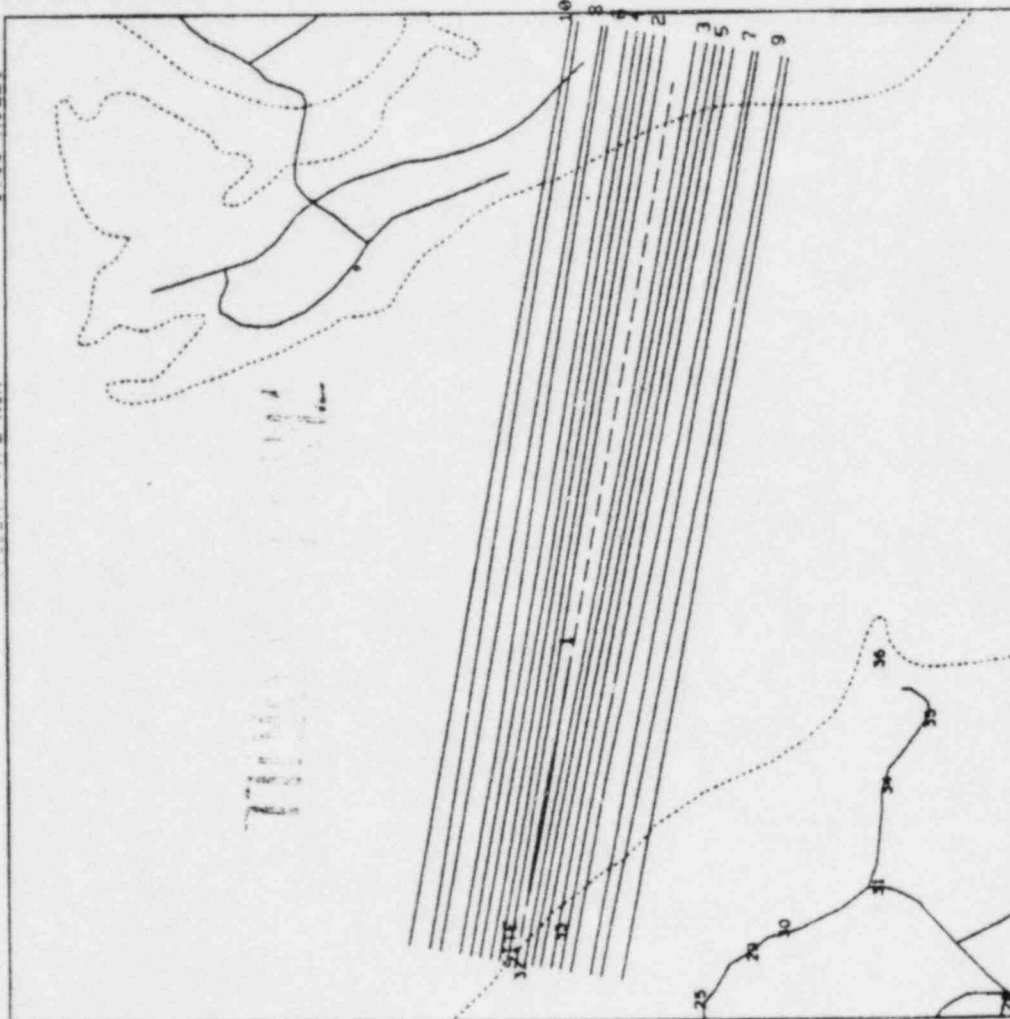
SCENARIO TIME 04:45

<u>Location</u>	<u>Description</u>	<u>Distance from Plant (mi)</u>	<u>Whole Dose Rate (mrem/h)</u>	<u>Thyroid Dose Rate (mrem/h)</u>	<u>Iodine Air Activity (uCi/cc)</u>	<u>NCP2 M W/MS2-SPA3</u>
Site Boundary		SB	2060	310	1.6E-6	13330
2 miles		2	1500	480	2.4E-6	20000
5 miles		5	710	270	1.4E-6	16333
10 miles		10	360	140	7E-7	5833
<u>Survey Point</u>						
33	Fence ent. to Camp Canoy	1/2	17	---	---	---
36	Coast Guard Station ent.	4 1/2	.1	---	---	---

5.3-43

WHOLE BODY DOSE RATE @ T = 5:00

SCALE: 1.00 MILES



TIME AFTER ACCIDENT 0.00 HOURS
 GAMMA DOSE (ADJ. FACTOR) 1.00
 DATE OF MET 8309141200
 RELEASE PT 1 2 4
 SPEED(MPH) 11 11 11
 DIR FROM 280 280 280
 VERT STAB FID FID FID
 HORIZ STAB FID FID FID
 RELEASE TYPE USP USP GND
 E/FI CFM/1000 131 112 0
 MIXED MODE .10 .12 0.00
 PLUME HGT(M) 66 69 0
 PEAK (REM/HR) 5.72E-01
 DST TO PY 9.7E 03(M), 6.0(MI)
 TERRAIN AT PEAK(M) 2.60E 01
 DECAYED REUSE(CI/SEC) 2.47E 03

LEGEND

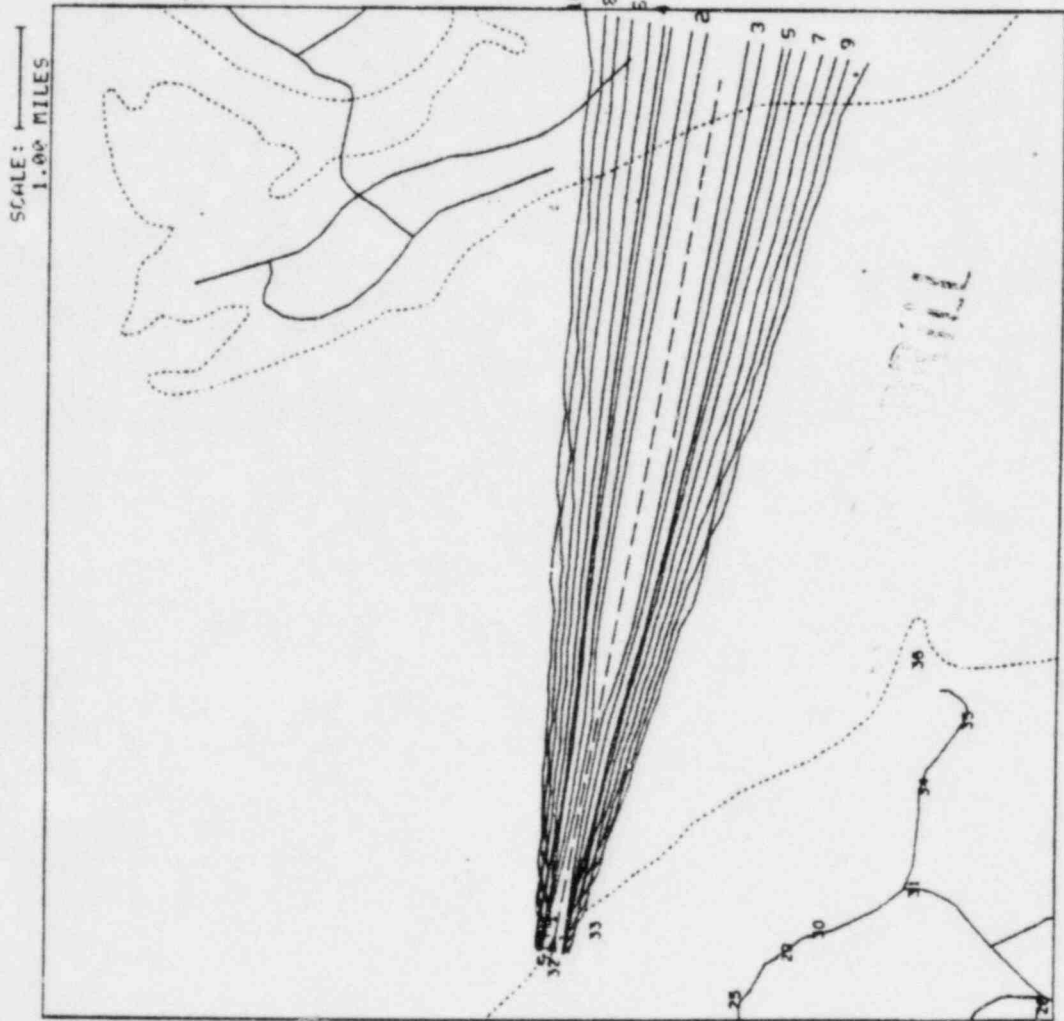
PEM/HR	
1	1.00E 00
2	1.00E-01
3	1.00E-02
4	1.00E-03
5	1.00E-04
6	1.00E-05
7	1.00E-06
8	1.00E-07
9	1.00E-08
10	1.00E-09

ISOTOPIIC REL.

CI/SEC	
XE133	2.07E 03
XE135	2.05E 02
KP25M	4.02E 01
KP25	4.02E 01
KP28	1.66E 01
XE138	1.03E 01
XE131M	9.25E 00
KP87	8.90E 00
1131	3.32E 01
1133	3.37E 01

*** EAL ISI SITE EMERGENCY ***

THYROID DOSE RATES @ T = 5:00



TIME AFTER ACCIDENT 0.00HOURS
 THYROID DOSE (ADJ. FACTOR) 1.00
 DATE OF MET 8309141200
 RELEASE PT 1 2 4
 SPEED(MPH) 11 11 11
 DIR FROM 280 280 280
 WERT STAB FID) FID) FID)
 HORIZ STAB FID) FID) FID)
 RELEASE TYPE USP USP GND
 EXFL CFM/1000 131 112 0
 MIXED MODE .10 .12 0.00
 PLUME HGT(M) 65 69 0
 PEAK(WPER/HR) 2.10E 02
 DST TO PY 9.7E 03(M), 6.0(MI)
 TERPWH AT PEAK(M) 2.60E 01
 DECAYED RELE(CI/SEC) 2.47E 03

LEGEND

WPER/HR

- 1 5.00E 02
- 2 1.00E 02
- 3 5.00E 01
- 4 1.00E 01
- 5 5.00E 00
- 6 1.00E 00
- 7 1.00E-01
- 8 1.00E-02
- 9 1.00E-03
- 10 1.00E-04

ISOTOPIC REL.

CI/SEC

- | | |
|--------|---------------|
| XE133 | 2.07E 03 |
| XE135 | 2.05E 02 |
| KR85M | 4.02E 01 |
| KR85 | 4.02E 01 |
| KR88 | 1.66E 01 |
| XE138 | 1.03E 01 |
| XE131M | 9.25E 00 |
| KR87 | 8.90E 00 |
| I131 | 3.32E 01 -01- |
| I133 | 3.37E 01 -01- |

SITE CC
EFFLUENT DATA SUMMARY
TIME OF RUN: 8307131141

MONITOR ID CURRENT READING CONU TO CURRENT READING (CFM) FLOW READING (CFM) NOBL GAS IODINE (CI/SEC) (CI/SEC)

UING 1.4E 07 A 7.6E-07 4.0E 01 1.3E 05 2.4E 09 6.7E 07
UZHG 1.0E 03 A 7.6E-07 2.8E-03 1.2E 05 1.5E 05 4.3E 03
DOME MON 1.2E 08 E 1.0E 00 7.7E 01 1.0E-01 3.2E 03 4.8E 02

UNIT DESIGNATOR FOR CURRENT READING
A = CPM, B = UCI/CC, C = UCI/SEC, D = NREM/HP

METEOROLOGICAL DATA: TIME OF MET USED: 8309141200

RPT1 RPT2 RPT3 RPT4

RELEASE TYPE USP USP
WIND SPD AT REF HT/M/SEC 4.4 4.4
WIND DIRECTION TOWARD: E E
PASQUILL CATEGORY VERT F F
PASQUILL CATEGORY HORIZ F F

5.3.46

DISPERSION DATA
BY RELEASE PT
RPT1 RPT2 RPT3 RPT4
4.0E-06 3.8E-06 0.0E 00 4.9E-06
9.7E 03 9.7E 03 0.0E 00 9.7E 03
2.7E-06 2.7E-06 0.0E 00 1.8E-05
4.8E-06 4.5E-06 0.0E 00 6.0E-06
2.6E-06 2.5E-06 0.0E 00 2.9E-06
4.0E-06 3.8E-06 0.0E 00 4.9E-06
9.7E 03 9.7E 03 0.0E 00 9.7E 03
7.0E-03 4.2E-07 0.0E 00 1.1E-08
2.7E-04 1.6E-02 0.0E 00 2.3E-09
4.0E-06 3.8E-06 0.0E 00 4.9E-06
9.7E 03 9.7E 03 0.0E 00 9.7E 03
PK NOBLE GAS CONC(UCI/CC)
PK 1 + PAPT CONC(UCI/CC)
X/O AT PEAK CONCENTRATION
DIST TO PEAK CONC(M)

DOSE RESULTS OFFSITE
BY RELEASE PT(NREM/HP) RPT1 RPT2 RPT3 RPT4 TOTALS

PEAK U BOD FOR EACH PP 5.7E-01 3.6E-05 0.0E 00 4.5E-07
DIST TO PEAK(M) 9.7E 03 9.7E 03 0.0E 00 9.7E 03
U BOD AT TOTAL PK LOC 5.7E-01 3.6E-05 0.0E 00 4.5E-07 5.7E-01
DIST TO TOT PK U BOD(M) 9.7E 03 9.7E 03 0.0E 00 9.7E 03 9.7E 03

U BOD SITE BOUNDARY 5.7E-01 3.6E-05 0.0E 00 4.5E-07 5.7E-01
U BOD AT 2 MILES 1.1E 00 6.4E-05 0.0E 00 5.2E-06 1.1E 00
U BOD AT 5 MILES 6.9E-01 4.3E-05 0.0E 00 5.5E-07 6.9E-01
U BOD AT 10 MILES 3.6E-01 2.2E-05 0.0E 00 2.3E-07 3.6E-01

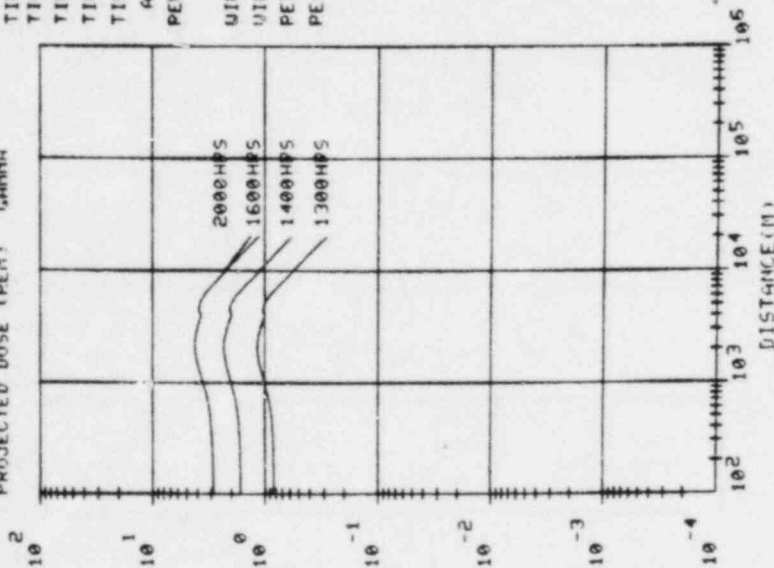
PK THYRD FOR EACH PP 2.1E 02 1.3E-02 0.0E 00 2.9E-03
DIST TO PEAK(M) 9.7E 03 9.7E 03 0.0E 00 9.7E 03
THYRD AT TOTAL PK LOC 2.1E 02 1.3E-02 0.0E 00 2.9E-03 2.1E 02
DIST TO TOT PK THYRD(M) 9.7E 03 9.7E 03 0.0E 00 9.7E 03 9.7E 03

THYRD SITE BOUNDARY 2.1E 02 1.3E-02 0.0E 00 2.9E-03 2.1E 02
THYRD AT 2 MILES 1.4E 02 9.0E-03 0.0E 00 1.4E 02
THYRD AT 5 MILES 2.5E 02 1.5E-02 0.0E 00 3.6E-03 2.5E 02
THYRD AT 10 MILES 1.3E 02 8.1E-03 0.0E 00 1.7E-03 1.3E 02

ENTER: [RETURN] TO CONTINUE

ENTER: [RETURN] SUMMARY PRINT REPORT,
[CH] SKIP, [EOJ] START OVER

PROJECTED DOSE (REM) GAMMA



0.5 1 2 5 10 20 50 100
DISTANCE(MILES)

13 14 16 20
HR WHEN FRONT ARRIVES

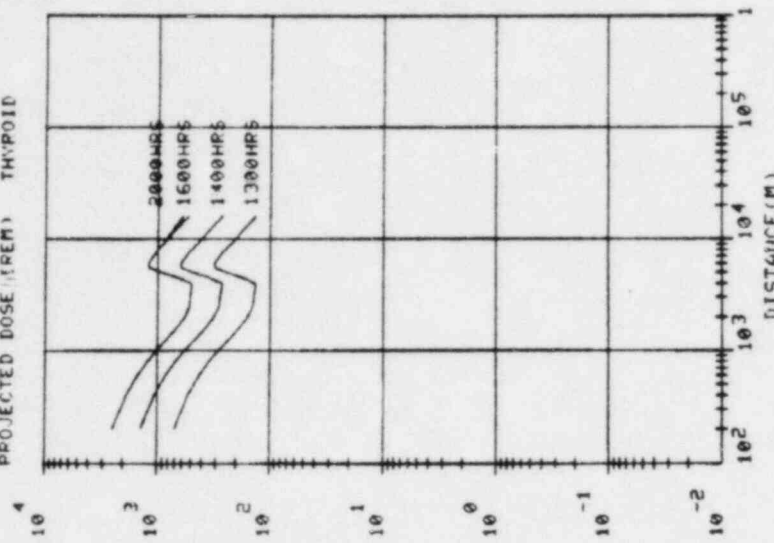
TIME OF PLOT: 2307131151 ST
TIME OF RUN: 8307131141 ST
TIME OF ACCIDENT: 2309140730 ST
TIME OF MET USED: 8309141200 ST
TIME BEFORE RELEASE STARTS
AFTER ACCIDENT: 0.0 (HPS)
REMAINING DURATION (HOURS) 3.5

WIND TOWARD DIRECTION SECTOR E
WIND SPD AT REF HT(M/SEC): 4.58
RELEASE PT 1 2 4
RELEASE TYPE USP USP GND

ISOTOPIC REL.
G1/SEC
XE133 2.07E 03
XE135 2.05E 02
KP85M 4.02E 01
KP85 4.02E 01
KP83 1.66E 01
XE132 1.03E 01
XE131M 9.25E 00
KP87 8.90E 00
I131 3.32E 01
I133 3.37E 01

EAL IS: SITE EMERGENCY
W BODY PAG OF 1.0 REM
REACHED AT 1344 EST
THYROID PAG OF 5.0 REM --
PEACHED AT 1201 EST

PROJECTED DOSE (REM) THYROID



0.5 1 2 5 10 20 50 100
DISTANCE(MILES)

13 14 16 20
HR WHEN FRONT ARRIVES

OFFSITE RADIOLOGICAL MEASUREMENTS

SAMPLE TIME 13:00

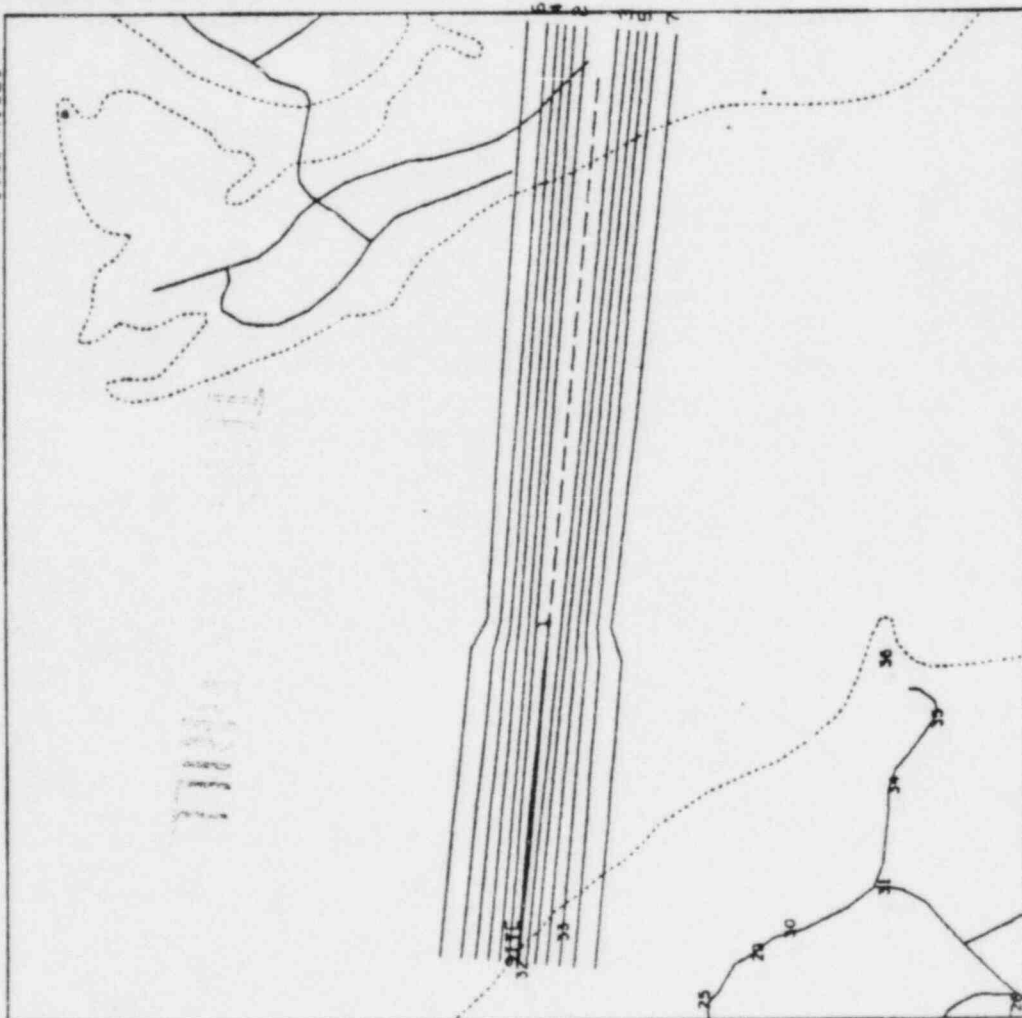
SCENARIO TIME 05:00

<u>Location</u>	<u>Description</u>	<u>Distance from Plant (mi)</u>	<u>Whole Dose Rate (mrem/h)</u>	<u>Thyroid Dose Rate (mrem/h)</u>	<u>Iodine Air Activity (uCi/cc)</u>	<u>NCP2 M W/MS2-SPA3</u>
Site Boundary		SB	570	210	1.1E-6	9167
2 miles		2	1100	140	7E-7	5833
5 miles		5	690	250	1.3E-6	10833
10 miles		10	360	130	6.5E-7	5416
<u>Survey Point</u>						
33	Fence ent. to Camp Canoy	1/2	.1	---	---	---

5.3-48

WHOLE BODY DOSE RATES @ T = 5:30

SCALE: 1.00 MILES



TIME AFTER ACCIDENT 0.0 HOURS
 GAMMA DOSE (ADJ. FACTOR) 1.00
 DATE OF NET 8309141230
 RELEASE PT 1 2 4
 SPEED (MPH) 10 10 10
 DIP FROM 275 275 275
 VERT STAB F(D) F(D) F(D)
 HORIZ STAB F(D) F(D) F(D)
 RELEASE TYPE USP USP GND
 EXFL CFM/1000 131 112 0
 MIXED MODE .08 .10 0.00
 PLUME HGT (M) 66 70 0
 PEAK (PEM/HR) 5.75E-05
 DST TO PY 9.7E 03 (M), 6.0 (MI)
 TERRAIN AT PEAK (M) 2.60E 01
 DECAYED RELE (CI/SEC) 2.28E-01

LEGEND

PEM/HR
1 1.00E-04
2 1.00E-05
3 1.00E-06
4 1.00E-07
5 1.00E-02
6 1.00E-09
7 1.00E-10

ISOTOPIC REL.

CI/SEC
XE133 1.89E-01
XE135 1.88E-02
FP85M 3.80E-03
FP85 3.65E-03
XE132 1.90E-03
KR23 1.61E-03
KR87 1.09E-03
XE131M 8.44E-04
II131 3.40E-03 -05
II133 3.06E-03 -05

*** EAL IS! NO EMERGENCY ***

SITE CC EFFLUENT DATA SUMMARY: TIME OF RUN: 18307131120

MONITOR ID CURRENT READING CONU FACTOR TO CURRENT READING (CFM) FLOW CURRENT READING (C/SEC) NOBL GAS IODINE (C/SEC) (C/SEC)

1.2E 03 A 7.6E-07 3.4E-03 1.3E 05 2.0E 05 5.7E 03

1.0E 02 A 7.6E-07 2.6E-04 1.2E 05 1.4E 04 3.9E 02

1.2E 08 E 1.0E 00 7.7E 01 1.0E-01 3.2E 03 4.8E 02

UNIT DESIGNATOR FOR CURRENT READING
A = CPM, B = UCI/CC, C = UCI/SEC, D = MPEM/HR

METEOROLOGICAL DATA:
TIME OF MET USED: 18307141230

RELEASE TYPE USP USP USP GND

WIND SPD AT REF HT(M/SEC) 4.0 4.0 4.0 4.5

WIND DIRECTION TOWARD: E E E E

PASQUILL CATEGORY VERT F F F F

PASQUILL CATEGORY HORIZ F F F F

5.3-50

DISPERSION DATA
BY RELEASE PT RPT1 RPT2 RPT3 RPT4

58 X/O(SEC/M3) 4.4E-06 4.1E-06 0.0E 00 5.3E-06

58 DIST(M) 9.7E 03 9.7E 03 0.0E 00 9.7E 03

X/O AT 2 MILES 2.5E-06 2.6E-06 0.0E 00 2.0E-05

X/O AT 5 MILES 5.2E-06 4.8E-06 0.0E 00 6.6E-06

X/O AT 10 MILES 2.8E-06 2.7E-06 0.0E 00 3.2E-06

PEAK X/O(SEC/M3) 4.4E-06 4.1E-06 0.0E 00 5.3E-06

DIST TO PEAK(M) 9.7E 03 9.7E 03 0.0E 00 9.7E 03

PK NOBLE GAS CONC(UCI/CC) 6.4E-07 4.1E-08 0.0E 00 1.2E-08

PK 1 + PART CONC(UCI/CC) 2.5E-08 1.6E-09 0.0E 00 2.6E-09

X/O AT PEAK CONCENTRATION 4.4E-06 4.1E-06 0.0E 00 5.3E-06

DIST TO PEAK CONC(M) 9.7E 03 9.7E 03 0.0E 00 9.7E 03

DOSE RESULTS OFFSITE
BY RELEASE PT(MPEM/HR) RPT1 RPT2 RPT3 RPT4 TOTALS

PEAK U BOD FOR EACH PP 5.3E-05 3.6E-06 0.0E 00 4.7E-07

DIST TO PEAK(M) 9.7E 03 9.7E 03 0.0E 00 9.7E 03

U BOD AT TOTAL PK LOC 5.3E-05 3.6E-06 0.0E 00 4.7E-07 5.7E-05

DIST TO TOT PK U BOD(M) 9.7E 03 9.7E 03 0.0E 00 9.7E 03

U BOD SITE BOUNDARY 5.3E-05 3.6E-06 0.0E 00 4.7E-07 5.7E-05

U BOD AT 2 MILES 1.0E-04 6.2E-06 0.0E 00 5.3E-06 1.1E-04

U BOD AT 5 MILES 6.4E-05 4.3E-06 0.0E 00 5.8E-07 6.9E-05

U BOD AT 10 MILES 3.3E-05 2.2E-06 0.0E 00 3.2E-07 3.6E-05

PK THYRD FOR EACH PP 1.9E-02 1.2E-03 0.0E 00 3.2E-03

DIST TO PEAK(M) 9.7E 03 9.7E 03 0.0E 00 9.7E 03

THYRD AT TOTAL PK LOC 1.9E-02 1.2E-03 0.0E 00 3.2E-03 2.4E-02

DIST TO TOT PK THYRD(M) 9.7E 03 9.7E 03 0.0E 00 9.7E 03

THYRD SITE BOUNDARY 1.9E-02 1.2E-03 0.0E 00 3.2E-03 2.4E-02

THYRD AT 2 MILES 1.1E-02 7.8E-04 0.0E 00 1.2E-02 2.3E-02

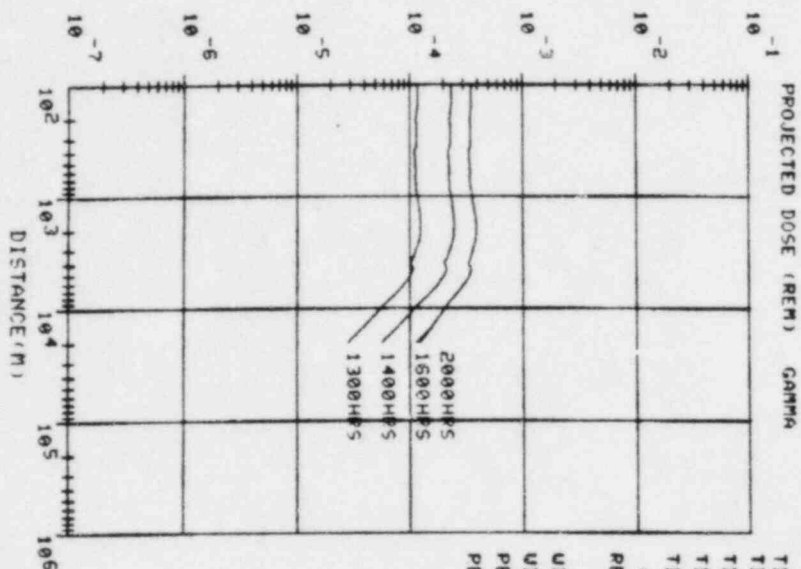
THYRD AT 5 MILES 2.3E-02 1.4E-03 0.0E 00 3.9E-03 2.8E-02

THYRD AT 10 MILES 1.2E-02 7.9E-04 0.0E 00 1.9E-03 1.5E-02

ENTER: [PRTUPN] TO CONTINUE

ENTER: [RETURN] SUMMARY PRINT
[END] SKIP, [F50] START OVER

REPORT,



TIME OF PLOT: 8307131128 ST
TIME OF RUN: 8307131120 ST
TIME OF ACCIDENT: 8309140730 ST
TIME OF MET USED: 2309141230 ST
TIME BEFORE RELEASE STARTS
AFTER ACCIDENT: 0.0 (HRS)
REMAINING DUPLICATION (HOURS) 3.0

WIND TOWARD DIRECTION SECTOR E
WIND SPD AT REF HT(M/SEC): 4.16
RELEASE PT 1 2 4
RELEASE TYPE USP USP GND

ISOTOPIC REL.
CI/SEC

XE133	1.89E-01
XE135	1.88E-02
KR85M	3.80E-03
KR25	3.65E-03
XE132	1.20E-03
KR88	1.61E-03
KR27	1.09E-03
XE131M	8.44E-04
XE131	3.49E-03
II33	3.06E-03

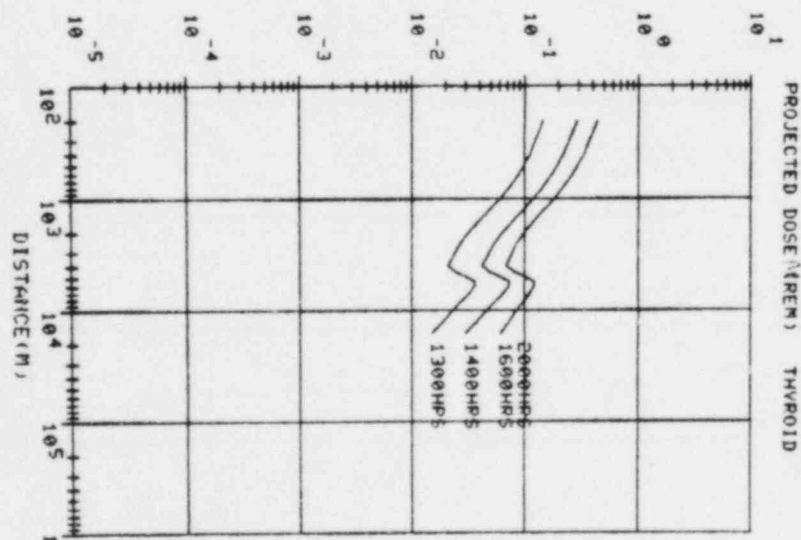
0.5 1 2 5 10 20 50 100
DISTANCE(MILES)

13 14 16 20

HR WHEN FRONT ARRIVES

```

*****
X      EAL IS: NO EMERGENCY
X
X      U BODY PAG OF 1.0 REM
X
X      REACHED AT GT 24 HOURS
X
X      THYROID PAG OF 5.0 REM
X      REACHED AT GT 24 HOURS
*****
  
```



0.5 1 2 5 10 20 50 100
DISTANCE(MILES)

13 14 16 20

HR WHEN FRONT ARRIVES

CALVERT CLIFFS NUCLEAR POWER PLANT
1983 EMERGENCY RESPONSE EXERCISE
SEPTEMBER 14, 1983

6.0 CONTROLLER'S INSTRUCTIONS

6.1 Controller Organization

<u>Name</u>	<u>Assignment</u>
T. E. Forgette	Lead Controller
M. L. Coon	Control Room
J. F. Shire	Control Room
J. P. Steelman	TSC
A. A. Barth	Monitoring Team (On-site)
J. E. Owens	Monitoring Team (On-site)
R. E. Bodin	Monitoring Team (Off-site)
J. C. Brown	Monitoring Team (Off-site)
W. E. Putman	Monitoring Team (Off-site)
L. D. Swindell	Monitoring Team (Off-site)
R. W. Smith	Maintenance Team
R. F. Weekly	Maintenance Team
J. R. Speciale	Chemistry Director
B. A. Watson	Rad. Assessment Director
G. F. Wall	OSC
G. T. Moses	As Assigned
C. L. Rayburn	As Assigned
J. A. Holleman	First Aid Team

6.2 Pre Drill Meeting:

Date: September 12, 1983

Time: 1.00 p.m.

Place: Warehouse #1, Security Training Classroom

6.3 Instructions

- 6.3.1 Comply with Lead Controller instructions.
- 6.3.2 Synchronize watches to ensure messages are delivered at the proper time. Message times are relative to drill start T+00.00.
- 6.3.3 Copies of messages controlling scenario progress are enclosed. No message shall be delivered out of time sequence without specific instruction by the Lead Controller.
- 6.3.4 Copies of plant and radiological parameters corresponding to scenario development are enclosed. Issue this information only upon request of appropriate participants (Control room and/or monitoring teams).
- 6.3.5 Do not provide information to participants regarding scenario development. Participants are expected to obtain information through their own organizations and exercise their own judgement in determining response actions and resolving problems.
- 6.3.6 Some participants may insist that some scenario parts are unrealistic. The Lead Controller has sole authority to clarify questions regarding scenario content.

6.4 Communications

- 6.4.1 Use existing plant communications systems.

CALVERT CLIFFS NUCLEAR POWER PLANT
1983 EMERGENCY RESPONSE EXERCISE
SEPTEMBER 14, 1983

7.0 EVALUATOR'S INSTRUCTIONS

7.1 Organization

P. H. Elliott	Lead Evaluator
T. E. Forgette	Control Room/ECC/AECC
J. F. Shire	Control Room
A. A. Barth	Monitoring Team (On-site)
J. E. Owens	Monitoring Team (On-site)
R. E. Bodin	Monitoring Team (Off-site)
J. C. Brown	Monitoring Team (Off-site)
W. E. Putman	Monitoring Team (Off-site)
L. D. Swindell	Monitoring Team (Off-site)
G. F. Wall	ECC/OSC
W. E. Chesnut	ECC/OSC
G. T. Moses	Security Team
J. A. Holleman	Medical
C. L. Rayburn	As Assigned

7.2 Pre-drill meeting:

Date:	September 12, 1983
Time:	2:30 p.m.
Place:	Warehouse #1, Security Training Room

7.3 Instructions

Evaluators shall take notes regarding drill participant progress and responses. Carefully note arrival and departure times, times major activities or milestones occur, and problem areas encountered. Consider:

- 7.3.1 Notification and mobilization of personnel.
- 7.3.2 Communications handling, verification, message recording.
- 7.3.3 Emergency action levels and emergency classification.
- 7.3.4 Activation and staffing of facilities; personnel deployment.
- 7.3.5 Alternate communications systems use.
- 7.3.6 Communication capabilities with and among teams.
- 7.3.7 Facility internal information system (displays, status boards, maps, message handling, etc.).
- 7.3.8 Security and access control (facilities, plant).
- 7.3.9 Decision making based on correct technical assessments; properly coordinated; timely implementation.
- 7.3.10 Coordination among local, Federal, State, and BG&E representatives and facilities.
- 7.3.11 Familiarity with and use of procedures.
- 7.3.12 Equipment adequacy; availability; utilization; calibration.
- 7.3.13 Sample media (water, vegetation, milk, air, etc.) collection and analysis.
- 7.3.14 Plume pathway monitoring. Ability to perform dose calculations, projections and formulate protective action recommendations (sheltering/evacuation).
- 7.3.15 Use of meteorological data.

- 7.3.16 Ability to assess plant conditions, classify incident, develop initial protective action recommendations and notify off-site authorities.
- 7.3.17 Recovery and reentry procedures.
- 7.3.18 Worker radiation exposure control. Includes exposure in excess of EPA guidelines for the public.
- 7.3.19 Use of potassium iodide (KI) for emergency workers.
- 7.3.20 Handling of injured, contaminated person.
- 7.3.21 Scenario ability to test emergency plans and procedures.
- 7.3.22 Participant benefit.
- 7.4 Evaluators shall use the attached forms. Submit notes to Lead Evaluator at the post drill critique. After the critique, all notes shall be forwarded to the Supervisor - Emergency Planning.
- 7.5 Evaluators shall be stationed T-00:15. Synchronize watches with corresponding station Controller.

EMERGENCY RESPONSE EXERCISE/DRILL
OBSERVATION/EVALUATION FORM

Evaluator's Name _____
Evaluator's Location _____
Exercise/Drill Date _____

1. Prior to the exercise/drill list key activities/events to observe based on review of Section 3.0 "Scenario", and Section 7.3 "Evaluation Instructions."

TIME	EVENT	PLAYER	CRITERIA FOR SAT/UNSAT RESPONSE
------	-------	--------	------------------------------------

**EMERGENCY RESPONSE EXERCISE/DRILL
OBSERVATION EVALUATION FORM**

2. Use attached observation sheet to list events, activities, and communications indicative of proper and improper use of emergency procedures (ERP, ERPIP, EOP, ROP, and Support Procedures).
3. List major strengths and weaknesses of: (Where possible, suggest corrective actions which could be taken.)
 - A. Emergency Response Procedures
 - B. Equipment, Facilities, etc.
 - C. Exercise/drill scenario and/or performance).

Date

Signature

EMERGENCY RESPONSE EXERCISE/DRILL
OBSERVATION SHEET

TIME	EVENT/PLAYER	COMMENTS
------	--------------	----------

**CALVERT CLIFFS NUCLEAR POWER PLANT
1983 EMERGENCY RESPONSE EXERCISE
SEPTEMBER 14, 1983**

8.0 SPECIAL INSTRUCTIONS

8.1 Player's Instructions & Rules

All players (at least the player group leaders) must read and follow the rules given below. This is important to successfully demonstrate emergency response capabilities.

- 8.1.1 There are two clocks; scenario time and actual time. Scenario time is more important to you. Track both times on status boards, if necessary. This is particularly important if the drill becomes delayed.
- 8.1.2 Know the Controllers organization. Identify your Controller by his Identification Badge (see attached Controller Chart).
- 8.1.3 Company Evaluators will be present. Identify them by their Identification Badges. They are here to judge your performance.
- 8.1.4 There may be visitors present. Identify them by their Identification Badges.
- 8.1.5 Identify yourself by name and function to Controllers and Evaluators. Always wear your Identification Badge.
- 8.1.6 Play out all actions, as much as possible, in accordance with Emergency Plan and procedures, as if it were a real emergency. Unless authorized by a Controller, do not simulate actions. If authorized to simulate actions, tell the Controller and Evaluator how and when you would actually do them.

- 8.1.7 Periodically speak out loud, identifying actions and decisions to the Controller and Evaluator. This may seem artificial, but will assist in the evaluation process, and is to your benefit.
- 8.1.8 When in doubt, ask your Controller for clarification. The Controller will not prompt or coach actions.
- 8.1.9 Controllers will periodically issue messages or instructions to initiate response actions. You must accept these messages; they are essential to successful performance.
- 8.1.10 Obey your Controller's directions at all times. This will ensure overall drill success.
- 8.1.11 If you disagree with your Controller, ask him to reconsider or consult with the Controller's Command Center as time permits. You must, however, accept his/her word as final and proceed.
- 8.1.12 Respond to the Controller's questions.
- 8.1.13 Do not accept messages/instructions from Evaluators. If they want to initiate actions, test your abilities, or give "surprises", they must work through your Controller.
- 8.1.14 Play as if radiation levels are actually present in accordance with information received. This requires wearing radiation dosimeters, anti-c's, observation of radiation protection practices, being aware of and minimizing radiation exposure. Know individuals in the emergency response organization responsible for informing you of these items. Follow their instructions.

- 8.1.15 Controllers and Evaluators are exempt from acting as if scenario radiation levels are present. Do not let them confuse you or cause you to act unwisely.
- 8.1.16 When entering power plant radiation areas, observe all rules and procedures. No one (even Controller and Evaluators) is exempt from normal plant radiological practices and procedures.

NOTE:

**DO NOT ENTER HIGH RADIATION AREAS
WITHOUT AUTHORIZATION. FOLLOW ALARA
PRINCIPLES.**

- 8.1.17 Demonstrate knowledge of your emergency plan, operations, and procedures.
- 8.1.18 Utilize Status Boards, Log Books, 3-Part Interoffice Memo's, etc., as much as possible for documenting actions, instructions, and reports. Remember: "Put it in writing."
- 8.1.19 Do not enter into conversations with Visitors.
- 8.1.20 Answer Evaluators questions. If questions are misdirected to you or you do not know the answer, refer them to your lead player or the Controller.

- 8.1.21 Keep a list of items you feel will improve your plans and procedures. Provide this to your lead player. Lead players will ensure they are considered. Remember one main purpose of the drill is for you the player to assure yourself that you are adequately prepared. Areas for improvement or lessons learned, will improve overall emergency planning, and preparedness.
- 8.1.22 A critique of the exercise will occur. Provide inputs to your lead player for presentation at the critique. Evaluation forms will be provided to participants following the exercise. You are encouraged to submit the form to the Supervisor • Emergency Planning with any pertinent comments. An evaluation form follows this page.

EVALUATION FORM

Emergency
Position/Title: _____

Examples: Scenario; equipment; communications; procedures; facilities; control/evaluation process; etc.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.