

2-124

PROCEDURE NO VEGP	10006-C	REVISION	12	PAGE NO	5 of 19
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Sheet 1 of 11

DATA SHEET 1  
REACTOR TRIP REPORT

UNIT NO. 2

REPORT NO. Z-90-001  
 TRIP DATE 7-20-90  
 TRIP TIME 0820

FOR INFORMATION ONLY

FOR INFORMATION ONLY

1. SHIFT PERSONNEL

OSOS J. Hopkins  
 SS G. Moore  
 RO J. Gullote  
 BOP RP Smith

Other persons involved: Truck Driver - Annice Willhite

2. PRETRIP CONDITIONS

a. Mode 1  
 Reactor Power 100%  
 Boron Concentration 291 PPM  
 Reactor Coolant System Pressure 2235 PSIG  
 RCS T<sub>avg</sub> 588.6 °F  
 Pressurizer Level 60%  
 Reactor Coolant Pumps Operating 1, 2, 3, 4  
 Steam Generator Levels 1 50% 2 50 3 50 4 50  
 Generator Electrical Load 1180 MWE (gross)  
 Control Bank D at 226 Steps

DATA SHEET 1

b. Off Normal Status Of Plant Systems  
Of Safety Systems:

~~None~~ MAJ 2/23/76

block valve for PORV 456 closed

due to PORV seat leakage

c. Tests and Surveillances in Progress:

ACOT Loop 1 AT-TAG 24510, CCW PI 1874 -24534

24510 Comp. Set

d. Operations in progress at time of Reactor Trip:

Normal Operation per 12004

3. POST TRIP CONDITIONS

a. Reactor Protection System Operation

First out annunciator Turbine Trip/P9 Rx Trip

List of RPS channels actuated <sup>JD2840 Gen. Unit Pri Diff</sup>

All Channels 1,2,3,4

DATA SHEET 1

Did the Reactor Trip result from an automatic or manual trip? (Circle one):

AUTO

RAT B High Side Trip

MANUAL

Comment: Generator Differential, → ETS trip →  
125VDC EHC TRIP ENERGIZED → TURBINE TRIP → P9 →  
Rx TRIP

Did all Reactor Trip Breakers open, and all rod banks fully insert? (Circle one)

YES

NO

If no explain: N/A

b. ESFAS Operation

Was ESFAS actuated? (Circle one)

YES

NO

Comments: SGWL 1→4 LCLL level MDAFW/TDAFW  
and SG B/D and sample isol., FWI

How was ESFAS Actuated (Circle one)

AUTO

MANUAL

N/A

List the ESFAS channels actuated: Steam Generator  
Water level LO-LO  
FWI  
Manual SLI at ~550°F and 20% Lp

DATA SHEET 1

c. Did the Reactor Trip result from a Turbine Trip?  
(Circle one)

YES

NO

If yes, list turbine first out trip data from the back EHC panel.

Elect. Customer Trip, 125V Trip Bus Elect. Trip Latch, 125V Trip  
Bus Energy

Front Stand ETS Trip, MTS tripped, Low ETS press, MTP tripped,  
Elect. Trip Valve tripped Mech Trip Valve tripped - Hit 2

PLU

d. Notifications (List names)

NRC J. Gasser did not get the name 3/20/90 0858  
(Time/Date)

System Operator ATKINS 3/20/90 1026

Duty Manager A. Masbough - 3/20/90 0820

Other \_\_\_\_\_

DATA SHEET 1

4. PLANT RESPONSE

a. Documentation

Attached

Include the following documentation if available

Plant Computer Alarm Printout       YES       NO

Plant Computer Pre/Post Trip Logs       YES       NO

ERF Computer Trip Logs      YES       NO

Recorder Chart reproductions       YES       NO

If yes, specify: ZPR 435 pressurizer pressure

ERF Computer Trend Prints      YES       NO

If yes, specify: \_\_\_\_\_

When sufficient post-trip data has been collected, terminate ERF post-trip data collection using the Change Mode overlay. After data collection has been terminated, the disk-packs should be removed from the computer and transmitted to the Operations Superintendent of Training for further evaluation.

\* ERF Computer/Printer Lost Power  
Reconstruction occurring.

*M.K.*  
3/22/90

DATA SHEET 1

b. Sequence of Events.

Prepare a written sequence of events using Data Sheet 3 from available data and attach to this report. Include when stable plant conditions are reestablished.

c. Plant response from the beginning of the transient leading to the trip until steady state conditions afterwards.

	MAX	MIN
PRZR Pressure	<u>2260</u>	<sup>1450</sup> <del>2000</del> <small>0853-11:20 1208</small>
PRZR Level	<u>62%</u>	<u>20%</u>
Tavg	<u>588.5</u>	<u>545</u>
SG1 Level	<u>50.6</u>	<del>NR</del> <u>WR</u> <u>42</u>
SG2 Level	<u>52.1</u>	<u>-1.3%</u> <u>42</u>
SG3 Level	<u>50.5</u>	<sup>006</sup> <u>+1.5%</u> <u>-0.6%</u> <u>43</u>
SG4 Level	<u>51.6</u>	<u>-1.5%</u> <u>55.1%</u> <u>38</u>
SG Pressure	<u>1076</u>	<u>896</u>
Did PRZR PORV's open	<u>YES</u> <sup>3 sec</sup>	<u>NO</u> <sup>NR</sup> <u>5-21-90</u>
Did PRZR Safety Valves open	YES	<u>NO</u>
Did SG ARV's open	YES	<u>NO</u>
Did SG Safety Valves open	YES	<u>NO</u>

Explain any abnormal responses: \* At 0853 the PORV 455A indicated partially open, full open indication did not occur based on available data 1:20-10 <sup>13:40</sup> Per Press ZPR-455 chart attached

d. Was any other plant equipment malfunction noticed? ERF computer malfunctioned - lost data  
 Comment: SG #3 MFRV dual position. Ho press in main gen (LOP), #A MFP dish valve did not close #1 CW pump back wheel - dish v. (LOP). Knocking noise in Turb. on coast down, #4 CV did not close contacts

DATA SHEET 1

e. Reactor Protection System Actuation

Did RPS channels actuate conservatively with respect to their intended set points? (Circle one)

YES

NO

If no, explain and describe instruments: \_\_\_\_\_

Based on available information and above evaluation did the RPS function correctly? (Circle one)

YES

NO

If no, describe corrective action required and reference any supporting documentation: \_\_\_\_\_

f. FSFAS ACTUATION

If two or more ESFAS channels monitoring the same variable reached an ESFAS setpoint, did the ESFAS components actuate without undue delay? (Circle one)

YES

NO

If no describe: \_\_\_\_\_

Based on available information and the above evaluation did all ESFAS components perform correctly? (Circle One)

YES

NO

If no, describe corrective actions and reference supporting documentation: \_\_\_\_\_

DATA SHEET 1

6. Trip Identification and Review

a. Direct Cause of the reactor trip was: Turbine TRIP  
above P9 results in Rx TRIP. Cause of  
turbine trip was relay 38741 actuation.

If the cause of the trip is not apparent, describe the evaluation in progress and organizations responsible for the evaluation.

N/A

b. What corrective actions have been completed or are in progress to correct the direct cause of the trip transient? Reference supporting documentation.

Doublet set VATE and check out protective  
relaying MWC: 290 00853/00854/00847

c. Identify any off normal occurrences or equipment malfunctions that accompanied the trip. List corrective actions taken.

MFR A disch V thermal all tripped. Reset and started sat.  
#3 MFRV dual position indic. Turbine knock range  
probe WRT 8956, LOP to 2NAB and subordinate buses. fix W1  
RATA, wire Nether Pump windmill for ~3 hours

d. Did all automatic functions perform correctly?  
 (Circle one)

YES

NO

If no, describe corrective action and reference supporting documentation.



DATA SHEET 1

e. Did the procedures used adequately cover the required actions? (Circle one)

YES

NO

If no, describe required corrective action and reference the action tracking item number used to initiate procedure correction.

procedures should address that an RCP(s) + MP  
need to close spray valves

NOTE

The purpose of this step is to identify weaknesses in training for the purpose of feedback to operators. Do not address specific cases of possible personal error. Specific cases of possible personal error shall be brought to the attention of the OSOS or the Operations Superintendent as appropriate.

f. Did the operators adequately handle the event? (Circle one)

YES

NO

If no, describe the corrective action required and Action Tracking item numbers used to initiate retraining or other actions.

N/A

g. Was an Emergency Plan EAL reached? Describe level involved (NUE, Alert, Site Area, General).

For Unit 2 - No

DATA SHEET 1

- h. Technical Specifications have been reviewed, and the following LCO Status sheets were prepared as the result of this reactor trip:

LCO#                      DESCRIPTION                      INITIAL

<u>LCO#</u>	<u>DESCRIPTION</u>	<u>INITIAL</u>
2-90-97	Loss of B RDT	ADG

- i. List any Technical Specification safety limits which were exceeded: (Note: NRC approval required prior to restart if any safety limit was exceeded)

None

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DATA SHEET 1

7. TRIP ANALYSIS

The reactor trip on 3-21-90 at 0826  
Date Time

has been reviewed, Signature indicates agreement with information contained in this report.

[Signature]  
Support Shift Supervisor

3-21-90 11500  
Date Time

[Signature]  
On-Shift Operations Supervisor

3-21-90 1504  
Date Time

## DATA SHEET 2

Sheet 1 of 2

REACTOR TRIP PERSONNEL STATEMENTREPORT NO. 2-90-001  
TRIP DATE 5-20-10  
TRIP TIME 0810

1. Summarize the sequence of events and actions taken.

0820 UNIT 2 REACTOR TRIP LINE TO GEN. DIFF. ENTERED 19000  
0821 PERFORMED MSLT DUE TO PRESSURIZER PRESS. AND LEVEL  
0827 ENTERED 19001  
0830 BROKE VACUUM DUE TO LOSS OF ALL BUT DC EMER. LUBC  
OIL PP.  
0902 SITE AREA EMER. DECLARED FULL 41  
0930 SITE AREA DOWN GRADED TO ALERT  
1035 ENTERED 12006  
1247 EMERGENCY TERMINATED

2. Did any automatic system malfunction or require operator intervention?

A) #3 MFRV HAD DUAL INDICATION - BUT WAS VERIFIED CLOSED  
B) OPERATOR HAD TO THROTTLE AFW FLOW, SID TO AFW, AND  
PERFORM A MSLT

3. Did this reactor trip reveal any procedural inadequacies?

NO

DATA SHEET 2

4. If this trip occurred again, what would you do differently?

THROTTLE AFW IMMEDIATELY - IN LESS THAN ONE MINUTE THE  
AMOUNT OF AFW FLOW CURRING WAS A PROBLEM

5. Are there any lessons learned from this trip that you believe should be included in training?

NO

6. Comments:

OPERATOR IMMEDIATELY MADE A PAGE ANNOUNCEMENT  
WHICH RESULTED IN MORE THAN ADEQUATE ASSISTANCE  
IN A VERY TIMELY MANNER

Signature

Title

Date

Kary Moore

SHIFT SUPERVISOR

3-20-90

J. a. Daulton

U2 RO

3/20/90

Bill Hunt

U2 BCR

3-20-90

SS Lykins

Shift Superintendent

3-21-90

I ENTERED THE P. A. AFTER 9:00  
WITH RICHARD BERRY ESCORT ME  
I WENT TO LOW VOLTAGE SWITCH  
YARD. TO CHECK WELDER FOR FUEL  
WHEN I GOT OUT OF TRUCK IT  
WAS POSITIONED THAT POLE WAS DIRECTLY  
BEHIND ME. I DID NOT SEE IT  
& BACK INTO IT.

Donnie Willett  
3-20-90.

DATA SHEET 3

SEQUENCE OF EVENTS

TIME

EVENT

0819	Rx at NOP, NOT, NCL
0819:56	Main Generator Primary Differential Relay Trip (Comp Pt JD2840) Causes a generator trip, turbine trip and Reactor TRIP (Turbine trip above P9 (50%))
	Initiating event was a truck backed into U1 RATA phase C switcher pole, knocking it to ground generating a U2 RATB High Side Neutral Backup trips 2 BAC3 Normal INComp. Breaker Tripped #2 and #4 RCP's tripped on the UAT power loss and B RAT deenergized, the RCP Undervoltage and P7 Trip (P4) occurred, the Reactor coolant loop 2 and 4 low-flow trips occurred (2.5 on 1/4 loop 2 actuated).
	MDAFW A started, SG B D isolated, FDFW started
	B Train NSCW stopped (2.5%)
	Main Gen H <sub>2</sub> Press Low Alarm (power lost)
	Power Range NI High flux neg. Rate occurred
	<sup>Low</sup> Pressurizer Pressure and P7 trip occurred and reset
0820	SG WL LoLo trip occurred TDAFW started

## DATA SHEET 3

SEQUENCE OF EVENTS

TIME

EVENT

	DG B started and tail to 2BAC3, load breakers sequenced onto the emergency bus CCP B started
	Pressurizer pressure low pressure <sup>SP7</sup> trip occurred and reset. TAV <sub>2</sub> at 563 approx. ACCW2 start
	Steam dumps to the condenser opened
	AFW B started, CCW2 & 4, NSCW2 & 4 started
0820 45	PII actuated and reset
0820 56	Containment Coolers B train started
0821 15	<del>PII actuated and</del> 0821 15 LA0711 Calculational point Low P <sub>2</sub> Press and RPSM 07 LA0707 Low P <sub>2</sub> Press (SZ) Engineering is resolving these LA0711 cleared immediately LA 707 cleared 2 minutes later. The lowest actual pressure by printout and recorder was 1955 <sup>1000-10-70</sup> + psig See attachment
0822 22	TDAFW was being throttled back to the S/G By ERF AMSAC Actuation occurred at 0822:35
0823:08	MDAFW B is being throttled back to S/G, MDAFW A is being throttled back to S/G By ERF these actions were at 0824:08



Sheet 1 of 1

## DATA SHEET 3

SEQUENCE OF EVENTS

Page 3 of 3

Rx Trip Report No. 2-16-01

TIME

EVENT

LE 0822 FEF	Manual Actuation of Steam Line Isolation Tavg was at 550°F and cooldown was continuing lowest Tavg observed by the operator was 545°F
—	The following pieces of equipment operated improperly: MFP A diach valve tripped on OL. Restricted sat 2-90-0850 MFRV #3 had dual indications PM by E.I.C. to resolve. <del>Circ. Water Pump #2 ran w/</del> <sup>SEE</sup> <del>utility water for ~ 1 hr. Vibe. readings</del> <sup>3-22-90</sup> <del>SEE 174</del> Circ. Water Pump #1 ran backwards for ~ 3 hrs. Still working the MWD Turbine T Bar loose for phase angle tests tightened. Relay 587U1 Actuated Cause is still being evaluated.
1035	The plant was stabilized at 1035 and UOP 12006 was entered.

DEFICIENCY CARD

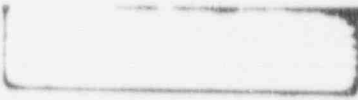
18532 2/27

PRB

CARD # 1-90-0097		UNIT 1 (X) UNIT 2 ( ) COMMON ( )	
1: DESCRIPTION OF DEFICIENCY		(ADDITIONAL SHEETS ATTACHED? YES NO)	
While testing the sequences in S4S mode and the Diesel run, The Diesel changed from Parallel mode to Unit mode. This caused the diesel to load to 8 meg watt for 30 sec. The Control room operators reacted quickly and put the Diesel back into Parallel mode. The Functional test for the sequences was run the first time when the engine was NOT running. The Problem			
LOCATION OF THE DEFICIENCY? Sequencer/Diesel		was not seen close to the diesel	
WHAT IS AFFECTED BY THE DEFICIENCY? The Diesel		being in Unit mode	
load of 8 meg watt for 30 sec. did not damage the generators.			
HOW WAS THE DEFICIENCY DISCOVERED? Control Room Operator			
EVENT TIME 0257	DATE 3/13/90	DISCOVERY TIME 0257	DATE 3/13/90
DISCOVERED BY? Control Room/Da. Hines		WORK # 41564093	DEPT ENG Support
2. SHIFT SUPERVISOR REVIEW			
NAME OF SS REPORTED TO? T.A. Polito		TIME 0257	DATE 3/13/90
PLANT MODE/CONDITION: 6			
IS IMMEDIATE NOTIFICATION REQUIRED? YES <input checked="" type="radio"/> NO			
IF YES, 1 HOUR, 2 HOUR, OR 24 HOUR		REPORTED DATE	TIME
TECH SPEC. REQUIRED ACTION TAKEN? <input checked="" type="radio"/> YES NO N/A			
LIST APPLICABLE TECH SPEC. SECTIONS: 38.1.1, 38.1.2			
SUMMARIZE COMPENSATORY ACTION TAKEN: Engineering to evaluate			
LCO Already existed due to outage			
LCO INITIATED: NO	YES # 1-90-180I	TYPE <input checked="" type="radio"/> LCO	FPE
WRT INITIATED: <input checked="" type="radio"/> NO	YES #		
SIGNATURE OF SS: <i>T.A. Polito</i>		TIME 0335	DATE 3/13/90

COMPLETED BY INITIATOR

COMPLETED BY SS WITHIN 2 HOURS



2/27

~~2/27~~

3: TECHNICAL SUPPORT REVIEW	
NSAC EVALUATION REVIEW (CHECK APPROPRIATE BOX) DATE RECEIVED: 3/14/90	
A	NOT A DEFICIENCY. SEND COPY TO RESPONSIBLE DEPT., CLOSE ORIGINAL
B	REPORTABLE DEFICIENCY. REPORT #
C	<input checked="" type="checkbox"/> DEFICIENCY, NOT REPORTABLE
EXPLANATION:	
Problem apparently occurred due to an inadequately prepared functional test (i.e. did not contain adequate precaution to not perform the test while the diesel was operating). Per the Engineering disposition in Block 4, no damage occurred to the diesel.	
RESPONSIBLE DEPT: Engineering Support	
NSAC REVIEWER: H. R. Smith	DATE: 3/14/90
NSAC SUPERVISOR: RMD	DATE: 3/14/90
4: DISPOSITION, FOR DEFICIENCIES IN ITEM 3C ABOVE ONLY.	
USE-AS-IS	
The Diesel Generator is designed to handle short duration overloads. One of the rating design points is 7.7 meg Watts for 2 hours. A load of 8 meg Watts for 30 seconds DOES NOT affect the operation of the Diesel Generator System.	
Do. Hines 2/17/90 Tom Miller 3/13/90	
CAUSE CODE: <sup>ILL 3/17/90</sup> ++ B4	EVENT CODE: IV (ATTACH SHEETS FROM 00058-C)
CAUSING DEPT(S): ENGINEERING SUPPORT	
DEPARTMENT MANAGER:	DATE:

COMPLETED IN 1 DAY

COMPLETED IN 1 MONTH BY RESPONSIBLE DEPT.

2/14/90  
5:12

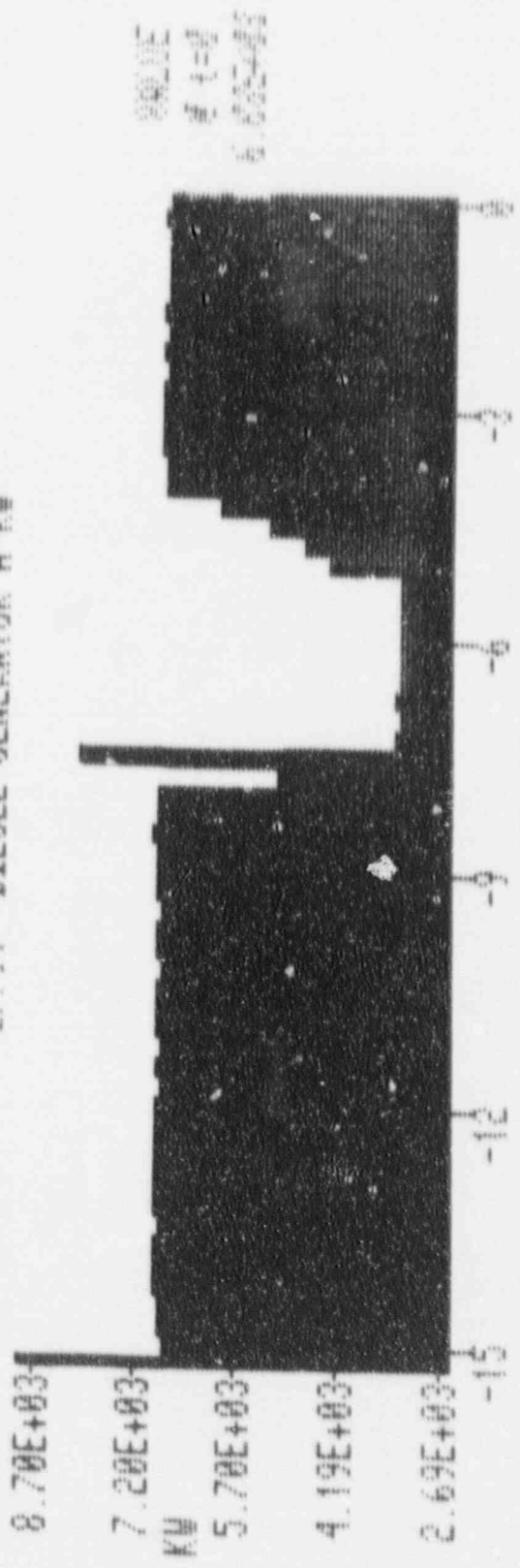


PRB 90-37 3/15/90  
CCTyran for PRB Chairman

RX TRIP

UNIT 1 4013/M 01:41:16 MODE 4

07791 DIESEL GENERATOR A KW



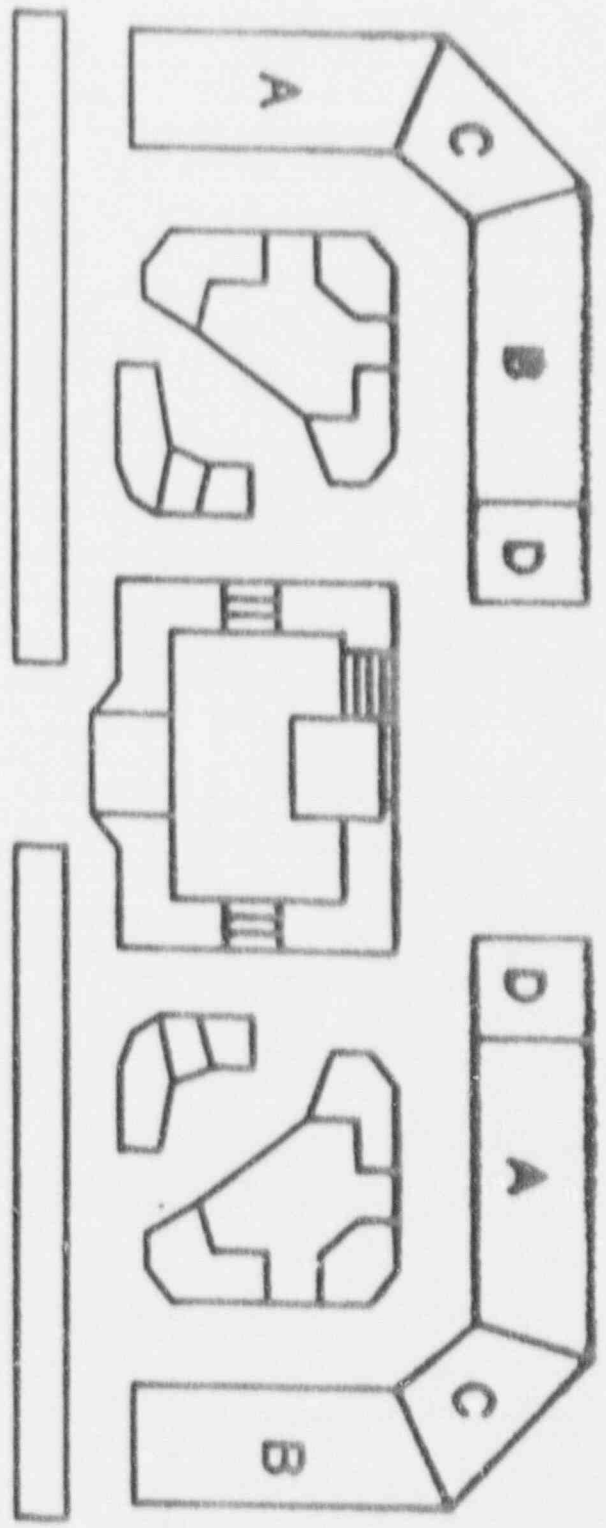
SCALE  
# 1=0  
6.02E+03

MINUTES SAMPLE RATE = 15 SECS



2-128

VOGTLE UNIT 1 & 2  
COMMON CONTROL ROOM



UNIT 2  
ROTATED

UNIT 1

65-2-98  
2-128

# VOGTLE UNIT 1

