



CONTROL LOGICS (CONT'D)

CL-14 MAKEUP PUMP 1-1 AUXILIARY DC LUBE OIL PUMP P371C (ZONE E-54) WILL START AUTOMATICALLY PROVIDED CONDITIONS 1 OR 11 AND 111 EXIST:

1. MAKEUP PUMP 1-1 (ZONE F-41) SEE *CL-10* IS RUNNING.
11. MAIN AC LUBE OIL PUMP P371B (ZONE E-54) SEE *CL-11* IS RUNNING.
111. LUBE OIL PRESSURE IS ≥ 15 PSIG AS SENSED BY PSMU05B (ZONE E-54).

AUX DC LUBE OIL PUMP IS MANUALLY STARTED BY PLACING ITS HANDSWITCH HISMU24A2 (ZONE D-55) IN "START".

AUX DC LUBE OIL PUMP WILL STOP AUTOMATICALLY PROVIDED THE FOLLOWING CONDITIONS EXIST:

- A. MAKEUP PUMP 1-1 OR MAIN AC LUBE OIL PUMP P371B ARE RUNNING.
- B. LUBE OIL PRESSURE IS ≥ 15 PSIG AS SENSED BY PSMU05B AND AUX DC LUBE OIL PUMP HAS NOT AUTOMATICALLY RESTARTED.

AUX DC LUBE OIL PUMP WILL RUN AS THE MAIN SOURCE OF LUBE OIL TO THE MAKEUP PUMP DURING A LOOP EVENT. IT WILL CONTINUE TO RUN AS THE MAIN SOURCE OF LUBE OIL AFTER VOLTAGE IS RESTORED AND WHEN MAKEUP PUMP 1-1 STARTS 2.5 SECONDS AFTER THE EDG OUTPUT BREAKER CLOSES.

AUX DC LUBE OIL PUMP IS MANUALLY STOPPED WHEN ITS HANDSWITCH HISMU24A2 "STOP" PUSHBUTTON IS DEPRESSED WHEN MAKEUP PUMP 1-1 AND MAIN AC LUBE OIL PUMP 1-1 ARE NOT RUNNING.

AUX DC LUBE OIL PUMP WILL RESTART IF MAKEUP PUMP 1-1 OR AC LUBE OIL PUMP 1-1 IS RUNNING AND LUBE OIL PRESSURE HAS FALLEN FROM ≥ 15 PSIG TO ≤ 5 PSIG AS SENSED BY PSMU05B.

LOGIC FOR MAKEUP PUMP 1-2 AUXILIARY DC LUBE OIL PUMP P372C (ZONE J-55) IS SIMILAR.

CL-15 LOSS OF OFFSITE POWER (LOOP) EVENTS:
LOOP ONLY:

IF MAKEUP PUMP 1-1 (ZONE F-41) WAS RUNNING PRIOR TO LOSS OF OFFSITE POWER, IT WILL BE SHED BY UV RELAYS AND START 2.5 SECONDS AFTER THE EDG OUTPUT BREAKER CLOSES.

SFAS WITH LOOP:

IF MAKEUP PUMP 1-1 (ZONE F-41) WAS RUNNING PRIOR TO SFAS, IT WILL BE SHED BY UV RELAYS AND START 2.5 SECONDS AFTER THE EDG OUTPUT BREAKER CLOSES.

LOGIC FOR MAKEUP PUMP 1-2, P37-2 (ZONE J-41) IS SIMILAR

NOTES

1. ALL VALVES ARE PREFIXED WITH "MV" UNLESS OTHERWISE NOTED.
2. VALVE 1A642 (ZONE B-7) IS ALSO TAGGED AS PCVMU3A.
3. FOR GENERAL NOTES, PIPING SYMBOLS, INSTRUMENTATION SYMBOLS AND OPERATIONAL SCHEMATIC INDEX, SEE INDEX SHEET DWG 05-000.
4. SYSTEM IS LINED UP FOR NORMAL OPERATING MODE IN ACCORDANCE WITH PROCEDURES.
5. DURING REACTOR COOLING SYSTEM DRAINING, FSHM039 (ZONE J-6) SETPOINT IS PHYSICALLY LOWERED TO 25 GPM BY THE 1&C DEPT. PER PROCEDURES.
6. MAXIMUM ALLOWABLE FLOW RATE THROUGH MIXED BED PURIFICATION DEMINERALIZERS (ZONE D-12, H-12 AND K-12) IS 70 GPM. MINIMUM ALLOWABLE FLOW RATE IS 25 GPM.
7. SOLENOID VALVES 9A778A AND 9A778B (ZONES C-41 AND C-42) ARE ALSO TAGGED AS SV4977 AND SV4978 RESPECTIVELY.
8. FOR THE OPERATION OF VALVE 32 (ZONE J-37), SEE REACTOR COOLANT SYSTEM DWG 05-001A, *CD-2*.
9. 125VDC CONTROL POWER FOR BREAKERS AC105 AND AD105 (ZONES E-42 AND J-42) IS SUPPLIED FROM THEIR RESPECTIVE SWITCHGEAR 125VDC CONTROL SEE 05-058 NOTES 7 AND 8.
10. THE FOLLOWING HANDSWITCHES ARE SPRING RETURN TO "AUTO" FROM "START" OR "STOP":

HANDSWITCH	ZONE	HANDSWITCH	ZONE
HISMU24A1	D-55	HISMU24B1	J-55
HISMU24A2	D-55	HISMU24B2	J-55
HISMU24A3	D-60	HISMU24B3	H-60
11. REACTOR COOLANT SEAL RETURN ISOLATION VALVES 59A, 59B, 59C AND 59D (ZONES K-21, J-21, G-21 AND F-21) AND LETDOWN COOLER OUTLET VALVE 2A (ZONE E-5) MUST BE $\geq 20\%$ OPEN TO AUTOMATICALLY CLOSE ON AN SFAS SIGNAL. SEE *CL-1*.
12. SETPOINT FOR RSH1988 (ZONE A-11) IS SPECIFIED BY RADIOLOGICAL CONTROLS IN THE DAVIS-BESSE RADIATION MONITOR SETPOINT MANUAL.
13. DELETED.
14. VALVES 1A648, 1A636, 1A654, 1A660, 1A630, 1A6406B AND 1A6407B ARE ALSO TAGGED AS PCVMU3A, PCVMU6A1, PCVMU6B1, PCVMU6C1, PCVMU6D1, PSV6406, AND PSV6407, RESPECTIVELY (ZONES D-19, K-28, H-28, G-28, F-28, J-41 AND G-41).
15. WHITE INDICATING LIGHT (ZONE D-43) ILLUMINATES IF MAKEUP PUMP 1-1 (ZONE F-41) SENSES PHASE A OR C TIME DELAY OVERCURRENT (SEE *CL-10*). NOTE FOR WHITE INDICATING LIGHT (ZONE H-42) FOR MAKEUP PUMP 1-2 IS SIMILAR.
16. VALVES WILL NOT OPERATE ON A VALVE MOTOR THERMAL OVERLOAD.
17. VALVES 230, 231, 232 AND 233 (ZONES K-31, J-31, G-31 AND F-31) ARE THROTTLED AS NECESSARY TO BALANCE FLOW PER DB-05006.
18. FOR MAKEUP SEAL INJECTION AND RETURN DETAILS TO REACTOR COOLANT PUMPS SEE REACTOR COOLANT PUMPS AND MOTORS DWG 05-001B, ZONES J-5, J-6, J-10, J-5, J-22, J-23, J-27 AND J-26.
19. LOCAL CONTROL STATION NV6418 (NOT SHOWN) FOR VALVE 6418 (ZONE F-37) IS CONVERTED TO JOG (MODULATOR) OPERATION. THE STOP PUSHBUTTON IS NO LONGER FUNCTIONAL.
20. DELETED.
21. COMPUTER POINT 0739 (ZONES A-7, C-19, E-26, F-29, G-29 AND J-29) WILL ANNUNCIATE WHEN AIR VOLUME TANK PRESSURE IS 90 PSIG AS SENSED BY PSLMU3, PSLMU38, PSLMU66A, PSLMU66B, PSLMU66C OR PSLMU66D.
22. FOR ADDITIONAL OPERATION OF RCP SEAL RETURN VALVES 59A, 59B, 59C AND 59D (ZONES K-21, J-21, G-21 AND F-21) SEE REACTOR COOLANT PUMPS AND MOTORS DWG 05-001B, *CL-4*.
23. FOR ADDITIONAL OPERATION OF FSMU30A, FSMU30B, FSMU30C AND FSMU30D (ZONES J-30, H-30, F-30 AND E-30) SEE REACTOR COOLANT PUMPS AND MOTORS DWG 05-001B, *CL-4*.
24. TEMPERATURE TRANSMITTER TT1585 (ZONE H-39) PROVIDES A SIGNAL TO THE RCP DIAGNOSTIC SYSTEM.
25. VALVE 0222 IS MECHANICALLY DISABLED (REF. MOD 91-0053).
26. WHERE NOTED THE TANK CAPACITY IS NOMINAL, WHERE APPLICABLE, SEE DB-PF-06705 (TANK LEVEL CALIBRATION CURVES) FOR INDICATED LEVEL VS. VOLUME RELATIONSHIP. (REF. PAGER 36-0976).
27. SEE FEARNS FOR ALTERNATE IDENTIFICATION (TAG) NUMBERS FOR THE ELEMENTS.
28. BLUE LIGHT EXTINGUISHES WHEN THE FOLLOWING CONDITIONS EXIST:
 - ANY FUSE HAS BLOWN
 - THE DISCONNECT SWITCH IS OPEN
 - THE MCC HAS BEEN DEENERGIZED
 - THREE PHASE ELECTRICAL LOAD IMBALANCE
29. VALVES PV28 AND PV29 (ZONE D-12 AND J-2) ARE DISABLED CLOSED. REFERENCE MOD 95-0090.
30. SOME VALVES NUMBERED WITH A "PW" DESIGNATION (i.e., PW32) ARE BEING USED TO SUPPLY DEMINERALIZED WATER. REFERENCE MOD 95-0090.

REFERENCES

DRAWINGS	DRAWINGS	DRAWINGS
M-0100	E-498 SH 700	
M-0101	E-498 SH 17A	
M-0102	E-498 SH 17B	
M-0103	E-498 SH 18A	
M-0104	E-498 SH 18B	
M-0105	E-498 SH 30A	
M-0106	E-498 SH 30B	
M-0107	E-498 SH 45A	
M-0108	E-498 SH 45B	
M-0109	E-498 SH 45D	
M-0110	E-498 SH 45E	
M-0111	E-498 SH 46A	
M-0112	E-498 SH 46B	
M-0113	E-498 SH 46C	
M-0114	E-498 SH 46D	
M-0115	E-498 SH 46E	
M-0116	E-498 SH 47A	
M-0117	E-498 SH 47B	
M-0118	E-498 SH 47D	
M-0119	E-498 SH 47E	
M-0120	E-498 SH 47F	
M-0121	E-498 SH 47G	
M-0122	E-498 SH 47H	
M-0123	E-498 SH 47I	
M-0124	E-498 SH 47J	
M-0125	E-498 SH 47K	
M-0126	E-498 SH 47L	
M-0127	E-498 SH 47M	
M-0128	E-498 SH 47N	
M-0129	E-498 SH 47O	
M-0130	E-498 SH 47P	
M-0131	E-498 SH 47Q	
M-0132	E-498 SH 47R	
M-0133	E-498 SH 47S	
M-0134	E-498 SH 47T	
M-0135	E-498 SH 47U	
M-0136	E-498 SH 47V	
M-0137	E-498 SH 47W	
M-0138	E-498 SH 47X	
M-0139	E-498 SH 47Y	
M-0140	E-498 SH 47Z	
M-0141	E-498 SH 48A	
M-0142	E-498 SH 48B	
M-0143	E-498 SH 48C	
M-0144	E-498 SH 48D	
M-0145	E-498 SH 48E	
M-0146	E-498 SH 48F	
M-0147	E-498 SH 48G	
M-0148	E-498 SH 48H	
M-0149	E-498 SH 48I	
M-0150	E-498 SH 48J	
M-0151	E-498 SH 48K	
M-0152	E-498 SH 48L	
M-0153	E-498 SH 48M	
M-0154	E-498 SH 48N	
M-0155	E-498 SH 48O	
M-0156	E-498 SH 48P	
M-0157	E-498 SH 48Q	
M-0158	E-498 SH 48R	
M-0159	E-498 SH 48S	
M-0160	E-498 SH 48T	
M-0161	E-498 SH 48U	
M-0162	E-498 SH 48V	
M-0163	E-498 SH 48W	
M-0164	E-498 SH 48X	
M-0165	E-498 SH 48Y	
M-0166	E-498 SH 48Z	
M-0167	E-498 SH 49A	
M-0168	E-498 SH 49B	
M-0169	E-498 SH 49C	

LR NOTES:

A. FOR GENERAL LICENSE RENEWAL NOTES REFER TO LR-0001-01

LICENSE RENEWAL BOUNDARY DRAWING
LR-05002 REV. 0

SYSTEMS SHOWN ON THIS DRAWING:
10: MAKEUP & PURIFICATION

DAVIS-BESSE NUCLEAR POWER STATION	
UNIT NO 1	
OPERATIONAL SCHEMATIC	
MAKEUP AND PURIFICATION SYSTEM	
DRAWING NO	REV
05-002 SH 4	20

Handwritten signature: OJDB3