

LOGIC SYMBOLS

LOGIC FUNCTION

DESCRIPTION

OR

A DEVICE WHICH PRODUCES AN OUTPUT ONLY WHEN ONE INPUT (OR MORE) EXISTS.

NOT

A DEVICE WHICH PRODUCES AN OUTPUT ONLY WHEN THE INPUT DOES NOT EXIST.

AND

A DEVICE WHICH PRODUCES AN OUTPUT ONLY WHEN EVERY INPUT EXISTS.

COINCIDENCE
(2 OUT OF 3
SHOWN)

A DEVICE WHICH PRODUCES AN OUTPUT WHEN THE PRESCRIBED NUMBER OF INPUTS EXIST (EXAMPLE 2 OUT OF 3 SHOWN).

ADJUSTABLE
TIME DELAY

A DEVICE WHICH PRODUCES AN OUTPUT FOLLOWING DEFINITE INTENTIONAL TIME DELAY AFTER RECEIVING AN INPUT.

OFF RETURN
MEMORY

A DEVICE WHICH RETAINS THE CONDITION OF OUTPUT CORRESPONDING TO THE LAST ENERGIZED INPUT, EXCEPT UPON INTERRUPTION OF POWER IT RETURNS TO THE OFF CONDITION.

RETENTIVE
MEMORY

A DEVICE WHICH RETAINS THE CONDITION OF OUTPUT CORRESPONDING TO THE LAST ENERGIZED INPUT (ALSO UPON INTERRUPTION OF POWER).

RETENTIVE
MEMORY
WITH ACTUATION
BLOCK

A DEVICE HAVING RETENTIVE MEMORY AND ACTUATION SIGNAL BLOCK LOGIC FUNCTIONS AS INDICATED BY THE DIAGRAM BELOW.

ACTUATING SIGNAL

RESET
(MOMENTARY)

OUTPUT SIGNAL

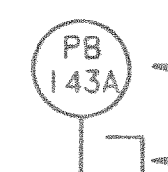
ANALOG
GATE

A DEVICE WHICH PERMITS AN ANALOG SIGNAL TO PASS IN AN ISOLATED CIRCUIT IF THE CONTROL LOGIC INPUT EXISTS.

ADJUSTABLE
TIME DELAY

A DEVICE WHICH REMOVES AN OUTPUT FOLLOWING A DEFINITE INTENTIONAL TIME DELAY AFTER REMOVAL OF THE INPUT.

ADDITIONAL SYMBOLS



INSTRUMENT CHANNEL BISTABLE

OUTPUT INDICATOR

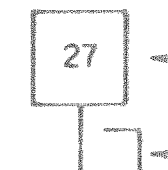
BISTABLE OUTPUT IS A LOGIC "1" WHEN THE MEASURED PARAMETER IS GREATER THAN THE SETPOINT VALUE.

BISTABLE OUTPUT IS A LOGIC "1" WHEN THE MEASURED PARAMETER IS LESS THAN THE SETPOINT VALUE.

BISTABLE OUTPUT IS A LOGIC "1" WHEN THE MEASURED PARAMETER DEVIATES FROM THE NORMAL VALUE BY MORE THAN THE SETPOINT AMOUNTS.

SAME AS ABOVE EXCEPT WITH AN AUTOMATICALLY ADJUSTED SETPOINT

SAME AS ABOVE EXCEPT WITH REQUIRED HYSTERESIS



NON-INSTRUMENT BISTABLE

OUTPUT INDICATOR (SAME AS EXPLAINED ABOVE)



INDICATOR LAMP (SUPPLIED BY UE&C) (FP-5-70073, 30001, 51029)



COMPUTER INPUT (SUPPLIED BY UE&C) (FP-5-70073, 30001, 51029)



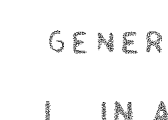
LOGIC INFORMATION TRANSMISSION



ANALOG INFORMATION TRANSMISSION



ANALOG DISPLAY (SUPPLIED BY UE&C)



ANALOG SUMMER

GENERAL NOTES: (FOR ALL SHEETS)

- IN ALL LOGIC CIRCUITS, THE INDICATED ACTUATION OF A SYSTEM OR DEVICE OCCURS WHEN A LOGIC "1" SIGNAL IS PRESENT. EXCEPT WHERE INDICATED OTHERWISE, ALL BISTABLES ARE "DE-ENERGIZE TO ACTUATE" SUCH THAT A LOGIC 1 SIGNAL IS DEFINED TO BE PRESENT WHEN THE BISTABLE OUTPUT VOLTAGE IS OFF.
- EXCEPT WHERE INDICATED OTHERWISE, THE FOLLOWING IS TRUE: ALL LOGIC CIRCUITS ARE REDUNDANT THAT IS EVERY LOGIC CIRCUIT SHOWN HAS A DUPLICATE LOCATED IN A SEPARATE CABINET. ALL INSTRUMENT CHANNELS, BISTABLES, COMPUTER INPUTS AND INDICATOR LAMPS ARE NOT REDUNDANT. MANUAL CONTROLS DO NOT HAVE REDUNDANT ACTUATORS, BUT DO HAVE REDUNDANT CONTACTS WHERE LOGIC IS REDUNDANT. ALL INDICATOR LAMPS, AND COMPUTER INPUTS ARE CONNECTED TO BOTH TRAINS (WHERE LOGIC IS REDUNDANT) SO THAT A SIGNAL IN EITHER TRAIN WILL ACTUATE.
- WHENEVER A PROCESS SIGNAL IS USED FOR CONTROL AND IS DERIVED FROM A PROTECTION CHANNEL, ISOLATION MUST BE PROVIDED. COMPUTER INPUTS ARE NOT A REQUIREMENT OF THE REACTOR CONTROL AND PROTECTION OR ENGINEERED SAFEGUARDS SYSTEMS AND ARE SHOWN FOR INFORMATION ONLY.
- THIS SET OF DRAWINGS AND THE ASSOCIATED REACTOR CONTROL AND PROTECTION SYSTEM FUNCTIONAL REQUIREMENTS DOCUMENTS ILLUSTRATE THE FUNCTIONAL REQUIREMENTS OF THE REACTOR CONTROL AND PROTECTION SYSTEM, INCLUDING ENGINEERED SAFEGUARDS. THESE DRAWINGS SHOULD NOT BE USED WITHOUT THE ASSOCIATED FUNCTIONAL REQUIREMENTS DOCUMENT AND THEY DO NOT REPRESENT ACTUAL HARDWARE IMPLEMENTATION. FOR HARDWARE IMPLEMENTATION, REFER TO THE FOLLOWING REFERENCE DRAWINGS:
LATER SOLID STATE PROTECTION SYSTEM SCHEMATIC
7247091 SOLID STATE PROTECTION SYSTEM INTERCONNECTION — (FP-70073)
5655049 NUCLEAR INSTRUMENTATION SOURCE RANGE — (FP-70147)
5655050 NUCLEAR INSTRUMENTATION INTERMEDIATE RANGE — (FP-70148)
5655051 NUCLEAR INSTRUMENTATION POWER RANGE — (FP-70149)
5655052 NUCLEAR INSTRUMENTATION AUXILIARY CHANNELS — (FP-70150)
8756051 PROCESS CONTROL SYSTEMS BLOCK DIAGRAM — (FP-70001)
2710339 ELEMENTARY WIRING DIAGRAM — (FP-30001)
1189E15 REACTOR TRIP SWITCHGEAR ELEMENTARY
OTHERS CONTROL BOARD SOLID STATE PROTECTION SYSTEM WIRING.
- THIS SET OF DRAWINGS IS IDENTICAL FOR MULTIPLE UNITS EXCEPT FOR THE TAG NUMBERS; FOR UNIT 1 TAG NUMBERS ADD A "1" (EXAMPLE: 1-RC-PB-455E) FOR UNIT 2 TAG NUMBERS ADD A "2" (EXAMPLE: 2-RC-PB-455E).
- FOR GENERAL NOTES AND REFERENCE DWGS SEE 9763-M-503100
- FOR SET POINTS REFERENCE SET POINT DATA LIST 9763-M-500376.

DEVICE FUNCTION LETTERS AND NUMBERS

FB FLOW CHANNEL
LB LEVEL CHANNEL
NC NUCLEAR CHANNEL
PB PRESSURE CHANNEL
RC RADIATION CHANNEL
SB SPEED CHANNEL
TB TEMPERATURE CHANNEL
ZB POSITION CHANNEL
20 ELECTRIC OPERATED VALVE
27 UNDERVOLTAGE RELAY
33 POSITION SWITCH

52 AC CIRCUIT BREAKER

63 PRESSURE SWITCH
71 LEVEL SWITCH
80 FLOW SWITCH
81 UNDERFREQUENCY RELAY

DWG. 509041 THRU C509056 ARE UE&C REDRAWS OF THE WESTINGHOUSE FUNCTIONAL DIAGRAMS, AS REFERENCED BELOW. UE&C HAS ADDED MAIN CONTROL BOARD (MCB) LOCATIONS, COMPUTER ID NUMBERS, MONITORING LIGHT NUMBERS, RECORDER NUMBERS, CONTROL SWITCH NUMBERS, REFERENCE DRAWINGS AND APPLICABLE UE&C INTERFERENCE.

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DWG. TRANSFERRED TO CUSTODY
OF NHY AT REV. 11
LTR 584 #A072 DTD 10/14/76

ISSUED FOR CONSTRUCTION

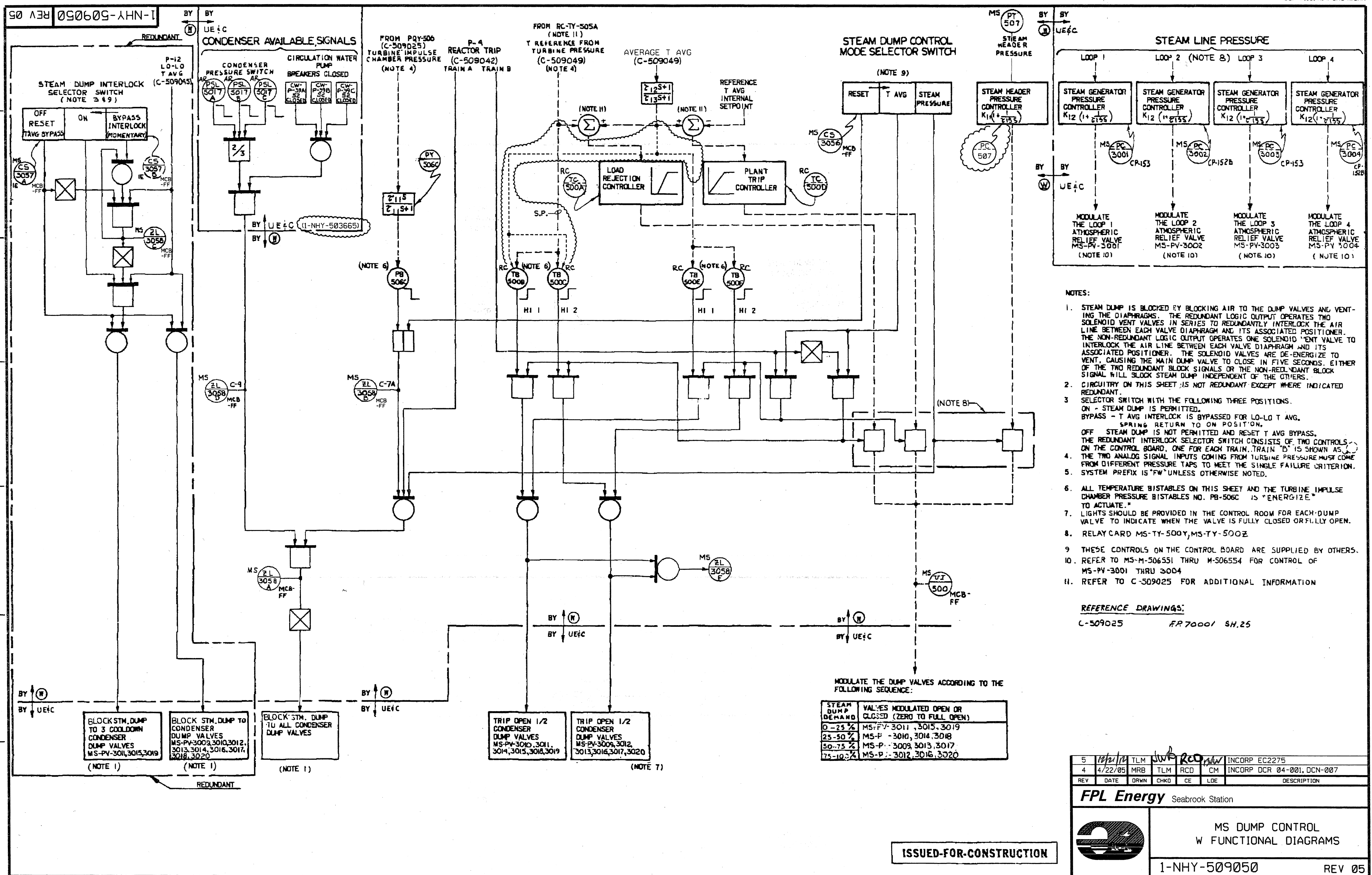
INDEX & SYMBOLES
W FUNCTIONAL DIAGRAMSNew Hampshire
YankeeSeabrook
Station

1-NHY-509041 REV 13

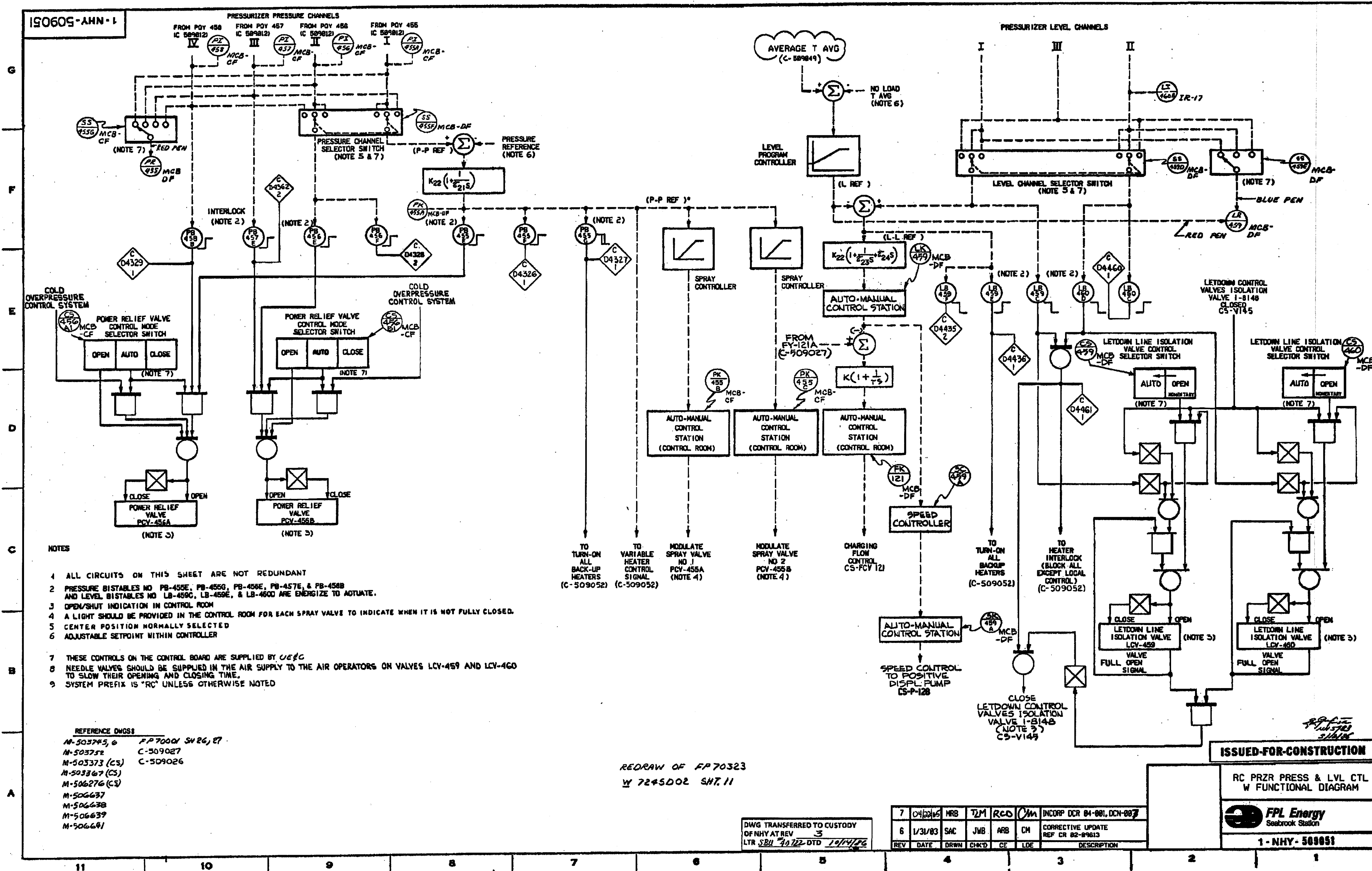
| | | | | | | |
|-----|----------|------|------|------|---------------------------------------|-------------|
| 13 | 13/6/75 | MRB | JNB | 3400 | INCORP DCR 94-039, CA-3 | |
| 12 | 10/30/76 | CCM | RAK | NA | 9763-C-509041 SUPERCEDES UE&C DWG. | |
| REV | DATE | DRWN | CHKD | CE | LDE | DESCRIPTION |

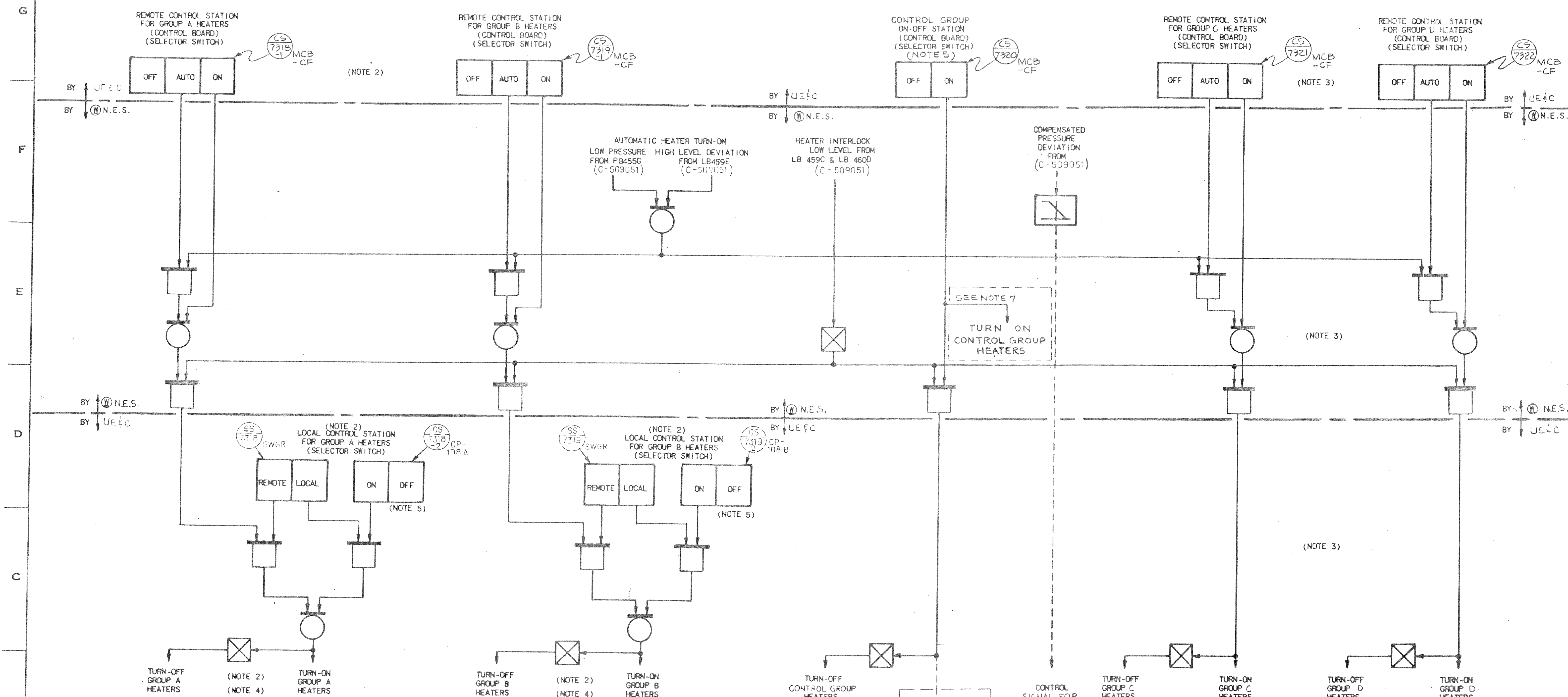
| | | | | | | | | | |
|-----|--------|--|----|------|------|----|-----|-----|-----|
| 11 | 2/1/76 | ECA 93/113274C ECA 05/117361C ECA 93/117438A ECA 05/116391A ECA 05/113093G | PE | DRWN | CHKD | RE | SDE | RAE | PEM |
| REV | DATE | DESCRIPTION | PE | DRWN | CHKD | RE | SDE | RAE | PEM |

| | | | | | | | | | |
|-----|---------|--|-----|------|------|-----|-----|-----|-----|
| 9 | 1/28/76 | ECA 05/104449A ECA 05/111763A ECA 93/100679D ECA 93/109947A SB-12809 | RPV | FM | RC | RPV | RPV | — | FM |
| 8 | 5/22/75 | REV'D C-509042, 43 | RPV | FM | RC | RPV | RPV | — | FM |
| 7 | 3/24/75 | REV'D C-509042 | RPV | FM | RC | RPV | RPV | — | FM |
| 6 | 1/4/75 | REV'D C-509048 | RPV | FM | RC | RPV | RPV | — | FM |
| 5 | 7/2/74 | REV'D C-509047 | RPV | FM | RC | RPV | RPV | — | FM |
| 4 | 6/12/74 | REV'D C-509047 | RPV | FM | RC | RPV | RPV | — | FM |
| 3 | 1/13/74 | REV'D C-509042 | RPV | FM | RC | RPV | RPV | — | FM |
| 10 | 5/21/76 | ECA 93/115386A | RPV | FM | RC | RPV | RPV | — | FM |
| 1 | 2-1-81 | FIRST ISSUE | RPV | FM | RC | RPV | RPV | — | FM |
| REV | DATE | DESCRIPTION | PE | DRWN | CHKD | RE | SDE | RAE | PEM |



ISO605-AHN-1





NOTES:

- ALL CIRCUITS ON THIS SHEET ARE NOT REDUNDANT.
- GROUP A AND GROUP B HEATERS MUST BE ON SEPARATE VITAL POWER SUPPLIES WITH THE LOCAL CONTROL SEPARATED SO THAT ANY SINGLE FAILURE DOES NOT DEFEAT BOTH. SHOW TRAIN 'B' SWITCH AS 24.
- THE NUMBER OF BACK-UP HEATER GROUPS IS TYPICAL. THE ACTUAL NUMBER OF GROUPS MAY DIFFER DEPENDING ON ELECTRICAL LOADING REQUIREMENTS.
- BACK-UP HEATER STATUS INDICATION IN CONTROL ROOM.
- PRECAUTIONS SHOULD BE TAKEN TO AVOID MANUAL HEATER OPERATION, WHICH WOULD CAUSE HEATER DAMAGE, IF THE WATER LEVEL UNCOVERS THE HEATERS. PRECAUTIONS SHOULD ALSO BE TAKEN TO VERIFY THAT PRZR LOW LEVEL ALARMS HAVE CLEARED BEFORE RECLOSING THE CONTROL GROUP BKR AFTER A LOW BKR TRIP.
- SYSTEM PREFIX IS 'RC' UNLESS OTHERWISE NOTED.
- WESTINGHOUSE DID NOT PROVIDE PRZR LOW LEVEL INTERLOCK CONTACTS FOR USE IN THE CONTROL GROUP BKR CLOSING CIRCUIT. ALTHOUGH THIS INTERLOCK IS SHOWN FUNCTIONALLY ON W DWG 7245D02, SH.12 SIMILAR TO THE BKR CLOSING CKTS FOR THE BACKUP GROUPS. 'PRZR LOW LEVEL' WILL TRIP OPEN THE CONTROL BKR AS SHOWN AND ONCE TRIPPED THE BKR CAN BE RECLOSED ONLY BY SWITCHING CS-7320 TO 'OFF' AND THEN TO 'ON'.

REFERENCE DRAWINGS:

M-503749
M-503750
M-503751

REDRAW OF F.P. 70324
W 7245D02 SH.12

| REV | DATE | DRWN | CHKD | CE | LDE | DESCRIPTION |
|-----|---------|------|------|-----|-----|---|
| 5 | 10/1/84 | SSG | JM | RPL | NA | 9763-C-509052 SUPERCEDES UE&C DWG. 1 |

| REV | DATE | DESCRIPTION | PE | DWN. | BY | CKD. | BY | RES. | ENG. | SDE | QAE | PEM |
|-----|---------|---|-----|------|-----|------|----|------|------|-----|-----|-----|
| 4 | 1-28-80 | ECA99109947A | RPN | FAI | W | ARV | W | W | W | W | W | W |
| 3 | 7/1/84 | EDITORIAL CHANGE | RPN | FAI | W | ARV | W | W | W | W | W | W |
| 2 | 5/20/83 | REV. PER ENG. ASSURANCE AUDIT REPORT NHE-5 | RPN | GWR | W | ARV | W | W | W | W | W | W |
| 1 | 8/24/81 | FIRST ISSUE | RPN | W | ARV | W | W | W | W | W | W | W |

DWG. TRANSFERRED TO CUSTODY
OF NHY AT REV. 4
LTR. SBU #A0722 DTD. 10/17/86

ISSUED-FOR-CONSTRUCTION

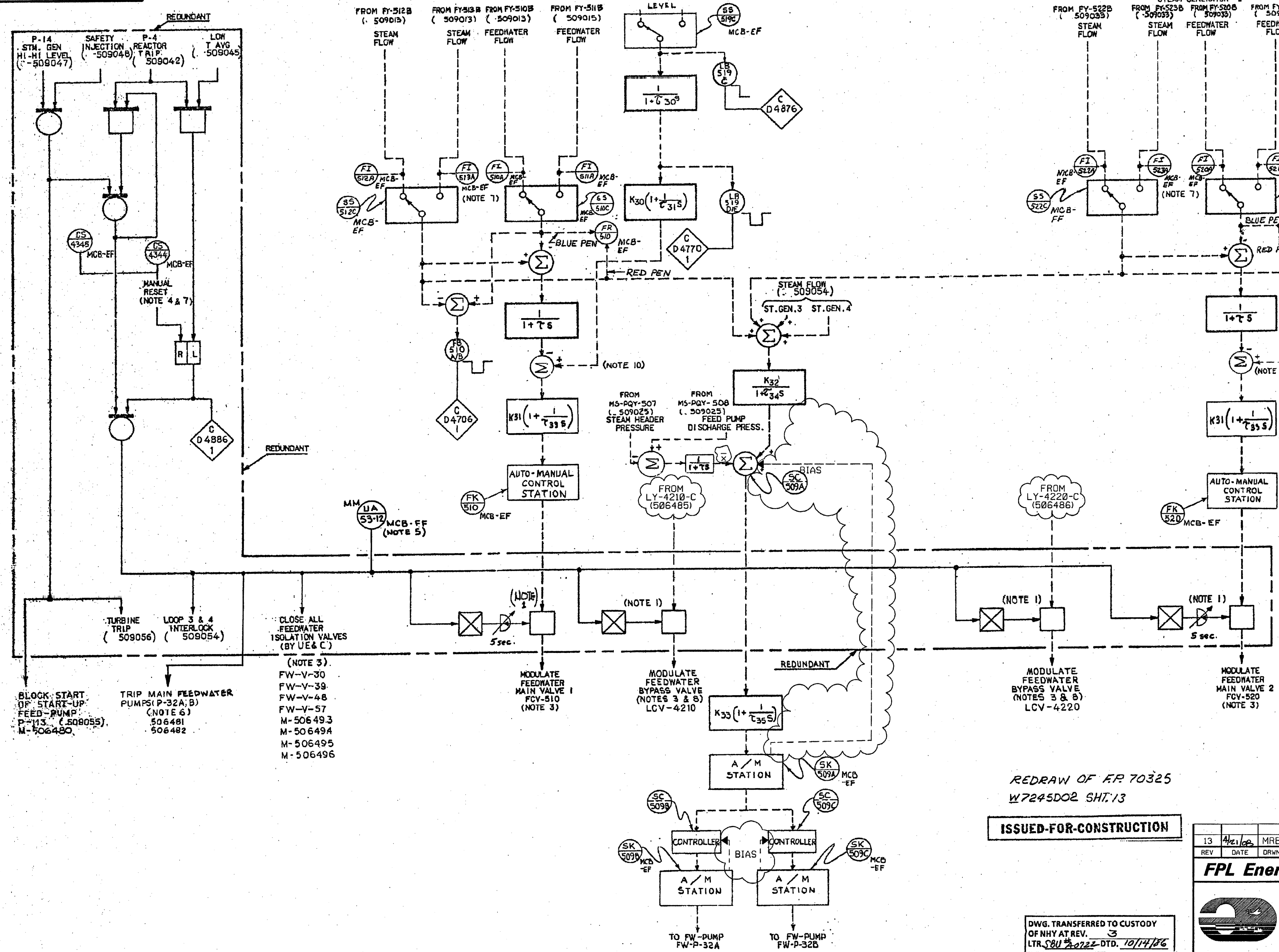
RC PRZR HTR CONTROL
W FUNCTIONAL DIAGRAMS

New Hampshire
Yankee

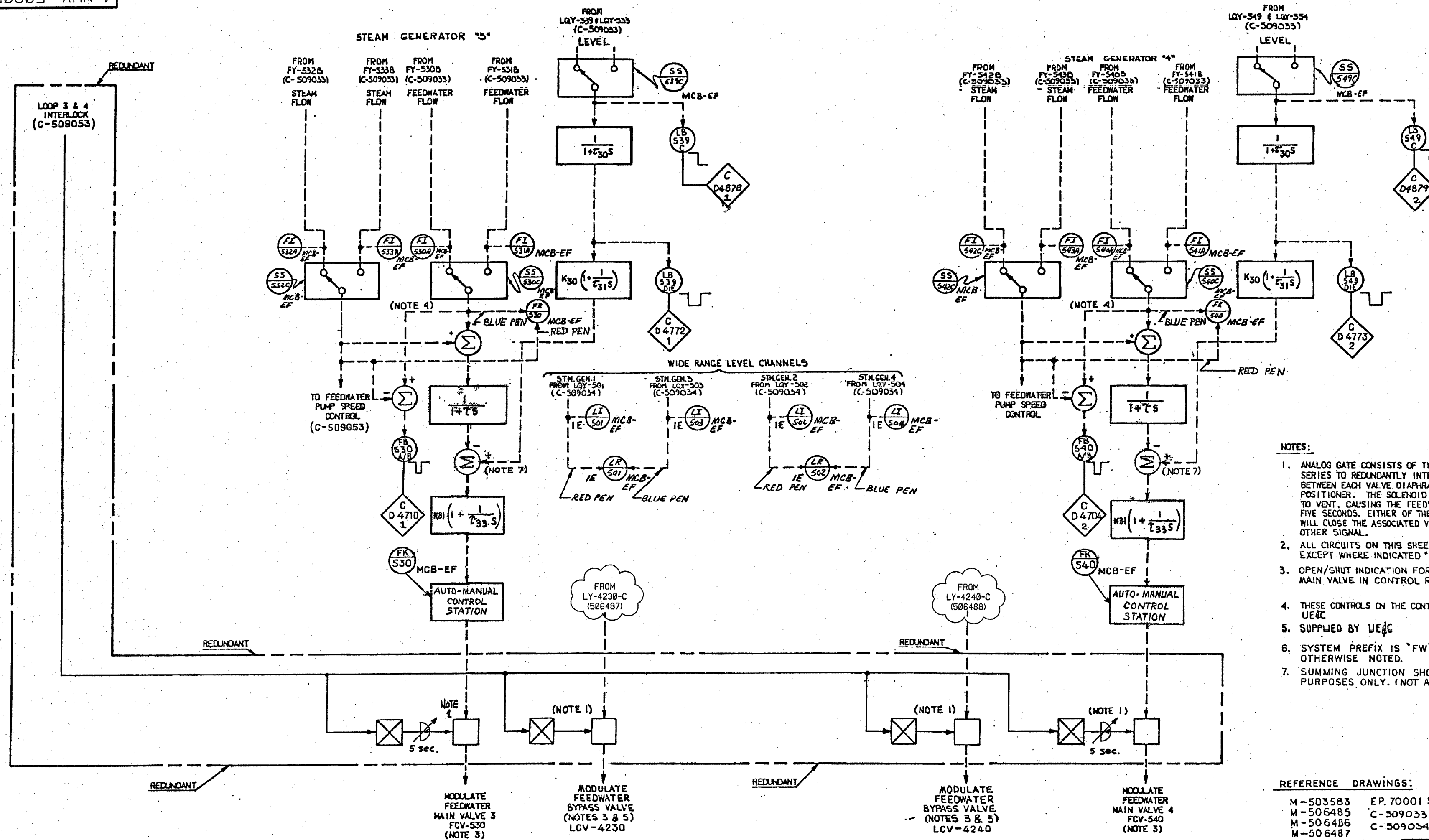
Seabrook
Station

1-NHY-509052

509053 - 1-NHN-1



1-NHY-509054



NOTES:

1. ANALOG GATE CONSISTS OF TWO SOLENOID VENT VALVES IN SERIES TO REDUNDANTLY INTERLOCK THE AIR LINE BETWEEN EACH VALVE DIAPHRAGM AND ITS ASSOCIATED POSITIONER. THE SOLENOID VALVES ARE DE-ENERGIZE TO VENT, CAUSING THE FEEDWATER VALVE TO CLOSE IN FIVE SECONDS. EITHER OF THE TWO REDUNDANT BLOCK SIGNALS WILL CLOSE THE ASSOCIATED VALVES INDEPENDENT OF THE OTHER SIGNAL.
2. ALL CIRCUITS ON THIS SHEET ARE NOT REDUNDANT, EXCEPT WHERE INDICATED "REDUNDANT".
3. OPEN/SHUT INDICATION FOR EACH FEEDWATER MAIN VALVE IN CONTROL ROOM.
4. THESE CONTROLS ON THE CONTROL BOARD ARE SUPPLIED BY UE&C.
5. SUPPLIED BY UE&C.
6. SYSTEM PREFIX IS "FW" UNLESS OTHERWISE NOTED.
7. SUMMING JUNCTION SHOWN FOR FUNCTIONAL PURPOSES ONLY. (NOT AN ACTUAL DEVICE)

REFERENCE DRAWINGS:

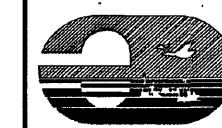
M-503583 E.P. 70001 SH.33,34
 M-506485 C-509033
 M-506486 C-509034
 M-506487
 M-506488

NUCLEAR SAFETY RELATED

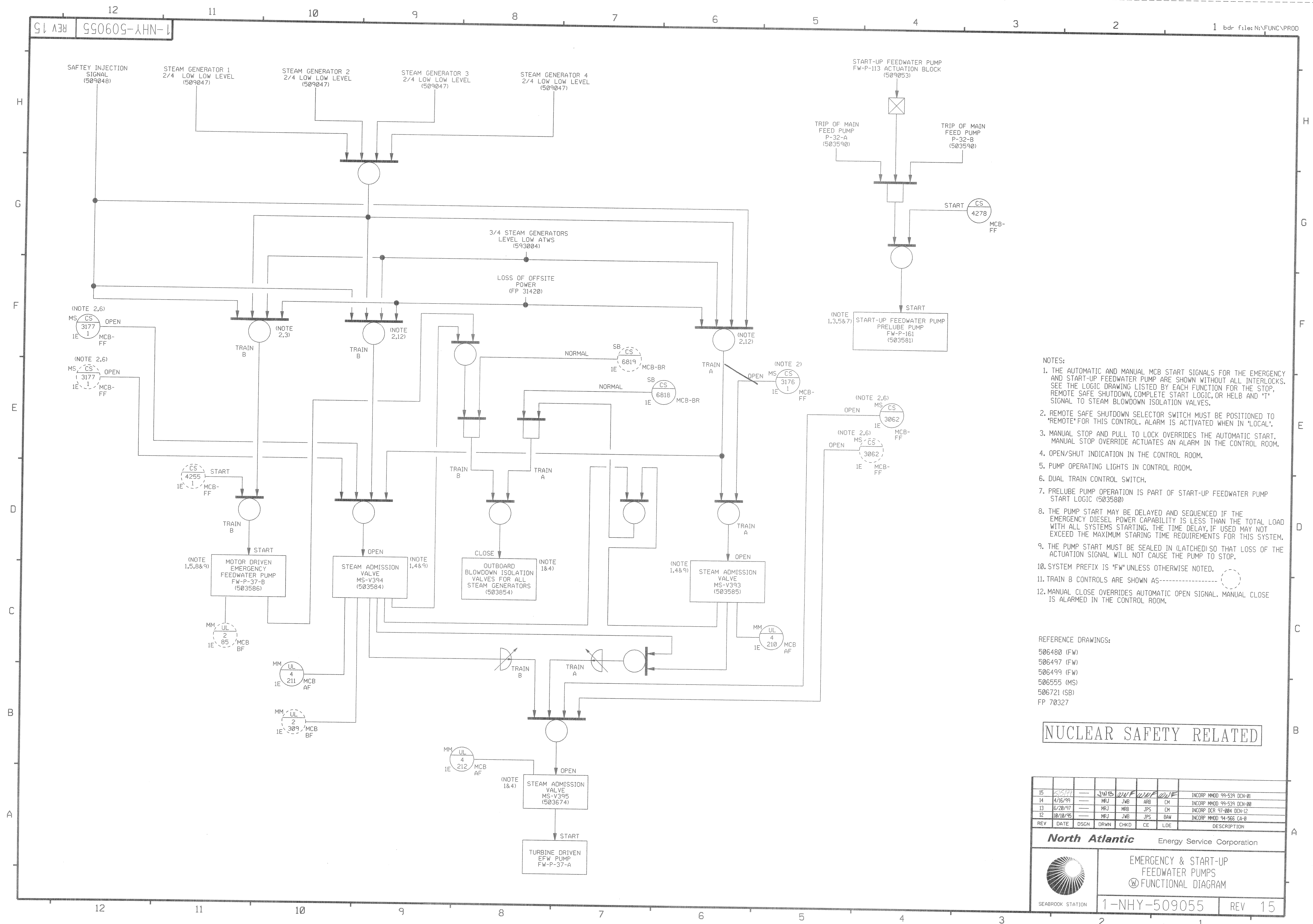
REDRAW OF FP70326
 W7275DO4 SHT.1A

ISSUED-FOR-CONSTRUCTION

| | | | | | | |
|--|---------|------|------|-----|-----|---------------------------|
| 8 | 4/2/00 | MRB | TLM | WVF | QCO | INCCORP 07MMDD527, DCN-01 |
| 7 | 12/6/95 | MRB | JWB | BAW | CM | INCCORP 94DCR039, DCN-03 |
| REV | DATE | DRWN | CHKD | CE | LDE | DESCRIPTION |
| FPL Energy Seabrook Station | | | | | | |
| FW CONTROL & ISOLATION W FUNCTIONAL DIAGRAM | | | | | | |
| 1-NHY 509054 REV 8 | | | | | | |

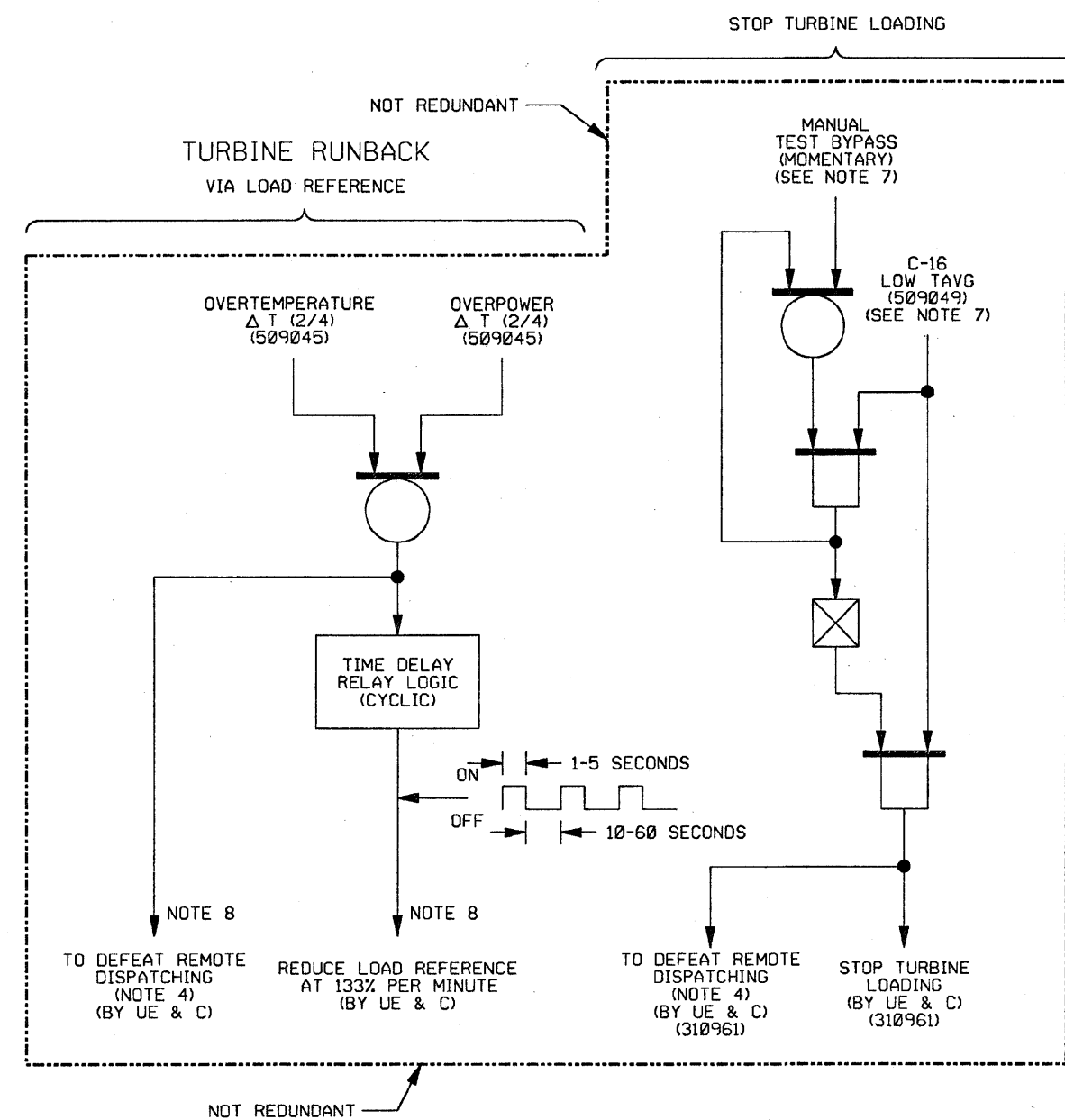
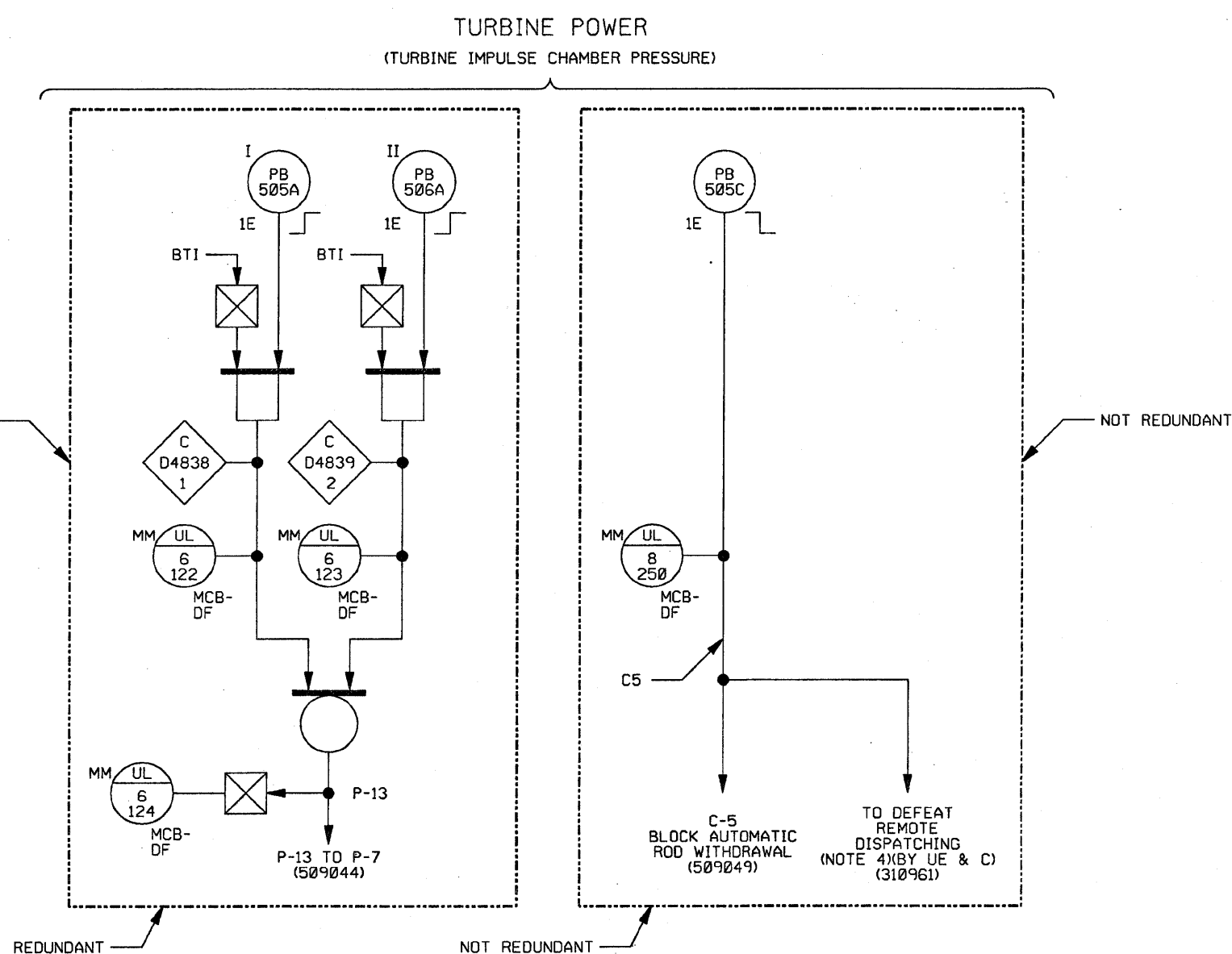
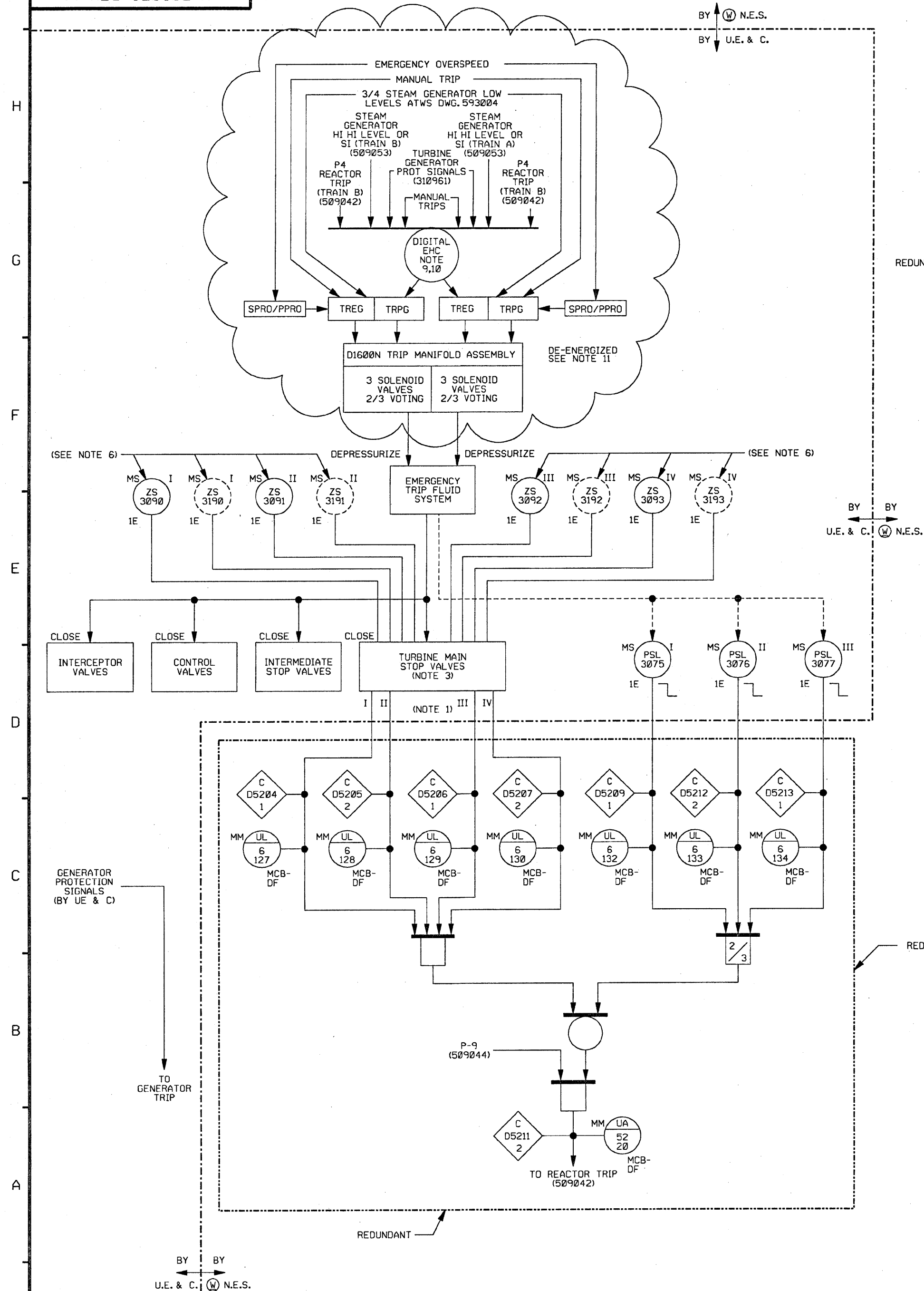
FW CONTROL & ISOLATION
W FUNCTIONAL DIAGRAM

1-NHY 509054 REV 8



1-NHY-509056 REV 14

1 bdr file: NAYUNC PROD



- NOTES:
1. THESE SIGNALS INDICATE THE CLOSING (LESS THAN FULL OPEN) OF THE STOP VALVES. POSITION DETECTION IS ACCOMPLISHED BY TWO CONTACTS PER STOP VALVE, ONE FOR EACH TRAIN. THE LOGIC SHOWN IS FOR FOUR STOP VALVES.
 2. REDUNDANCY IS INDICATED IN REGARDS TO WESTINGHOUSE NUCLEAR ENERGY SYSTEMS REQUIREMENTS ONLY.
 3. OPEN/SHUT INDICATION IN CONTROL ROOM FOR EACH STOP VALVE.
 4. THE REMOTE DISPATCHING IS TYPICAL. ACTUAL IMPLEMENTATION MAY NOT INCLUDE REMOTE DISPATCHING.
 5. SYSTEM PREFIX IS 'FW' UNLESS OTHERWISE NOTED.
 - 6.
 7. MANUAL TEST BY-PASS SWITCH IS NOT INSTALLED.
 8. DEFEAT DISPATCHING AND LOAD REDUCTION NOT USED. (REF: DCR 92-0033)
 9. LOGIC PERFORMED BY MK VLS DIGITAL EHC TMR PROCESSORS.
 10. FOR A COMPLETE LIST OF TURBINE TRIPS REFER TO 1-NHY-503229.
 11. SUCCESSFUL OPERATION (DE-ENERGIZATION) OF ANY 2 OUT OF 3 SOLENOIDS IN EITHER HYDRAULIC CIRCUIT WILL INITIATE A TURBINE TRIP.

NUCLEAR-SAFETY-RELATED

| | | | | | | |
|-----|---------|------|------|------|-----|--|
| 14 | 1/18/95 | MRB | MRB | TLM | CM | INCORP EC12635 |
| 13 | 1/18/95 | JWB | JWB | TLM | JPS | INCORP 07MM00500 DCN00 |
| 12 | 1/18/95 | RJS | RJS | MRJ | WNF | REDRAWN: INCORP, DCR 94-0002, CA-8 EDITORIAL CHANGES |
| REV | DATE | DSGN | DRWN | CHKD | CE | LDE |

Seabrook Station

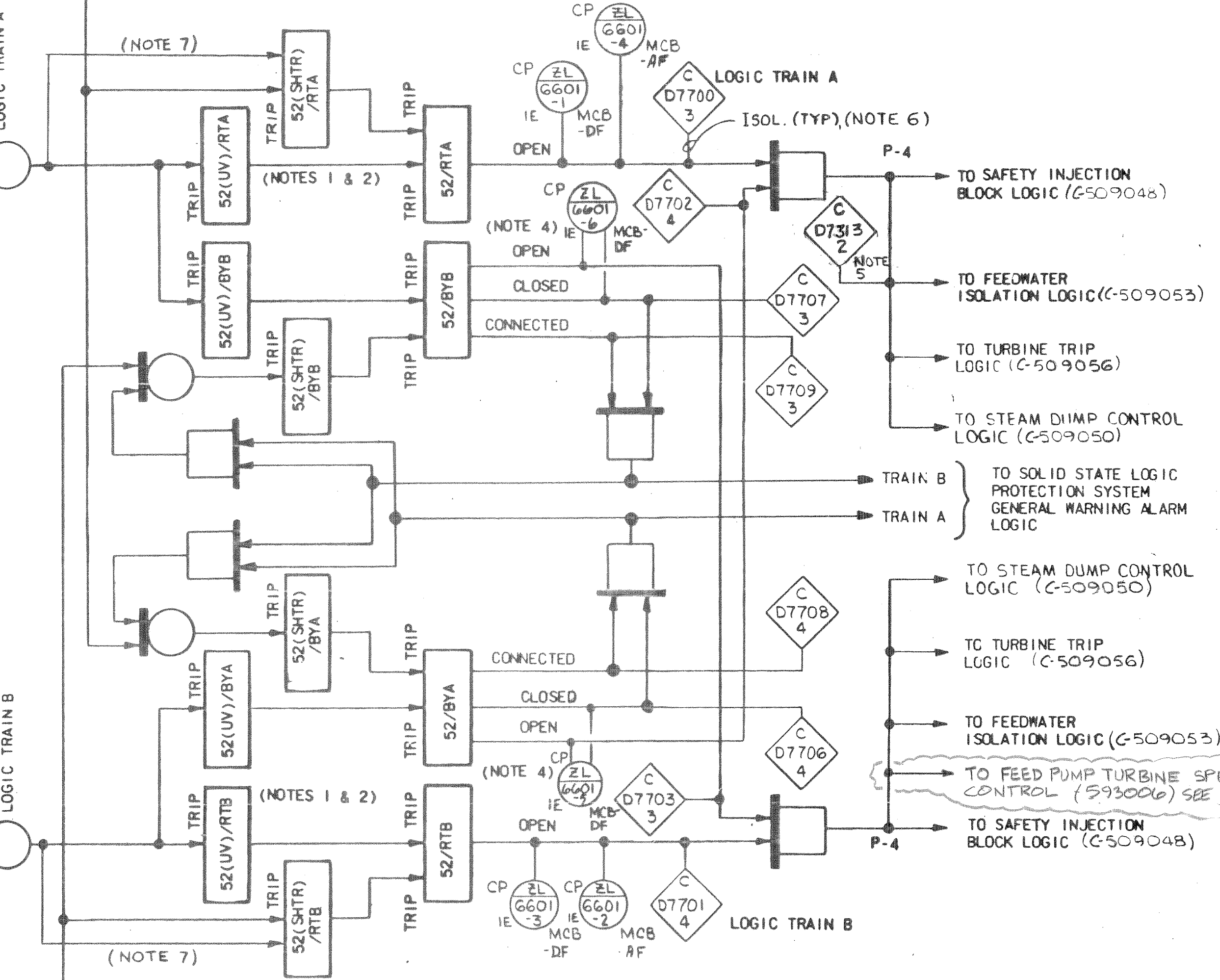
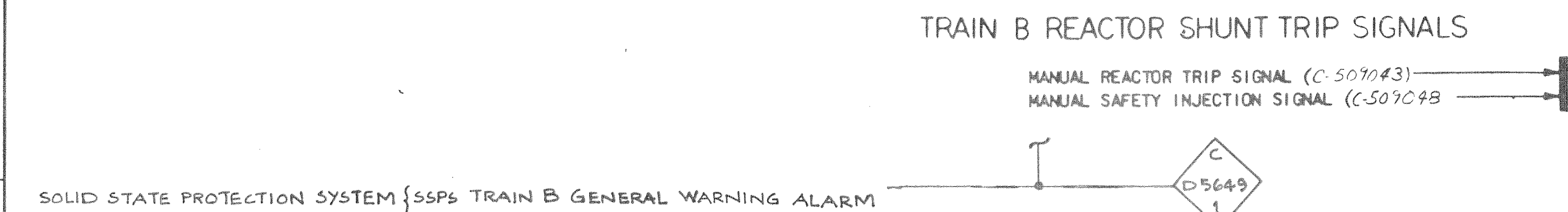
NEXTERA ENERGY

FW- TURBINE TRIP/RUN BACK W FUNCTIONAL DIAGRAMS

1-NHY-509056 REV 14

REFERENCE DRAWINGS: 506556 (MS)

REDRAW OF F.P. 70328 W 7245002 SHT. 16



- DWG. TRANSFERRED TO CUSTODY
OF NHY AT REV. 7
LTS 801 240722 DTD. 10/14/86
NUCLEAR SAFETY RELATED
ISSUED-FOR-CONSTRUCTION

| | | | | | | | | | |
|----------|---------|---|-------------|---------|---------|-----------|-----|-----|-----|
| 7 | 5/12/86 | ECA 99/113274C ECA 05/113261C | GT | ARW | ARW | ARW | - | ARW | |
| 6 | 3-7-86 | ECA 99/113082A | ARW | ARW | ARW | ARW | - | ARW | |
| 5 | 4/27/85 | REVISED PER W F.P. 70314 | ARW | HK | ARW | ARW | - | ARW | |
| 4 | 4/22/85 | DCN 650253A | ARW | ARW | ARW | ARW | - | ARW | |
| 3 | 7/27/84 | REV. INCOM. WITH M-313084 | ARW | ARW | ARW | ARW | - | ARW | |
| 2 | 5/29/84 | REV. PER ENG. ASSURANCE AUDIT REPORT NHE-5 | ARW | ARW | ARW | ARW | - | ARW | |
| 1 | 5/29/83 | FIRST ISSUE | 5000 ARW | ARW | ARW | ARW | - | ARW | |
| REV. NO. | DATE | DESCRIPTION | FE | OWN. BY | CKD. BY | RES. ENG. | USE | QAE | PEM |

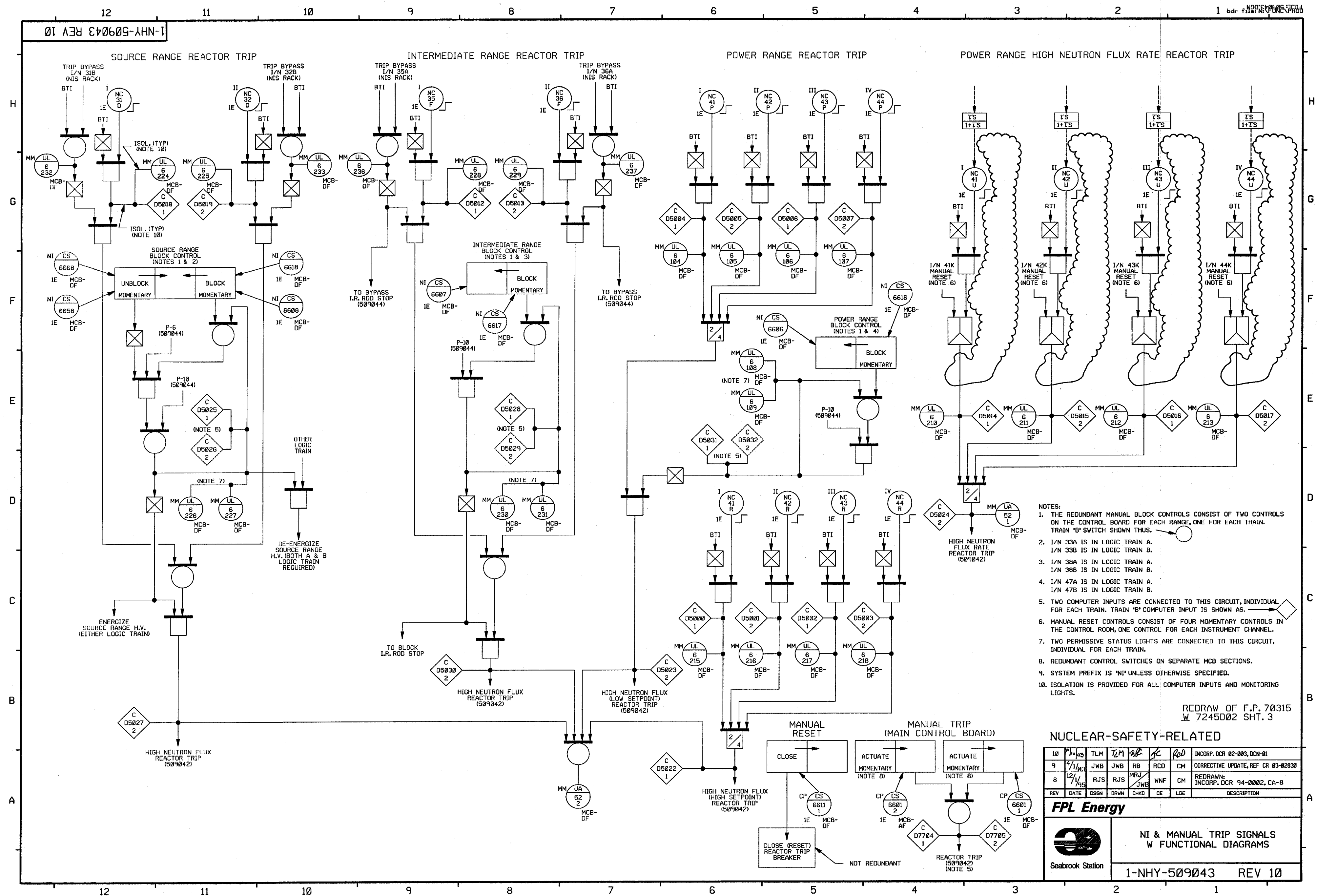
REACTOR TRIP SIGNALS
W FUNCTIONAL DIAGRAMS

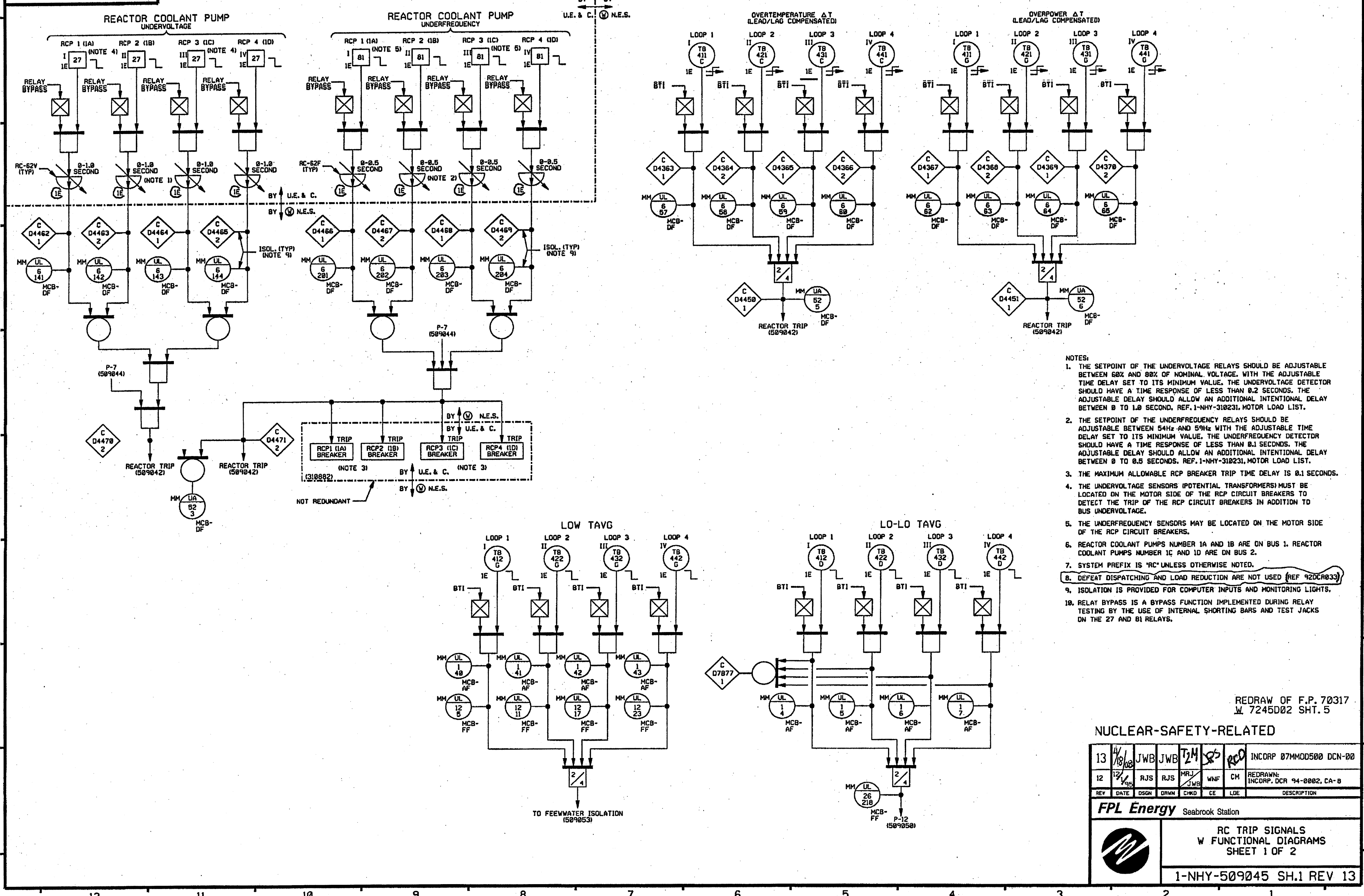
New Hampshire
Yankee

Seabrook
Station

1-NHY-509042

REV
10





- NOTES:
1. THE SETPOINT OF THE UNDERVOLTAGE RELAYS SHOULD BE ADJUSTABLE BETWEEN 60% AND 80% OF NOMINAL VOLTAGE. WITH THE ADJUSTABLE TIME DELAY SET TO ITS MINIMUM VALUE, THE UNDERVOLTAGE DETECTOR SHOULD HAVE A TIME RESPONSE OF LESS THAN 0.2 SECONDS. THE ADJUSTABLE DELAY SHOULD ALLOW AN ADDITIONAL INTENTIONAL DELAY BETWEEN 0 TO 1.0 SECOND, REF. 1-NHY-310231, MOTOR LOAD LIST.
 2. THE SETPOINT OF THE UNDERFREQUENCY RELAYS SHOULD BE ADJUSTABLE BETWEEN 54Hz AND 59Hz WITH THE ADJUSTABLE TIME DELAY SET TO ITS MINIMUM VALUE. THE UNDERFREQUENCY DETECTOR SHOULD HAVE A TIME RESPONSE OF LESS THAN 0.1 SECONDS. THE ADJUSTABLE DELAY SHOULD ALLOW AN ADDITIONAL INTENTIONAL DELAY BETWEEN 0 TO 0.5 SECONDS, REF. 1-NHY-310231, MOTOR LOAD LIST.
 3. THE MAXIMUM ALLOWABLE RCP BREAKER TRIP TIME DELAY IS 0.1 SECONDS.
 4. THE UNDERVOLTAGE SENSORS (POTENTIAL TRANSFORMERS) MUST BE LOCATED ON THE MOTOR SIDE OF THE RCP CIRCUIT BREAKERS TO DETECT THE TRIP OF THE RCP CIRCUIT BREAKERS IN ADDITION TO BUS UNDERVOLTAGE.
 5. THE UNDERFREQUENCY SENSORS MAY BE LOCATED ON THE MOTOR SIDE OF THE RCP CIRCUIT BREAKERS.
 6. REACTOR COOLANT PUMPS NUMBER 1A AND 1B ARE ON BUS 1. REACTOR COOLANT PUMPS NUMBER 1C AND 1D ARE ON BUS 2.
 7. SYSTEM PREFIX IS "RC" UNLESS OTHERWISE NOTED.
 8. DEFEAT DISPATCHING AND LOAD REDUCTION ARE NOT USED (REF 920CR033).
 9. ISOLATION IS PROVIDED FOR COMPUTER INPUTS AND MONITORING LIGHTS.
 10. RELAY BYPASS IS A BYPASS FUNCTION IMPLEMENTED DURING RELAY TESTING BY THE USE OF INTERNAL SHORTING BARS AND TEST JACKS ON THE 27 AND 81 RELAYS.

REDRAW OF F.P. 70317
W 7245D02 SHT. 5

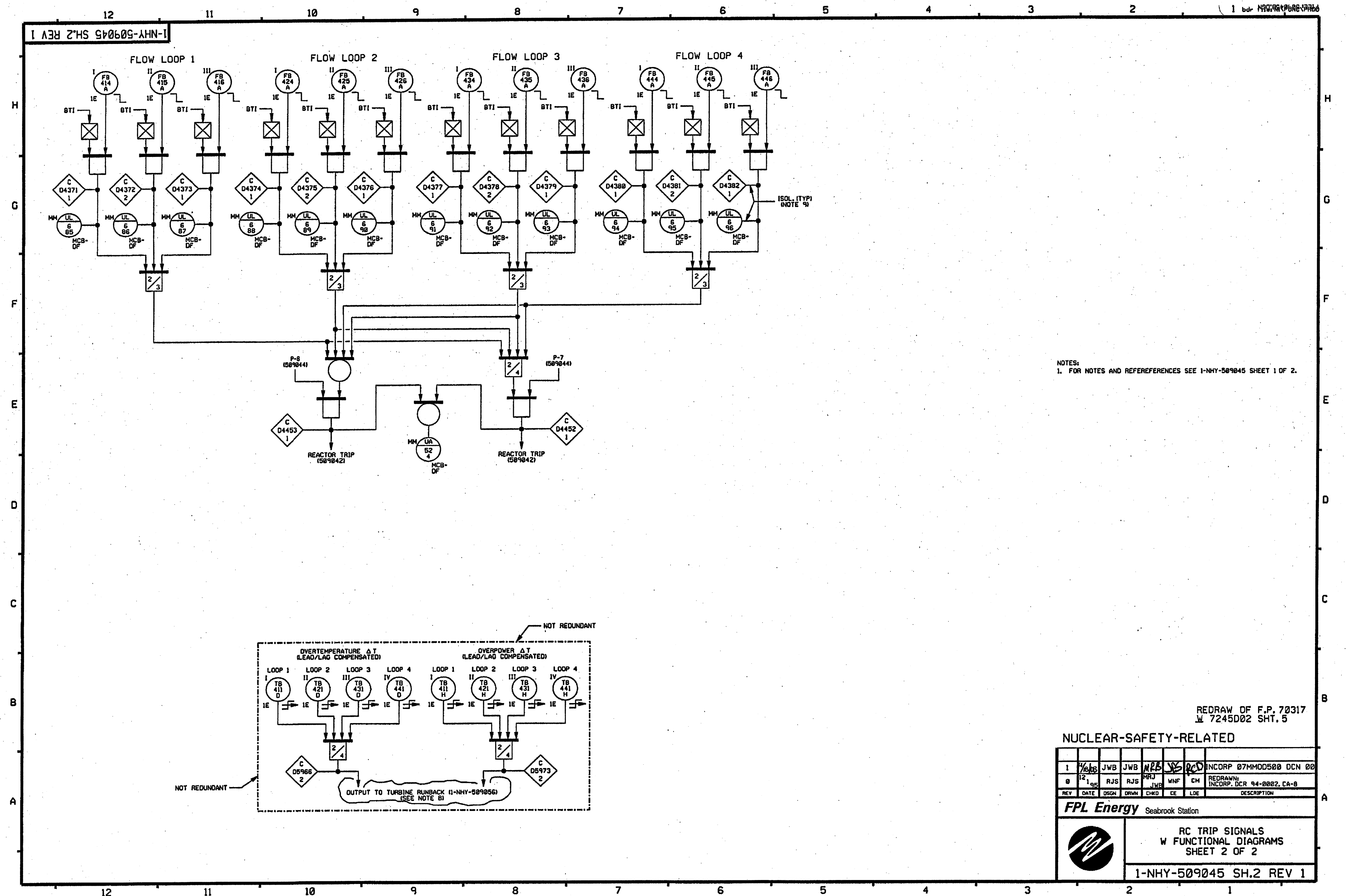
NUCLEAR-SAFETY-RELATED

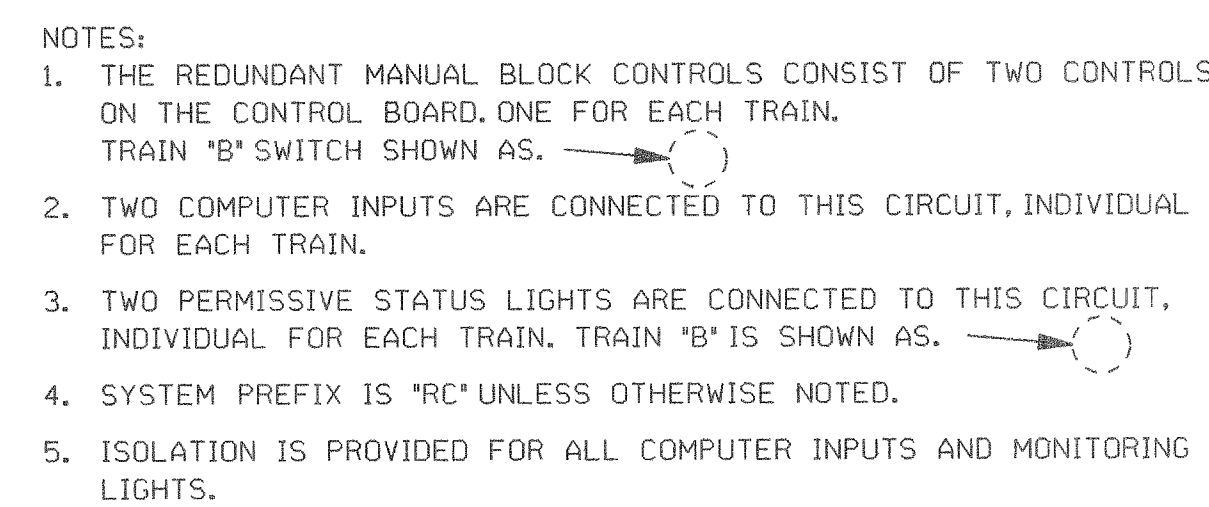
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|-----|---------|------|------|------|-----|-----|------------------------------------|
| 13 | 4/18/02 | JWB | JWB | T24 | 24 | RC | INCORP 07MMOD500 DCN-00 |
| 12 | 12/1/01 | RJS | RJS | MRJ | WNF | CM | REDRAWN: INCORP. DCR 94-0002, CA-8 |
| REV | DATE | DSGN | DRWN | CHKD | CE | LDE | DESCRIPTION |

FPL Energy Seabrook Station

RC TRIP SIGNALS
W FUNCTIONAL DIAGRAMS
SHEET 1 OF 2

1-NHY-509045 SH.1 REV 13





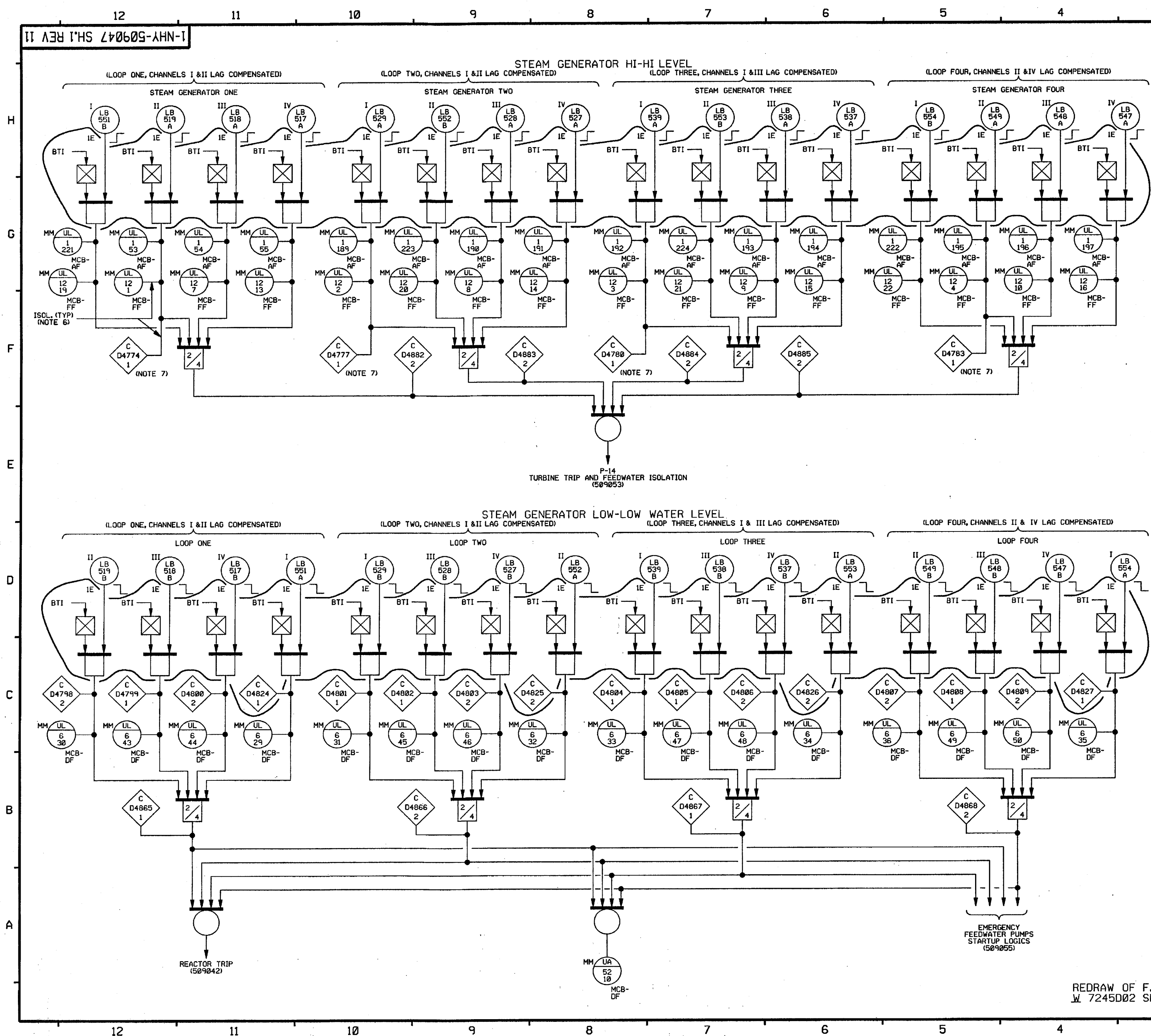
| 7 | 9-20-00 | — | MJR | JWB | SPS | ML | INCORP. MMOD 96-619 DCN-08 | | |
|-----|---------|------|-------|------|-----|-----|-------------------------------------|--|--|
| 6 | 12-7-95 | RJS | MJR | JWB | WNF | CM | REDRAWN: INCORP. DCR 94-0002, CA=08 | | |
| REV | DATE | DSGN | DRAWN | CHKD | CE | LDE | DESCRIPTION | | |

Energy Service Corporation



1-NHY-509046 REV 7

REDRAW OF F.P. 70318
W 7245D02 SHT. 6

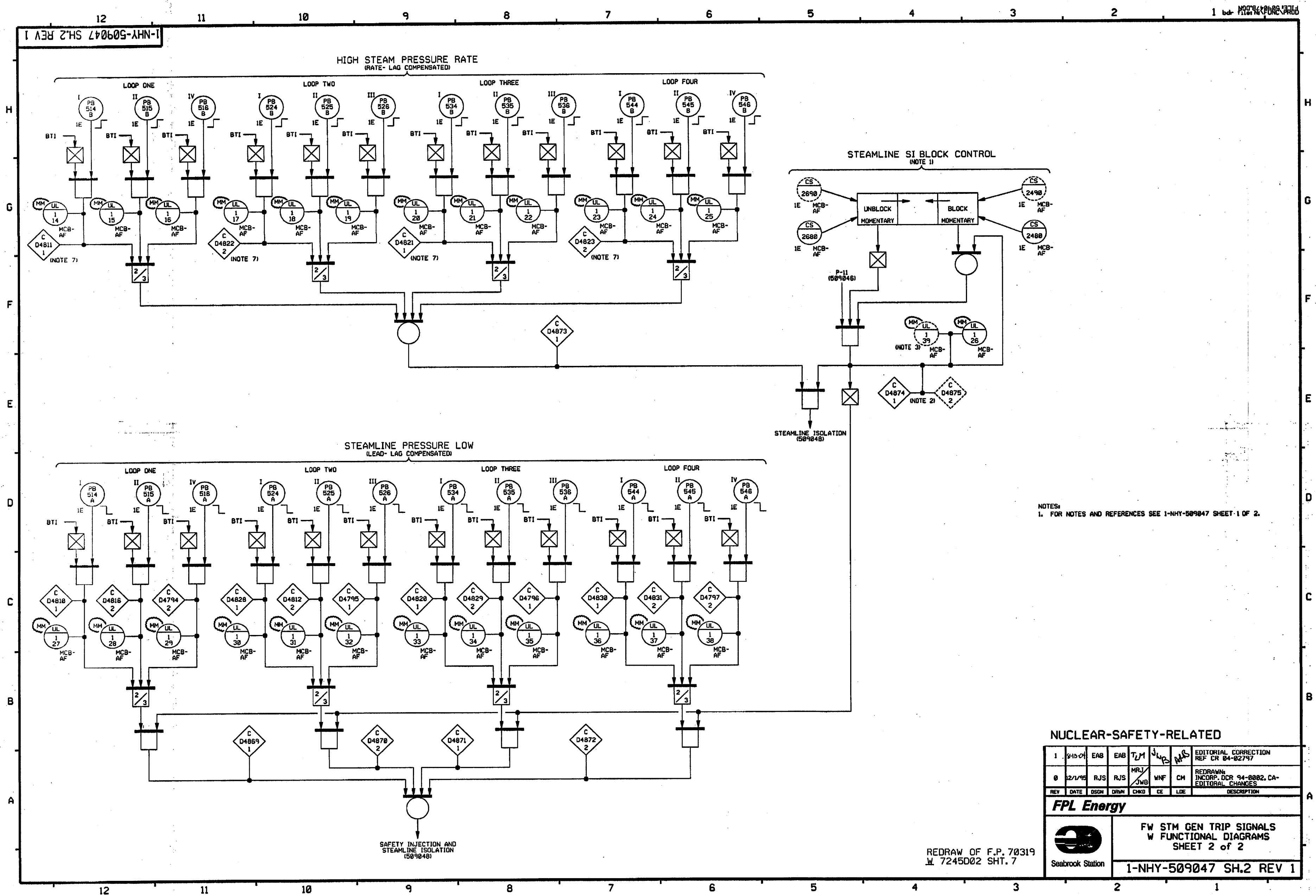


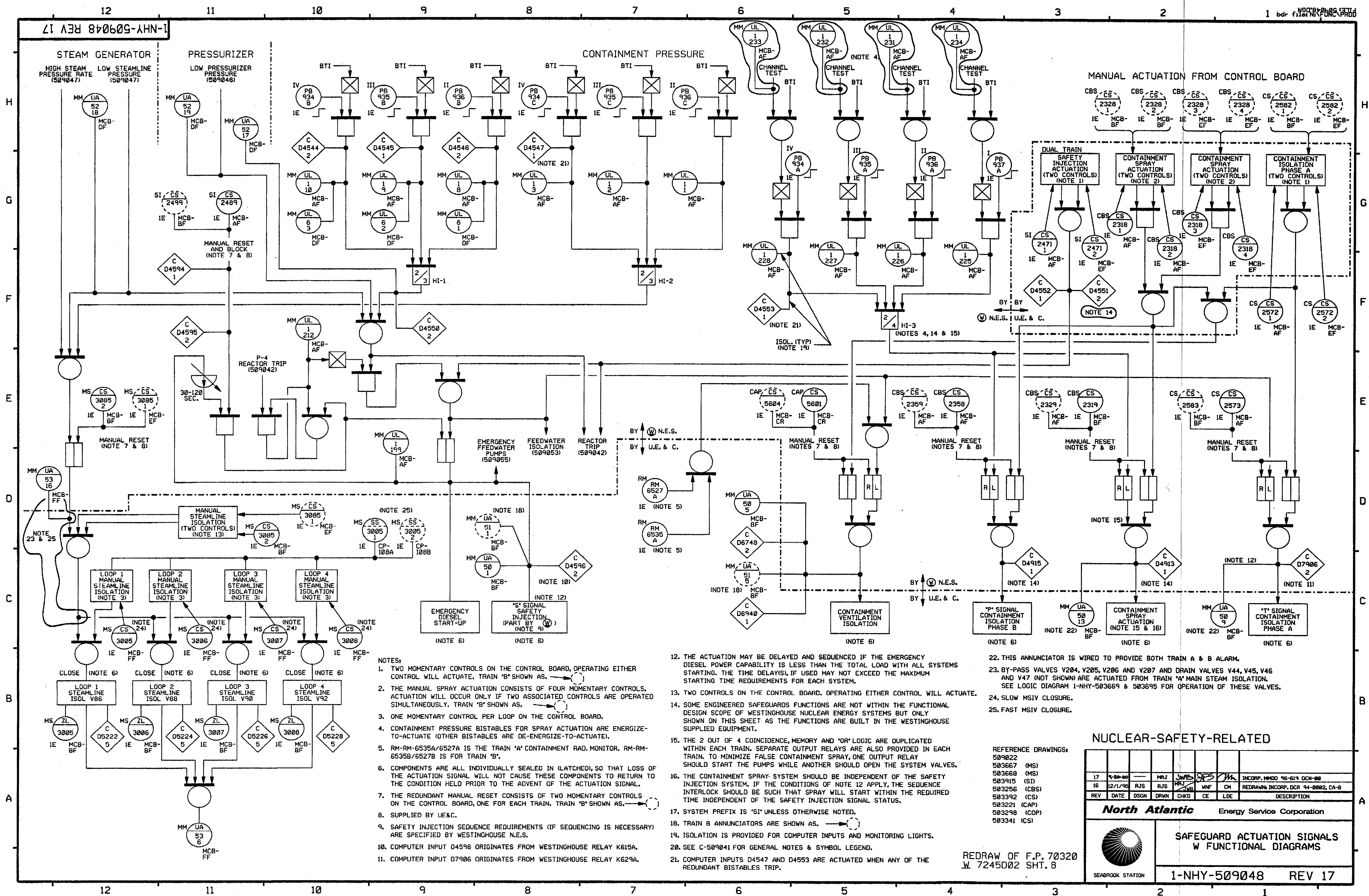
- NOTES:
1. THE REDUNDANT MANUAL BLOCK CONTROLS CONSIST OF TWO CONTROLS ON THE CONTROL BOARD, ONE FOR EACH TRAIN. TRAIN "B" IS SHOWN AS.
 2. TWO COMPUTER INPUTS ARE CONNECTED TO THIS CIRCUIT, INDIVIDUAL FOR EACH TRAIN. TRAIN "B" COMPUTER INPUT IS SHOWN AS.
 3. TWO PERMISSIVE STATUS LIGHTS ARE CONNECTED TO THIS CIRCUIT, INDIVIDUAL FOR EACH TRAIN. TRAIN "B" IS SHOWN AS.
 4. SYSTEM PREFIX IS "FW" UNLESS OTHERWISE NOTED.
 5. STEAM GEN. LO-LO WATER LEVEL ALARMS NUMBER WERE ADDED PER DCN-650054A.
 6. ISOLATION IS PROVIDED FOR ALL COMPUTER INPUTS AND MONITORING LIGHTS.
 7. COMPUTER INPUTS D4774, D4777, D4780, D4783, D4811, D4821, D4822 & D4823 ARE ACTUATED WHEN ANY OF THE REDUNDANT BISTABLES TRIP.

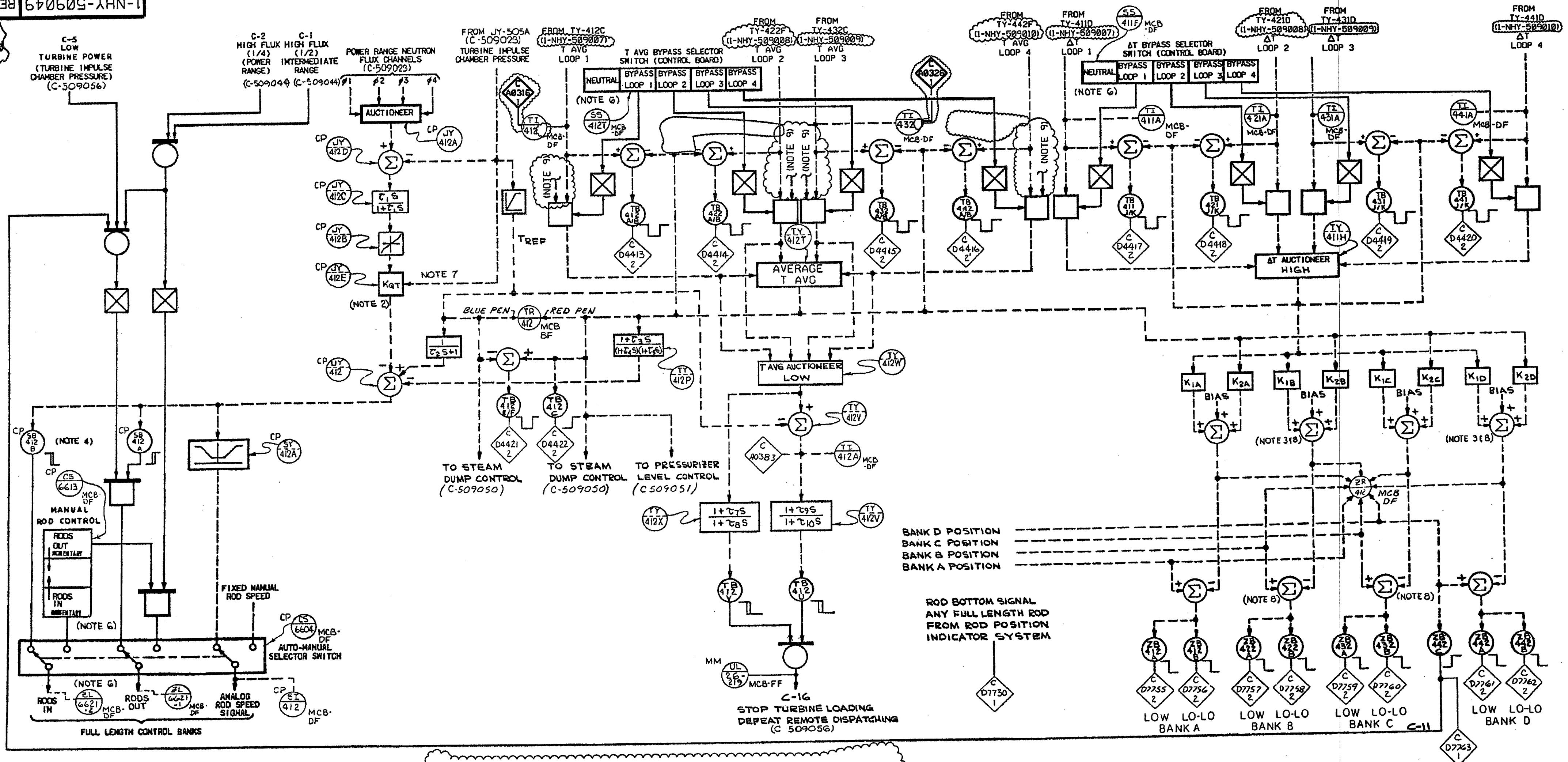
NUCLEAR-SAFETY-RELATED

| | | | | | | | | |
|--|-----|------|------|------|------|----|-----|-------------|
| 11 | REV | DATE | OSGN | DRWN | CHKD | CE | LDE | DESCRIPTION |
| | | | | | | | | |
| North Atlantic Energy Service Corporation | | | | | | | | |
| FW STM GEN TRIP SIGNALS W FUNCTIONAL DIAGRAMS (SHEET 1 of 2) | | | | | | | | |
| 1-NHY-509047 SH.1 REV 11 | | | | | | | | |

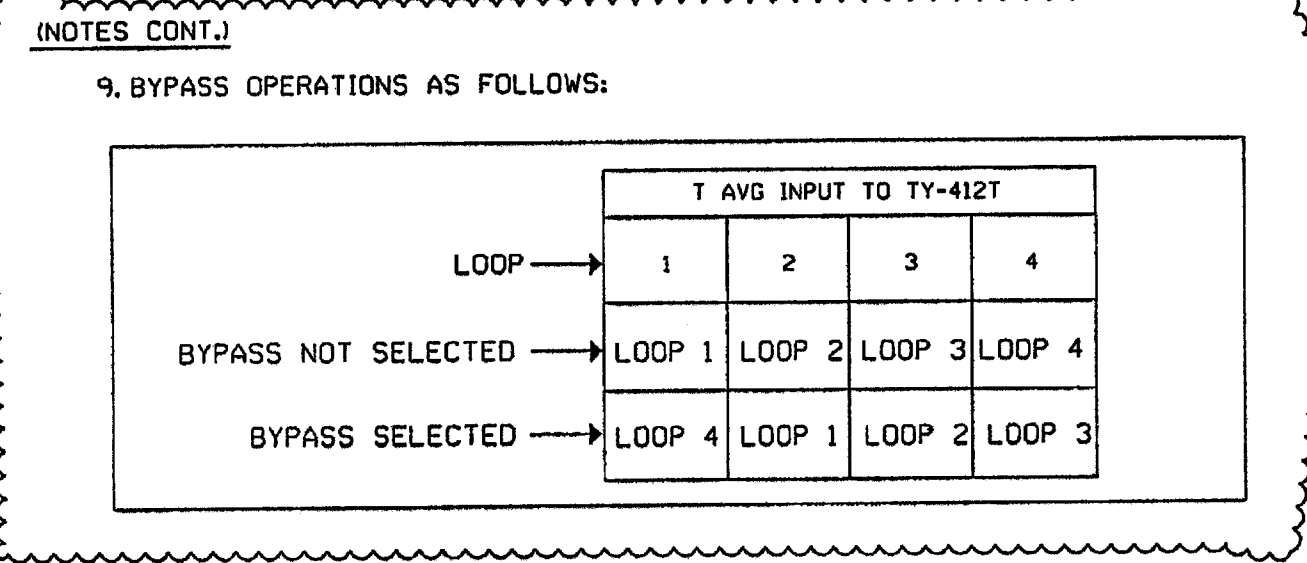
REDRAW OF F.P. 70319
W 7245D02 SHT. 7







- NOTES**
1. ALL CIRCUITS ON THIS SHEET ARE NOT REDUNDANT.
 2. KGT MAY VARY INVERSELY PROPORTIONAL TO LOAD WITH A FIXED LIMIT OR MAY VARY IN TWO DISCRETE STEPS WITH BREAK POINTS AT 30 TO 50 % AND GO TO 80% TURBINE LOAD.
 3. THE SUMMER OUTPUTS HAVE FIXED MANUALLY ADJUSTABLE UPPER LIMITS.
 4. THE ROD DIRECTION BISTABLES NO. SB-412A AND SB-412B ARE "ENERGIZED TO ACTUATE".
 5. SYSTEM PREFIX IS "RC" UNLESS OTHERWISE NOTED.
 6. THESE CONTROLS ON THE CONTROL BOARD ARE SUPPLIED BY U & C.
 7. REFER TO C-509023 FOR ACTUAL HARDWARE IMPLEMENTATION
 8. REFER TO C-509030 FOR ACTUAL HARDWARE IMPLEMENTATION



REFERENCE DWGS
M-506628 F.P. 70001 SH23,32,30,31
C-509023
C-509032
C-509030
C-509031

ISSUED-FOR-CONSTRUCTION

| | | | | | | |
|-----|----------|------|------|-----|-----|----------------------------------|
| 8 | 10/10/85 | TPG | MRB | ACD | RS | CR 05-01761-01 EDITORIAL CHANGES |
| 7 | 4/22/85 | MRB | TLH | RCD | CM | INCRP DCR 04-001, DCN-00 |
| 6 | 11/6/92 | JWB | WDS | RWM | BEB | INCRP DCR 92-033, CA-01 |
| REV | DATE | DRWN | CHKD | CE | LOE | DESCRIPTION |

FPL Energy Seabrook Station

**ROD CONTROL & BLOCKS
W FUNCTIONAL DIAGRAMS**

1-NHY-509049 REV 07