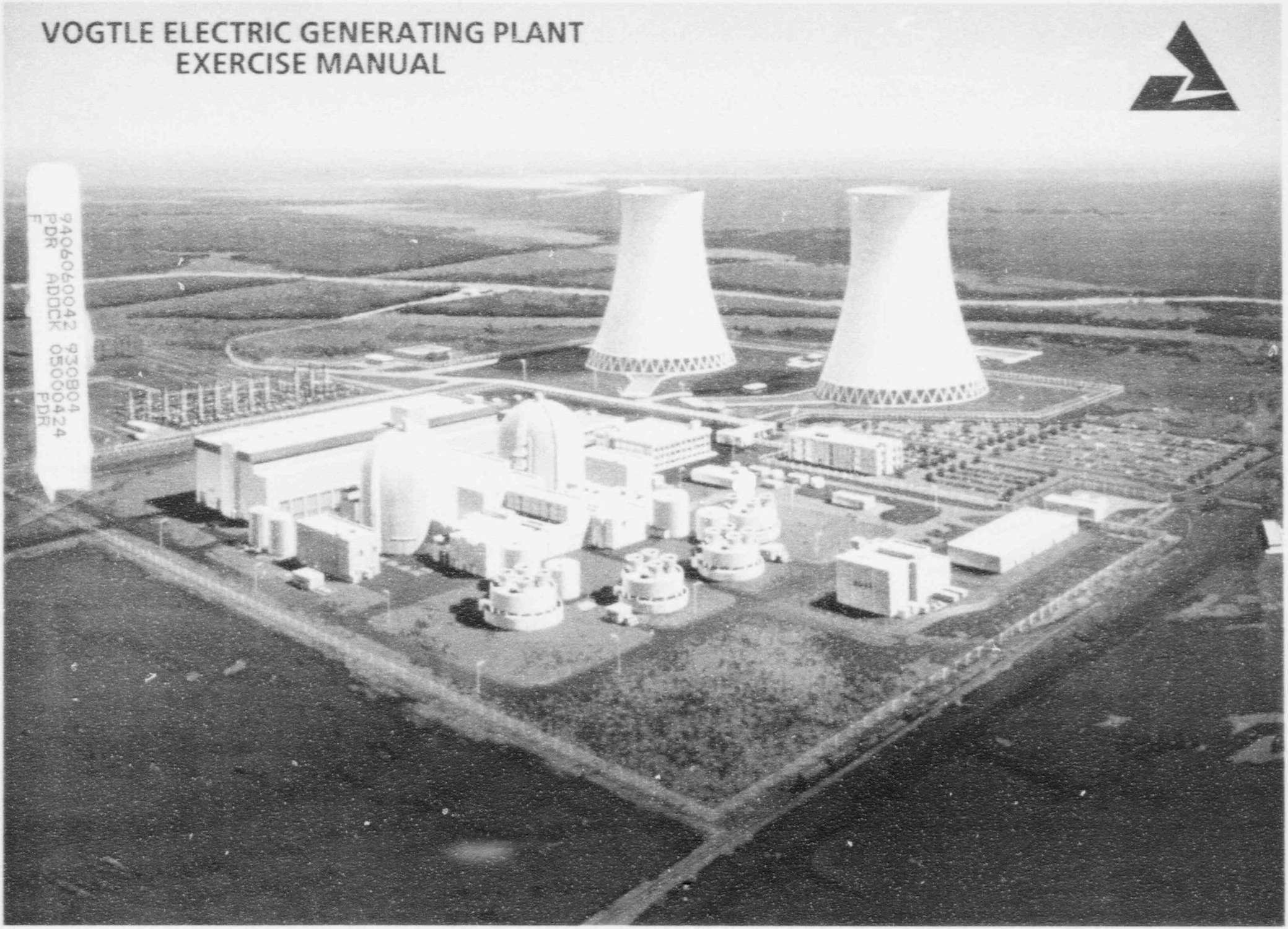
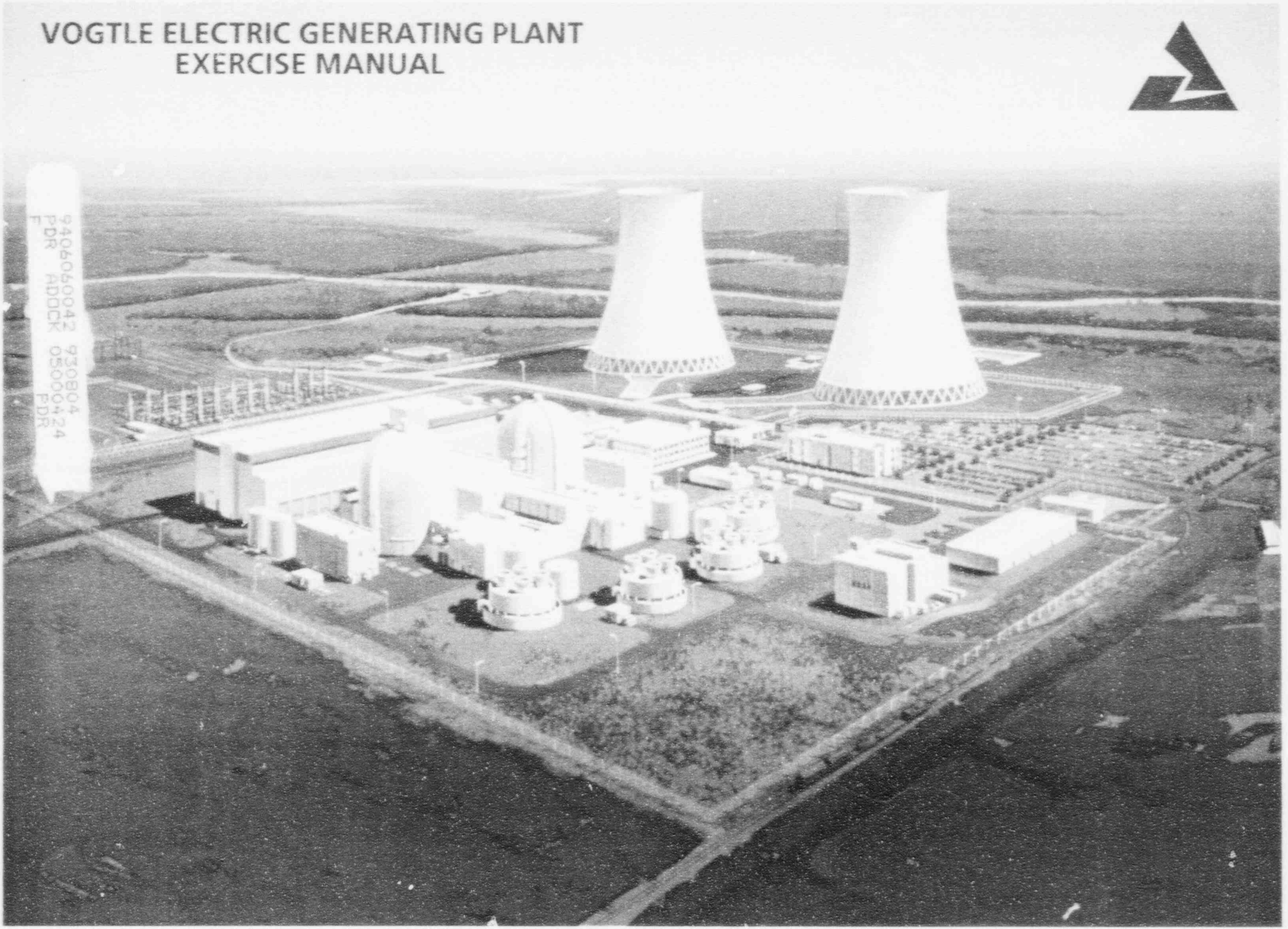
VOGTLE ELECTRIC GENERATING PLANT
EXERCISE MANUAL



VOGTLE ELECTRIC GENERATING PLANT
EXERCISE MANUAL



1993 NRC GRADED EXERCISE
August 4, 1993

SCHEDULE OF EVENTS

1. **Players Briefing**

   Time and Date — 1300 July 29, 1993

   Location — Admin. Bldg. Auditorium

2. **Controller Briefing**

   Time and Date — 0900 August 3, 1993

   Location — EOF - Training Center
   Rooms 506 & 508

3. **NRC Graded Exercise**

   Date — August 4, 1993

4. **GPC Self Critique**

   Time and Date — 1500 August 4, 1993

   Location — EOF - Training Center
   Rooms 506 & 508

5. **Preliminary Exercise Critique for Managers** — 0930 August 6, 1993
   Admin. Bldg. Conference Room

6. **NRC Exit** — Time TBD August 6, 1993
   Admin. Bldg. Conference Room

7. **Public Critique** — Time TBD August 6, 1993
   Burke County Office Park

1993 NRC GRADED EXERCISE
August 4, 1993

CONTROLLERS

Roving	Rob Dorman (B-035)
Lead Exercise	J. N. Roberts (B-435)
Simulator:	**Ext. 3907/3911**
Lead Simulator	Perry Tucker Tom Petrak
Lead Operations	Gary Moore (B-478)
Communications:	**Ext. 3911/4449**
Simulator/ EOF	Cynthia Brady
Control Room Page Operator	Extra RO (unit 1)
Simulator Page Operator	Michelle Gentry
TSC:	**Ext. 4511**
Lead	
Plant System Engineering	Robert Moye (B-133)
Chemistry	Ricky Bryant (B-476)
HP	Lewis Rouse
PEO's (Ext. 3004)	John Digby Greg Lee Brain Whittemore
OSC:	**Ext. 3898**
Lead	Darrel Barnett (B-287)
I&C	Tim Ruckman (B-228)
Electrical	Floyd Fields (B-059)
Electrical	Mike Silva (B-274)
Mechanical	David Seckinger (B-238)
Mechanical	Gene Anderson
Medical	Teanna Greiner (B-193)

CONTROLLERS

HP Control Point:	**Ext. 4016 or 4018**
HP Lead	Mike Kurtzman (B-475)
HP	Darlene Diaz (B-474)
HP	Bob Anderson (B-476)
HP	Art Belge (B-477)
Security:	**Ext. 3737**
PESB	Tom McQuillen (B-311)
	Terri McCafferty (B-004)
	Lawrence Mayo (B-147)
EOF:	**Ext. 4449**
Lead	Jim Roberts (B-435)
	Paul Herrmann
Dose Assessment	Rachelle Reddick
Communications	Cynthia Brady
Field Monitoring Teams (Lead)	Russell Brown
	Merrill Maddox
	Dan Hill
	Gene Henry
Assembly Area (Admin. Building):	Terri McCafferty (B-004)

1993 NRC GRADED EXERCISE
August 4, 1993

PARTICIPATING AGENCIES

I. GEORGIA POWER COMPANY

A. Plant Vogtle

1. EOF
2. TSC
3. OSC
4. Simulator

B. General Office Operations Center

C. Emergency News Center (ENC)

II. OFFSITE

A. Savannah River Site - Communications only

B. South Carolina EPD - Communications only

C. Aiken County - Communications only

D. Barnwell County - Communications only

E. Allendale County - Communications only

F. South Carolina Dept. of Health and Environmental Control (DHEC) - Communications only

G. Georgia Emergency Management Agency (GEMA) - Partial from FEOC

H. Burke County EMA - partial from EOC

I. Burke County Ambulance

J. Burke County Hospital

OBJECTIVES

The Vogtle Electric Generating Plant (VEGP) emergency preparedness exercise objectives are based on Nuclear Regulatory Commission (NRC) requirements provided in 10CFR50.47, "Emergency Plans," and 10CFR50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities." Additional guidance provided in NUREG-0654, FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans" was utilized in developing the objectives.

A. Accident Assessment and Classification

1. Demonstrate the ability to identify initiating conditions, determine emergency action levels (EAL) parameters and correctly classify the emergency throughout the exercise.

2. Demonstrate the ability to provide core damage assessments.

B. Notifications

1. Demonstrate the ability to alert, notify and mobilize site emergency response personnel.

2. Demonstrate the ability to expeditiously notify state, local and federal authorities (NRC).

3. Demonstrate the ability to warn or advise onsite individuals of emergency conditions.

C. Emergency Response

1. Demonstrate the capability to direct and control emergency operations.

2. Demonstrate the ability to transfer emergency direction from Control Room (simulator) to the Technical Support Center (TSC) and from the TSC to the Emergency Operations Facility (EOF) in a timely manner.

3. Demonstrate the ability to prepare for around the clock staffing requirements.

4. Demonstrate the ability to perform assembly and accountability in a timely manner.

OBJECTIVES

D. **Emergency Response Facilities**

1. Demonstrate timely activation of the TSC, Operations Support Center (OSC), and EOF.

2. Demonstrate the adequacy of equipment, security provisions, and habitability precautions for the TSC, OSC, and EOF, and Emergency News Center (ENC).

3. Demonstrate the adequacy of communications for all emergency support resources.

E. **Radiological Assessment and Control**

1. Demonstrate the ability to obtain onsite radiological surveys and samples.

2. Demonstrate the ability to utilize the post accident sampling system to collect and analyze samples to determine the extent of core damage.

3. Demonstrate the ability to continuously monitor and control radiation exposure to emergency workers.

4. Demonstrate the ability to assemble and deploy field monitoring teams in a timely fashion.

5. Demonstrate the ability to satisfactorily collect and disseminate field team data.

6. Demonstrate the ability to develop dose projections and determine appropriate protective actions.

F. **Medical**

1. Demonstrate the ability to respond to and treat an injured individual.

OBJECTIVES

G. **Public Information**

1. Demonstrate the capability to coordinate the development and dissemination of clear, accurate and timely information to the news media.

2. Demonstrate the ability to brief the media in a clear, accurate, and timely manner.

3. Demonstrate the capability to establish and operate rumor control in a coordinated fashion.

H. **Recovery**

1. Demonstrate the ability to start planning for recovery by conducting an initial briefing on recovery procedures and by the establishment of a tentative organization.

I. **Evaluation**

1. Demonstrate the ability to conduct a post-exercise critique to determine areas requiring improvement and corrective action.

1993 NRC GRADED EXERCISE
August 4, 1993

INITIAL CONDITIONS

Unit 2 is in a refueling outage.

- The reactor is de-fueled.

Unit 1 is in Mode 1 at MOL in Cycle 5, operating at 100% power.

- The unit has been on line for 135 days.
- Containment mini-purge is in service (release permit # 930099-G) in preparation for a containment entry to repair the transmitter for 1LT-461.
- All control systems are in automatic.

Key Unit 1 Parameters:

- Reactor Power = 100%
- RCS at NOTP
- RCS boron concentration = 1003 ppm (BAST = 7100 ppm)
- Pressurizer level and Steam Generator levels at program
- Core burnup = 9000 MWD/MTU

Unit 1 Systems / Equipment Out Of Service

① Pressurizer level channel "461" due to a faulty transmitter. I&C preparing for containment entry to replace the transmitter.

② RHR "A" train out of service (72 hour LCO bearing replacement) scheduled to return to service 1600 August 5.

Meteorological Data:

- Wind Direction 90° (from)
- Wind Speed 2.3 mph
- Temperature 80°
- Stability Class B
- Precipitation 0" in the past 24 hours

Sheet 1 of 3

LCO STATUS SHEET

SECTION I: INITIATION

Applicable Modes 1, 2, 3, 4, 5, 6 LCO Number 1-93-304

Tech. Spec. 3.0.4 Applicable (YES) NO (circle one)

LCO Initiated: Date _____ Time _____

Tech. Spec. References 3.5.2, 3.5.3.1, 3.4.1.3, 3.4.1.4.1, 3.4.1.4.2, 3.9.8.1, 3.9.8.2

Condition Initiating LCO Action 1-1205-P6-001-M01 RHR PUMP "A" TRAIN MOTOR LOWER BEARING NEEDS REPLACEMENT

REQUIRED ACTIONS	Completion USS Init/Date/Time
WITH ONE ECCS SUBSYSTEM INOPERABLE, RESTORE THE INOPERABLE SUBSYSTEM TO OPERABLE STATUS WITHIN 72 HOURS OR BE IN AT LEAST HOT STANDBY WITHIN THE NEXT SIX HOURS AND IN HOT SHUTDOWN WITHIN THE FOLLOWING SIX HOURS.	

Document repeating actions on Figure 3.

Remarks _____

USS _____ SS _____

Figure 1

LCO NUMBER _____

SECTION II: RESTORATION

Date	DC, MWO, WRT Procedure, Clearance Number	Work Being Performed	Completion Date	USS Init
	19300179 CLR	REPLACE MOTOR LOWER BEARING		
	19201349 MWO	REPLACE MOTOR LOWER BEARING		
	19300616	CALIBRATE IFI 0618 A/B		

Continue on Page 3 of 3 if required.

Continuation Sheet 3 of 3 attached? Yes [ ] No [ ]

Operability Determined: _____

_____ _____

_____

Chemistry/HP Person Notified (Rad Monitors Only)

Name _____ Date _____ Time _____

LCO No Longer Active: Date _____ Time _____

USS _____ SS _____

Figure 1 (Cont'd.)

REV. 1
03/01/93

UNIT 1 RHR A

11205P6001

SCHEDULED START DATE

DAY/DATE		Aug 3, 1993						Aug 4, 1993						Aug 5, 1993					
TIME	00	24	00	06	00	12	00	18	00	24	00	06	00	12	00	18	00	24	00	06	00	12	00	18	00

LCO FOR RHR PUMP 1A 1-1205-P6-001-M01 36 HRS

NEW BEARING DAMAGED DURING INSTALLATION. REPLACEMENT TO ARRIVE BY FEDERAL EXPRESS@ 1600.

APPROVALS

ORIGINAL FAGNET
PREVIOUSLY
SIGNED
AND PLACED
ON FILE
IN WPG

OPS HANG
CLR 19300179
ENTER LCO

MEOP
CHANGE BEARING &
11205P6001M01

19201349

ICPP
CALIBRATE
1FI0618A/B

19300616

ICPM
CALIBRATE
1HIC0606A/B

ICPM
CALIBRATE
1TE0612

19300753 19300779

ISI PERFORM WELD INSPECTIONS

OPS RELEASE
CLR 19300179
ENV SSPI CLOCK

OPS PLR PUMP
1/2 HP
EXIT LCO

SSPI TIME FOR RHR 1A 1-1205-P6-001

Georgia Power Company
Vogtle Electric Generating Plant U-1
Gaseous Radioactive Waste Release Permit
Pre-Release Supplementary Data

930099-G

PART I: PRE-RELEASE DATA

Release Point (25): UNIT 1 CONTAINMENT PURGE/VENT
Discharge Point (5): UNIT ONE PLANT VENT

Permit Issued: 28-apr-1993 19:06:12 Release Type: Batch

Rad Monitor: (25) 1RE2565C
Rad Monitor Bckgrnd: 0.0000E+00 CPM

Estim. Waste Flow: 1.8000E+04 CFM
Estim. Waste Volume: 1.3932E+08 CF
Estim. Release Start: 28-apr-1993 14:59:00
Estim. Release End: 03-may-1993 23:59:00
Estim. Duration: 7740.0000 MIN

PART II: PRE-RELEASE CALCULATIONS

Sample Entry # : 129
Gas sample time: 28-apr-1993 14:59:00 Sampled by: MKJ

Gas Monitor Response: 1.63E+01 CPM
Total Body Dose Rate: 4.05E-03 mrem/yr % Limit = 0.0%
Skin Dose Rate: 5.93E-03 mrem/yr % Limit = 0.0%
Max Organ Dose Rate: 6.41E-04 mrem/yr % Limit = 0.0%
Max Monitor Setpoint: 1.61E-03 uCi/cc Flag:
2.01E+05 CPM

Flags: A-Release Curies > Local Limit N-Noble Gas Dose Rate > Limit
S-Release Curies > Site Limit O-Organ Dose Rate > Limit

	Analysis Date	Measured Concen.	Est. Curies
Noble Gases	28-apr-1993 15:16:54	1.30E-07 uCi/cc	5.13E-01
Particulates	28-apr-1993 15:26:17	1.82E-12 uCi/cc	7.19E-06
Radioiodines	28-apr-1993 16:40:25	7.26E-12 uCi/cc	2.87E-05

LAB FOREMAN
TECHNICAL REVIEW:

Georgia Power Company
Vogtle Electric Generating Plant U-1
Gaseous Radioactive Waste Release Permit
Pre-Release Supplementary Data

930099-G

ISOTOPIC IDENTIFICATION - Unit 1

Isotope		Pre-Disp. Measured uCi/cc	Pre-Disp. Measured Conc/MPC	Pre-Disp. Measured Conc/Total	Conc/Total by Type	Release Rate uCi/sec	Estimated Curies Released
H-3	O:	4.04E-08	2.02E-01	2.37E-01	1.00E+00	3.43E-01	1.59E-01
I-131	R:	7.26E-12	7.26E-02	4.26E-05	1.00E+00	6.17E-05	2.87E-05
AR-41	N:	1.16E-07	2.90E+00	6.81E-01	8.93E-01	9.87E-01	4.58E-01
XE-133	N:	1.40E-08	4.66E-02	8.20E-02	1.07E-01	1.19E-01	5.52E-02
BR-82	P:	1.82E-12	3.04E-04	1.07E-05	1.00E+00	1.55E-05	7.19E-06
Totals		1.71E-07	3.22E+00			1.45E+00	6.73E-01

Georgia Power Company
Vogtle Electric Generating Plant U-1
Gaseous Radioactive Waste Release Permit 930099-G
Pre-Release Supplementary Data

Report Category	: Calculated Dose Rate to Man (mrem/year) from this : Release at Site Boundary.
Type of Activity	: Radioiodines and Particulates
Age Group & Pathway(s)	: Child . ; Inhalation
Controlling Sector	: NE
Unit number	: 1

	:Bone	:Liver	:Tot-body	:Thyroid	:Kidney	:Lung	:GI-LLI
NE	1.37E-06	1.80E-04	1.79E-04	6.41E-04	1.81E-04	1.78E-04	1.78E-04

Report Category : Calculated Doses at Site Boundary.
: Gamma and Beta Air Doses, Tot-body and Skin
: Doses and Dose Rates.
Type of Activity : Noble Gases
Controlling Sector : NE
Unit number : 1

:Site :Boundary :Dist (km)	:Tot-body :Dose :mrem	:Skin Dose :mrem	:Gamma Air :mrad	:Beta Air :mrad	:Tot-body :Dose Rate :mrem/year	:Skin :Dose Rate :mrem/year
NE	1.13E+00	5.96E-05	8.73E-05	6.27E-05	2.29E-05	4.05E-03	5.93E-03

Georgia Power Company
Vogtle Electric Generating Plant U-1
Gaseous Radioactive Waste Release Permit 930099-G
Pre-Release Supplementary Data

Report Category : Cumulative Dose at Site Boundary
Type of Activity : Noble Gases
Location : NE at 1.127 km.
Unit number : 1

	Tot-body mrem	Skin mrem	Gamma Air mrad	Beta Air mrad
This Release	5.96E-05	8.73E-05	6.27E-05	2.29E-05
31D Prior To Rel	2.83E-05	6.69E-05	3.40E-05	1.01E-04
31D After Release	8.43E-05	1.49E-04	9.29E-05	1.23E-04
31 Day Limit	0.00E+00	0.00E+00	2.00E-01	4.00E-01
31 Day Limit	0.00%	0.00%	0.05%	0.03%
Qtr Prior To Rel	3.02E-05	7.12E-05	3.62E-05	1.08E-04
Qtr After Release	8.97E-05	1.59E-04	9.89E-05	1.31E-04
Quarterly Limit	0.00E+00	0.00E+00	5.00E+00	1.00E+01
Quarter Limit	0.00%	0.00%	0.00%	0.00%
Ann Prior To Rel	1.29E-03	3.03E-03	1.54E-03	4.46E-03
Ann After Release	1.34E-03	3.12E-03	1.60E-03	4.48E-03
Annual Limit	0.00E+00	0.00E+00	1.00E+01	2.00E+01
Annual Limit	0.00%	0.00%	0.02%	0.02%

Georgia Power Company
Vogtle Electric Generating Plant U-1
Gaseous Radioactive Waste Release Permit 930099-G
Pre-Release Supplementary Data

Report Category : Cumulative Maximum Individual Dose (mrem) for
: Controlling Age Group at Controlling Location
Type of Activity : Radioiodines and Particulates
Age Group & Pathway(s) : Child . Gr_Plane; Inhalation
Location : WSW at 1.931 km.
Unit number : 1

	:Bone	:Liver	:Tot-body	:Thyroid	:Kidney	:Lung	:GI-LLI
This Release	2.10E-08	7.43E-07	7.40E-07	2.61E-06	7.46E-07	7.37E-07	7.38E-07
31D Prior To Rel	6.31E-07	7.69E-05	7.68E-05	9.45E-05	7.69E-05	7.69E-05	7.68E-05
31D After Release	6.51E-07	7.75E-05	7.75E-05	9.70E-05	7.76E-05	7.76E-05	7.75E-05
31 Day Limit	3.00E-01	3.00E-01	3.00E-01	3.00E-01	3.00E-01	3.00E-01	3.00E-01
% 31 Day Limit	0.00%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%
Qtr Prior To Rel	6.72E-07	8.18E-05	8.18E-05	1.01E-04	8.18E-05	8.18E-05	8.18E-05
Qtr After Release	6.93E-07	8.25E-05	8.25E-05	1.03E-04	8.26E-05	8.25E-05	8.25E-05
Quarterly Limit	7.50E+00	7.50E+00	7.50E+00	7.50E+00	7.50E+00	7.50E+00	7.50E+00
% Quarter Limit	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Ann Prior To Rel	8.32E-07	9.60E-05	9.60E-05	1.29E-04	9.61E-05	9.60E-05	9.59E-05
Ann After Release	8.53E-07	9.68E-05	9.67E-05	1.32E-04	9.68E-05	9.67E-05	9.67E-05
Annual Limit	1.50E+01	1.50E+01	1.50E+01	1.50E+01	1.50E+01	1.50E+01	1.50E+01
% Annual Limit	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Georgia Power Company
Vogtle Electric Generating Plant U-1

No. 930099-G
Unit # 1

BATCH GASEOUS EFFLUENT PERMIT

I. REQUEST

X NORMAL UNPLANNED	RELEASE POINT UNIT 1 CONTAINMENT PURGE/VENT	ESTIMATED START: 28-apr-1993 14:59:00
RELEASE VOLUME (ESTIM.) 1.3932E+08 CF	DISCHARGE POINT UNIT ONE PLANT VENT	ESTIMATED STOP: 03-may-1993 23:59:00

II. SAMPLE IDENTIFICATION

NUMBER	COLLECTION DATE/TIME	ANALYSIS DATE/TIME
129	28-apr-1993 14:59:00	28-apr-1993 15:16:54

III. RADIOANALYSIS - GASEOUS

T-BODY DOSE RATE < 500 4.05E-03	CUM. AIR DOSE-GAMMA(Q) < 5 9.89E-05	CUM. ORGAN DOSE(Q) < 7.5 1.03E-04
SKIN DOSE RATE < 3000 5.93E-03	CUM. AIR DOSE-GAMMA(A) < 10 1.60E-03	CUM. ORGAN DOSE(A) < 15 1.32E-04
ORGAN DOSE RATE < 1500 6.41E-04	CUM. AIR DOSE-BETA(Q) < 10 1.31E-04	
	CUM. AIR DOSE-BETA(A) < 20 4.48E-03	

IV. RADIATION MONITOR(S)

NUMBER	SETPOINT	EFFECTIVE GAIN	EXPECTED RESPONSE	ACTUAL RESPONSE
1RE2565C	1.61E-03 uCi/cc	7.99E-09 uCi/cc/cpm	1.30E-07 uCi/cc	_____ uCi/cc
1RE12442C	3.06E-04 uCi/cc	1.60E-08 uCi/cc/cpm	1.14E-08 uCi/cc	_____ uCi/cc

1RE12442C 3.06E-04 uCi/cc 1.60E-08 uCi/cc/cpm

V. AUTHORIZATION

MAX. VOLUME	MAX. EFFLUENT FLOW RATE
2.7500E+06 CF	1.8000E+04 CFM

The above-named source has been sampled and analyzed and is in compliance with applicable Technical Specifications. Release is authorized for the volume and flow rates specified. (ODCM)

LAB FOREMAN
TECHNICAL REVIEW: [signature] 4/28/93
~~OSOS~~ SS/USS
AUTHORIZATION: _____

Purge Required for (check 1) :

__ Containment Pressure Control
__ Purge Valve Surveilance Tests
__ ALARA (personnel entry)
__ Respirable Air Quality (personnel entry)

VI. RELEASE DATA

	TIME	DATE	TANK PRESSURE	EFFLUENT FLOW RATE	OPERATOR'S INITAILS
START					
STOP				XXXXXXXXXXXXXXXX	

Georgia Power Company
Vogtle Electric Generating Plant U-1
Gaseous Radioactive Waste Release Permit 930099-G
Pre-Release Supplementary Data

PART I: PRE-RELEASE DATA

Release Point (25): UNIT 1 CONTAINMENT PURGE/VENT
Discharge Point (5): UNIT ONE PLANT VENT

Permit Issued: 28-apr-1993 19:06:12 Release Type: Batch

Rad Monitor: (25) 1RE2565C
Rad Monitor Bckgrnd: 0.0000E+00 CPM

Estim. Waste Flow: 1.8000E+04 CFM
Estim. Waste Volume: 1.3932E+08 CF
Estim. Release Start: 28-apr-1993 14:59:00
Estim. Release End: 03-may-1993 23:59:00
Estim. Duration: 7740.0000 MIN

PART II: PRE-RELEASE CALCULATIONS

Sample Entry # : 129
Gas sample time: 28-apr-1993 14:59:00 Sampled by: MKJ

Gas Monitor Response:	1.63E+01 CPM		
Total Body Dose Rate:	4.05E-03 mrem/yr	% Limit =	0.0%
Skin Dose Rate:	5.93E-03 mrem/yr	% Limit =	0.0%
Max Organ Dose Rate:	6.41E-04 mrem/yr	% Limit =	0.0%
Max Monitor Setpoint:	1.61E-03 uCi/cc	Flag:	
	2.01E+05 CPM		

Flags: A-Release Curies > Local Limit N-Noble Gas Dose Rate > Limit
S-Release Curies > Site Limit O-Organ Dose Rate > Limit

	Analysis Date	Measured Concen.	Est. Curies
Noble Gases	28-apr-1993 15:16:54	1.30E-07 uCi/cc	5.13E-01
Particulates	28-apr-1993 15:26:17	1.82E-12 uCi/cc	7.19E-06
Radioiodines	28-apr-1993 16:40:25	7.26E-12 uCi/cc	2.87E-05

LAB FOREMAN
TECHNICAL REVIEW: _____

ISOTOPIC IDENTIFICATION - Unit 1

Isotope		Pre-Disp. Measured uCi/cc	Pre-Disp. Measured Conc/MPC	Pre-Disp. Measured Conc/Total	Conc/Total by Type	Release Rate uCi/sec	Estimated Curies Released
H-3	O:	4.04E-08	2.02E-01	2.37E-01	1.00E+00	3.43E-01	1.59E-01
I-131	R:	7.26E-12	7.26E-02	4.26E-05	1.00E+00	6.17E-05	2.87E-05
AR-41	N:	1.16E-07	2.90E+00	6.81E-01	8.93E-01	9.87E-01	4.58E-01
XE-133	N:	1.40E-08	4.66E-02	8.20E-02	1.07E-01	1.19E-01	5.52E-02
BR-82	P:	1.82E-12	3.04E-04	1.07E-05	1.00E+00	1.55E-05	7.19E-06
Totals		1.71E-07	3.22E+00			1.45E+00	6.73E-01

Report Category : Calculated Doses at Site Boundary.
: Gamma and Beta Air Doses, Tot-body and Skin
: Doses and Dose Rates.
Type of Activity : Noble Gases
Controlling Sector : NE
Unit number : 1

:Site :Boundary :Dist (km)	:Tot-body :Dose :mrem	:Skin Dose :mrem	:Gamma Air :mrad	:Beta Air :mrad	:Tot-body :Dose Rate :mrem/year	:Skin :Dose Rate :mrem/year
NE : 1.13E+00	: 5.96E-05	: 8.73E-05	: 6.27E-05	: 2.29E-05	: 4.05E-03	: 5.93E-03

Georgia Power Company
Vogtle Electric Generating Plant U-1
Gaseous Radioactive Waste Release Permit
Pre-Release Supplementary Data

930099-G

Report Category	: Calculated Dose Rate to Man (mrem/year) from this Release at Site Boundary.
Type of Activity	: Radioiodines and Particulates
Age Group & Pathway(s)	: Child . ; Inhalation
Controlling Sector	: NE
Unit number	: 1

	:Bone	:Liver	:Tot-body	:Thyroid	:Kidney	:Lung	:GI-LLI
NE	1.37E-06	1.80E-04	1.79E-04	6.41E-04	1.81E-04	1.78E-04	1.78E-04

Report Category : Cumulative Dose at Site Boundary
Type of Activity : Noble Gases
Location : NE at 1.127 km.
Unit number : 1

	Tot-body mrem	Skin mrem	Gamma Air mrad	Beta Air mrad
This Release	5.96E-05	8.73E-05	6.27E-05	2.29E-05
31D Prior To Rel	2.83E-05	6.69E-05	3.40E-05	1.01E-04
31D After Release	8.43E-05	1.49E-04	9.29E-05	1.23E-04
31 Day Limit	0.00E+00	0.00E+00	2.00E-01	4.00E-01
% 31 Day Limit	0.00%	0.00%	0.05%	0.03%
Qtr Prior To Rel	3.02E-05	7.12E-05	3.62E-05	1.08E-04
Qtr After Release	8.97E-05	1.59E-04	9.89E-05	1.31E-04
Quarterly Limit	0.00E+00	0.00E+00	5.00E+00	1.00E+01
% Quarter Limit	0.00%	0.00%	0.00%	0.00%
Ann Prior To Rel	1.29E-03	3.03E-03	1.54E-03	4.46E-03
Ann After Release	1.34E-03	3.12E-03	1.60E-03	4.48E-03
Annual Limit	0.00E+00	0.00E+00	1.00E+01	2.00E+01
% Annual Limit	0.00%	0.00%	0.02%	0.02%

Report Category : Cumulative Maximum Individual Dose (mrem) for
: Controlling Age Group at Controlling Location
Type of Activity : Radioiodines and Particulates
Age Group & Pathway(s) : Child . Gr_Plane; Inhalation
Location : WSW at 1.931 km.
Unit number : 1

	Bone	Liver	Tot-body	Thyroid	Kidney	Lung	GI-LLI
This Release	2.10E-08	7.43E-07	7.40E-07	2.61E-06	7.46E-07	7.37E-07	7.38E-07
31D Prior To Rel	6.31E-07	7.69E-05	7.68E-05	9.45E-05	7.69E-05	7.69E-05	7.68E-05
31D After Release	6.51E-07	7.75E-05	7.75E-05	9.70E-05	7.76E-05	7.76E-05	7.75E-05
31 Day Limit	3.00E-01	3.00E-01	3.00E-01	3.00E-01	3.00E-01	3.00E-01	3.00E-01
% 31 Day Limit	0.00%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%
Qtr Prior To Rel	6.72E-07	8.18E-05	8.18E-05	1.01E-04	8.18E-05	8.18E-05	8.18E-05
Qtr After Release	6.93E-07	8.25E-05	8.25E-05	1.03E-04	8.26E-05	8.26E-05	8.25E-05
Quarterly Limit	7.50E+00	7.50E+00	7.50E+00	7.50E+00	7.50E+00	7.50E+00	7.50E+00
% Quarter Limit	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Ann Prior To Rel	8.32E-07	9.60E-05	9.60E-05	1.29E-04	9.61E-05	9.60E-05	9.59E-05
Ann After Release	8.53E-07	9.68E-05	9.67E-05	1.32E-04	9.68E-05	9.67E-05	9.67E-05
Annual Limit	1.50E+01	1.50E+01	1.50E+01	1.50E+01	1.50E+01	1.50E+01	1.50E+01
% Annual Limit	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

1993 NRC GRADED EXERCISE
August 4, 1993

SCENARIO ABSTRACT

The initial conditions have Unit 2 defueled and in a refueling outage. Unit 1 is in Mode 1 at 100% power and has been on line for 222 days. All control systems are in automatic. Containment mini-purge is in service in preparation for a containment entry to repair pressurized level transmitter 461, which is out of service. Additionally, RHR train A is out of service due to scheduled bearing replacement.

The drill scenario creates conditions for an offsite release through the sequential failure of the three fission product barriers. An event is postulated which results in fuel damage and release of fission product activity to the Reactor Coolant System (RCS). In this event, control bank D control rod H-8 drops to the full "in" position in the reactor core due to a blown stationary gripper fuse. Fuel failure occurs due to localized overheating. Various radiation sensors alarm due to the fuel failure. Mini purge damper 1HV-2626B inside reactor containment fails to close when operators attempt a manual closure. An alert emergency is declared due to the breach or challenge of one of the three fission product barriers. At Alert Emergency, the ERDS in initiated, the TSC and OSC are activated, and the EOF placed on standby. Accountability is initiated and completed. The mechanism for control rod H-8 ruptures, resulting in a leak in the reactor vessel head. This initiates a reactor trip and SI. RHR B pump fails to start due to faulty relays and purge supply isolation damper 1HV-2626B fails to automatically close on SI. A site area emergency is declared due to the breach or challenge of two of the three fission product barriers. The EOF is activated with the declaration of a site area emergency. A bomb threat is received, with an explosion subsequently occurring in the Unit 1 HVAC containment purge equipment room. Plant personnel are dispatched to investigate and report that containment purge isolation damper 1HV-2627B and associated piping is breached due to an explosion. A general emergency is declared due to the breach or challenge of three fission product barriers. Protective action recommendation are made to state agencies. The release path is isolated by closing 1HV-2626B, which leads to emergency termination and recovery actions.

SCENARIO TIME LINE

CLASS	TIME	EVENT
	08:00	Start Drill.
	08:05	Control Bank D control rod H-8, drops to the full "in" position in the reactor core (due to a blown stationary gripper fuse).
		• Flux distribution abnormality begins due to the dropped control rod.
		• Control Room Operators enter Abnormal Operating Procedure 18003-C "Rod Control System Malfunction" and reduce reactor power to less than 90%.
	08:20	Fuel failure occurs due to localized overheating.
		• Chemical Volume Control System (CVCS) letdown radiation monitor RE-48000 alarms on the ERF computer and rapidly goes off-scale high. Radiation levels in the Reactor Coolant System (RCS) sample area start to increase (RE-007B). Chemistry is directed by the control room to sample the RCS.
	08:22	The Gross Failed Fuel Detector alarms.
	08:25	Control Room may isolate containment mini-purge HVAC. Damper 1HV-2626B inside reactor containment (IRC) fails to close.
ALERT	08:35	ALERT EMERGENCY declared due to the breach or challenge of one of three fission product barriers.
		• Unit shutdown commenced.
	08:50	Emergency Response Data System to NRC activated.
	09:00	TSC and OSC activated. EOF coming to standby.
	09:05	Injured person call-in to control room.
	09:05	Accountability complete.
	09:10	EOF in standby.

SCENARIO TIME LINE

CLASS	TIME	EVENT
	09:30	The mechanism housing for control rod H-8 ruptures, resulting in a four inch diameter leak in the reactor vessel head.
		• Reactor Trip (if not already actuated) and Safety Injection.
		• RHR B pumps fails to start - trips due to faulty relays.
		• PERMS data no longer available due to Safety Injection.
		• Purge supply isolation damper 1HV-2626B fails to close.
SITE AREA	09:45	SITE AREA EMERGENCY declared due to the breach or challenge of two of three fission product barriers.
	10:15	EOF activated.
	10:45	Bomb threat called in to the main control room. (Disgruntled employee)
	11:00	Explosion in the Unit 1 Heating Ventilation and Air Conditioning (HVAC) containment purge supply "equipment room" (Outside reactor containment (ORC) and located next to the north main steam valve room).
		• Security alarm for door 1C108 (room 114).
		• Fire alarm for fire zone 141B, local zone indicating panel (LZIP) 1S48; (rooms 114, 116, and 125).
		• Containment HVAC purge supply isolation damper 1HV-2627B (ORC) QHVC light indication extinguishes.
	11:01	Security dispatches officer to investigate door alarm.
	11:01	Fire protection technician dispatched to LZIP 1S48.
	11:05	Security officer calls in to report conditions. (Steam flowing out, scattered debris, door blown off).

SCENARIO TIME LINE

CLASS	TIME	EVENT
	11:06	Fire protection tech calls in to report fire alarm investigation information.
		• Containment HVAC purge supply isolation damper 1HV-2627B and associated piping discovered breached due to bomb.
GENERAL	11:15	GENERAL EMERGENCY declared due to the breach or challenge of three of three fission product barriers.
		• Protective Action Recommendations (PAR's): Evacuate Zones A, C-5, D-5, E-5, F-5, SRS to 2 miles. Shelter the remainder of the plume EPZ.
	12:00	1HV-2626B is shut, isolating the release path.
	12:30	Emergency Terminated and Recovery Organization activated.
	13:00	Drill Terminated.

1993 NRC GRADED EXERCISE
AUGUST 4, 1993

SIMULATOR SCRIPT

A. SIMULATOR SETUP

1. Reset to IC #14.

2. IC Setup:

   a. Place containment mini-purge in service per SOP 13125-1.
   b. Place RHR "A" handswitch, 1HS-0620 in PTL.
   c. Fail pressurizer level channel 461 to 0%. Malf # PR03C.
   d. Trip channel 461 bistables. Remote Function ES27.
   e. Acknowledge annunciators.

3. Snap a temporary IC (Snapshot IC #_____).

4. Run and catalog the following programs:

   a. (TOM) G.CHL1.AUG Seg 1
   b. (TOM) G.CHL2.AUG Seg 1
   c. (TOM) G.CHL3.AUG Seg 2
   d. (TOM) G.RM.AUG Seg 10
   e. (TOM) G.SISL.AUG Seg 11

5. Reset to temporary IC.

6. Control Board Setup:

   a. Set control rod step counters to 228 steps on Bank D
   b. Ensure operator aid for ΔI target @ MOL is in place on QMCB panel 'C'.
   c. Place hold tag on 1HS-0620, "A" RHR pump
   d. Ensure BAST analysis on the boron meter sample board is 7200 ppm.
   e. Ensure Accumulator sample analysis is updated.
   f. Set the ERF computer to MODE 1

7. Insert the following malfunctions:

   a. "RHR pump trip" (RHR pump 2), malfunction RH01B
   b. "Containment mini-purge supply isolation damper 1HV-2626B fails to close", YP:XMFB(269) = T

8. Parameters to Monitor:

   a. EDCLOCK
   b. RMCNTR2
   c. RMCNTR3
   d. CHFMLEAK
   e. SIV8801A

9. Check / Set ERF computer and simulator clocks.

SIMULATOR SCRIPT

B. EXERCISE SETUP

1. Conduct pre-drill briefing with simulator players using message **#1**.

C. EXERCISE

08:00 Place simulator in **RUN**

08:05 Insert malfunction **RD13I**, "Dropped RCCA H-8 CBD"

08:05 + If attempts are made to close HV-2626B by pulling the fuses to solenoid, Insert malfunction **YP:XMFTB(266)=T**. (NOTE: This will not close HV-2626B because of the override)

08:22 Insert annunciator override **464,ON**, "GFFD Alarm"

09:30 Insert malfunction **RD16**, "RCCA H-8 ejected"

09:30 + If the operators attempt to decrease ECCS flow by throttle methods directed from EOP 19111-C, then insert remote function "HV-8801A BIT isolation valve position" as follows:

a. **SET YREMFADD(17)=1.0 ⇨ 0.0** (as desired)
b. **SB YP:REMF(241)=T**

11:00 Insert the following malfunctions to trip the mini-purge supply HVAC unit 1-1505-B7-002-M01, remove indicating lights from 1HS-2627B, and create a 14" diameter breach in containment:

a. **YP:XMFTB(265)=T**; "Explosion"
b. **YP:XMFTB(172)=T**, and **YPXSVRTY(149)=50.0**; "Containment Leak to Atmosphere"

11:25 Insert malfunction **FP02 @ 10%**, "Fire Protection System Acutation (Motor Driven Fire Pump)"

12:00 Remove "Containment mini-purge supply isolation damper 1HV-2626B fails to close", **YP:XMFB(269)=F** and remove malfunction "Containment Leak to Atmosphere" by setting **YP:XMFTB(172)=F**

13:00 Terminate the Drill upon the direction of the Lead Controller.

13:00 + Run and catalog the following programs:

a.	(SRCE) G.CHL1	Seg 1
b.	(SRCE) G.CHL2	Seg 1
c.	(SRCE) G.CHL3	Seg 2
d	(SRCE) G.RM	Seg 10
e.	(SRCE) G.SISL	Seg 11

IN-PLANT MESSAGE

TO: Control Room Operations/Maintenance Manager/ General Manager

TIME: 0800

FROM: All Onsite Lead Controllers

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

INITIAL CONDITIONS

MESSAGE:

Unit 2 is in a refueling outage.

- The reactor is de-fueled.

Unit 1 is in Mode 1 at MOL in Cycle 5, operating at 100% power.

- The unit has been on line for 135 days.
- Containment mini-purge is in service (release permit # 93099-G) in preparation for a containment entry to repair the transmitter for 1LT-461.
- All control systems are in automatic.

Key Unit 1 Parameters:

- Reactor Power = 100%
- RCS at NOTP
- RCS boron concentration = 1003 ppm (BAST = 7100 ppm)
- Pressurizer level and Steam Generator levels at program
- Core burnup = 9000 MWD/MTU

Unit 1 Systems / Equipment Out Of Service

① Pressurizer level channel "461" due to a faulty transmitter. I&C preparing for containment entry to replace the transmitter.

② RHR "A" train out of service (72 hour LCO bearing replacement) scheduled to return to service 1600 August 5.

Meteorological Data:

- Wind Direction 90° (from)
- Wind Speed 2.3 mph
- Temperature 80°
- Stability Class B
- Precipitation 0" in the past 24 hours

THIS IS A DRILL

IN-PLANT MESSAGE

TO: PEO at Bank "D" control panel (Dropped Rod H-8) **TIME:** 0810

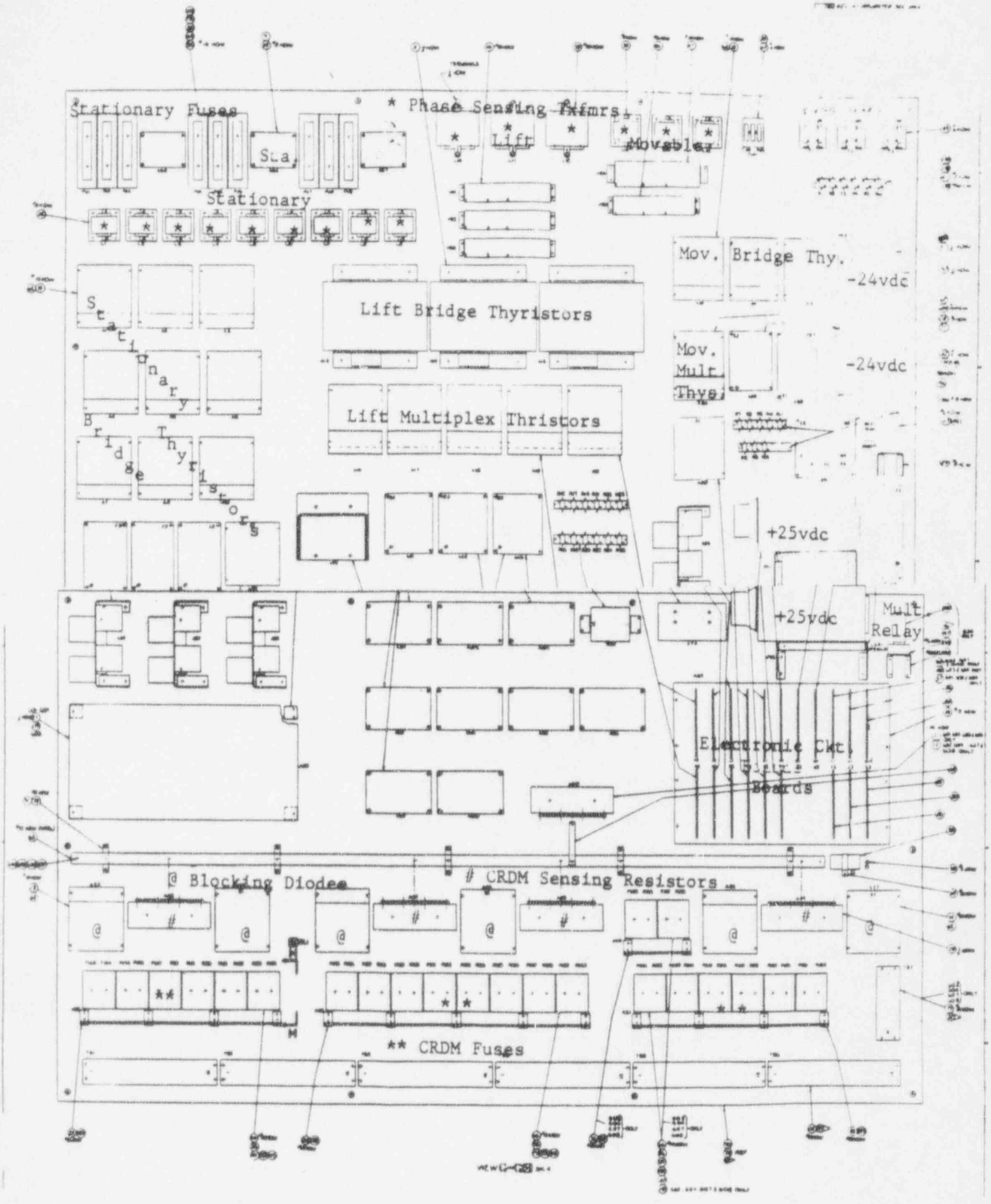
FROM: PEO Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Use attached drawings to convey appropriate conditions.

THIS IS A DRILL



ROD CONTROL POWER CABINET

IN-PLANT MESSAGE

TO: I&C Technician Team (Dropped Rod H-8), (Room B71 Control Building)

TIME: 0815

FROM: I&C Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Provide the following indications of a blown stationary gripper fuse.

Cabinet number 2BD; Fuse "27" pop out indicator is visible.

CONTROLLER INFORMATION: Cabinet 2BD is located in Room B-71 of the Control Building.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Chemistry Staff (Primary Lab - Control Building) **TIME:** 0822

FROM: Chemistry/HP Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Personnel EDRD's are alarming and the Area Rad Monitor (ARE-0007B) is alarming.

CONTROLLER INFORMATION: Issue only when chemistry personnel approach sample area to collect chemistry sample.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Primary Lab Personnel (Control Building) **TIME:** 0822

FROM: Chemistry Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

The display reading for Sample Sink Area Radiation Monitor (ARE-0007B) is 7.5E+2 mr/hr.

CONTROLLER INFORMATION: Hang this message over the display window of monitor.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Simulator Crew **TIME:** 0822

FROM: Simulator Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Gross Failed Fuel Detector (GFFD) chart is reading off-scale high. Meter is off-scale high on wide & narrow range. Low (flow) alarm light is off. High alarm light is on.

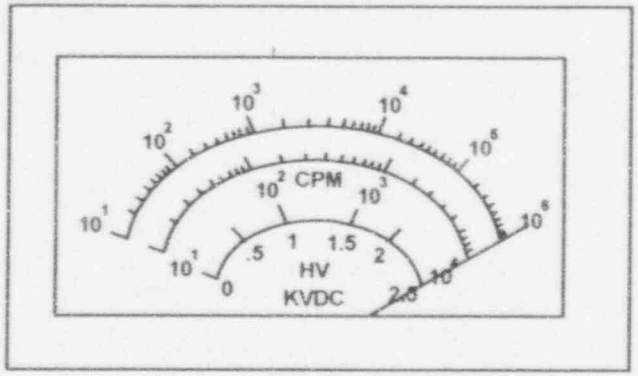
TOS Wide Range: 1×10^6 cpm

TOS Narrow Range: 1×10^4 cpm

CONTROLLER INFORMATION: Issue to operator only when looking at GFFD meter. Use Attached Drawings.

THIS IS A DRILL

GROSS FAIL FUEL DETECTOR

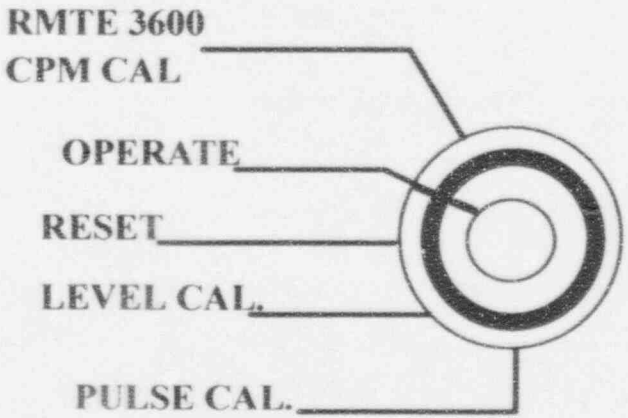


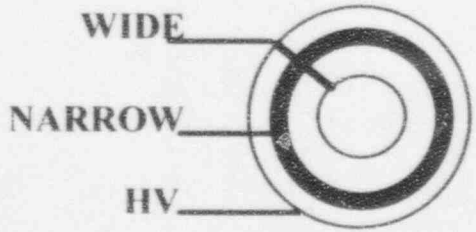
POWER ON	CHANNEL TEST		LOW ALARM

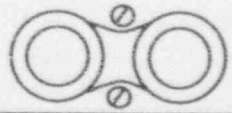
NEUTRON CHANNEL

OPERATION SELECTOR

RANGE SELECTOR

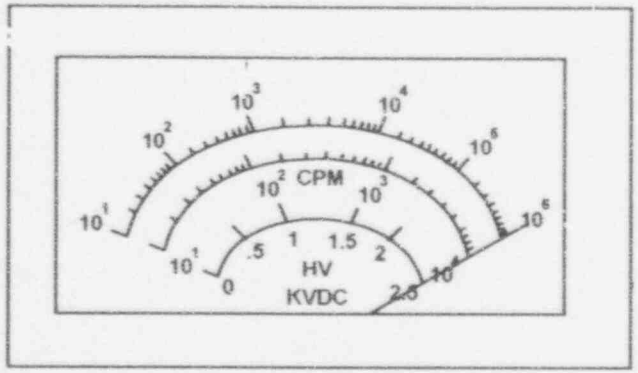






2A SLO BLOW

GROSS FAIL FUEL DETECTOR

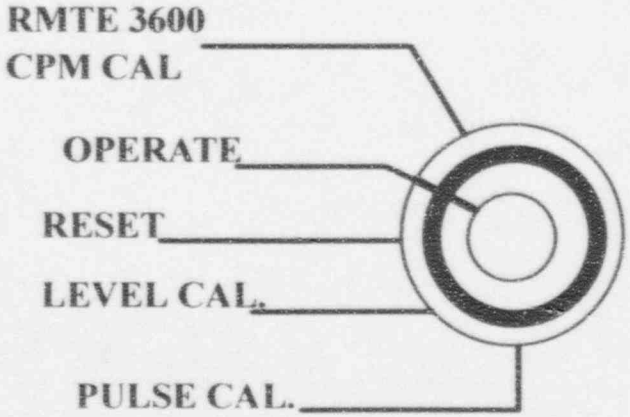


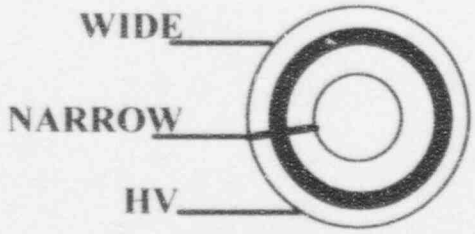
POWER ON	CHANNEL TEST		LOW ALARM

NEUTRON CHANNEL

OPERATION SELECTOR

RANGE SELECTOR





IN-PLANT MESSAGE

TO: PEO or Maintenance Team **TIME:** 0825+

FROM: HP Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Do not allow simulated containment entry if team is ready prior to 9:30. After 9:30 containment conditions will not allow entry.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Primary Lab Chemistry Staff **TIME:** 0835

FROM: Chemistry/HP Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Chemistry must use PASS to obtain RCS sample.

CONTROLLER INFORMATION: Issue only if Operations does not request PASS sample from Chemistry.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Shift Superintendent **TIME:** 0835+

FROM: Simulator Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Declare an **ALERT** based on:

A breach or challenge of 1 of 3 fission product barriers.

CONTROLLER INFORMATION: Issue only on direction from Lead Controller.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Shift Superintendent/Control Room
Plant Page Communicator

TIME: 0835+

FROM: Simulator/Control Room Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

I. Make this announcement after you receive call from Simulator Plant Page Communicator.

a. "ATTENTION ALL PERSONNEL - **THIS IS A DRILL** - AN ALERT HAS BEEN DECLARED FOR UNIT 1 DUE TO FUEL DAMAGE.

b. EMERGENCY RESPONSE PERSONNEL REPORT TO YOUR EMERGENCY RESPONSE FACILITY.

c. "PERSONNEL WORKING (ON/IN) _____ CALL CONTROL ROOM AT EXTENSION _____ AND CONTINUE WORK".

d. ALL OTHER PERSONNEL EXIT THE PROTECTED AREA AND REPORT TO THE ADMINISTRATION BUILDING. **THIS IS A DRILL**.

II. Sound the alarm for an Alert - Warble Tone (15 seconds).

III. Repeat the announcement from Step I.

CONTROLLER INFORMATION: Note that assembly and accountability will actually be performed.

Use this if ALERT is declared due to fission product barrier breach/challenge.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Emergency Director **TIME:** 0840+

FROM: Lead Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Use this script for **EARLY DISMISSAL** announcement:

THIS IS A DRILL

"ATTENTION ALL PERSONNEL. ATTENTION ALL PERSONNEL. THE EMERGENCY DIRECTOR HAS DIRECTED A SIMULATED EARLY DISMISSAL. TAKE NO EARLY DISMISSAL ACTION BECAUSE THIS IS A DRILL."

(Repeat announcement)

CONTROLLER INFORMATION: Early Dismissal can be ordered any time after declaration of Alert Emergency. Give this message to the ED if and when he decides Early Dismissal is appropriate.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Shift Superintendent/Control Room
Plant Page Communicator

TIME: 0845+

FROM: Simulator/Control Room Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

I. Make this announcement after you receive call from Simulator Plant Page Communicator.

a. "ATTENTION ALL PERSONNEL - **THIS IS A DRILL** - AN ALERT HAS BEEN DECLARED FOR UNIT 1 DUE TO FUEL DAMAGE.

b. EMERGENCY RESPONSE PERSONNEL REPORT TO YOUR EMERGENCY RESPONSE FACILITY.

c. "PERSONNEL WORKING (ON/IN) _____ CALL CONTROL ROOM AT EXTENSION _____ AND CONTINUE WORK".

d. ALL OTHER PERSONNEL EXIT THE PROTECTED AREA AND REPORT TO THE ADMINISTRATION BUILDING. **THIS IS A DRILL**.

II. Sound the alarm for an Alert - Warble Tone (15 seconds).

III. Repeat the announcement from Step I.

CONTROLLER INFORMATION: Second announcement during accountability.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Shift Superintendent/Control Room
Plant Page Communicator

TIME: 0855+

FROM: Simulator/Control Room Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

I. Make this announcement after you receive call from Simulator Plant Page Communicator.

a. "ATTENTION ALL PERSONNEL - **THIS IS A DRILL** - AN ALERT HAS BEEN DECLARED FOR UNIT 1 DUE TO FUEL DAMAGE.

b. EMERGENCY RESPONSE PERSONNEL REPORT TO YOUR EMERGENCY RESPONSE FACILITY.

c. "PERSONNEL WORKING (ON/IN) _____ CALL CONTROL ROOM AT EXTENSION _____ AND CONTINUE WORK".

d. ALL OTHER PERSONNEL EXIT THE PROTECTED AREA AND REPORT TO THE ADMINISTRATION BUILDING. **THIS IS A DRILL**.

II. Sound the alarm for an Alert - Warble Tone (15 seconds).

III. Repeat the announcement from Step I.

CONTROLLER INFORMATION: Third announcement during accountability.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: OSC Repair Team (A-Train RHR Pump) **TIME:** 0900+

FROM: OSC Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

The new lower motor bearing was damaged during installation. The replacement should arrive by federal express today at 1600 hours.

CONTROLLER INFORMATION: This message should be issued to the team that was working on "A" train RHR pump motor replacement.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Simulator (Extension 4369) **TIME:** 0905

FROM: Injured Individual
(Medical Emergency Lead Controller)

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

"(This is a drill). I need help in the Administration Building Auditorium. _____ has fallen and is complaining of chest pains. **(This is a drill)"**.

CONTROLLER INFORMATION: The injured individuals co-worker should telephone the above report into the Simulator (Extension 4369). Do not transmit any additional information.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Shift Superintendent **TIME:** 0906+

FROM: Simulator/Control Room Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Page 911 for first responders.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Control Room Page (Controller) **TIME:** 0910

FROM: TSC Lead Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

"All personnel who assembled in the Administration Building as part of the assembly/accountability return to your work stations".

CONTROLLER INFORMATION: Issue after assembly and accountability have been completed and not later than 1 hour after the start of assembly and accountability (declaration of Alert).

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Medical Emergency Response Team **TIME:** 0915+

FROM: Medical Emergency Lead Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Upon arriving at the Admin. Building Auditorium you observe a man lying on the floor. He is conscious and agitated.

MEDICAL SYMPTOMS:

Conscious and complaining of chest pain, shortness of breath. Skin is pale and clammy. Patient clutching his chest. Patient has taken two nitroglycerin with no relief.

CONTROLLER INFORMATION: Simulator/Control Room telephone 4369

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Medical Emergency Response Team **TIME:** 0915+

FROM: Observation (Medical Emergency Lead Controller)

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

	Pulse (beats per min)	Blood Pressure	Respirations (per minute)	Notes
when found	80	100/60	shallow	Labored breathing, chest pains
15 mins later	84	106/60	shallow	Irregular respirations, shortness of breath
30 mins later	84	100/60	shallow	same

CONTROLLER INFORMATION: First responders should reassure the patient and keep patient calm. Other expected actions by the first responders are taking vital signs and packaging patient for transport.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: TSC Manager **TIME:** 0915+

FROM: TSC Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Ambulance should simulate transport of injured person to Burke County Hospital.

CONTROLLER INFORMATION: Hand to TSC Manager only in the event he is unsure where ambulance should go. Ambulance will not actually arrive at the plant site nor transport patient to hospital.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: HP Supervisor in TSC **TIME:** 0930

FROM: TSC Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

PERMS data no longer available on PERMS CRT.

CONTROLLER INFORMATION: Hang message over face of PERMS CRT.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: HP Supervisor/HP Control Point **TIME:** 0930

FROM: HP Control Point Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

PERMS data no longer available on PERMS CRT.

CONTROLLER INFORMATION: Hang message over face of PERMS CRT.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: PEO responder
("B" Train RHR - Rm A-50 Control Building)

TIME: 0940+

FROM: PEO Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Describe scene to OSC repair team player.

GREEN LIGHT ON
RED LIGHT OFF

If upper cubicle door is opened the red light resistor is charred.

CONTROLLER INFORMATION: Do not give upper cubicle information unless PEO opens door.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: OSC Repair Team
("B" Train RHR - Rm A-50 Control Building)

TIME: 0940+

FROM: OSC Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Describe scene to OSC Repair Team player.

GREEN LIGHT ON
RED LIGHT OFF

If upper cubicle door is opened the red light resistor is charred.

CONTROLLER INFORMATION: Repair personnel could simulate pulling a resistor from any other equipment with a red indicating light which is not operating (example "A" Train RHR).

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Shift Superintendent **TIME:** 0945+

FROM: Simulator Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Declare a **SITE AREA EMERGENCY** based on:

A breach or challenge of 2 of 3 fission product barriers.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Shift Superintendent/Control Room
Plant Page Communicator

TIME: 0945+

FROM: Simulator/Control Room Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

I. Make this announcement after you receive call from Simulator Plant Page Communicator.

a. "ATTENTION ALL PERSONNEL - **THIS IS A DRILL** - A SITE AREA EMERGENCY HAS BEEN DECLARED FOR UNIT 1 DUE TO A LARGE BREAK LOCA INSIDE CONTAINMENT/LOSS OF SECOND FISSION PRODUCT BARRIER."

b. EMERGENCY RESPONSE PERSONNEL CONTINUE TO WORK ON SIMULATED EMERGENCY DUTIES."

II. Sound the alarm for a Site Area Emergency - Pulse Tone (15 seconds).

III. Repeat the announcement from Step I.

CONTROLLER INFORMATION: Use this if a Site Area Emergency is declared due to product barriers breach/challenge.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Simulator Control Room (Ext. 4369) **TIME:** 1045

FROM: Disgruntled Employee (Controller)

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

"THIS IS A DRILL. THIS IS A DRILL.

I have placed a bomb in the protected area and it will go off at about 1100 this morning and you can't do a thing about it. I'll teach you people not to treat me the way you do. **THIS IS A DRILL."**

CONTROLLER INFORMATION: Read this message and give **No** additional information.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Simulated Control Room **TIME:** 1100

FROM: TSC/OSC CONTROLLERS

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Make announcement to **ALL** players

"You have just now heard a loud thump.

THIS IS A DRILL"

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Control Room Fire Technician **TIME:** 1100

FROM: Simulator Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

The Fire Computer has reported: Fire Alarm Zone 141B

Fire Alarm LZIP 1S48

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Simulator Control Room Operators that respond to Seismic Panel

TIME: 1100

FROM: Simulator Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

The "EVENT INDICATOR" located at SM-3 Control Rack of Seismic Control Panel (ANCQSIP) is "ON" and alarming. (white flag is showing)

CONTROLLER INFORMATION: Issue only after simulator personnel arrive at SMA-3 control rack of the seismic control panel.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: SAS/CAS Operators **TIME:** 1100

FROM: Security Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Door 1C108 has an Alarm.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Simulator Shift Superintendent **TIME:** 1100

FROM: Simulator Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

ALL Seismic Equipment is working properly.

CONTROLLER INFORMATION: Issue if I&C is requested to inspect seismic equipment.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Security Officers at Unit 1 HVAC Containment Purge Supply Equipment Room

TIME: 1105+

FROM: Security Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Upon arriving at the scene you observe that there is steam filling the room from a broken pipe. (Rooms 114, 116, 125). The door has been torn from its hinges and there is **NO** fire or smoke present, only steam.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Fire Protection Tech/PEO **TIME:** 1110+

FROM: Security Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

The door to rooms 114, 116, and 125 has been torn from its hinges. The HVAC outside air intake louvers have also been blown out and are damaged.

The containment HVAC piping before and up to HV-2627B is flared with jagged edges and is open to the environment and steam is coming out the pipe.

There are blast marks around the room.

CONTROLLER INFORMATION: If personnel go into containment HVAC equipment room they will be contaminated.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: OSC Repair Teams **TIME:** 1110+

FROM: OSC Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

After completing inspection of Rooms 114, 116, and 125 you observed the following:

- Panel 1NB1702N door is open with charring inside.
- TV-12432C equipment bldg. HVAC outside air intake louvers are blown out.
- Some sections of the expand -o- flash around the outside of room is blown away.
- The containment HVAC piping coming out of PEN 83 up to valve HV-2627B is blown away. The end of the containment side of pipe is flared with jagged edges.

CONTROLLER INFORMATION: These team members should be decontaminated upon exit of rooms if not properly dressed out.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Shift Superintendent **TIME:** 1123+

FROM: Simulator Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Upgrade to **GENERAL EMERGENCY** based on:

A breach or challenge of 3 of 3 fission product barriers.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Shift Superintendent/Control Room
Plant Page Communicator

TIME: 1123+

FROM: Simulator/Control Room Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

I. Make this announcement after you receive call from Simulator Plant Page Communicator.

a. "ATTENTION ALL PERSONNEL - **THIS IS A DRILL** - A GENERAL EMERGENCY HAS BEEN DECLARED FOR UNIT 1 DUE TO A BREACH OR CHALLENGE OF 3 OF 3 FISSION PRODUCT BARRIERS."

b. EMERGENCY RESPONSE PERSONNEL CONTINUE TO WORK ON SIMULATED EMERGENCY DUTIES."

II. Sound the alarm for a General Emergency - Yelp Tone (15 seconds).

III. Repeat the announcement from Step I.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Control Room Fire Technician **TIME:** 1125+

FROM: Simulator Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

The fire computer has reported:

Electric fire Pump is running

THIS IS A DRILL

IN-PLANT MESSAGE

TO: PEO/OSC Teams **TIME:** 1125+

FROM: Operations/OSC Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Post Indicating Valve 1-2301-U4-391 (fire water to unit 1 turbine building) is leaking water at the point where the valve enters the ground. (approximately 25 gallons per minute)

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Health Physics Decon Team **TIME:** 1130+

FROM: Health Physics Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Initial Contamination Survey Data:
Overall body - 50k cpm
Face - Chin - 30k cpm

Decontamination Survey Data:

After 1st decontamination efforts:
Overall body - 10k cpm
Face - 5k cpm

After 2nd decontamination efforts:
Overall body 2k cpm
Face - <100 cpm

After 3rd decontamination efforts:
Overall body - <100 cpm

CONTROLLER INFORMATION: These contamination levels are for all personnel that initially enter Rooms 114, 116 and 125 of the control building.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: Emergency Director, TSC Manager, OSC Manager **TIME:** 1215+

FROM: EOF Controller, TSC Lead Controller, OSC Lead Controller

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Time is advanced 48 hours.

Plant conditions have stabilized.

A RCS leak still exists but the core is covered and decay heat is being removed with RHR in hot leg recirc mode. Both trains of RHR are operational.

Plant Temperatures is 112°F.

The release of radioactivity from containment has stopped.

Containment is full of radioactive gas. RE-002/003 read 100 mrem/hr.

Make plans to enter Recovery and establish an Initial Recovery Organization.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: All Players **TIME:** 1300+

FROM: All Controllers

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

DRILL TERMINATED

All Players please complete critique forms and participate in critique process.

CONTROLLER INFORMATION: Issue only after approval of Lead Exercise Controller.

THIS IS A DRILL

IN-PLANT MESSAGE

TO: All Participants **TIME:** 1300+

FROM: Control Room Plant Page Communicator

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

I. Make this announcement after you receive call from Simulator Plant Page Communicator.

"ATTENTION ALL PERSONNEL "

ALL DRILL ACTIVITIES ARE TERMINATED.
ALL DRILL ACTIVITIES ARE TERMINATED"

CONTROLLER INFORMATION: Simulated Control Room telephone 4369 or 4370.

THIS IS A DRILL

VOGTLE ELECTRIC GENERATING PLANT
RADIOCHEMISTRY ANALYSIS SYSTEM

NID QUALITY CONTROL REPORT

TITLE : Unit 1 RCS HOT LEG - LOOP 3 - DEGASSED LIQ
SAMPLE # : 2650-93 SAMPLE GEOMETRY : SCIN_S0
SAMPLE TYPE : DEGASSED LIQ SAMPLE QUANTITY : 8.00000E+00
COUNT TIME : 04-Aug-1993 02:44:08.00 REACTOR UNIT # : 1
SAMPLE TIME : 04-Aug-1993 01:05:00.00 OPERATOR NAME : AROBERSON

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR UCI/ML	COMMENTS
F-18	511.00	-0.14	1.022E-01	* Peak FWHM Suspect
NA-24	1368.53	-0.15	3.347E-03	Nuclide QA Results OK
CL-38	1642.42	0.25	8.852E-04	* Count Rate Error >50%
CR-51	320.08	-0.27	2.438E-02	Nuclide QA Results OK
MN-54	834.83	-0.05	1.189E-02	Nuclide QA Results OK
MN-56	1810.69	-0.28	1.186E-03	Nuclide QA Results OK
CO-57	122.06	0.02	2.565E-04	Nuclide QA Results OK
CO-58	810.76	-0.05	8.562E-02	Nuclide QA Results OK
FE-59	1099.22	-0.11	3.775E-03	Nuclide QA Results OK
CO-60	1332.47	-0.09	5.775E-03	Nuclide QA Results OK
NB-95	765.79	-0.07	4.730E-03	Nuclide QA Results OK
ZR-95	756.72	-0.07	3.045E-03	Nuclide QA Results OK
NB-97	657.90	-0.36	1.198E-03	Nuclide QA Results OK
ZR-97	743.36	-0.12	3.844E-04	Nuclide QA Results OK
SN-113	391.69	-0.26	3.968E-04	Nuclide QA Results OK
I-133	529.87	-0.32	3.436E-04	Nuclide QA Results OK
CS-134	795.85	-0.07	1.080E-03	Nuclide QA Results OK
I-134	847.03	0.14	5.350E-03	Nuclide QA Results OK
I-135	1260.41	-0.03	8.149E-04	Nuclide QA Results OK
XE-135	249.79	-0.41	7.680E-05	* Peak FWHM Suspect * Count Rate Error >30%
CS-137	661.65	-0.11	1.263E-03	Nuclide QA Results OK
CE-144	133.20	-0.37	1.814E-03	* Peak FWHM Suspect
W-187	479.53	-0.21	5.167E-04	* Count Rate Error >30%
AVG ENERGY DIFF =		-0.14	2.603E-01	= TOTAL GAMMA ACTIVITY

Dose Equivalent Iodine-131 = 1.060E-04

133.57 KeV Peak was used in identifying 2 isotopes
846.89 KeV Peak was used in identifying 2 isotopes
1038.70 KeV Peak was used in identifying 2 isotopes

UNIDENTIFIED PEAKS

ENERGY	NET AREA	FWHM	CTS/SEC	ERROR
61.10	612.	0.88	5.097E-01	45.84
172.23	795.	1.84	6.622E-01	34.64

REPORT NAME : QA CHECK
REPORT DATE : 04-Aug-1993 01:41:51.94

VOGTLE ELECTRIC GENERATING PLANT
RADIOCHEMISTRY ANALYSIS SYSTEM

NID QUALITY CONTROL REPORT

TITLE : Unit 1 RCS HOT LEG - LOOP 3 - DISSOLVED GAS
SAMPLE # : 2648-93
SAMPLE TYPE : DISSOLVED GAS
COUNT TIME : 04-Aug-1993 01:23:16.00
SAMPLE TIME : 04-Aug-1993 01:05:00.00
SAMPLE GEOMETRY : 14GAS_S0
SAMPLE QUANTITY : 2.00000E+00
REACTOR UNIT # : 1
OPERATOR NAME : AROBERSON

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR UCI/CC	COMMENTS
AR-41	1293.64	0.09	1.550E-02	Nuclide QA Results OK
KR-85M	151.18	0.01	1.141E-04	Nuclide QA Results OK
KR-87	402.58	0.26	2.883E-04	* Count Rate Error >30%
XE-135	249.79	-0.17	5.153E-04	Nuclide QA Results OK
XE-135M	526.56	-0.13	4.855E-04	Nuclide QA Results OK
XE-138	434.49	-0.17	1.856E-03	* Count Rate Error >30%
AVG ENERGY DIFF =		-0.02	1.876E-02 = TOTAL GAMMA ACTIVITY	

UNIDENTIFIED PEAKS

ENERGY	NET AREA	FWHM	CTS/SEC	ERROR
196.40	297.	1.52	2.966E-01	25.41
462.25	77.	1.77	7.727E-02	39.08
511.06	26825.	2.37	2.683E+01	0.70
810.93	39.	1.28	3.911E-02	51.15
889.67	28.	1.39	2.827E-02	50.58
1436.24	23.	2.08	2.283E-02	39.18

Total Unidentifed Peaks = 6
% Unidentified Peaks = 42.86

REVIEWED BY : Douglas M [illegible] DATE : 8/4/93

APPROVED BY : R. Carver DATE : 8-4-93

REPORT NAME: QA CHECK
REPORT DATE: 4-AUG.-1993 10:20:57

VOGTLE ELECTRIC GENERATING PLANT
RADIOCHEMISTRY ANALYSIS SYSTEM
NID QUALITY REPORT

TITLE: UNIT # 1 PASS
SAMPLE #: 2649-93
SAMPLE TYPE: LIQUID
OPERATOR: MARVIN MUDDLE

ISOTOPE	PEAK ENERGY	DECAY CORR UCI/CC
Kr-85m	151.18	2.28E0
Kr-87	402.58	2.42E+1
Kr-88	196.32	1.60E+2
Xe-131m	164.01	1.31E+1
Xe-133	81.00	2.3E+2
Xe-133m	233.14	8.5E+1
I-131	364.48	9.6E+1
I-132	667.69	1.4E+2
I-133	529.87	1.4E+2
I-135	1280.4	2.1E+2
Cs-134	795.85	1.15E-2
Te-132	230.0	1.17E-1
Ba-140	537.0	1.90E-1
Pr-144	695.1	1.5E-1

TOTAL GAMMA ACTIVITY 1.10E+3 uCi/cc

REVIEWED BY: _____

APPROVED BY: _____

REPORT NAME: QA CHECK
REPORT DATE: 4-AUG.-1993 10:30:37

VOGTLE ELECTRIC GENERATING PLANT
RADIOCHEMISTRY ANALYSIS SYSTEM
NID QUALITY REPORT

TITLE: UNIT # 1 PASS
SAMPLE #: 2650-93
SAMPLE TYPE: CONTAINMENT ATMOSPHERE
OPERATOR: MARVIN MUDDLE

ISOTOPE	PEAK ENERGY	DECAY CORR UCI/CC
Kr-85m	151.18	3.09E-4
Kr-87	402.58	8.80E-6
Kr-88	196.32	5.89E-5
Xe-131m	164.01	4.72E-6
Xe-133	81.00	8.40E-5
Xe-133m	233.14	3.09E-5
I-131	364.48	3.49E-5
I-132	667.69	5.16E-5
I-133	529.87	5.01E-5
I-135	1280.4	7.6-E-5

TOTAL GAMMA ACTIVITY 7.08E-4 uCi/cc

REVIEWED BY: _____

APPROVED BY: _____

IN-PLANT HP SURVEY DATA

TABLE FHB A-1

TIME **0930** **FOX**

AMBIENT RADIATION LEVELS mR/hr

AREA		
A-1	150	150
A-2	5	5
A-3	2.5	2.5
A-4	As Read	As Read

*** NOTE: 200 mR/hr VALUE IS AT THREE FT WITH LID OFF OF SAMPLE TRANSPORT PIG AS PASS PANEL. CONTACT DOSE ON SIDE OF SAMPLE TRANSPORT PIG IS 20 mR/hr. There is a reading of 2R/hr on contact.**

AIRBORNE RADIOACTIVITY LEVELS

GENERAL AREAS "AS READ FOR THE DURATION OF THE EXERCISE"

LOOSE SURFACE CONTAMINATION LEVELS

GENERAL AREAS "AS READ FOR THE DURATION OF THE EXERCISE"

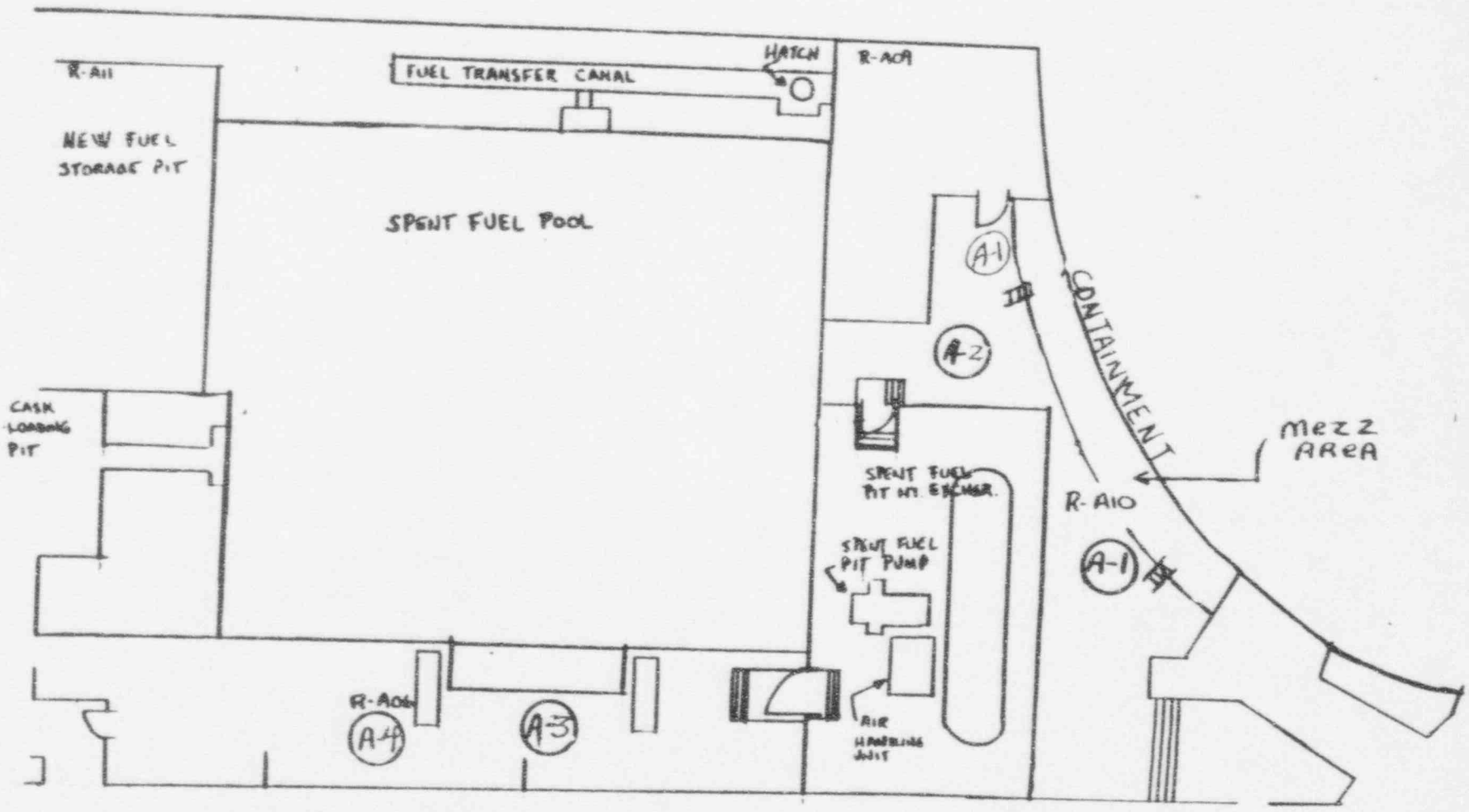


FIGURE FHB A-1

IN-PLANT HP SURVEY DATA

TIME	0800 0930	0931 1000	1001 1030	1031 1100	1101 1200	1201 FOX

AMBIENT RADIATION LEVEL POINT OF RELEASE mR/hr

AREA						
A1	AS READ	150	150	150	1,500	150
A2	AS READ	20	20	20	1000	20
A3	AS READ	5	5	5	700	5
A4	AS READ	150	150	150	750	150
A5	AS READ	20	20	20	750	20
A6	AS READ	150	150	150	2000	150
A7	AS READ	150	150	150	150	150
A8	AS READ	AS READ	AS READ	AS READ	10	AS READ
A9	AS READ	AS READ	AS READ	AS READ	200	AS READ
A10	AS READ	AS READ	AS READ	AS READ	350	AS READ
A11	AS READ	AS READ	AS READ	AS READ	200	AS READ
A12	AS READ	AS READ	AS READ	AS READ	40	AS READ

IN-PLANT HP SURVEY DATA

AIRBORNE RADIOACTIVITY LEVELS

NOTE

LEVELS "AS READ" UNTIL 1100 HOURS

1100 - FOX

ISOTOPE	ACTIVITY µCi/cc
Kr-85m	3.09E-3
Kr-87	8.8E-5
Kr-88	5.89E-4
Xe-131m	4.72E-4
Xe-133	8.4E-4
Xe-133m	3.1E-4
I-131	4.59E-7
I-132	5.16E-7
I-133	5.01E-8
I-135	7.6E-6
Co-58	6.2E-8
Cs-134	3.1E-7
Cs-137	4.7E-8

IN-PLANT HP SURVEY DATA

LOOSE SURFACE CONTAMINATION LEVELS

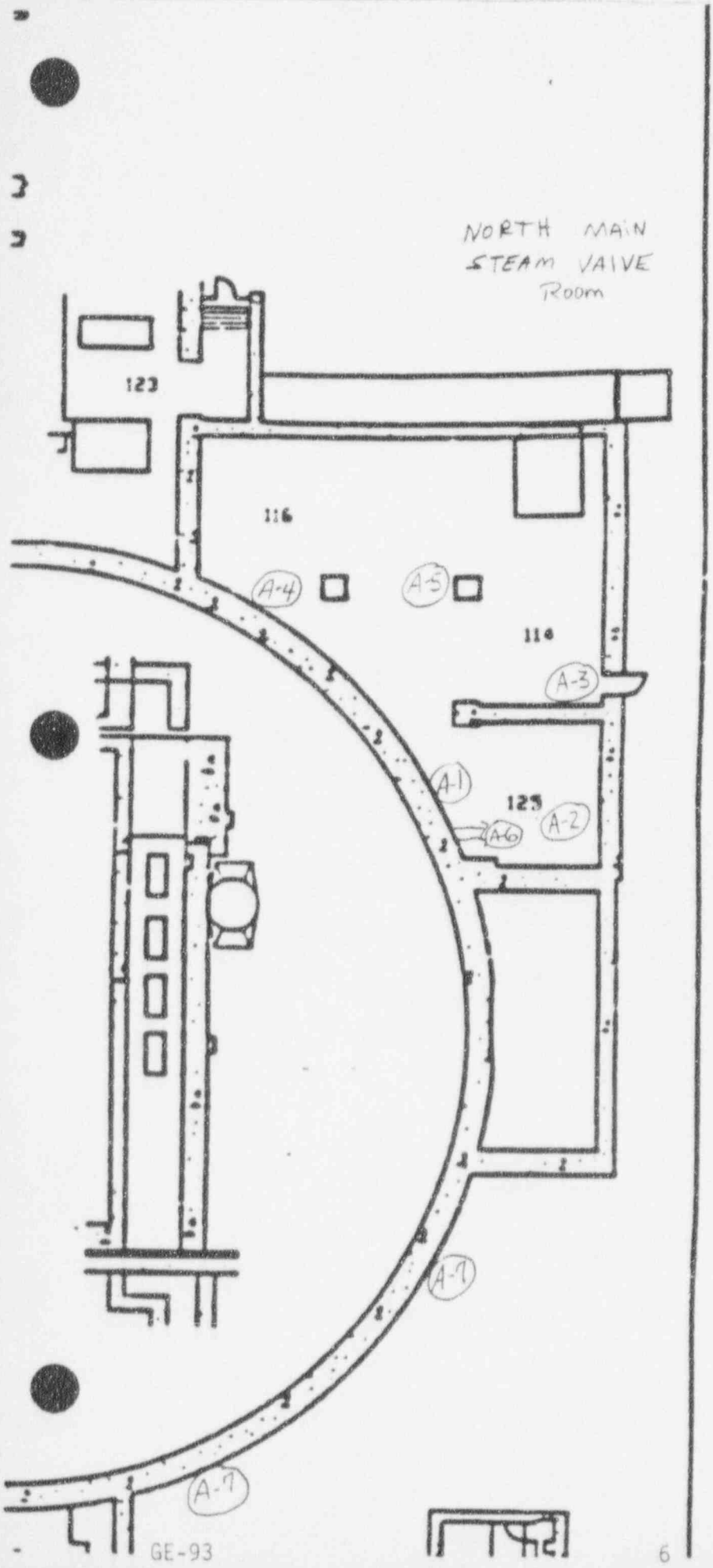
NOTE

LEVELS "AS READ" UNTIL 1100 HOURS

1100 - FOX

AREA

Rooms 114, 116, 125	200 mRAD/hr smearable
A10	5 mRAD/hr smearable
A9 & A11	AS READ
A8 & A12	AS READ



A-8

A-9

A-10

A-11

A-12

LEVEL 1
Unit 1

IN-PLANT HP SURVEY DATA

LEVEL "A" UNIT 1

TIME	0800	0930 FOX

AMBIENT RADIATION LEVELS mR/hr

AREA		
A-1	AS READ	100
A-2	AS READ	5

AIRBORNE RADIOACTIVITY LEVELS

GENERAL AREAS "AS READ FOR THE DURATION OF THE EXERCISE"

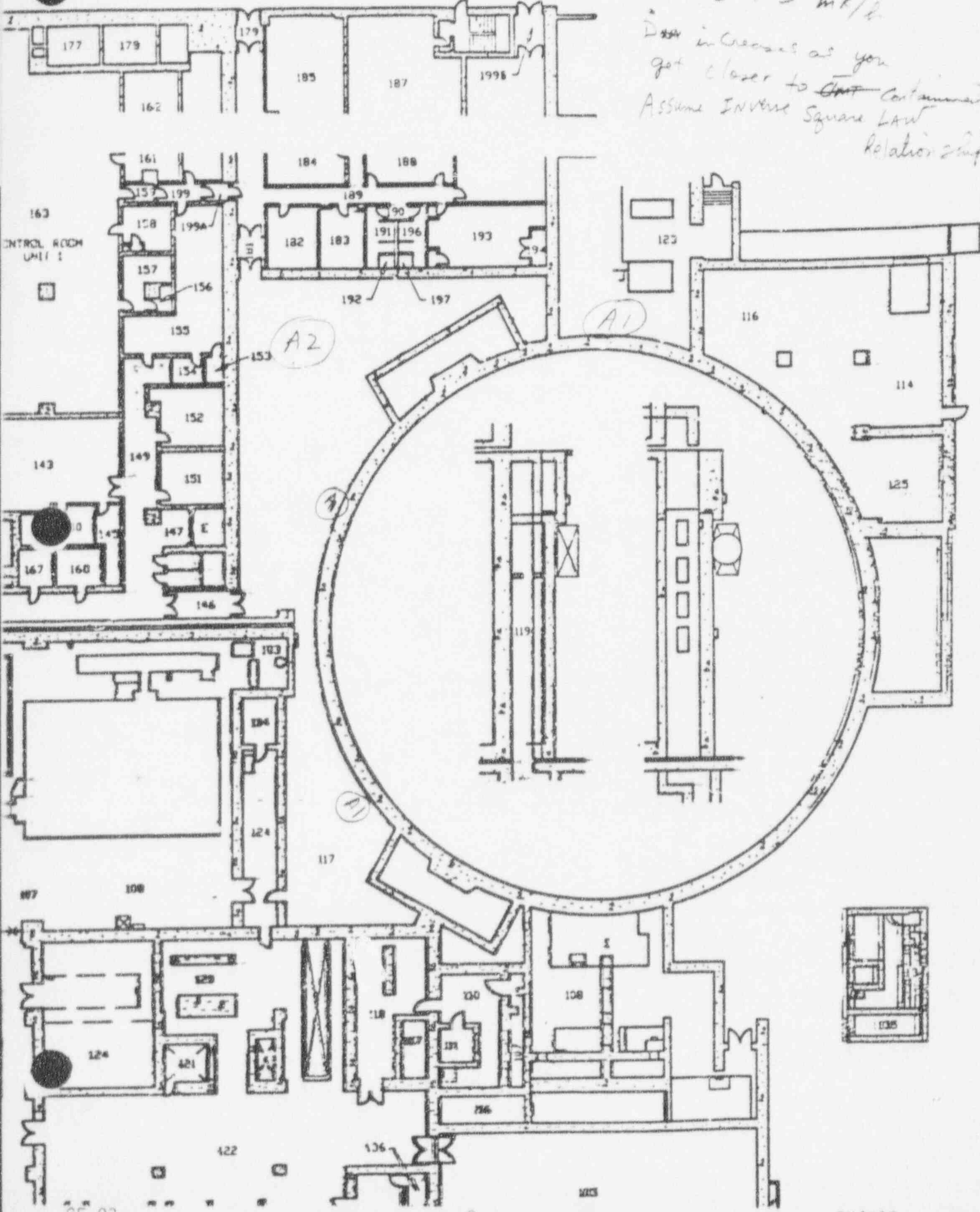
LOOSE SURFACE CONTAMINATION LEVELS

GENERAL AREAS "AS READ FOR THE DURATION OF THE EXERCISE"

$A_1 \rightarrow 100$ mR/h

$A_2 \rightarrow 5$ mR/h

Dose increases as you get closer to ~~Cmt~~ Containment. Assume Inverse Square Law Relationship.



IN-PLANT HP SURVEY DATA

LEVEL "B" UNIT 1

TIME	0800	0930 FOX

AMBIENT RADIATION LEVELS mR/hr

AREA		
A-1	AS READ	150
A-2	AS READ	10

AIRBORNE RADIOACTIVITY LEVELS

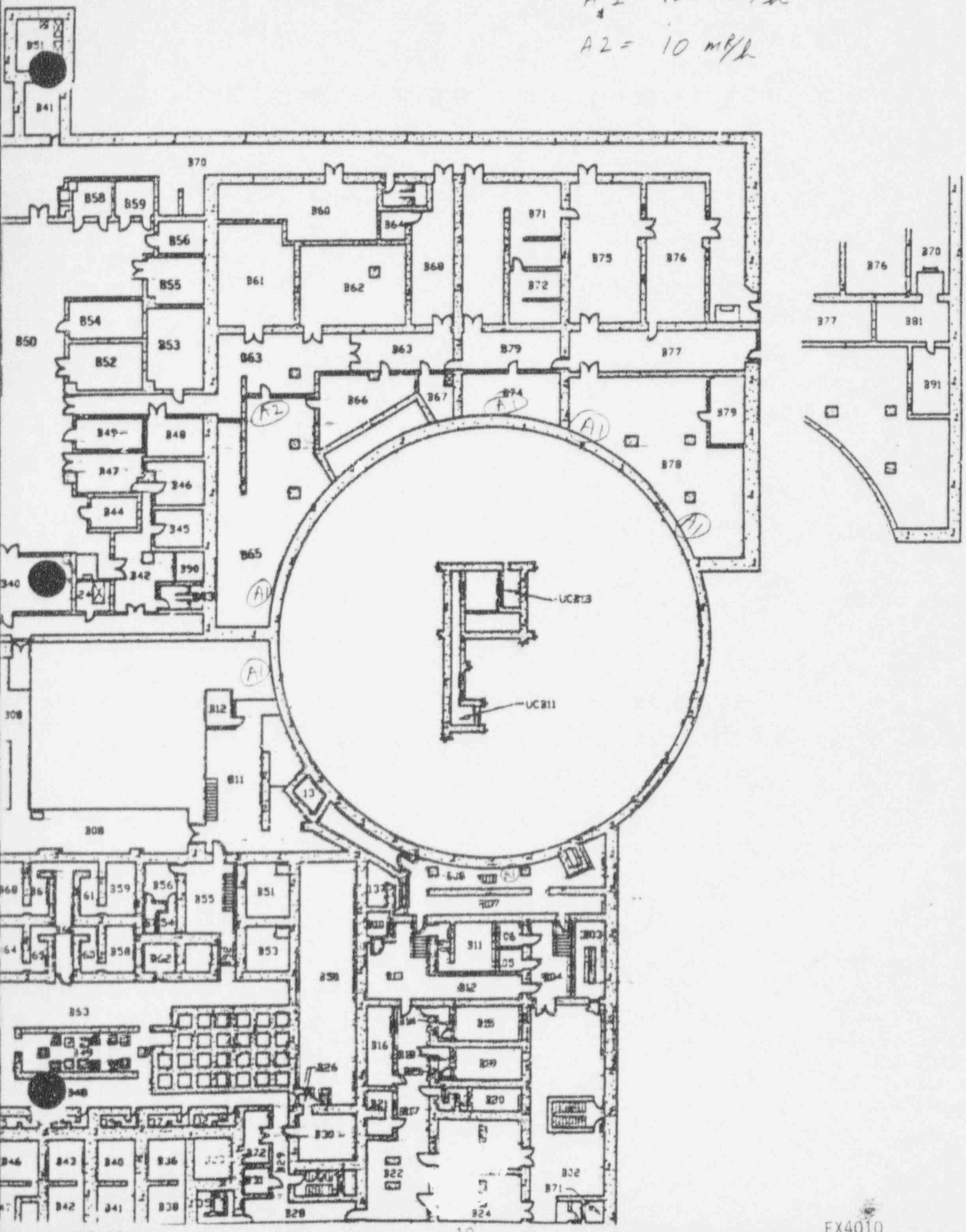
GENERAL AREAS "AS READ FOR THE DURATION OF THE EXERCISE"

LOOSE SURFACE CONTAMINATION LEVELS

GENERAL AREAS "AS READ FOR THE DURATION OF THE EXERCISE"

A1 - 150 MR/h

A2 = 10 MR/h



IN-PLANT HP SURVEY DATA

LEVEL "C" UNIT 1

TIME	0800	0930 FOX

AMBIENT RADIATION LEVELS mR/hr

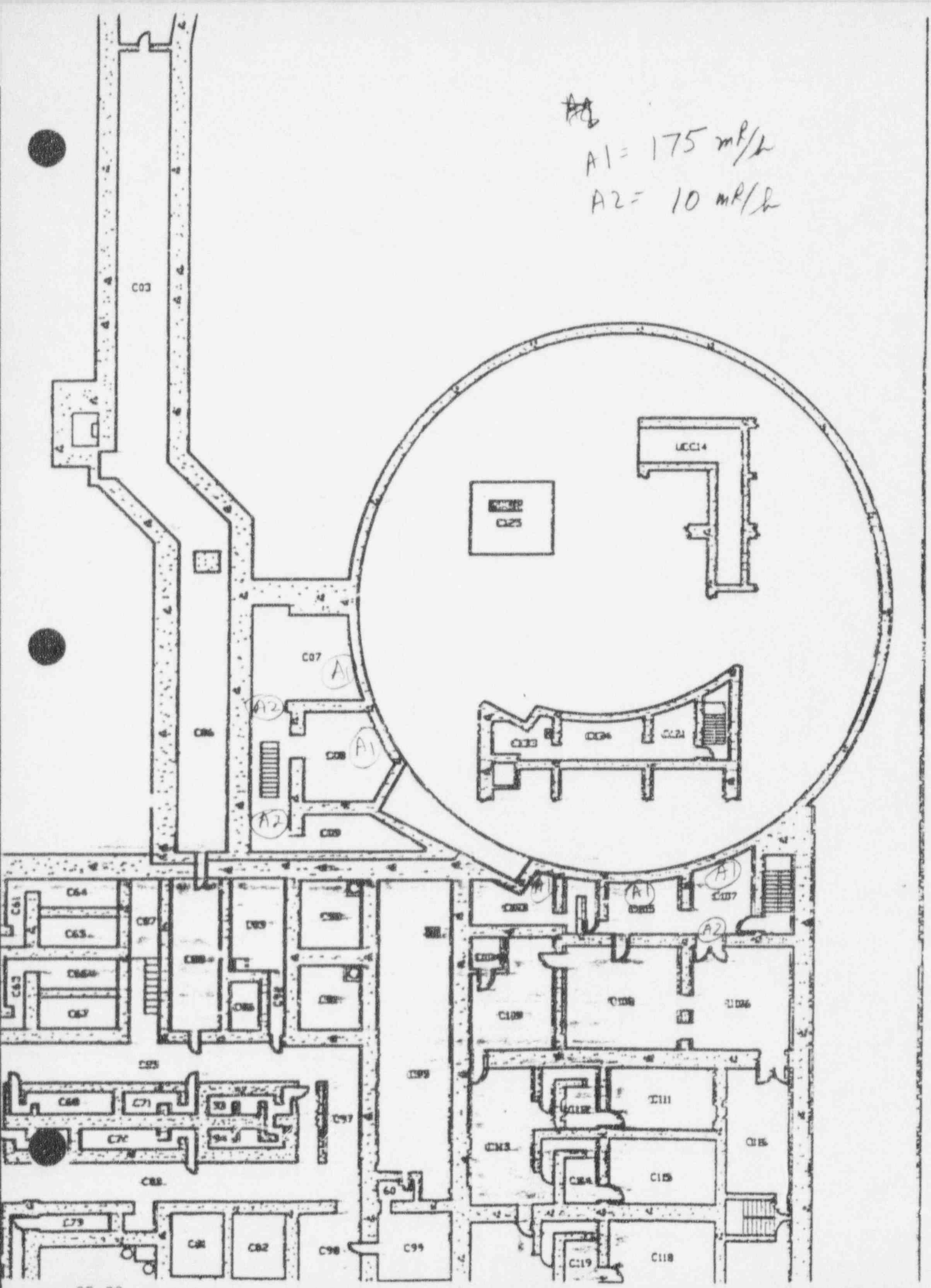
AREA		
A-1	AS READ	175
A-2	AS READ	10

AIRBORNE RADIOACTIVITY LEVELS

GENERAL AREAS "AS READ FOR THE DURATION OF THE EXERCISE"

LOOSE SURFACE CONTAMINATION LEVELS

GENERAL AREAS "AS READ FOR THE DURATION OF THE EXERCISE"


A1 = 175 mR/h
A2 = 10 mR/h
C03
C07
C08
C09
C25
UCC14
C64
C65
C66A
C67
C68
C71
C77
C88
C79
C81
C82
C98
C99
C109
C111
C115
C118
C119
A1
A2

IN-PLANT HP SURVEY DATA

LEVEL "D" UNIT 1

TIME	0800	0930 FOX

AMBIENT RADIATION LEVELS mR/hr

AREA		
A-1	AS READ	175
A-2	AS READ	10

AIRBORNE RADIOACTIVITY LEVELS

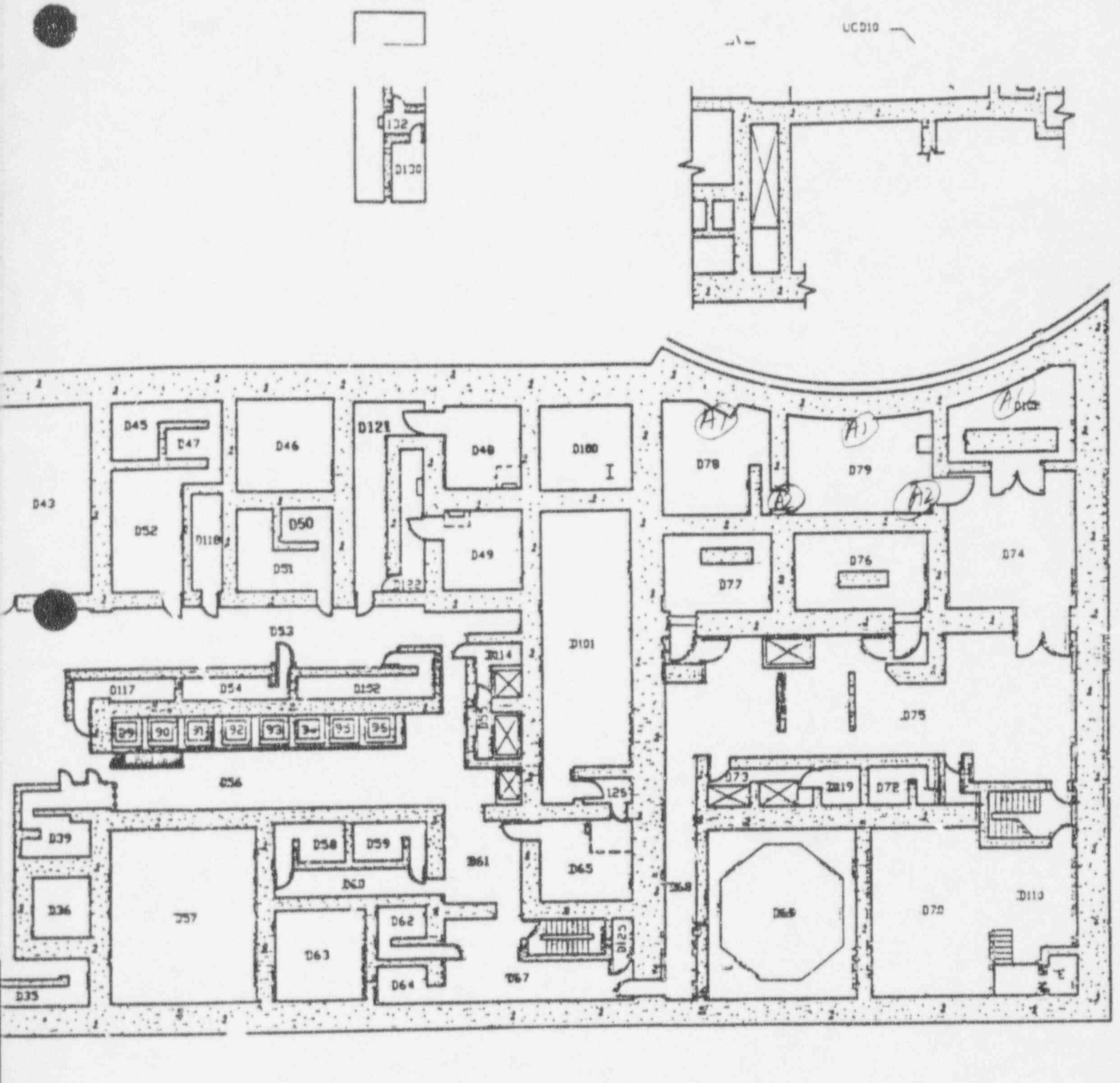
GENERAL AREAS "AS READ FOR THE DURATION OF THE EXERCISE"

LOOSE SURFACE CONTAMINATION LEVELS

GENERAL AREAS "AS READ FOR THE DURATION OF THE EXERCISE"

A1 = 175 mR/h

A2 = 10 mR/h



... and Pump Room
... and ... Room
... Room
Room
...ndensate Pump Room

Tank Room

... Pump Room
...ump and Pumps Area
... Room

AUXB Level "D"

D85 - Pit ([illegible] Filter)
D86 - Pit ([illegible] Evaporator Condensate Filter)
D87 - Pit ([illegible] Oil Separator Filter)
D88 - Pit (Laundry and Hot Shower Tank Filter)
D89 - Pit ([illegible] Oil Separator)
D90 - Pit (Boric Acid Filter)
D91 - Pit ([illegible] Evaporator Condensate Filter)
D92 - Pit ([illegible] Drain Feed Filter)
D93 - Pit ([illegible] System Discharge Filter)
D94 - Pit ([illegible] Skimmer Filter)
D95 - Pit (Waste Gas Drain Filter)
D96 - Pit ([illegible] Evaporator Condensate Filter)
D97 - Storage
D98 - Pit
D99 - Pipe Chase, Train 'B'
D100 - Pit

AUXB Level "D"

D111 - Valve Gallery
D112 - Hallway
D113 - Hallway
D114 - Valve Pit
D115 - Valve Gallery
D116 - Valve Gallery
D117 - Valve Gallery
D118 - Storage
D119 - Boric Acid Transfer Pump Room
D120 - Valve Pit
D121 - Hallway
D122 - Hallway
D123 - Boric Acid Transfer Pump Room
D124 - Storage Room
D125 - Storage Room
D126 - Vestibule
D127 - Vestibule

1993 NRC GRADED EXERCISE
August 4, 1993

RADIATION MONITORS (STEAM GENERATORS)
$\mu Ci/cm^3$

		RANGE	ALERT	ALARM	NORMAL	0800 FOX
RE-019	**STM GEN SAMPLE LIQ**	**7.2E-8**	**1.4E-2**	**9.0E-6**	**3.0E-5**	**9.0E-8**	**1.8E-7**
RE-021	STM GEN BLOWDOWN LIQ	7.1E-9	7.1E-3	9.0E-6	1.8E-5	0.0E0	9.5E-7
RE-13120	**STEM GEN 1 MAIN STM LINE**	**3.6E-3**	**1.1E+3**	**2.0E-1**	**3.03-1**	**1.0E-1**	**7.2E-2**
RE-13121	STEM GEN 2 MAIN STM LINE	3.6E-3	1.1E+3	2.0E-1	3.0E-1	1.0E-1	7.4E-2
RE-13122	**STEM GEN 3 MAIN STM LINE**	**3.6E-3**	**1.1E+3**	**2.0E-1**	**3.03-1**	**1.0E-1**	**9.5E-2**
RE-13119	STEM GEN 4 MAIN STM LINE	3.6E-3	1.1E+3	2.0E-1	3.03-1	1.0E-1	8.7E-2
RE-12839C	**CNDSR AIR EJCTR/STM (L)**	**1.2E-8**	**3.5E-3**	**6.3E-4**	**7.9E-4**	**8.0E-8**	**4.5E-7**
RE-12839D	CNDSR AIR EJCTR/STM (M)	1.4E-4	4.2E+1	1.0E0	3.0E0	8.0E-8	0.0
RE-12839E	**CNDSR AIR EJCTR/STM (H)**	**3.2E-1**	**1.9E+4**	**5.0E+2**	**5.0E+2**	**8.0E-8**	**0.0**

		RANGE	ALERT	ALARM	NORMAL	0800 0820	0820 0821	0821 FOX
RE-48000	CVCS LETDOWN	2.0E-4	4.0E+1	8.0E0	1.1E+1	4.0E0	4.0E0	TOS	TOS

RCS

NC - NO CHANGE
TOS - TOP OF SCALE

RADIATION MONITORS (AREA)
mR/hr

		RANGE	ALERT	ALARM	NORMAL	0800 0820	0820 0822	0822 0930	0930 FOX
RE-001	**CONTROL ROOM**	**1.2E-2**	**1.2E+3**	**1.0E-1**	**2.5E-1**	**5.0E-2**	**5.0E-2**	**NC**	**NC**	**NC**
RE-007B	SAMPLING ROOM	7.5E-3	7.5E+2	2.0E+1	4.0E+1	6.0E0	6.0E0	7.5E+2	1.0E+1	NC
RE-008	**FUEL HANDLING BLDG**	**9.7E-3**	**9.7E+2**	**1.0E0**	**2.5E0**	**8.0E-2**	**2.3E-1**	**2.3E-1**	**NC**	**NC**

NC - NO CHANGE

RADIATION MONITORS (CONTAINMENT)

		RANGE		ALERT	ALARM	NORMAL	SOX 0930	0930 1000	1000 1100	1100 1200	1200 FOX
	$\mu Ci/cm^3$										
RE-2565A	CNMT VENT EFFL PART	2.1E-11	4.2E-6	2.4E-7	3.0E-7	0.0E0	1.9E-10	NC	NC	NC	NC
RE-2565B	CNMT VENT EFFL IODINE	1.7E-11	3.4E-6	1.0E-7	1.3E-7	0.0E0	2.9E-11	NC	NC	NC	NC
RE-2565C	**CNMT VENT EFFL GAS**	**5.6E-8**	**1.1E-2**	**1.9E-4**	**2.4E-4**	**2.0E-7**	**2.E-7**	**NC**	**NC**	**NC**	**NC**
RE-2562A	CNMT ATM PART	9.1E-11	1.8E-5	2.1E-8	2.6E-8	2.0E-9	2.0E-9	NC	NC	NC	NC
RE-2562C	**CNMT ATM GAS**	**6.2E-8**	**1.2E-2**	**8.8E-6**	**9.7E-6**	**4.0E-6**	**7.8E-7**	**NC**	**NC**	**NC**	**NC**
	mR/hr										
RE-002	**CNMT BLDG LOW RANGE**	**1.0E-2**	**1.0E+3**	**1.0E+2**	**7.6E+2**	**1.3E+1**	**1.3E+1**	**TOS**	**TOS**	**TOS**	**TOS**
RE-003	CMNT BLDG LOW RANGE	1.0E-2	1.0E+3	1.0E+2	7.6E+2	1.3E+1	1.3E+1	TOS	TOS	TOS	TOS
RE-004	**CNMT BLDG ACCESS HATCH**	**1.7E-2**	**1.7E+3**	**1.0E+1**	**1.5E+1**	**2.0E-1**	**2.0E**	**TOS**	**TOS**	**TOS**	**TOS**
RE-005	CNMT BLDG HIGH RANGE	1.0E+3	1.6E+11	3.0E+3	1.0E+5	5.0E+1	5.0E+1	3.1E+6	3.8E+6	4.5E+6	2.0E+6
RE-006	**CNMT BLDG HIGH RANGE**	**1.0E+3**	**1.8E+11**	**3.0E+3**	**1.0E+5**	**5.0E+1**	**5.0E+1**	**2.9E+6**	**3.3E+6**	**4.0E+6**	**2.1E+6**
RE-011	CNMT BLDG INCORE INSTR	1.0E-1	1.0E+4	5.0E+1	1.0E+2	5.0E0	5.0E+0	TOS	TOS	TOS	TOS

TOS - TOP OF SCALE

RADIATION MONITORS (GASEOUS)
$\mu Ci/cm^3$

		RANGE		ALERT	ALARM	NORMAL	0800 FOX
RE-013	**WASTE GAS PROC SYS**	**1.9E-1**	**3.7E+3**	**2.4E+2**	**2.4E+3**	**6.0E-1**	**BAD**
RE-12442A	PLANT VENT PART	6.5E-11	1.3E-5	1.5E-6	1.9E-6	7.0E-10	4.6E-10
RE-12442B	**PLANT VENT IODINE**	**1.7E-11**	**3.4E-6**	**6.7E-7**	**8.4E-7**		**1.8E-11**
RE-12442C	PLANT VENT GAS	2.1E-7	4.1E-2	2.5E-4	3.1E-4	1.2E-7	5.8E-7
RE-12444C	**PLANT VENT GAS**	**1.5E-7**	**9.2E-3**	**2.5E-4**	**3.1E-4**	**1.2E-7**	**2.4E-7**
RE-12444D	PLANT VENT GAS	1.4E-4	4.2E+1	1.0E0	3.0E0	0.0E0	0.0E0
RE-12444E	**PLANT VENT GAS**	**3.2E-1**	**1.9E+4**	**5.0E+2**	**5.0E+2**	**0.0E0**	**0.0E0**
ARE-014	**WASTE GAS PROC EFFL**	**3.7E-2**	**3.7E+3**	**1.1E0**	**1.4E0**	**1.0E-1**	**2.0E-2**
RE-039A	WASTE GAS DECAY TK EFFL	2.7E-8	5.4E-3	1.0E-5	1.0E-4	6.0E-8	1.8E-7
RE-039B	**WASTE GAS DECAY TK CMPSR VENT**	**1.8E-8**	**3.6E-3**	**1.0E-5**	**1.0E-4**	**1.0E-7**	**2.9E-8**
RE-AUCT	FUEL HAND BLDG EFFL GAS	2.5E-9	2.5E-3	4.0E-7	6.0E-7	4.4E-8	4.8E-8
RE-024A	**SELECTIVE CUBICLE PART**	**1.3E-11**	**1.3E-5**	**2.0E-8**	**3.0E-8**	**0.0E0**	**BAD**
RE-024B	SELECTIVE CUBICLE GAS	5.9E-8	5.9E-2	1.9E-5	2.8E-5	0.0E0	BAD
RE-12116	**CR AIR INTAKE GAS**	**4.8E-9**	**4.8E-3**	**7.2E-7**	**1.0E-6**	**0.0E0**	**0.0E0**
RE-12117	CR AIR INTAKE GAS	4.8E-9	4.8E-3	8.0E-7	1.2E-6	0.0E0	0.0E0

NC - NO CHANGE
TOS - TOP OF SCALE
SOX - START OF EXERCISE
FOX - FINISH OF EXERCISE

WEATHER FORECAST

TO: EOF Dose Assessment Staff **TIME:** 1015+

FROM: EOF Controllers

THIS IS A DRILL
DO NOT initiate actions affecting normal plant operations.

MESSAGE:

Bush Field Weather Report (forecast)

No rain forecasted. Temperatures ranging from middle 80's to middle 90's.

Partly cloudy. Winds from southeast up to 5 miles per hour.

CONTROLLER INFORMATION: Provide forecast only if players request information.

1993 NRC GRADED EXERCISE
August 4, 1993

METEOROLOGICAL DATA (15 Minute Ave)

	0800	0815	0830	0845	0900	0915	0930	0945	1000
PRI MET TWR 10M Wind Speed - mph	2.5	5.2	6.1	3.4	3.7	5.1	4.2	3.7	4.2
PRI MET TWR 10M Wind Dir.	90	81	85	96	76	91	70	78	90
PRI MET TWR 10M Ambient Temp - Deg. F	80°	81°	81°	82°	82°	84°	85°	85°	85°
PRI MET TWR 10M DEW PT Temp	74°	75°	75°	74°	75°	75°	76°	76°	76°
PRI MET TWR 10M Sigma Theta	22.0	20.6	21.2	19.3	17.5	16.9	19.0	20.1	20.8
PRI MET TWR 60M Wind Speed - mph	3.0	4.2	5.1	3.6	3.5	4.2	3.3	5.1	3.9
PRI MET TWR 60M Wind Dir.	110	101	105	116	64	67	79	70	80
PRI MET TWR 60M Precipitation	.4	.4	.4	.4	.4	.4	.4	.4	.4
PRI MET TWR 60-10M Delta Temp - Deg F	-1.6	-1.7	-1.6	-1.6	-1.4	-1.4	-1.5	-1.6	-1.6
SEC MET TWR 10M Wind Speed - mph	BAD								
SEC MET TWR 10M Wind Dir. - Deg.	BAD								
SEC MET TWR Ambient Temp - Deg F	BAD								
SEC MET TWR 10M Sigma Theta	BAD								
Stability Class	B	B	B	B	C	C	B	B	B

1993 NRC GRADED EXERCISE
August 4, 1993

METEOROLOGICAL DATA (15 Minute Ave)

	1015	1030	1045	1100	1115	1130	1145	1200	1215
PRI MET TWR 10M Wind Speed - mph	3.5	3.0	4.1	4.3	3.1	2.9	3.4	3.6	3.3
PRI MET TWR 10M Wind Dir.	80	85	95	90	100	130	125	135	90
PRI MET TWR 10M Ambient Temp - Deg. F	86°	86°	86°	86°	87°	87°	87°	88°	88°
PRI MET TWR 10M DEW PT Temp	76°	76°	76°	76°	76°	76°	76°	76°	76°
PRI MET TWR 10M Sigma Theta	16.4	17.0	20.1	21	19.1	19.1	19.0	16.9	17.0
PRI MET TWR 60M Wind Speed - mph	3.0	2.7	3.1	4.2	4.0	3.5	4.2	4.5	4.0
PRI MET TWR 60M Wind Dir.	100	105	95	75	110	120	135	130	110
PRI MET TWR 60M Precipitation	.4	.4	.4	.4	.4	.4	.4	.4	.4
PRI MET TWR 60-10M Delta Temp - Deg F	-1.4	-1.5	-1.6	-1.6	-1.6	-1.6	-1.6	-1.4	-1.4
SEC MET TWR 10M Wind Speed - mph	BAD								
SEC MET TWR 10M Wind Dir. - Deg.	BAD								
SEC MET TWR Ambient Temp - Deg F	BAD								
SEC MET TWR 10M Sigma Theta	BAD								
Stability Class	C	C	B	B	B	B	B	C	C

1993 NRC GRADED EXERCISE
August 4, 1993

METEOROLOGICAL DATA (15 Minute Ave)

	1230	1245	1300	1315
PRI MET TWR 10M Wind Speed - mph	5.1	4.2	3.9	4.0
PRI MET TWR 10M Wind Dir.	79	80	92	90
PRI MET TWR 10M Ambient Temp - Deg. F	88°	88°	89°	89°
PRI MET TWR 10M DEW PT Temp	75°	75°	76°	76°
PRI MET TWR 10M Sigma Theta	18.3	18.4	18	18
PRI MET TWR 60M Wind Speed - mph	4.6	5.0	4.9	5.1
PRI MET TWR 60M Wind Dir.	90	100	101	100
PRI MET TWR 60M Precipitation	.4	.4	.4	.4
PRI MET TWR 60-10M Delta Temp - Deg F	-1.6	-1.6	-1.6	-1.6
SEC MET TWR 10M Wind Speed - mph	BAD			
SEC MET TWR 10M Wind Dir. - Deg.	BAD			
SEC MET TWR Ambient Temp - Deg F	BAD			
SEC MET TWR 10M Sigma Theta	BAD			
Stability Class	B	B	B	B

DOWNWIND PLUME DATA

WHOLE BODY DATA ALONG PLUME CENTERLINE

General Area Count Rate - cpm
(Whole Body Dose Rate - mRem/hr)
DOWNWIND DISTANCE (Miles)

	0.6	1	2	3	4	5	6	7	8	9	10
ETA	1110	1117	1134	1151	1208	1226	1243	1300	1317	1334	1351
cpm	340,000	340,000	23,800	17,000	6,800	13,600	10,200	10,200	6,800	3,400	3,400
mRem/hr	100	100	7	5	2	4	3	3	2	1	1
ETA	1125	1132	1149	1206	1224	1241	1258	1315	1332	1349	
cpm	408,000	374,000	34,000	17,000	10,200	10,200	10,200	13,600	6,800	3,400	
mRem/hr	120	110	10	5	3	3	3	4	2	1	
ETA	1140	1147	1204	1221	1239	1256	1313	1330	1347		
cpm	340,000	408,000	27,200	20,400	6,800	6,800	10,200	6,800	3,400		
mRem/hr	100	120	8	6	2	2	3	2	1		
ETA	1155	1204	1221	1238	1255	1312	1329	1346	1403		
cpm	374,000	374,000	34,000	17,000	10,200	10,200	6,800	6,800	3,400		
mRem/hr	110	110	10	5	3	3	2	2	1		
ETA	1210	1227	1234	1251	1308	1325	1342	1359	1416		
cpm	306,000	340,000	30,600	20,400	10,200	6,800	10,200	6,800	3,400		
mRem/hr	90	100	9	6	3	2	3	2	1		
ETA	1225	1242	1259	1316	1333	1350	1406				
cpm	0	0	0	0	0	0	0				
mRem/hr	0	0	0	0	0	0	0				

NOTES: background reading
Use table values for map areas shaded BLUE.
Use 0.10 times table values for map areas shaded YELLOW.
Use 0.01 times table values for map areas shaded GREEN.
Use 3,400 cpm/1mR to determine cpm's.
Use the sample readings for waist and 2-inch readings.

For "closed window" readings use the above values.
For "open window" readings use 3.00 times the table values.

DOWNWIND PLUME DATA

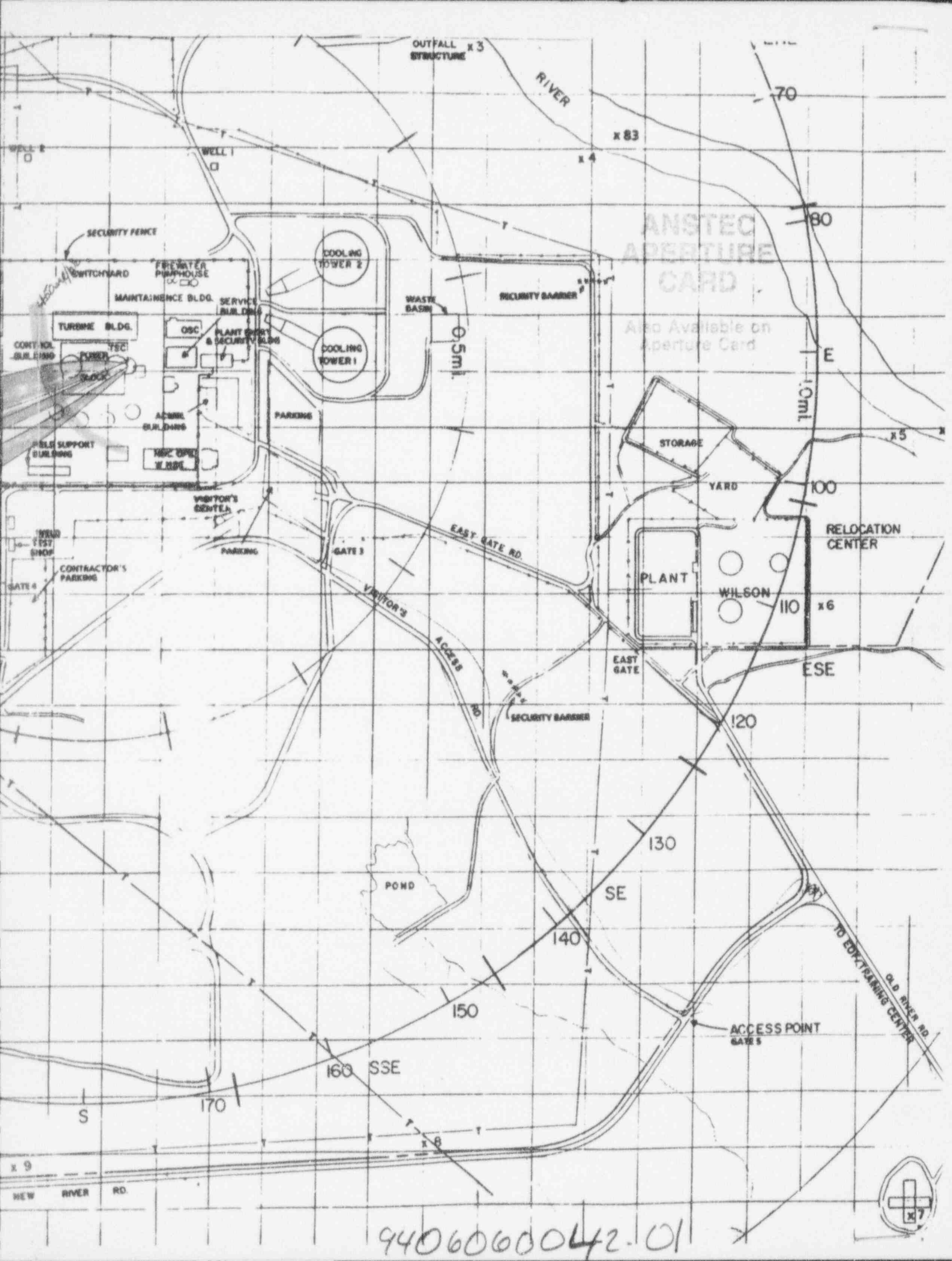
PARTICULATE & SILVER ZEOLITE DATA ALONG PLUME CENTERLINE

DOWNWIND DISTANCE (Miles)

	0.6	1	2	3	4	5	6	7	8	9	10
ETA	1110	1117	1134	1151	1208	1226	1243	1300	1317	1334	1351
part.	0	0	0	0	0	0	0	0	0	0	0
AgZ ncpm	950	100	50	30	10	35	30	20	10	5	5
ETA	1125	1132	1149	1206	1224	1241	1258	1315	1332	1349	
part.	0	0	0	0	0	0	0	0	0	0	
AgZ ncpm	1045	980	95	30	20	20	20	35	10	5	
ETA	1140	1147	1204	1221	1239	1256	1313	1330	1347		
part.	0	0	0	0	0	0	0	0	0		
AgZ ncpm	950	1045	63	40	10	10	20	10	5		
ETA	1155	1204	1221	1238	1255	1312	1329	1346	1403		
part.	0	0	0	0	0	0	0	0	0		
AgZ ncpm	980	980	95	30	20	20	10	10	5		
ETA	1210	1227	1234	1251	1308	1325	1342	1359	1416		
part.	0	0	0	0	0	0	0	0	0		
AgZ ncpm	825	940	84	40	20	10	20	10	5		
ETA	1225	1242	1259	1316	1333	1350	1406				
part.	0	0	0	0	0	0	0				
AgZ ncpm	0	0	0	0	0	0	0				

NOTES: Use 0.10 times table values for map areas shaded YELLOW.
Use 0.01 times table values for map areas shaded GREEN.


WNW
290
280
270
260
250
WSW
240
230
220
210
200
SSW
190
x 15
x 12
x 11
x 10
1.0mi
0.5mi
NORTH GATE
NORTH GATE RD.
NEW HOPE CHURCH RD.
MAIN ROAD
WATERSHED
ALTERNATE DISP.
ADMIN SUPPORT BLDG.
CONTRACTOR PARKING LOT
DRY ACTIVE WASTE
WARE HOUSE
GATE
POND
SW POND
ACCESS RD.
PLANT ACCESS RD.
SECURITY BARRIER
CRAFT
GATE 1
OLD WAREHOUSE AREA
METEOROLOGICAL TOWERS
ACCESS POINT
EBENEZER CHURCH RD.
TO RECREATION RELOCATION CENTER (SEE DETAIL 1)
DETAIL 1
BALL FIELD
TENNIS COURT
BASKETBALL COURT
SHOWERS
PAVILION
BARBERS
POND
RECREATION AREA RELOCATION CENTER



9406060042-01

80
23
E-10
D-5
C-5
CLAXTON
LIVELY
N95
N105
N101
N104
N106
N102
N103
N93
N92
N94
B16
N91
N82
N83
N72
N61
x29
N81
N71
B15
M73
N51
N52
N53
B14
N43
N41
N32
N33
N31
N22
N21
x13
x12
x11
B20
L11
L21
L22
L23
L32
L33
L31
B19
x43
RELOCATION CENTER
M42
M41
M31
M51
T40
HANCOCK
THOMAS
B18
M62
M61
x28
M63
M52
M43
M53
M86
M91
M92
M71
M72
MCNORRILL
CHURCH
M82
BOTSFORD
B17
M85
M93
M81
M83
M84
UTLEY
L41
L42
L43
L44
L34
L51
L52
L53
L54
B28
x27
K31
K41
EBENEZER
23
K51
K52
K53
x26
B27
J51
L82
M87
M101
BATES
B30
L81
L92
THOMPSON
E.P.Z.
L71
L72
B29
L61
K62
K64
K63
K73
K72
B32
J63
HATCHERS
THOMPSON
BRIDGE
RD


G-10
F-10
E-5
RICHMOND
BURKE
SOUTH CAROLINA
GEORGIA
AIKEN
COLLINS
ANDERSON
MILLER POND RD
BLUFF LNDG RD
HATCHER RD
RIVER
SAXON RD
MIDWELL CAMP RD
SPRING BRANCH CHURCH
HANCOCK LANDING
E.P.Z.
SHELL BLUFF SPUR
B1
B2
B3
B4
B5
B6
B7
B8
B10
B11
B13
80
56
23
89
940606004 2-02