

NUCLEAR POWER BUSINESS UNIT

LESSON PLAN / LABORATORY GUIDE COVERSHEET

PROGRAM NUMBER AND TITLE:		TRPR 33.0, Licensed Operator Requalification Training	
COURSE NUMBER AND TITLE:		LOR Cycle 01-2	
LP/LG TITLE:	Exam Issues		
LP/LG NUMBER:	LP3418		
REVISION NO: 0	DATE:		
DESCRIBE CHANGES (Change/Reason). For Revision 0, describe purpose.			
This lesson plan is to cover the exam weaknesses that were uncovered in the last requal exam.			
PRESENTATION	LABORATORY	SELF-EVALUATION/STUDY	TOTAL
<u>1.0</u> HOURS	_____ HOURS	_____ HOURS	<u>1.0</u> HOURS
<input checked="" type="checkbox"/> One-Time-Use LP/LG (no cleanup or issuance required) Note: One-time-use lessons or guides are not maintained in the EDMS, nor are they electronically retrievable. One-time-use lessons and guides are microfiched only.			
PREPARED BY:	Pat Murphy <u>Pat Murphy</u> TRAINING INSTRUCTOR / NUCLEAR		<u>2/16/01</u> DATE
REVISION ACKNOWLEDGED:	<u>R.C. Curran</u> LESSON PLAN OWNER (PA)		<u>2/16/01</u> DATE
TECHNICAL REVIEW BY:	<u>[Signature]</u> SUBJECT MATTER EXPERT		<u>2/20/01</u> DATE
APPROVED BY:	<u>[Signature]</u> TRAINING COORDINATOR		<u>2/20/01</u> DATE

A1107

Exam Issues

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## MATERIALS AND REFERENCES

### TRANSPARENCIES

- TP-1 Learning Objectives
- TP-2 Primary to Secondary Leak Question
- TP-3 AOP-3 Step 10
- TP-4 Dropped Rod Question
- TP-5 ARB 1C04 1A 1-6
- TP-6 Intermediate Range Instrument Power Fuse Question
- TP-7 Nuclear Instrument and Control Power schematic
- TP-8 Axial/Radial Flux Distribution Question
- TP-9 Flux Distribution in a Rodded Core
- TP-10 Gas Decay Tank Discharge Permit Question
- TP-11 AFW Following SI Initiation Question
- TP-12 Logic Sheet 20

### POWERPOINT/SLIDES

None

### HANDOUTS

None

### TRAINING AIDS

None

### REFERENCES

- AOP-3 Steam Generator Tube Leak.
- AOP-6A Dropped Rod Recovery
- LP2958 Reactor Theory Fundamentals Review
- CR 99-1313
- NIS Technical Manual
- ARB 1C04 1A 1-6

Exam Issues

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COMMITMENTS INCLUDED IN THIS LESSON PLAN

None

HISTORICAL DOCUMENTATION

The purpose of this lesson is to provide continuing training on the topics with high miss rates from the LOR 2001 Biennial Exam

\*OBTAIN MOST CURRENT REVISION AT TIME OF INSTRUCTION.

- 3.5.5 Based on the success rate of this question that seems to be an invalid assumption.

**Evaluation**

Ask the class the following question:

When may the discharge permit be terminated when purging a GDT for maintenance?

Answer:

Following a satisfactory chemistry sample after the maintenance purge

**TP-11**

**LO 052.05.LP0169.004**

- 3.6 052.05.LP0169.004 - Static Question addressing the status of P-38A following a manual SI initiation because the "A" train did not automatically actuate. The static had the pump tripped (green flagged), the discharge MOV opening, and the Mini-recirc open.
  - 3.6.1 The P-38A question was the highest missed question on the exam.
  - 3.6.2 The main knowledge issue is the behavior of the AFW system upon an SI initiation.

**TP-12**

- a. When the AFW pump is running and an SI signal is initiated, the AFW pump will get a trip signal.
  - b. The Pump will restart when the sequencer times out and the start signal is allowed to pass.
- 3.6.3 The key point that should have clued the operators to the correct answer is the fact that the min-flow recirc valve was open.

**499B466 sheet 369A and sheet 372A contains the development for this function**

- a. The Minirecirc valve does not open unless the pump breaker was closed at the same time there was low flow, or less than 45 seconds after the flow exceeded 75 gpm (the time delay dropout).
- b. In order for the valve to have gotten open the pump had to have started before the SI signal stripped it.
- c. In this case the pump had started on low-low level and tripped before the recirc valve time delay had dropped out, so the recirc valve was still open when the conditions were frozen.
- d. The recirc valve would close following its delay (45 seconds) once the pump breaker was opened, but in this case the recirc valve timer had not timed out.

### **Evaluation**

Ask the class the following question:

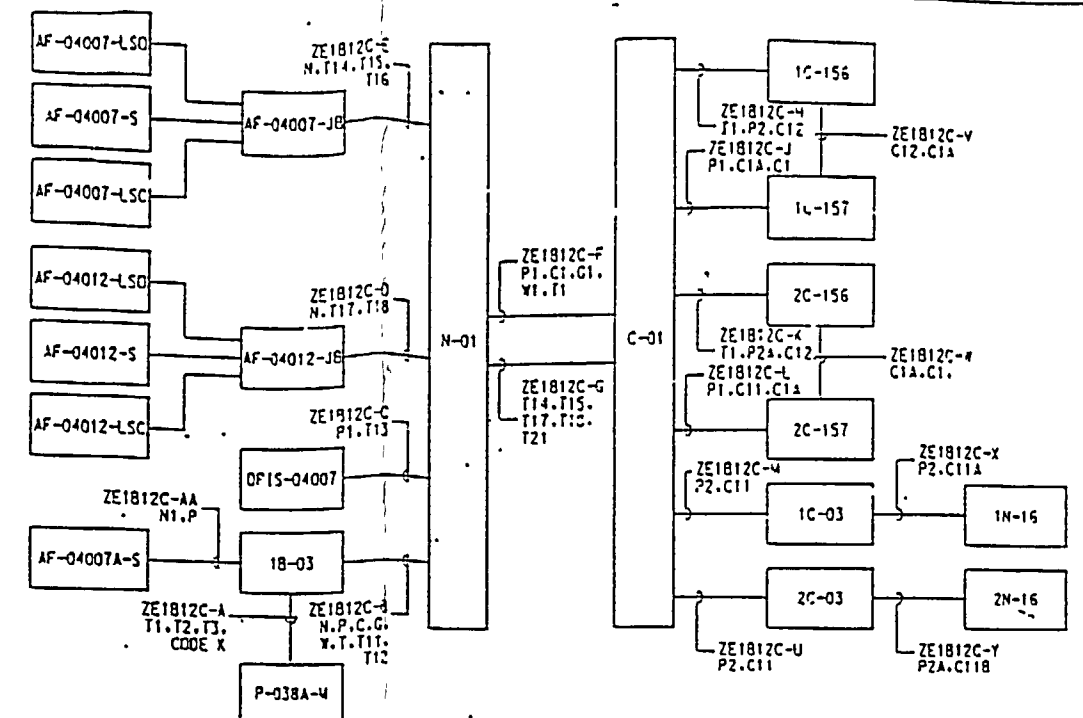
What sequence of events pertaining to the AFW pumps would you expect to occur if an AFW pump was running and a SI signal in the same train was processed?

Answer:

The pump will trip on the SI signal, the Discharge MOV will remain open the recirc valve will remain open for about 45 seconds, and the pump will restart when sequenced on.

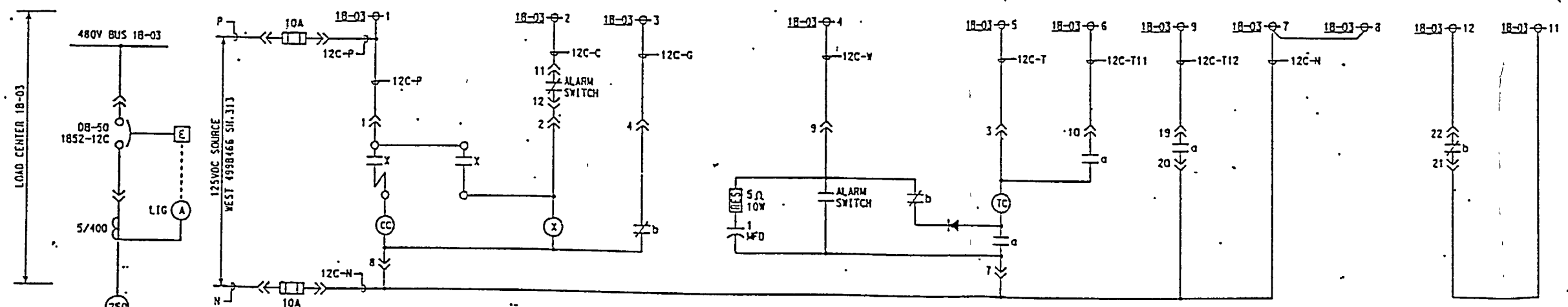
## **4.0 SUMMARY**

- 4.1 **RECOGNIZE and ANALYZE** the effects on Steam Generator operation of the following:  
Steam Generator Tube Leak (051.01.LP0492.005)



RISER DIAGRAM

FOR CONTROL CONTINUATION  
WEST 4998466 SH.372A



SCHEME: 1812C (PART)  
SAFEGUARDS TRAIN (A)

P-038A SCHEME TABLE	WEST 4998466
BREAKER 1852-12C	SH.369A
AUTOMATIC ACTUATION	SH.370A
REMOTE CONTROL	SH.372A
SUCTION PRESSURE TRIP	SH.373A

- NOTES:
- 1852-12C RETROFITTED W/AMPECTOR OVERLOAD KIT #647C21G10
  - COMPOSITE CABLE RISER DIAGRAM SHOWN THIS DRAWING. SEE P-038A SCHEME TABLE

LEGEND

- ⊗ PENETRATION TERMINAL
- LOCAL TERMINAL
- ⊕ TERMINAL AT LOAD CENTER
- ⊖ TERMINAL AT CONTROL PANEL DISCONNECTING (SLIDER) TYPE
- \*\* - PANEL NO.
- \*\* - TERMINAL NO.
- ⊖ TERMINAL AT CONTROL PANEL PERMANENT (FIXED) TYPE
- \*\* - PANEL NO.
- \*\* - TERMINAL NO.

THIS DRAWING HAS BEEN REDRAWN FROM WEST JOB #  
DWG. NO. 4998466 SH.369 REV.18  
DATE 9-22-97 BY SAB/OES

VENDOR : WEST  
T.F.I. T3.3  
MOD. REQ. : NONE

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**CONTROLLED**

WEST 4998466 SH.369A

REFERENCE DRAWINGS	DATE	REVISION DESCRIPTION	BY	CHK'D	APP'D	LEVEL USAGE	CGS REF FILES	WI-PROFILM NO.	CGS NO.	ELEMENTARY WIRING DIAGRAM
ONE-LINE DIAGRAM, 18-03						1 2 3 4 5 6 7 8 9			74247	POWER TO P-038A-M
CONNECTION DIAGRAM, 18-03						10 11 12 13 14 15 16 17 18				AUX FEEDWATER
CONNECTION DIAGRAM, N-01						19 20 21 22 23 24 25 26 27				MOTOR DRIVEN PUMP
						28 29 30 31 32 33 34 35 36				POINT BEACH N.P. UNIT 1
						37 38 39 40 41 42 43 44 45				
						46 47 48 49 50 51 52 53 54				
						55 56 57 58 59 60 61 62 63				

323767

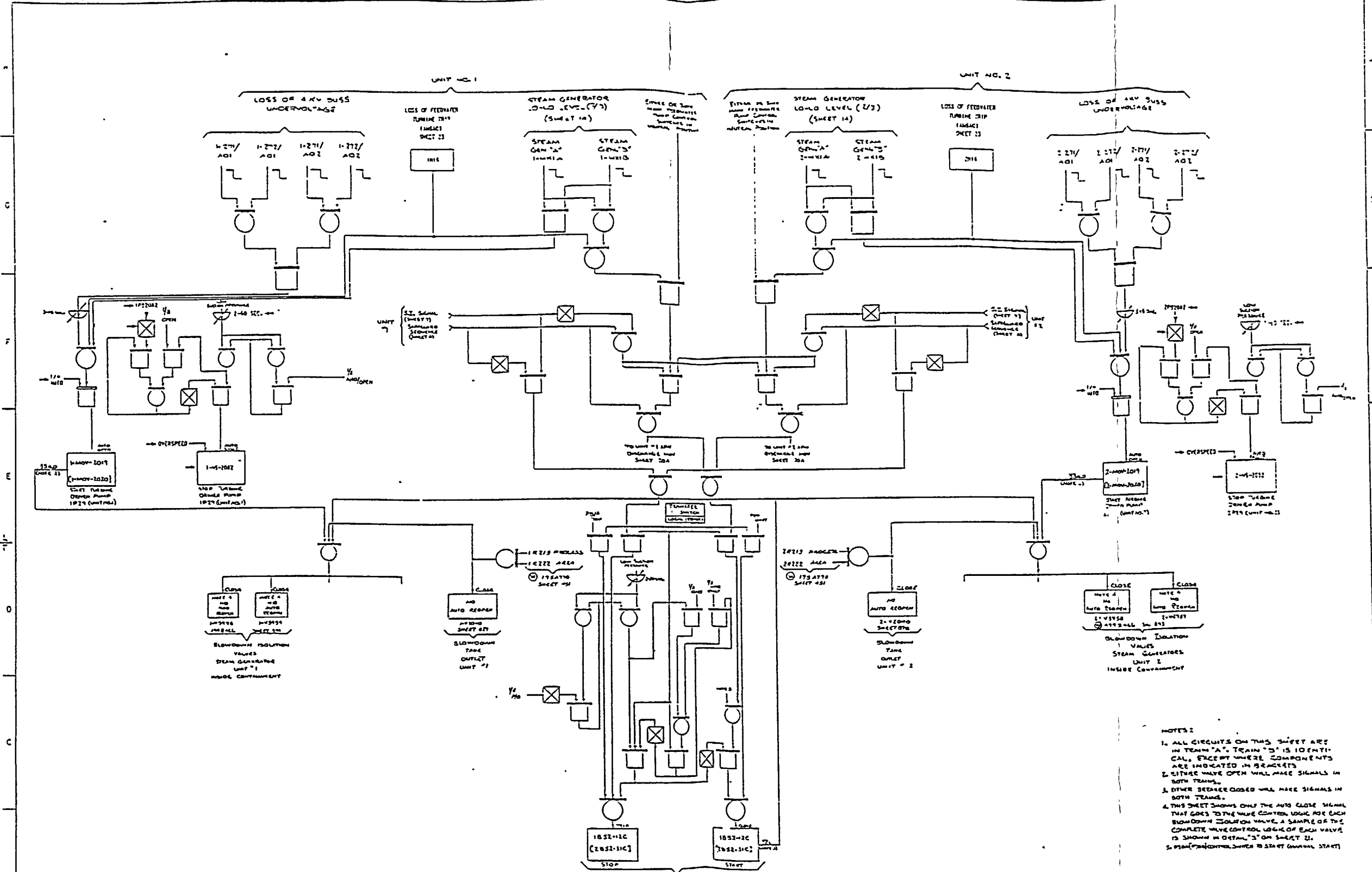
WISCONSIN ELECTRIC

CGS NO. 74247

DPB 01 EIAPS0001037100

95-48-2000





- NOTES:
1. ALL CIRCUITS ON THIS SHEET ARE IN TRAIN "A". TRAIN "B" IS IDENTICAL, EXCEPT WHERE COMPONENTS ARE INDICATED IN BRACKETS.
  2. EITHER VALVE OPEN WILL MAKE SIGNALS IN BOTH TRAINS.
  3. EITHER VALVE CLOSED WILL MAKE SIGNALS IN BOTH TRAINS.
  4. THIS SHEET SHOWS ONLY THE AUTO CLOSE SIGNAL THAT GOES TO THE VALVE CONTROL LOGIC FOR EACH SHUTDOWN ISOLATION VALVE. A SAMPLE OF THE COMPLETE VALVE CONTROL LOGIC OF EACH VALVE IS SHOWN IN DETAIL "D" ON SHEET 21.
  5. PMSA CONTROL SWITCH TO START (MANUAL START)

THIS DRAWING HAS BEEN REVISIONED FROM REVISION NO. 133 BY ENG. M. L. B. 10/14/78 DATE 10-14-78

FOR INFORMATION ONLY

WEST 3820195 SH.20

YOUNG & RUBICAM

17878

WISCONSIN ELECTRIC

AUXILIARY FEEDWATER PUMPS START-UP LOGIC

POINT BEACH NP UNITS 1 & 2

PE 31 EAFK1410015

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