

FIGURE 10.1-1

TURBINE PLANT

NIAGARA MOHAWK POWER CORPORATION  
NINE MILE POINT-UNIT 2  
FINAL SAFETY ANALYSIS REPORT

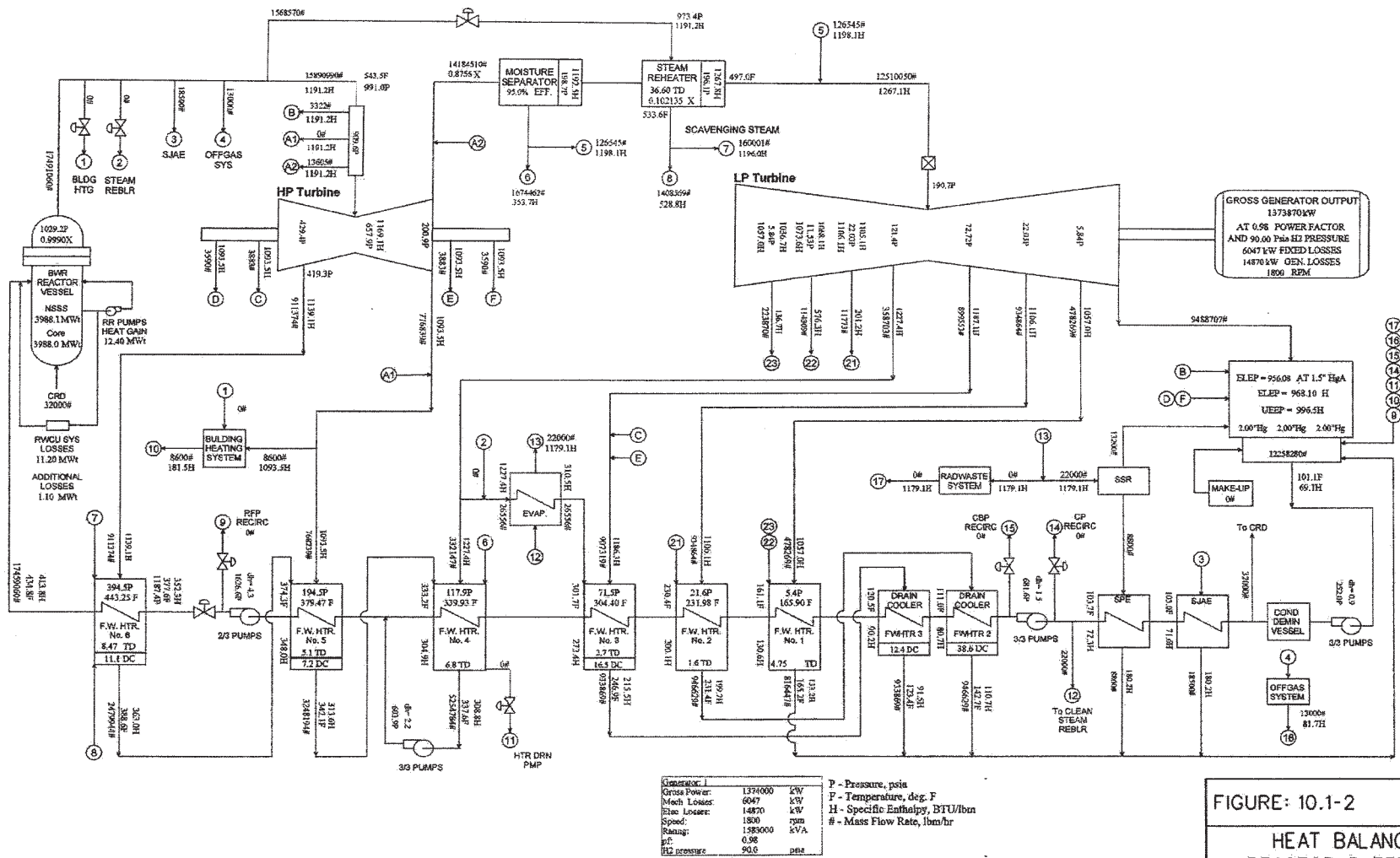


FIGURE: 10.1-2

HEAT BALANCE DIAGRAM  
REACTOR RATED - EPU 100%  
2 IN HGA CONDENSER PRESSURE

NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT









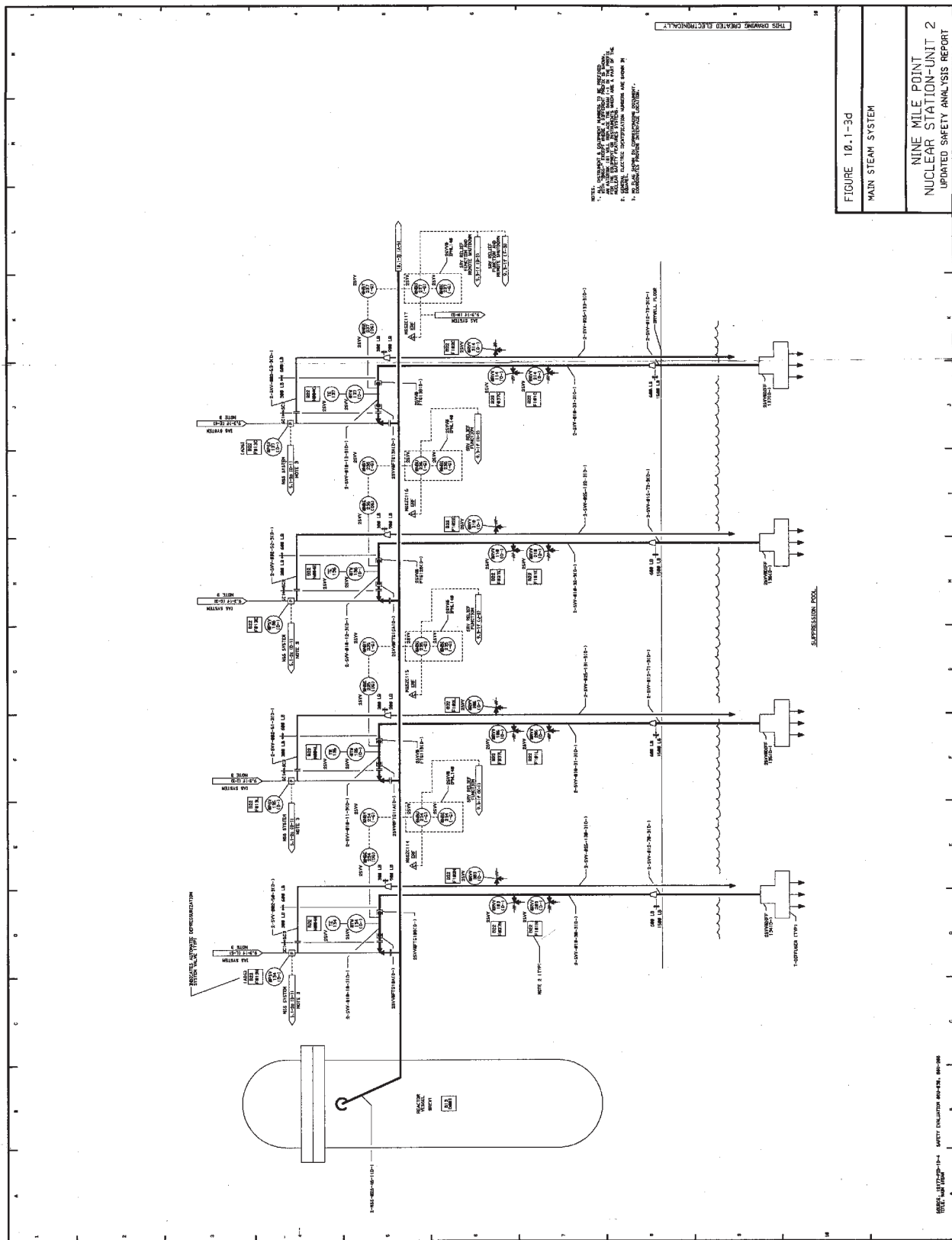


FIGURE 10.1-3d  
MAIN STEAM SYSTEM

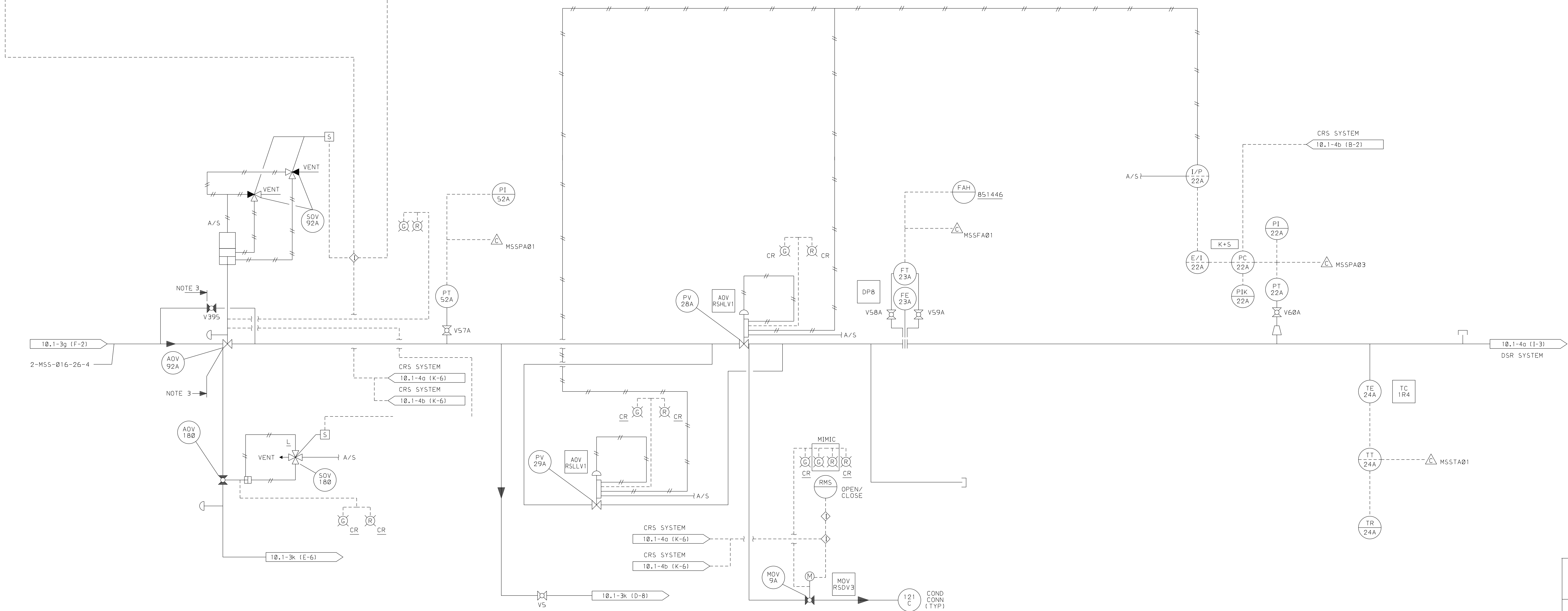
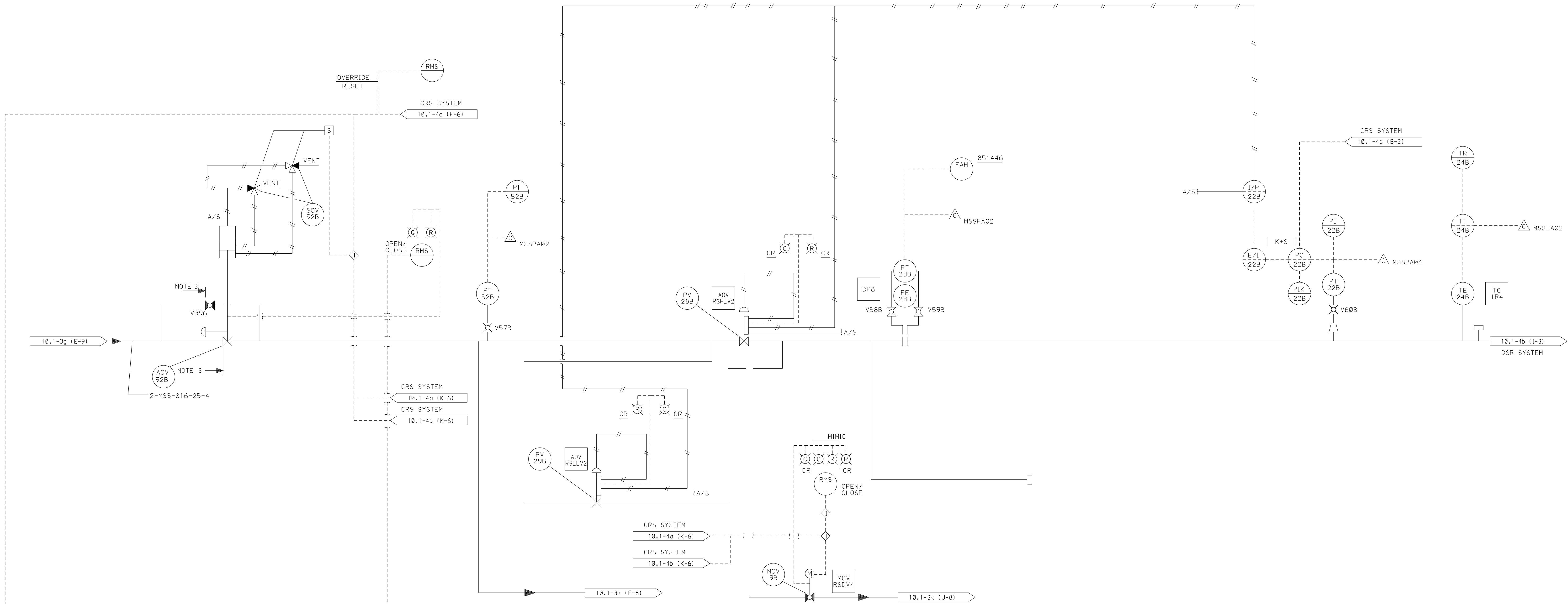
NINE MILE POINT  
NUCLEAR STATION-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

USAR REVISION 0









- NOTES:
1. ALL INSTRUMENT & EQUIPMENT NUMBERS TO BE PREFIXED WITH "2MSS-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN. AN ASTERISK (\*) WILL REPLACE THE DASH (-) IN THE PREFIX FOR EQUIPMENT OR INSTRUMENTS WHICH ARE A PART OF THE NUCLEAR SAFETY SYSTEM.
  2. GENERAL ELECTRIC IDENTIFICATION NUMBERS ARE SHOWN IN SQUARES.
  3. LIMIT OF QA CAT I NON NUCLEAR SAFETY RELATED SYSTEM PORTION, SEE SPEC. NMP2-P301A, APPENDIX 1 FOR DETAILED REQUIREMENTS.

FIGURE 10.1-3h

MAIN STEAM SYSTEM

NINE MILE POINT  
NUCLEAR STATION - UNIT 2  
SCRIBA, N.Y.

UPDATED SAFETY ANALYSIS REPORT

SOURCE: PID-1H-21  
TITLE: MAIN STEAM

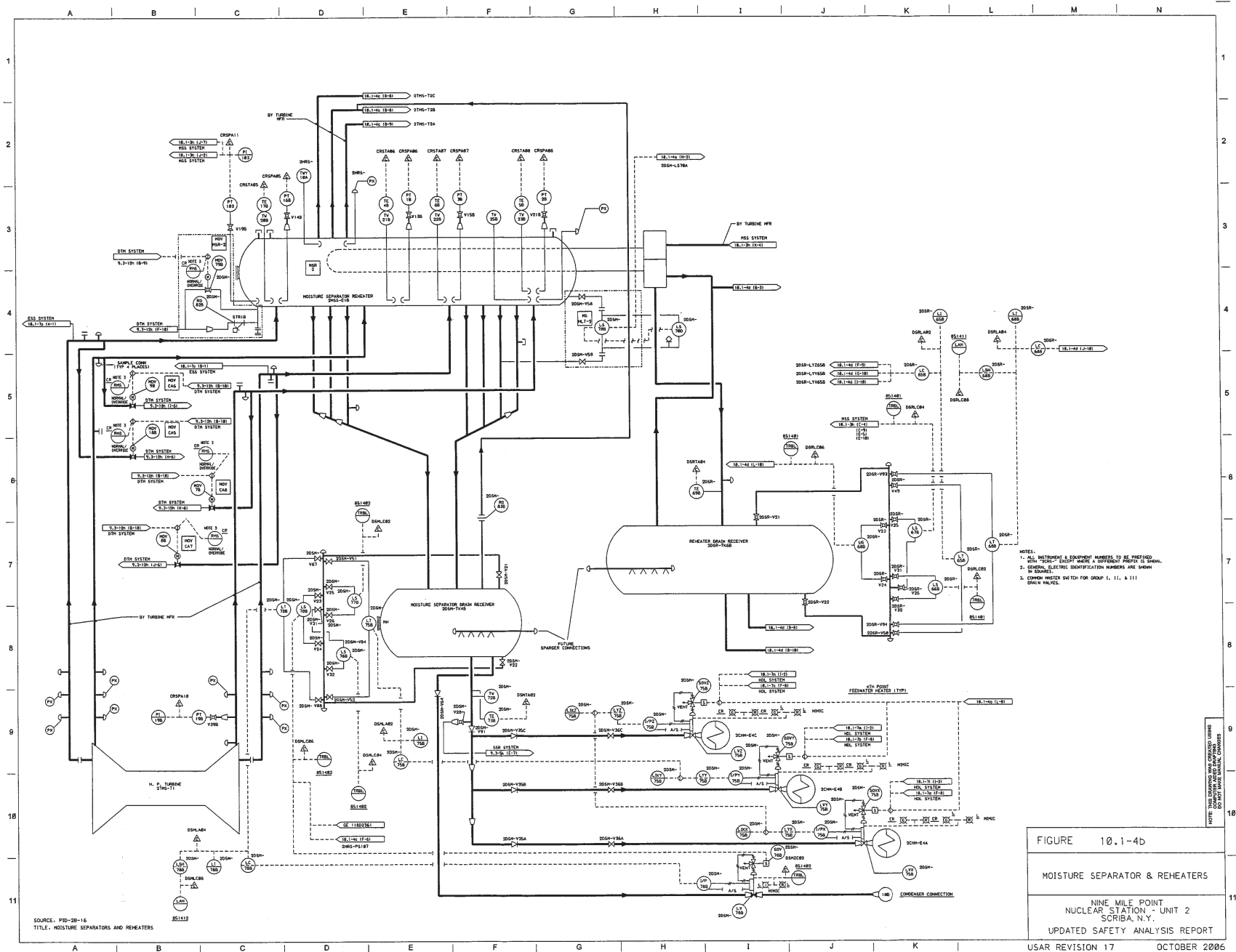
NOTE: THIS DRAWING WAS CREATED USING  
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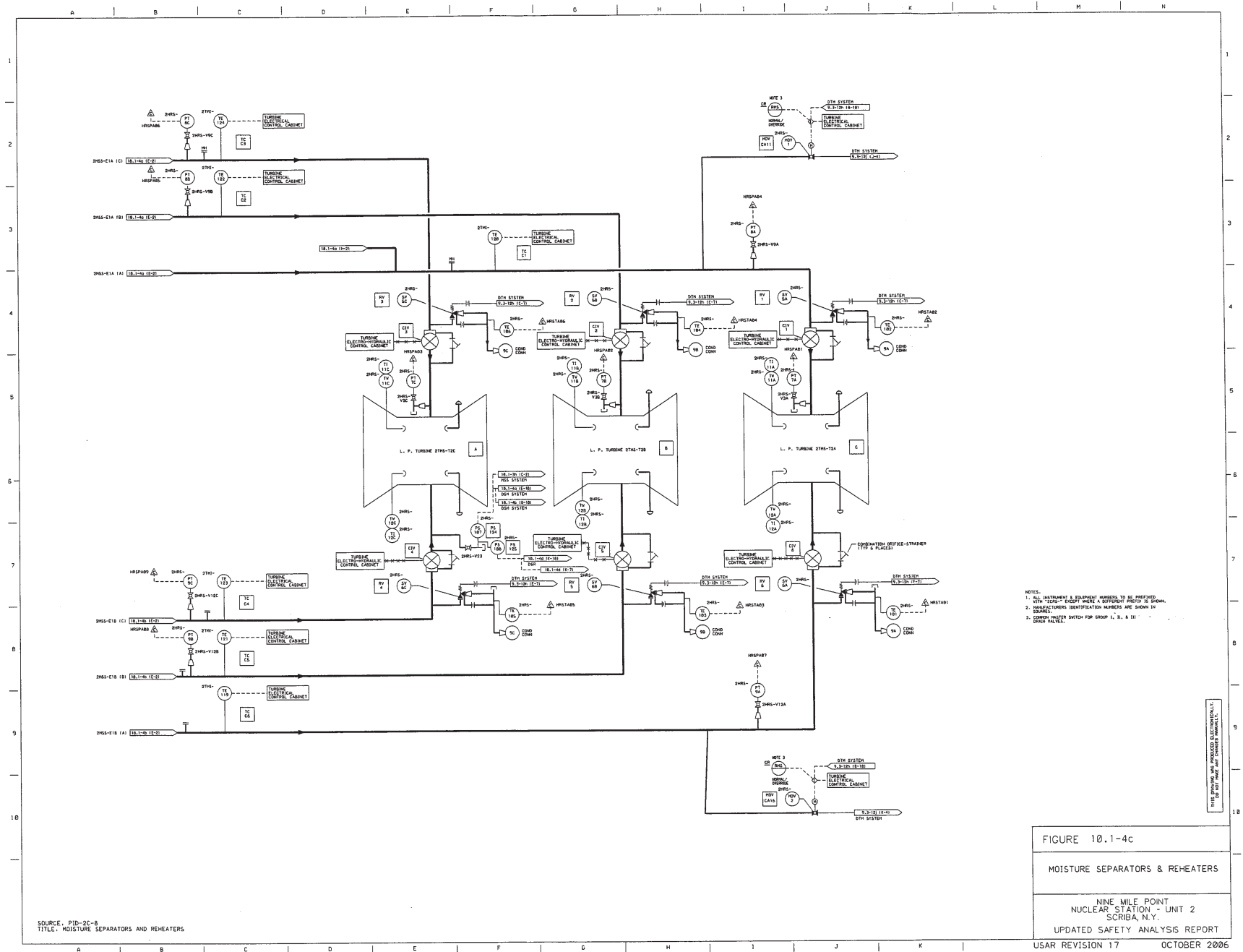


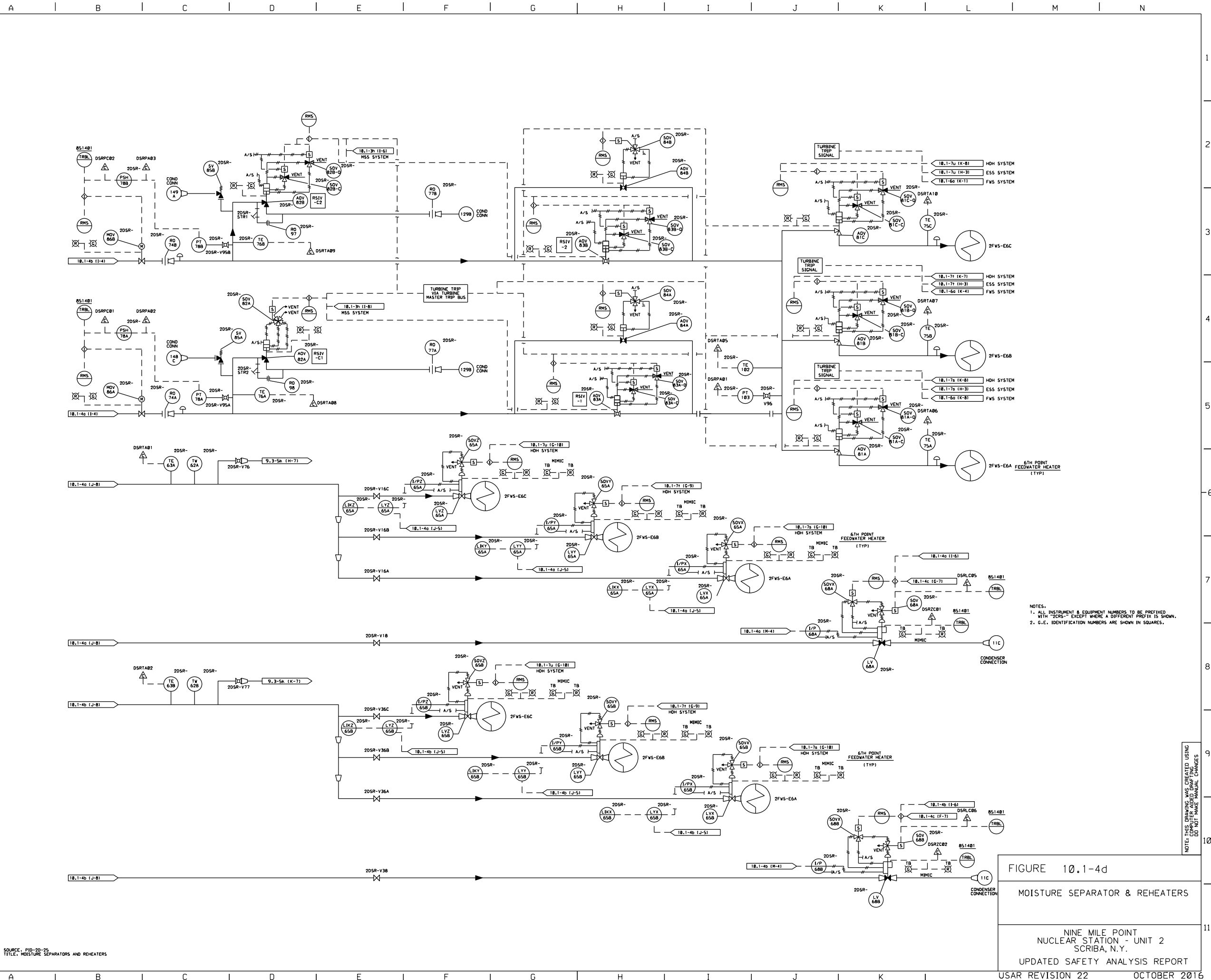












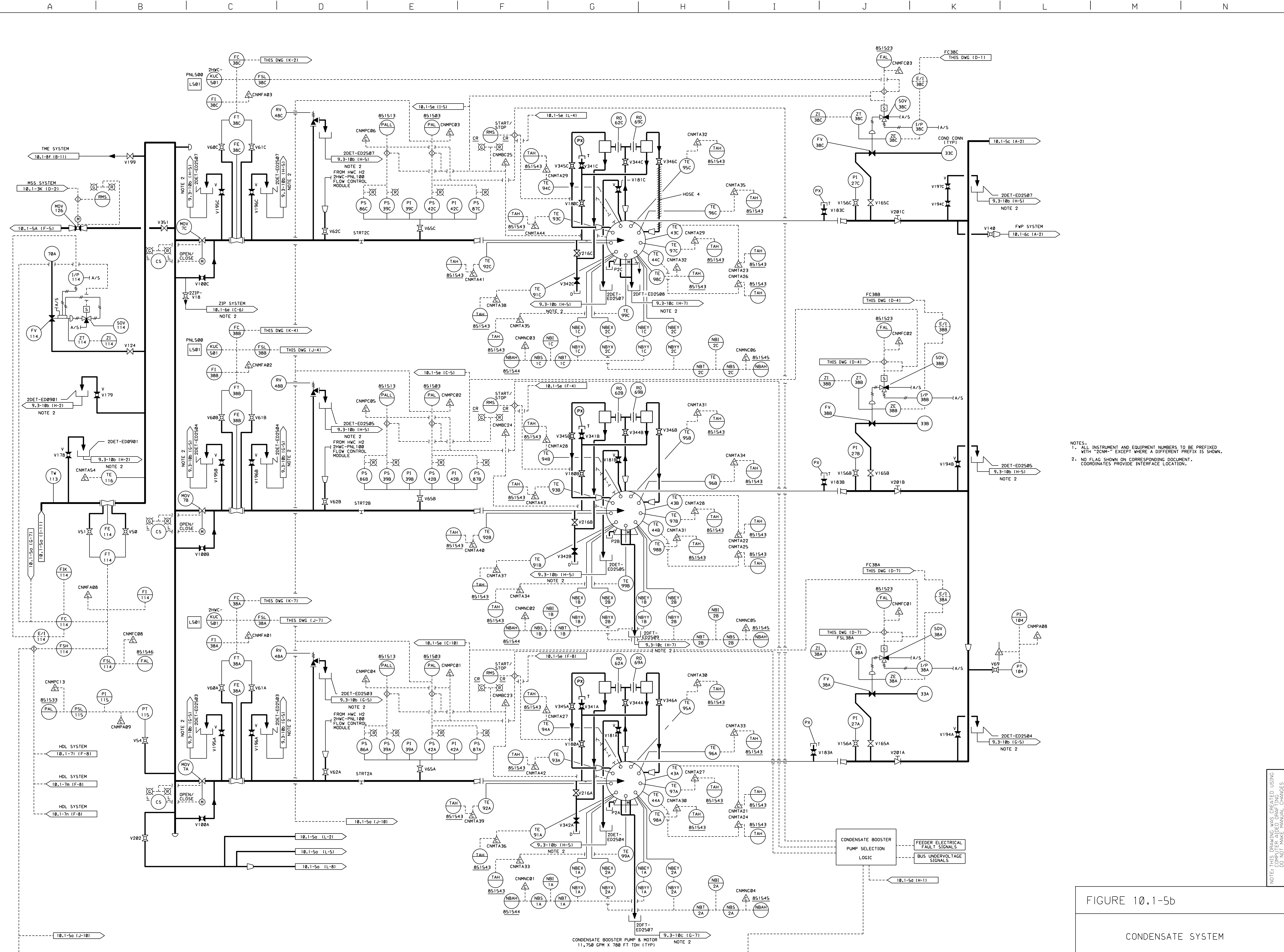
SOURCE: PID-20-25  
TITLE: MOISTURE SEPARATORS AND REHEATERS

NOTES:  
1. ALL INSTRUMENT & EQUIPMENT NUMBERS TO BE PREFIXED  
WITH "20SR-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.  
2. G.E. IDENTIFICATION NUMBERS ARE SHOWN IN SQUARES.



NINE MILE POINT  
NUCLEAR STATION - UNIT 2  
SCRIBA, N.Y.  
ATED SAFETY ANALYSIS REPORT





NOTES:  
 1. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2CNM-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.  
 2. NO FLAG SHOWN ON CORRESPONDING DOCUMENT. COORDINATES PROVIDE INTERFACE LOCATION.

NOTE: THIS DRAWING WAS CREATED USING COMPUTER AIDED DRAFTING. DO NOT MAKE MANUAL CHANGES.

SOURCE: PID-3B-23  
 TITLE: CONDENSATE SYSTEM

FIGURE 10.1-5b

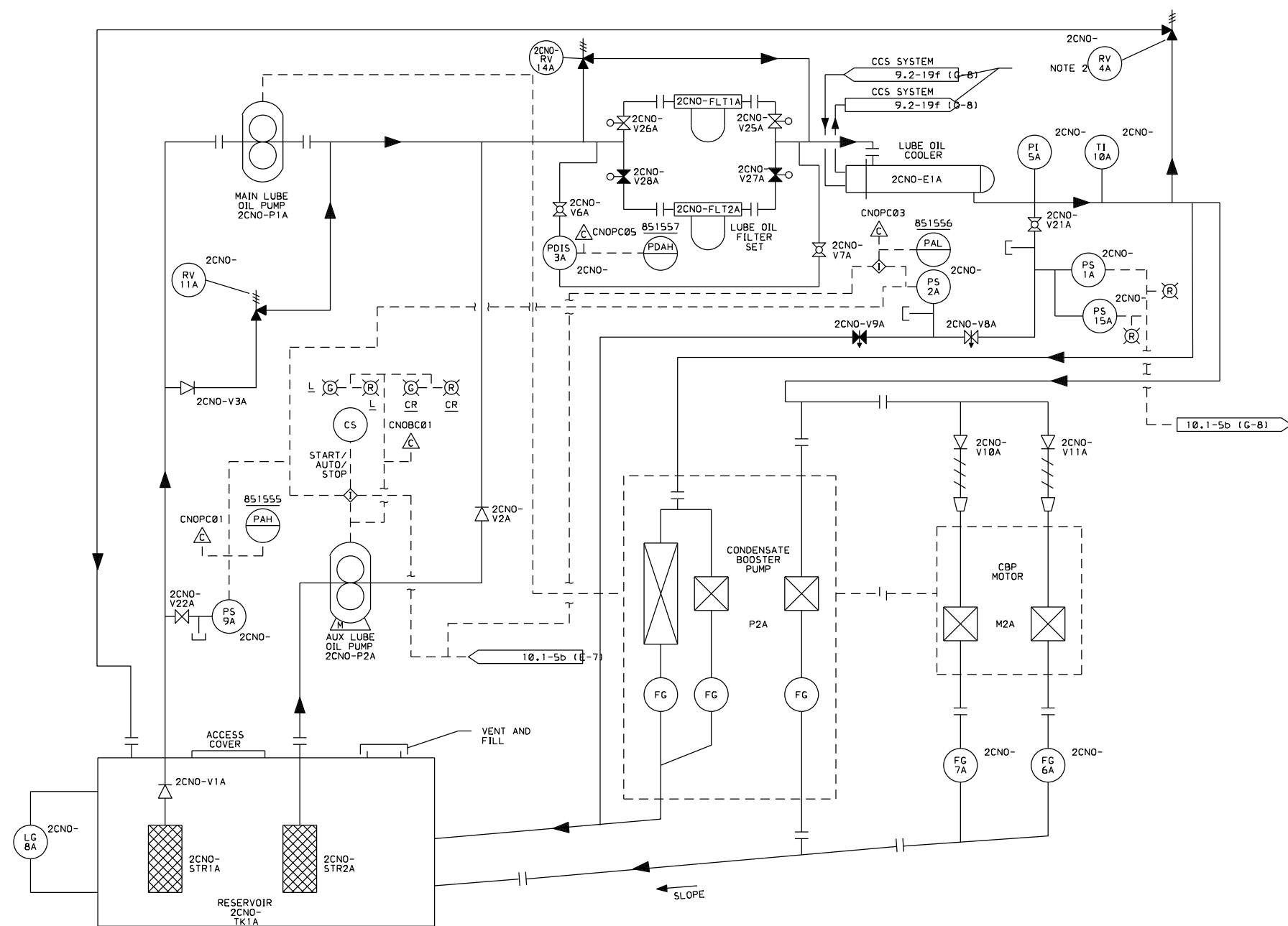
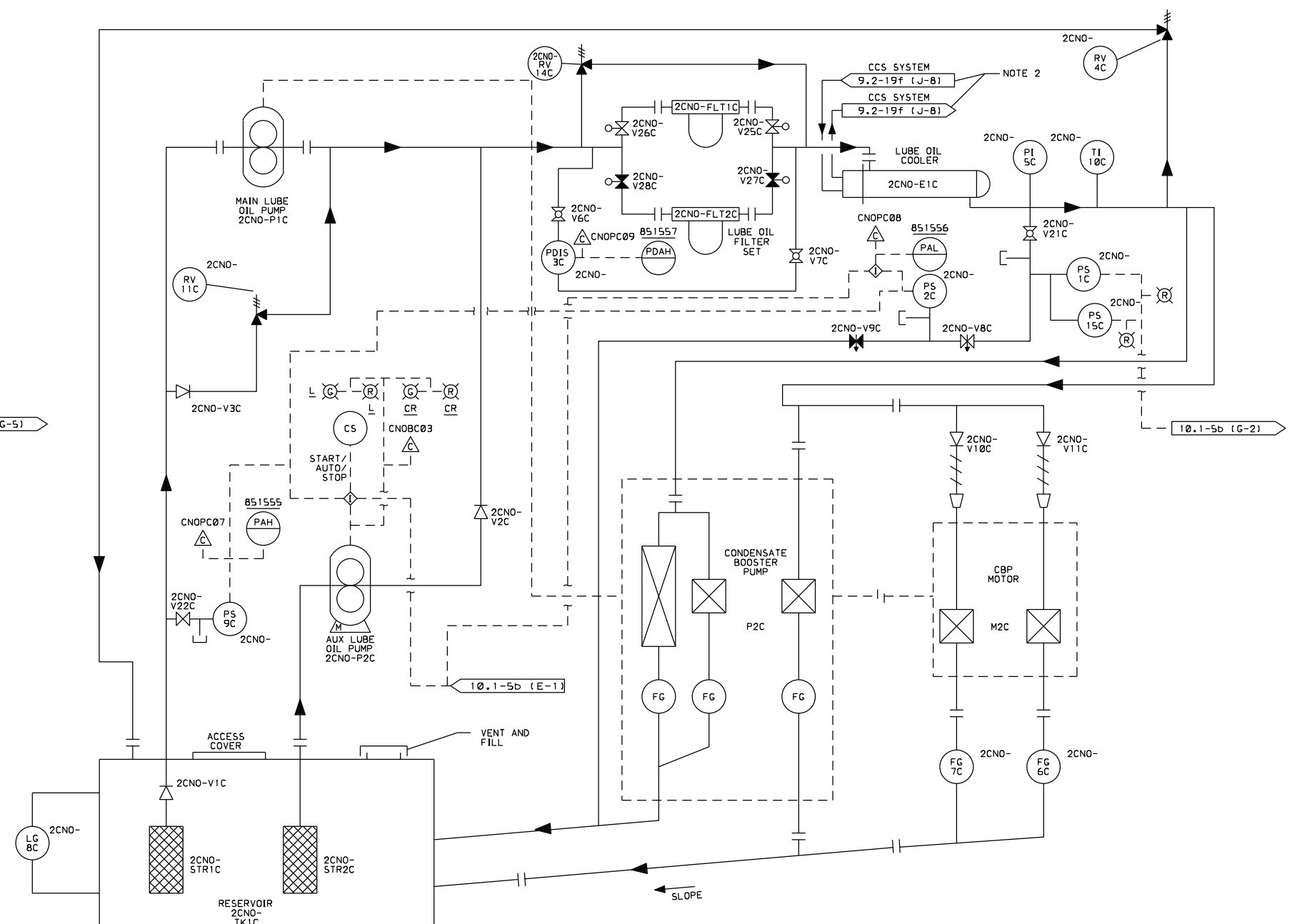
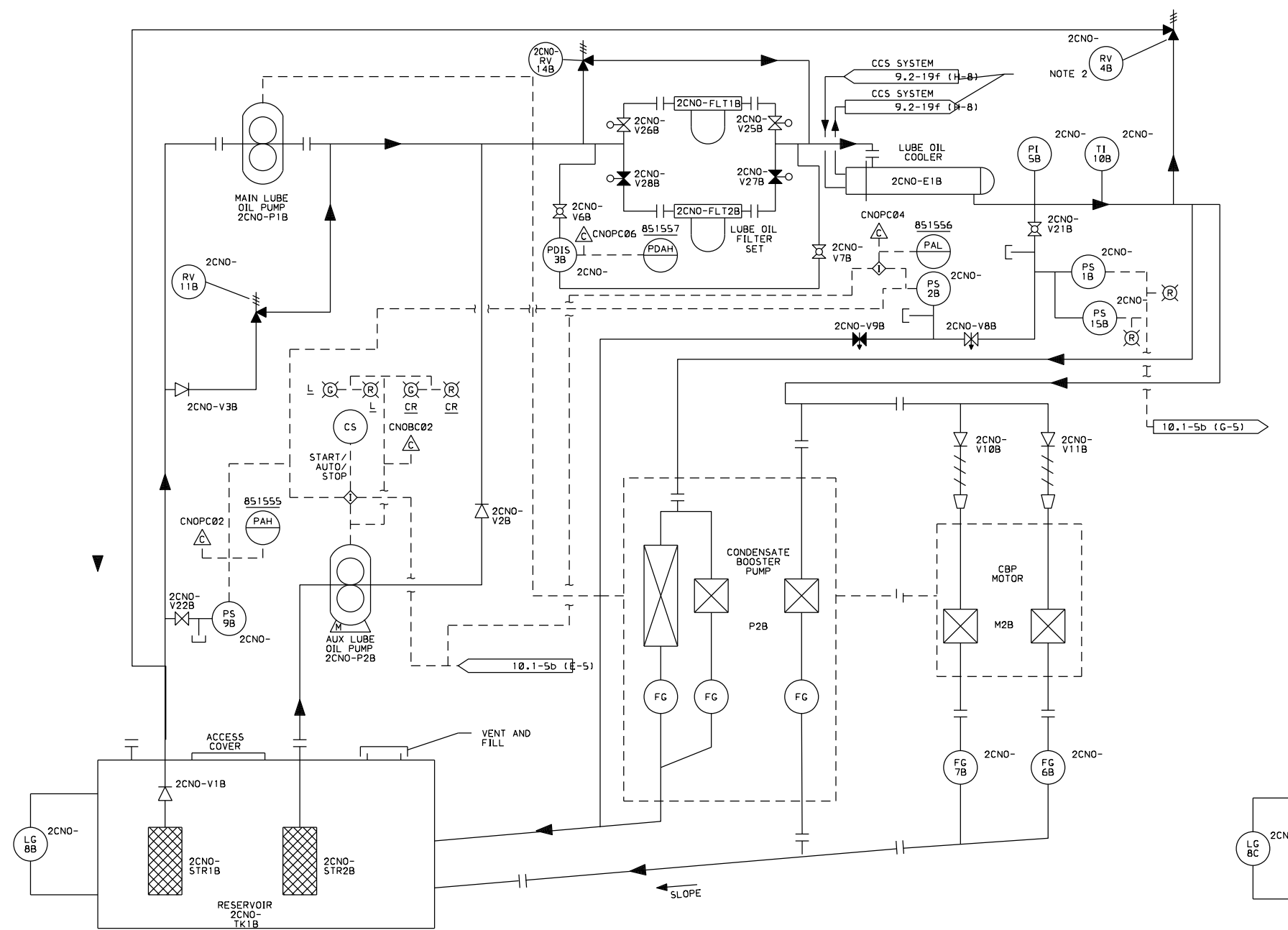
CONDENSATE SYSTEM

NINE MILE POINT  
 NUCLEAR STATION - UNIT 2  
 SCRIBA, N.Y.  
 UPDATED SAFETY ANALYSIS REPORT









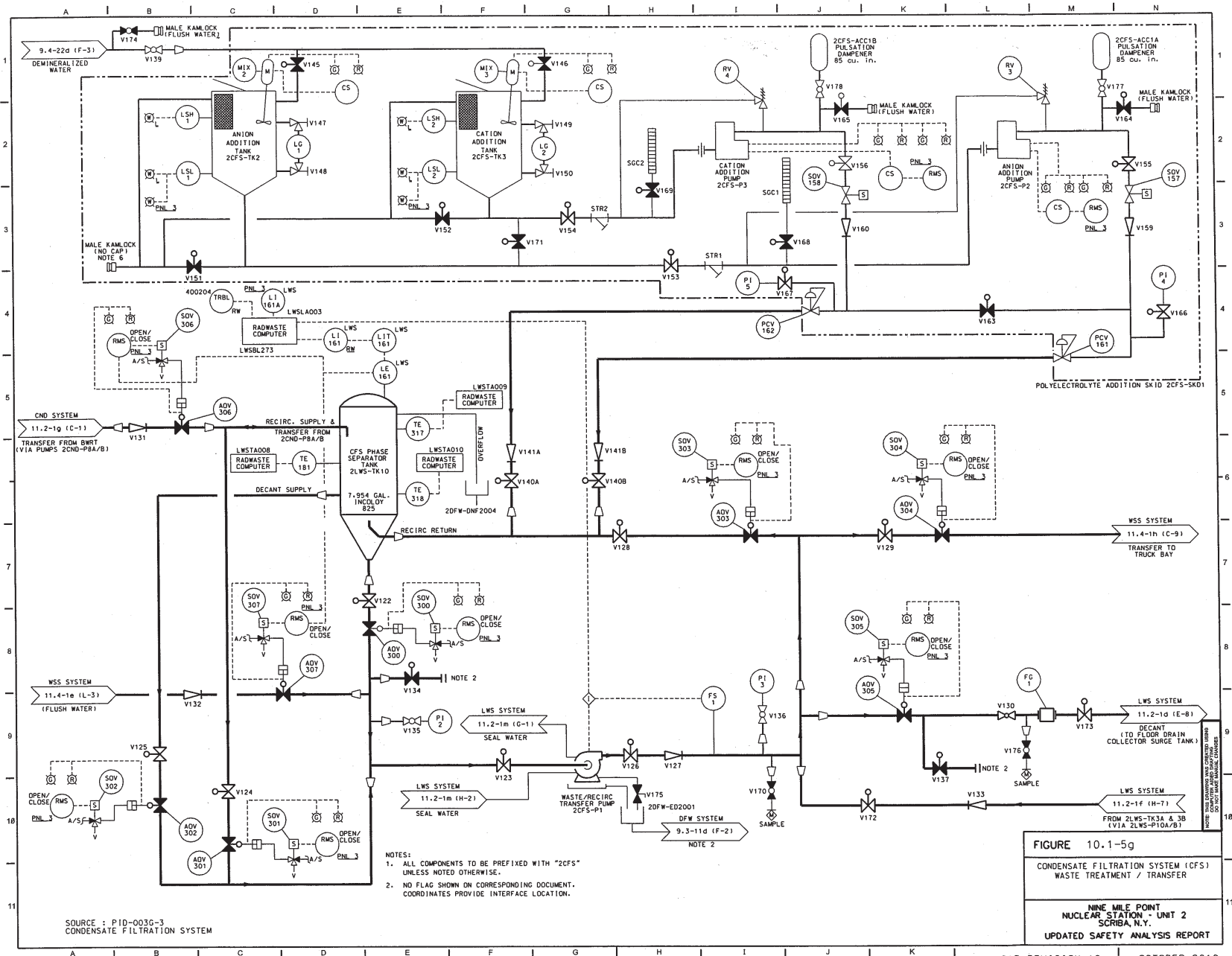
- NOTES:
1. ALL INSTRUMENT & EQUIPMENT NUMBERS TO BE PREFIXED WITH "2CNO-" UNLESS OTHERWISE NOTED.
  2. NO FLAG SHOWN ON CORRESPONDING DOCUMENT. COORDINATES PROVIDE INTERFACE LOCATION.

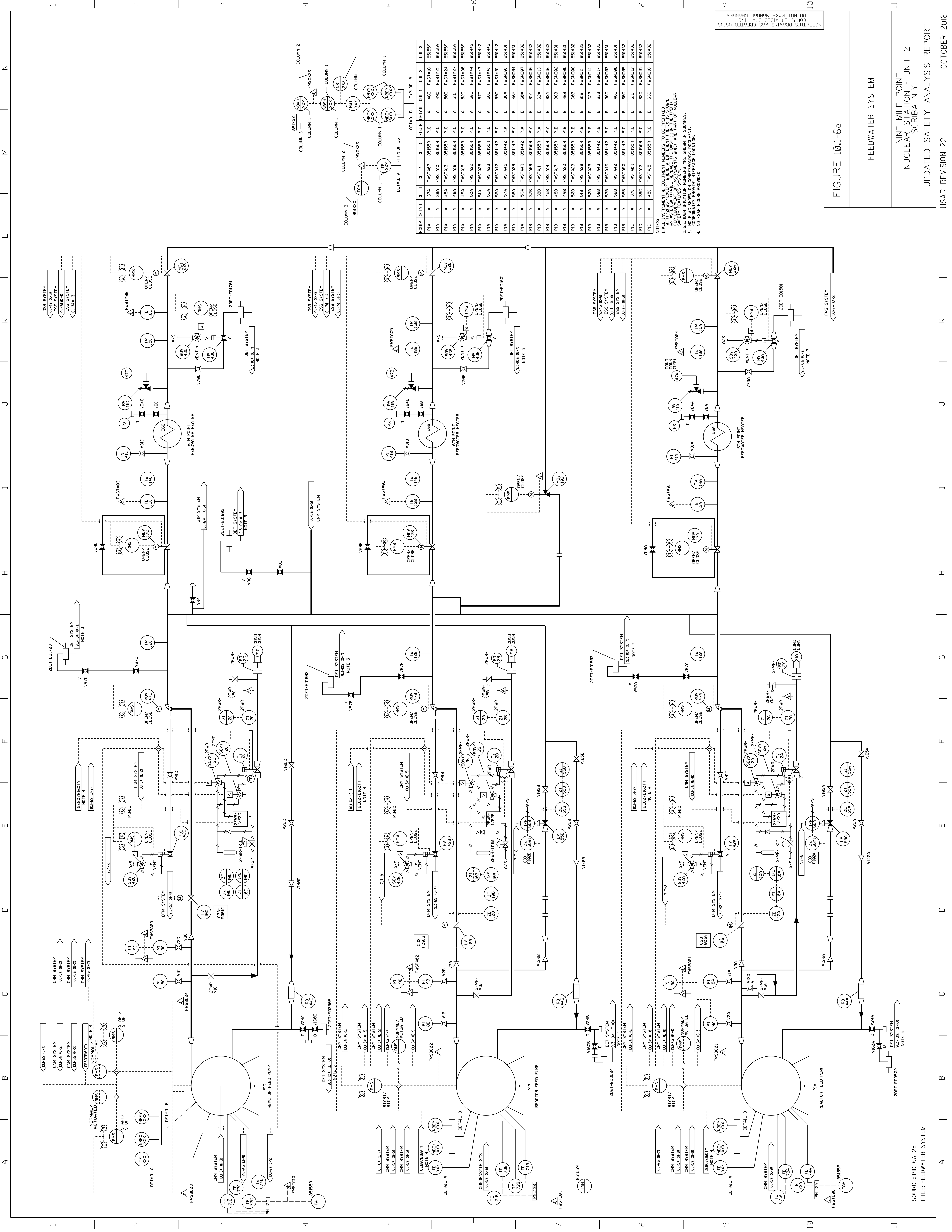
FIGURE 10.1-5e

CONDENSATE SYSTEM

NINE MILE POINT  
NUCLEAR STATION - UNIT 2  
SCRIBA, N.Y.  
UPDATED SAFETY ANALYSIS REPORT



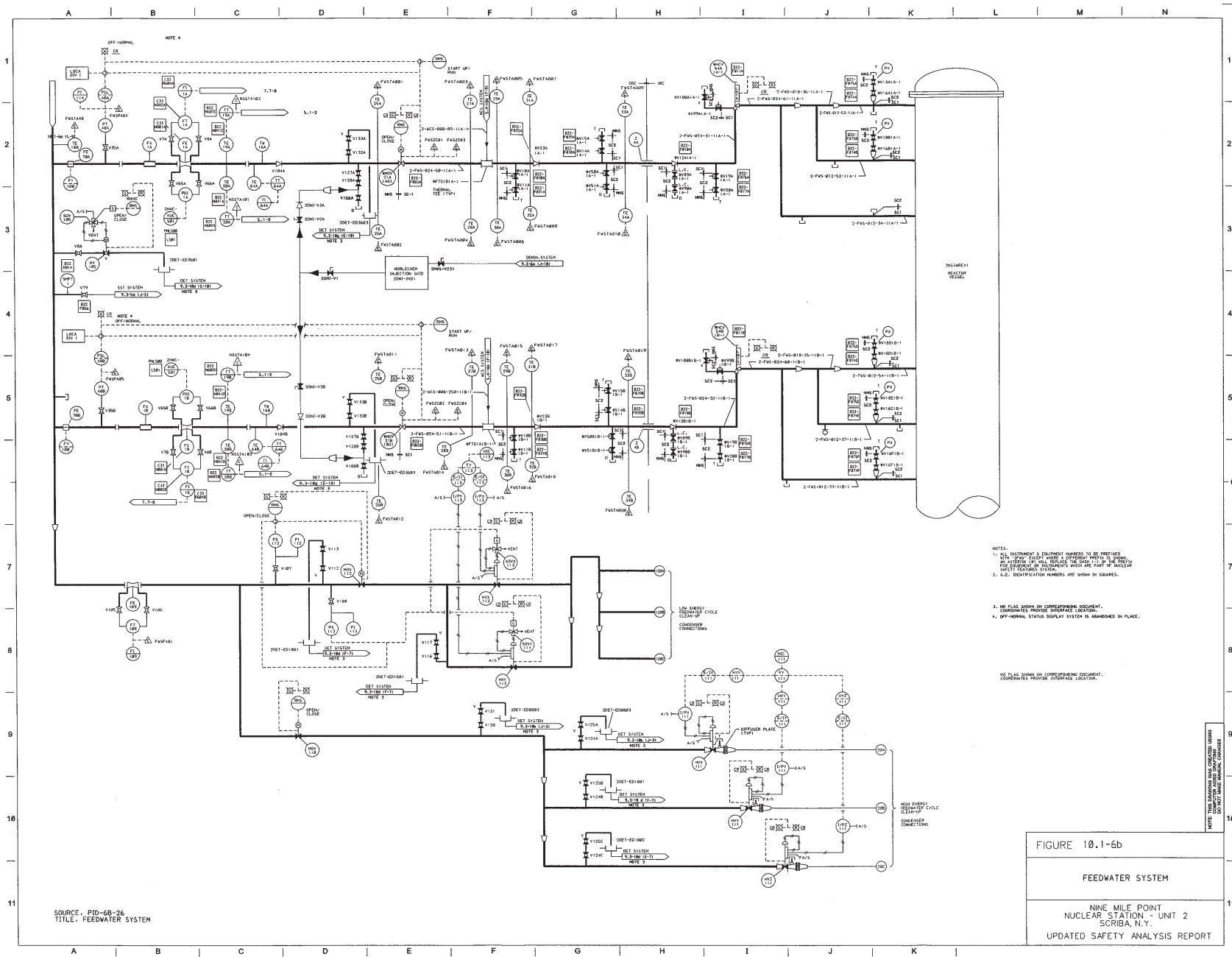


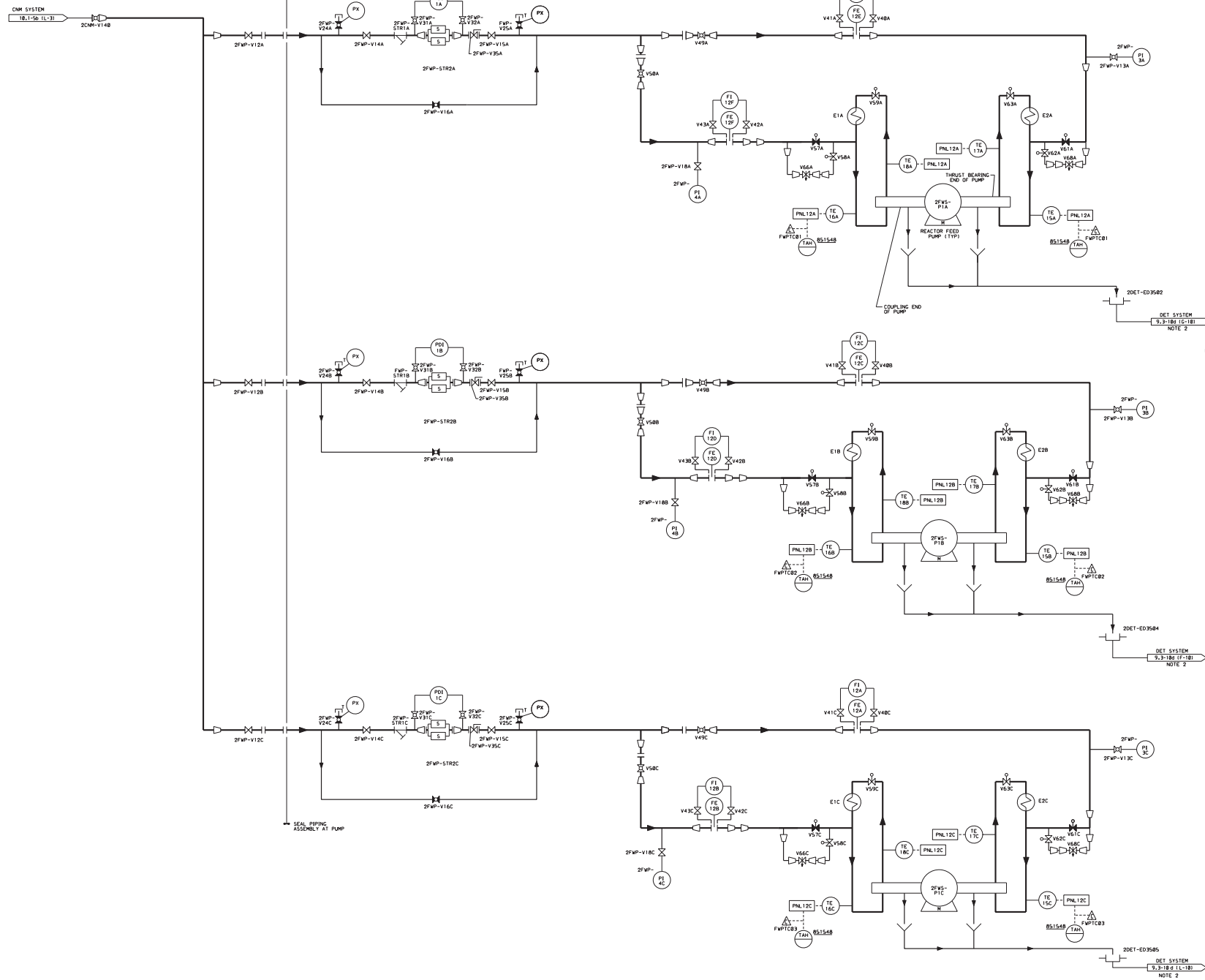


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DO NOT MAKE MANUAL CHANGES

EQUIP	DETAIL	COL 1	COL 2	COL 3	EQUIP	DETAIL	COL 1	COL 2	COL 3
PIA	A	37A	FWS1A07	851559	PIC	A	48C	FWS1A18	851559
PIA	A	38A	FWS1A18	851559	PIC	A	49C	FWS1A21	851559
PIA	A	43A	FWS1A13	851559	PIC	A	56C	FWS1A24	851559
PIA	A	48A	FWS1A16	851559	PIC	A	51C	FWS1A27	851559
PIA	A	49A	FWS1A17	851559	PIC	A	52C	FWS1A28	851559
PIA	A	50A	FWS1A22	851559	PIC	A	56C	FWS1A44	851442
PIA	A	51A	FWS1A25	851559	PIC	A	57C	FWS1A47	851442
PIA	A	52A	FWS1A28	851559	PIC	A	58C	FWS1A51	851442
PIA	A	53A	FWS1A42	851442	PIC	A	59C	FWS1A51	851442
PIA	A	57A	FWS1A45	851442	PIA	B	36A	FWS1A51	851431
PIA	A	58A	FWS1A39	851442	PIA	B	46A	FWS1A51	851431
PIA	A	59A	FWS1A49	851442	PIA	B	60A	FWS1A51	851432
PIB	A	37B	FWS1A08	851559	PIA	B	61A	FWS1A51	851432
PIB	A	38B	FWS1A11	851559	PIA	B	62A	FWS1A51	851432
PIB	A	40B	FWS1A14	851559	PIA	B	63A	FWS1A51	851432
PIB	A	48B	FWS1A17	851559	PIB	B	36B	FWS1A51	851431
PIB	A	49B	FWS1A20	851559	PIB	B	46B	FWS1A51	851431
PIB	A	50B	FWS1A23	851559	PIB	B	60B	FWS1A51	851432
PIB	A	51B	FWS1A26	851559	PIB	B	61B	FWS1A51	851432
PIB	A	52B	FWS1A29	851559	PIB	B	62B	FWS1A51	851432
PIB	A	56B	FWS1A43	851442	PIB	B	63B	FWS1A51	851432
PIB	A	57B	FWS1A46	851442	PIC	B	36C	FWS1A51	851431
PIB	A	58B	FWS1A48	851442	PIC	B	46C	FWS1A51	851431
PIB	A	59B	FWS1A50	851442	PIC	B	60C	FWS1A51	851432
PIC	A	37C	FWS1A09	851559	PIC	B	61C	FWS1A51	851432
PIC	A	38C	FWS1A12	851559	PIC	B	62C	FWS1A51	851432
PIC	A	45C	FWS1A15	851559	PIC	B	63C	FWS1A51	851432

NOTES:  
1. EQUIPMENT AND COMPONENT NUMBERS TO BE PREPARED  
WITH "2" PREFIX, EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.  
2. ALL DEVICES TO BE INTERFACED TO THE DASH-110 TIME PREPARED  
SAFETY FEATURES SYSTEM.  
3. ALL DEVICES TO BE INTERFACED TO THE DASH-110 TIME PREPARED  
SAFETY FEATURES SYSTEM.  
4. NO FEAR FIGURE PROVIDED





- NOTES:
1. ALL INSTRUMENT & EQUIPMENT NUMBERS TO BE PREFIXED WITH "2FWS-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
  2. NO FLAG SHOWN ON CORRESPONDING DOCUMENT. COORDINATES PROVIDE INTERFACE LOCATION.

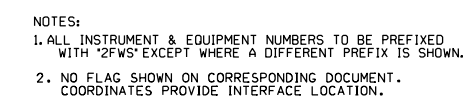
FIGURE 10.1-6c

FEEDWATER SYSTEM

NINE MILE POINT  
NUCLEAR STATION - UNIT 2  
SCRIBA, N.Y.  
UPDATED SAFETY ANALYSIS REPORT

NOTE: THIS DRAWING WAS CREATED USING  
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SOFTWARE. THERE MAY BE  
DISCREPANCIES BETWEEN  
THIS DRAWING AND THE  
ORIGINAL DRAWING.



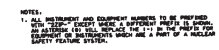


NOTE: THIS DRAWING WAS CREATED USING  
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DO NOT MAKE MANUAL CHANGES

# FEEDWATER SYSTEM "A" TRAIN

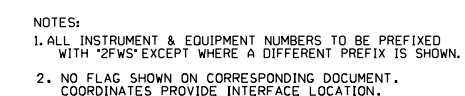
NINE MILE POINT  
NUCLEAR STATION - UNIT 2  
SCRIBA, N.Y.  
UPDATED SAFETY ANALYSIS REPORT

TITLE: FEEDWATER SYSTEM  
SOURCE: PID-6D-15



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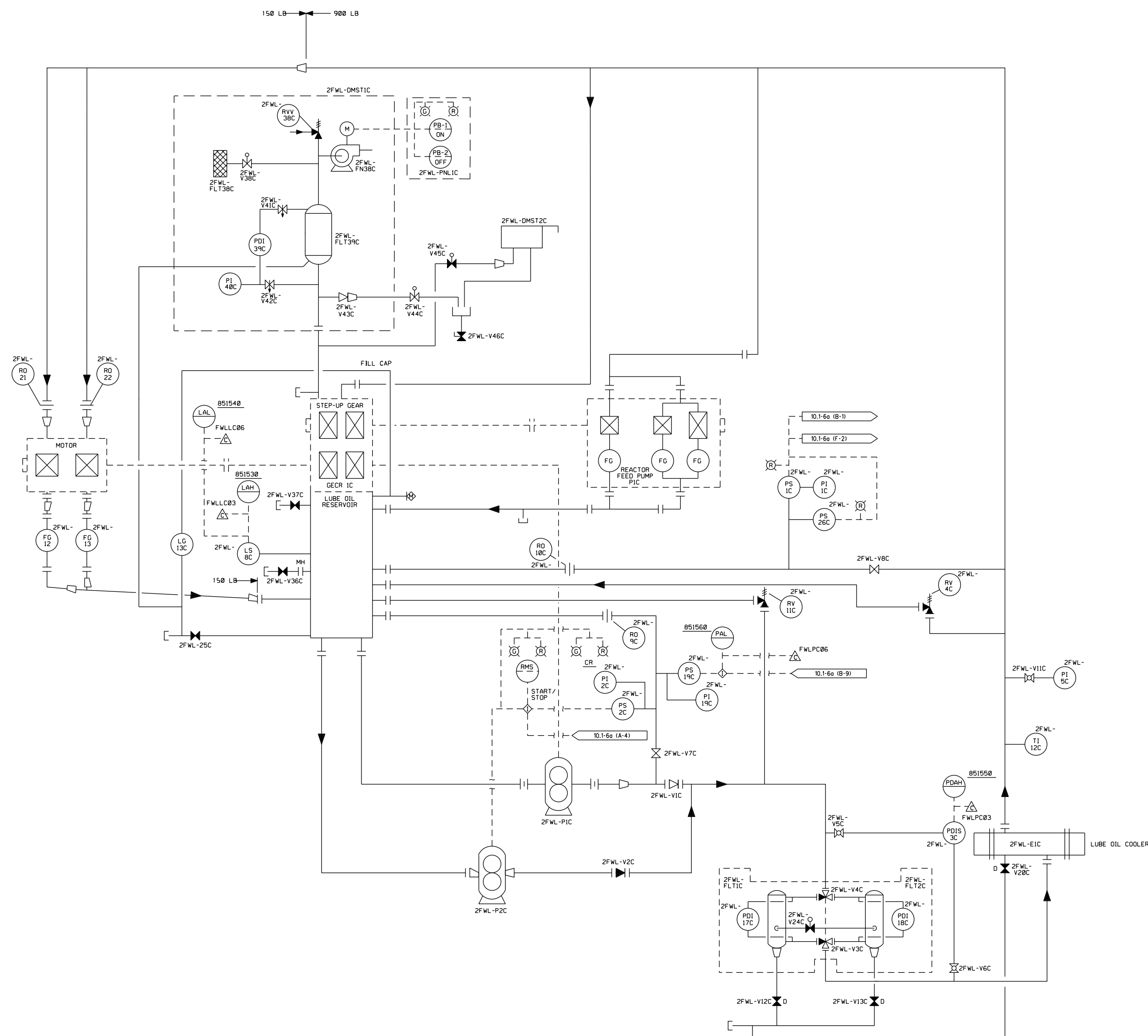
TITLE: FEEDWATER SYSTEM  
SOURCE: PID-6F-00

FIGURE 10.1-6f

FEEDWATER SYSTEM "B" TRAIN
NINE MILE POINT NUCLEAR STATION - UNIT 2 SCRIBA, N.Y.  UPDATED SAFETY ANALYSIS REPORT

1  
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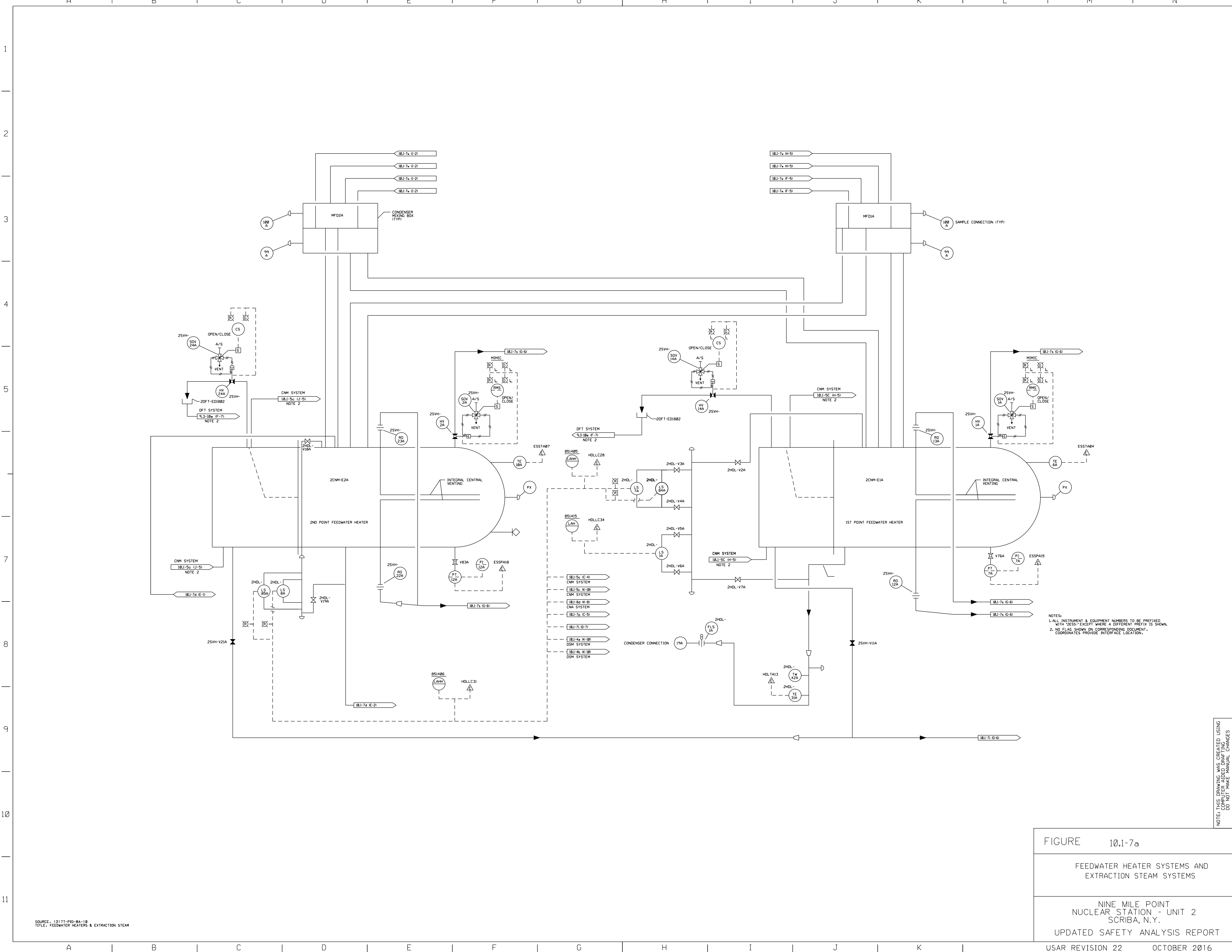
NOTES:  
1. ALL INSTRUMENT & EQUIPMENT NUMBERS TO BE PREFIXED  
WITH "2FWS" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.  
2. NO FLAG SHOWN ON CORRESPONDING DOCUMENT.  
COORDINATES PROVIDE INTERFACE LOCATION.

TITLE: FEEDWATER SYSTEM  
SOURCE: PID-6G-000

FIGURE 10.1-6g  
FEEDWATER SYSTEM  
"C" TRAIN  
NINE MILE POINT  
NUCLEAR STATION - UNIT 2  
SCRIBA, N.Y.  
UPDATED SAFETY ANALYSIS REPORT

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NOTE: THIS DRAWING WAS CREATED USING  
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SOURCE: 12177-PID-04-18  
TITLE: FEEDWATER HEATERS & EXTRACTION STEAM

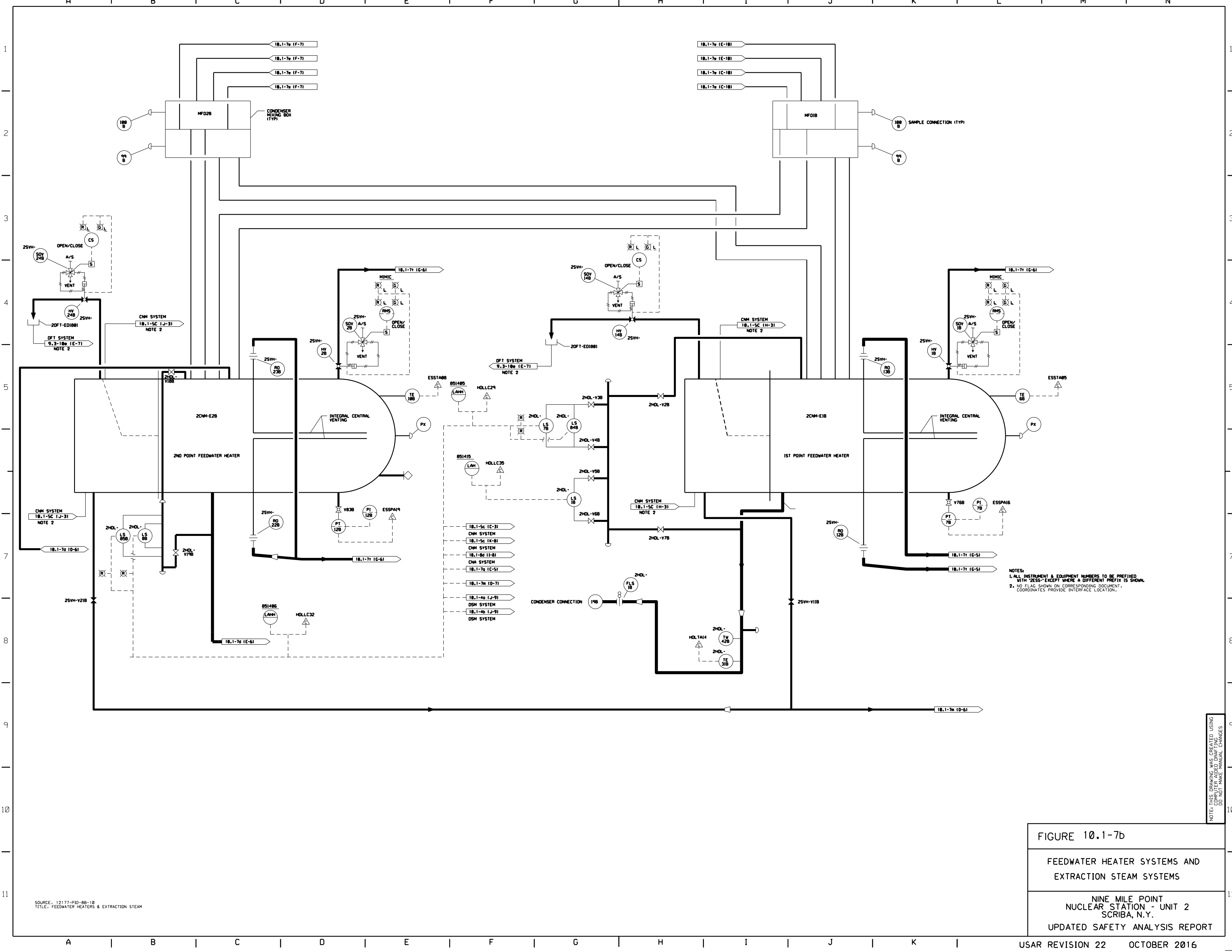
FIGURE 10.1-7a

FEEDWATER HEATER SYSTEMS AND EXTRACTION STEAM SYSTEMS

NINE MILE POINT  
NUCLEAR STATION - UNIT 2  
SCRIBA, N.Y.

UPDATED SAFETY ANALYSIS REPORT

NOTE: THIS DRAWING WAS CREATED USING  
COMPUTER AIDED DRAFTING  
SOFTWARE. NO MANUAL CHANGES  
WERE MADE.



NOTES:  
1. ALL INSTRUMENT & EQUIPMENT NUMBERS TO BE PREFIXED WITH "2ESS" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.  
2. NO FLAG SHOWN ON CORRESPONDING DOCUMENT. COORDINATES PROVIDE INTERFACE LOCATION.

NOTE: THIS DRAWING WAS CREATED USING AUTOCAD. IT DOES NOT MAKE MANUAL CHANGES

FIGURE 10.1-7b  
FEEDWATER HEATER SYSTEMS AND  
EXTRACTION STEAM SYSTEMS  
NINE MILE POINT  
NUCLEAR STATION - UNIT 2  
SCRIBA, N.Y.  
UPDATED SAFETY ANALYSIS REPORT



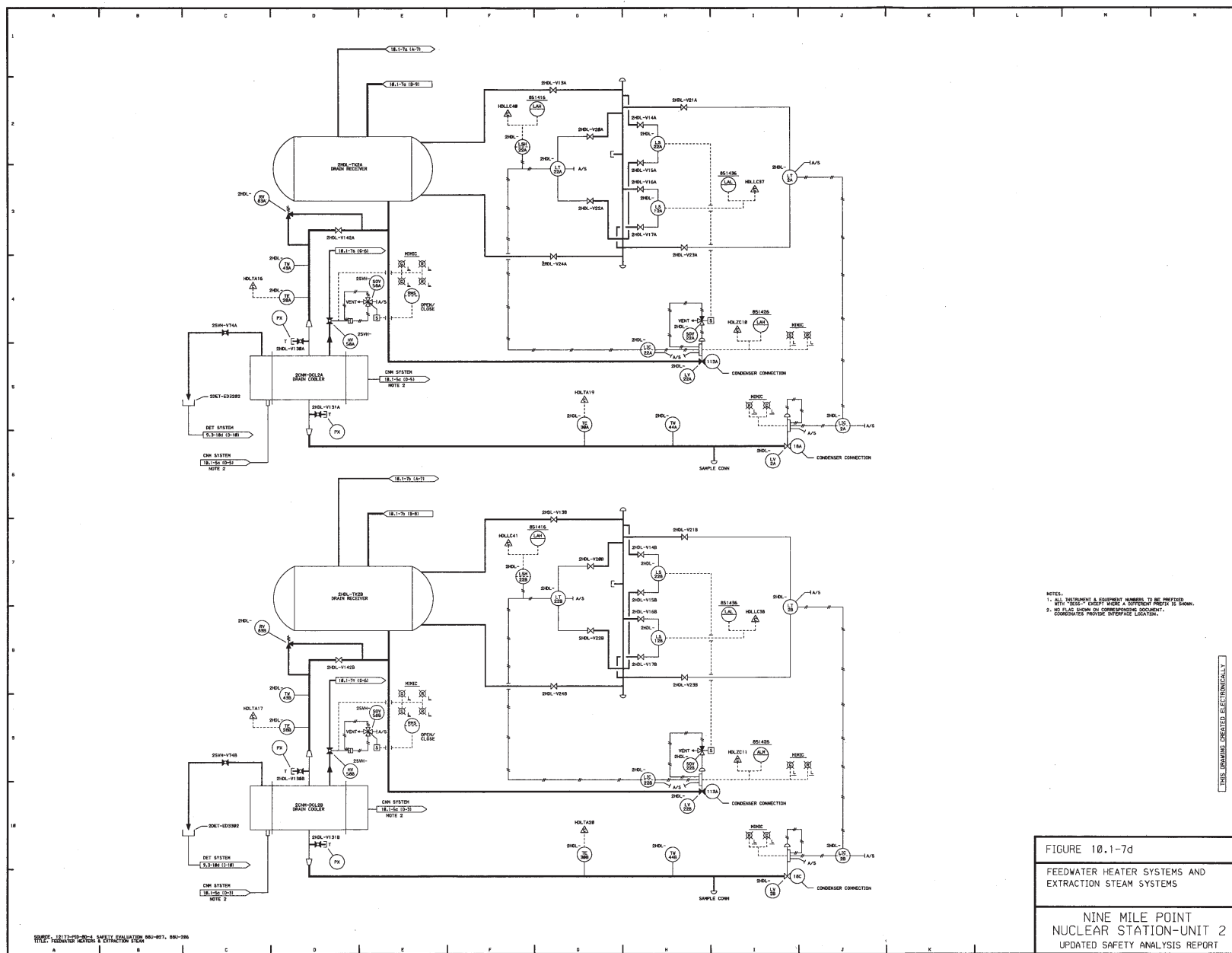
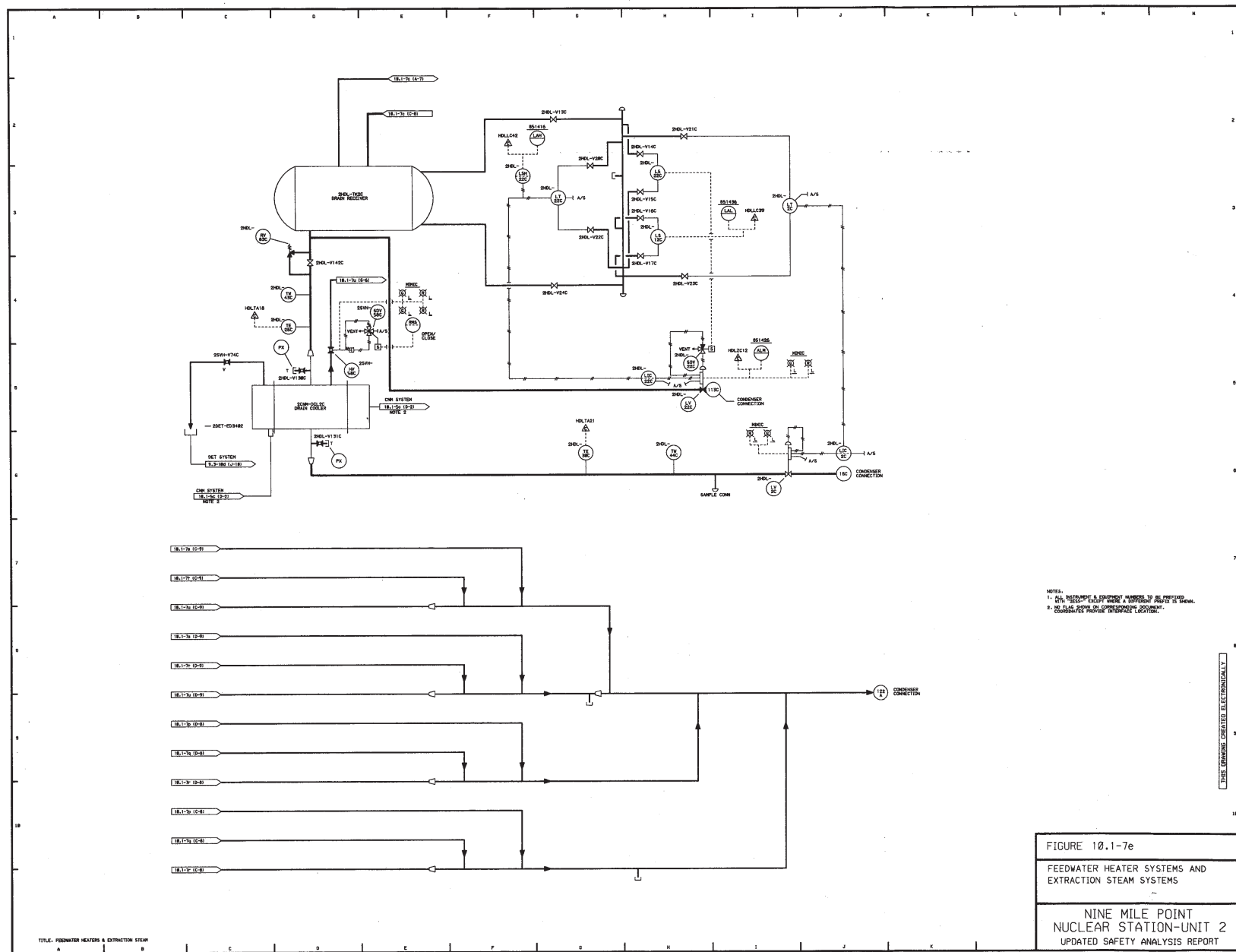
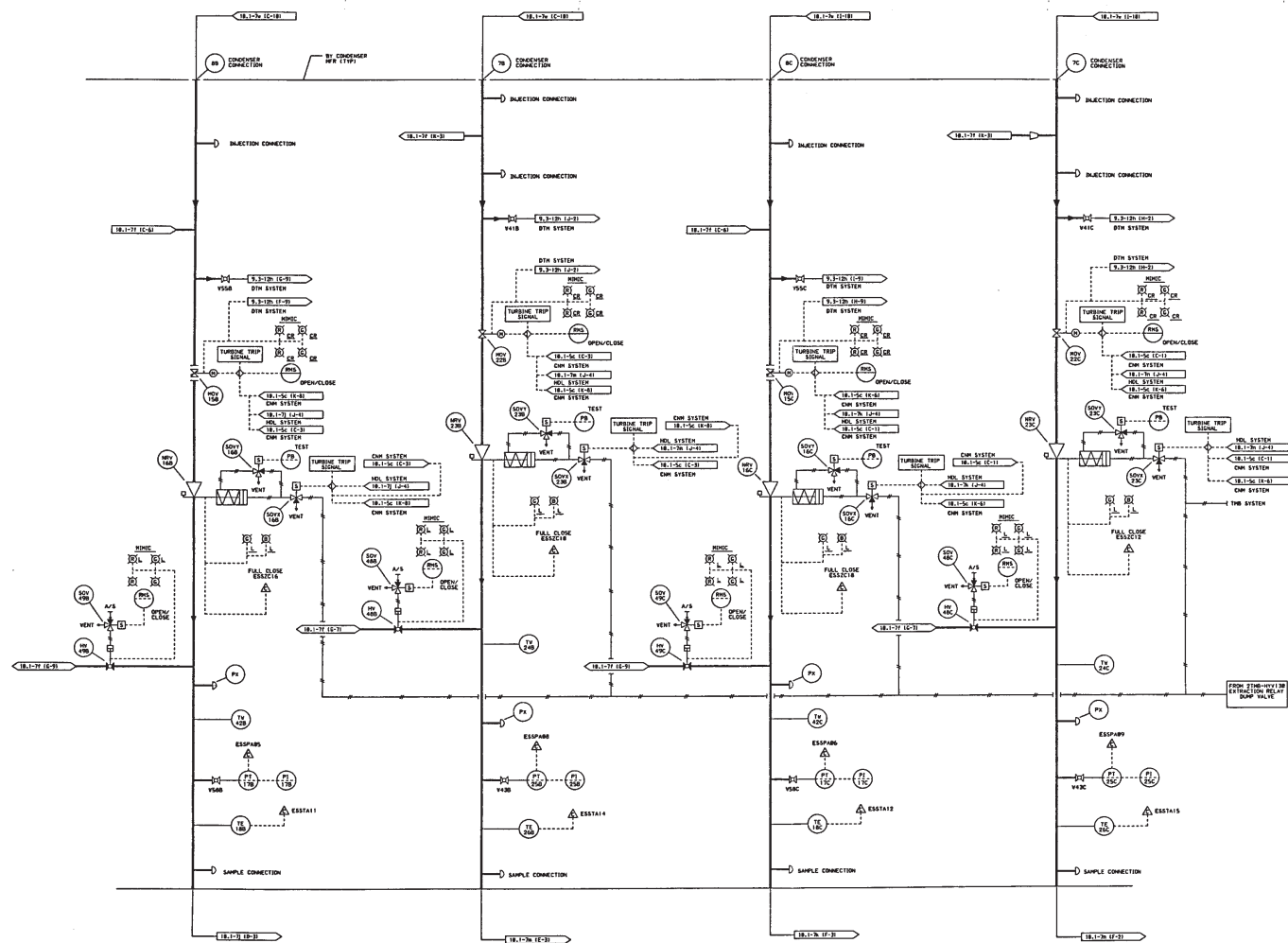


FIGURE 10.1-7d  
FEEDWATER HEATER SYSTEMS AND  
EXTRACTION STEAM SYSTEMS  
NINE MILE POINT  
NUCLEAR STATION-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT









NOTES:  
1. ALL INSTRUMENT & EQUIPMENT NUMBERS TO BE PROVIDED WITH "NPS" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.

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DO NOT MAKE ANY CHANGES MANUALLY.

FIGURE 10.1-7g

FEEDWATER HEATER SYSTEMS AND  
EXTRACTION STEAM SYSTEM

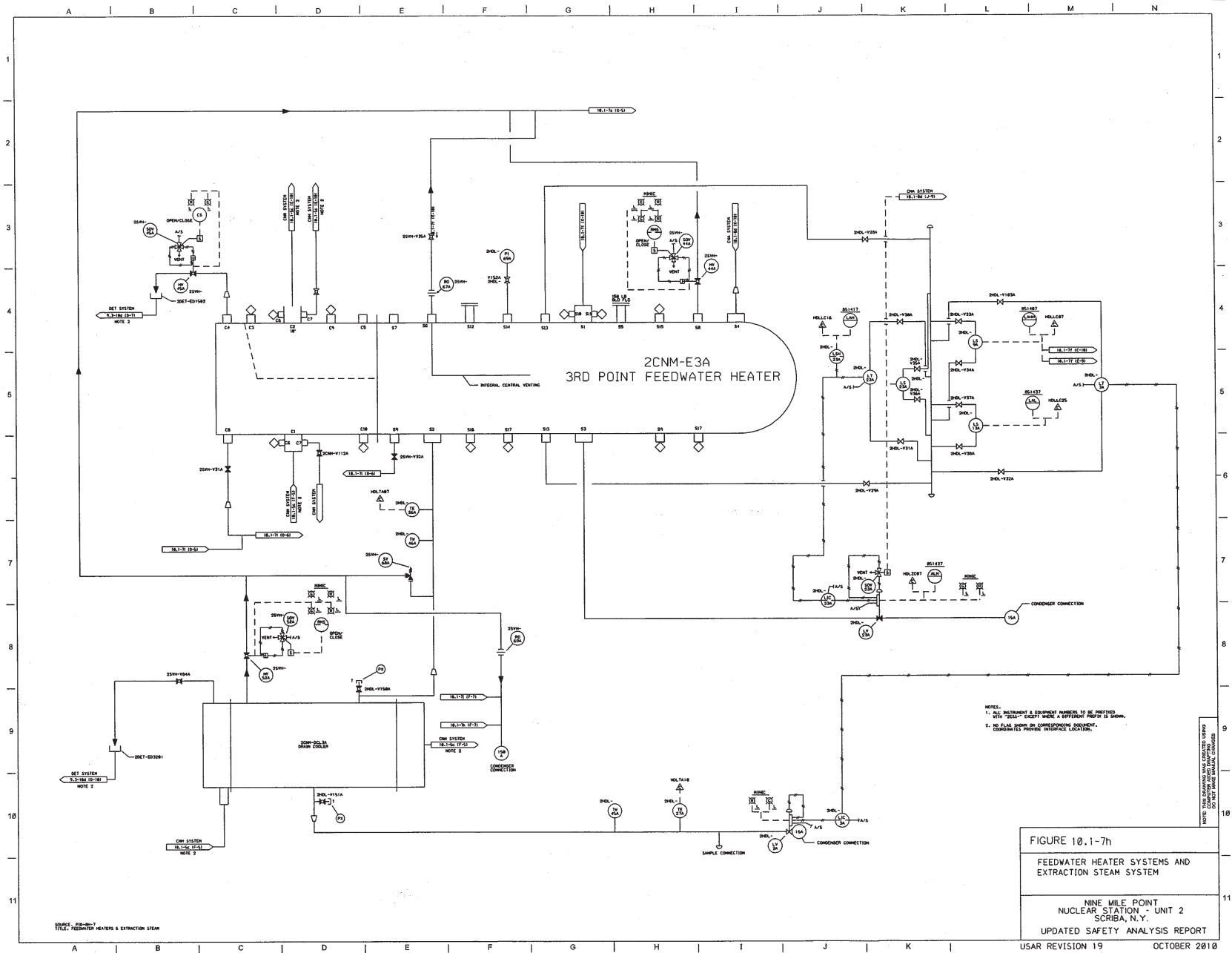
NIAGARA MOHAWK POWER CORPORATION  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

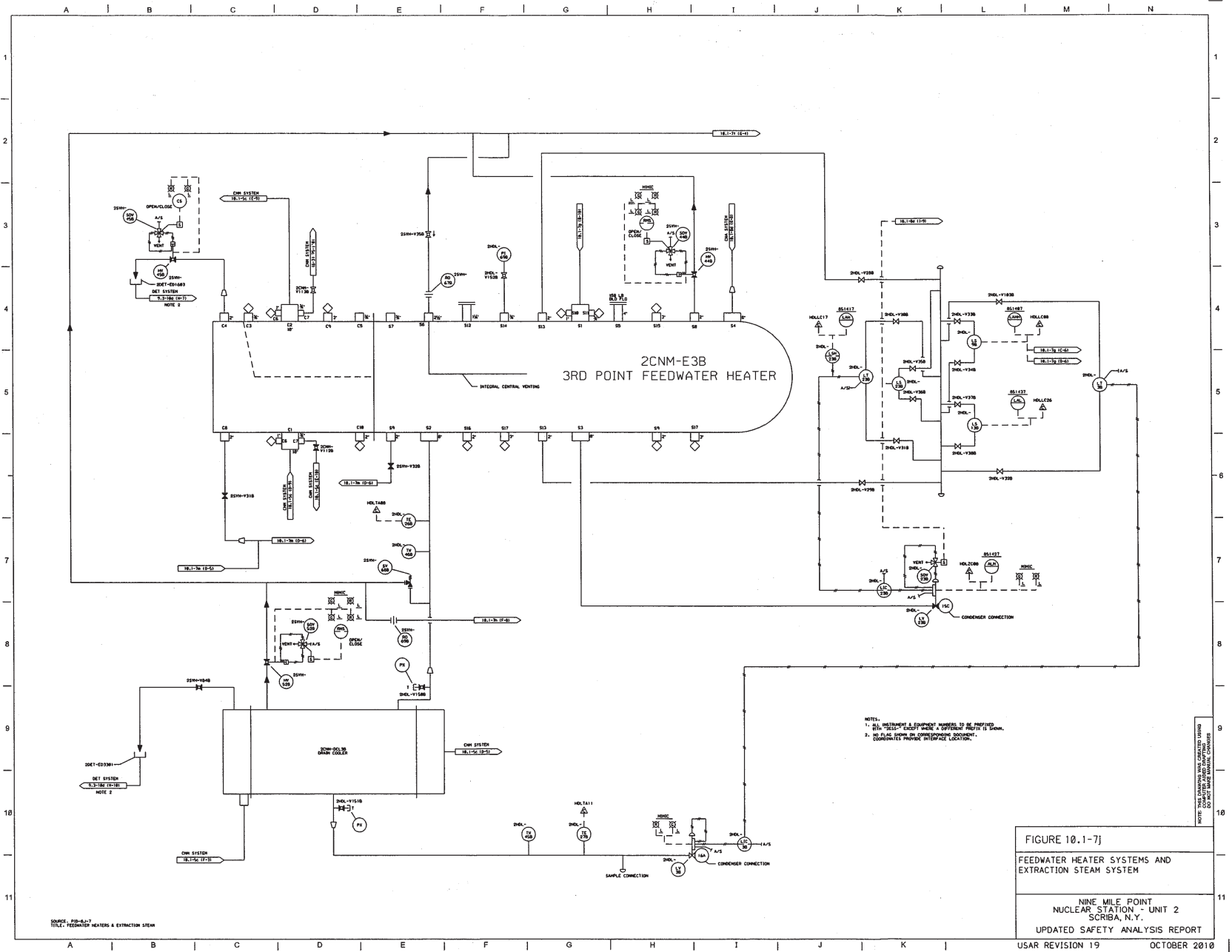
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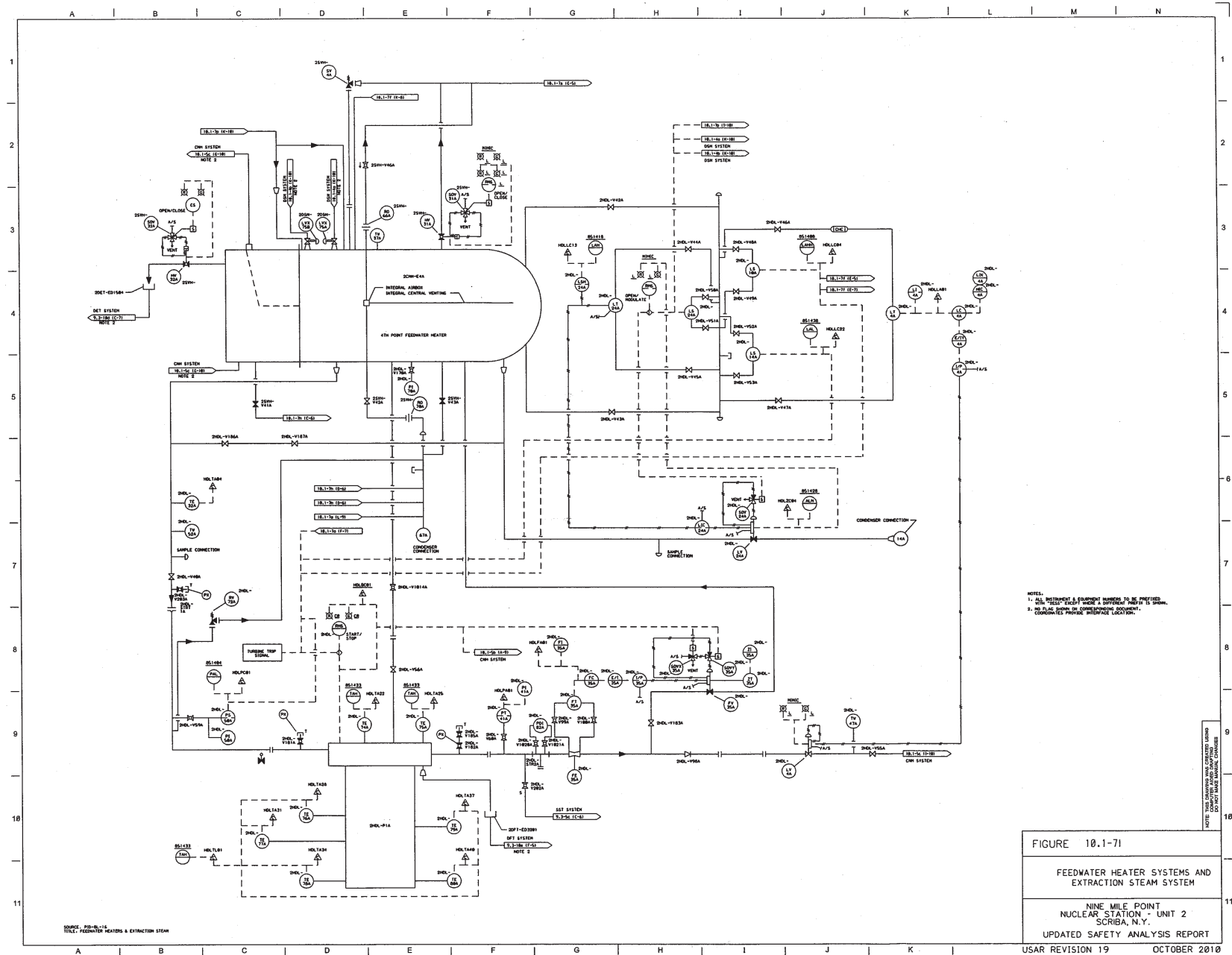
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TITLE: FEEDWATER HEATERS & EXTRACTION SYSTEM

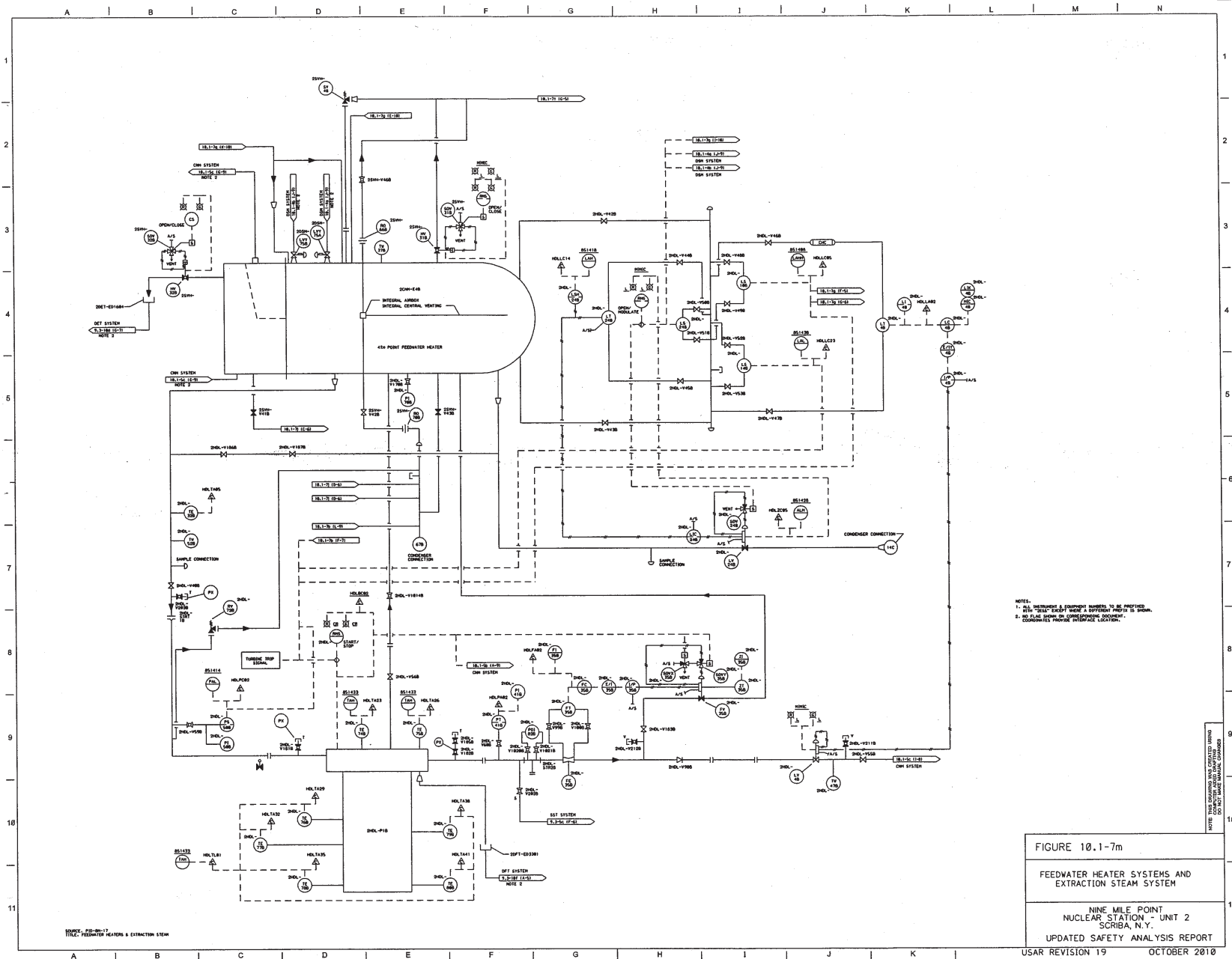
12171

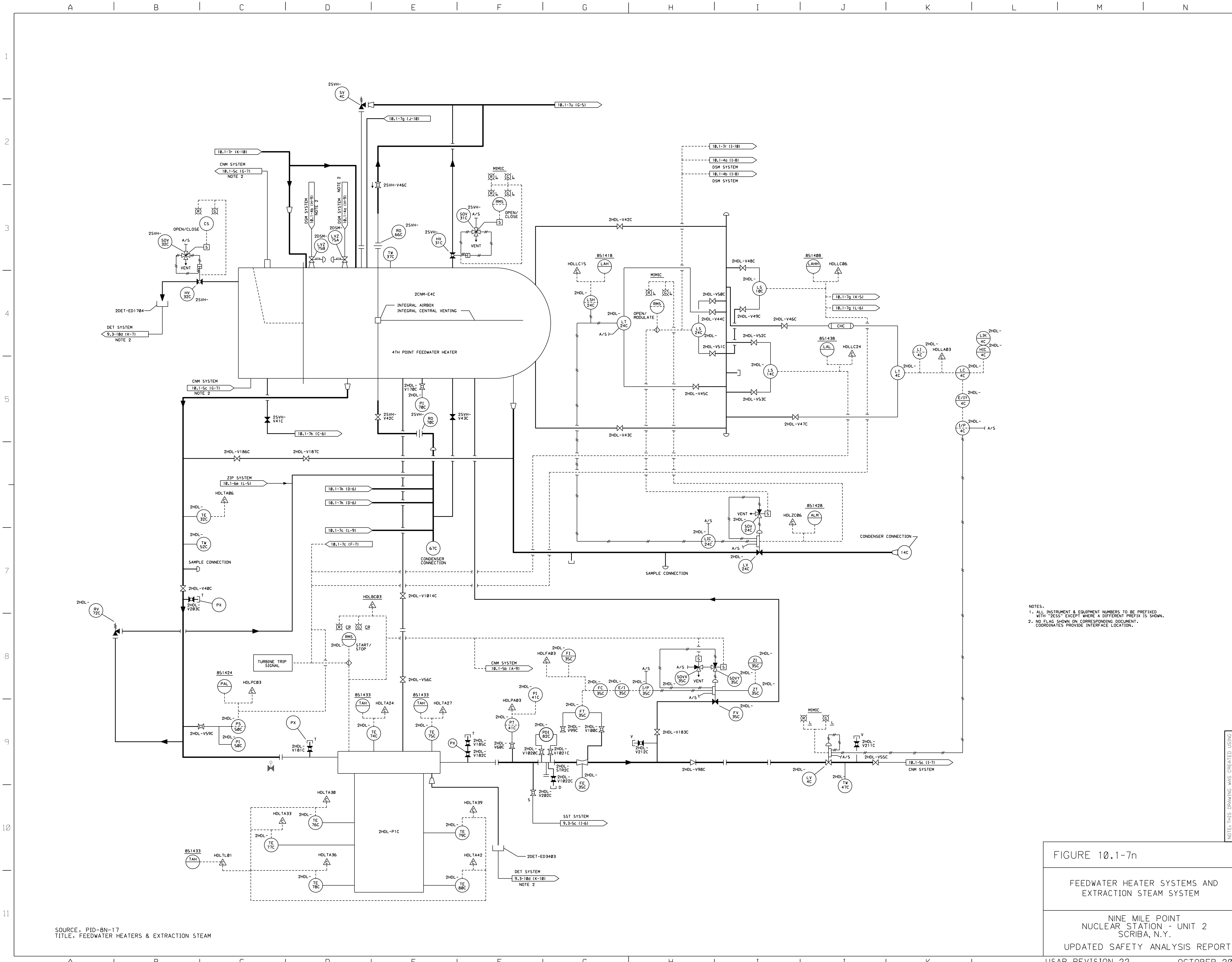












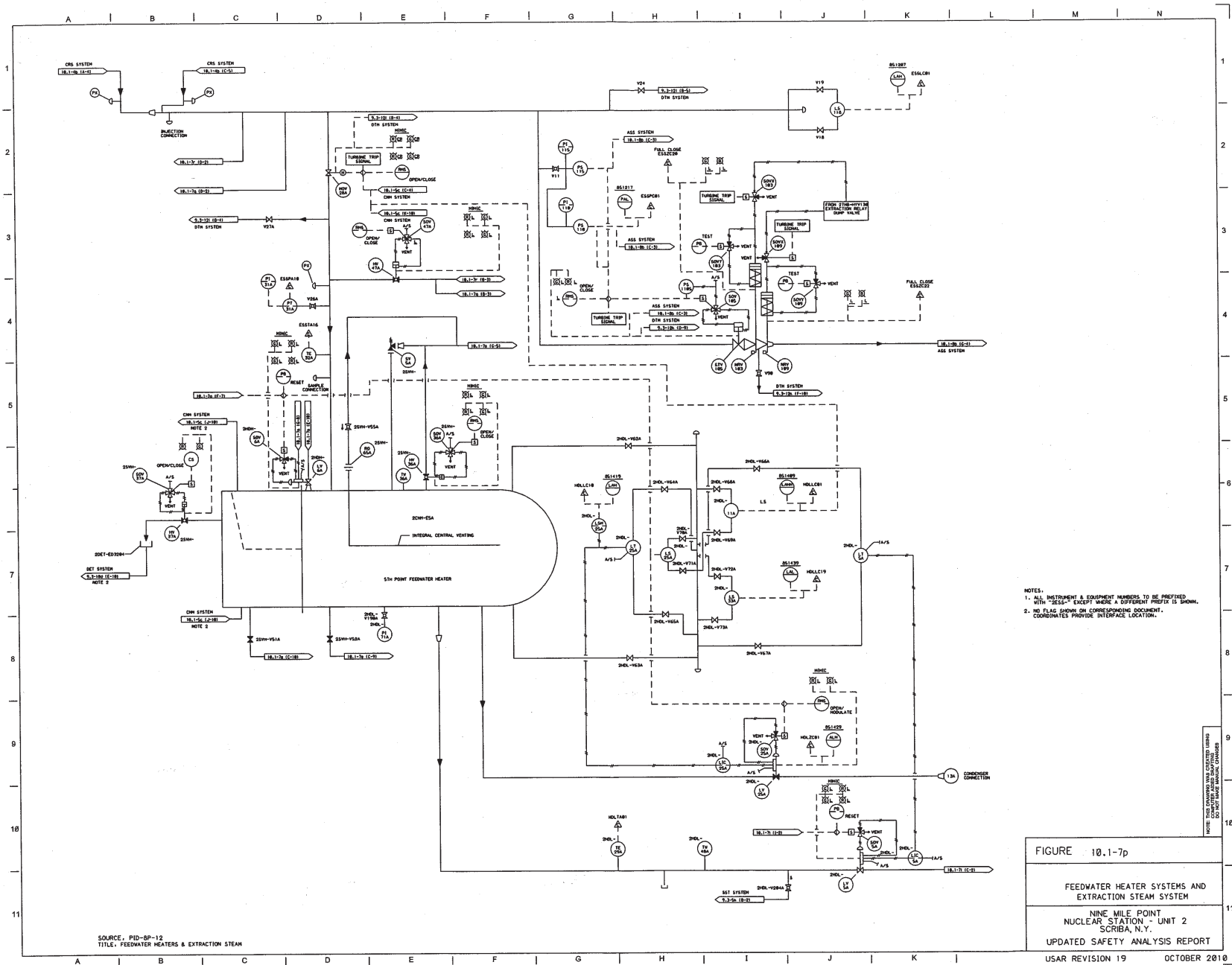
SOURCE: PID-8N-17  
TITLE: FEEDWATER HEATERS & EXTRACTION STEAM

FIGURE 10.1-7n

FEEDWATER HEATER SYSTEMS AND  
EXTRACTION STEAM SYSTEM

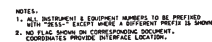
NINE MILE POINT  
NUCLEAR STATION - UNIT 2  
SCRIBA, N.Y.

UPDATED SAFETY ANALYSIS REPORT



- NOTES:
1. ALL INSTRUMENT & EQUIPMENT NUMBERS TO BE PREFIXED WITH "250-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
  2. NO FLAG SHOWN ON CORRESPONDING DOCUMENT. COORDINATES PROVIDE INTERFACE LOCATION.

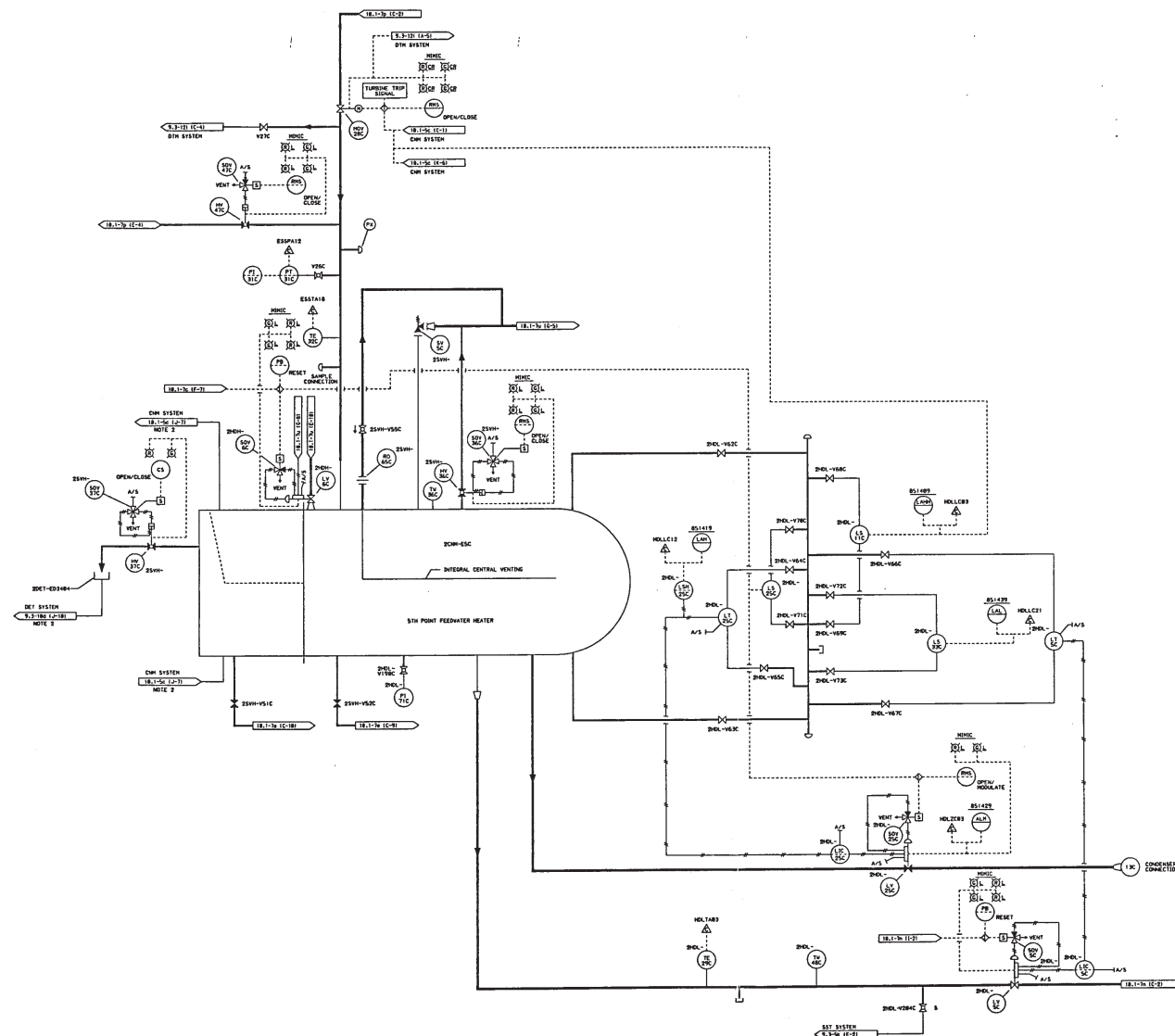




## FEEDWATER HEATER SYSTEMS AND EXTRACTION STEAM SYSTEM

NIAGARA MOHAWK POWER CORPORATION  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

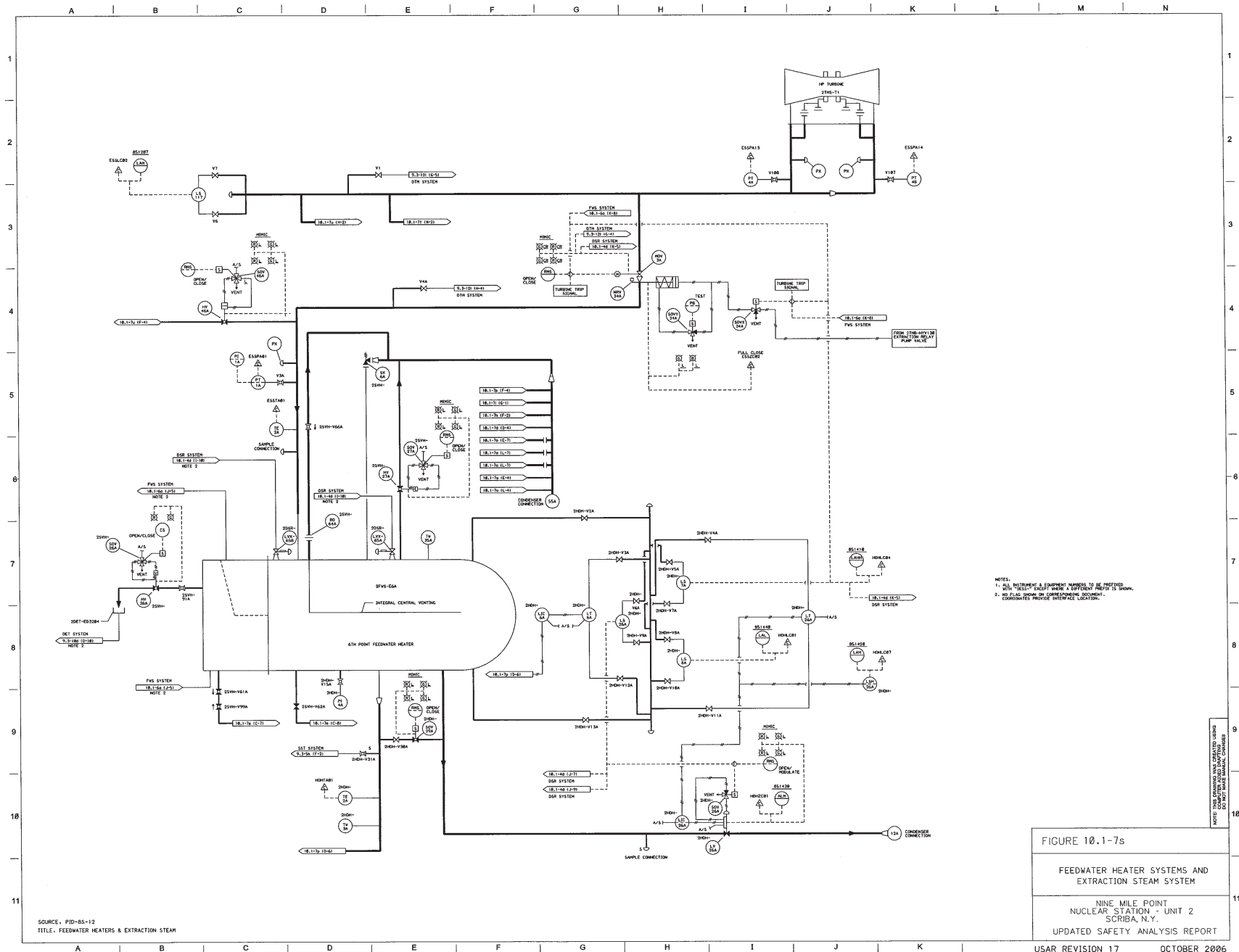
USAR REVISION 3      OCTOBER 1991

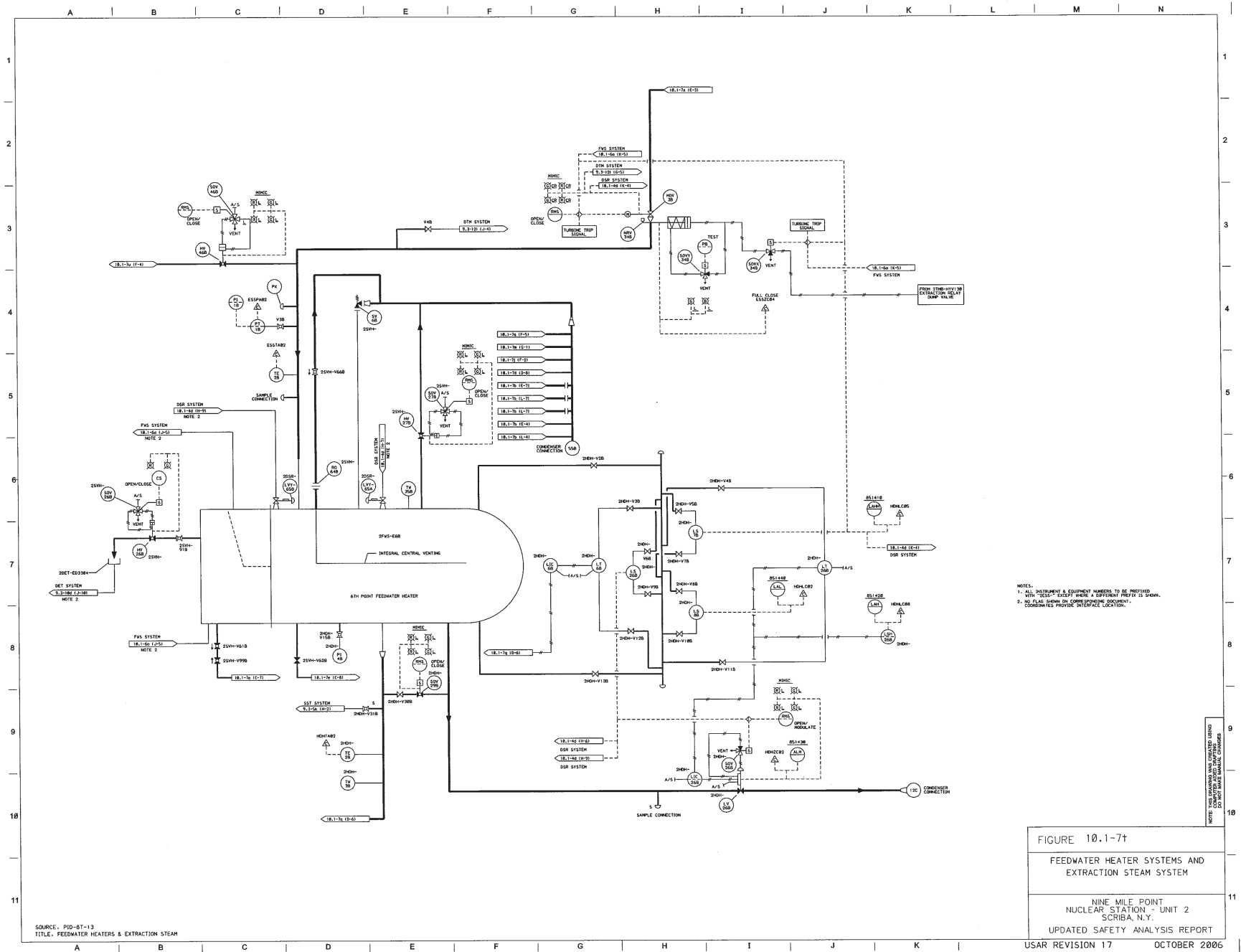


NOTES:  
 1. ALL INSTRUMENT & EQUIPMENT NUMBERS TO BE PROVIDED WITH "ISS" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.  
 2. NO FLIC SHOWN ON CORRESPONDING DOCUMENT.  
 3. COORDINATES PROVIDE INTERFACE LOCATION.

THIS IS A PRELIMINARY DRAWING. IT IS NOT TO BE USED FOR CONSTRUCTION. IT IS NOT TO BE USED FOR ANY OTHER PURPOSE.

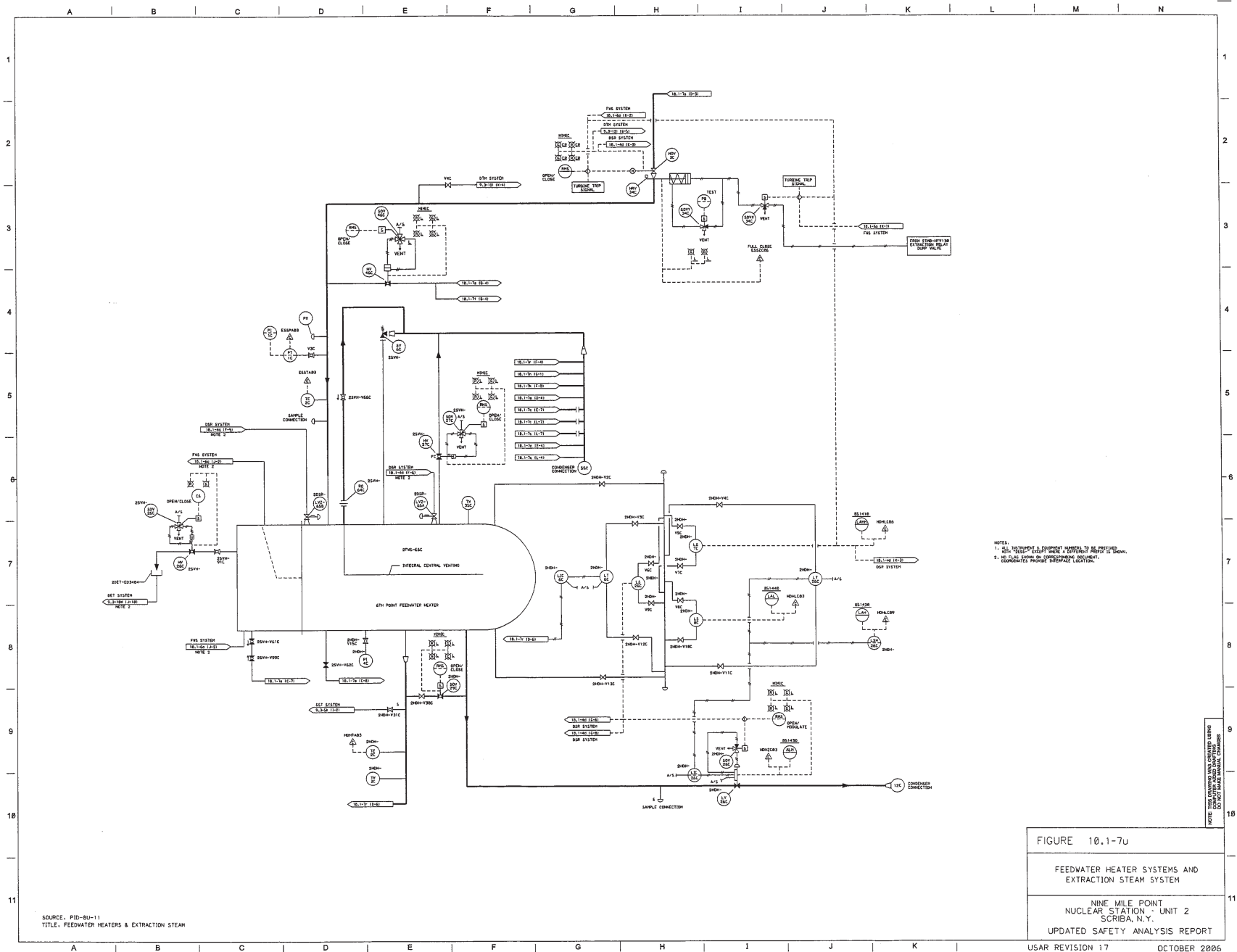
FIGURE 10.1-7r  
 FEEDWATER HEATER SYSTEMS AND  
 EXTRACTION STEAM SYSTEM  
 NIAGARA MOHAWK POWER CORPORATION  
 NINE MILE POINT-UNIT 2  
 UPDATED SAFETY ANALYSIS REPORT

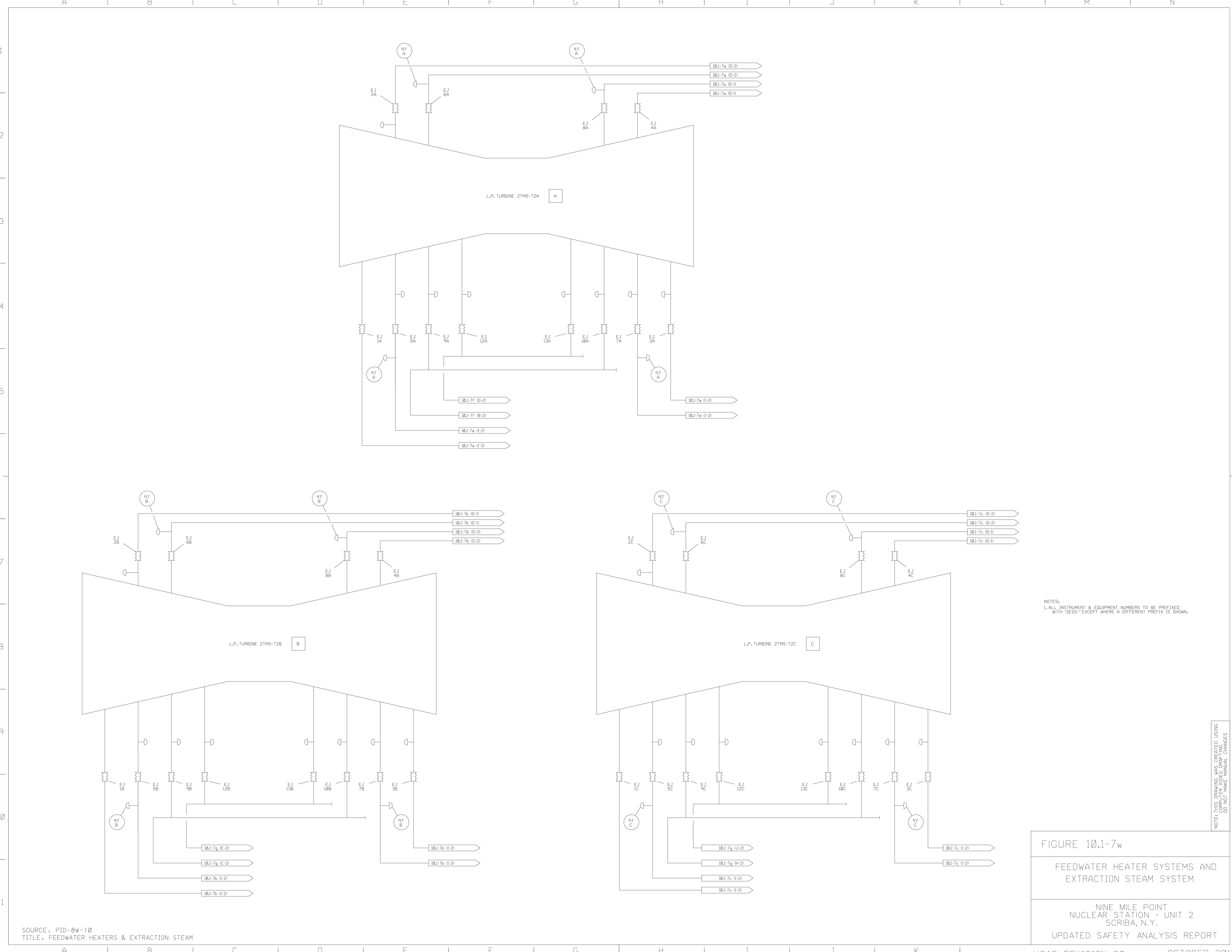




SOURCE: PID-BT-13  
TITLE: FEEDWATER HEATERS & EXTRACTION STEAM

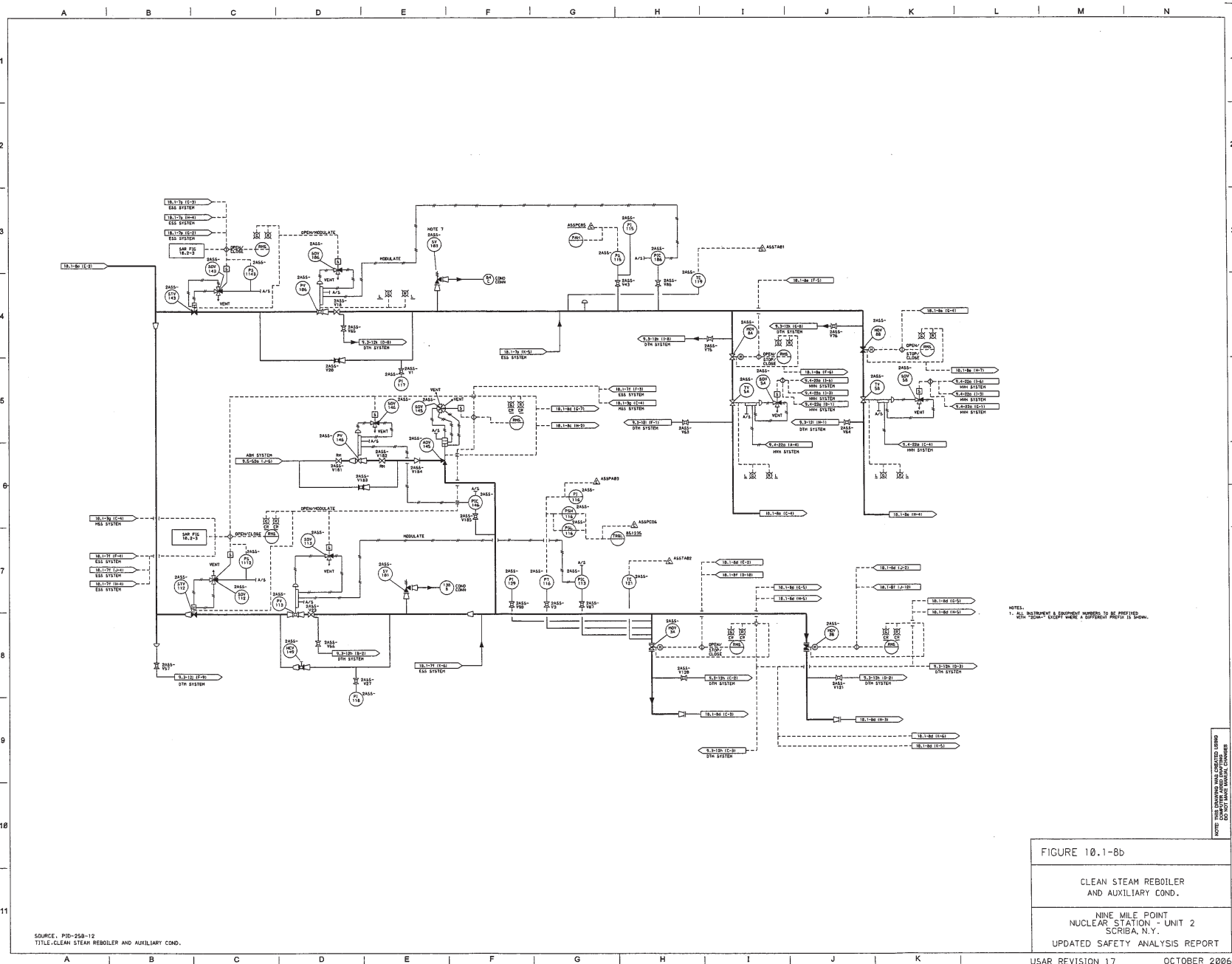
NOTES:  
1. ALL INSTRUMENT & EQUIPMENT NUMBERS TO BE PROVIDED WITH "TEST" - EXCEPT WHERE A DIFFERENT PROBE IS SHOWN.  
2. NO PLANT DRAWING OR CORRESPONDING DOCUMENT.  
CONNECTIONS FOR THE DUMP VALVE LOCATION.



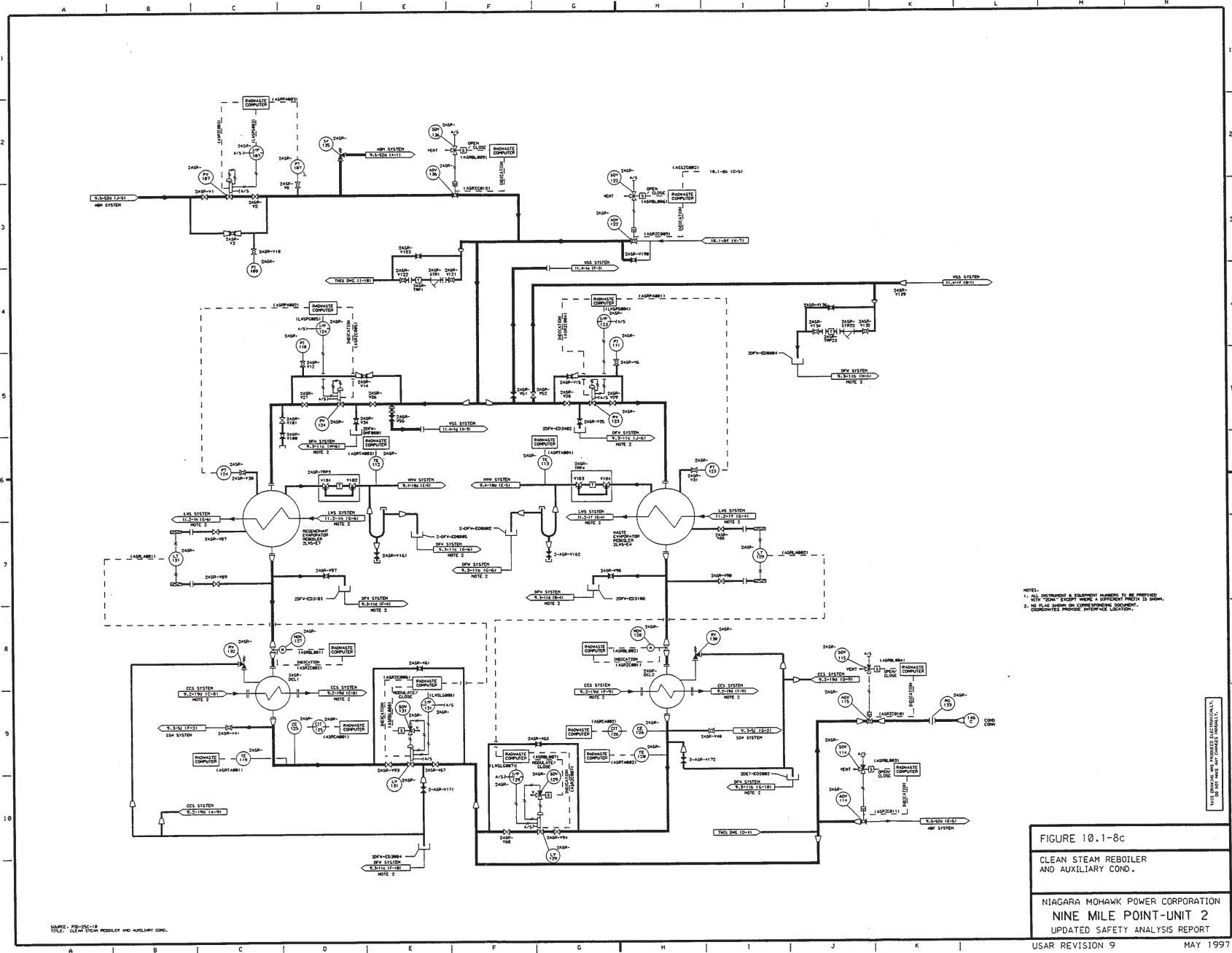


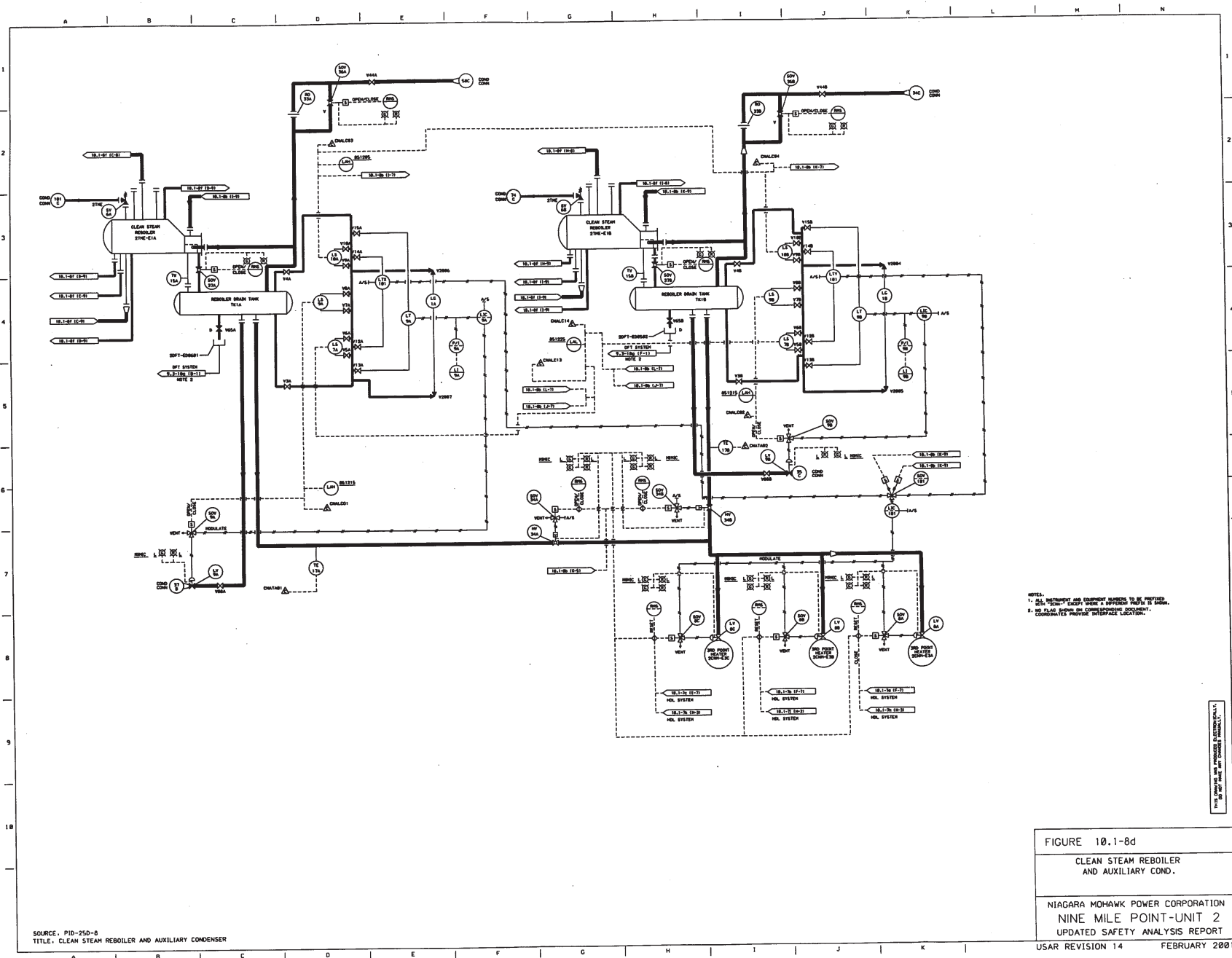
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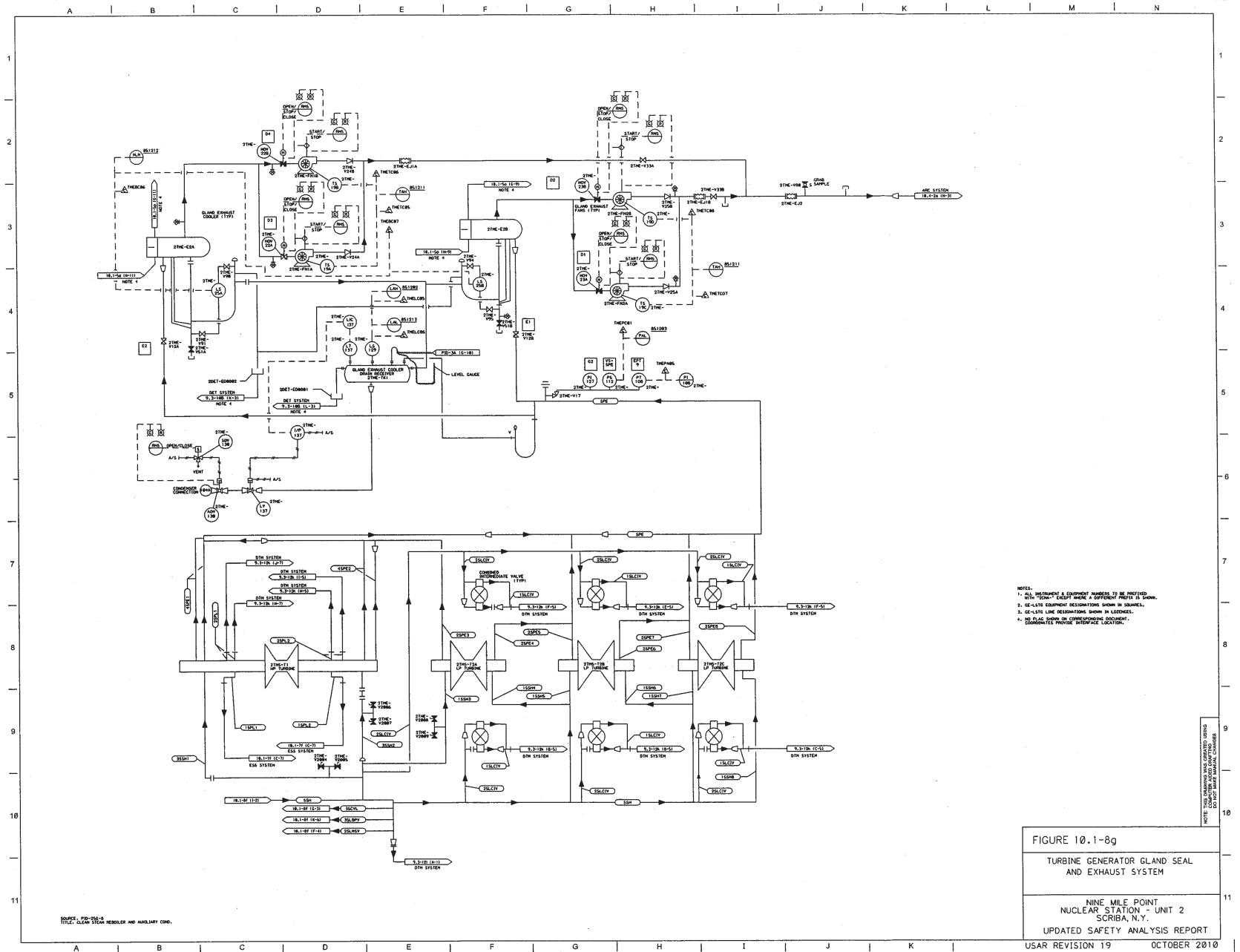


TURBINE GENERATOR GLAND SEAL  
AND EXHAUST SYSTEM

NINE MILE POINT  
NUCLEAR STATION-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT



NINE MILE POINT  
NUCLEAR STATION - UNIT 2  
SCRIBA, N.Y.  
UPDATED SAFETY ANALYSIS REPORT





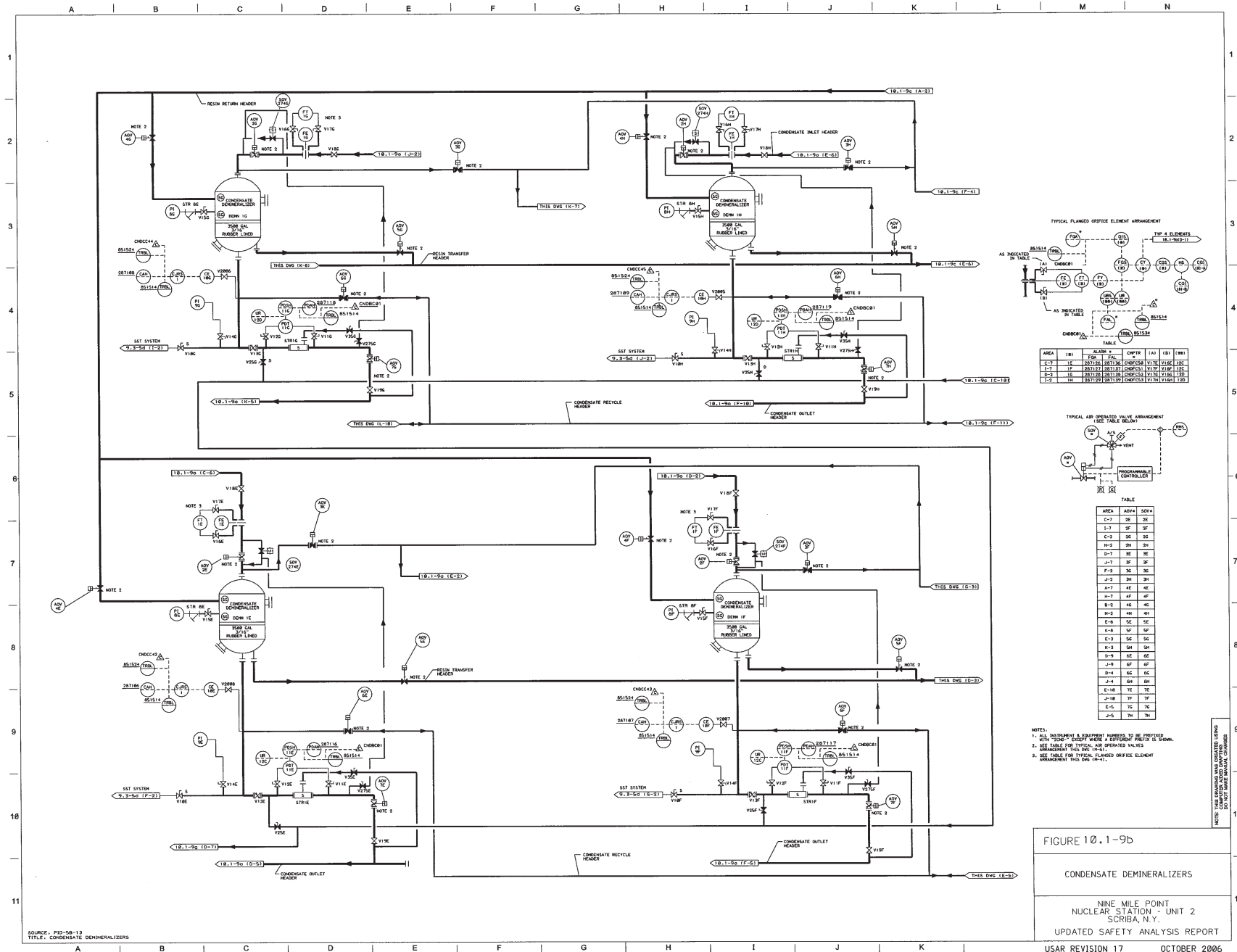


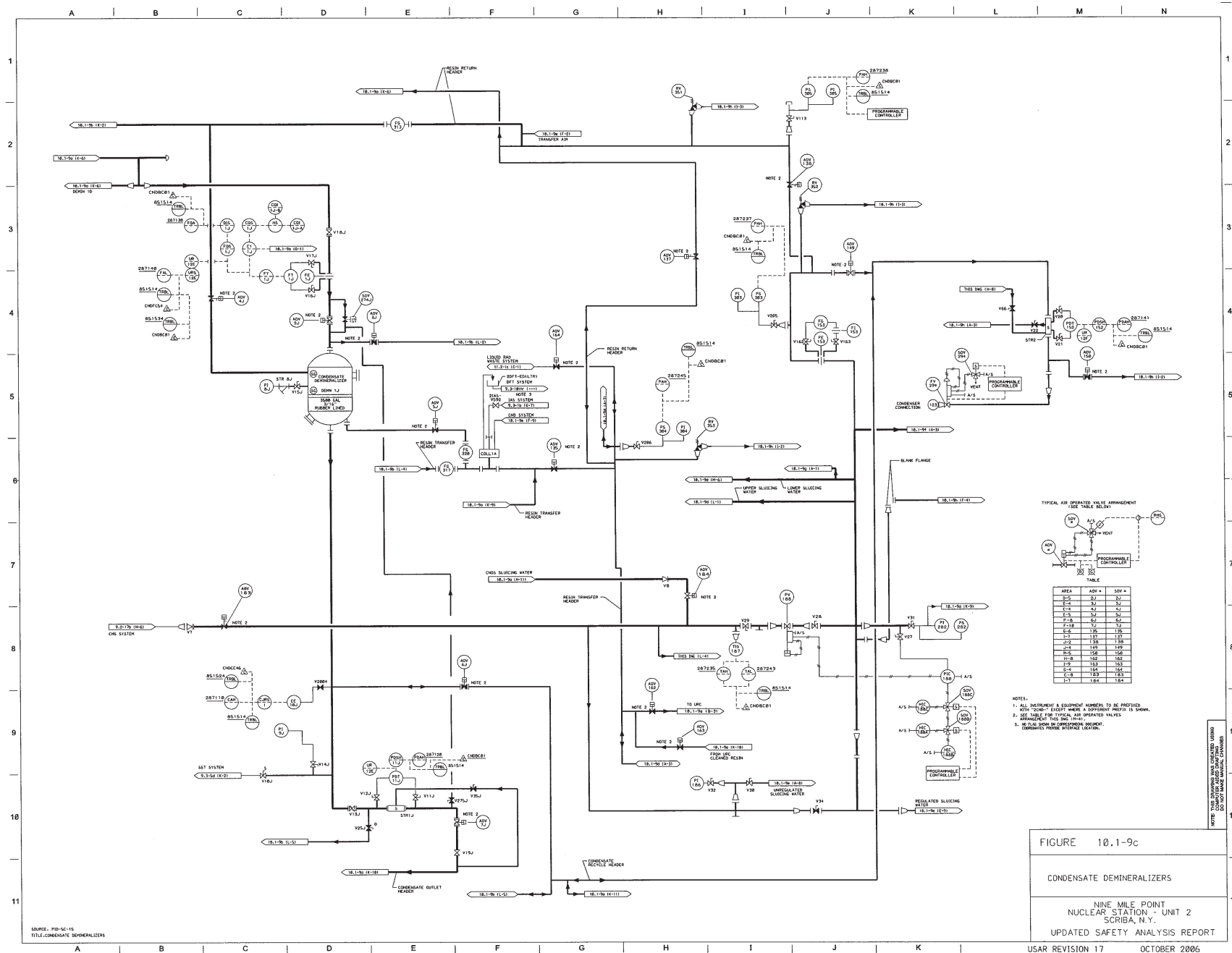
FIGURE 10.1-9D

CONDENSATE DEMINERALIZERS

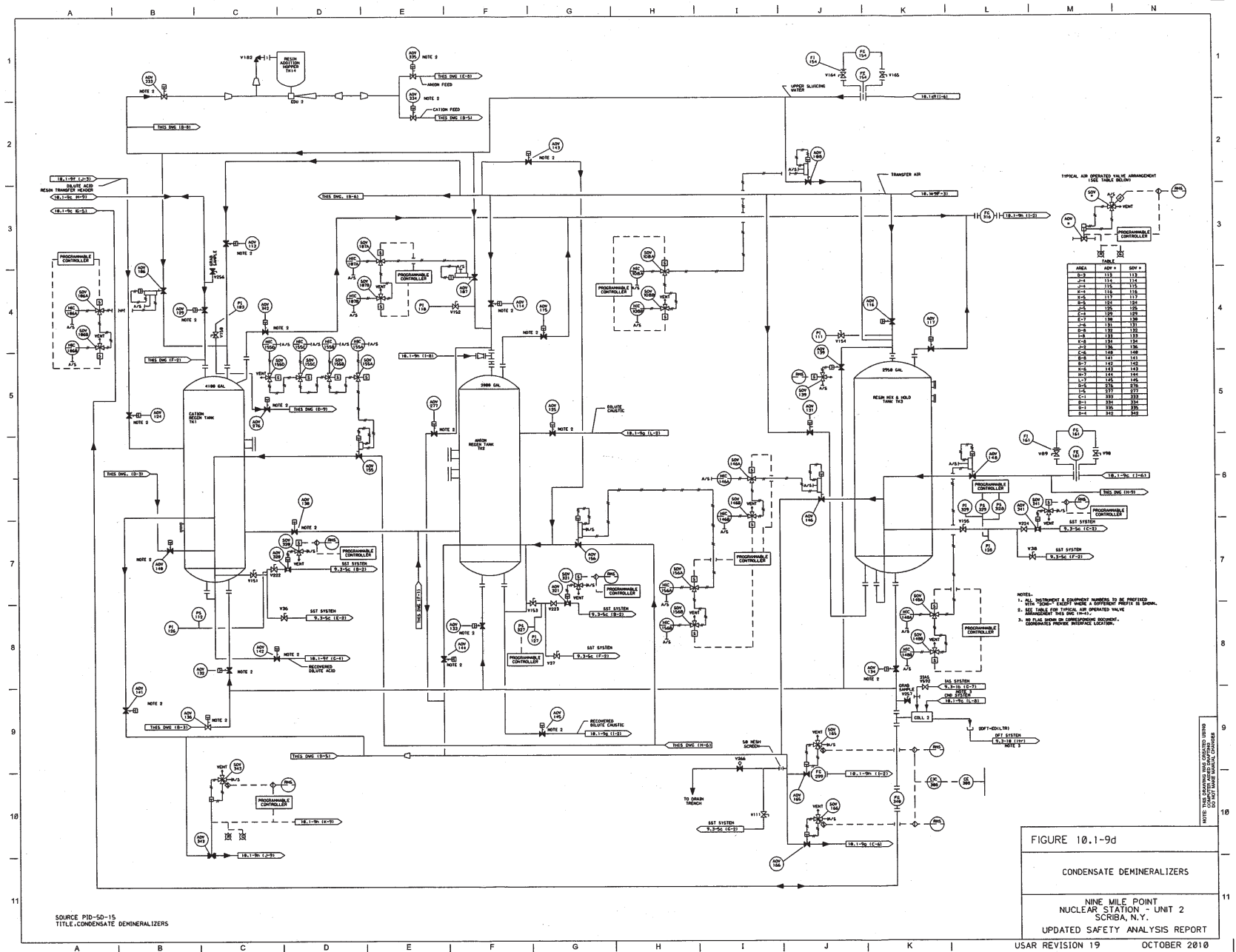
NINE MILE POINT  
 NUCLEAR STATION - UNIT 2  
 SCRIBA, N.Y.  
 UPDATED SAFETY ANALYSIS REPORT

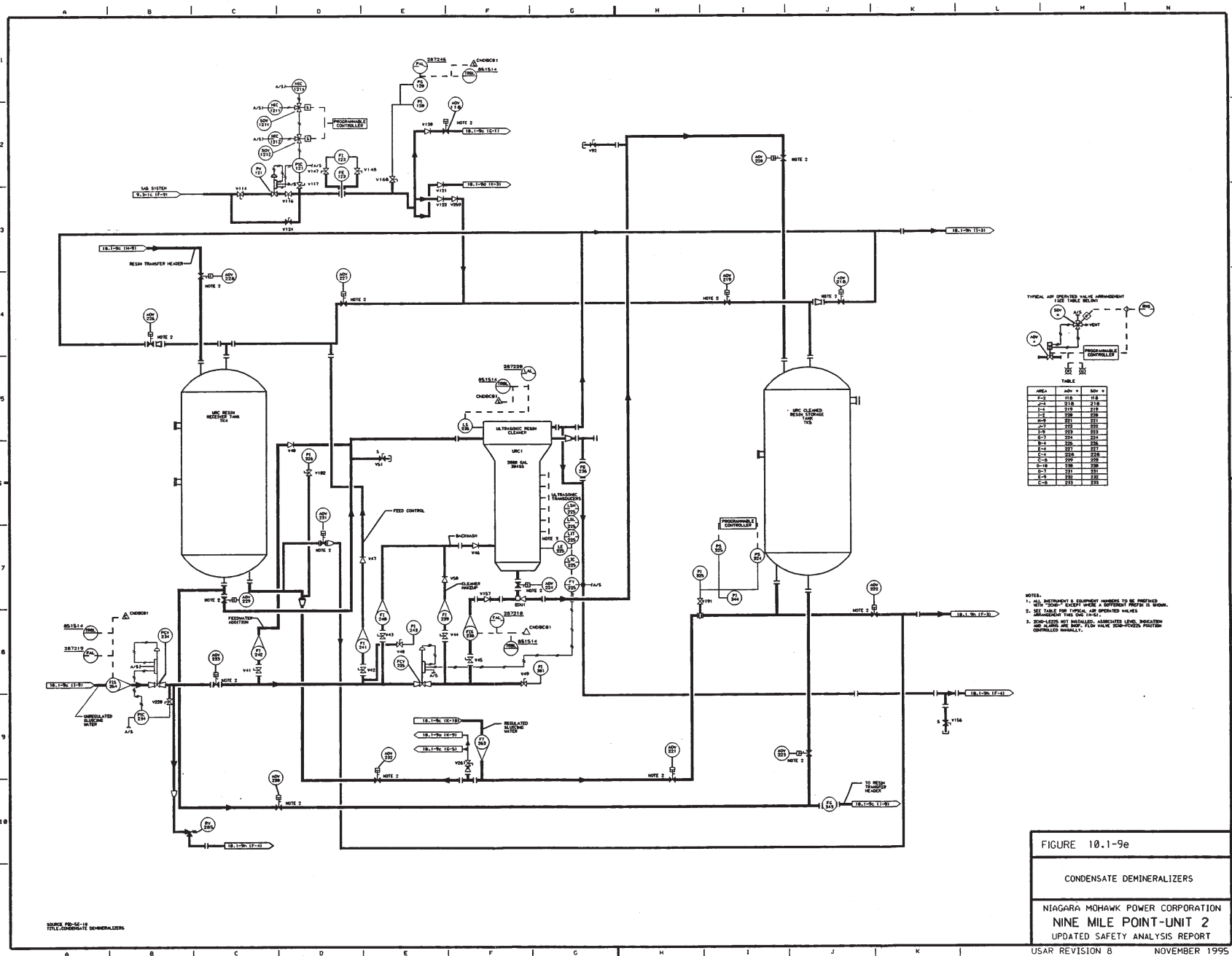
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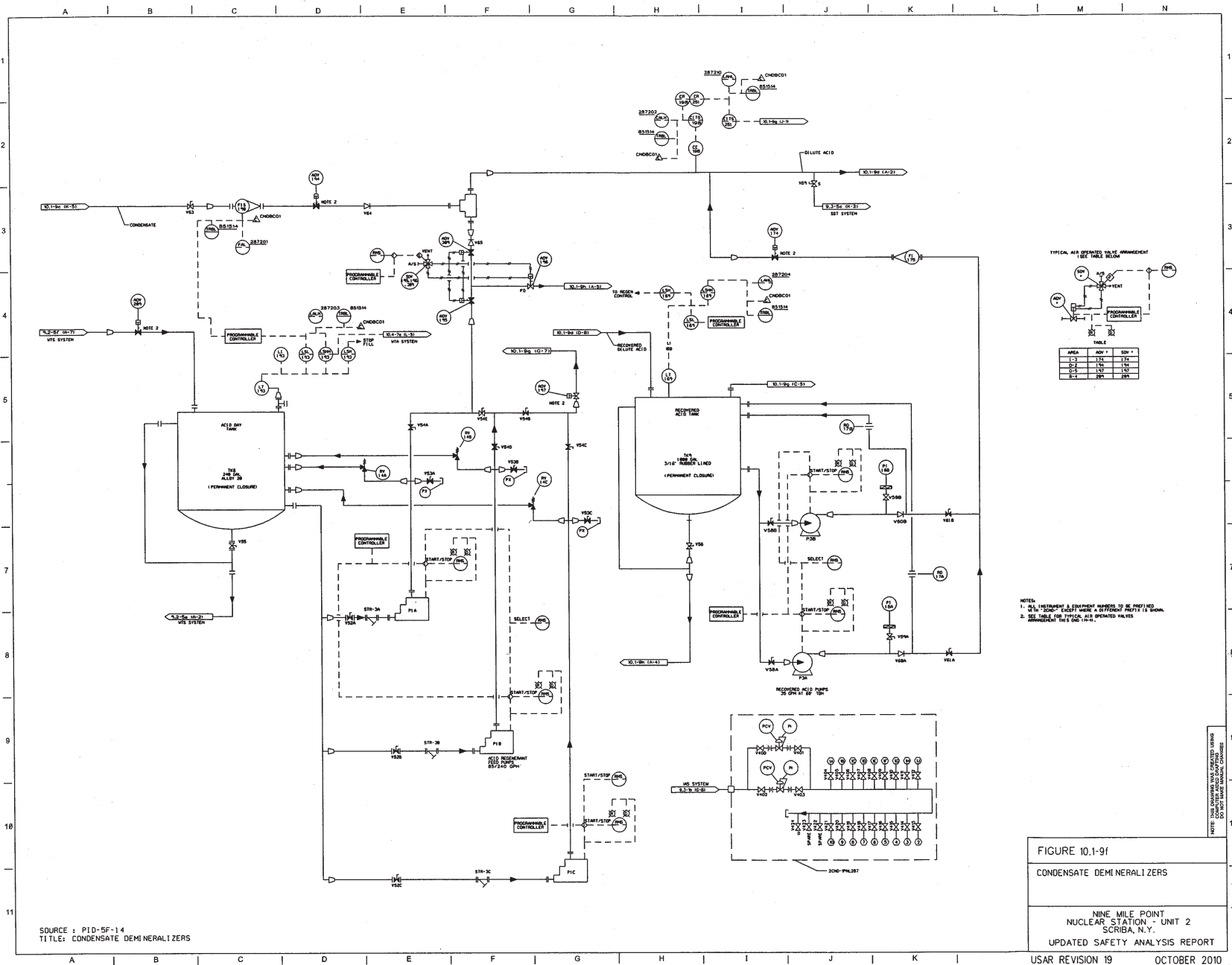
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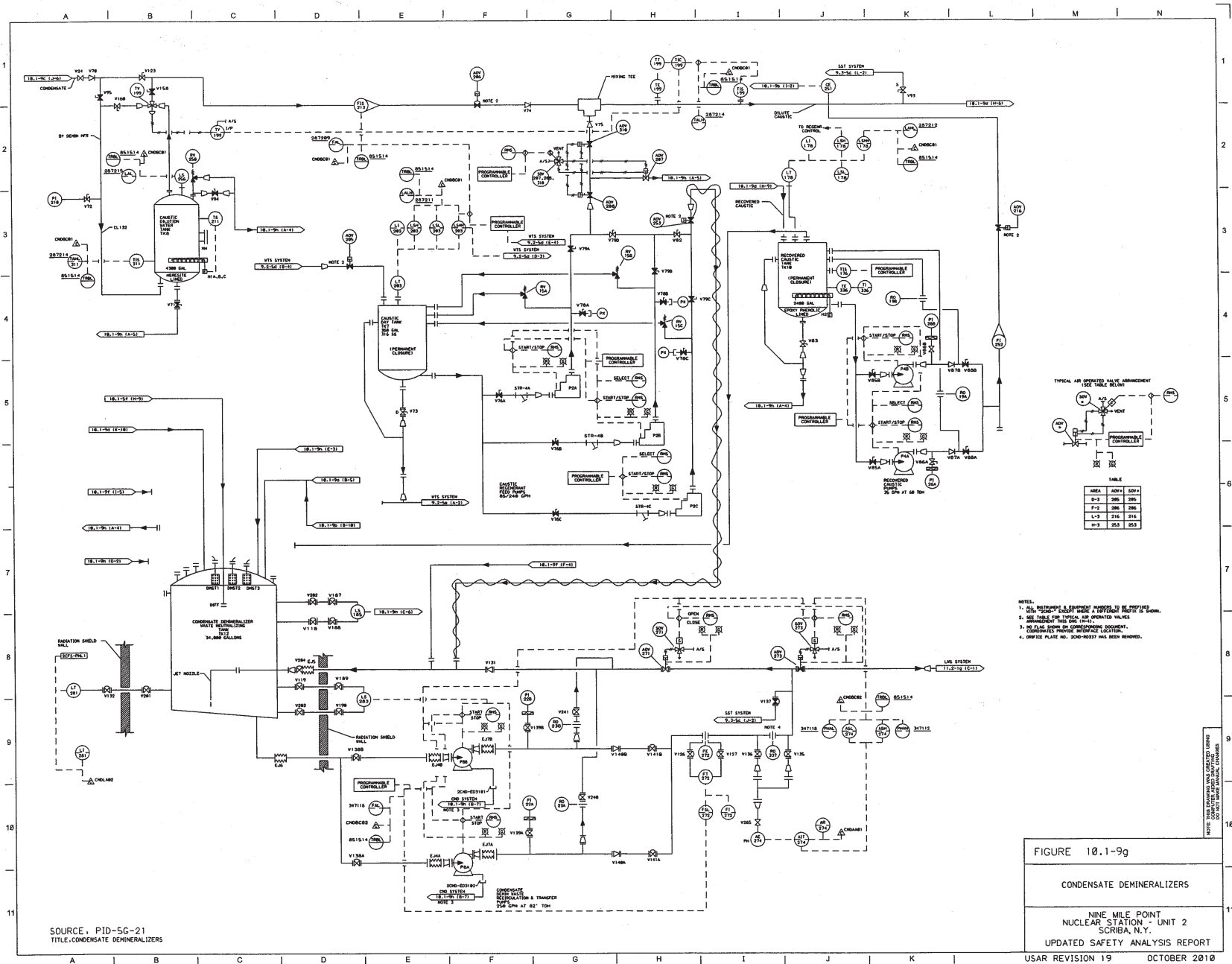


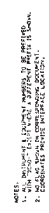












CONDENSATE DEMINERALIZERS

NIAGARA MOHAWK POWER CORPORATION  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

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1632178 13/11/2008 08:43:47 12318  
01-10-2008 22:58:00



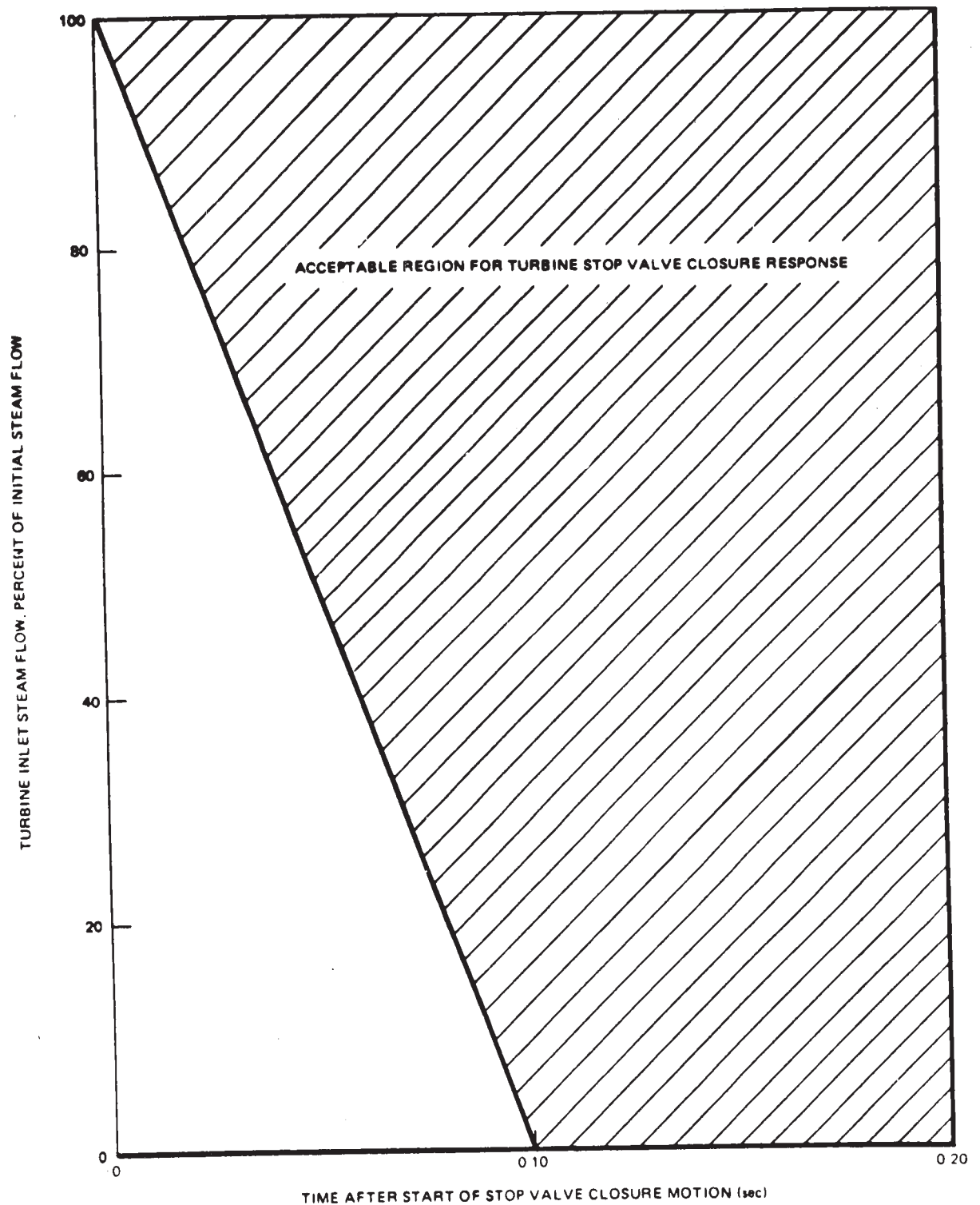


FIGURE 10.2-1

MAIN TURBINE  
STOP VALVE  
CLOSURE CHARACTERISTIC

NIAGARA MOHAWK POWER CORPORATION  
NINE MILE POINT-UNIT 2  
FINAL SAFETY ANALYSIS REPORT

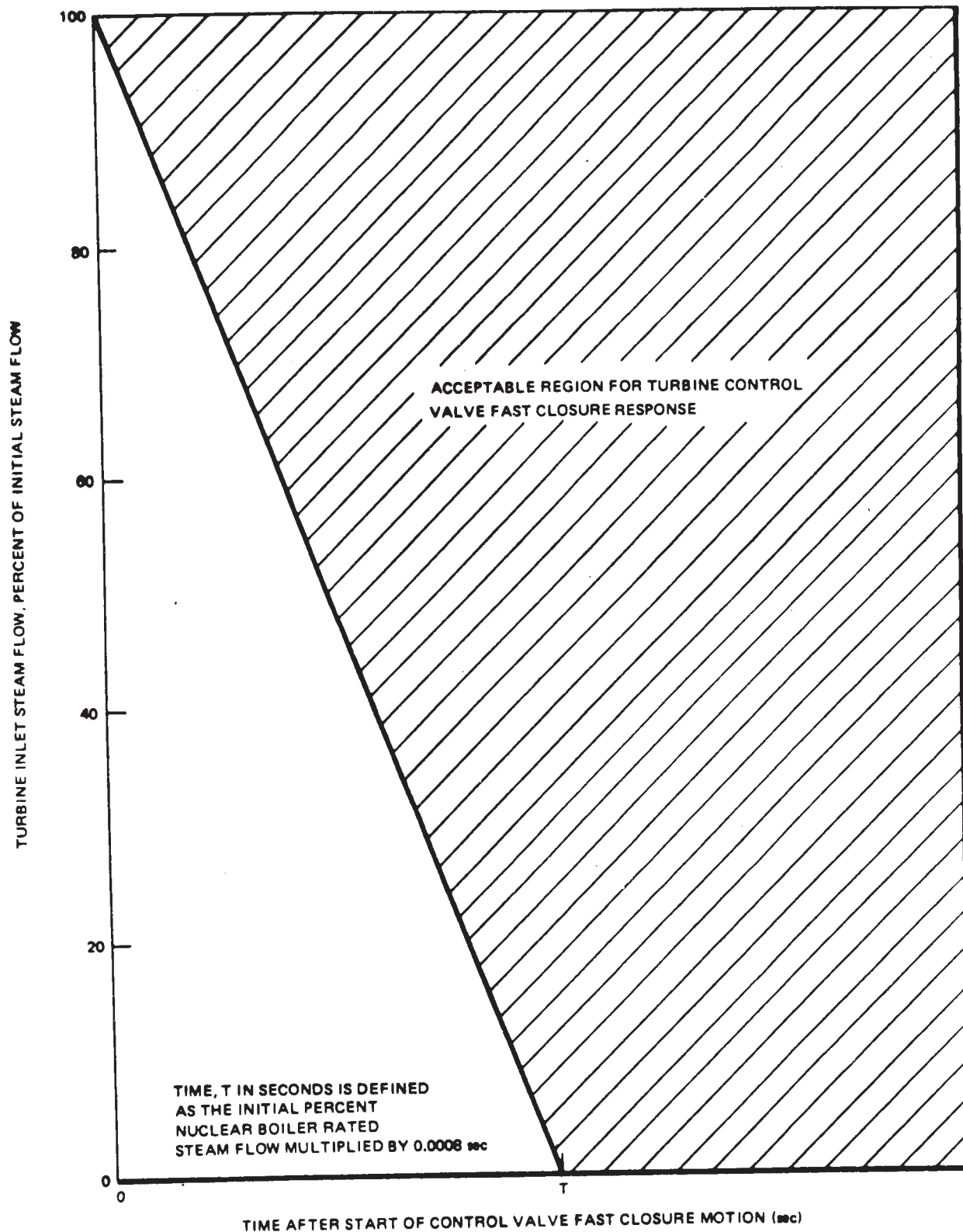


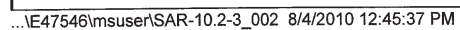
FIGURE 10.2-2

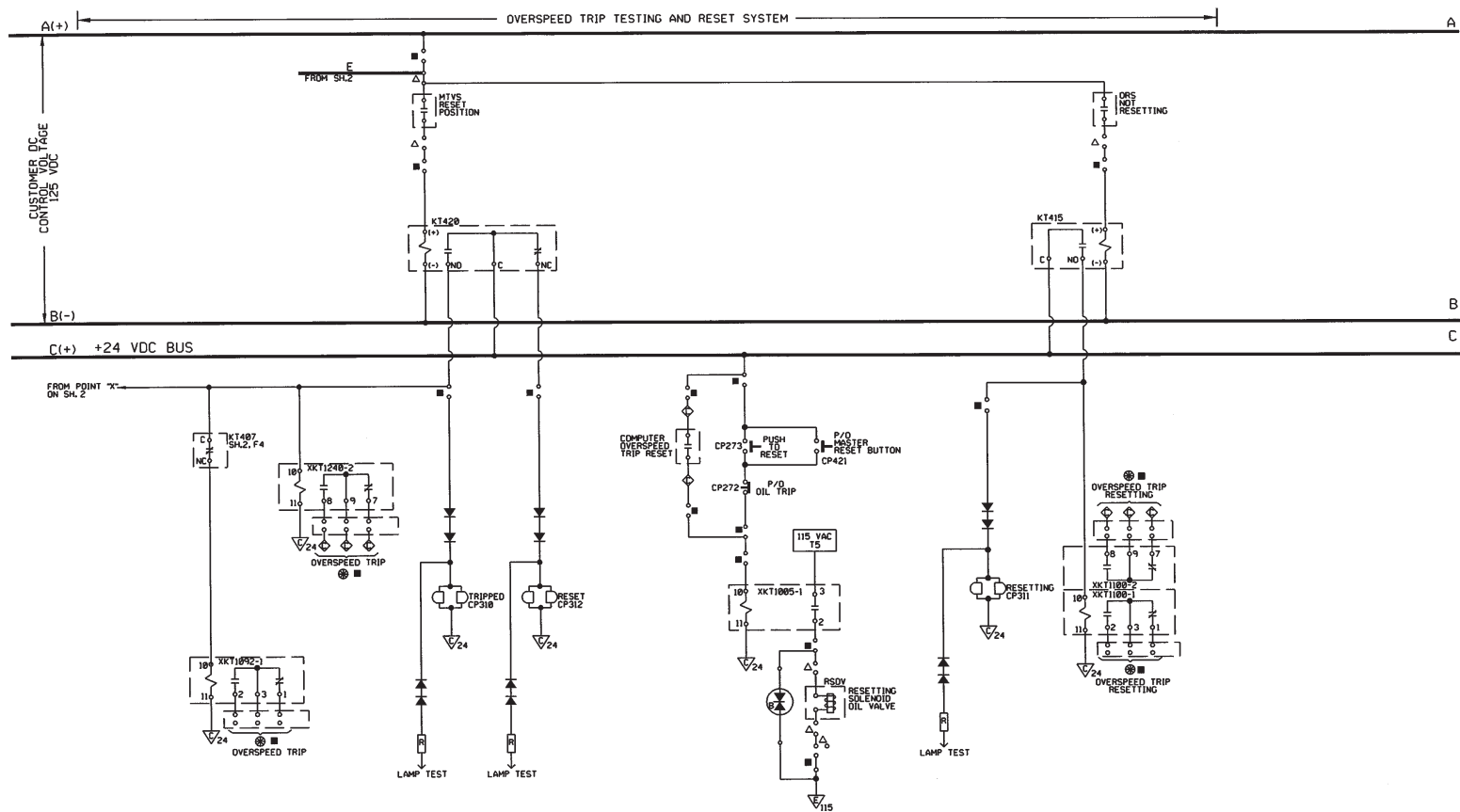
MAIN TURBINE CONTROL  
VALVE FAST  
CLOSURE CHARACTERISTIC

NIAGARA MOHAWK POWER CORPORATION  
NINE MILE POINT-UNIT 2  
FINAL SAFETY ANALYSIS REPORT







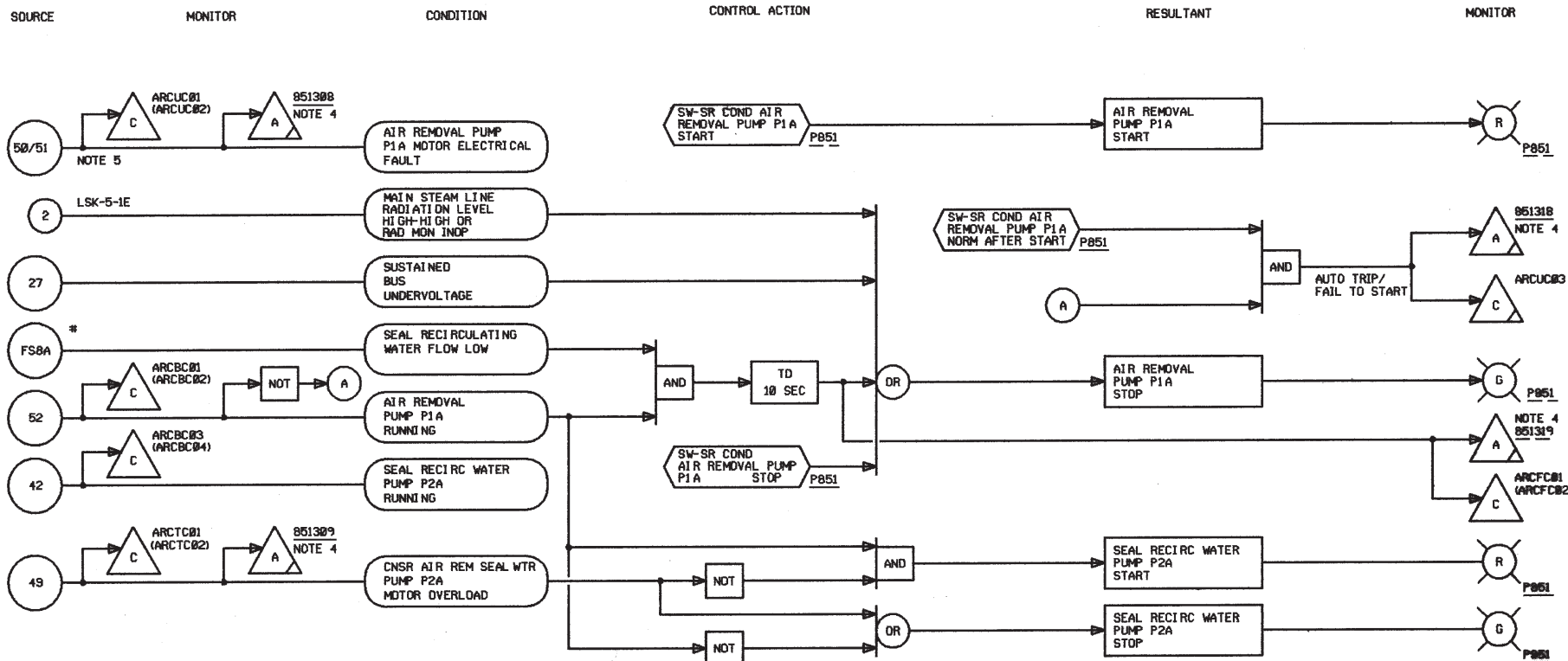


SOURCE: N/A

FIGURE 10.2-3 (SHEET 3 OF 3)

OVERSPEED PROTECTION SYSTEM  
SCHEMATIC-ALARM AND TRIP SYSTEM

NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT



- NOTES:
1. ALL INSTRUMENT AND EQUIPMENT NO.'S TO BE PREFIXED WITH "2ARC-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
  2. \*INDICATES EQUIPMENT FURNISHED BY VENDOR.
  3. LOGIC FOR AIR REMOVAL PUMP P1A AND SEAL RECIRCULATION WATER PUMP P2A IS SHOWN. LOGIC IS SIMILAR FOR PUMPS P1B AND P2B.
  4. COMMON ANNUNCIATOR WINDOW FOR TWO PUMPS.
  5. THIS IS A DIRECT TRIP AND AUTOMATIC LOCKOUT WITH MANUAL RESET FEATURE IN THE BREAKER. SEE LSK-24-10.1 FOR DETAILS.
  6. ASSOCIATED EQUIPMENT MARK NO.'S:
- P1A \*      P1B  
FS8A      FS8B

U-1323  
U-1322/1

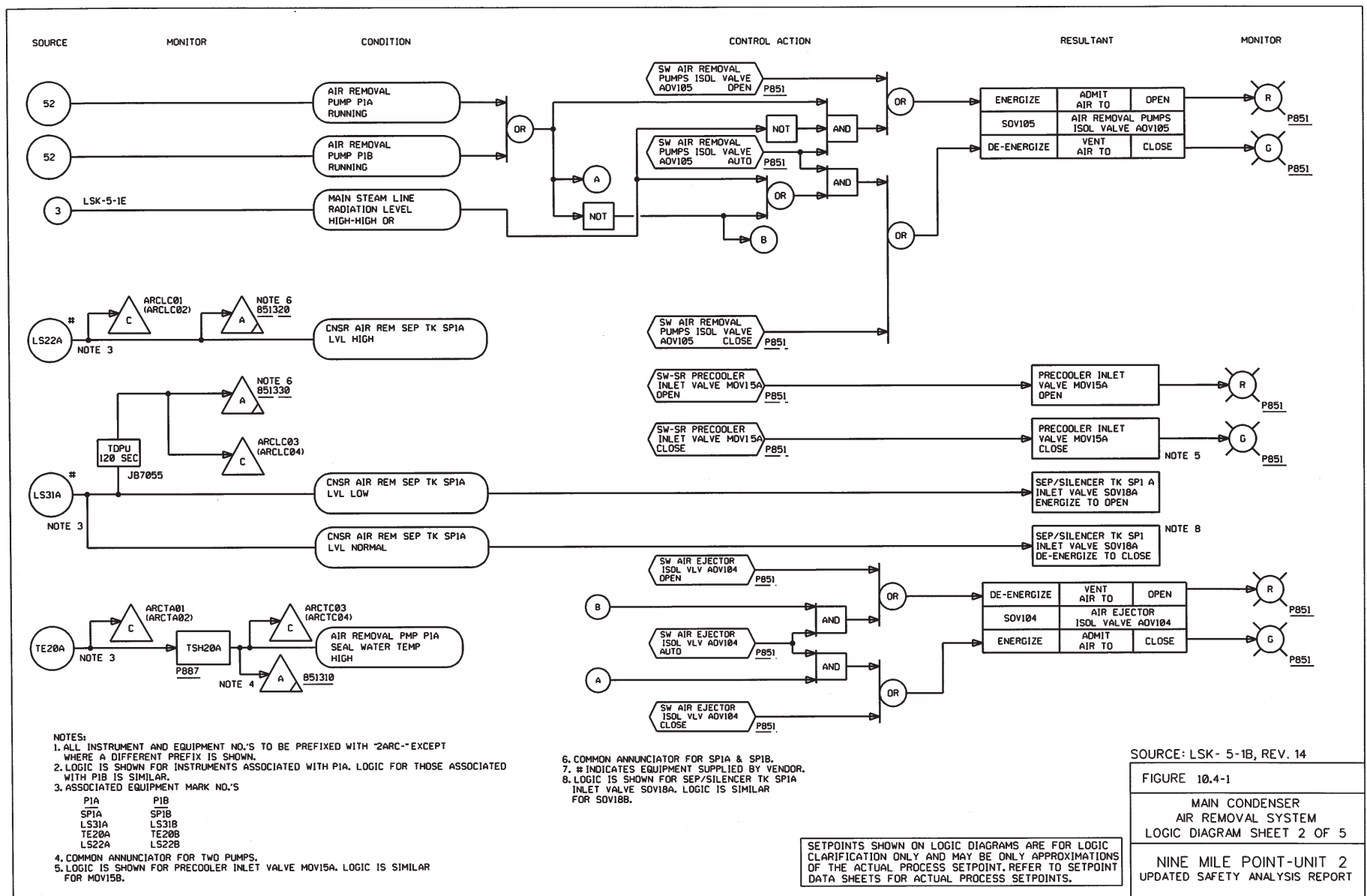
SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

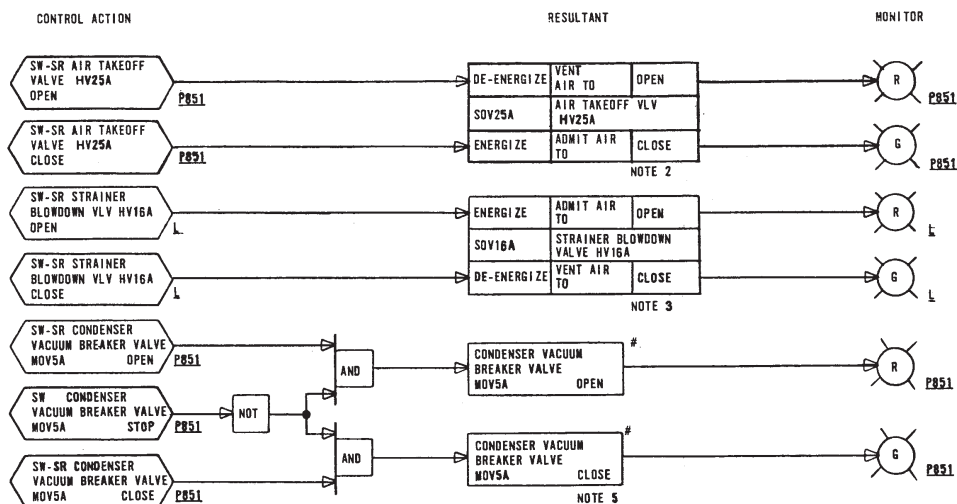
SOURCE: LSK-5-1A REV.10

FIGURE 10.4-1

MAIN CONDENSER  
AIR REMOVAL SYSTEM  
LOGIC DIAGRAM SHEET 1 OF 5

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT





NOTES:

1. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2ARC-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
2. LOGIC FOR AIR TAKEOFF VALVE HV25A IS SHOWN. LOGIC IS SIMILAR FOR VALVES HV25B, HV25C, HV25A, HV25D, AND HV25E.
3. LOGIC FOR EJECTOR MOTIVE STEAM STRAINER BLOWDOWN VALVE HV16A IS SHOWN. LOGIC IS SIMILAR FOR VALVES HV16B, HV17A, AND HV17B.
4. # INDICATES EQUIPMENT FURNISHED BY VENDOR.
5. LOGIC IS SHOWN FOR CONDENSER VACUUM BREAKER VALVE MOV5A. LOGIC IS SIMILAR FOR MOV5B AND MOV5C.

NOTE:

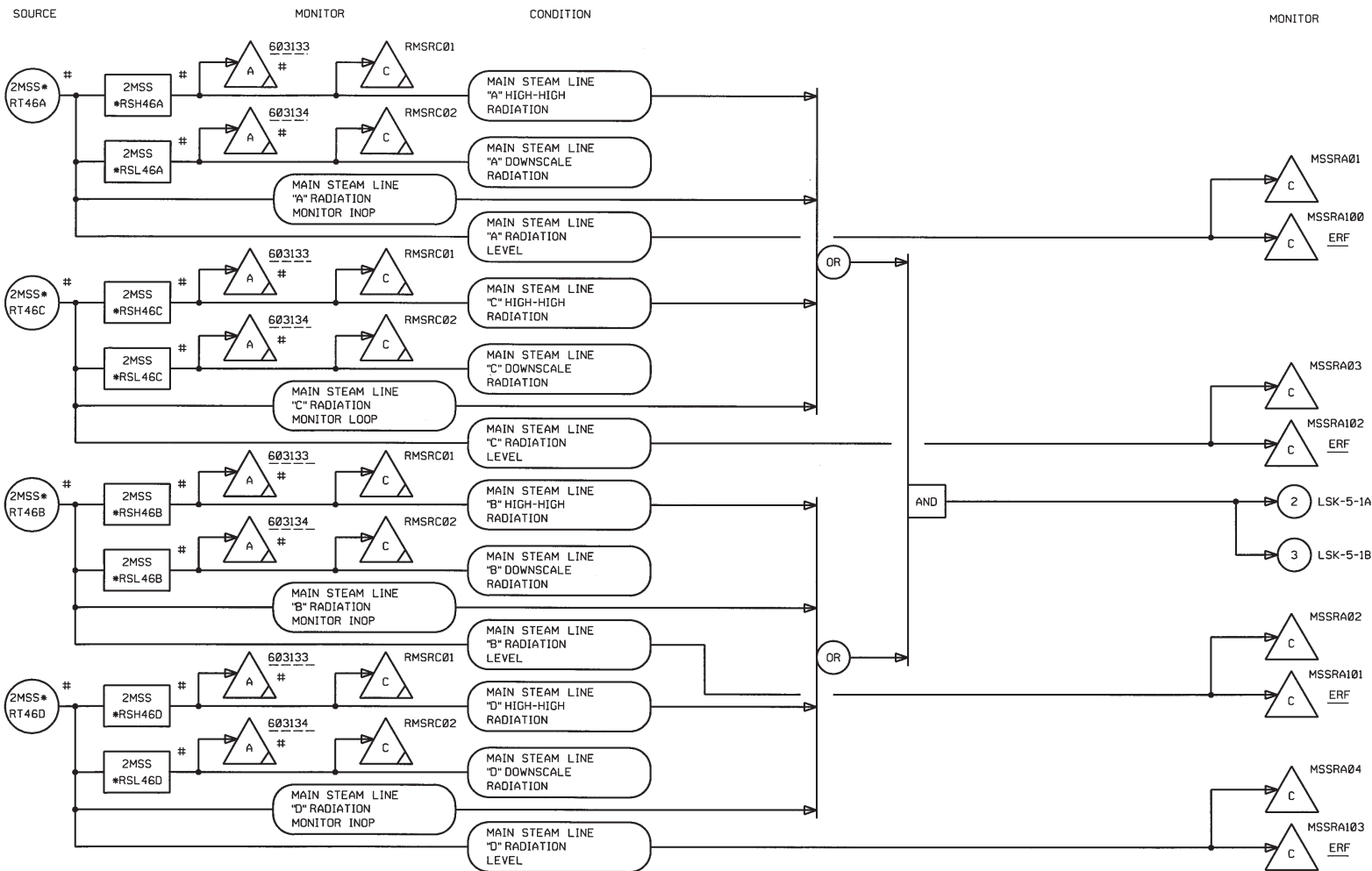
FOR LATEST SET POINT INFORMATION  
SEE SET POINT DATA SHEET

SOURCE: 12177-LSK-5-1C REV.8

FIGURE 10.4-1

MAIN CONDENSER AIR REMOVAL SYS.  
LOGIC DIAGRAM SHEET 3 OF 5

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT



- NOTES:
1. ALL EQUIPMENT AND INSTRUMENT NO.'S TO BE PREFIXED WITH "ZARC-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN. ANASTERISK (\*) WILL REPLACE THE DASH (-) IN THE PREFIX FOR INSTRUMENTS AND EQUIPMENT WHICH ARE A PART OF NUCLEAR SAFETY FEATURES SYSTEMS.
  2. SUPPLIED BY GE-NED REFER TO NO. 807E168TY SH.2.

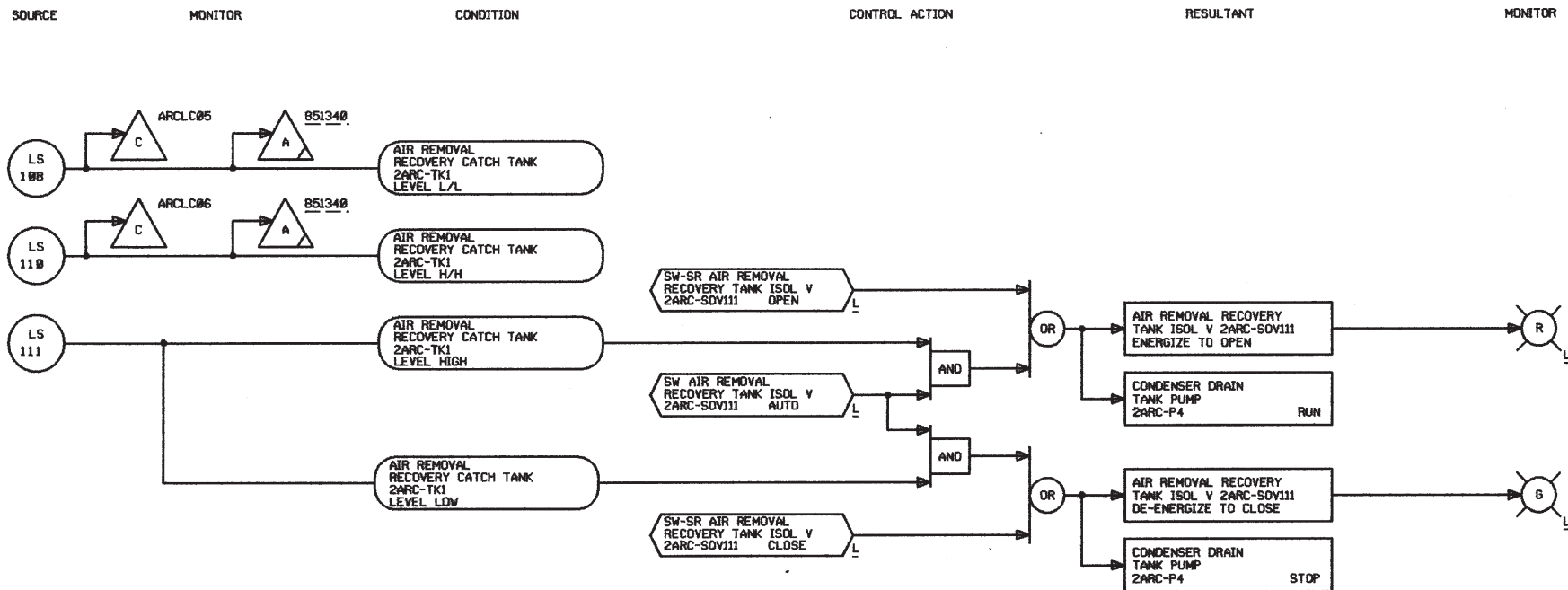
SOURCE: LSK-5-1E REV.11

FIGURE 10.4-1

MAIN CONDENSER  
AIR REMOVAL SYSTEM  
LOGIC DIAGRAM SHEET 4 OF 5

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT



NOTES:  
1. ALL INSTRUMENTS AND EQUIPMENT NO.'S TO BE PREFIXED WITH "2ARC-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.

SOURCE: LSK-5-1F REV.9

FIGURE 10.4-1

MAIN CONDENSER  
AIR REMOVAL SYSTEM  
LOGIC DIAGRAM SHEET 5 OF 5

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

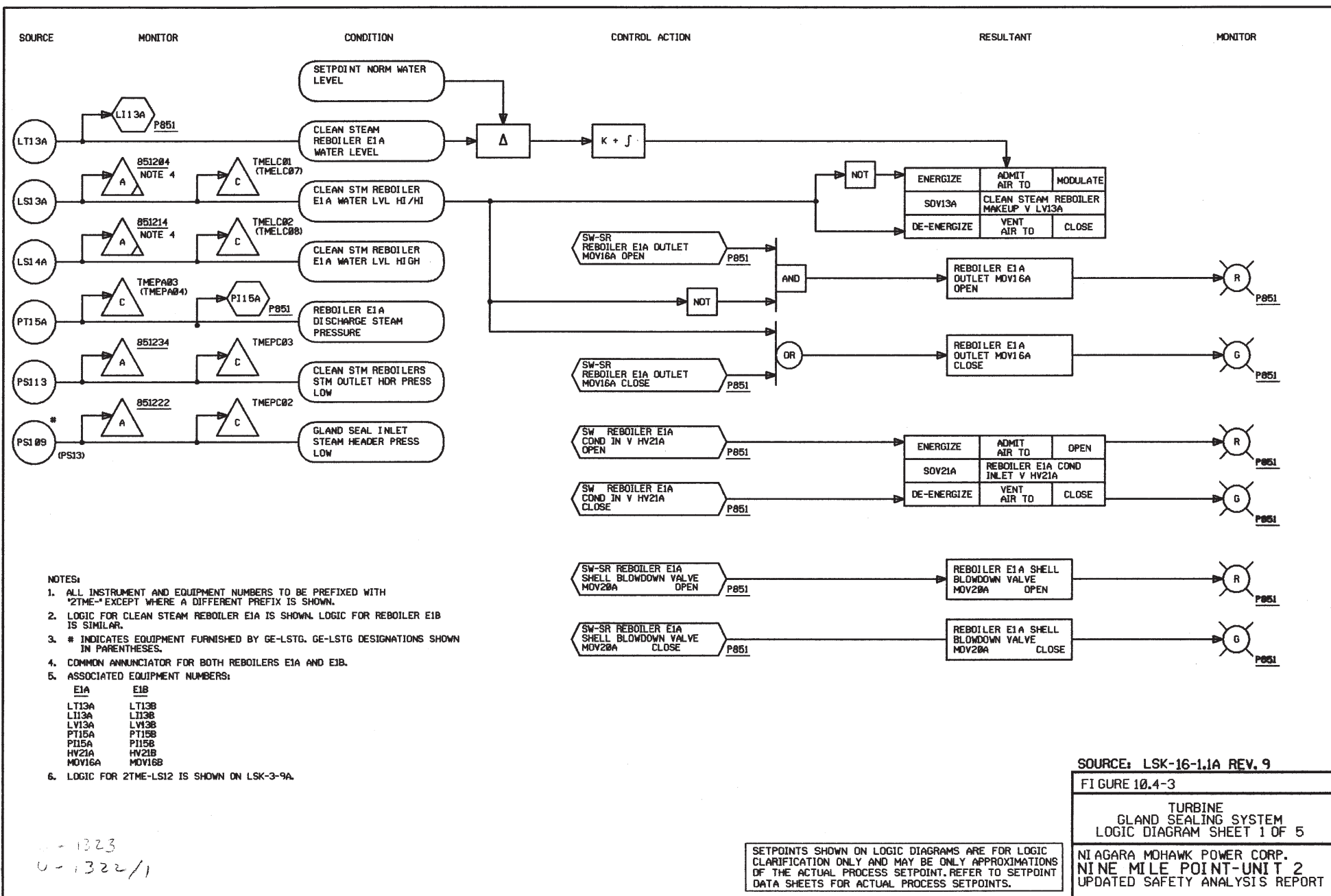
USAR REVISION 3

OCTOBER 1991

U-1302/1







SOURCE: LSK-16-1.1A REV. 9

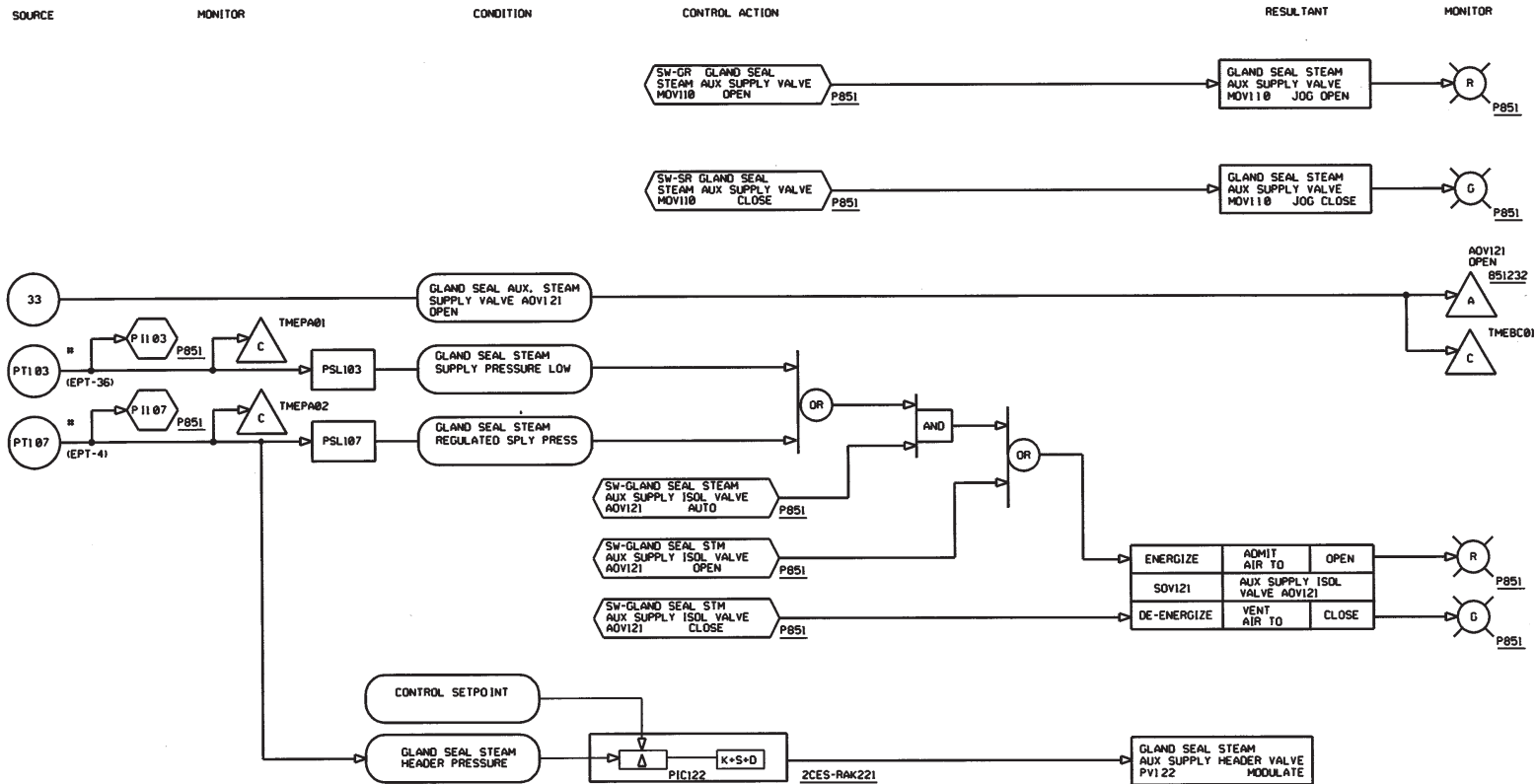
FIGURE 10.4-3

TURBINE  
GLAND SEALING SYSTEM  
LOGIC DIAGRAM SHEET 1 OF 5

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

USAR REVISION 3

OCTOBER 1991



**NOTES:**

1. INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH '2TME-' EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN, AN ASTERISK (\*) WILL REPLACE THE DASH (-) IN THE PREFIX FOR EQUIPMENT OR INSTRUMENTS WHICH ARE A PART OF THE NUCLEAR SAFETY FEATURES SYSTEM.
2. # INDICATES EQUIPMENT FURNISHED BY GE-LSTG. GE-LSTG DESIGNATIONS SHOWN IN PARENTHESIS.

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK 16-1-1.18 REV 10

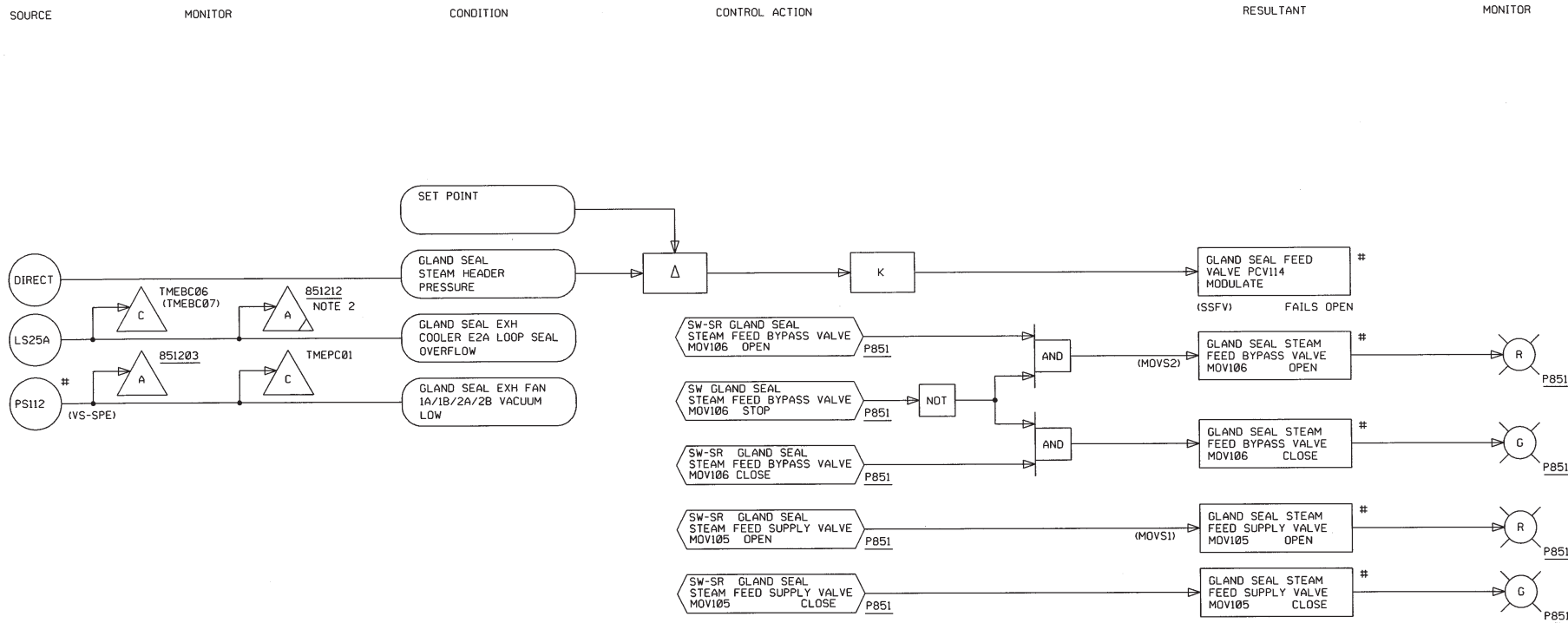
FIGURE 10.4-3

TURBINE  
GLAND SEALING SYSTEM  
LOGIC DIAGRAM SHEET 2 OF 5

NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

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OCTOBER 2010



- NOTES:
1. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2TME-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
  2. COMMON ANNUNCIATOR FOR BOTH LOOPS. GLAND EXHAUST COOLER LOOP SEAL OVERFLOWS.
  3. # INDICATES EQUIPMENT FURNISHED BY GE-LSTG. GE-LSTG DESIGNATIONS SHOWN IN PARENTHESIS.
  4. LOGIC IS SHOWN FOR VALVE MOV106#. LOGIC IS SIMILAR FOR VALVES MOV22A#, MOV22B#, MOV23A# AND MOV23B#.
  5. NOT USED.
  6. LOGIC FOR LS25A IS SHOWN. LOGIC IS SIMILAR FOR LS25B.
  7. ASSOCIATED EQUIPMENT NUMBERS:  
E2A E2B

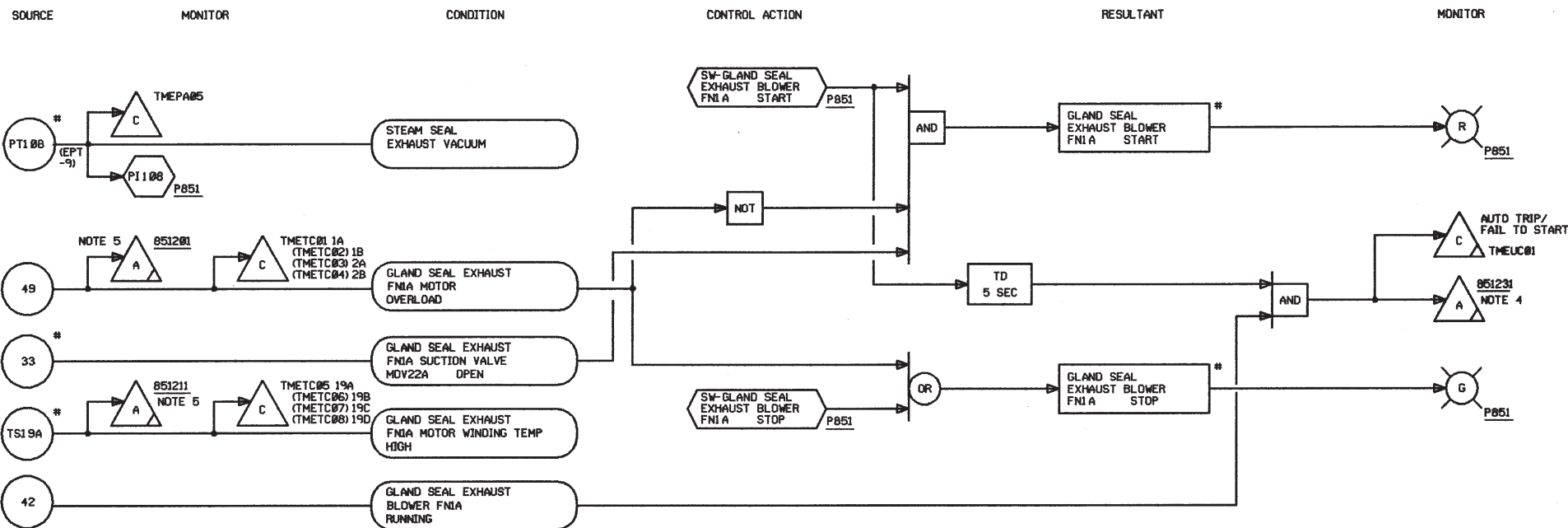
SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK- 16-1.1C REV.11

FIGURE 10.4-3

TURBINE  
GLAND SEALING SYSTEM  
LOGIC DIAGRAM SHEET 3 OF 5

NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT



#### NOTES:

- ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2TME-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
- \* REPRESENTS EQUIPMENT SUPPLIED BY GE-LSTG. GE-LSTG DESIGNATIONS SHOWN IN PARENTHESIS.
- LOGIC SHOWN FOR STEAM PACKING EXHAUSTER BLOWER FNI A. LOGIC IS SIMILAR FOR FNI B, FNI 2A AND FNI 2B.
- COMMON ANNUNCIATOR FOR FOUR BLOWERS, STEAM PACKING EXHAUSTER BLOWER TROUBLE.
- ASSOCIATED EQUIPMENT MARK NUMBERS:

FNI A	FNI B	FNI 2A	FNI 2B
TS19A	TS19B	TS19C	TS19D
(STD-SPEM-A)	(STD-SPEM-B)	(STD-SPEM-C)	(STD-SPEM-D)
MOV22A	MOV22B	MOV23A	MOV23B

U-1323  
U-1322/1

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK-16-1.1D REV. 9

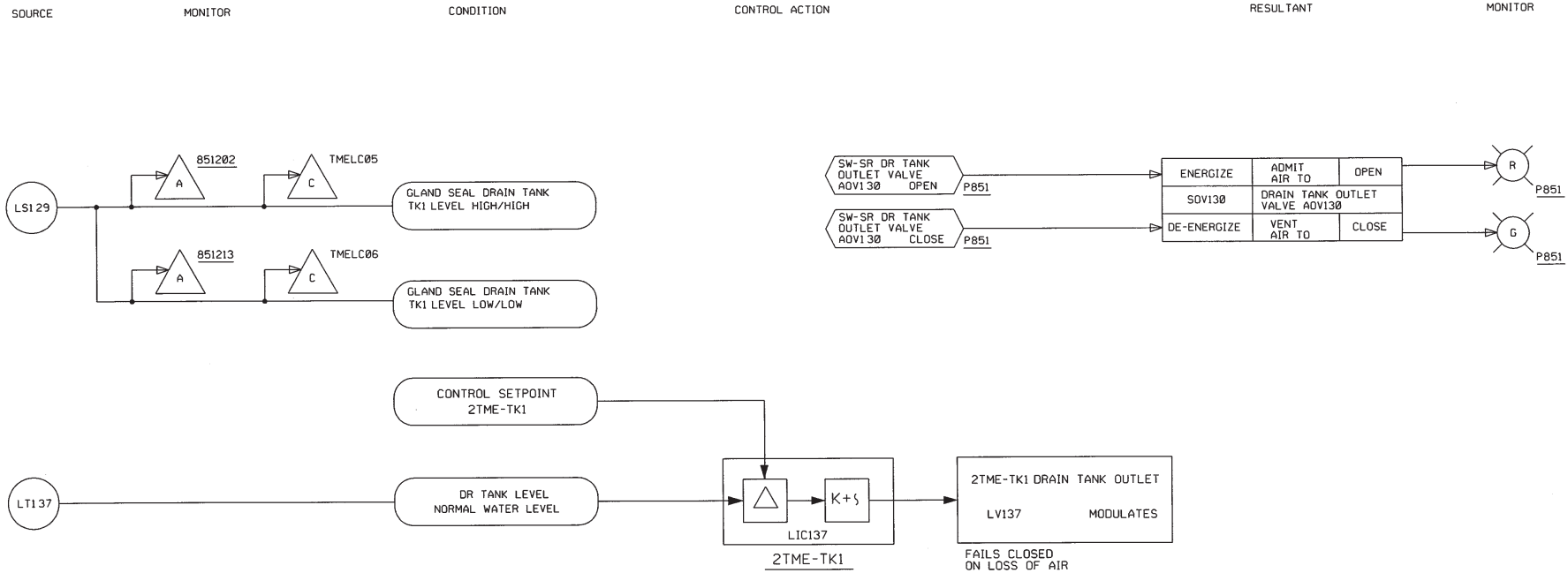
FIGURE 10.4-3

TURBINE  
GLAND SEALING SYSTEM  
LOGIC DIAGRAM SHEET 4 OF 5

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

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OCTOBER 1991



NOTES:  
1. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2TME-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK-16 - 01.01-E, REV. 11

FIGURE 10.4-3

TURBINE  
GLAND SEALING SYSTEM  
LOGIC DIAGRAM SHEET 5 OF 5

NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

USAR REVISION 19

OCTOBER 2010

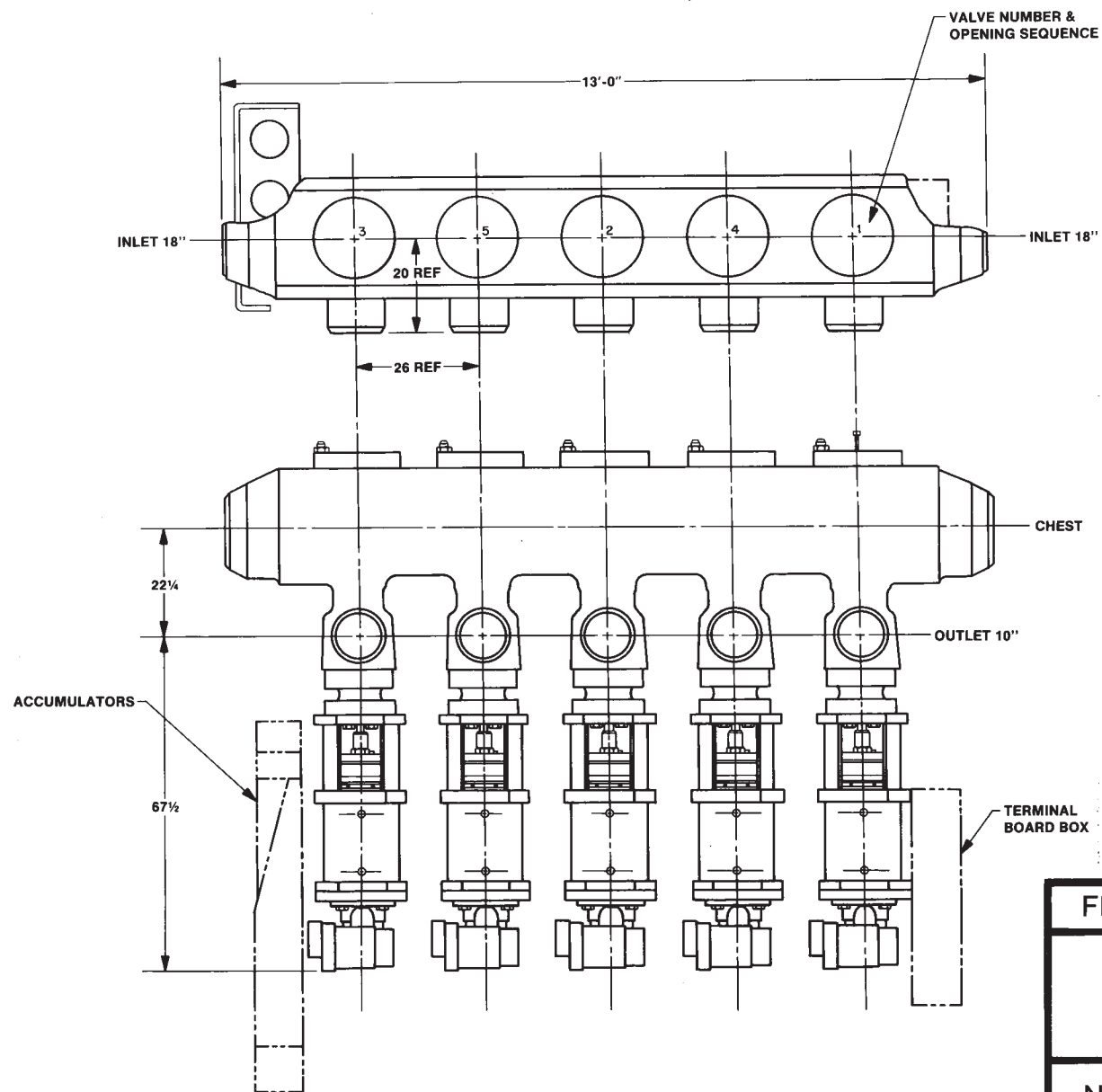


FIGURE 10.4-4

TURBINE BYPASS VALVE ASSEMBLY

NIAGARA MOHAWK POWER CORPORATION  
**NINE MILE POINT-UNIT 2**  
 FINAL SAFETY ANALYSIS REPORT

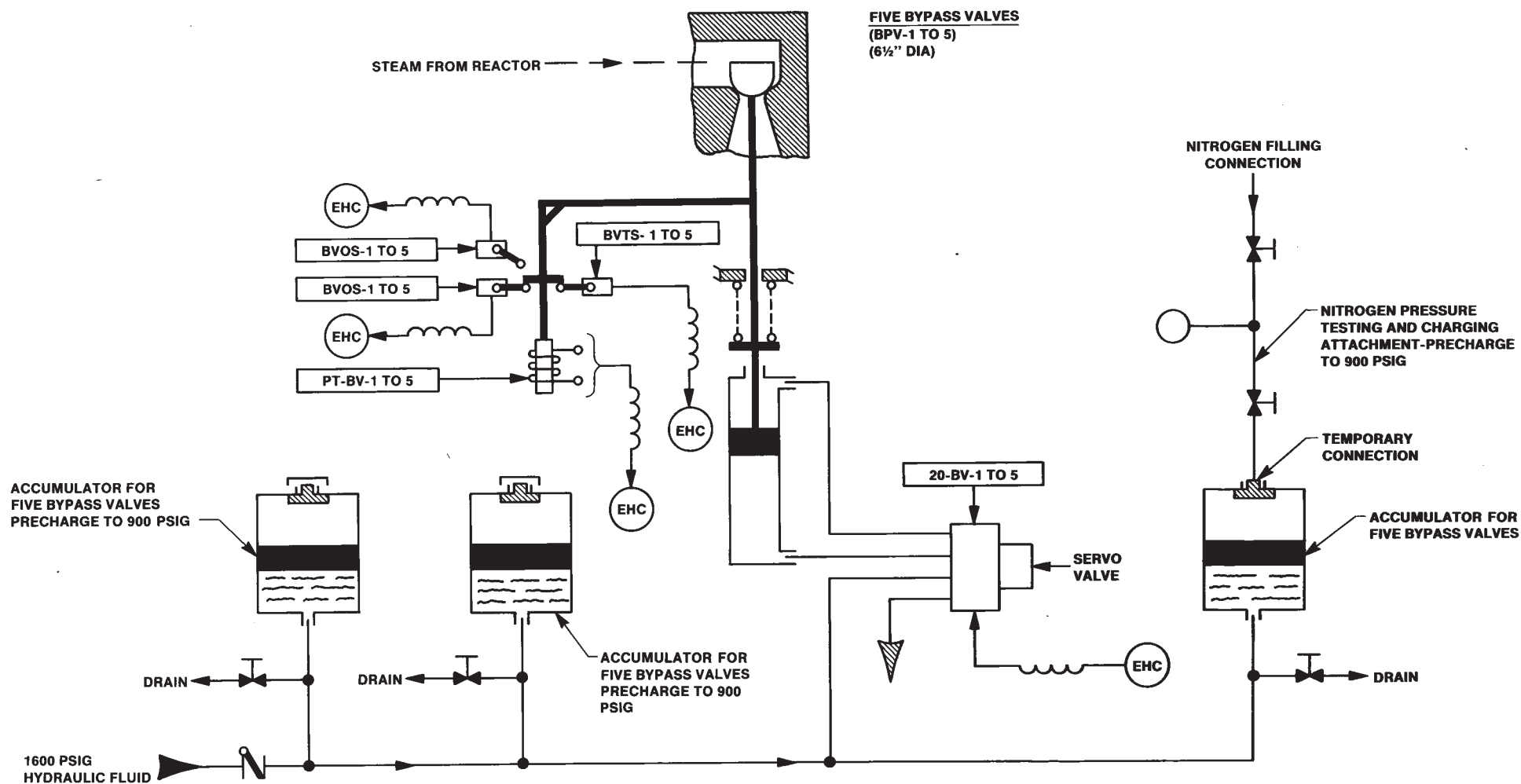


FIGURE 10.4-5

BYPASS VALVE CONTROL DIAGRAM  
ELECTRO-HYDRAULIC CONTROL UNIT

NIAGARA MOHAWK POWER CORPORATION  
NINE MILE POINT-UNIT 2  
FINAL SAFETY ANALYSIS REPORT



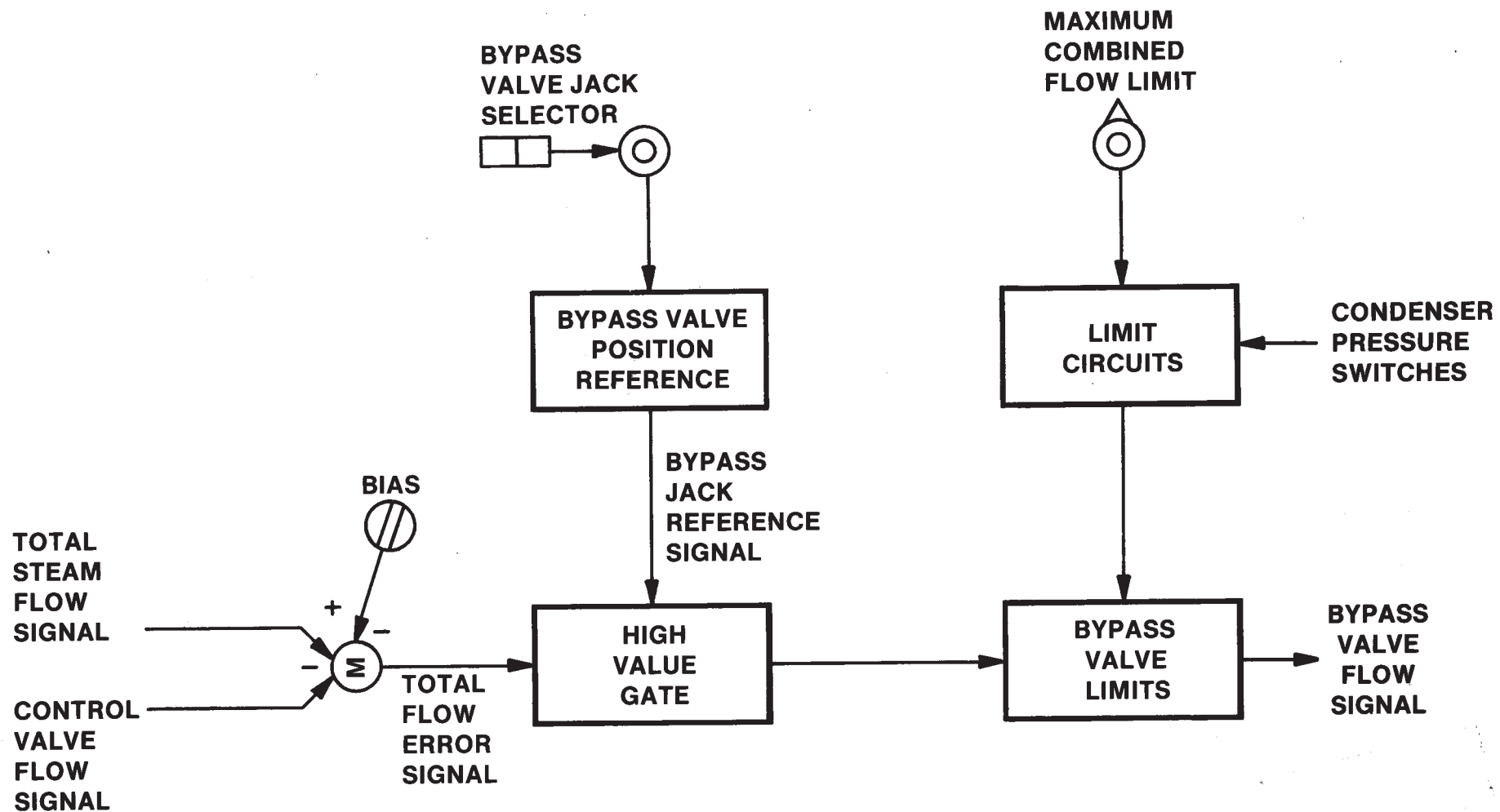
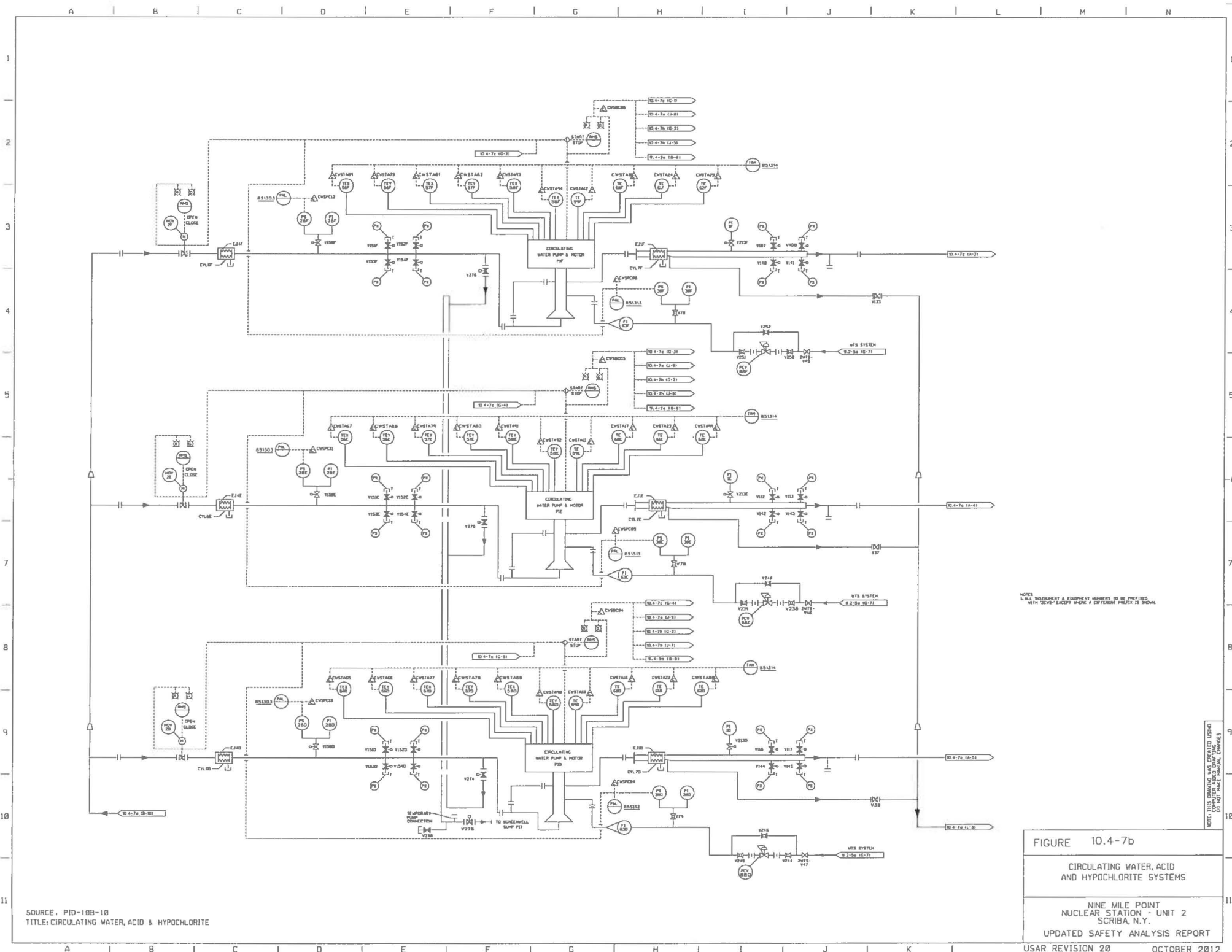


FIGURE 10.4-6

SIGNAL FLOW CHART FOR TURBINE  
BYPASS CONTROL UNIT

NIAGARA MOHAWK POWER CORPORATION  
NINE MILE POINT-UNIT 2  
FINAL SAFETY ANALYSIS REPORT

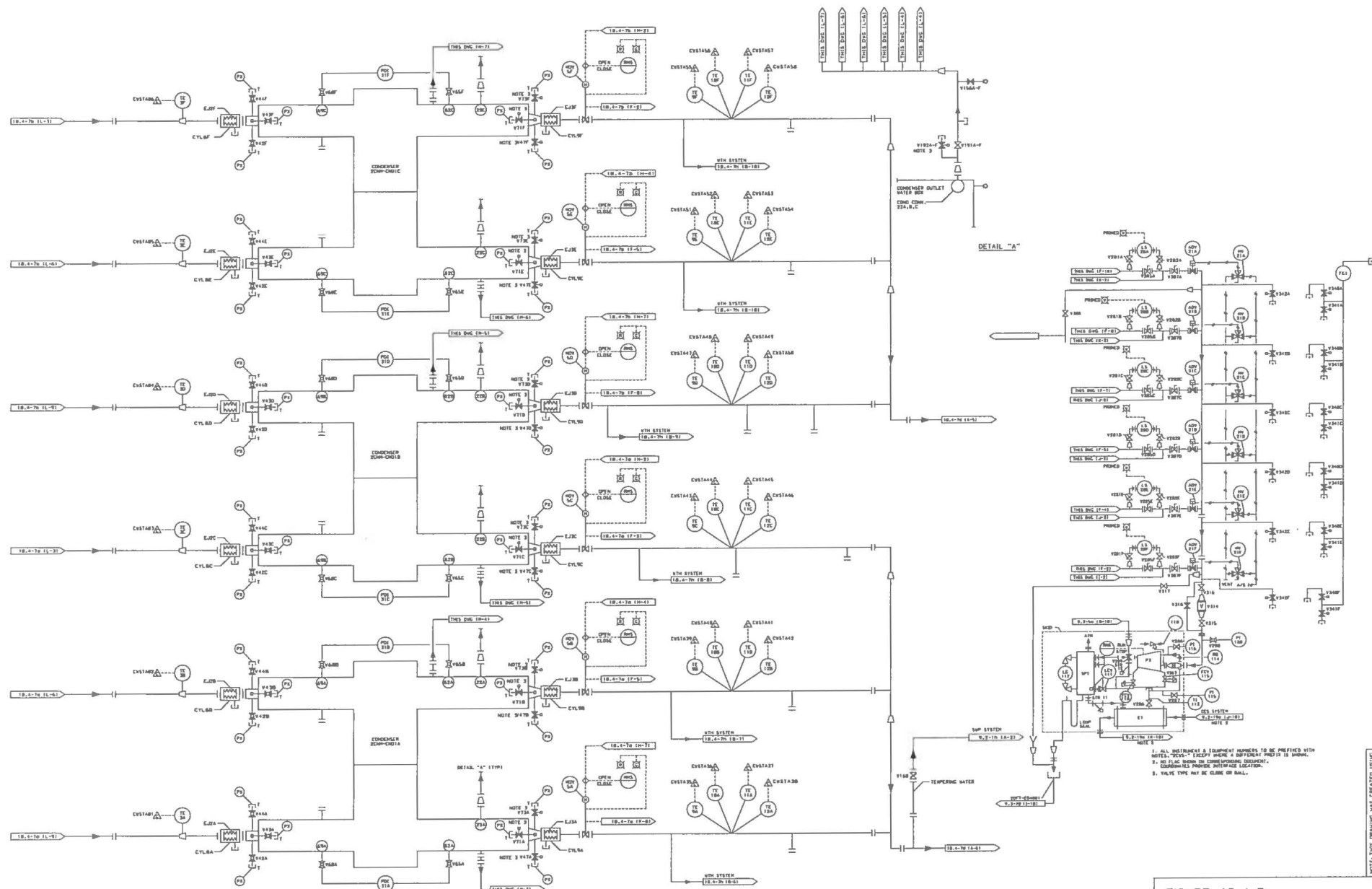




SOURCE: PID-189-10  
TITLE: CIRCULATING WATER, ACID & HYPOCHLORITE

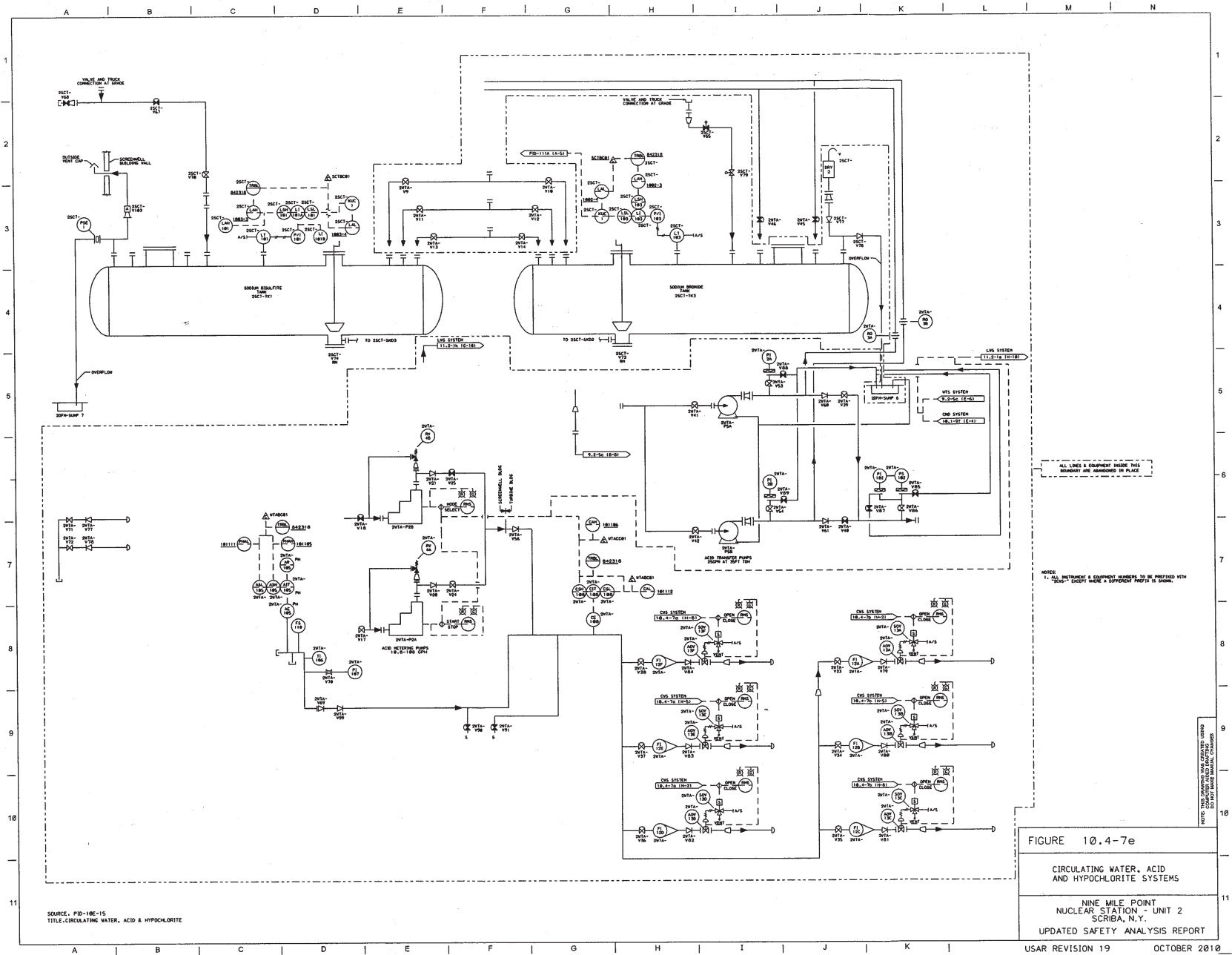
FIGURE 10.4-7b  
CIRCULATING WATER, ACID  
AND HYPOCHLORITE SYSTEMS  
NINE MILE POINT  
NUCLEAR STATION - UNIT 2  
SCRIBA, N.Y.  
UPDATED SAFETY ANALYSIS REPORT

NOTE: THIS DRAWING WAS CREATED USING  
A P&ID SYSTEM WHICH DOES NOT MAINTAIN CHANGES



SOURCE: FID-100-01  
TITLE: CIRCULATING WATER, ACID AND HYPOCHLORITE





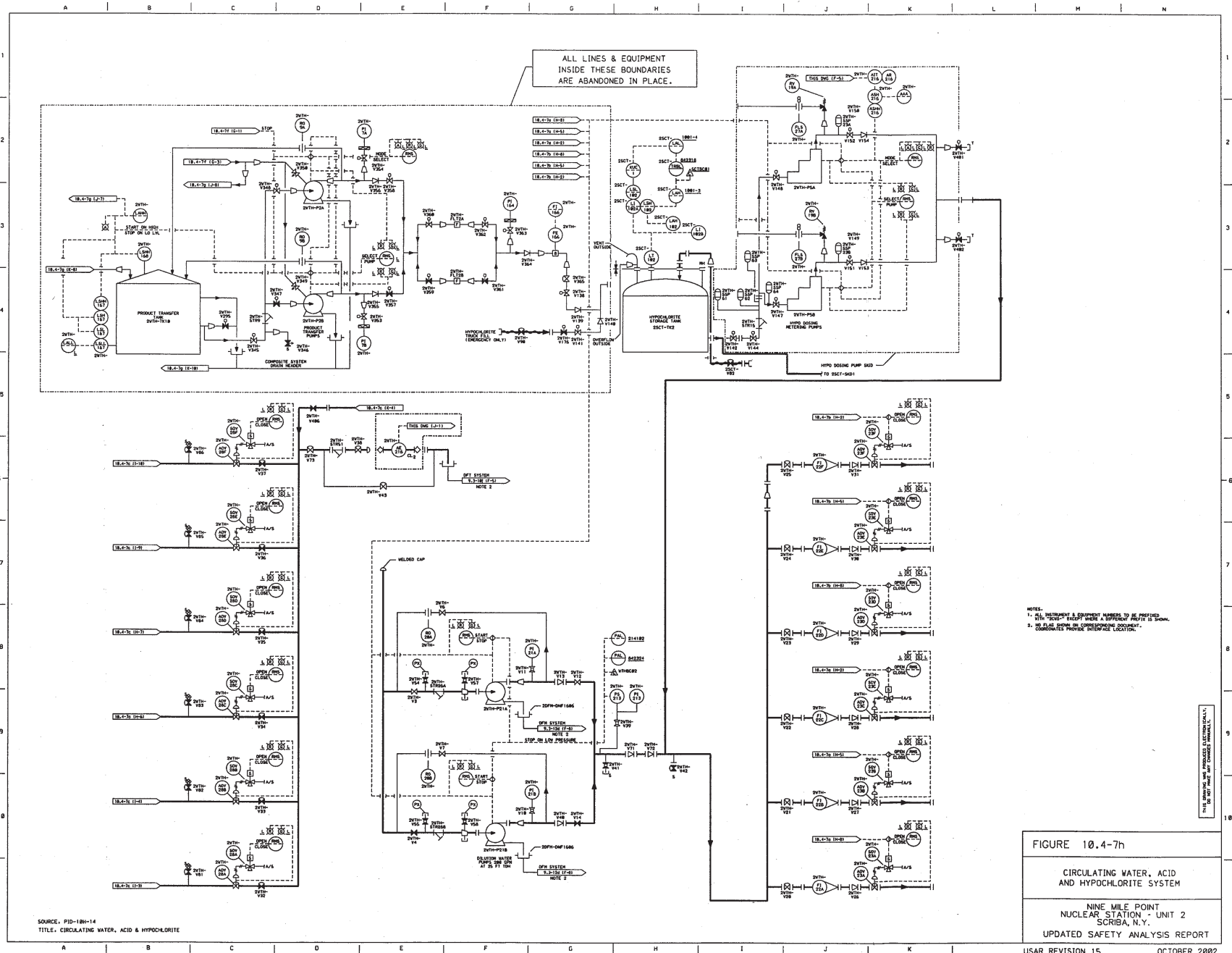


**CIRCULATING WATER, ACID  
AND HYPOCHLORITE SYSTEMS**

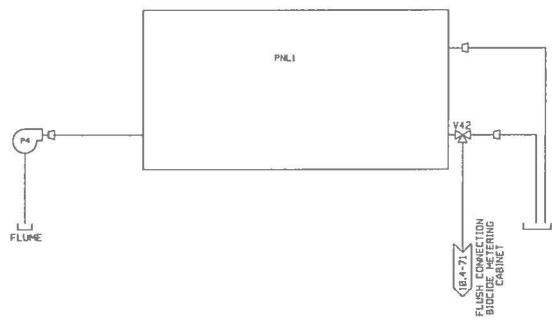
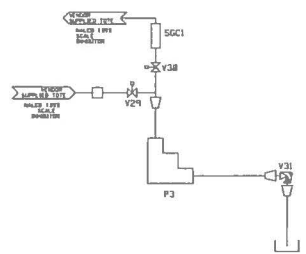
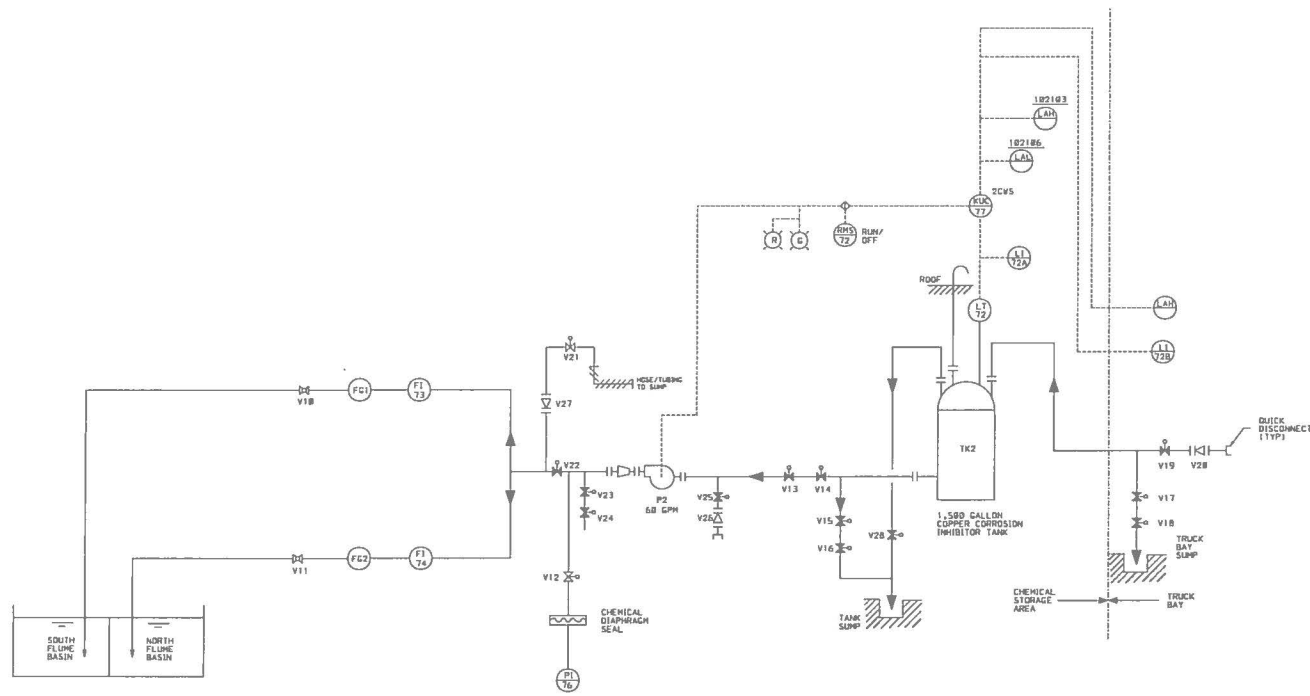
USAR REVISION 0 APRIL 1989









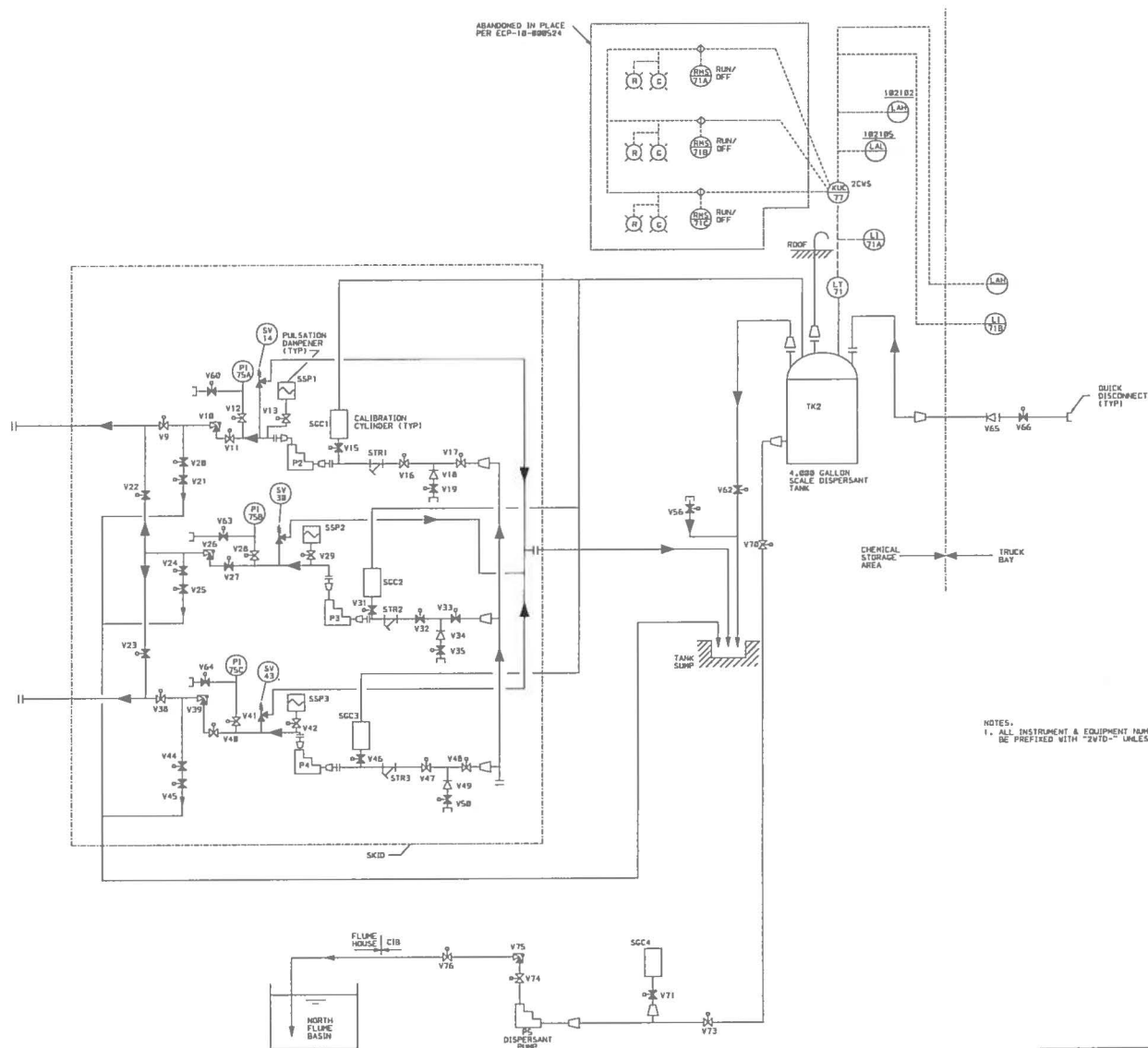


NOTES:  
1. ALL INSTRUMENT & EQUIPMENT NUMBERS TO BE PREFIXED WITH "2VIC-" UNLESS OTHERWISE NOTED.

NOTE: THIS DRAWING WAS CREATED USING  
AUTOCAD 2000 AND MICROSOFT  
EXCEL 2000. THE DRAWING IS  
A COPY OF THE ORIGINAL.

SOURCE: PID-10K-5  
TITLE: CHEMICAL INJECTION (WTC)  
COPPER CORROSION INHIBITOR SYSTEM

FIGURE 10.4-7k
CHEMICAL INJECTION (WTC) COPPER CORROSION INHIBITOR SYSTEM
NINE MILE POINT NUCLEAR STATION - UNIT 2 SCRIBA, N.Y. UPDATED SAFETY ANALYSIS REPORT



NOTES:  
1. ALL INSTRUMENT & EQUIPMENT NUMBERS TO BE PREFIXED WITH "2VTD-" UNLESS OTHERWISE NOTED.

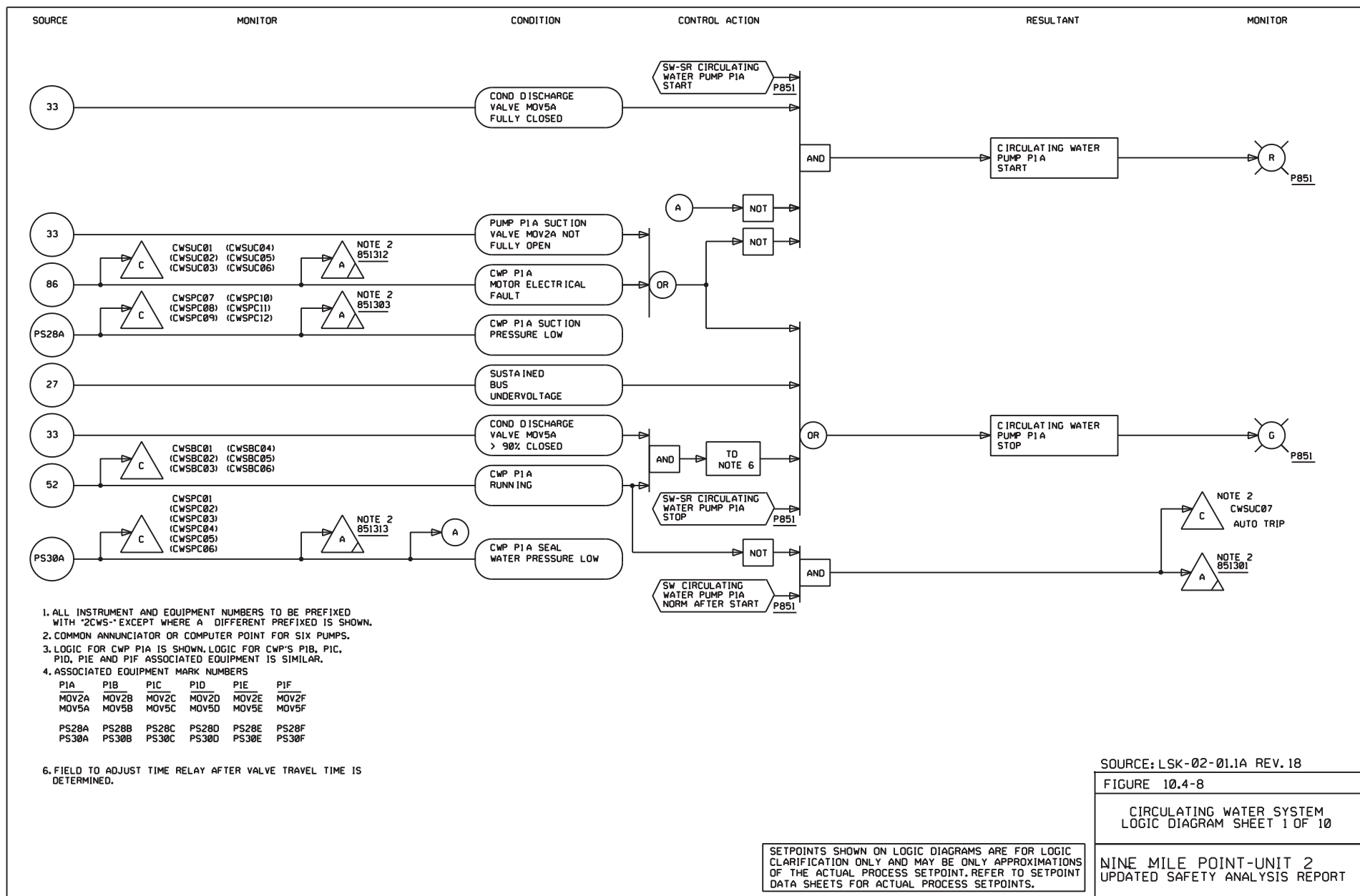
THIS DRAWING WAS PRODUCED ELECTRONICALLY. SEE US FOR MORE INFORMATION.

SOURCE: PID-1BL-7  
TITLE: CHEMICAL INJECTION (WTD)  
SCALE DISPERSANT SYSTEM

FIGURE 10.4-71  
CHEMICAL INJECTION (WTD)  
SCALE DISPERSANT SYSTEM  
NINE MILE POINT  
NUCLEAR STATION - UNIT 2  
SCRIBA, N.Y.  
UPDATED SAFETY ANALYSIS REPORT

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OCTOBER 2012



SOURCE: LSK-02-01.1A REV. 18

FIGURE 10.4-8

CIRCULATING WATER SYSTEM  
LOGIC DIAGRAM SHEET 1 OF 10

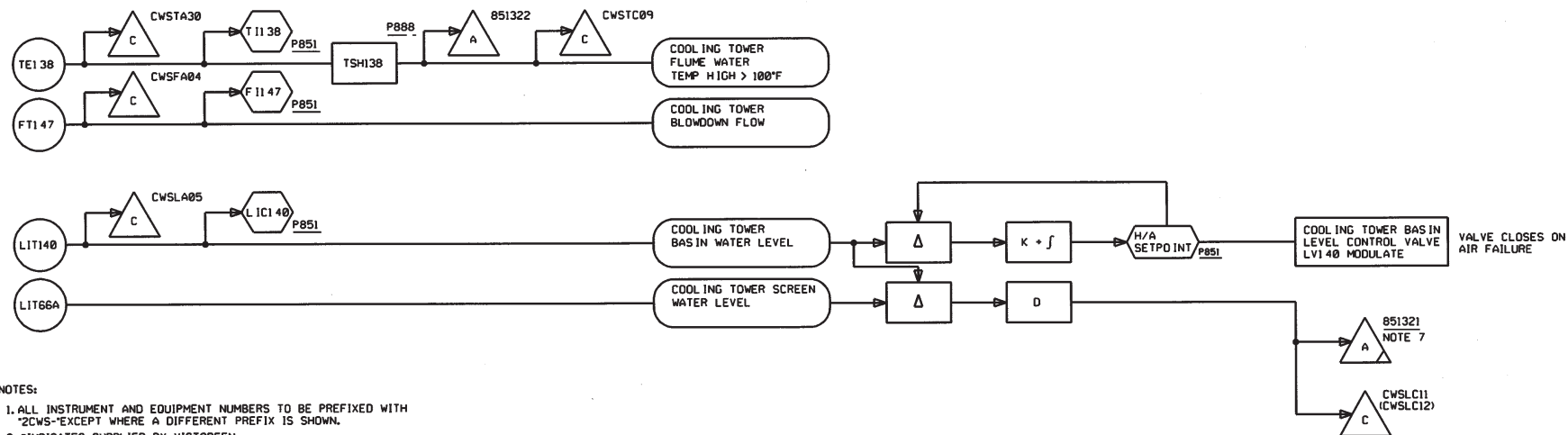
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

USAR REVISION 20

OCTOBER 2012



SOURCE	MONITOR	CONDITION	CONTROL ACTION	RESULTANT	MONITOR
--------	---------	-----------	----------------	-----------	---------



NOTES:

1. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "CWS"-EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
2. \*INDICATES SUPPLIED BY VICTOREEN.
3. COMMON ALARM INPUT FOR THE FOLLOWING CONDITIONS:  
RADIATION HIGH, RADIATION ALERT, CHANNEL FAILURE, POWER FAILURE,  
MONITOR INOPERABLE/BYPASSED.
4. COMMON ANNUNCIATOR WINDOW FOR "LIQUID PROCESS RADIATION  
HIGH/TROUBLE".
5. DELETE
6. LOGIC FOR COOLING TOWER SCREEN WATER LEVEL LIT66A IS SHOWN.  
LOGIC FOR COOLING TOWER SCREEN WATER LEVEL LIT66B IS SIMILAR.
7. COMMON ANNUNCIATOR FOR CIRCULATING WATER COOLING  
TOWER TROUBLE.

SOURCE: LSK- 2-1.1D

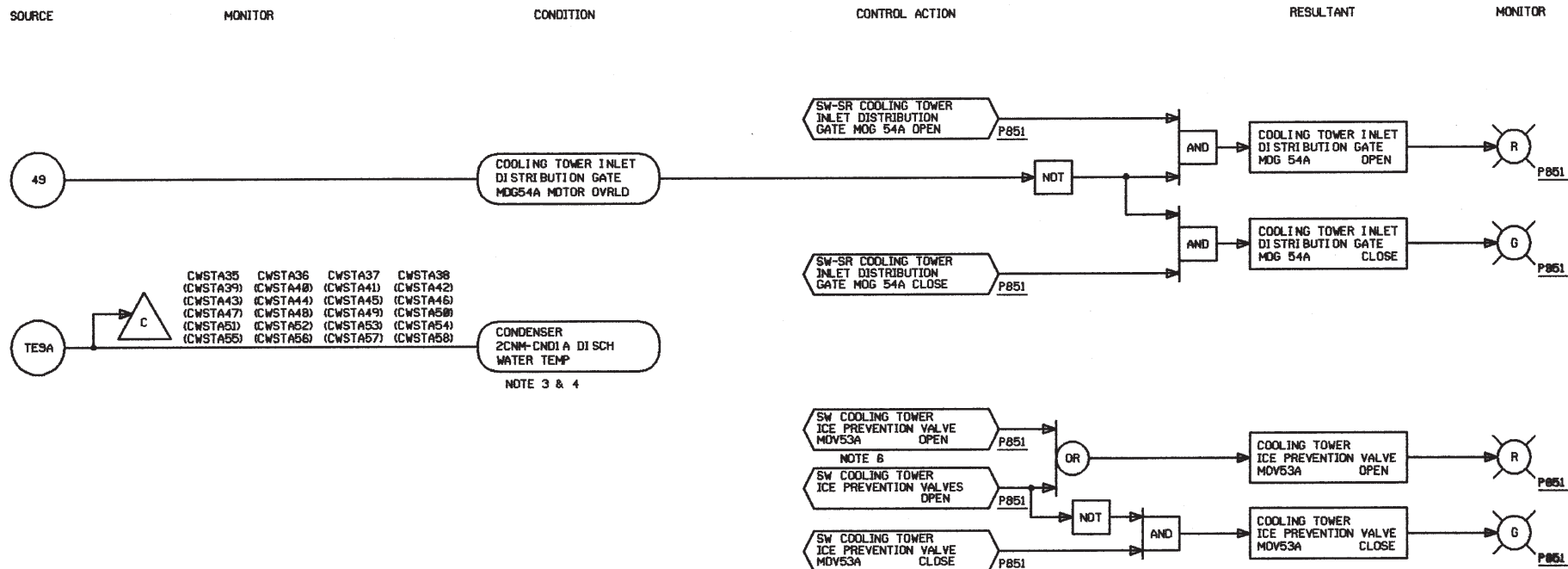
FIGURE 10.4-8

CIRCULATING WATER SYSTEM  
LOGIC DIAGRAM SHEET 3 OF 10

NINE MILE POINT-UNIT 2

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC  
CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS  
OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT  
DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

USAR REVISION 18      OCTOBER 2008



#### NOTES:

- ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2CWS-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
  - LOGIC FOR INLET DISTRIBUTION GATE MOG 54A IS SHOWN. LOGIC FOR INLET DISTRIBUTION GATE MOG 54F IS SIMILAR.
  - LOGIC FOR CONDENSER 2CMM-CND1A DISCHARGE WATER TEMPERATURE IS SHOWN. LOGIC FOR ASSOCIATED EQUIPMENT IS SIMILAR.
  - ASSOCIATED EQUIPMENT MARK NUMBERS:
- | 2CMM-CND1A |       | 2CMM-CND1B |       | 2CMM-CND1C |       |
|------------|-------|------------|-------|------------|-------|
| TE3A       | TE9B  | TE9C       | TE9D  | TE9E       | TE9F  |
| TE10A      | TE10B | TE10C      | TE10D | TE10E      | TE10F |
| TE11A      | TE11B | TE11C      | TE11D | TE11E      | TE11F |
| TE12A      | TE12B | TE12C      | TE12D | TE12E      | TE12F |
- LOGIC FOR ICE PREVENTION VALVE MOV53A IS SHOWN. LOGICS FOR ICE PREVENTION VALVES MOV53B,C,D,E,F,G,H,J,L,M ARE SIMILAR.
  - COOLING TOWER ICE PREVENTION VALVES MASTER OPEN SWITCH OPENS ALL VALVES (MOV53A,B,C,D,E,F,G,H,J,K,L & M) SIMULTANEOUSLY.

SOURCE: LSK-2-1.1E REV.15

FIGURE 10.4-8

CIRCULATING WATER SYSTEM  
LOGIC DIAGRAM SHEET 4 OF 10

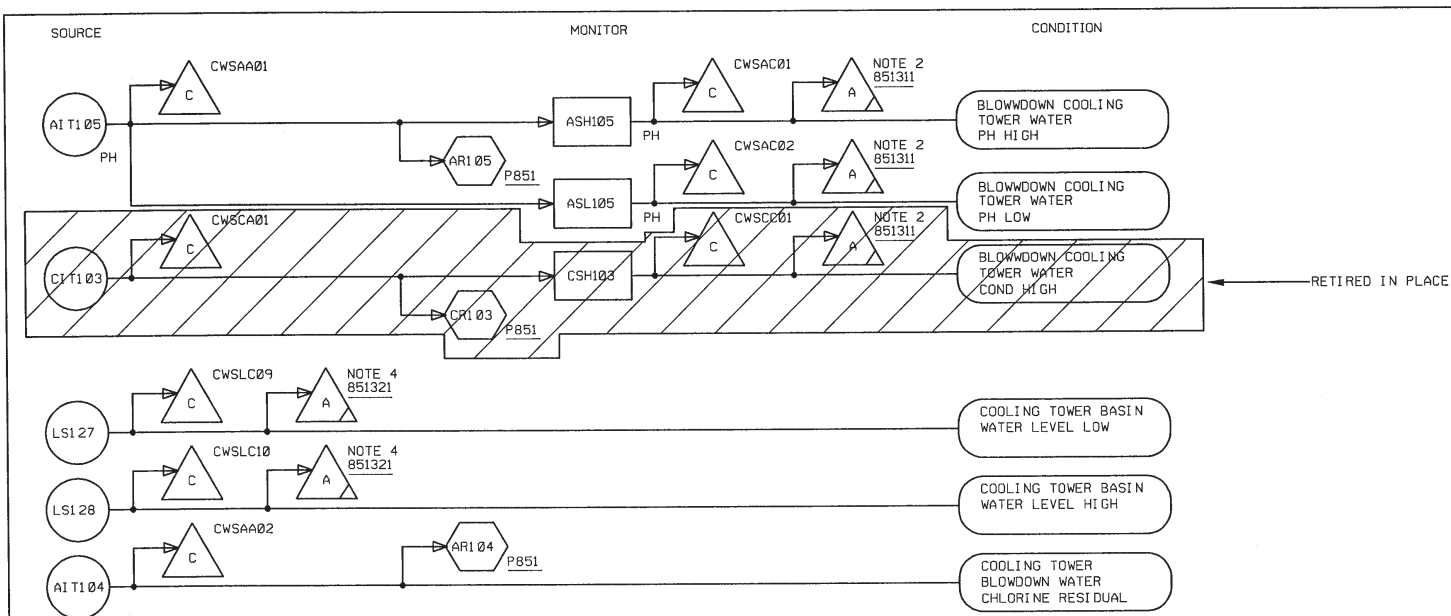
SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

USAR REVISION 3

OCTOBER 1991





**NOTES:**

1. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "CWS-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
2. COMMON ANNUNCIATOR FOR SYSTEM TROUBLE.
4. COMMON ANNUNCIATOR FOR CIRCULATING WATER COOLING TOWER TROUBLE.

SOURCE: LSK-2-1.1F REV.16

FIGURE 10.4-8

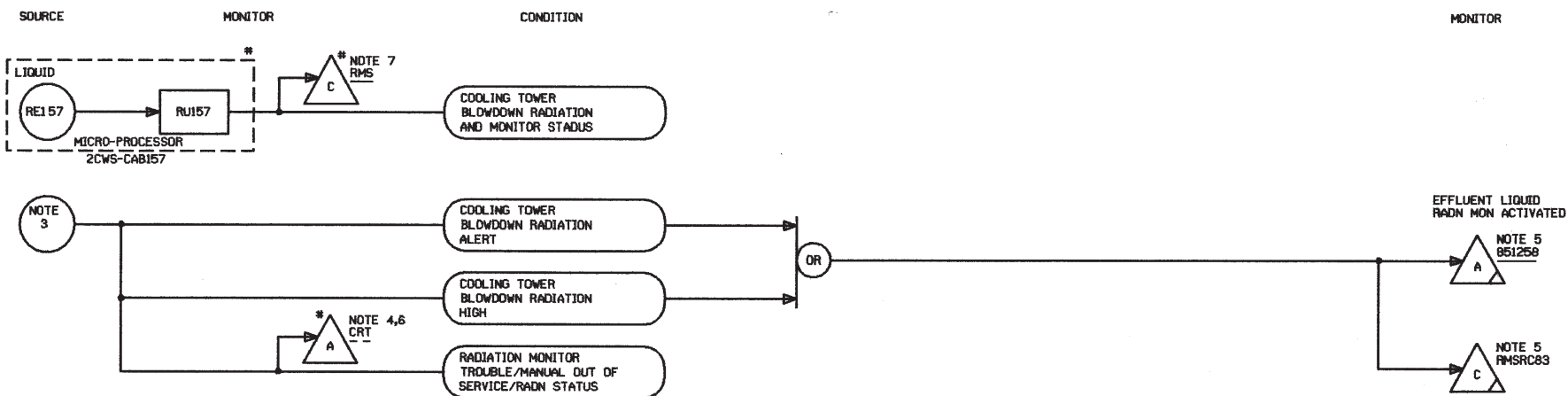
CIRCULATING WATER SYSTEM  
LOGIC DIAGRAM SHEET 5 OF 10

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

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OCTOBER 1993



#### NOTES:

1. ALL INSTRUMENTS AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2CWS-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
2. \*- SUPPLIED BY DIGITAL RADN MON VENDOR.
3. RMS COMPUTER GENERATED SIGNAL.
4. RMS COMPUTER GENERATED SIGNAL LOCATED ON CONSOLES COM FOR ALL RADIATION MONITORS.
5. COMMON INPUT, SEE THE FOLLOWING LSK'S FOR ADDITIONAL INPUTS: LSK-9-18W, 31-1.21D.
6. RADIATION MONITOR TROUBLE / MANUAL OUT-OF-SERVICE/RADN STATUS CONSISTS OF THE FOLLOWING CONDITIONS:

##### I. TROUBLE

1. DETECTOR FAILURE/SATURATION
2. LOSS OF SIGNAL COMMUNICATION
3. POWER FAILER (HIGH & LOW VOLTAGE)
4. CHECK SOURCE FAILURE
5. BACK GROUND CHECK FAILURE
6. PUMP FAILURE
7. HIGH/LOW FLOW

##### 7. LOOP COMMUNICATION

##### II. MANUAL OUT OF SERVICE

1. TEST MODE
2. CALIBRATE MODE
3. MONITOR OFF

##### III. RADN STATUS

1. HIGH RADN LEVEL
2. ALERT RADN LEVEL
3. HIGH RATE OF RADN INCREASE

U-1322/1

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK-2-1.1J REV.14

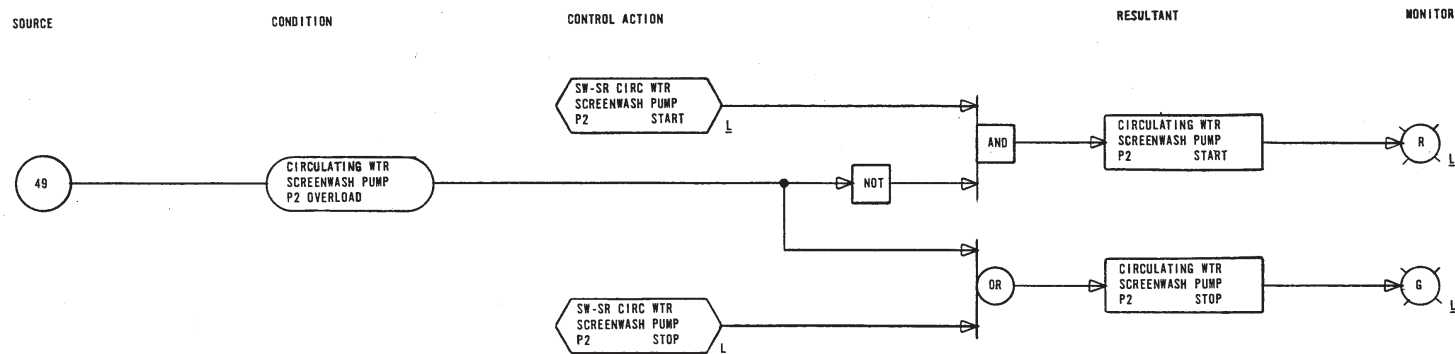
FIGURE 10.4-8

CIRCULATING WATER SYSTEM  
LOGIC DIAGRAM SHEET 6 OF 10

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

USAR REVISION 3

OCTOBER 1991



NOTES:

1. ALL INSTRUMENTS AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "CWS-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.

NOTE:

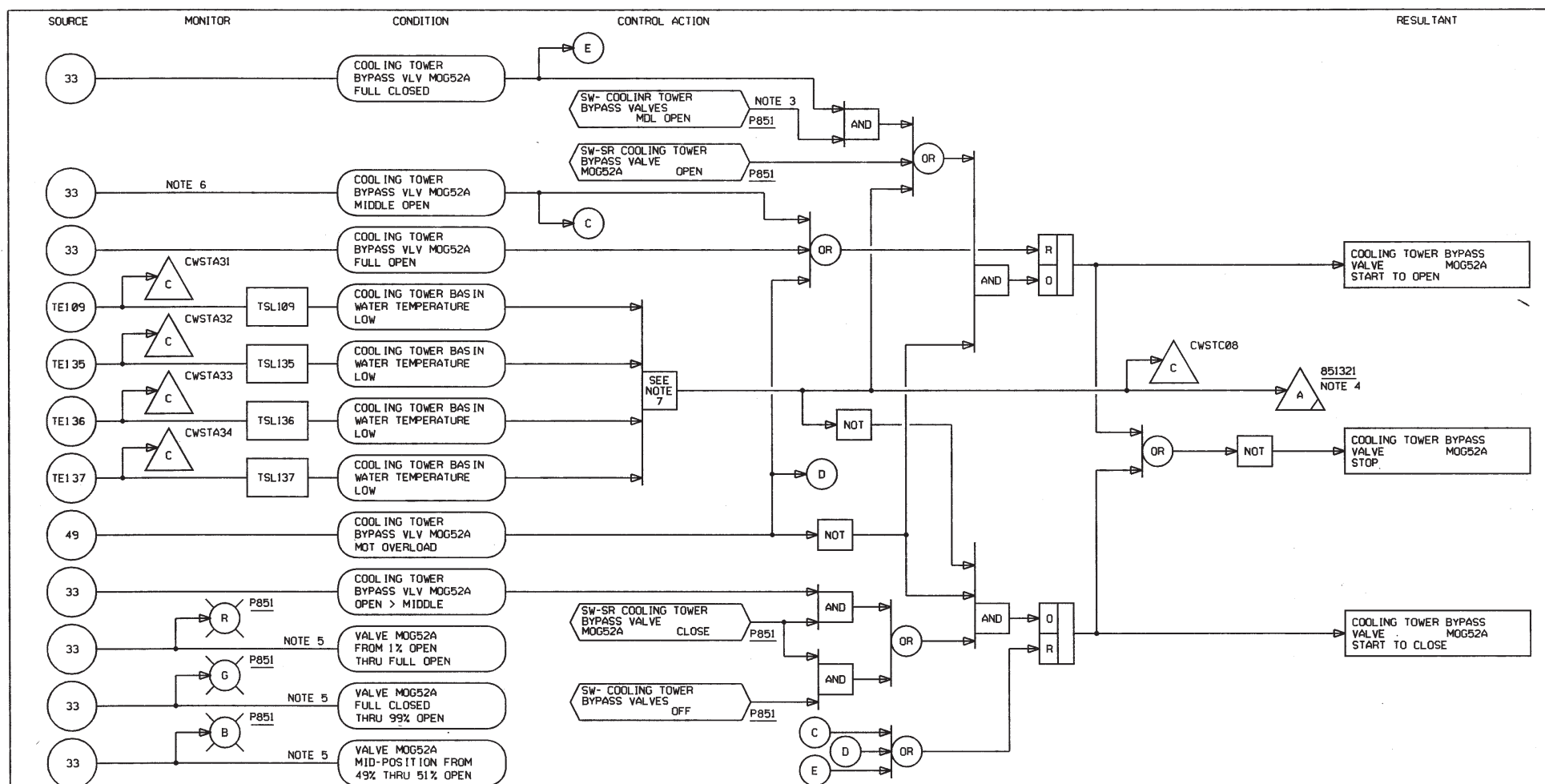
FOR LATEST SET POINT INFORMATION  
SEE SET POINT DATA SHEET

SOURCE: 12177-LSK-2-1.1K REV.13

FIGURE 10.4-8

CIRCULATING WATER SYSTEM  
LOGIC DIAGRAM SHEET 7 OF 10

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT



# NOTES:

1. ALL INSTRUMENTS AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "CWS-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
2. LOGIC FOR BYPASS VALVE MOG52A IS SHOWN. LOGIC FOR BYPASS VALVE MOG52B & MOG52C IS SIMILAR.
3. COOLING TOWER BYPASS GATES MASTER SWITCH OPENS MOG52A, MOG52B & MOG52C SIMULTANEOUSLY.
4. COMMON ANNUNCIATOR FOR CIRC WATER COOLING TOWER TROUBLE.
5. LIMIT SWITCH POSITION FIELD ADJUSTABLE TO PROVIDE OVERLAP AT MIDDLE POSITION.
6. MIDDLE POSITION OF LIMIT SWITCH IS FIELD ADJUSTABLE PER TOWER COOLING VENDOR INSTRUCTION.
7. 2 OUT OF 4 IS THE NORMAL LOGIC. ACTUAL LOGIC CONFIGURATION IS DETERMINED BY DESIGN CONFIGURATION DOCUMENTATION BASED ON THE AVAILABILITY OF THE COOLING TOWER BASIN THERMAL DETECTORS. THE ACCEPTABLE ALTERNATIVE LOGIC CONFIGURATIONS INCLUDE: 2 OUT OF 3 AND 2 OUT OF 2.

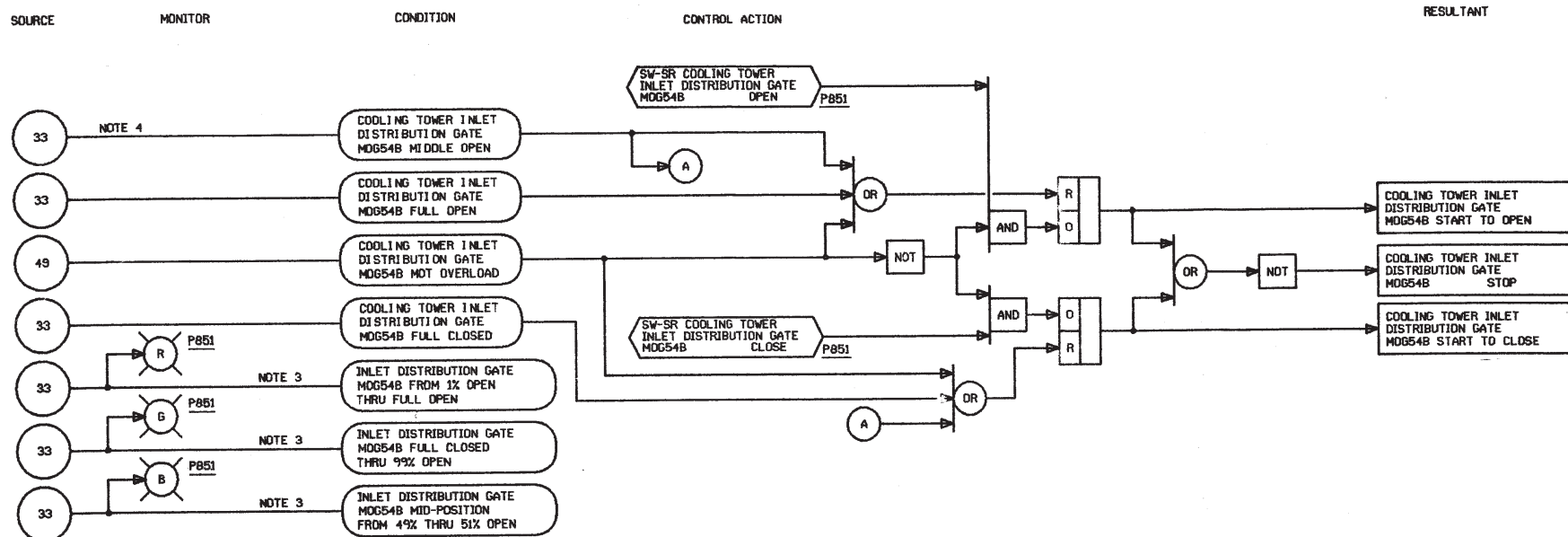
SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK-2-1.1L

FIGURE 10.4-8

CIRCULATING WATER SYSTEM  
LOGIC DIAGRAM SHEET 8 OF 10

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT



#### NOTES

1. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2CWS-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
2. LOGIC FOR COOLING TOWER INLET DISTRIBUTION GATE MOG54B IS SHOWN. LOGIC FOR COOLING TOWER INLET DISTRIBUTION GATE MOG54C, MOG54D & MOG54E IS SIMILAR.
3. LIMIT SWITCH POSITION IS FIELD ADJUSTABLE TO PROVIDE OVERLAP AT MIDDLE POSITION.
4. MIDDLE POSITION OF LIMIT SWITCH IS FIELD ADJUSTABLE PER COOLING TOWER VENDOR INSTRUCTION.

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK-2-1.1M REV.16

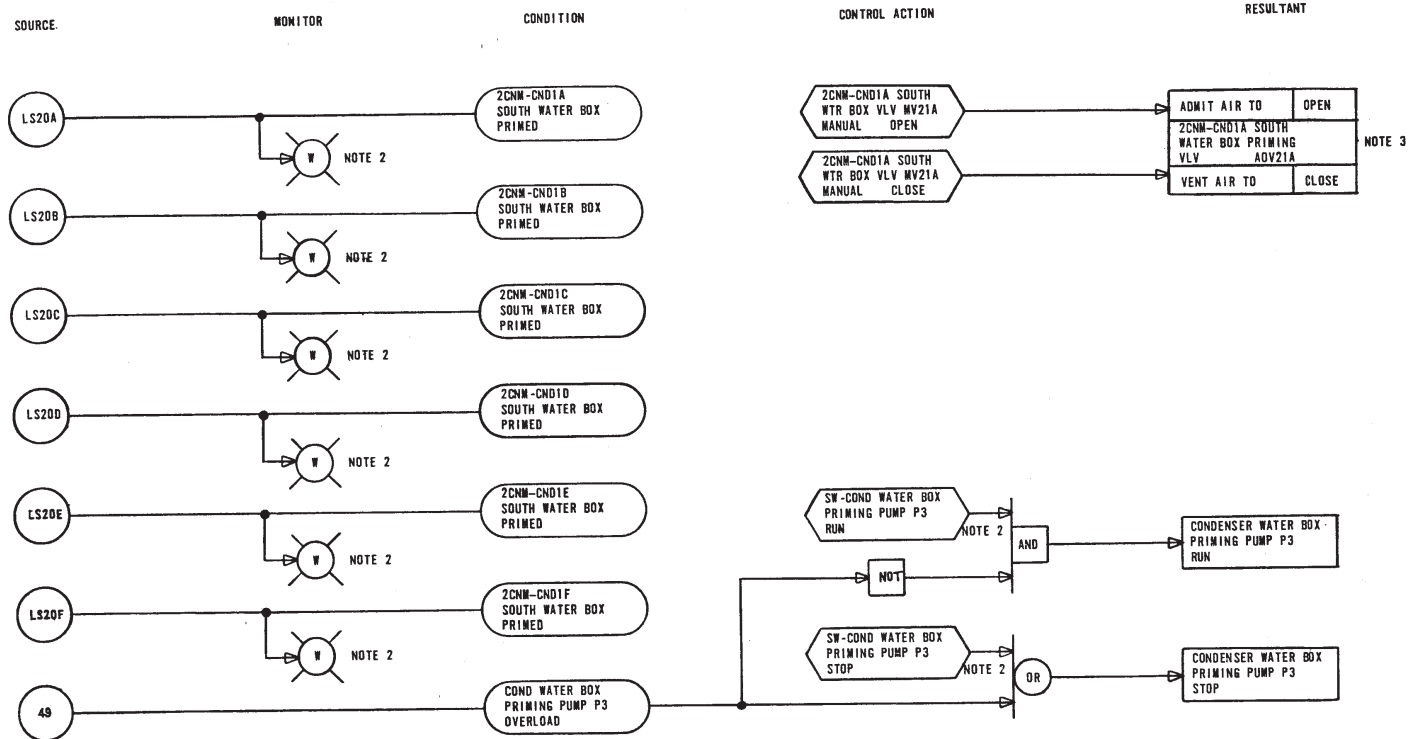
FIGURE 10.4-8

CIRCULATING WATER SYSTEM  
LOGIC DIAGRAM SHEET 9 OF 10

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

USAR REVISION 1

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- NOTES:
- ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED BY "2CWS-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
  - EQUIPMENT LOCATED AT LOCAL PANEL 2CWS-PNL101.
  - LOGIC FOR 2CNM-CND1A SOUTH WATER BOX VLV MV21A AND ADV21A IS SHOWN. LOGIC IS SIMILAR FOR THE FOLLOWING:
- | SERVICE                 | VLV   | ADV    |
|-------------------------|-------|--------|
| 2CNM-CND1B S. WATER BOX | MV21B | ADV21B |
| 2CNM-CND1C S. WATER BOX | MV21C | ADV21C |
| 2CNM-CND1D S. WATER BOX | MV21D | ADV21D |
| 2CNM-CND1E S. WATER BOX | MV21E | ADV21E |
| 2CNM-CND1F S. WATER BOX | MV21F | ADV21F |

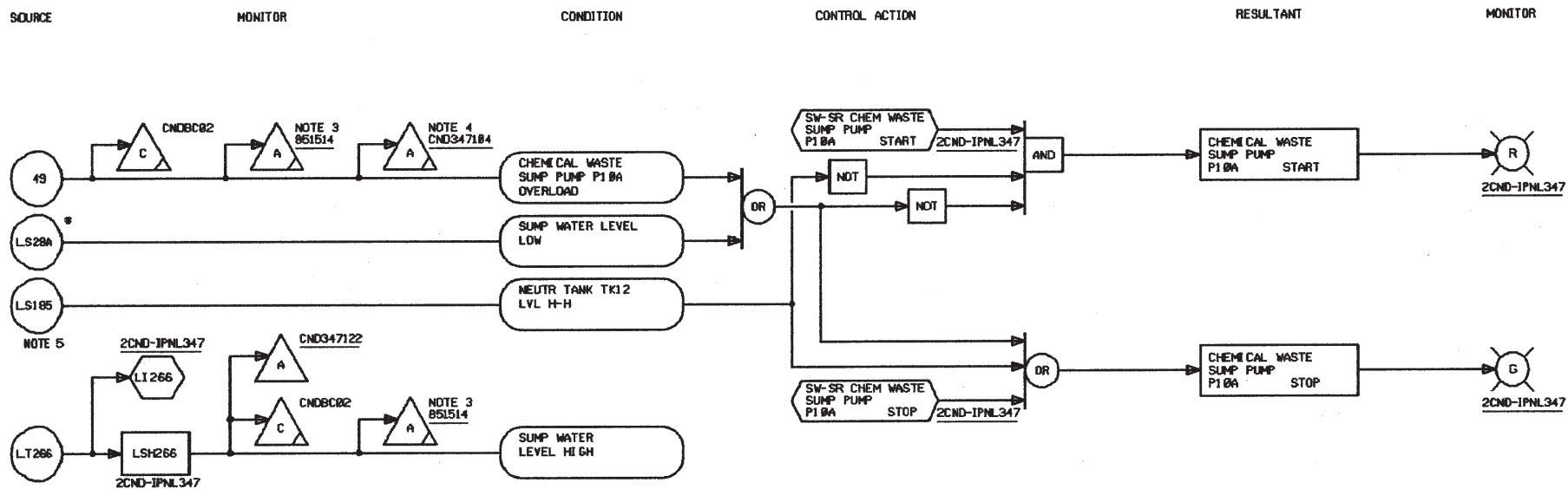
NOTE:  
FOR LATEST SET POINT INFORMATION  
SEE SET POINT DATA SHEET

SOURCE: 12177-LSK-2-1.1N REV.13

FIGURE 10.4-8

CIRCULATING WATER SYSTEM  
LOGIC DIAGRAM  
SHEET 10 OF 10

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT



# NOTES:

1. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2CND" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
2. LOGIC SHOWN FOR SUMP PUMP P18A. LOGIC FOR SUMP PUMP P18B IS SIMILAR.
3. COMMON ANNUNCIATOR - SYSTEM TROUBLE.
4. COMMON ANNUNCIATOR FOR BOTH PUMPS.
5. ADDITIONAL LOGIC FOR LS185 IS SHOWN ON LSK-4-7E.
6. \* REPRESENTS SUPPLIED BY VENDOR.
7. ASSOCIATED EOPT MARK NO'S:

P18A	P18B
LS28A	LS28B

SOURCE: LSK-4-7A REV.9

FIGURE 10.4-9

CONDENSATE DEMINERALIZER SYSTEM  
LOGIC DIAGRAM SHEET 1 OF 10

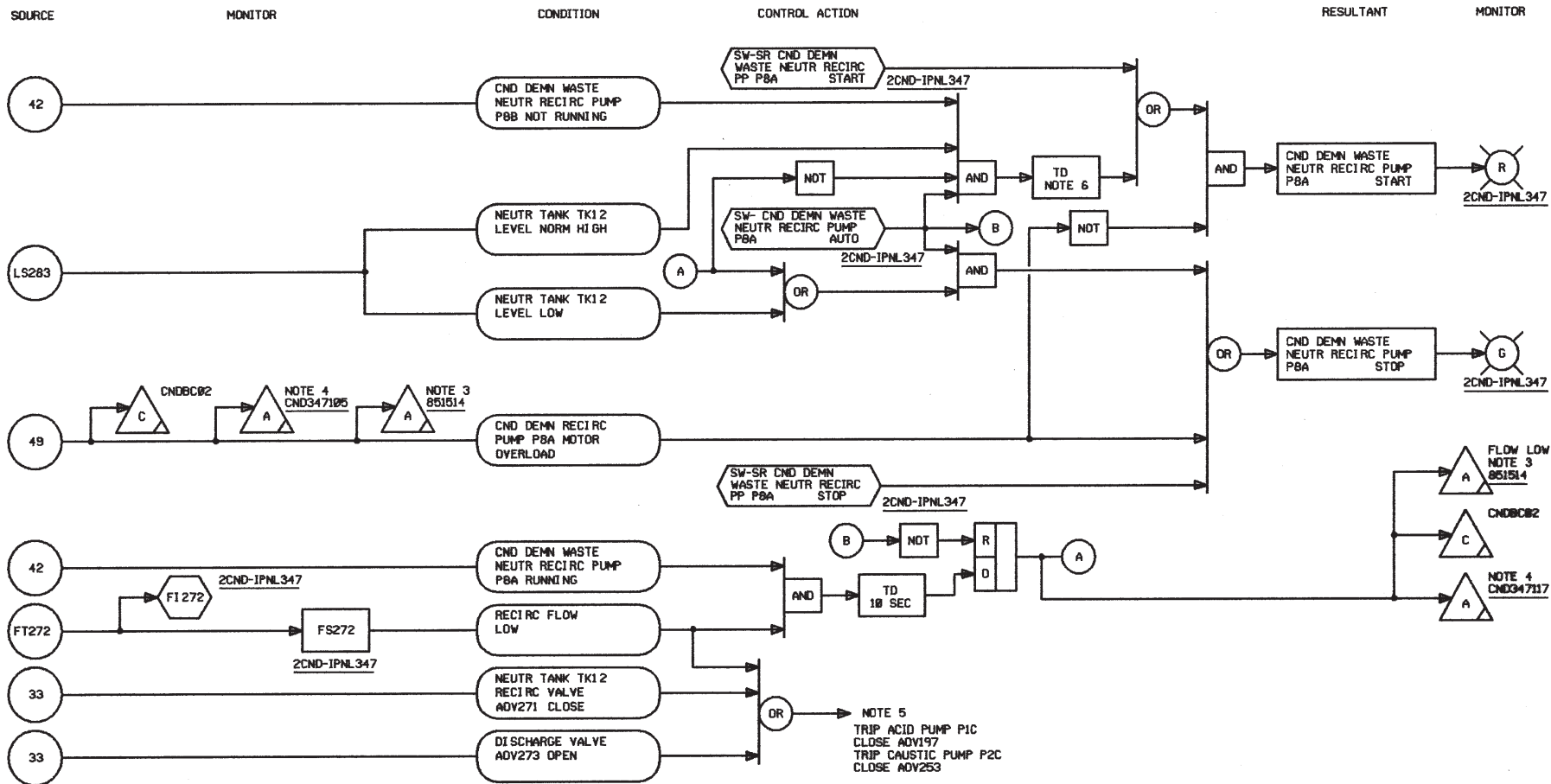
NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

USAR REVISION 3

OCTOBER 1991

U-1322/1



SOURCE: LSK-4-7B REV.9

FIGURE 10.4-9

CONDENSATE DEMINERALIZER SYSTEM  
LOGIC DIAGRAM SHEET 2 OF 10

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

USAR REVISION 3

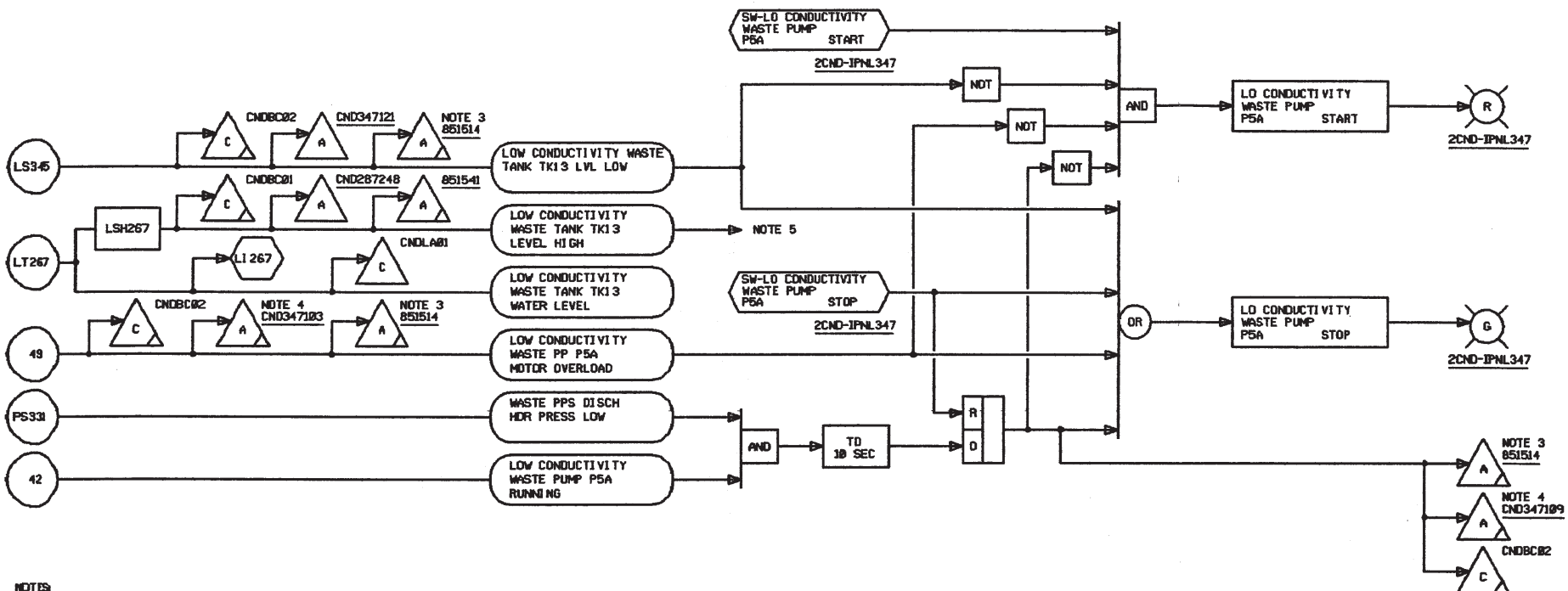
OCTOBER 1991

U-1322 / 1





SOURCE	MONITOR	CONDITION	CONTROL ACTION	RESULTANT	MONITOR
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#### NOTES

1. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2CND" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
2. LOGIC SHOWN FOR WASTE PUMP PSA. LOGIC FOR WASTE PUMP P50 IS SIMILAR.
3. COMMON ANNUNCIATOR - SYSTEM TROUBLE.
4. COMMON ANNUNCIATOR FOR BOTH PUMPS.
5. REFER TO MANUFACTURERS DWG. NO. T-21538 S&W FILE NO. 0007.600-005-027

SOURCE: LSK-4-7D REV.10

FIGURE 10.4-9

CONDENSATE DEMINERALIZER SYSTEM  
LOGIC DIAGRAM SHEET 4 OF 10

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

USAR REVISION 3

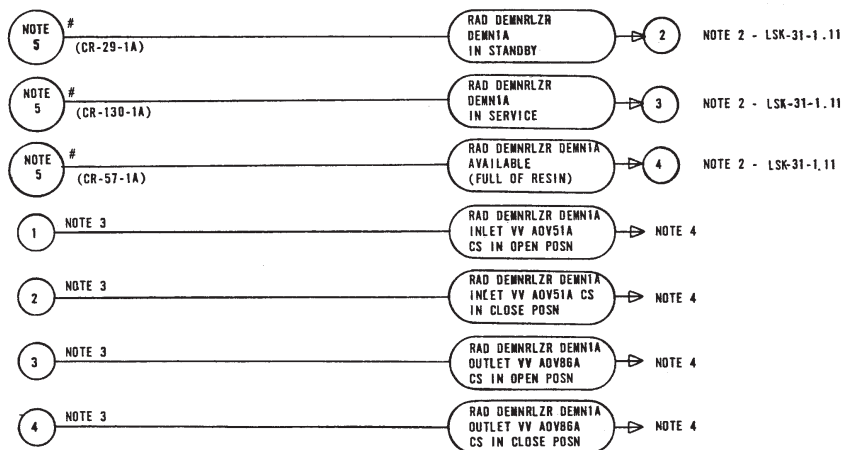
OCTOBER 1991



SOURCE

MONITOR

CONDITION



## NOTES:

- ALL INSTRUMENTS AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2CND-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
- ADDITIONAL LOGIC DEVELOPMENT SHOWN ON LSK-31-1 REFER MANUFACTURERS DWG NO. T-21532 & T21533  
S&W FILE NO. 7.600-005-021 & 7.600-005-022
- ADDITIONAL LOGIC DEVELOPMENT SHOWN ON LSK-31-1.11
- REFER TO MANUFACTURERS DWG NO. T-21532  
S&W FILE NO. 7.600-005-021
- REFER TO MANUFACTURERS DWG NO.'S T-21534 & T-21532  
S&W FILE NO.'S 7.600-005-021  
7.600-005-023
- NUMBERS SHOWN IN PARENTHESIS ARE VENDOR RELAY CONTACT NUMBERS
- # REPRESENTS SUPPLIED BY VENDOR.
- LOGIC SHOWN FOR RAD DEMIN 1A. LOGIC FOR RAD DEMIN 1B IS SIMILAR.

## NOTE:

FOR LATEST SET POINT INFORMATION  
SEE SET POINT DATA SHEET

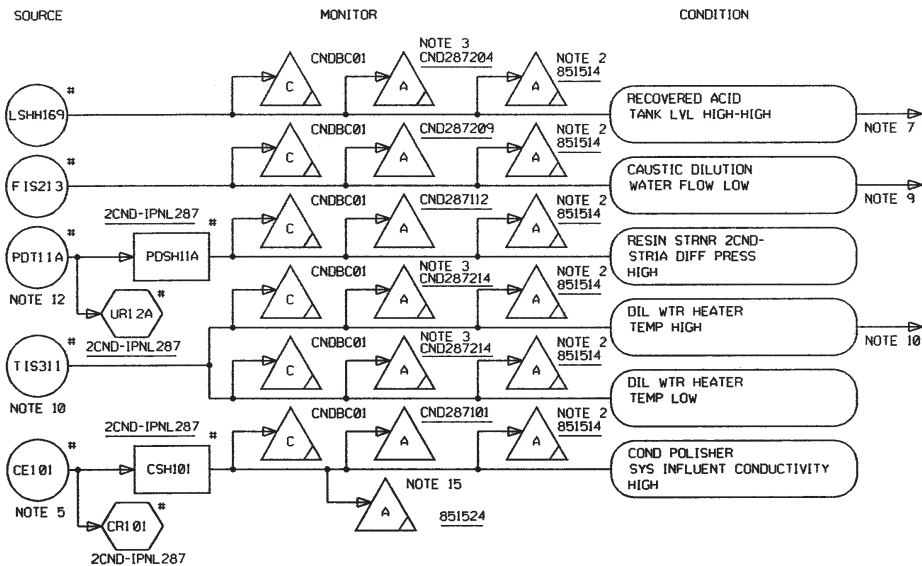
SOURCE: 12177-LSK-4-7F REV. 8

FIGURE 10. 4-9

CONDENSATE DEMINERALIZER  
SYSTEM

LOGIC DIAGRAM SHEET 6 OF 10

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT



#### NOTES:

1. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2CND-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
2. COMMON ANNUNCIATOR - SYSTEM TROUBLE
3. COMMON ANNUNCIATOR FOR LOCAL LOW & HIGH ALARMS.
4. # REPRESENTS SUPPLIED BY VENDOR
5. LOGIC SHOWN FOR CE101. LOGIC FOR CE10A, 10B, 10C, 10D, 10E, 10F, 10G, 10H, 10J, CE159, CE157, CE158, CE105 IS SIMILAR.
6. COMMON CONDUCTIVITY MULTI-POINT RECORDER (CJRS 1) FOR THE FOLLOWING: CE105, CE10A, 10B, 10C, 10D, 10E, 10F, 10G, 10H, & 10J.
7. LOGIC SHOWN FOR LSHH169. LOGIC FOR LSHH178 IS SIMILAR. REFER MANUFACTURER DWG NO T-24130 S&W FILE NO 0007.600-005-030
8. LOGIC SHOWN FOR FIS213. LOGIC FOR FIS190, 264 & 238 IS SIMILAR. REFER MANUFACTURER DWG NO T-21811 S&W FILE NO 0007.600-005-073.
9. LOGIC SHOWN FOR TIS311. LOGIC FOR TIS199 IS SIMILAR. REFER TO MANUFACTURER DWG NO T-24152 S&W FILE NO 0007.600-005-029
10. LOGIC SHOWN FOR PDT11A. LOGIC FOR PDT11B, 11C, 11D, 11E, 11F, 11G, 11H, 11J, 11K, & 11L IS SIMILAR & SHOWN ON LSK-4-7J.
11. COMMON ANNUNCIATOR-DEMINERALIZER UNIT CONDUCTIVITY BREAKTHROUGH.
12. COMMON CONDUCTIVITY MULTI-POINT RECORDER (CJRS 2) FOR THE FOLLOWING: CE159, CE157, CE158.
13. COMMON ANNUNCIATOR WINDOW-CONDENSATE POLISHER SYSTEM EFFLUENT CONDUCTIVITY HIGH-FOR CE10A THRU CE10J ONLY.

SOURCE	PGCC ALARM WINDOW NO	S&W'S LOCAL ALARM WINDOW NO	CONDITION	COMPUTER POINT NO	REMARKS
CE105 #	851514	CND287111	CONDENSATE POLISHER SYS EFFLUENT CONDUCTIVITY HIGH	CNDBC01	NOTE 2,5,6
CE10A #	851514 851524	CND287102	CND POLISHER 2CND-DEMNI A EFFLUENT CONDUCTIVITY HIGH	CNDCC38	NOTE 5,6,13,15
CE10B #	851514 851524	CND287103	CND POLISHER 2CND-DEMNI B EFFLUENT CONDUCTIVITY HIGH	CNDCC39	NOTE 5,6,13,15
CE10C #	851514 851524	CND287104	CND POLISHER 2CND-DEMNI C EFFLUENT CONDUCTIVITY HIGH	CNDCC40	NOTE 5,6,13,15
CE10D #	851514 851524	CND287105	CND POLISHER 2CND-DEMNI D EFFLUENT CONDUCTIVITY HIGH	CNDCC41	NOTE 5,6,13,15
CE10E #	851514 851524	CND287106	CND POLISHER 2CND-DEMNI E EFFLUENT CONDUCTIVITY HIGH	CNDCC42	NOTE 5,6,13,15
CE10F #	851514 851524	CND287107	CND POLISHER 2CND-DEMNI F EFFLUENT CONDUCTIVITY HIGH	CNDCC43	NOTE 5,6,13,15
CE10G #	851514 851524	CND287108	CND POLISHER 2CND-DEMNI G EFFLUENT CONDUCTIVITY HIGH	CNDCC44	NOTE 5,6,13,15
CE10H #	851514 851524	CND287109	CND POLISHER 2CND-DEMNI H EFFLUENT CONDUCTIVITY HIGH	CNDCC45	NOTE 5,6,13,15
CE10J #	851514 851524	CND287110	CND POLISHER 2CND-DEMNI J EFFLUENT CONDUCTIVITY HIGH	CNDCC46	NOTE 5,6,13,15
TIS199 #	851514	CND287213	DILUTE CAUSTIC TEMPERATURE HIGH-LOW	CNDBC01	NOTE 2,10
LSHH178 #	851514	CND287212	RECOVERED CAUSTIC TANK LEVEL HIGH-HIGH	CNDBC01	NOTE 2,3
CE159 #	851514	CND287208	MIX & HOLD VESSEL RINSE EFFLUENT CONDUCTIVITY HIGH	CNDBC01	NOTE 2,5,14
CE157 #	851514	CND287206	CATION VESSEL RINSE EFFLUENT CONDUCTIVITY HIGH	CNDBC01	NOTE 2,5,14
CE158 #	851514	CND287207	ANION VESSEL RINSE EFFLUENT CONDUCTIVITY HIGH	CNDBC01	NOTE 2,5,14
FIS190 #	851514	CND287201	ACID DILUTION WATER FLOW LOW	CNDBC01	NOTE 2,9
FIS264 #	851514	CND287219	WATER FLOW TO URC SYSTEM LOW	CNDBC01	NOTE 2,9
FIS238 #	851514	CND287218	URC WATER FLOW TO EDUCATOR LOW	CNDBC01	NOTE 2,9

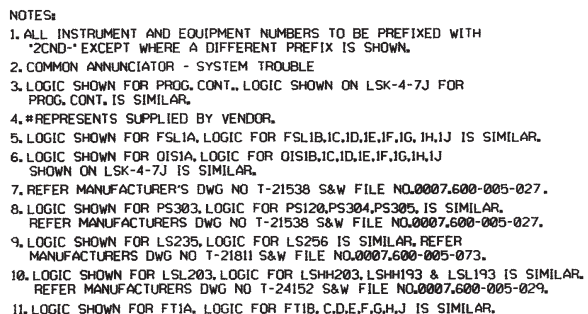
SOURCE: LSK-4-7G REV.13

FIGURE 10.4-9

CONDENSATE DEMINERALIZER SYSTEM  
LOGIC DIAGRAM SHEET 7 OF 10

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

[illegible]

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.



SOURCE	PGCC ALARM WINDOW NO	S&W'S LOCAL ALARM WINDOW NO	CONDITION	SET POINT	COMPUTER POINT NO	REMARKS	RECORDER
PDT109#	851514	CND287121	CND POLISHER SYSTEM DIFF PRESSURE HIGH		CNDBC01	NOTE 2.4	UR 12F, PEN 2
PDT11B #	851514	CND287113	RESIN STRAINER 2CND-STRI B DIFF PRESSURE HIGH		CNDBC01	NOTE 2.4	UR 12A, PEN 4
PDT11C #	851514	CND287114	RESIN STRAINER 2CND-STRI C DIFF PRESSURE HIGH		CNDBC01	NOTE 2.4	UR 12B, PEN 1
PDT11D #	851514	CND287115	RESIN STRAINER 2CND-STRI D DIFF PRESSURE HIGH		CNDBC01	NOTE 2.4	UR 12B, PEN 4
PDT11E #	851514	CND287116	RESIN STRAINER 2CND-STRI E DIFF PRESSURE HIGH		CNDBC01	NOTE 2.4	UR 12C, PEN 1
PDT11F #	851514	CND287117	RESIN STRAINER 2CND-STRI F DIFF PRESSURE HIGH		CNDBC01	NOTE 2.4	UR 12C, PEN 4
PDT11G #	851514	CND287118	RESIN STRAINER 2CND-STRI G DIFF PRESSURE HIGH		CNDBC01	NOTE 2.4	UR 12D, PEN 1
PDT11H #	851514	CND287119	RESIN STRAINER 2CND-STRI H DIFF PRESSURE HIGH		CNDBC01	NOTE 2.4	UR 12D, PEN 4
PDT11J #	851514	CND287120	RESIN STRAINER 2CND-STRI J DIFF PRESSURE HIGH		CNDBC01	NOTE 2.4	UR 12E, PEN 1
PDT152#	851514	CND287141	RESIN STRAINER CND RECYCLE DIFF PRESSURE HIGH		CNDBC01	NOTE 2.4	UR 12F, PEN 1
QISIB #	851514	CND287123	CND POLISHER 2CND-DEMNIB TOTAL THROUGHPUT		CNDBC01	NOTE 3.4	
QISIC #	851514	CND287124	CND POLISHER 2CND-DEMNIC TOTAL THROUGHPUT		CNDBC01	NOTE 3.4	
QISID #	851514	CND287125	CND POLISHER 2CND-DEMNID TOTAL THROUGHPUT		CNDBC01	NOTE 3.4	
QISIE #	851514	CND287126	CND POLISHER 2CND-DEMNIE TOTAL THROUGHPUT		CNDBC01	NOTE 3.4	
QISIF #	851514	CND287127	CND POLISHER 2CND-DEMNIF TOTAL THROUGHPUT		CNDBC01	NOTE 3.4	
QISIG #	851514	CND287128	CND POLISHER 2CND-DEMNIG TOTAL THROUGHPUT		CNDBC01	NOTE 3.4	
QISIH #	851514	CND287129	CND POLISHER 2CND-DEMNIH TOTAL THROUGHPUT		CNDBC01	NOTE 3.4	
QISIJ #	851514	CND287130	CND POLISHER 2CND-DEMNIJ TOTAL THROUGHPUT		CNDBC01	NOTE 3.4	
PROG CONT #	851514	CND287221	URC CLEANING COMPLETE		CNDBC01	NOTE 4.5	
PROG CONT #	851514	CND287224	AUTO CYCLE INTERRUPTED		CNDBC01	NOTE 4.5	
PROG CONT #	851514	CND287222	URC CLEANING COMPLETE		CNDBC01	NOTE 4.5	
PROG CONT #	851514	CND287131	SYSTEM INFLUENT CONDUCTIVITY MONITOR RANGE EXCEEDED		CNDBC01	NOTE 4.5	

NOTES:

1. #REPRESENTS SUPPLIED BY VENDOR.
2. LOGIC SHOWN FOR PDT11A ON LSK-4-7G, LOGIC FOR PDT11B, IIC, IID, IIE, IIF, IIG, IIH, IIJ, PDT109, PDT152 IS SIMILAR.
3. LOGIC SHOWN FOR QISIA ON LSK-4-7H, LOGIC FOR QISIB, IC, ID, IE, IF, IG, IH, IJ IS SIMILAR.
4. COMMON ANNUNCIATOR - SYSTEM TROUBLE
5. LOGIC SHOWN FOR PROG. CONT. ON LSK-4-7H IS SIMILAR.
6. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "CND-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.

SOURCE: LSK-4-7J REV.11

FIGURE 10.4-9

CONDENSATE DEMINERALIZER SYSTEM  
LOGIC DIAGRAM SHEET 9 OF 10

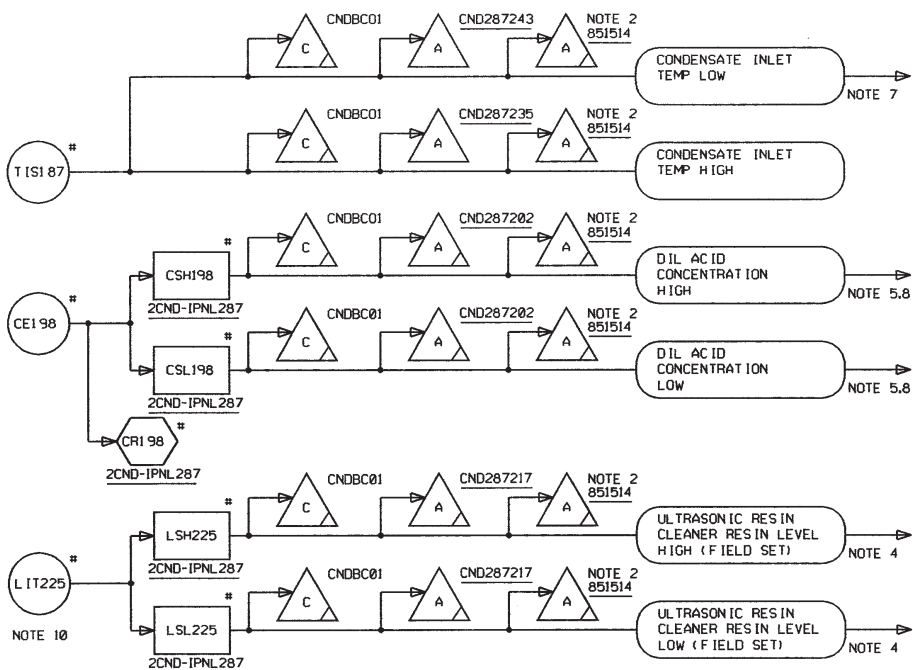
SETPPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

SOURCE

MONITOR

CONDITION



## NOTES:

1. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2CND-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
2. COMMON ANNUNCIATOR - SYSTEM TROUBLE
3. # REPRESENTS SUPPLIED BY VENDOR.
4. REFER TO MANUFACTURERS DWG \*T21537 S&W FILE NO 0007.600-005-026
5. REFER TO MANUFACTURERS DWG \*T24130 S&W FILE NO 0007.600-005-030
6. REFER TO MANUFACTURERS DWG \*T24152 S&W FILE NO 0007.600-005-029
7. REFER TO MANUFACTURERS DWG \*T24152 S&W FILE NO 0007.600-005-029
8. LOGIC SHOWN FOR CE198, LOGIC FOR CE251 IS SIMILAR.
9. REFER TO MANUFACTURERS DWG \*T-21812 S&W FILE NO 0007.600-005-074
10. LEVEL ELEMENT LE225 NOT INSTALLED, ASSOCIATED LEVEL INDICATION AND ALARMS ARE INOP.

SOURCE	PCCC ALARM WINDOW NO	S&W'S LOCAL ALARM WINDOW NO	CONDITION	COMPUTER POINT NO	REMARKS
CE251	851514	CND287210	DILUTE CAUSTIC CONCENTRATION HIGH-LOW	CNDBC01	NOTE 2,6,8

SOURCE: LSK-4-7K REV.10

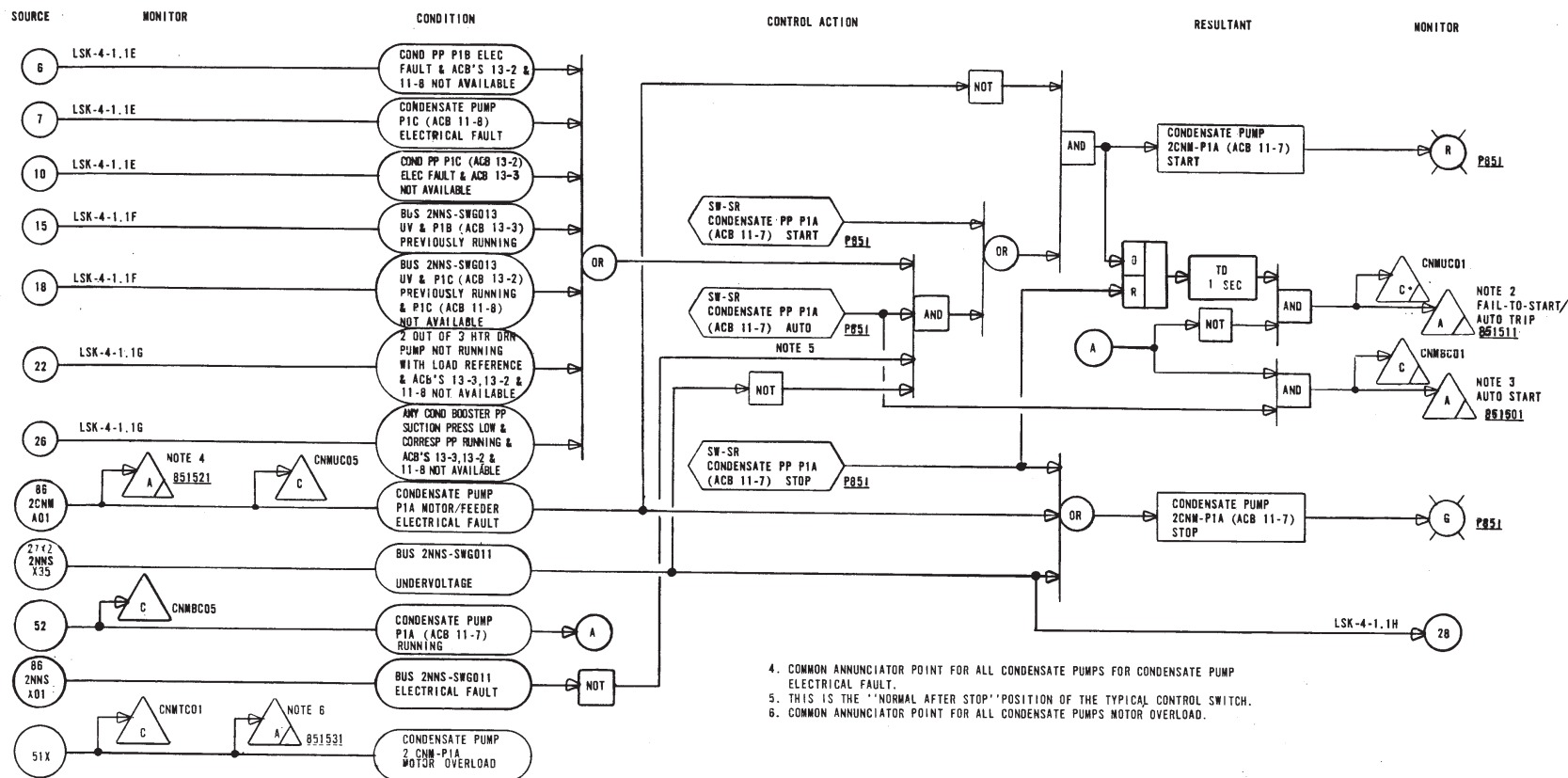
FIGURE 10.4-9

CONDENSATE DEMINERALIZER SYSTEM  
LOGIC DIAGRAM SHEET 10 OF 10

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT





#### NOTES:

1. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2CNM-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
2. COMMON ANNUNCIATOR POINT FOR ALL CONDENSATE PUMPS FOR FAIL-TO-START/AUTO TRIP CONDITION.
3. COMMON ANNUNCIATOR POINT FOR ALL CONDENSATE PUMPS FOR AUTO START CONDITION.

4. COMMON ANNUNCIATOR POINT FOR ALL CONDENSATE PUMPS FOR CONDENSATE PUMP ELECTRICAL FAULT.
5. THIS IS THE "NORMAL AFTER STOP" POSITION OF THE TYPICAL CONTROL SWITCH.
6. COMMON ANNUNCIATOR POINT FOR ALL CONDENSATE PUMPS MOTOR OVERLOAD.

#### NOTE:

FOR LATEST SET POINT INFORMATION  
SEE SET POINT DATA SHEET

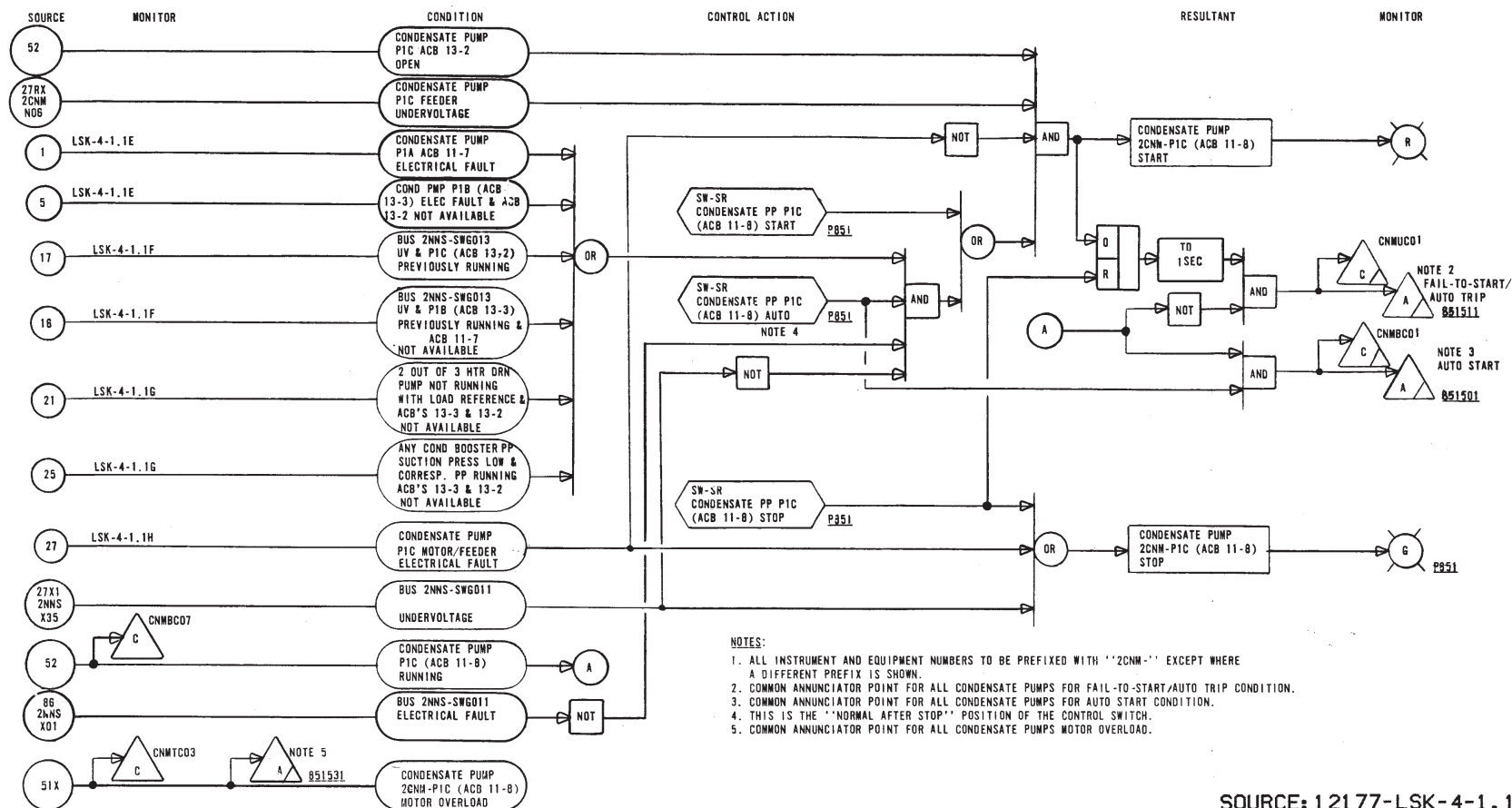
SOURCE: 12177-LSK-4-1.1A REV. 9

FIGURE 10.4-10

CONDENSATE SYSTEM-  
CONDENSATE PUMPS  
LOGIC DIAGRAM SHEET 1 OF 23

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT





SOURCE: 12177-LSK-4-1.1C REV.9

FIGURE 10. 4-10

CONDENSATE SYSTEM-  
CONDENSATE PUMPS  
LOGIC DIAGRAM SHEET 3 OF 23

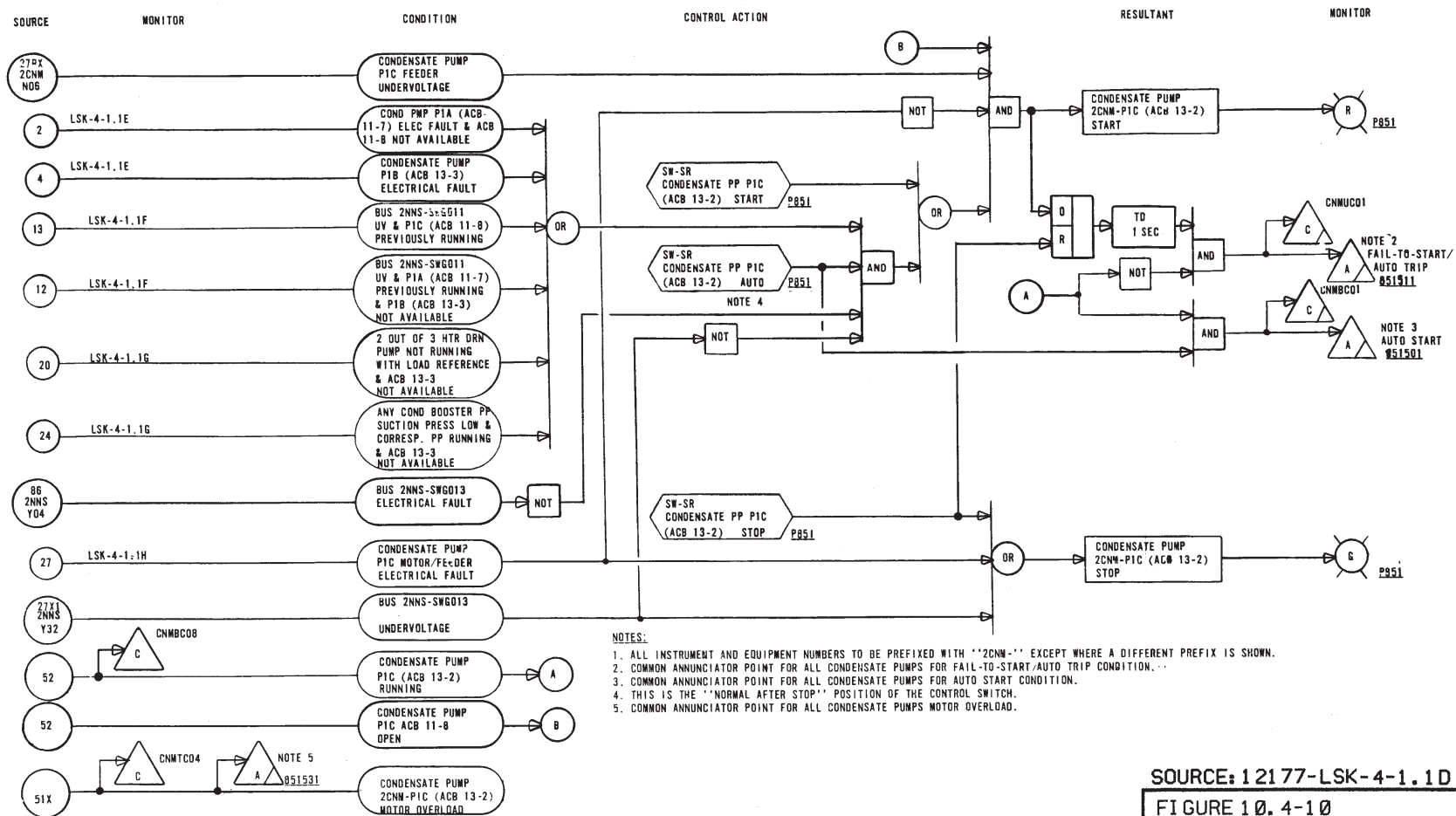
NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

NOTE:

FOR LATEST SET POINT INFORMATION  
SEE SET POINT DATA SHEET

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SOURCE: 12177-LSK-4-1.1D REV. 9

FIGURE 10.4-10

CONDENSATE SYSTEM-  
CONDENSATE PUMPS  
LOGIC DIAGRAM SHEET 4 OF 23

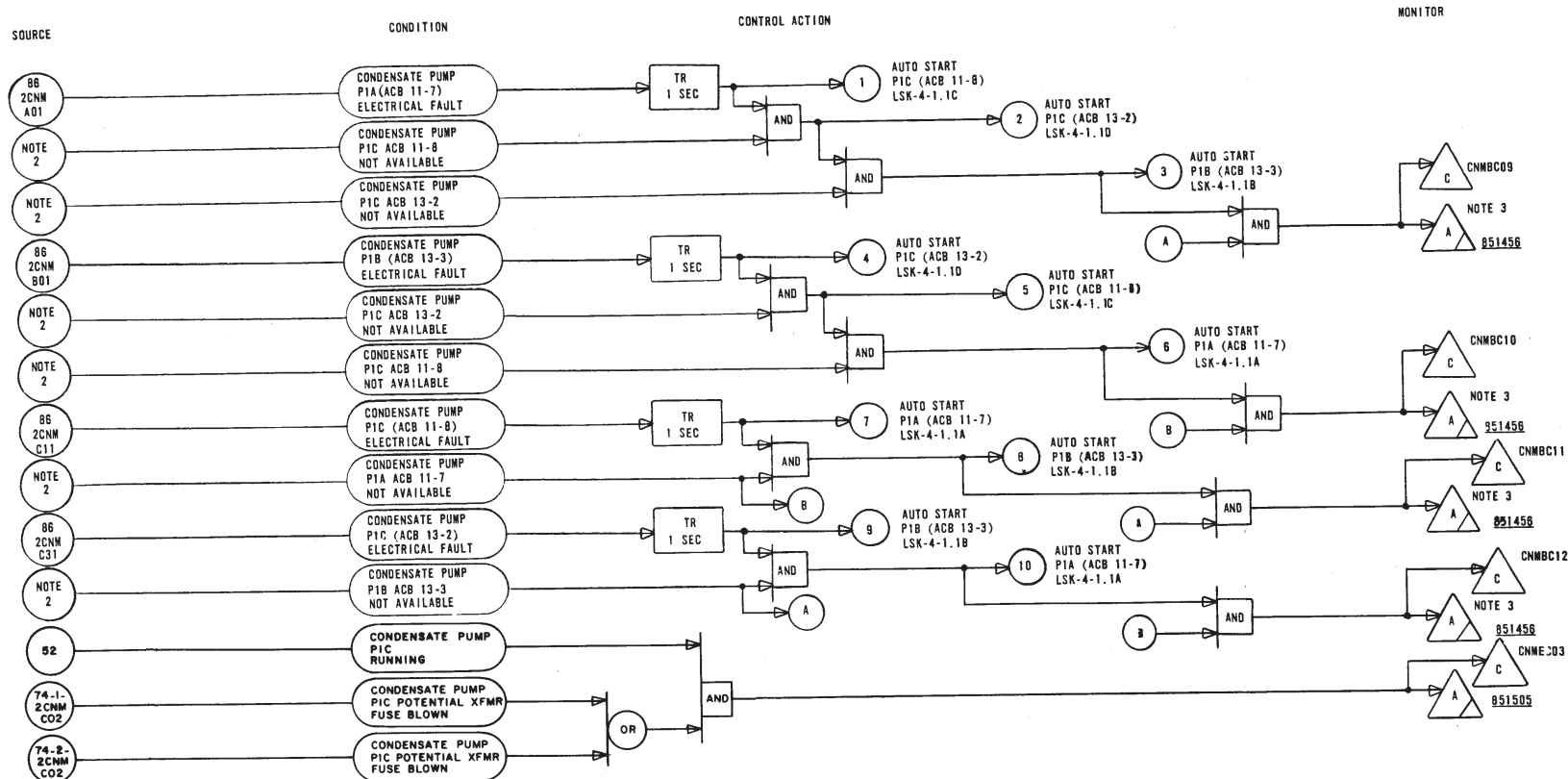
NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

NOTE:

FOR LATEST SET POINT INFORMATION  
SEE SET POINT DATA SHEET

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APRIL 1989



**NOTES:**

1. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2CNM-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
2. REFER TO LSK-4-1.1H FOR FURTHER LOGIC DEVELOPMENT.
3. COMMON ANNUNCIATOR INDICATING SYSTEM TROUBLE AND NO BACKUP PUMP AVAILABLE.

**NOTE:**

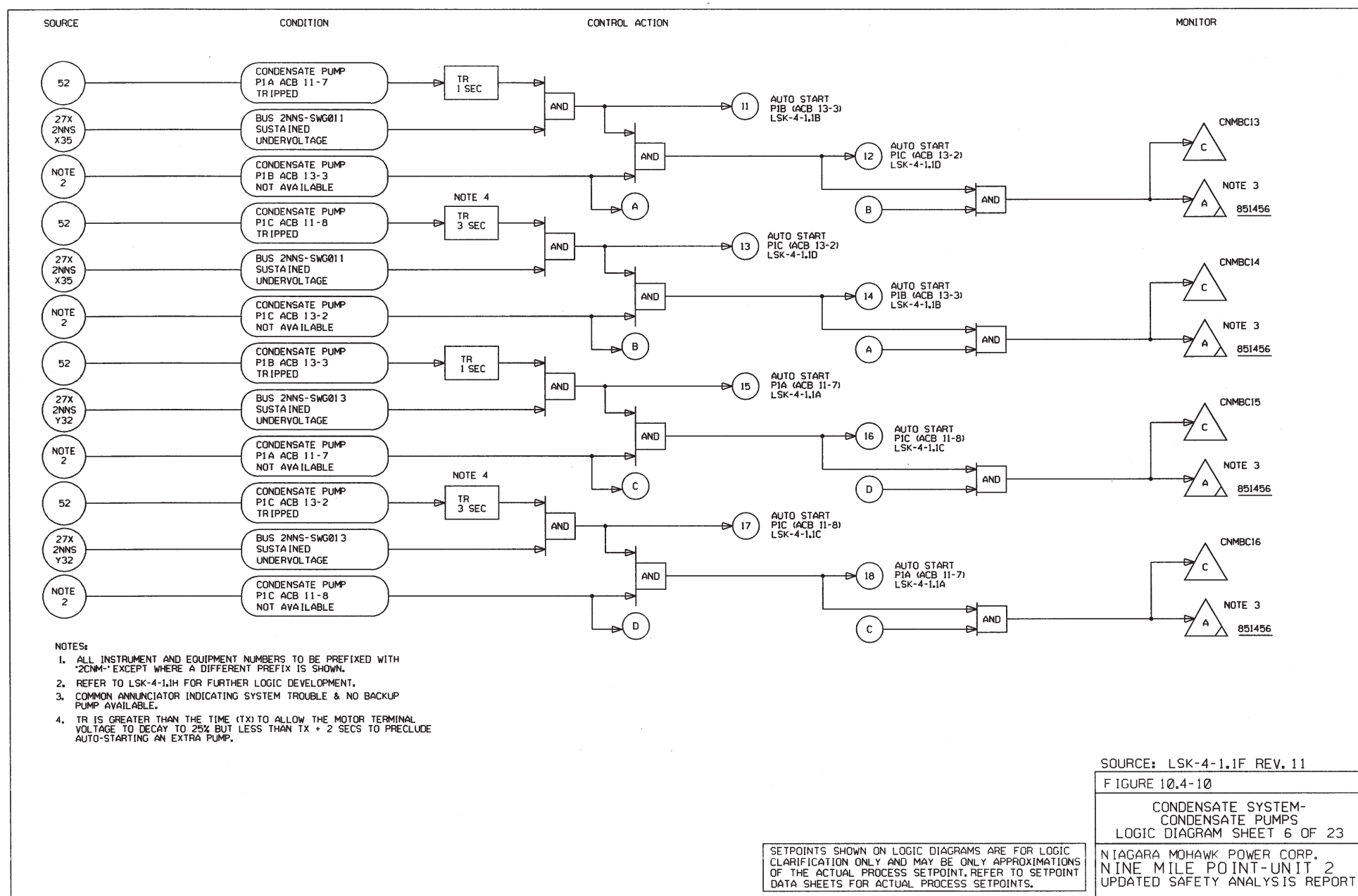
FOR LATEST SET POINT INFORMATION  
SEE SET POINT DATA SHEET

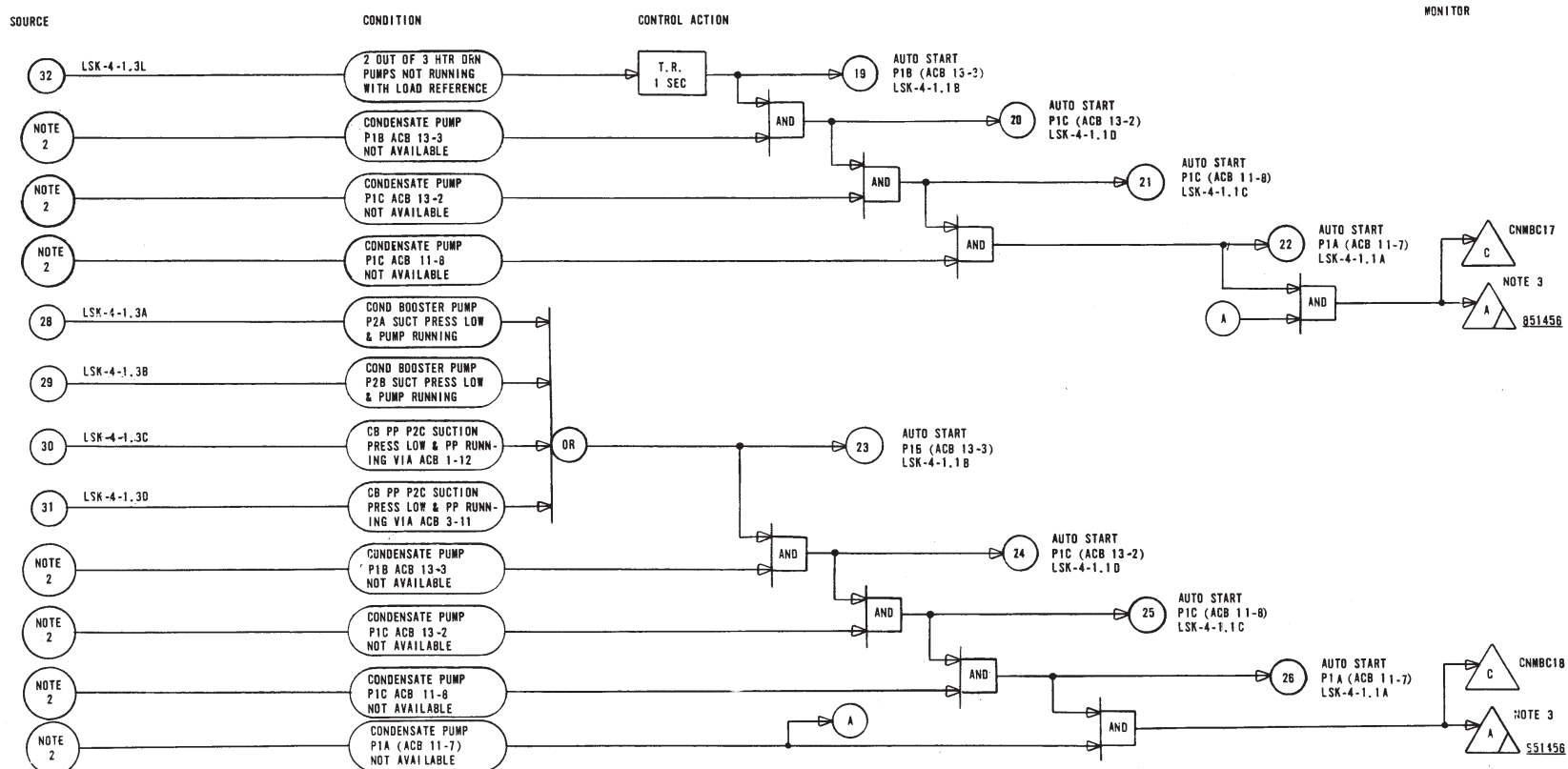
SOURCE: 12177-LSK-4-1.1E REV. 10

FIGURE 10. 4-10

CONDENSATE SYSTEM-  
CONDENSATE PUMPS  
LOGIC DIAGRAM SHEET 5 OF 23

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT





NOTES:

1. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2CNM-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
2. REFER TO LSK-4-1.1H FOR FURTHER LOGIC DEVELOPMENT.
3. COMMON ANNUNCIATOR INDICATING SYSTEM TROUBLE & NO BACKUP PUMP AVAILABLE.

NOTE:

FOR LATEST SET POINT INFORMATION  
SEE SET POINT DATA SHEET

SOURCE: 12177-LSK-4-1.1G REV. 9

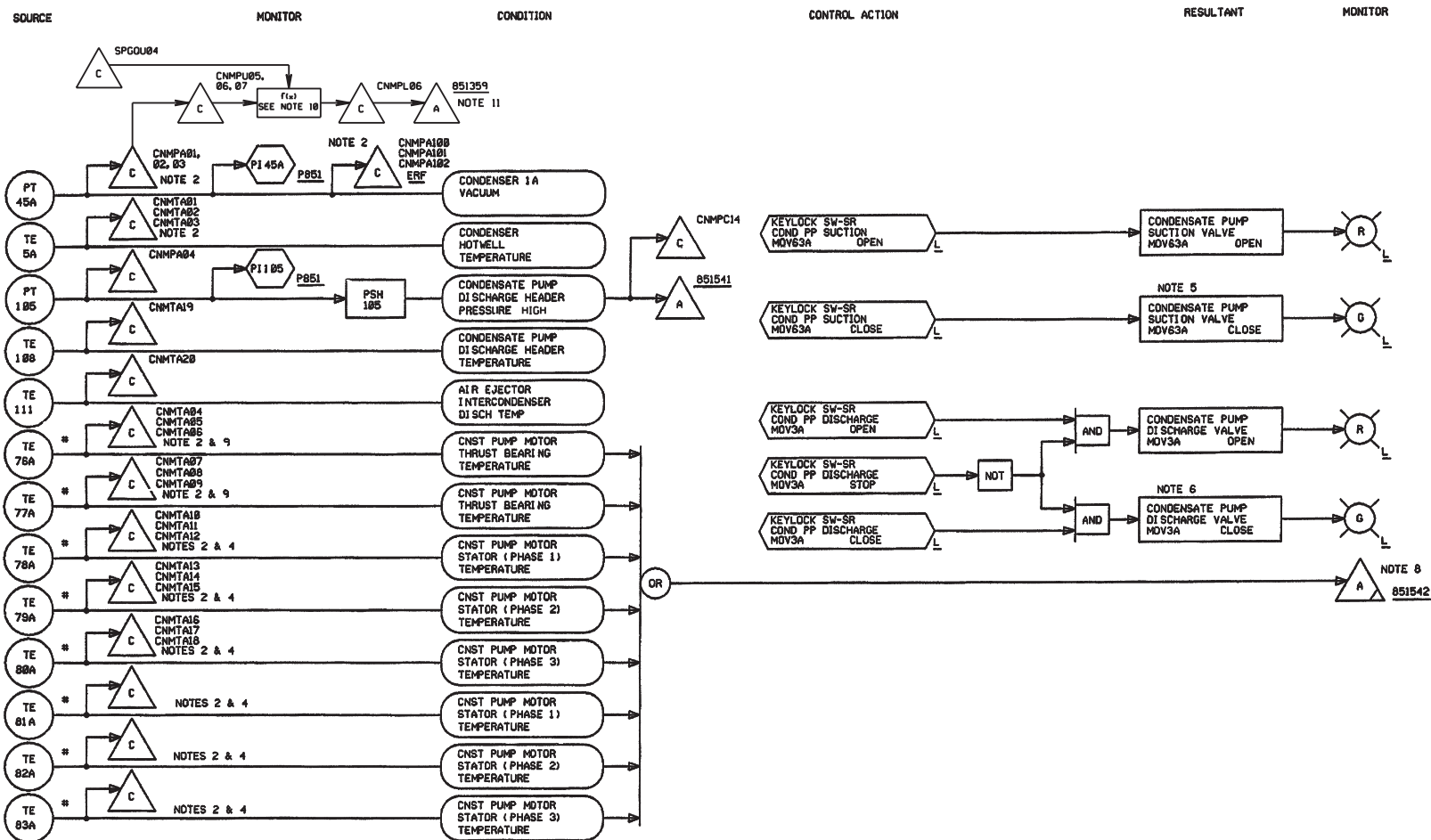
FIGURE 10.4-10

CONDENSATE SYSTEM-  
CONDENSATE PUMPS  
LOGIC DIAGRAM SHEET 7 OF 23

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT







#### NOTES:

- ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2CNM" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
- INSTRUMENT ASSOCIATED WITH STRING A IS SHOWN. INSTRUMENT ASSOCIATED WITH STRINGS B & C IS SIMILAR.
- \* - INDICATES EQUIPMENT BY VENDOR.
- CONDENSATE PUMPS ARE SUPPLIED WITH TWO DUPLEX THERMOCOUPLES PER STATOR PHASE. FIELD WILL SELECT THE HOTTER ELEMENT, WHICH WILL BE INPUT TO THE COMPUTER.
- LOGIC FOR THE COND PUMP SUCTION VALVE MOV63A IS SHOWN. LOGIC FOR THE FOLLOWING IS SIMILAR: COND PUMP SUCTION VALVES MOV63B & C, AIR EJECTOR INTERCONDENSERS DISCHARGE VALVES MOV65A & B, STEAM PACKING EXHAUSTER DISCH VALVES MOV67A & B.
- LOGIC FOR THE COND PUMP DISCHARGE VALVE MOV3A IS SHOWN. LOGIC FOR THE FOLLOWING IS SIMILAR: COND PUMP DISCHARGE VALVES MOV3B & C, AIR EJECTOR INTERCONDENSERS INLET VALVES MOV64A & B, STEAM PACKING EXHAUSTER INLET VALVES MOV68A & B.
- SEE LSK-21-10 FOR "COND DEMINERALIZER OUTLET HEADER CONDUCTIVITY HIGH" FROM 25ST-CE-11A.
- COMPUTER GENERATED COMMON ALARM ON HIGH STATOR/BEARING TEMPERATURES OF ALL THE PUMPS.
- TE78A AND TE77A ARE ONE DUPLEX THERMOCOUPLE TEMPERATURE ELEMENT SELECTION FOR COMPUTER INPUT WILL BE ACCOMPLISHED DURING SYSTEM START UP.
- POWER DEPENDENT POLYNOMIAL BASED ALARM RECEIVES INPUTS FROM CNMPU05(06,07) & SPGQU04.
- CNMPLO6 TRIPS ANNUNCIATOR 851359 IF CONDENSER 2CNM-CNDIAB,C) EXCEEDS BACKPRESSURE LIMITS.

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK- 04-01.01-J

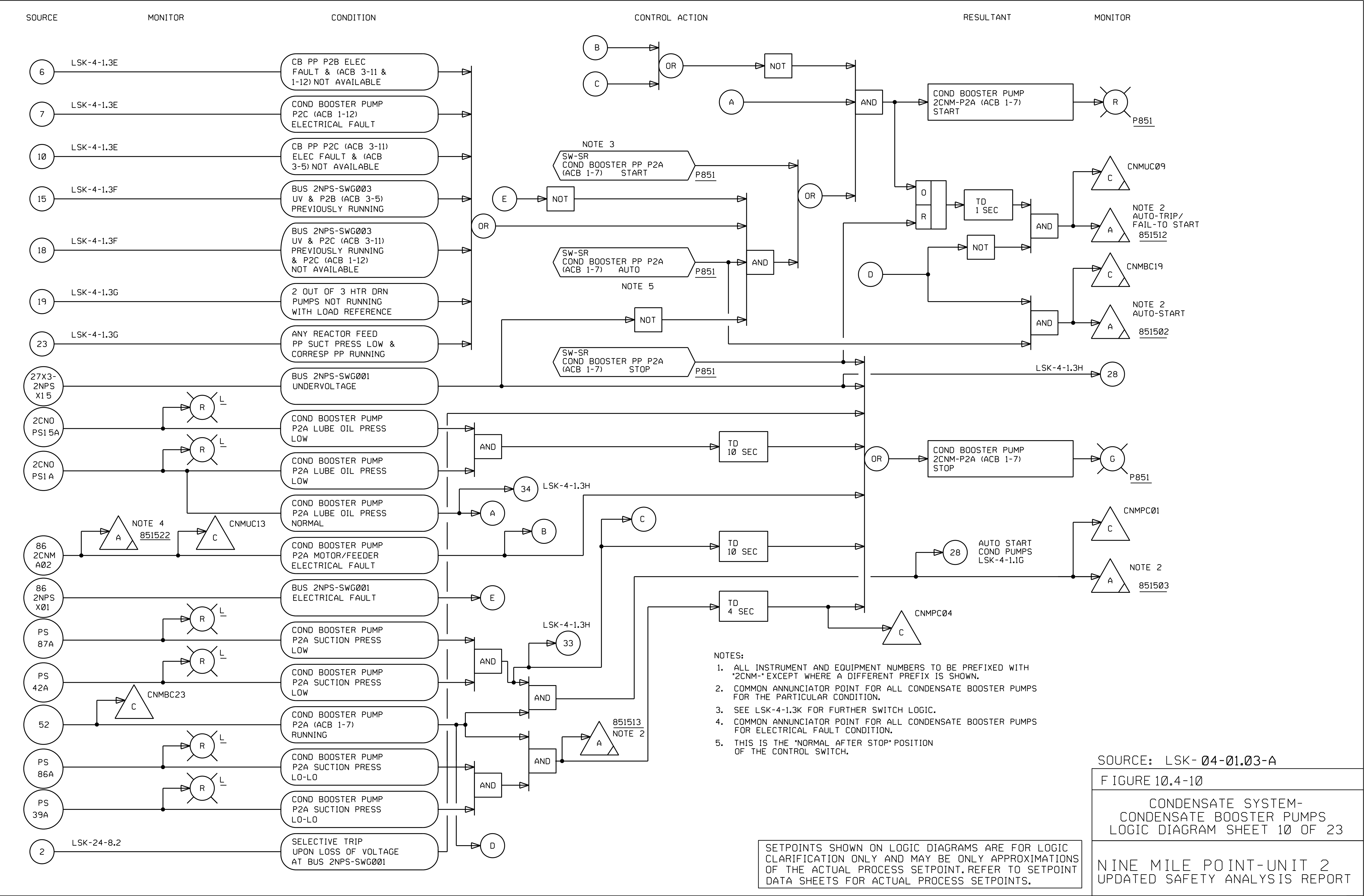
FIGURE 10.4-10

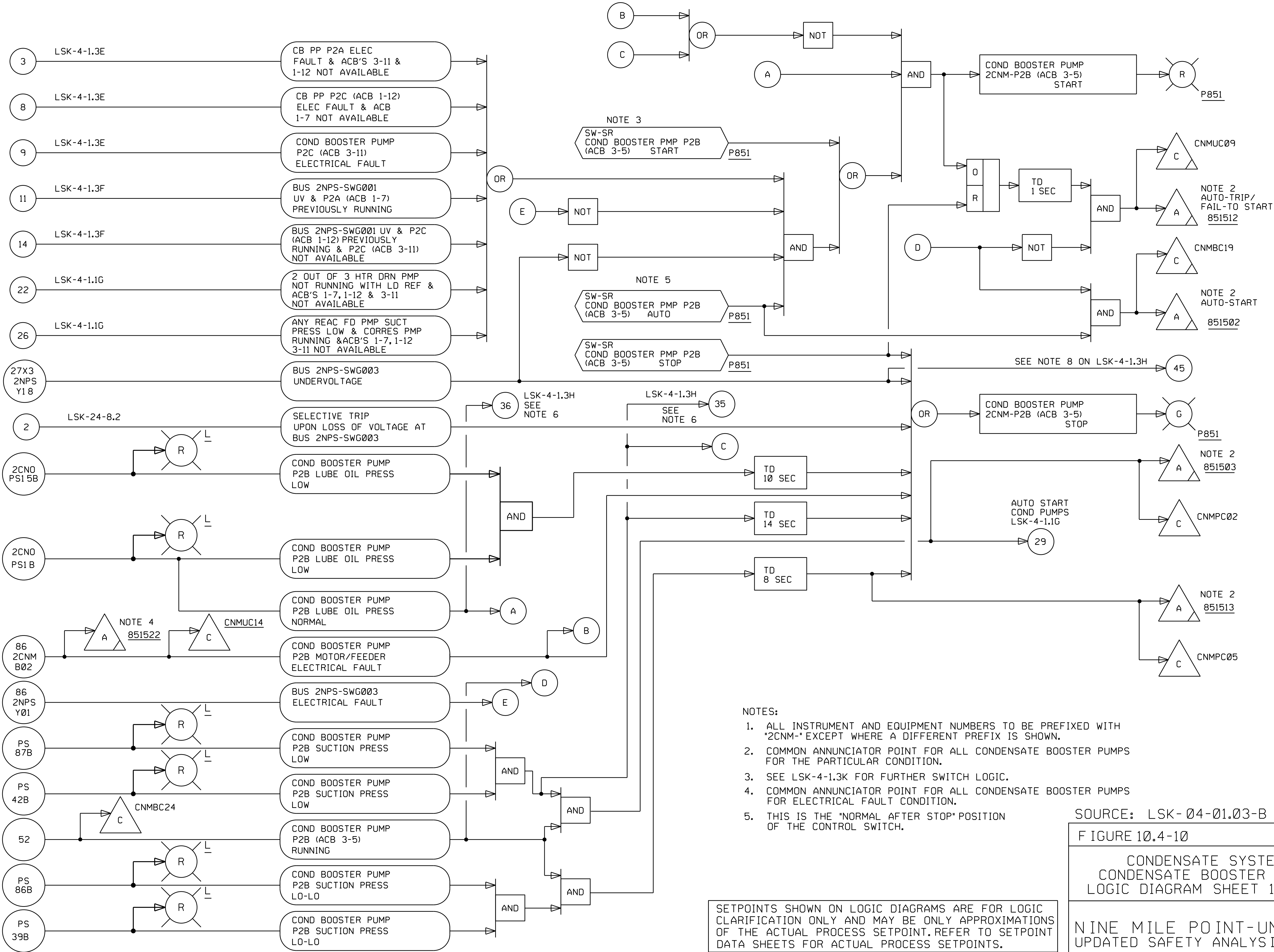
CONDENSATE SYSTEM  
CONDENSATE PUMPS  
LOGIC DIAGRAM SHEET 9 OF 23

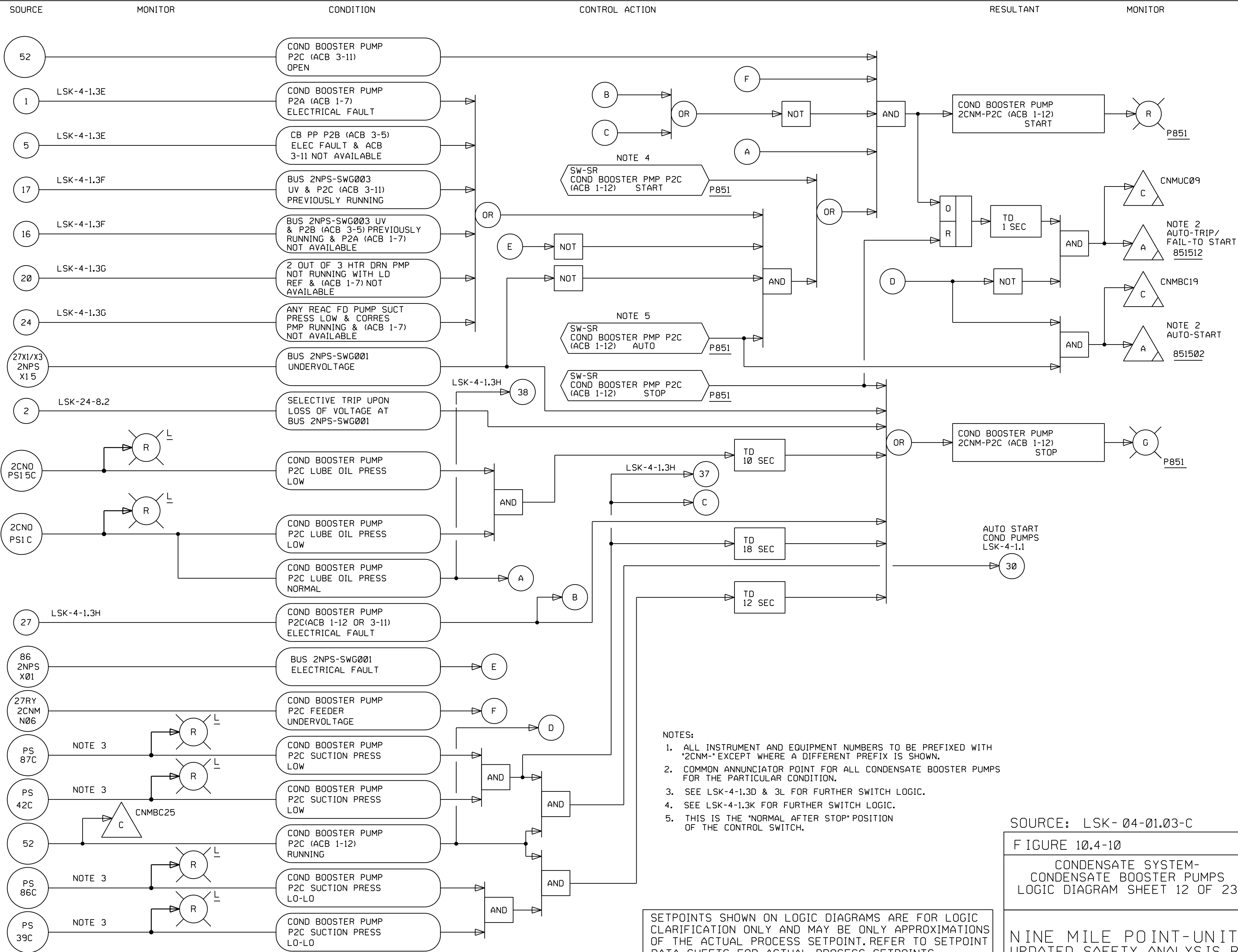
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

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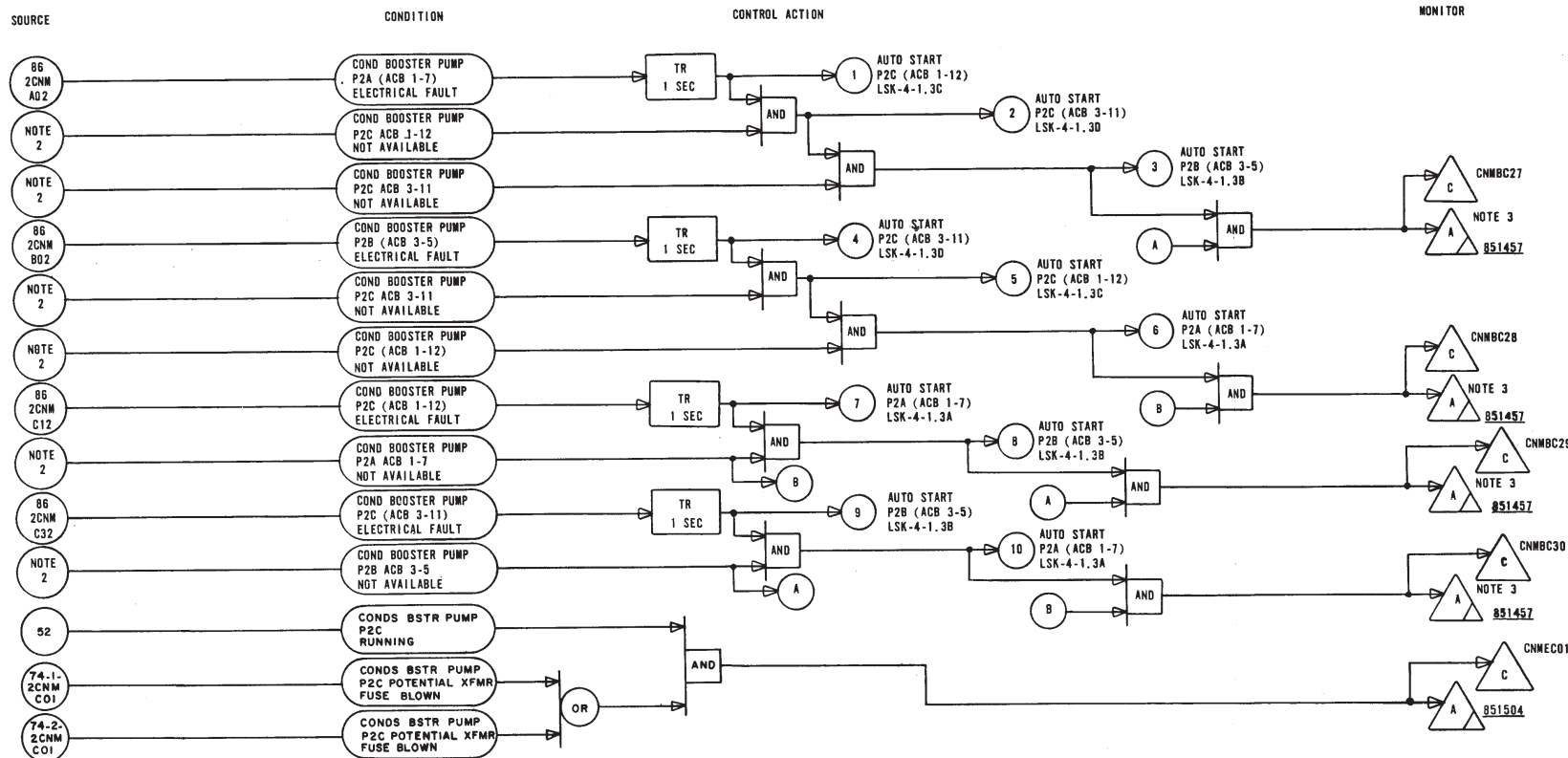
SOURCE: LSK- 04-01.03-C

FIGURE 10.4-10

CONDENSATE SYSTEM-  
CONDENSATE BOOSTER PUMPS  
LOGIC DIAGRAM SHEET 12 OF 23

NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT





NOTES:  
 1. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2CNM-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.  
 2. REFER TO LSK-4-1.3H FOR FURTHER LOGIC DEVELOPMENT.  
 3. COMMON ANNUNCIATOR INDICATING SYSTEM TROUBLE AND NO BACKUP PUMP AVAILABLE.

NOTE:  
 FOR LATEST SET POINT INFORMATION  
 SEE SET POINT DATA SHEET

SOURCE: 12177-LSK-4-1.3E REV. 9

FIGURE 10. 4-10

CONDENSATE SYSTEM-  
 CONDENSATE BOOSTER PUMPS  
 LOGIC DIAGRAM SHEET 14 OF 23

NIAGARA MOHAWK POWER CORP.  
 NINE MILE POINT-UNIT 2  
 UPDATED SAFETY ANALYSIS REPORT

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APRIL 1989

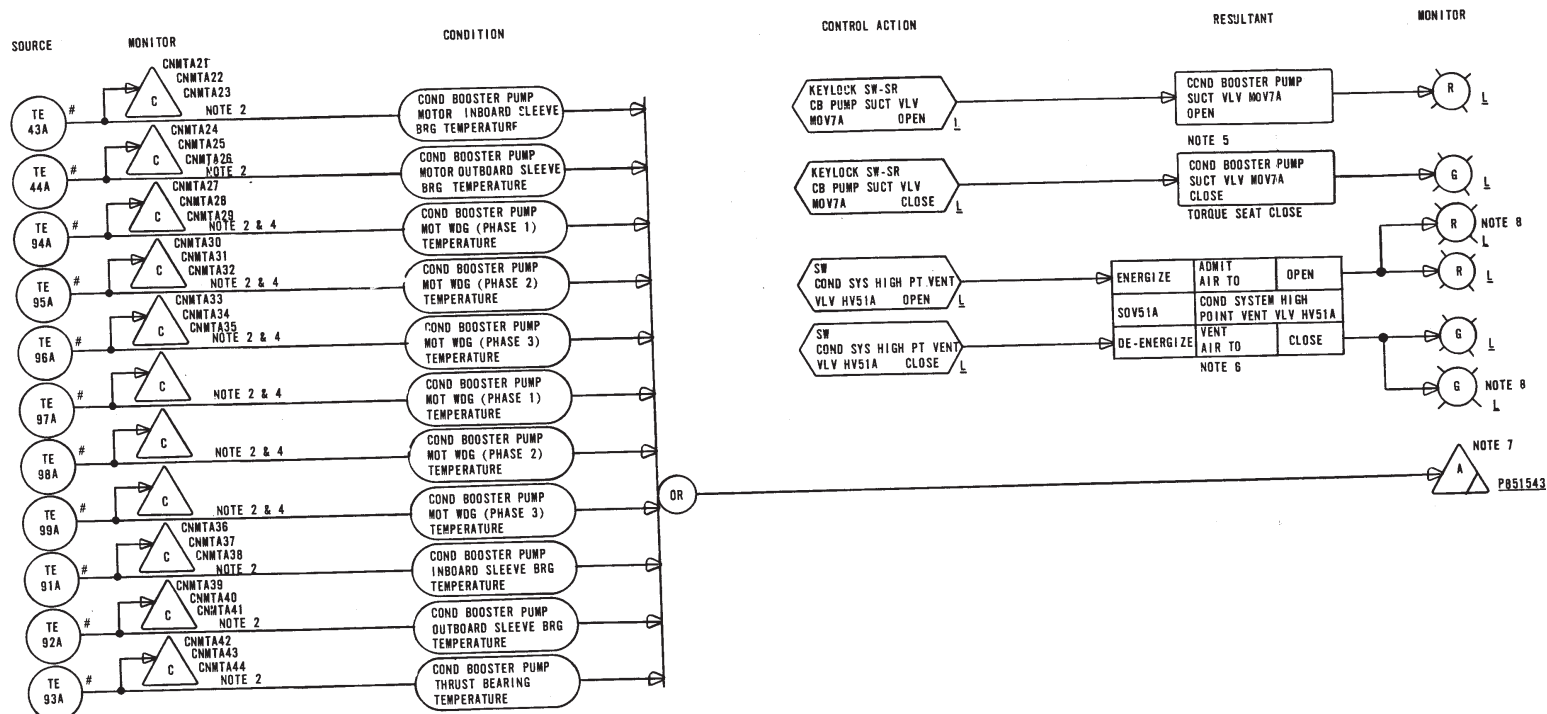












#### NOTES:

1. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2CNM-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
2. LOGIC FOR INSTRUMENT ASSOCIATED WITH CB PUMP P2A IS SHOWN. LOGIC FOR INSTRUMENTS ASSOCIATED WITH CB PUMPS P2B & P2C IS SIMILAR.
3. # INDICATES EQUIPMENT BY VENDOR.
4. COND BOOSTER PUMPS ARE SUPPLIED WITH TWO DUPLEX THERMOCOUPLES PER MOTOR WINDING PHASE. TEMPERATURE ELEMENT SELECTION FOR COMPUTER INPUT WILL BE ACCOMPLISHED DURING SYSTEM START-UP.
5. LOGIC FOR COND BOOSTER PUMP SUCTION VALVE MOV7A IS SHOWN. LOGIC FOR VALVES MOV7B & 7C IS SIMILAR.
6. LOGIC FOR THE CONDENSATE SYSTEM HIGH POINT VENT VALVE HV 51A IS SHOWN. LOGIC FOR THE FOLLOWING IS SIMILAR.  

HV51B, C	HV55A, B, C	HV57A, B, C	HV119
HV52A, B, C	HV56A, B, C	HV58A, B, C	HV60A, B, C
6. (CONT'D)  
LOGIC FOR THE REAC FEED PUMP SUCTION VALVE BYPASS VALVES HV59A, B, C IS ALSO SIMILAR.
7. COMPUTER GENERATED COMMON ALARM ON HIGH WINDING/BEARING TEMPERATURES OF ALL THE PUMPS.
8. SECOND SET OF INDICATING LIGHTS FOR MINIC DISPLAY OF HV59A, B & C, AND HV60A, B & C ONLY.

#### NOTE:

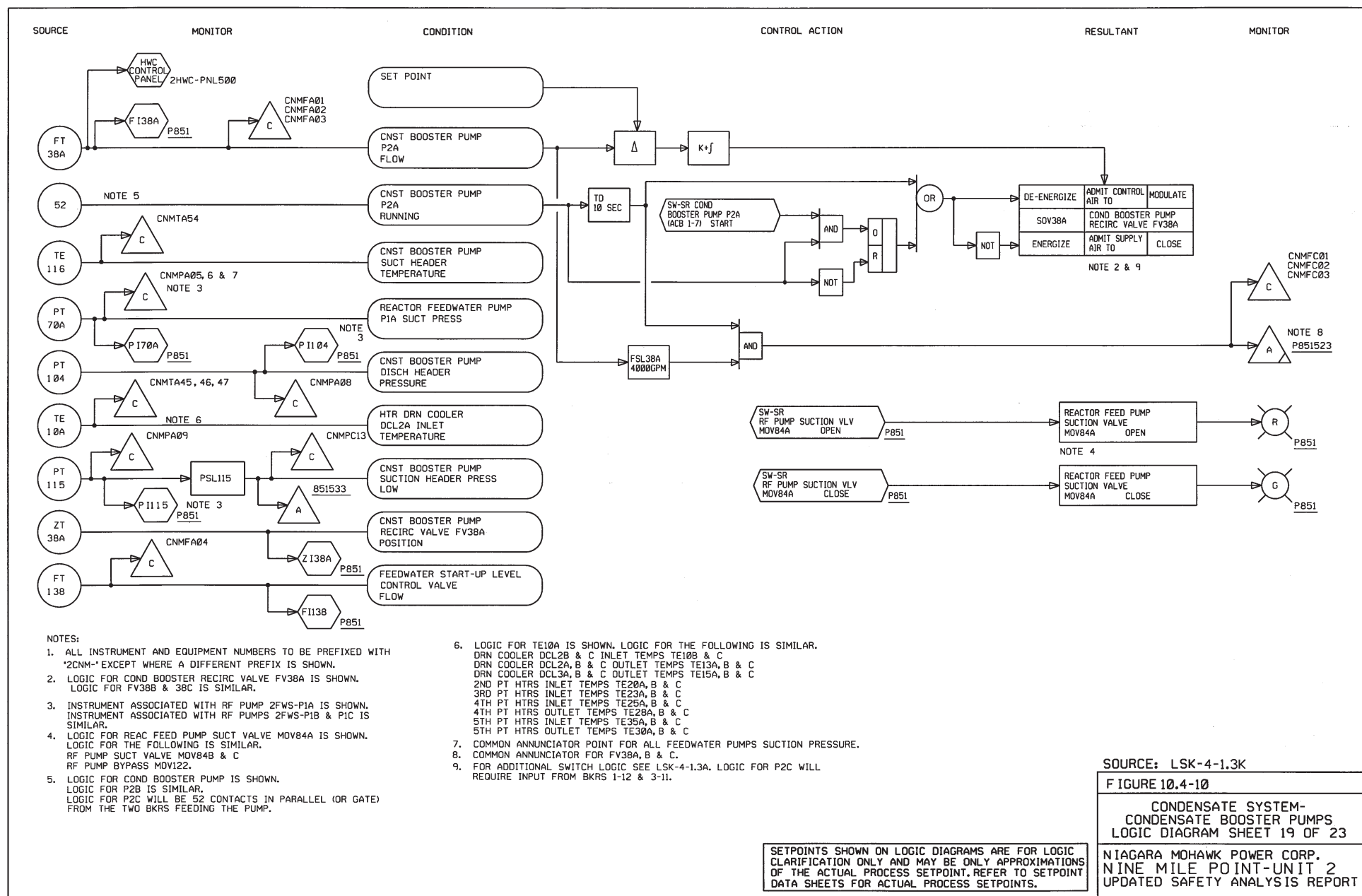
FOR LATEST SET POINT INFORMATION  
SEE SET POINT DATA SHEET

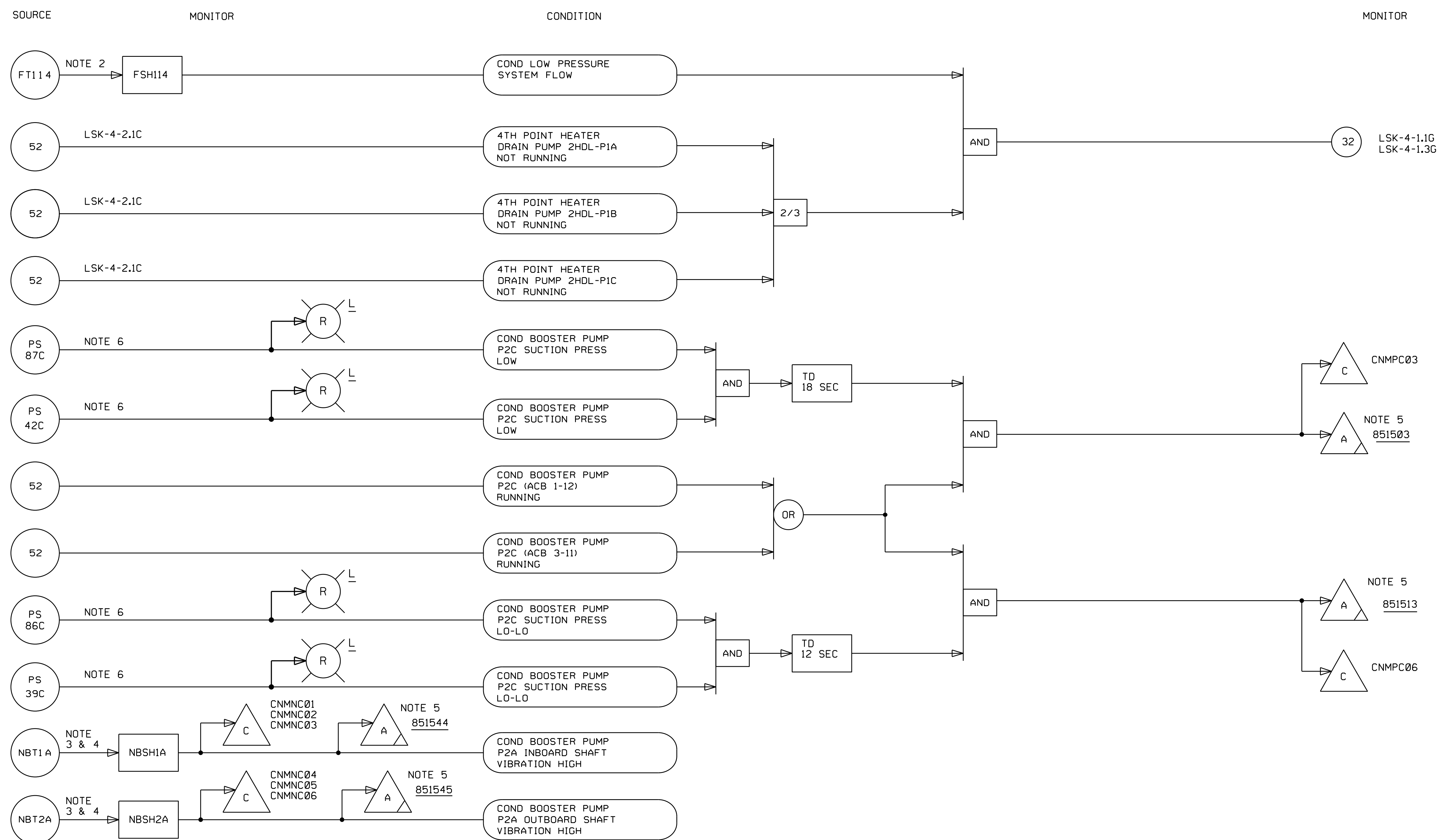
SOURCE: 12177-LSK-4-1.3J REV. 8

FIGURE 10.4-10

CONDENSATE SYSTEM-  
CONDENSATE BOOSTER PUMPS  
LOGIC DIAGRAM SHEET 18 OF 23

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT





**NOTES:**

1. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH \*2CNM-\* EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
2. FOR ADDITIONAL LOGIC SEE LSK-4-1.4.
3. LOGIC FOR VIBRATION MONITORS ASSOCIATED WITH CONDENSATE BOOSTER PUMP P2A IS SHOWN. LOGIC FOR P2B & P2C IS SIMILAR.
4. INPUT TO TRANSMITTER IS FROM TWO VIBRATION PROBES MOUNTED 90° APART.
5. COMMON ANNUNCIATOR FOR ALL CONDENSATE BOOSTER PUMPS.
6. SEE LSK-4-1.3C & 3D FOR FURTHER SWITCH LOGIC.

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK-04-01.03-L

FIGURE 10.4-10

CONDENSATE SYSTEM-  
CONDENSATE BOOSTER PUMPS  
LOGIC DIAGRAM SHEET 20 OF 23

NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT



NOTES:  
I. COMMON ANNUNCIATOR POINT FOR  
ALL CONDENSATE BOOSTER PUMPS.

NOTE:  
FOR LATEST SET POINT INFORMATION  
SEE SET POINT DATA SHEET

SOURCE: 12177-LSK-4-1.3M REV. 8

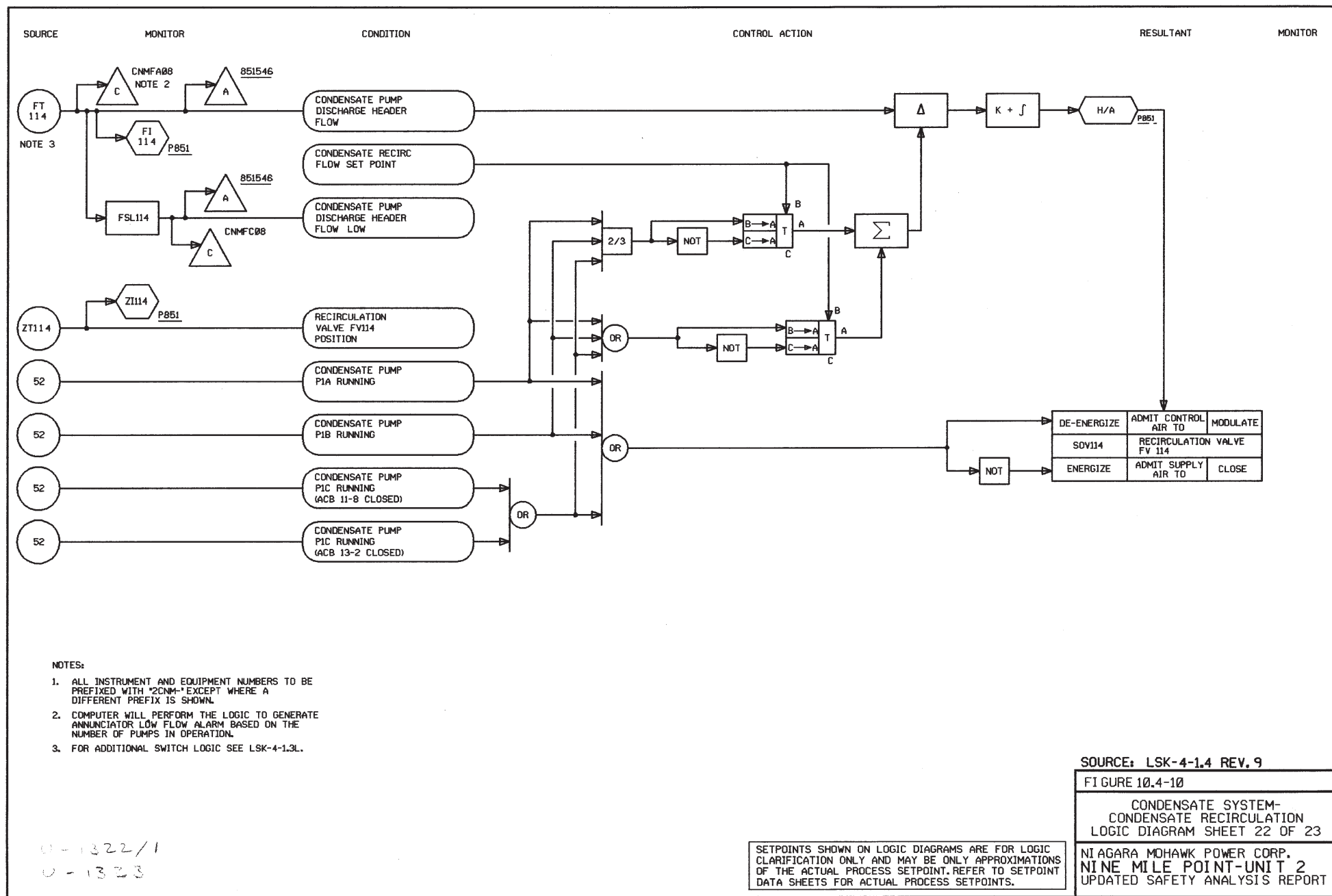
FIGURE 10.4-10

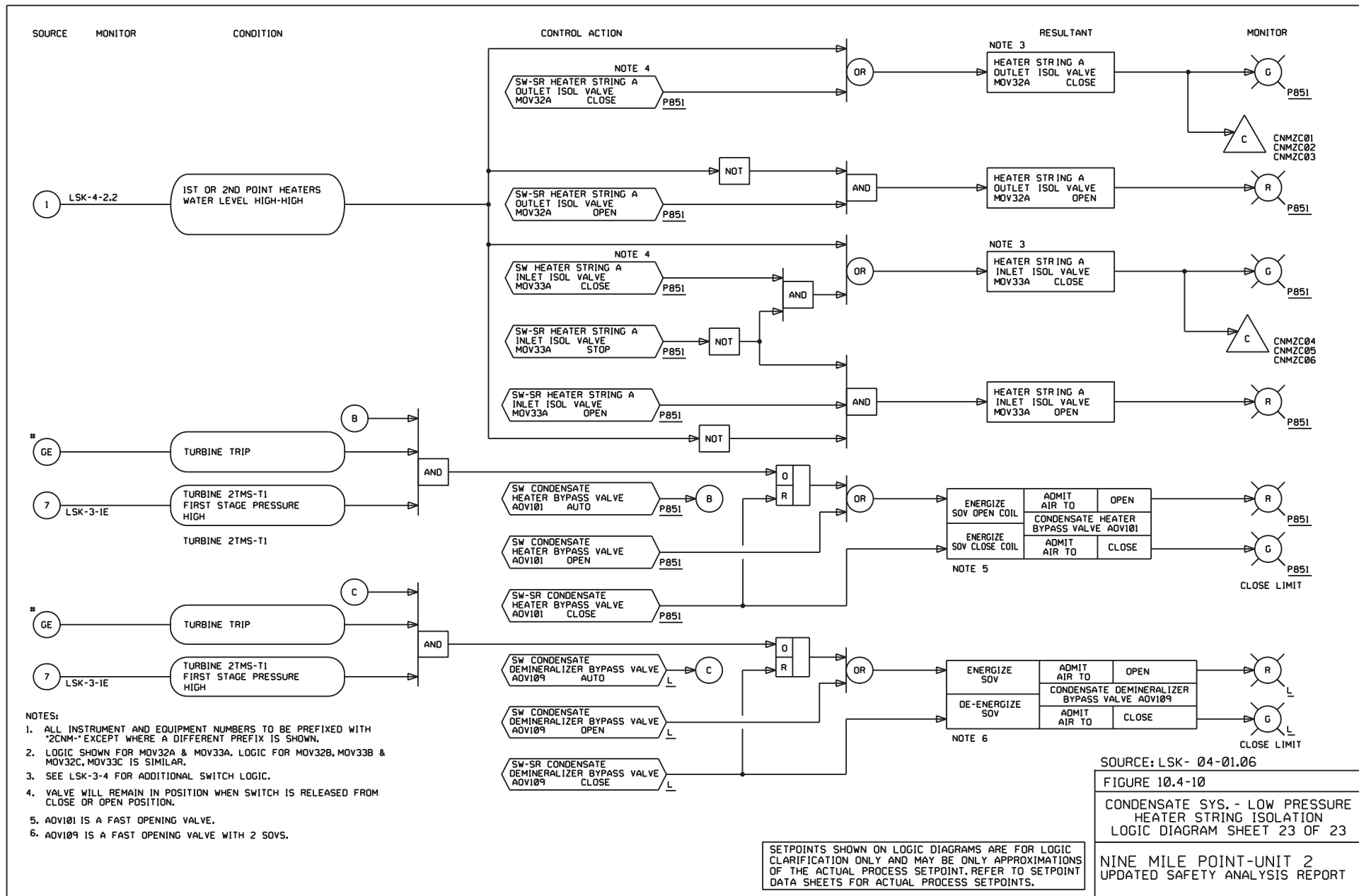
CONDENSATE SYSTEM-  
CONDENSATE BOOSTER PUMPS  
LOGIC DIAGRAM SHEET 21 OF 23

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

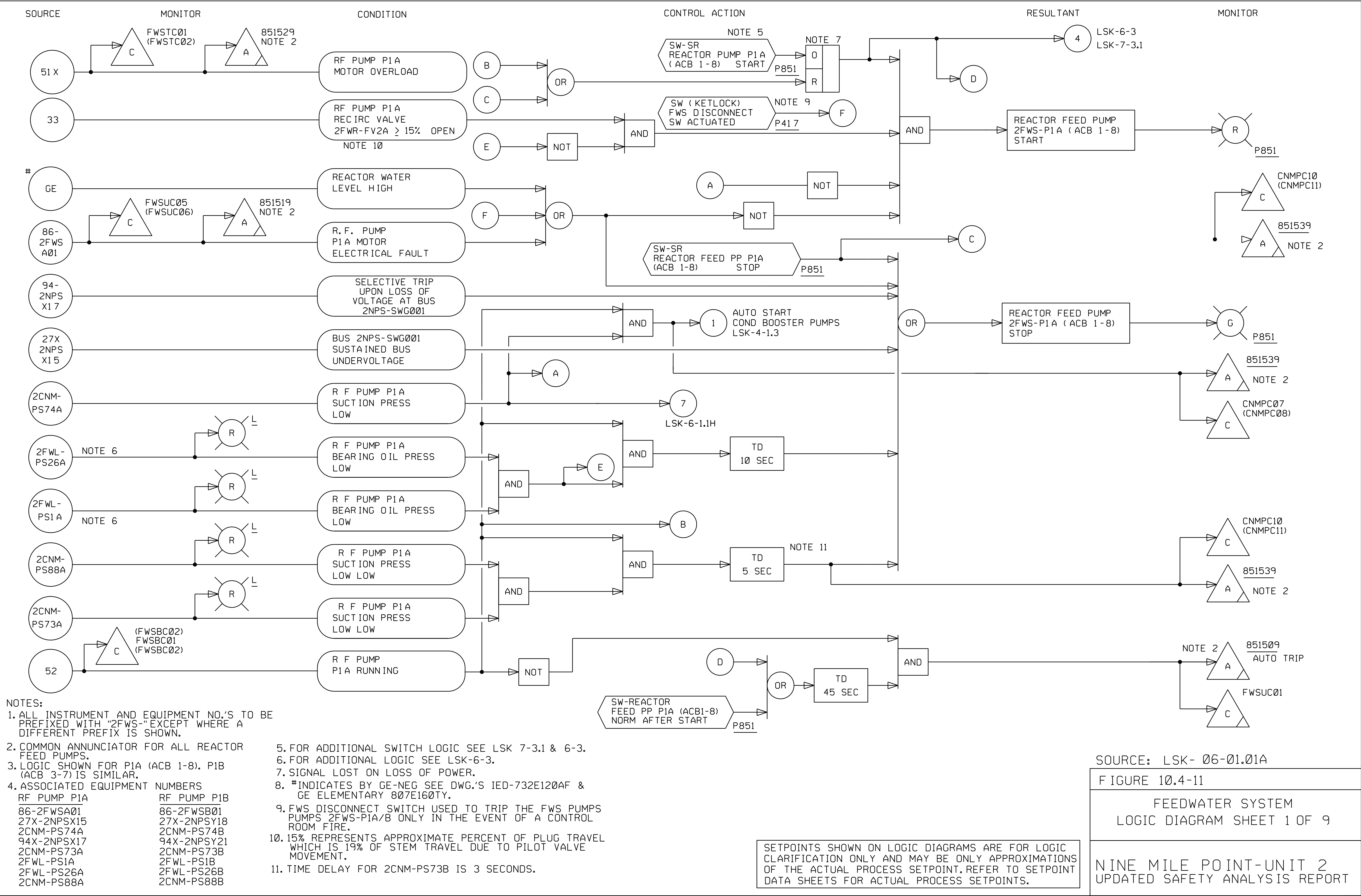
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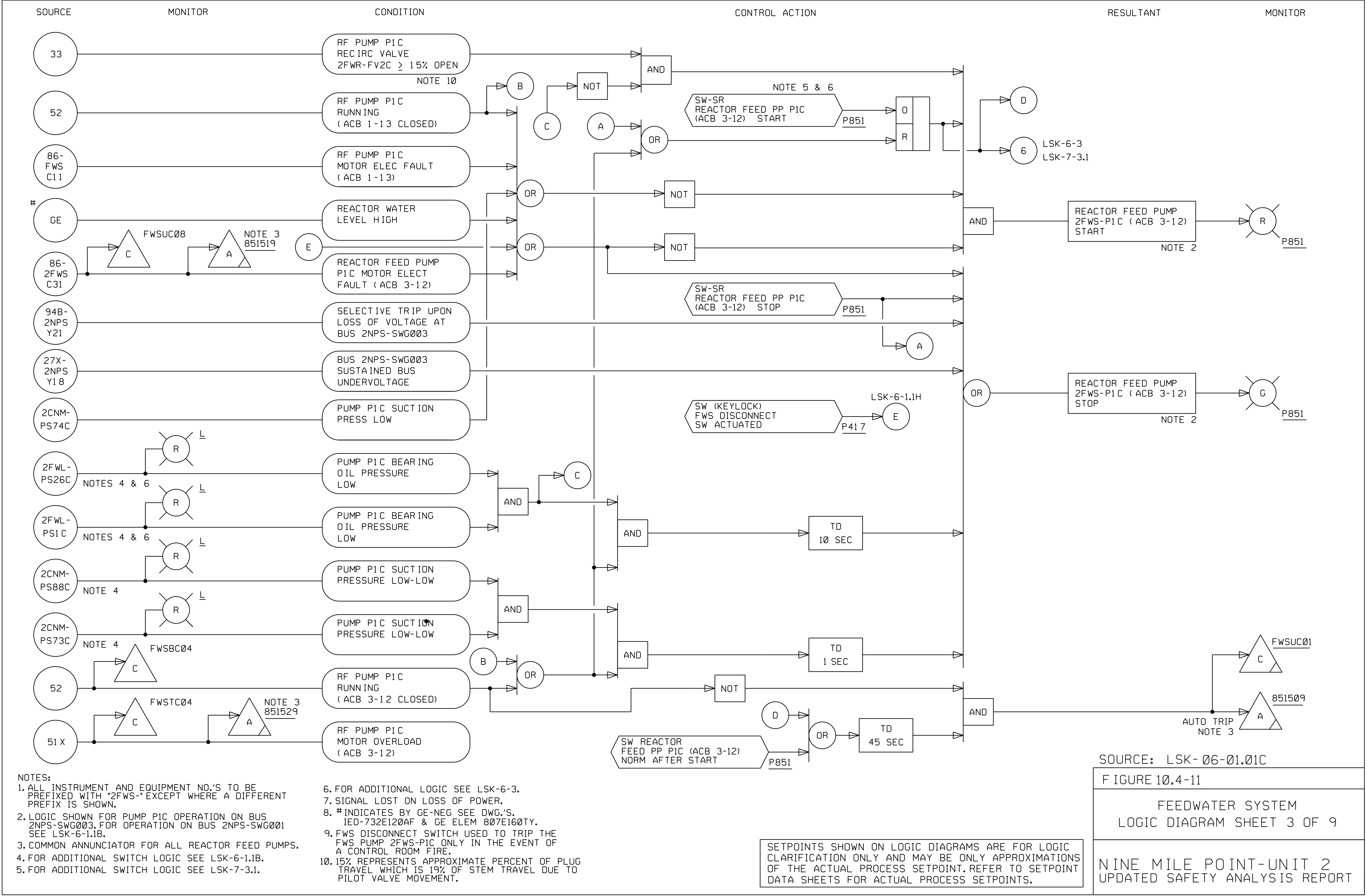










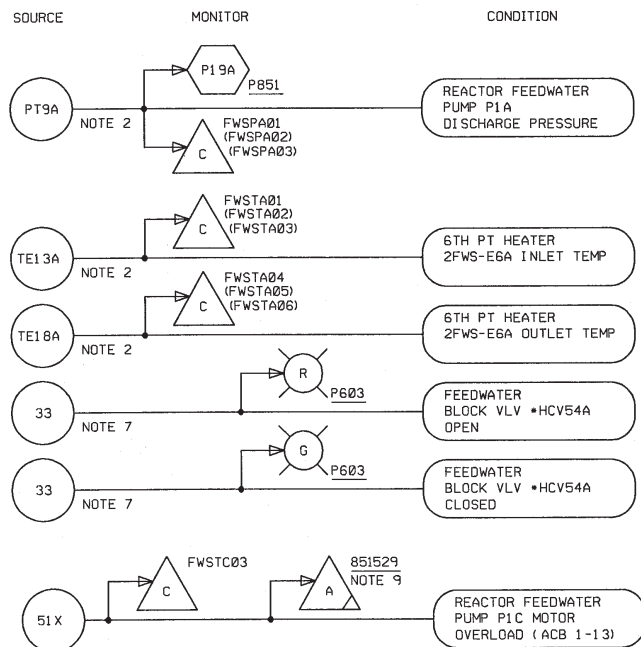


SOURCE: LSK- 06-01.01C

FIGURE 10.4-11

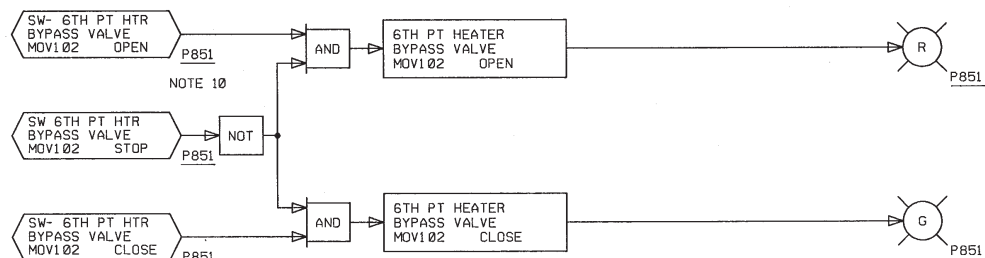
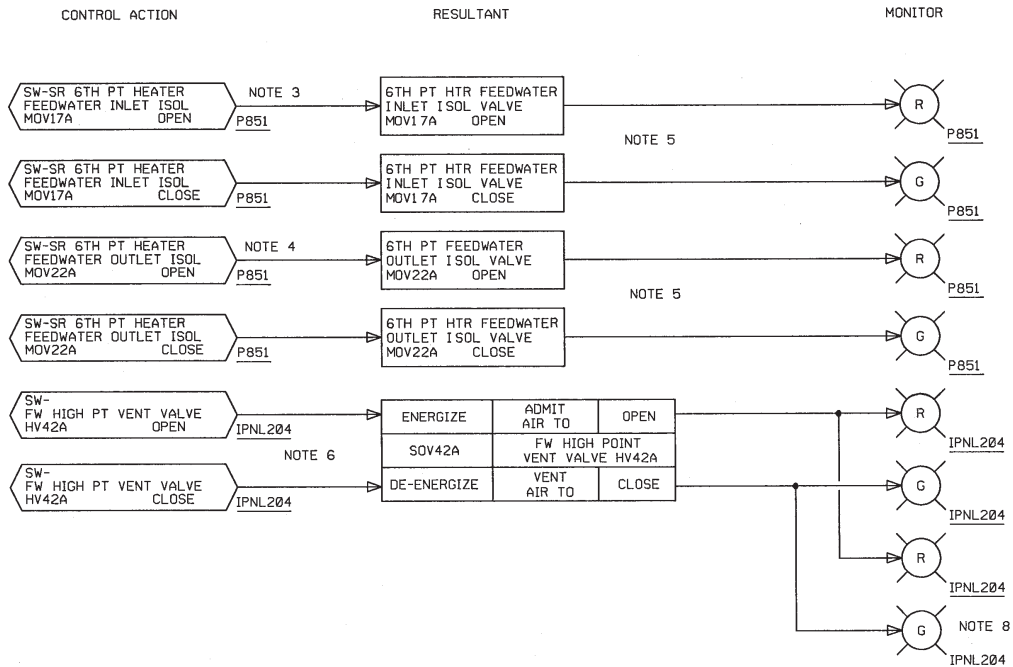
FEEDWATER SYSTEM  
LOGIC DIAGRAM SHEET 3 OF 9

NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT



#### NOTES:

1. ALL INSTRUMENT AND EQUIPMENT NO.'S TO BE PREFIXED WITH '2FWS-' EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN. AN ASTERISK (\*) WILL REPLACE THE DASH (-) IN THE PREFIX FOR EQUIPMENT OR INSTRUMENTS WHICH ARE PART OF NUCLEAR SAFETY FEATURES SYSTEM.
2. LOGIC SHOWN FOR DEVICES ASSOCIATED WITH STRING A. LOGIC FOR THOSE ASSOCIATED WITH STRINGS B&C ARE SIMILAR.
3. LOGIC FOR FW INLET ISOL VALVE MOV17A IS SHOWN. LOGIC FOR MOV17B & 17C AND THE HIGH ENERGY FWCCU SHUTOFF VALVE MOV110 IS SIMILAR.
4. LOGIC SHOWN FOR MOV22A. LOGIC FOR MOV22B, MOV22C, AND RFP DISCHARGE BLOCK VALVES MOV47A, B&C IS SIMILAR.
5. OTHER VALVE LIMIT SWITCH FUNCTION SHOWN ON LSK-3-4 & 32-6.
6. LOGIC SHOWN FOR HV42A. LOGIC FOR HV42 B&C, HV105, HV43A, B&C IS SIMILAR, EXCEPT W/LOCAL PILOT LTS (ONLY) & SWITCHES.
7. LOGIC SHOWN FOR \*HCV54A. LOGIC FOR \*HCV54B IS SIMILAR.
8. ONE SET OF LIGHTS USED ON MIMIC DISPLAY.
9. COMMON ANNUNCIATOR FOR ALL REACTOR FEED PUMPS.
10. LOGIC FOR BYPASS VALVE 2FWS-MOV102 IS SHOWN. LOGIC FOR RWCU VALVES 2WCS\*MOV404A AND 2WCS\*MOV404B IS SIMILAR EXCEPT THAT THE SWITCHES AND LIGHTS ARE IN P602.



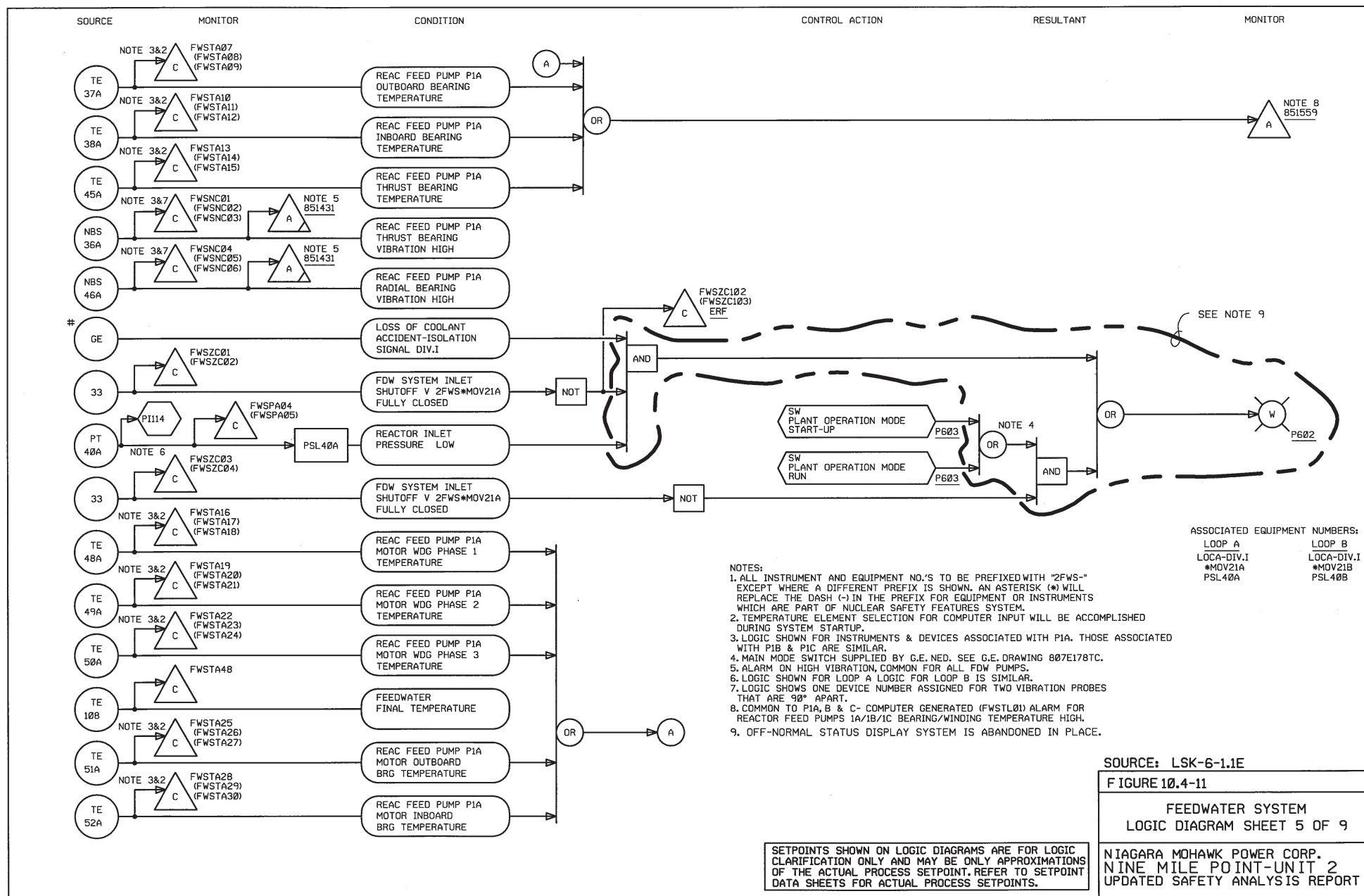
SOURCE: LSK-6-1.1D REV.16

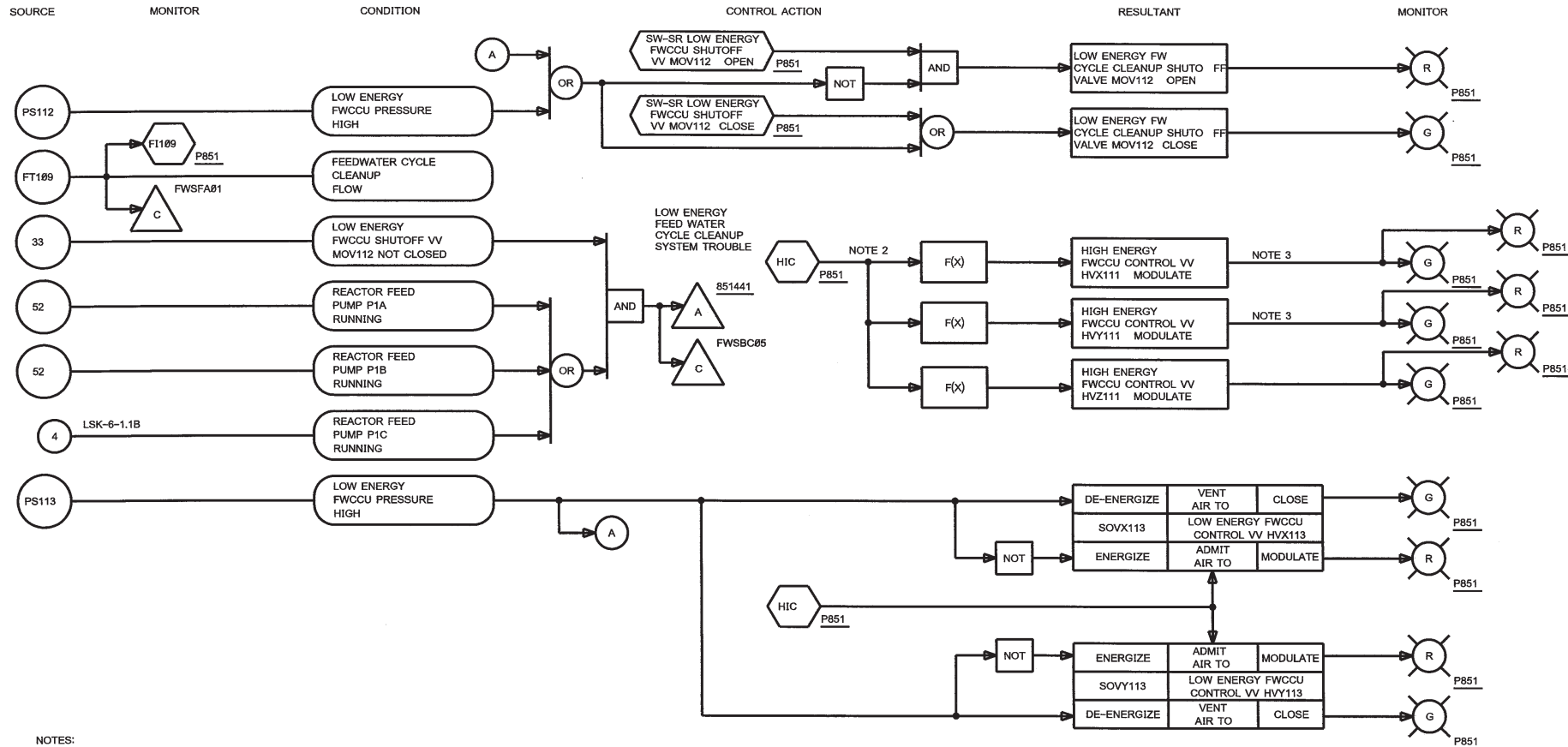
FIGURE 10.4-11

FEEDWATER SYSTEM  
LOGIC DIAGRAM SHEET 4 OF 9

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.





NOTES:

1. ALL INSTRUMENT AND EQUIPMENT NO.'S TO BE PREFIXED WITH "2FWS-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
2. THE OPENING OF THE CONTROL VALVES WILL BE STAGED IN SUCH A WAY THAT HVY111 WILL START OPENING WHEN HVX111 IS 100% OPEN AND HVZ111 WILL START OPENING WHEN HVY111 IS 100%.
3. VALVE CLOSING ON AIR FAILURE. RED AND GREEN LIGHT WILL COME ON WHEN THE VALVE IS FULL OPEN & FULL CLOSED RESPECTIVELY. BOTH LIGHTS WILL BE ON WHEN VALVE IS IN MID-TRAVEL.
4. DELETED
5. SEE LSK-27-19A FOR LOSS OF COOLANT ACCIDENT ISOLATION SIGNAL LOGIC DEVELOPMENT.
6. DELETED
7. DELETED

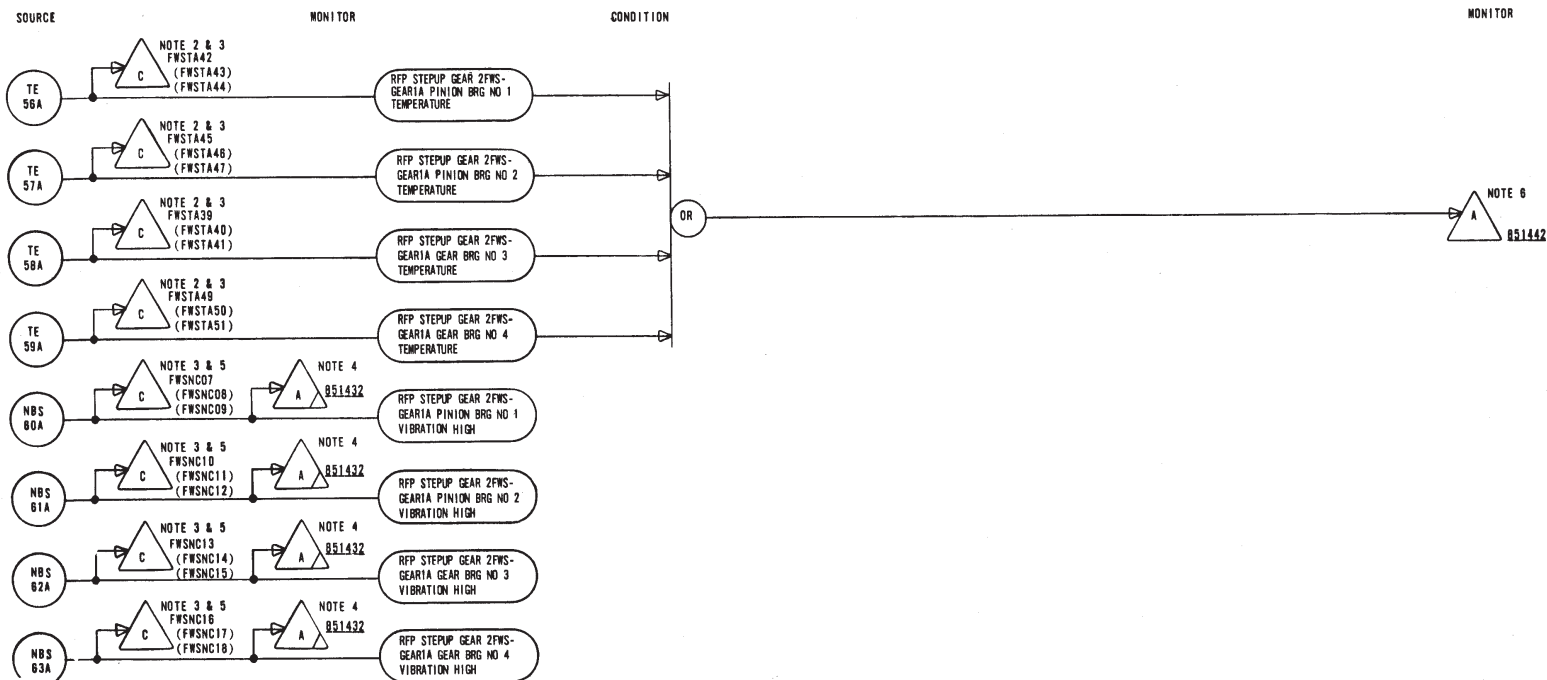
SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK- 6-1.1F REV.16

FIGURE 10.4-11

FEEDWATER SYSTEM  
LOGIC DIAGRAM SHEET 6 OF 9

NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT



- NOTES:
1. "ALL INSTRUMENT AND EQUIPMENT NUMBERS PREFIXED WITH "2FWS-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
  2. TEMPERATURE ELEMENT SELECTION FOR COMPUTER INPUT WILL BE ACCOMPLISHED DURING SYSTEM STARTUP.
  3. LOGIC SHOWN FOR INSTRUMENTS & DEVICES ASSOCIATED WITH P1A, THOSE ASSOCIATED WITH P1B & P1C ARE SIMILAR.
  4. ALARM ON HIGH VIBRATION COMMON FOR ALL RFP STEPUP GEARS.
  5. LOGIC SHOWS ONE DEVICE NUMBER ASSIGNED FOR TWO VIBRATION PROBES THAT ARE 90° APART.
  6. COMPUTER GENERATED ALARM (FWSTL02) COMMON FOR ALL RFP STEPUP GEAR BEARING TEMPERATURE HIGH.

NOTE:  
FOR LATEST SET POINT INFORMATION  
SEE SET POINT DATA SHEET

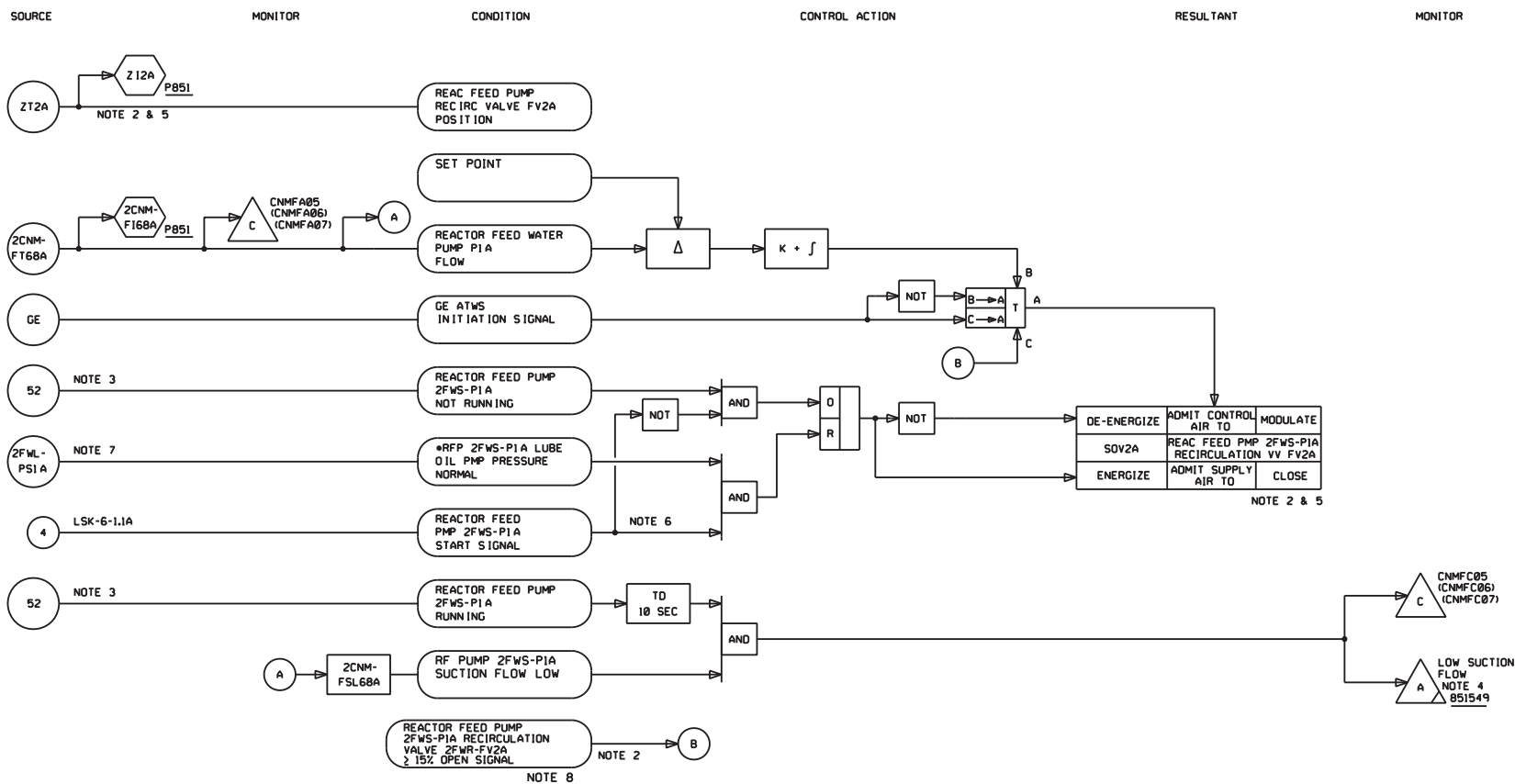
SOURCE: 12177-LSK-6-1.1G REV.11

FIGURE 10.4-11

FEEDWATER SYSTEM  
LOGIC DIAGRAM SHEET 7 OF 9

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT





#### NOTES:

- ALL INSTRUMENTS AND EQUIPMENT NO.'S TO BE PREFIXED WITH "2FWR-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
- LOGIC SHOWN FOR REACTOR FEED PUMP P1A RECIRCULATION SYSTEM. LOGIC FOR FEED PUMPS P1B AND P1C RECIRCULATION SYSTEMS IS SIMILAR.
- FOR PUMP C, A PARALLEL COMBINATION (OR GATE) OF PUMP RUNNING SIGNAL, ONE FROM EACH FEEDER BREAKER, MUST BE USED.
- COMMON ANNUNCIATOR FOR ALL REACTOR FEED PUMPS.
- ASSOCIATED EQUIPMENT MARK NO.'S
 

R.F. PUMP P1A	R.F. PUMP P1B	R.F. PUMP P1C
2CNM-F168A	2CNM-F168B	2CNM-F168C
2CNM-F168A	2CNM-F168B	2CNM-F168C
FV2A	FV2B	FV2C
2CNM-FSL68A	2CNM-FSL68B	2CNM-FSL68C
2FWS-PS1A	2FWS-PS1B	2FWS-PS1C
SOV2A	SOV2B	SOV2C
ZT2A	ZT2B	ZT2C
Z12A	Z12B	Z12C
- FOR PUMP C, A PARALLEL COMBINATION (OR GATE) OF START SIGNAL, ONE FROM EACH BREAKER CONTROL MUST BE USED.
- FOR ADDITIONAL SWITCH LOGIC SEE LSK-6-1.1A.
- 15% REPRESENTS APPROXIMATE PERCENT OF PLUG TRAVEL WHICH IS 19% OF STEM TRAVEL DUE TO PILOT VALVE MOVEMENT.

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

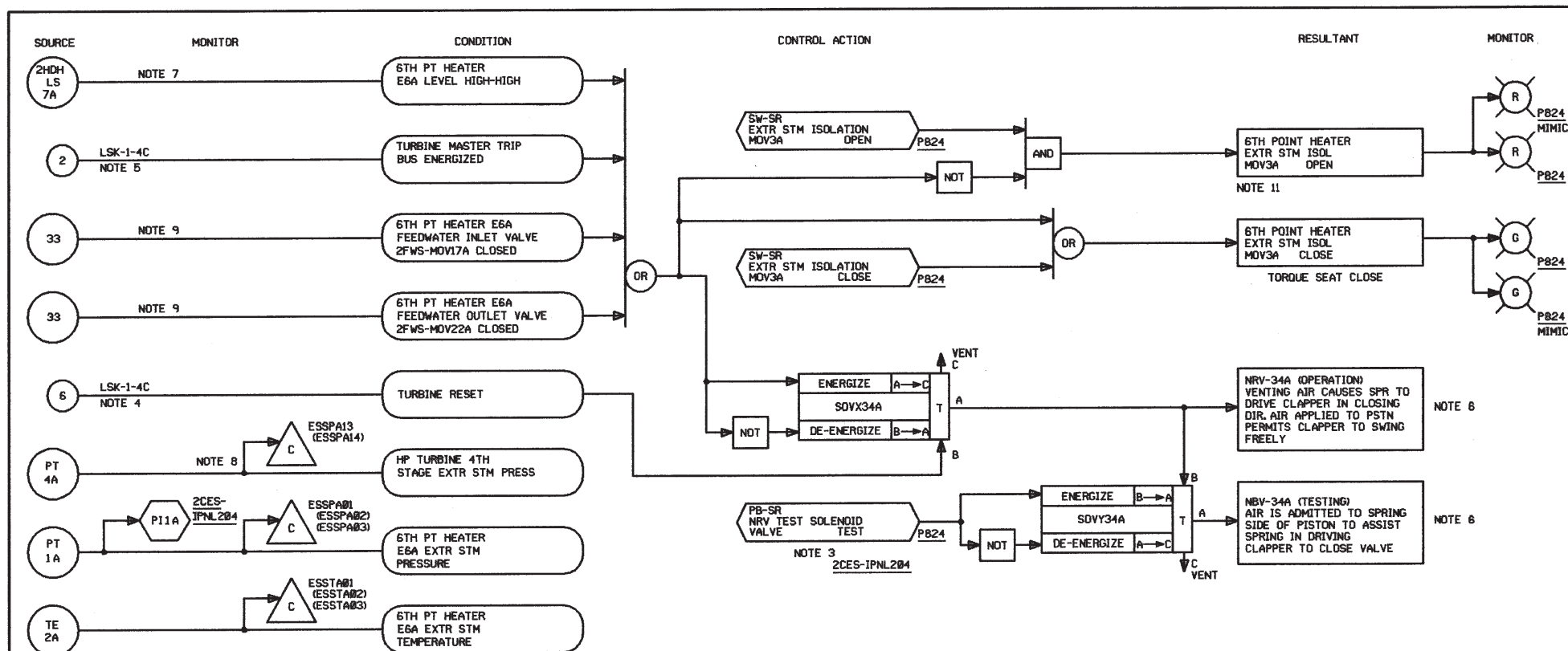
SOURCE: LSK- 06-03

FIGURE 10.4-11

FEEDWATER SYSTEM  
LOGIC DIAGRAM SHEET 9 OF 9

NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT





#### NOTES:

- ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH '2ESS-' EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
- LOGIC SHOWN FOR 6TH POINT HEATER E6A. LOGIC FOR HEATERS E6B AND E6C IS SIMILAR.
- TEST SOLENOID VALVES FOR NRV34A, NRV34B, AND NRV34C MUST BE INSTALLED IN HEATER DRAIN/DRV TEST PANELS LOCATED IN RAD ZONE 4, 5 OR 6.
- EXTRACTION RELAY DUMP VALVE 2TMB-HYV130 (FURNISHED BY GE-LSTG) ADMITS AIR TO ALL NRV'S WHEN THE TURBINE IS RESET AND VENTS AIR TO CLOSE ALL NRV'S WHEN TURBINE TRIPS (REF GE DWG 251R161, S & W 20.518.002.000).
- XKT-1183-1 FURNISHED BY GE LSTG INITIATES OPENING OF ALL SOLENOID VALVES FOR VENTING NRV AIR CYLINDERS WHEN TURBINE TRIPS (REF GE DWG 11802360, S & W 1.018-002-002).
- MONITORS ARE SHOWN ON LSK-3-4G.
- FOR ADDITIONAL SWITCH LOGIC, SEE LSK-6-6.
- PT 4A SHOWN. PT 4B SIMILAR.
- FOR ADDITIONAL SWITCH LOGIC, SEE LSK-6-1.

#### 10. ASSOCIATED EQUIPMENT NUMBERS:

HEATER E6A	E6B	E6C
MOV3A	MOV3B	MOV3C
NRV34A	NRV34B	NRV34C
SOVX34A	SOVX34B	SOVX34C
SOVY34A	SOVY34B	SOVY34C
2HDH-LS7A	2HDH-LS7B	2HDH-LS7C
PT1A	PT1B	PT1C
TE2A	TE2B	TE2C
P11A	P11B	P11C

#### 11. FOR ADDITIONAL LIMIT SWITCH LOGIC SEE LSK-32-5.

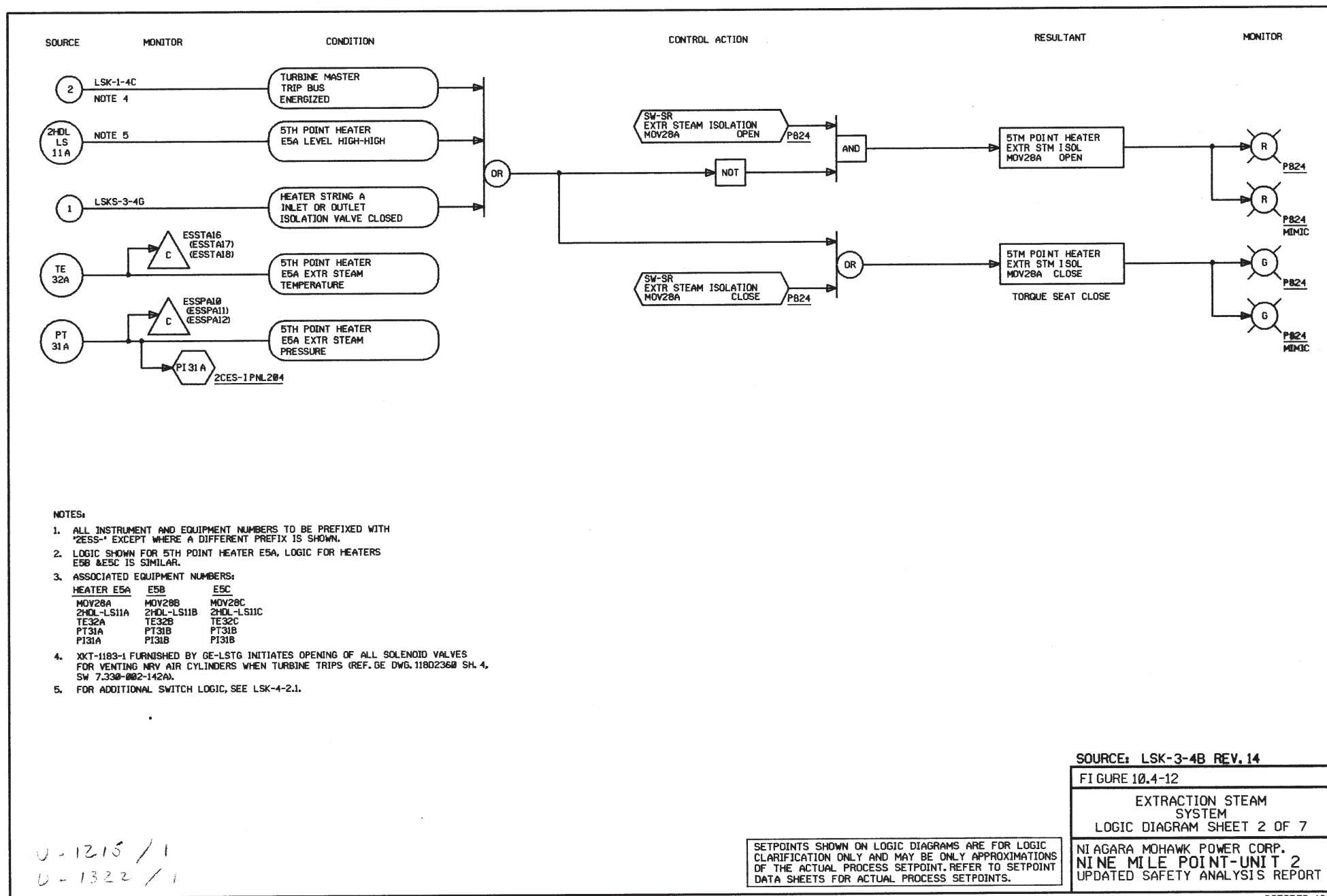
SOURCE: LSK-3-4A REV.13

FIGURE 10.4-12

EXTRACTION STEAM  
SYSTEM  
LOGIC DIAGRAM SHEET 1 OF 7

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.



SOURCE: LSK-3-4B REV. 14

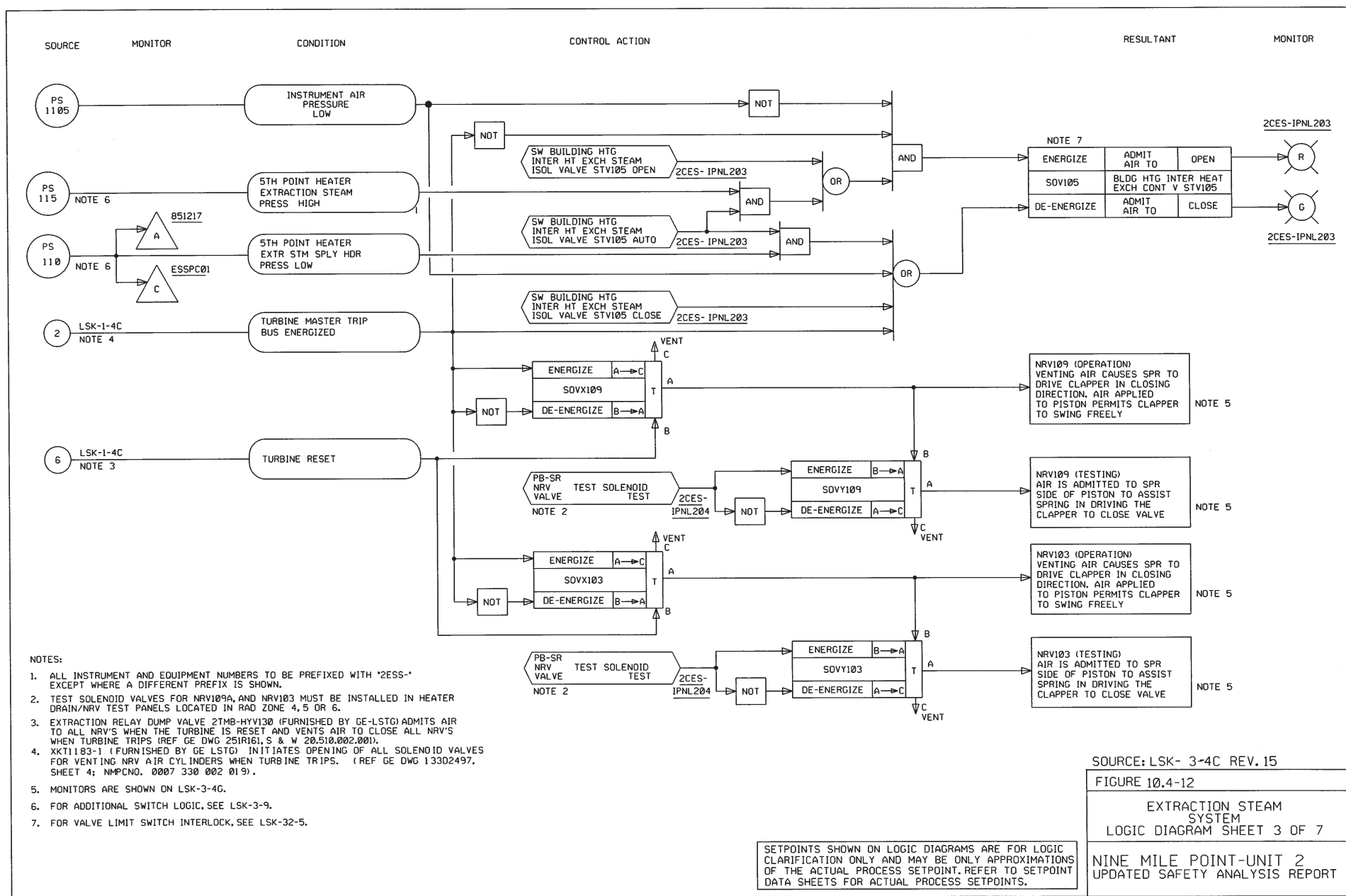
FIGURE 10.4-12

EXTRACTION STEAM  
SYSTEM  
LOGIC DIAGRAM SHEET 2 OF 7

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

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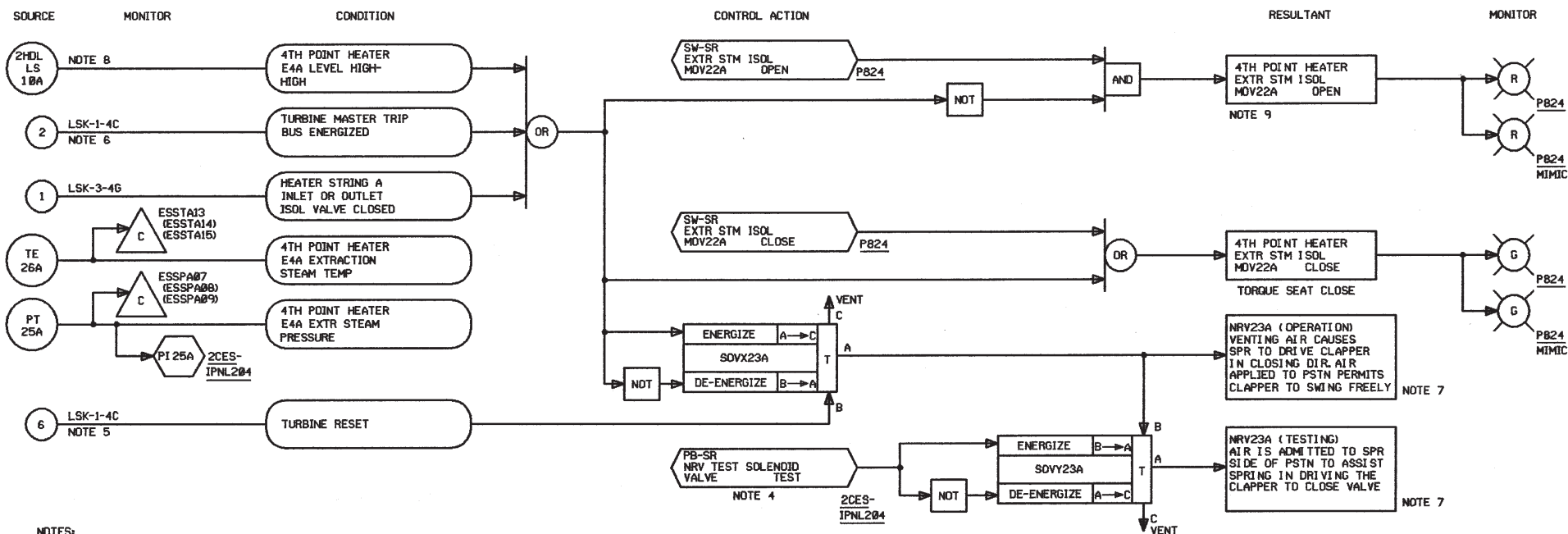


SOURCE: LSK- 3-4C REV. 15

FIGURE 10.4-12

EXTRACTION STEAM  
SYSTEM  
LOGIC DIAGRAM SHEET 3 OF 7

NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT



U-1215  
U-1322/1

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK-3-4D REV. 13

FIGURE 10.4-12

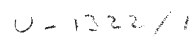
EXTRACTION STEAM  
SYSTEM  
LOGIC DIAGRAM SHEET 4 OF 7

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

USAR REVISION 3

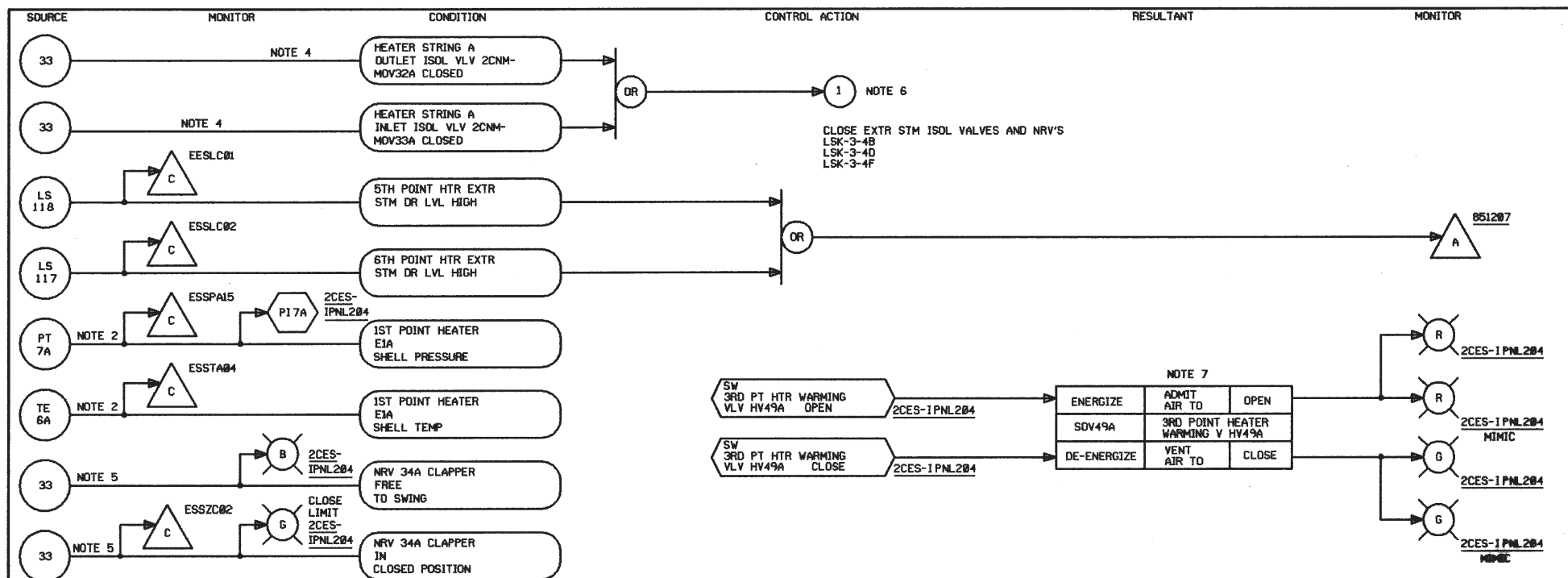
OCTOBER 1991





11. FOR VALVE LIMIT SWITCH INTERLOCK, SEE LSK-32-5.

OCTOBER 1991

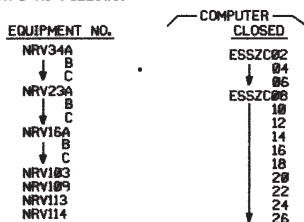


#### NOTES:

- ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH '2ESS-' EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
- LOGIC SHOWN FOR 1ST POINT HEATER E1A. LOGIC FOR HEATERS E1B, E1C, E2A, E2B AND E2C IS SIMILAR.
- ASSOCIATED EQUIPMENT NUMBERS:

HEATER E1A	E1B	E1C	E2A	E2B	E2C
TE8A	TE8B	TE8C	TE10A	TE10B	TE10C
PT7A	PT7B	PT7C	PT12A	PT12B	PT12C
ESSPA15	ESSPA16	ESSPA17	ESSPA18	ESSPA19	ESSPA20
ESSTA04	ESSTA05	ESSTA06	ESSTA07	ESSTA08	ESSTA09

- REFER TO LSK-4-1.1 FOR ADDITIONAL SWITCH LOGIC.
- LOGIC SHOWN FOR NRV34A AND IS TYPICAL FOR OTHER NRVS AS FOLLOWS:



- LOGIC SHOWN FOR HEATER STRING A. LOGIC FOR STRINGS B AND C IS SIMILAR.
- LOGIC FOR 3RD PT HEATER WARMING VALVE HV49A IS SHOWN. LOGIC FOR THE FOLLOWING IS SIMILAR.

3RD PT HEATER WARMING VLV HV49B & C  
4TH PT HEATER WARMING VLV HV46A, B & C  
5TH PT HEATER WARMING VLV HV47A, B & C  
6TH PT HEATER WARMING VLV HV46A, B & C

SOURCE: LSK-3-4G REV. 12

FIGURE 10.4-12

EXTRACTION STEAM  
SYSTEM  
LOGIC DIAGRAM SHEET 7 OF 7

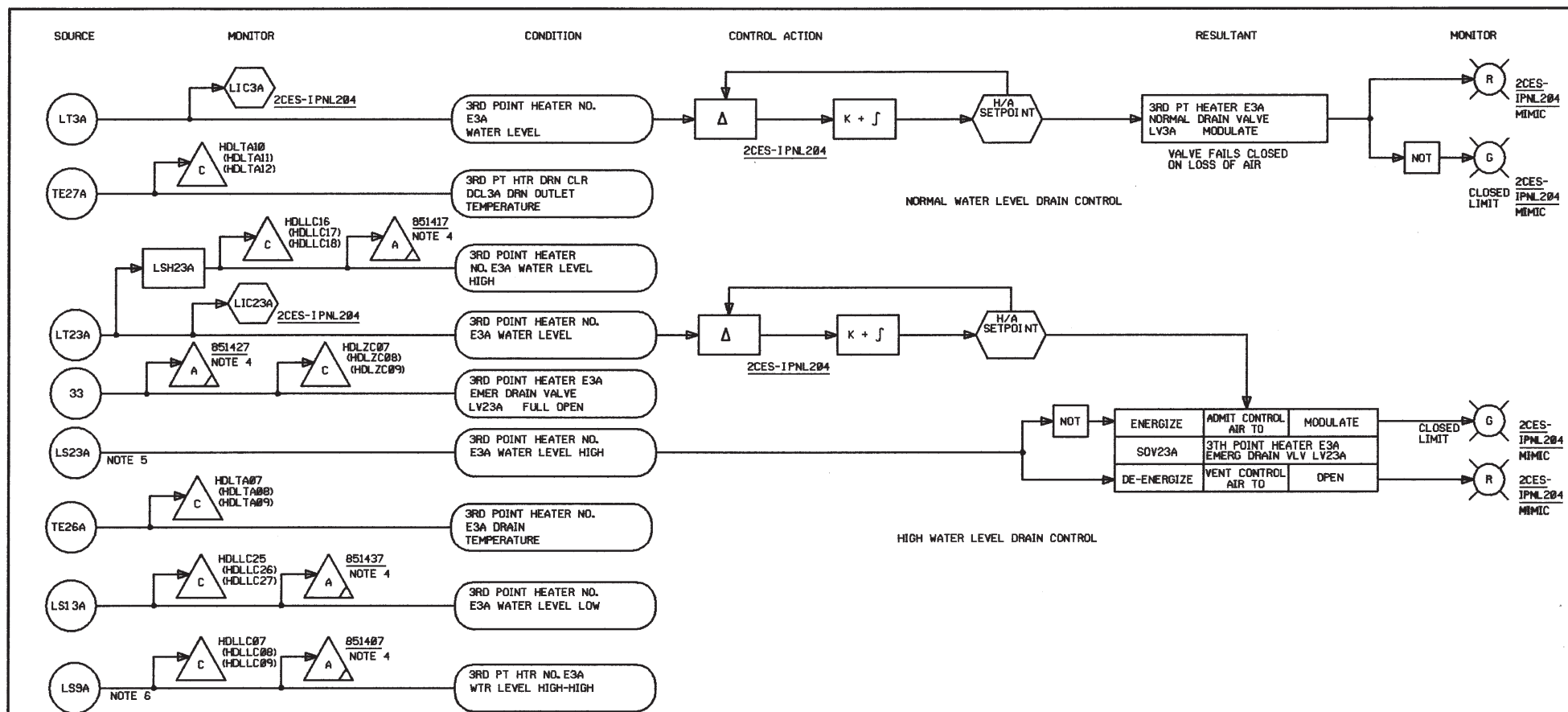
NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.









# NOTES:

- ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2HOL-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
- NORMAL WATER LEVEL DRAIN CONTROL VALVE FOR HEATER NO. E3A SHOWN. CONTROL VALVES FOR HEATER NO'S. E3B AND E3C ARE SIMILAR.
- HIGH WATER LEVEL DRAIN CONTROL VALVE FOR HEATER NO. E3A SHOWN. CONTROL VALVES FOR HEATER NO'S. E3B AND E3C ARE SIMILAR.
- COMMON ANNUNCIATOR FOR THREE LOOPS.
- FOR ADDITIONAL SWITCH LOGIC, SEE LSK-4-4.1.
- FOR ADDITIONAL SWITCH LOGIC, SEE LSK-3-4.

# 7. ASSOCIATED EQUIPMENT MARK NO'S.:

HEATER E3A	E3B	E3C
LT3A	LT3B	LT3C
LV3A	LV3B	LV3C
TE27A	TE27B	TE27C
LT23A	LT23B	LT23C
LS23A	LS23B	LS23C
LV23A	LV23B	LV23C
TE26A	TE26B	TE26C
LS13A	LS13B	LS13C
LS9A	LS9B	LS9C
LSH23A	LSH23B	LSH23C
LIC3A	LIC3B	LIC3C
LIC23A	LIC23B	LIC23C

- THE NORMAL WATER LEVEL FOR HEATERS IS IDENTIFIED BY A BENCHMARK LOCATED ON THE HEATER.

SOURCE: LSK-4-2.1D REV.14

FIGURE 10.4-13

FEEDWATER HEATER DRAINS SYS. -  
LOW PRESS. FEEDWATER HTR. DRAINS  
LOGIC DIAGRAM SHEET 2 OF 8

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC  
CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS  
OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT  
DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE

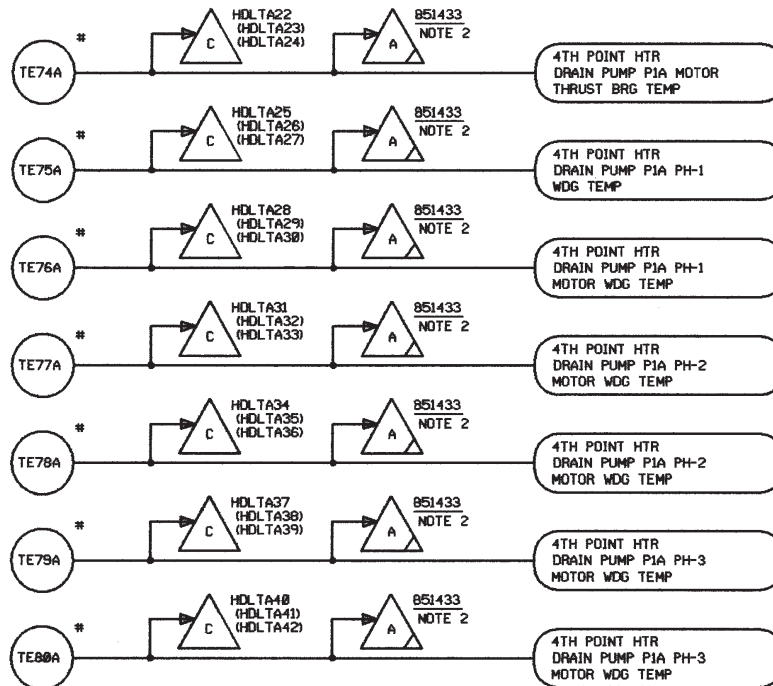
MONITOR

CONDITION

CONTROL ACTION

RESULTANT

MONITOR



## NOTES:

- LOGIC FOR HEATER DRAIN PUMP P1A SHOWN. LOGIC FOR PUMPS P1B AND P1C SIMILAR.
- COMPUTER GENERATED COMMON ALM FOR 'HIGH TEMPERATURE'.
- ASSOCIATED EQUIPMENT MARK NO'S.:

PUMP P1A	P1B	P1C
TE74A	TE74B	TE74C
TE75A	TE75B	TE75C
TE76A	TE76B	TE76C
TE77A	TE77B	TE77C
TE78A	TE78B	TE78C
TE79A	TE79B	TE79C
TE80A	TE80B	TE80C

- \* - SUPPLIED BY PUMP VENDOR.

SOURCE: LSK-4-2.1E REV.15

FIGURE 10.4-13

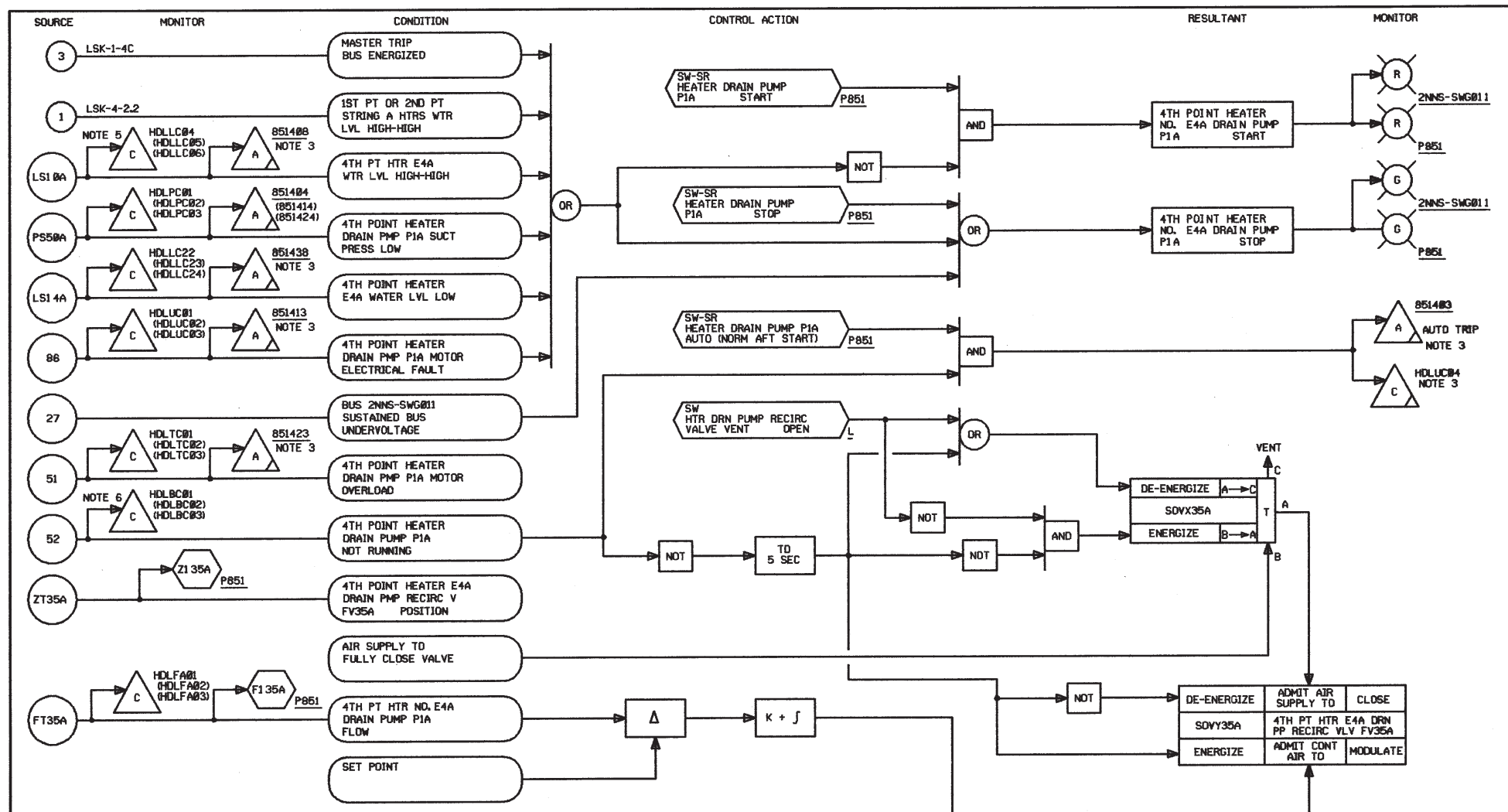
FEEDWATER HEATER DRAINS SYS. -  
LOW PRESS. FEEDWATER HTR. DRAINS  
LOGIC DIAGRAM SHEET 3 OF 8

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC  
CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS  
OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT  
DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

USAR REVISION 3

OCTOBER 1991



# NOTES:

- ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2HDL-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
- LOGIC FOR HEATER DRAIN PUMP NO. P1A SHOWN. LOGIC FOR PUMPS P1B AND P1C IS SIMILAR.
- COMMON ANNUNCIATOR OR COMPUTER FOR THREE LOOPS.

## 4. ASSOCIATED EQUIPMENT MARK NO.'S.:

PUMP P1A	P1B	P1C
FT35A	FT35B	FT35C
FV35A	FV35B	FV35C
F135A	F135B	F135C
PS50A	PS50B	PS50C
P150A	P150B	P150C
LS10A	LS10B	LS10C
LS14A	LS14B	LS14C
ZT35A	ZT35B	ZT35C
Z135A	Z135B	Z135C

5. FOR ADDITIONAL SWITCH LOGIC SEE LSK-3-40.

6. FOR ADDITIONAL SWITCH LOGIC SEE LSK-4-1.3L.

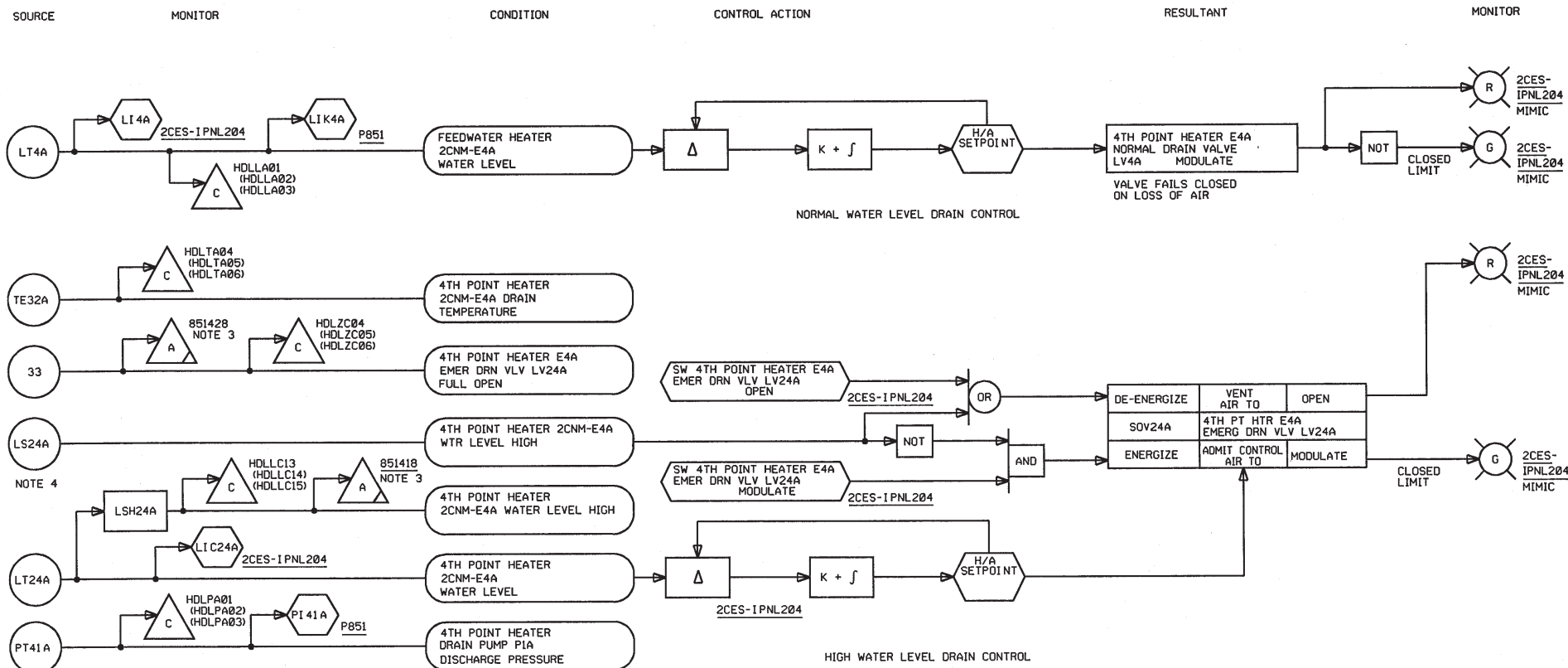
SOURCE: LSK-4-2.1C REV.14

FIGURE 10.4-13

FEEDWATER HEATER DRAINS SYS. - LOW PRESS. FEEDWATER HTR. DRAINS LOGIC DIAGRAM SHEET 4 OF 8

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.



# NOTES:

- ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH '2HDL-' EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
- DRAIN CONTROL FOR HEATER 2CNM-E4A IS SHOWN. CONTROL IS SIMILAR FOR 2CNM-E4B AND E4C.
- COMMON ANNUNCIATOR FOR THREE LOOPS.
- FOR ADDITIONAL SWITCH LOGIC, SEE LSK-4-2.1A AND 32-7.

## 5. ASSOCIATED EQUIPMENT MARK NUMBERS:

HEATER 2CNM-E4A	2CNM-E4B	2CNM-E4C
LT4A	LT4B	LT4C
LV4A	LV4B	LV4C
LIK4A	LIK4B	LIK4C
LS14A	LS14B	LS14C
TE32A	TE32B	TE32C
LS24A	LS24B	LS24C
LV24A	LV24B	LV24C
LIC24A	LIC24B	LIC24C
LT24A	LT24B	LT24C
LI4A	LI4B	LI4C
PT41A	PT41B	PT41C
LSH24A	LSH24B	LSH24C
PI41A	PI41B	PI41C

- THE NORMAL WATER LEVEL FOR HEATERS IS IDENTIFIED BY A BENCH MARK LOCATED ON THE HEATER.

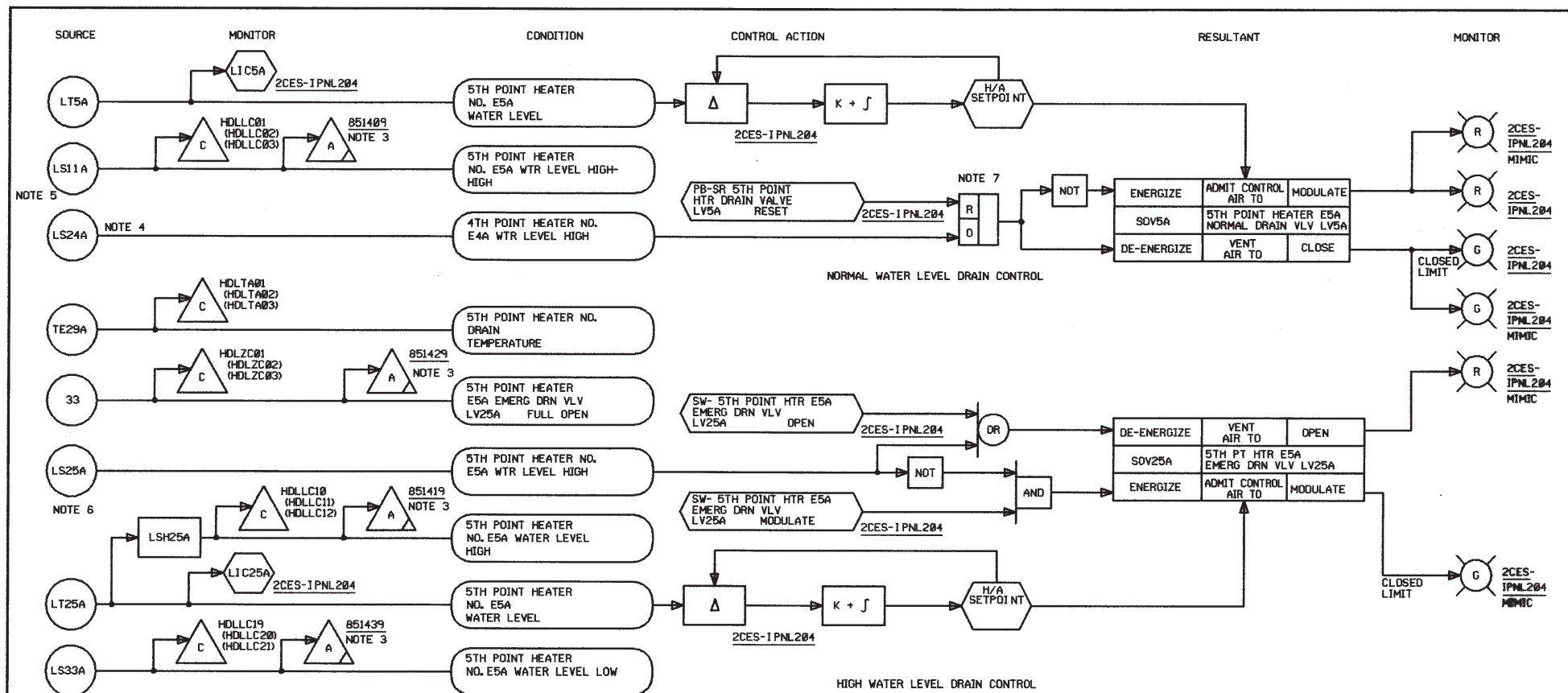
SOURCE: LSK-4-2.1B REV.17

FIGURE 10.4-13

FEEDWATER HEATER DRAINS SYS. -  
LOW PRESS. FEEDWATER HTR. DRAINS  
LOGIC DIAGRAM SHEET 5 OF 8

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.



#### NOTES:

1. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2HOL-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
2. LOGIC IS SHOWN FOR HEATER 2CNM-E5A DRAIN CONTROL. LOGIC IS SIMILAR FOR HEATERS 2CNM-E5B AND E5C.
3. COMMON ANNUNCIATOR FOR THREE LOOPS.
4. FOR ADDITIONAL SWITCH LOGIC, SEE LSK-4-2.1B AND 32-7.
5. FOR ADDITIONAL SWITCH LOGIC, SEE LSK-3-4.
6. FOR ADDITIONAL SWITCH LOGIC, SEE LSK-6-6.
7. ON LOSS OF POWER MEMORY RESETS.

#### 8. ASSOCIATED EQUIPMENT MARK NUMBERS:

HEATER 2CNM-E5A	2CNM-E5B	2CNM-E5C
LT5A	LT5B	LT5C
LIC5A	LIC5B	LIC5C
LV5A	LV5B	LV5C
LS11A	LS11B	LS11C
LT25A	LT25B	LT25C
LIC25A	LIC25B	LIC25C
LV25A	LV25B	LV25C
TE29A	TE29B	TE29C
LS25A	LS25B	LS25C
LS33A	LS33B	LS33C
LS24A	LS24B	LS24C
LSH25A	LSH25B	LSH25C

9. THE NORMAL WATER LEVEL FOR HEATERS IS IDENTIFIED BY A BENCH MARK LOCATED ON THE HEATER.

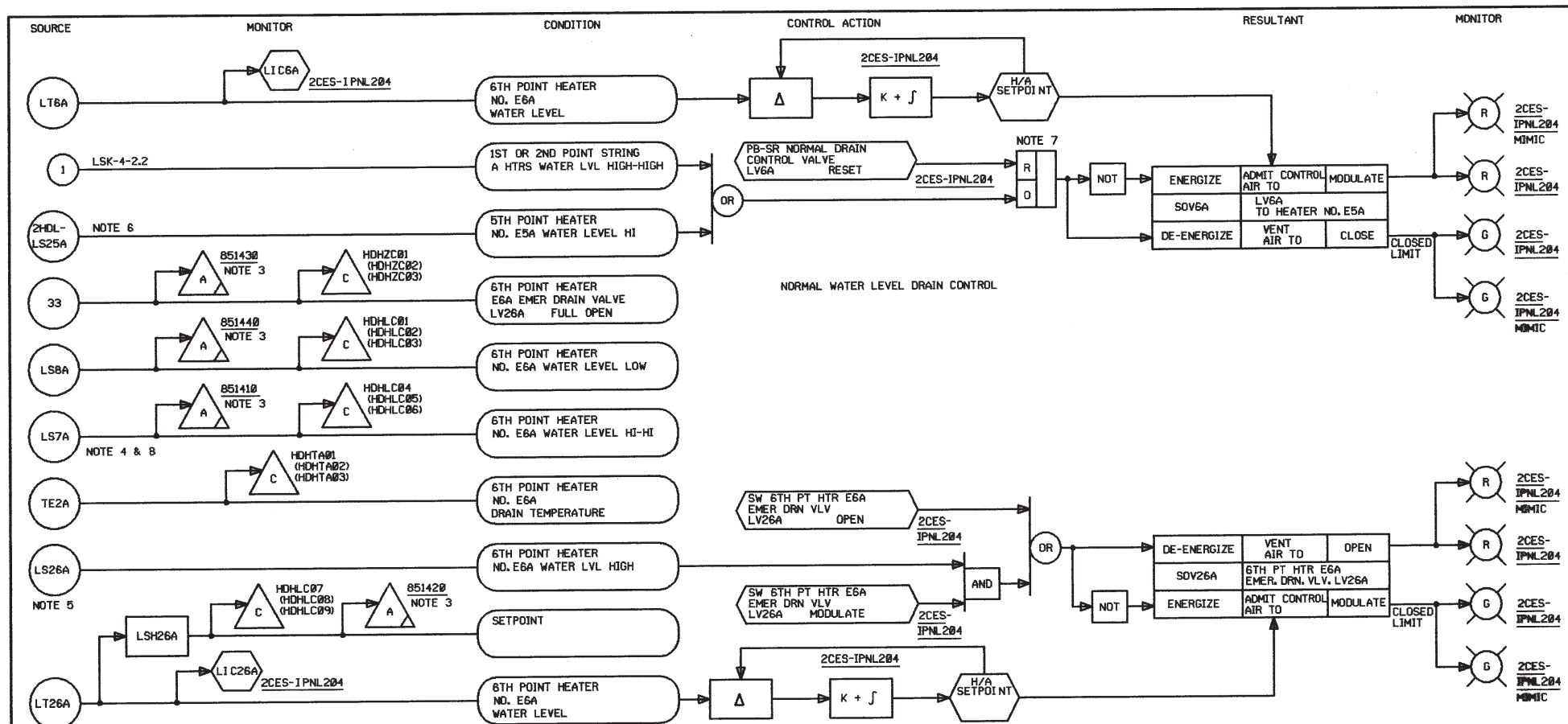
SOURCE: LSK-4-2.1A REV.14

FIGURE 10.4-13

FEEDWATER HEATER DRAINS SYS. -  
LOW PRESS. FEEDWATER HTR. DRAINS  
LOGIC DIAGRAM SHEET 6 OF 8

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT

SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.



#### NOTES:

1. ALL INSTRUMENT AND EQUIPMENT NUMBERS TO BE PREFIXED WITH "2HDL-" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN.
2. LOGIC IS SHOWN FOR HEATER 2FWS-E6A DRAIN CONTROL. LOGIC IS SIMILAR FOR HEATERS 2FWS-E6B AND E6C.
3. COMMON ANNUNCIATOR FOR THREE LOOPS.
4. FOR ADDITIONAL SWITCH LOGIC SEE LSK-3-4A.
5. FOR ADDITIONAL SWITCH LOGIC SEE LSK-32-6A.
6. FOR ADDITIONAL SWITCH LOGIC SEE LSK-4-2.1A.
7. ON LOSS OF POWER RELAY RESETS (DE-ENERGIZES).
8. FOR ADDITIONAL SWITCH LOGIC SEE LSK-32-6C.

#### 9. ASSOCIATED EQUIPMENT MARK NO.'S:

HEATER 2FWS-E6A	2FWS-E6B	2FWS-E6C
LT6A	LT6B	LT6C
LIC6A	LIC6B	LIC6C
LV6A	LV6B	LV6C
LS8A	LS8B	LS8C
LS7A	LS7B	LS7C
LS26A	LS26B	LS26C
LT26A	LT26B	LT26C
LV26A	LV26B	LV26C
LIC26A	LIC26B	LIC26C
TE2A	TE2B	TE2C
2HDL-LS25A	2HDL-LS25B	2HDL-LS25C
LSH26A	LSH26B	LSH26C

10. THE NORMAL WATER LEVEL FOR THE HEATERS IS IDENTIFIED BY A BENCHMARK LOCATED ON THE HEATER.

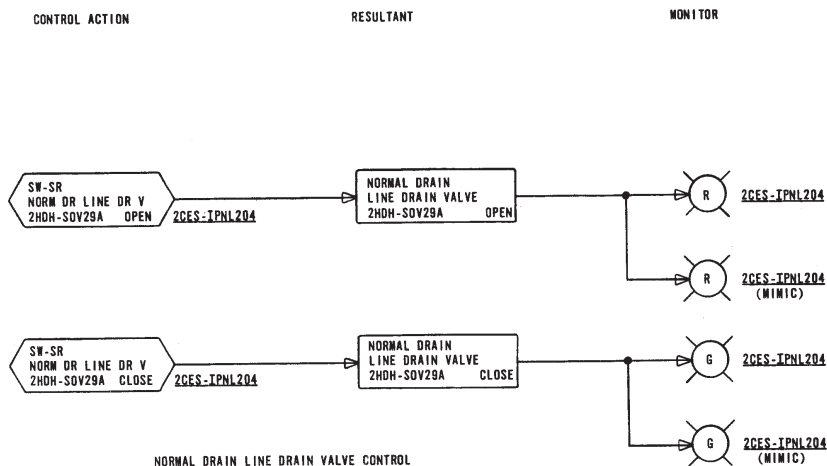
SETPOINTS SHOWN ON LOGIC DIAGRAMS ARE FOR LOGIC CLARIFICATION ONLY AND MAY BE ONLY APPROXIMATIONS OF THE ACTUAL PROCESS SETPOINT. REFER TO SETPOINT DATA SHEETS FOR ACTUAL PROCESS SETPOINTS.

SOURCE: LSK-6-6A REV.10

FIGURE 10.4-13

FEEDWATER HEATER DRAINS SYS. -  
HIGH PRESS. FEEDWATER HTR. DRAINS  
LOGIC DIAGRAM SHEET 7 OF 8

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT



NOTES:

1. LOGIC FOR DRAIN VALVE SOV29A IS SHOWN.  
LOGIC FOR DRAIN VALVES SOV29B AND SOV29C IS SIMILAR.

NOTE:

FOR LATEST SET POINT INFORMATION  
SEE SET POINT DATA SHEET

SOURCE: 12177-LSK-6-6B REV. 8

FIGURE 10. 4-13

FEEDWATER HEATER DRAINS SYS. -  
HIGH PRESSURE FEEDWATER HTR.  
DRAINS  
LOGIC DIAGRAM SHEET 8 OF 8

NIAGARA MOHAWK POWER CORP.  
NINE MILE POINT-UNIT 2  
UPDATED SAFETY ANALYSIS REPORT