

(27)

CONTROLLED COPY CENTRAL FILE

2106-2.1
Revision 11
02/05/79

THREE MILE ISLAND NUCLEAR STATION UNIT #2 OPERATING PROCEDURE 2106-2.1 CONDENSATE SYSTEM

APR 23 1979

~~CONTROLLED COPY~~
~~MASTER COPY~~

Table of Effective Pages

Page	Date	Revision	Page	Date	Revision	Page	Date	Revision
1.0	11/22/77	2	22.0	11/22/77	2	48.0	11/22/77	2
2.0	01/13/77	0	23.0	11/22/77	2			
3.0	01/13/77	0	24.0	11/22/77	2			
4.0	09/22/78	9	25.0	11/22/77	2			
4.1	05/12/78	7	26.0	12/22/77	3			
5.0	09/16/77	1	27.0	12/22/77	3			
6.0	01/13/77	0	28.0	12/22/77	3			
7.0	09/22/78	9	29.0	12/22/77	3			
7.1	09/22/78	9	30.0	11/22/77	2			
7.2	09/22/78	9	31.0	11/22/77	2			
8.0	03/30/78	4	32.0	04/27/78	5			
9.0	05/12/78	7	33.0	11/22/77	2			
10.0	03/30/78	4	34.0	11/22/77	2			
11.0	01/13/77	0	35.0	04/27/78	5			
12.0	09/22/78	9	36.0	11/22/77	2			
13.0	09/22/78	9	37.0	11/22/77	2			
14.0	06/28/78	8	38.0	11/22/77	2			
14.1	06/28/78	8	39.0	11/22/77	2			
15.0	01/13/77	0	40.0	11/22/77	2			
16.0	01/13/77	0	41.0	11/22/77	2			
17.0	02/05/79	11	42.0	11/22/77	2			
17.1	02/05/79	11	43.0	04/27/78	5			
18.0	11/22/77	2	44.0	04/27/78	5			
19.0	12/22/77	3	45.0	03/30/78	4			
20.0	12/22/77	3	46.0	11/22/77	2			
21.0	11/22/77	2	47.0	11/22/77	2			

Unit 1 Staff Recommends Approval

Approval NA Date
Cognizant Dept. Head

Unit 2 Staff Recommends Approval

Approval NA Date
Cognizant Dept. Head

Unit 1 PORC Recommends Approval

NA Date
Chairman of PORC

Unit 2 PORC Recommends Approval

R.P. Warren Date 3/2/79
Chairman of PORC 194 106

Unit 1 Superintendent Approval

NA Date

Unit 2-Superintendent Approval

J.P. Logan Date 2/1/79

Manager Generation Quality Assurance Approval NA Date

3
Call
APR 23 1977

THREE MILE ISLAND NUCLEAR STATION
UNIT #2 OPERATING PROCEDURE 2106-2.1
CONDENSATE SYSTEM

1.0 REFERENCES

- 1.1 Drawings Applicable for Operation.
 - 1.1.1 Feedwater and Condensate (B&R Dwg. 2005).
 - 1.1.2 Make-up Water Treatment and Condensate Polishing (B&R Dwg. 2006).
 - 1.1.3 Demineralized Service Water (B&R Dwg. 2007).
- 1.2 Operating Procedures.
 - 1.2.1 2104-2.2 Demineralized Service Water.
 - 1.2.2 2104-2.3 Instrument Air.
 - 1.2.3 2104-2.8 Secondary Sampling.
 - 1.2.4 2104-3.5 Secondary Service Closed Cooling Water.
 - 1.2.5 2106-2.2 Condensate Polishing.
 - 1.2.6 2106-2.4 Feedwater.
 - 1.2.7 2106-1.2 Extraction Steam and FW Header Vents and Drains.
 - 1.2.8 2106-1.3 Auxiliary Steam.
- 1.3 Manufacturer's Instruction Manuals
 - 1.3.1 Byron Jackson Pump Division Instruction Manual 26KXH Two-Stage VMT (8.00).
 - 1.3.2 Ingersoll-Rand Centrifugal Pump Instruction Manual 12X17F. (89.00).
 - 1.3.3 Condenser (2.00).
 - 1.3.4 Struthers Wells Heat Exchanger Manuals, (3.00).
- 1.4 System Descriptions

194 108

APR 23 1979

- 1.4.1 Auxiliary Steam, Index No. 3.
- 1.4.2 Feedwater and Condensate Index No. 4A.
- 1.4.3 Condensate Polishing Index No. 4B.
- 1.4.4 Instrument and Service Air Index No. 10.

1.5 Curves, Tables, etc.

None.

2.0 LIMITS AND PRECAUTIONS

2.1 Equipment

- 2.1.1 Ensure applicable booster pump recir valve COV35A, 35B or 35C is open when operating a Condensate Pump.

NOTE: Booster Pump recirculation line provide mininum flow requirements for both the Condensate and Booster Pumps.

- 2.1.2 Do not operate a Condensate or Condensate Booster Pump for extended periods of time with their discharge valves closed.
- 2.1.3 Check oil sight glass on pump motors at periodic intervals to insure correct oil level is maintained.
- 2.1.4 Do not exceed the following limits on Condensate or Booster pump starts:
 - Two successive starts from ambient temperature.
 - One start from running temperature.
- 2.1.5 To prevent damage to Condensate Pumps, do not operate at a Hotwell Level less than 1'-0". Normal operating level is 26 inches.
- 2.1.6 Insure the Condensate Booster Pumps' Lube Oil Systems are in operation or their suction valves are closed.

194 109

APR 23 1979

- 2.1.7 Prior to starting a Condensate Pump, insure the feedpump turbines' lube oil systems are in normal operation and the pumps are on turning gear per 2106-2.4 or the pump's suction valves are closed.
- 2.1.8 Condensate pump differential pressure (Poutlet-Pinlet) should be maintained above 105 psi to prevent pump runoff.
- 2.1.9 Condensate booster pump differential pressure (Poutlet-Pinlet) should be maintained above 280 psi to prevent pump runoff.
- 2.2 Administrative
- 2.2.1 Do not fill the condensate storage tanks without processing the flow through the Condensate Polishing System.
- 2.2.2 While in Modes 1-3, maintain a minimum total volume of 220,000 gals. in the Condensate Storage Tanks (T.S. 3.7.1.3). This corresponds to a combined level of at least 27.6 feet.
- 2.2.3 The Demineralized Service Water System degasifier unit must be in operation to supply deoxygenated water when filling the condenser hotwell or the condensate storage tanks.
- 2.2.4 Insure the quality of the water in the condensate system remains within specifications set forth in the Plant Chemistry Manual. Feedwater chemistry requirements are based on 100% of condensate flow being routed through condensate polishing demineralizers. To avoid corrosion damage and deposition of cations on OTSG tubing and turbine blading, polisher demineralizers must not be bypassed.

3.0 PREREQUISITES

- ___ 3.1 Demineralized Service Water is available per 2104-2.2

APR 23 1979

- ___ 3.2 instrument Air is available per 2104-2.3.
- ___ 3.3 Secondary Services Closed Cooling Water System is in operation per 2104-3.5.
- ___ 3.4 Valve line-up complete for Feedwater and Emergency Feedwater Systems per 2106-2.4.
- ___ 3.5 Valve line-up complete for Condensate Polishing System per 2106-2.2.
- ___ 3.6 Condensate System valve line-up complete per Appendix A.

194 111

APR 23 1979

- 3.7 Hotwell level between 24.5" and 27.5" as indicated by CO-LI-332 on Panel 5.
- 3.8 Main feedwater pumps 1A and 1B on their respective turning gear per 2106-2.4.
- 3.9 All condensate pump control switches in PULL-TO-LOCK and the AUTO-MANUAL Selector Switch in MANUAL.
- 3.10 All pump oil reservoirs at normal level, and all condensate booster pump auxiliary oil pumps running.
- 3.11 The Turbine Building Sump Pumps in operation per 2104-2.5.
- 3.12 The Chemical Addition System lined up for normal operation per 2106-2.8.
- 3.13 Secondary Sampling System lined up for normal operation per 2104-2.8.
- 3.14 Auxiliary Steam is available for FW heating per 2106-1.3.
- 3.15 The breakers for the following pumps, on 4160 Volt Buses are racked in, and their associated 69 switches are in their Normal-After-Close position (red flag), and handles removed.
- 4160V Bus 2-3
- a. CO-P-1A (Unit 3-6).
 - b. CO-P-1C (Unit 3-5).
 - c. CO-P-2A (Unit 3-3).
 - d. CO-P-2C (Unit 3-4).
- 4160V Bus 2-4
- a. CO-P-1B (Unit 4-11).
 - b. CO-P-1C (Unit 4-10).
 - c. CO-P-2B (Unit 4-13).
 - d. CO-P-2C (Unit 4-12).

194 112

3.16 On the following 480V MCC insure that the designated equipment manual breakers are closed.

480V MCC 2-31A.

- a. Aux Oil Pump for CO-P-2A (Unit 7E).
- b. Aux Oil Pump for CO-P-2C (Unit 7F).

480V MCC 2-31B.

- a. COV12 (Unit 10C).
- b. CO-V38B (Unit 4D).
- c. CO-V50B (Unit 5D).

480V MCC 2-41A.

- a. Aux Oil Pump for CO-P-2B (Unit 8E).
- b. Aux Oil Pump for CO-P-2C (Unit 8F).

480V MCC 2-41B.

- a. CO-V38A (Unit 4D).
- b. CO-V50A (Unit 5D).
- c. CO-V55 (Unit 10D).
- d. CO-V199 (Unit 11A).

480V MCC 2-11EB.

- a. CO-V87 (Unit 10R).

4.0 PROCEDURES

Initial Each Step After Satisfactory Completion.

4.1 System Start-up.

4.1.1 CLOSE the condensate dump isolation valve (CO-V58) to the storage tank and open CO-V199 to maintain condenser hotwell level between 33" (Hi Alarm) and 26" (Normal) as indicated on Panel 5 while filling the condensate system.

APR 23 1978

2106-2.1
Revision 9
09/22/78

- ___ 4.1.2 CLOSE discharge valve for the condensate pump to be started. (CO-V5A, 5B, or 5C).
- ___ 4.1.3 OPEN all booster pump recir valves (CO-V35A, 35B, and 35C).
- ___ 4.1.3.1 Insure CO-V38 A and B, and CO-V88 A and B are closed.
NOTE: This will prevent water from leaking past the feed pump seals, overflowing the S.G.F.P. bracket leak off tank, and flooding the oil system.
- ___ 4.1.3.2 Insure HD-V203A, 203B, and 203C are closed. This will prevent water from leaking past HD-Pump seals and flooding this oil system.
- 4.1.4 START CO-P-1A as follows:
- ___ 1. OPEN CO-V252A.
NOTE: Flow path is thru CO-V35A, 35B, and 35C to condenser.
- ___ 2. From Panel 5 start CO-P-1A. Verify that ammeter returns to normal after starting \approx 90 amps on Panel 5.
- ___ 3. Slowly open CO-V5A. (discharge valve) fully. CO-P-1A discharge pressure will increase to approximately 155 PSI as indicated on Panel 5.
- ___ 4. CLOSE CO-V252A.
- ___ 4.1.5 When condenser vacuum is established, CO-V88 A and B may be opened. Insure S.G.F.P. bracket leakoff tank level controller functions properly.
- ___ 4.1.5.1 When vacuum is established, HD-V203A, B, and C may be opened. Insure HD-V208 operates properly to maintain a normal level in HD Pump Seal Water Drain Tank.

4.1.5.2 Open CO-V38 A and B.

4.1.5.3 VENT CO-P-2A pump casing and start CO-P-2A.

1. Sealing water to Main Feedwater Pumps is now being supplied.
(Insure sealing water is being maintained at 25 psid per 2105-2.4).

4.1.6 VENT the system from the following points until a clear stream of water issues.

dit
APR 23 1979

2106-2.1
Revision 9
09/22/73

Venting points

1. Condensate Pumps

CO-P-1A

CO-P-1B

CO-P-1C

2. Gland Steam Condenser

CO-V-140

CO-V-142

APR 23 1979

2106-2.1
Revision 4
03/30/78

3. Condensate Booster Pumps
CO-P-2A CO-V31A & CO-V134A
CO-P-2B CO-V31B & CO-V134B
CO-P-2C CO-V31C & CO-V134C
 4. Gland Steam Desuperheater
COV180 & CO-V181
 5. Between 13th & 14th Stage Heaters
CO-V175A & CO-V176A (A string)
CO-V175B & CO-V176B (B string)
 6. Between 11th & 13th Stage Heaters
CO-V171A & CO-V172A (A string)
CO-V171B & CO-V172B (B string)
 7. Between 11th & 10th Stage Heaters
No vents
 8. Between 8th & 10th Stage Heaters
CO-V167A & CO-V168A (A string)
CO-V167B & CO-V168B (B string)
 9. Downstream of 8th Stage Heaters
CO-V165A & CO-V166A (A string)
CO-V165B & CO-V166B (B string)
 10. Between Feed Pumps and FW-V8A & B
FWV27A & FW-V28A (A string)
FW-V27B & FW-V28B (B string)
- 4.1.7 OPEN Feedwater Start-up recirculation valves FW-V12A and 12B. Monitor amps to prevent overload.
 - 4.1.8 After system is filled and vented, OPEN CO-V58 and CLOSE CO-V199. Ensure hotwell level is within the normal operating range 27.5" and 24.5".

194 117

NOTE: Prior to starting cycle cleanup condenser vacuum will be established per 2106-2.3.

4.1.9 Commence Feedwater Heating using 13th stage FW Heater A (B) as follows.

- 1. Insure AS-V6A, B, C, D are closed as indicated on Panel 17.
- 2. Insure Aux Steam is in operation per 2106-1.3.
- 3. Insure heater drain lined up from 13th stage heaters per 2106-1.2.

NOTE: The following sequence is written for 13th stage heater A with B is parenthesis.

- 4. Insure AS-V7C & D (A & B) are closed by positioning local control for each valve.
- 5. Open AS-V6C & D (A & B) from Panel 17.
- 6. Monitor local 13th stage outlet temp COTI-2005 (2006) and slowly open AS-V7C & D (A & B) by positioning local controller to establish feedwater heating.
- 7. Monitor 13th stage heater level to ensure proper heater level control.
- 8. Continue to monitor 13th stage outlet temp and adjust AS-V7C & D (A & B) as necessary to achieve 200°F feedwater heating or as directed by Shift Foreman.

4.1.10 Shut CO-V12 and Place Condensate Polishing System in service per 2106-2.2.

NOTE: Operate in this mode for condensate system clean-up operations. When Condensate System Chemistry is within TMI Chemistry Manual specifications the system is available for feed to the OTSG's.

APR 23 1979

2106-2.1
Revision 4
03/30/78

- 4.1.11 At a S.G. pressure of 150 psi place the Panel 5 Auto-
Manual Selector Switch in Auto.
- 4.1.12 When Main Feed Pump 1A and/or 1B are warmed up and ready
for operation start the second condensate and booster
pump from Panel 5. Verify ammeters return to normal
after starting.
- NOTE: Condensate Booster Pump will start automatically
when its paired condensate pump is started if
the lube pressure and the suction pressure are
normal.
- 4.1.13 Place the non-running condensate pump's control switch to
the Normal-After-Stop position.
- 4.1.14 The Condensate System is now in a normal full power
operational status.

4.2 Normal System Operation.

The normal operation of the condensate system at full load conditions, consists of two (2) 50 percent capacity condensate pumps, two (2) 50 percent capacity condensate booster pumps and both heater strings. The third condensate and condensate booster pumps will be in an automatic start standby condition. Overall pump requirements will be determined by plant load. The condensate booster pumps pump water through the low pressure stage heaters where condensate is heated and pressure is raised to meet the NPSH requirements of the main feedwater pumps.

APR 23 1979

2106-2.1
Revision 0
01/13/77

Hotwell level is automatically maintained by normal makeup and reject to and from the storage tanks. Demin water makeup is provided by the station demineralizers normally through CO-V199 to the hotwell.

1. Check operating equipment at least once per shift to ensure that equipment is operating satisfactorily.
2. During periods when makeup is being added to the system from the station demineralizers, monitor hotwell and condensate storage tank levels to prevent flooding hotwell or overflowing storage tank.
3. To check operation and efficiency of the drain coolers and L.P. heater strings, monitor plant computer points 0933 through 0945 which are inlet and outlet temperatures on coolers and heaters.

4.3 System Shutdown

NOTE: Shutdown of the condensate system is performed in conjunction with the feedwater system. The shutdown of the feedwater system is dependent on the primary plant shutdown and cooldown. When feed flow is within capacity of one feed pump, one feed pump and one condensate and condensate booster pump will be secured. The primary plant will be cooled down by dumping steam to the main condenser and the feedwater pump will be operated to feed the steam generators until secondary steam pressure is reduced sufficiently to remove the pump from service. The remainder of the cooldown requiring feed, the operating condensate pump and booster pump will be used. When the steam dumps

APR 23 1979

2106-2.1
Revision 9
09/22/78

are closed and the steam generators secured the operating booster and condensate pump will be secured, completing the condensate system shutdown.

4.3.1 When the first main feed pump is secured, stop (1) condensate booster and (1) condensate pump by placing condensate/condensate booster pump selector switch to manual on Panel 5.

4.3.2 Stop condensate booster pump by placing control switch to stop position on Panel 5.

4.3.3 Stop condensate pump by placing control switch to stop position on Panel 5.

NOTE: Do not secure remaining operating condensate booster pump until feed is no longer required to steam generators. This allows the feedpump sealing water system to operate normally.

4.3.4 Continue plant cooldown using the running condensate and condensate booster pumps to feed the steam generators.

4.3.5 Per 2106-2.2, open condensate polishing bypass valve CO-V12 and secure the Condensate Polishing System.

NOTE: Before securing condenser vacuum close CO-V-38A and B, CO-V88A and B, and HD-V203A, B and C. This prevents water from leaking past the feed pump and Heater drain pump seals, overfilling the bracket leakoff tank, and subsequently flooding the respective oil system.

4.3.6 If the turbine gland steam system and the vacuum pumps have been secured, the running condensate and condensate booster pumps can be stopped or left running as directed by the shift foreman.

194 121

NOTE: Insure running pumps have a minimum recirculating flow of approx. 2000 gpm.

4.3.7 The condensate system is now is a normal shutdown status.

4.4 Shifting Condensate and/or Booster Pumps.

4.4.1 Shifting Condensate/Condensate Booster Pump Pairs.

4.4.1.1 ENSURE the Condensate/Condensate Booster Pump Selector Switch is in AUTO.

4.4.1.2 START the standby Condensate/Condensate Booster Pump Pair by placing the standby condensate pump control switch to Start (spring return to normal after start). Verify ammeters return to normal after starting.

4.4.1.3 PLACE the Condensate/Condensate Booster Pump Selector Switch in "MANUAL".

4.4.1.4 WAIT at least 5 seconds.

4.4.1.5 Trip desired pump(s) manually.

4.4.1.6 Return selector switch to "AUTO".

4.4.2 Seperate Pump Operation.

4.4.2.1 Place Condensate/Condensate Booster Pump Selector Switch to Manual.

1. Condensate Pumps

(1) On Panel 5 place the standby pump control switch to start (spring return to normal after start). Verify ammeter returns to normal after starting.

(2) Check system pressure, flow, and pump amps prior to stopping the off going pump to ensure that the pump which was started is functioning properly.

(3) On Panel 5 stop the appropriate condensate pump and closely monitor system parameters.

APR 23 1979

2106-2.1
Revision 8
06/28/78

2. Condensate Booster Pumps.

- (1) On Panel 5 check aux. oil pump indicating lights below booster pump control switch to ensure oil pump is running.
- (2) On Panel 5 start the 3rd condensate pump. This will enable the 3rd condensate booster pump to be started.
- (3) On Panel 5 start the standby booster pump. Verify ammeter returns to normal after starting.
- (4) From Panel 5, Stop one booster pump and one condensate pump and monitor system parameters.

4.4.2.2 Condensate/Condensate Booster Pump Selector Switch can be returned to Auto only if the proper Condensate/Condensate Booster Pump Pairs are running.

4.5 Bypassing One L.P. Heater String During Plant Operation.

NOTE: Non adjacent feedwater heaters may be removed from service with the limitation that the turbine generator output must not exceed 926KW. Adjacent feedwater heaters may be removed from service if all higher feedwater heaters in that string are also removed. Turbine Generator output must be limited to 926 KW. If it is desired to remove adjacent feedwater heaters with higher pressure heaters still in operation, the unit load must be reduced 10% from 926KW for each successive adjacent heater removed from service. For example, if two low pressure adjacent heaters are removed while a higher pressure heater remains in service, the load must be reduced 10%. If three adjacent heaters are removed, the load must be reduced

20%, etc. The maximum load reduction necessary is 50% for any combination of heaters taken out of service. Care must be used when isolating a heater string to insure that all drains, vents, and extraction steam lines have been isolated from the heaters being taken out of service. The extraction steam supply to the heaters will be secured first by closing the appropriate L.P. extraction valves. After the L.P. heater string being isolated has cooled down, condensate flow can be stopped by slowly opening the heater bypass valve CO-V55 partially and closing the inlet and outlet valve for the heater string being isolated. When returning the heaters to service condensate flow will be established first and extraction steam supply last. The following procedure will cover the condensate portion of the system, for detailed operation of heater vents, drains and extraction steam refer to 2106-1.2.

- ___ 4.5.1 Isolate extraction steam to the desired FW heater string per 2106-1.2.
- ___ 4.5.2 Start the standby condensate and condensate booster pump.
- ___ 4.5.3 From console 5, open LP heater bypass valve (CO-V-55).
- ___ 4.5.4 From panel #17, close the inlet (CO-V38A or 38B) and the outlet (CO-V50A or B) isolation valve for the heater string to be removed from service.
- ___ 4.5.5 Trip one condensate and one condensate booster pump. The desired LP heater string is now removed from service.

- ___ 4.5.6 To return isolated LP heater string to service open the isolated string inlet valve (CO-V38A or 38B) at panel #17 in the control room.
- ___ 4.5.7 Vent 14th stage heater and drain cooler by opening CO-V175A and 176A or CO-V175B and 176B.
- ___ 4.5.8 Vent 13th stage heater by opening CO-V171A and 172A or CO-V171B and 172B.
- ___ 4.5.9 Vent 10th and 11th stage heaters by opening CO-V167A and 168A or CO-V167B and 168B.
- ___ 4.5.10 Vent 8th stage heater by opening CO-V165A and 166A or CO-V165B and 166B.
NOTE: When venting condensate side of LP heaters, leave vent valves open until you receive a solid stream of clear water.
- ___ 4.5.11 When venting is completed start the standby condensate pump and condensate booster pump.
- ___ 4.5.12 Open the affected string outlet valve (CO-V50A or 50B) from Panel #17.
- ___ 4.5.13 Shut the LP heater string bypass valve (CO-V55) from console #5 in control room.
- ___ 4.5.14 Stop the standby condensate and condensate booster pumps started in step 4.5.11.
- ___ 4.5.15 The isolated LP heater string, vents, drains, and extraction steam systems should now be returned to normal operating lineup as per 2106-1.2.

NOTE: When opening extraction steam supply valves to heaters, sequence should be as follows: 13th stage, 11th stage, 10th stage, and 8th stage. Starting with 13th stage, open extraction steam valve. When heater stage reaches operating temperature, open extraction valve to next stage.

4.6 Condensate Storage Tank Fill During Normal Operation.

- ___ 4.6.1 OPEN demineralized water make-up valve CO-V199. Monitor hotwell level closely.
- ___ 4.6.2 The hotwell level control system will open condensate dump valve CO-V59 when hotwell level reaches high level setpoint. CLOSE CO-V199 after storage tank level has increased to the desired level. Observe that CO-V59 closes properly when level drops below high level setpoint.

4.7 Condensate Storage Tank Fill with System Shutdown.

- ___ 4.7.1 Ensure the booster pump auxiliary oil pumps are operating.
- ___ 4.7.2 CLOSE storage tank dump isolation valves CO-V67, CO-V70, and CO-V191.
- ___ 4.7.3 CLOSE L.P. feedwater heater trains inlet valves CO-V38A and 38B.
- ___ 4.7.4 Commence filling the condenser hotwell by opening demineralized water make-up valve CO-V199.
- ___ 4.7.5 When condenser hotwell level is greater than 28", CLOSE a condensate pump discharge valve and OPEN booster pump recirculation valve CO-V35A, 35B, or 35C.

APR 23 1979

2106-2.1
Revision 11
02/05/79

- ___ 4.7.6 OPEN discharge valve bypass valve CO-V252A, 252B, or 252C, and start selected condensate pump.
- ___ 4.7.7 Place the Condensate Polishing System in operation per 2106-2.2.
- ___ 4.7.8 THROTTLE OPEN CO-V62 to fill the storage tank while maintaining condenser hotwell level between high and low level alarm setpoints.
- ___ 4.7.9 After storage tank level has been increased to the desired level as indicated by CO-LI-72 or 73 2A/2B Condensate Storage Tank Level on Panel 5, CLOSE CO-V199 and STOP the operating condensate pump.
- ___ 4.7.10 CLOSE CO-V62, CO-V35A, B or C, and CO-V252A, B or C.

4.8 Condensate Pump Suction Strainer Flushing

- ___ 4.8.1 Remove the Condensate/Condensate booster pump pair from service and place their control switches in "pull-to-lock".
- ___ 4.8.2 Unlock and close the affected pump suction valve (CO-V1), Pump Vent Valve (CO-V91) and rupture diaphragm isolation valve (CO-V66).
- ___ 4.8.3 Connect a pressurized source of water at the strainer blowdown valve.
- ___ 4.8.4 Open CO-V-128 and pressurize strainer housing. Do not exceed 10 psig.
- ___ 4.8.5 Open CO-V-127 strainer drain. Do not allow pressure to drop below 0 psig. Simultaneously open CO-V-128 and 127 until max flow is obtained. Cycle CO-V-127 so as to cause suction pressure to oscillate between 0 psig and 10 psig.


CS
APR 23 1979

2106-2.1
Revision 11
02/05/79

Flush in this manner until all foreign objects are clear of strainer and then close CO-V-127 and CO-V-128 and then remove hose.

4.8.6

Return the pump to service by OPENING its suction valve (CO-V1), vent valve (CO-V91) and rupture diaphragm isolation valve (CO-V66) and placing pump control switches in "Normal".



 2106-2.1
 Revision 2
 APR 23 1979 11/22/77

APPENDIX A
Valve Line-up

System:	Condensate System	Date
VALVE NO.	DESCRIPTION	POSITION INITIAL
CO-V151C	Cond. 1B drain isolation (under 1B Hotwell)	CL _____
CO-V152C	Cond. 1B drain (under 1B Hotwell)	CL _____
CO-V152D	Cond. 1B drain (under 1B Hotwell)	CL _____
CO-V151D	Cond. 1B drain isolation (under 1B Hotwell)	CL _____
CO-V151A	Cond. 1B drain isolation (under 1B Hotwell)	CL _____
CO-V152A	Cond. 1B drain (under 1B Hotwell)	CL _____
CO-V151B	Cond. 1B drain isolation (under 1B Hotwell)	CL _____
CO-V152B	Cond. 1B drain (under 1B Hotwell)	CL _____
CO-V203B	SGFP Bracket Leakoff Tank 2B outlet (Located above cond. suction HDR. at Hotwell)	OP _____
CO-V204B	SGFP Bracket Leakoff Tank 2E level cont. (Located above cond. suction HDR at Hotwell)	A _____
CO-V205B	SGFP Bracket Leakoff Tank 2B level cont. (outlet (located above cond. suction HDR at Hotwell))	OP _____
CO-V203A	SGFP Bracket Leakoff Tank 2A outlet (Located above cond. suction HDR at Hotwell)	OP _____
CO-V204A	SGFP Bracket Leakoff Tank 2A level cont. (Located above cond. suction HDR at Hotwell)	A _____
CO-V205A	SGFP Bracket Leakoff Tank 2A level cont. outlet (Located above cond. suction HDR at Hotwell)	OP _____
CO-V196	Cond. polishing recycle to condenser 1B (Located above cond. suction HDR at Hotwell)	OP _____
CO-V13B	Cond. pump suction HDR drain	CL _____
CO-V2A	CO-P1-2001 Instrument root (CO-P-14 suction)	OP _____
CO-V66A	Cond. pump 1A rupture diaphragm valve	OP _____
CO-V91A	Cond. pump 1A vent	OP _____


APPENDIX A
 Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-V3A	CO-P1-2004 Inst. root (CO-P-1A disch)	OP	_____
CO-V252A	CO-V-5A bypass	CL	_____
CO-V5A	Cond. pump 1A discharge	OP	_____
CO-V99A	Cond. pump 1A disch. bypass	CL	_____
CO-V183A	Cond. pump 1A disch drain	CL	_____
CO-V65A	Cond. pump 1A seal water supply	LOCKED/OP	_____
CO-V128A	Cond. pump 1A suct. strainer flush	CL	_____
CO-V94A	CO-DP1-1172-1 inst. root (CO-P-1A suction strainer)	OP	_____
CO-V94B	CO-DP1-1172-1 inst. root (CO-P-1A suct. strainer)	OP	_____
CO-V127A	Cond. pump 1A suction strainer drain	CL	_____
CO-V1A	Cond. pump 1A suction	LOCKED/OP	_____
CO-V2B	CO-P1-2003 inst. root (CO-P-1B suct.)	OP	_____
CO-V66B	Cond. pump 1B rupture diaphragm valve	OP	_____
CO-V91B	Cond. pump 1B vent	OP	_____
CO-V3B	CO-P1-2003 inst. root (CO-P-1B disch.)	OP	_____
CO-252B	CO-V-5B bypass	CL	_____
CO-V5B	Cond. pump 1B discharge	OP	_____
CO-V99B	Cond. pump 1B disch bypass	CL	_____
CO-V183B	Cond. pump 1B disch drain	CL	_____
CO-V65B	Cond. pump 1B seal water supply	LOCKED/OP	_____
CO-V128B	Cond. pump 1B suct. strainer flush	CL	_____
CO-V94D	CO-DP1-1172-2 instr. root (CO-P-1B suction strain.)	OP	_____


 2106-2.1
 Revision 3
 APR 23 1979 12/22/77

APPENDIX A
 Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-V94C	CO-DPI-1172-2 inst. root (CO-P-1B suct. strain.)	OP	_____
CO-V127B	Cond. pump 1B suct. strainer drain	CL	_____
CO-V1B	Cond. pump 1B suction	LOCKED/OP	_____
CO-V2C	CO-P1-2003 inst. root (CO-P-1C suction)	OP	_____
CO-V66C	Cond. pump 1C rupture diaphragm valve	OP	_____
CO-V91C	Cond. pump 1C vent	OP	_____
CO-V3C	CO-P1-2006 instr. root (CO-P-1C disch.)	OP	_____
CO-V252C	CO-V-5C bypass	CL	_____
CO-V5C	Cond. pump 1C discharge	OP	_____
CO-V99C	Cond. pump 1C disch bypass	CL	_____
CO-V183C	Cond. pump 1C disch drain	CL	_____
CO-V65C	Cond. pump 1C seal water supply	LOCKED/OP	_____
CO-V127C	Cond. pump 1C suct. strainer drain	CL	_____
CO-V94F	CO-DPI-1172-3 instr. root (CO-P-1C suct. strainer)	OP	_____
CO-V94E	CO-DPI-1172-3 instr. root (CO-P-1C suct. strainer)	OP	_____
CO-V128C	Cond. pump 1C suction strainer flush	CL	_____
CO-V1C	Cond. pump 1C suction	LOCKED/OP	_____
CO-V6	CO-PT-1102 instr. root (cond. pump discharge) in overhead above cond. pumps	OP	_____
CO-V7	Cond. supply to turb. exh. hood spray	OP	_____
CO-V137B	CO-DPT-1733 instr. root (turb exh. hood)	OP	_____
CO-IV32	CO-DPT-1733 vent valve	CL	_____
CO-V22B	Turb exh hood spray strainer (CO-V3) blowoff	CL	_____


 2106-2.1
 Revision 2
 APR 23 1979 11/22/77

APPENDIX A
Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-V137A	CO-DPT-1733 instr. root (turb. exh. hood)	OP	_____
CO-IV31	CO-DPT-1733 vent valve (overhd of cond. pumps)	CL	_____
CO-IV29	CO-DP15-1172-3 vent valve (in overhead)	CL	_____
CO-IV30	CO-DP15-1172-3 vent valve (in overhead)	CL	_____
CO-IV27	CO-DP15-1172-2 vent valve (in overhead)	CL	_____
CO-IV28	CO-DP15-1172-2 vent valve (in overhead)	CL	_____
CO-IV26	CO-DP15-1172-1 vent valve (in overhead)	CL	_____
CO-IV25	CO-DP15-1172-1 vent valve (in overhead)	CL	_____
	RACK 402F (By cond. pumps on East side)		
CO-IV501	CO-PT-1102 isolation valve	OP	_____
CO-IV502	CO-PT-1102 drain valve	CL	_____
CO-IV503	CO-PI-2006 isolation valve	OP	_____
CO-IV504	CO-PS-064 isolation valve	OP	_____
CO-IV505	CO-PI-2006 and CO-PS-064 common drain valve	CL	_____
CO-IV506	CO-PI-2005 isolation valve	OP	_____
CO-IV507	CO-PS-065 isolation valve	OP	_____
CO-IV508	CO-PI-2005 and CO-PS-065 common drain	CL	_____
CO-IV509	CO-PI-2004 isolation valve	OP	_____
CO-IV510	CO-PS-066 isolation valve	OP	_____
CO-IV511	CO-PI-2004 and CO-PS-066 common drain	CL	_____
CO-IV512	CO-DPI-1733 high side isolation valve	OP	_____
CO-IV513	CO-DPI-1733 high side vent valve	CL	_____
CO-IV514	CO-DPI-1733 high side drain valve	CL	_____

2106-2.1
Revision 2
APR 23 1979 11/22/77

APPENDIX A
Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-IV515	CO-DPI-1733 low side isolation valve	OP	_____
CO-IV516	CO-DPI-1733 low side vent valve	CL	_____
CO-IV517	CO-DPI-1733 low side drain valve	CL	_____
CO-IV518	CO-DPI-1733 equalizing valve	CL	_____
	RACK 402B (Behind 402F)		
CO-IV519	CO-PI-2001 isolation valve	OP	_____
CO-IV520	CO-PI-2002 drain valve	CL	_____
CO-IV521	CO-PI-2002 drain valve	CL	_____
CO-IV522	CO-PI-2002 isolation valve	OP	_____
CO-IV523	CO-PI-2003 isolation valve	OP	_____
CO-IV524	CO-PI-2003 drain valve	CL	_____
CO-IV525	CO-DPIS-1172-1 high side isolation	OP	_____
CO-IV526	CO-DPIS-1172-1 high side vent	CL	_____
CO-IV527	CO-DPIS-1172-1 high side drain	CL	_____
CO-IV528	CO-DPIS-1172-1 low side isolation	OP	_____
CO-IV529	CO-DPIS-1172-1 low side drain	CL	_____
CO-IV530	CO-DPIS-1172-1 low side vent	CL	_____
CO-IV531	CO-DPIS-1172-1 equalizing valve	CL	_____
CO-IV532	CO-DPIS-1172-2 high side isolation	OP	_____
CO-IV533	CO-DPIS-1172-2 high side vent	CL	_____
CO-IV534	CO-DPIS-1172-2 high side drain	CL	_____
CO-IV535	CO-DPIS-1172-2 low side isolation	OP	_____
CO-IV536	CO-DPIS-1172-2 low side vent	CL	_____

2106-2.1
Revision 2
11/22/77
APR 23 1979

APPENDIX A
Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-IV537	CO-DPIS-1172-2 low side drain	CL	_____
CO-IV538	CO-DPIS-1172-2 equalizing valve	CL	_____
CO-IV539	CO-DPIS-1172-3 high side isolation	OP	_____
CO-IV540	CO-DPIS-1172-3 high side vent	CL	_____
CO-IV541	CO-DPIS-1172-3 high side drain	CL	_____
CO-IV542	CO-DPIS-1172-3 low side isolation	OP	_____
CO-IV543	CO-DPIS-1172-3 low side vent	CL	_____
CO-IV544	CO-DPIS-1172-3 low side drain	CL	_____
CO-IV545	CO-DPIS-1172-3 equalizing valve	CL	_____
RACK 401 B (Cond. Booster Pumps) (In front of cond. pumps)			
CO-IV546	CO-DPI-1161 high side isolation	OP	_____
CO-IV547	CO-DPI-1161 high side vent	CL	_____
CO-IV548	CO-DPI-1161 high side drain	CL	_____
CO-IV549	CO-DPI-1161 low side isolation	OP	_____
CO-IV550	CO-DPI-1161 low side vent	CL	_____
CO-IV551	CO-DPI-1161 low side drain	CL	_____
CO-IV552	CO-DPI-1161 equalizing valve	CL	_____
CO-IV553	CO-DPI-1162 high side isolation	OP	_____
CO-IV554	CO-DPI-1162 high side vent	CL	_____
CO-IV555	CO-DPI-1162 high side drain	CL	_____
CO-IV556	CO-DPI-1162 low side isolation	OP	_____
CO-IV557	CO-DPI-1162 low side vent	CL	_____

APR 23 1979

2106-2.1
Revision 2
11/22/77

APPENDIX A
Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-IV558	CO-DPI-1162 low side drain	CL	_____
CO-IV559	CO-DPI-1162 equalizing valve	CL	_____
CO-IV560	CO-DPI-1163 high side isolation	OP	_____
CO-IV561	CO-DPI-1163 high side vent	CL	_____
CO-IV562	CO-DPI-1163 high side drain	CL	_____
CO-IV563	CO-DPI-1163 low side isolation	OP	_____
CO-IV564	CO-DPI-1163 low side vent	CL	_____
CO-IV565	CO-DPI-1163 low side drain	CL	_____
CO-IV566	CO-DPI-1163 equalizing valve	CL	_____
CO-IV567	CO-FS-1114 high side isolation	OP	_____
CO-IV568	CO-FS-1114 high side vent	CL	_____
CO-IV569	CO-FS-1114 high side drain	CL	_____
CO-IV570	CO-FS-1114 low side isolation	OP	_____
CO-IV571	CO-FS-1114 low side vent	CL	_____
CO-IV572	CO-FS-1114 low side drain	CL	_____
CO-IV573	CO-FS-1114 equalizing valve	CL	_____
CO-IV574	CO-FS-1127 high side isolation	OP	_____
CO-IV575	CO-FS-1127 high side vent	CL	_____
CO-IV576	CO-FS-1127 high side drain	CL	_____
CO-IV577	CO-FS-1127 low side isolation	OP	_____
CO-IV578	CO-FS-1127 low side vent	CL	_____
CO-IV579	CO-FS-1127 low side drain	CL	_____
CO-IV580	CO-FS-1127 equalizing valve	CL	_____

APR 23 1979

2106-2.1
Revision 2
11/22/77

APPENDIX A
Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-IV581	CO-FS-1130 high side isolation	OP	_____
CO-IV582	CO-FS-1130 high side vent	CL	_____
CO-IV583	CO-FS-1130 high side drain	CL	_____
CO-IV584	CO-FS-1130 low side isolation	OP	_____
CO-IV585	CO-FS-1130 low side vent	CL	_____
CO-IV586	CO-FS-1130 low side drain	CL	_____
CO-IV587	CO-FS-1130 equalizing valve	CL	_____
CO-IV588	CO-PT-1141 isolation valve	OP	_____
CO-IV589	CO-PT-1141 drain valve	CL	_____
RACK 401F (In front of booster pumps)			
CO-IV590	CO-PI-2007 isolation valve	OP	_____
CO-IV591	CO-PS-1108 isolation valve	OP	_____
CO-IV592	CO-PI-2007 and CO-PS-1108 common drain	CL	_____
CO-IV593	CO-PI-2008 isolation valve	OP	_____
CO-IV594	CO-PS-1109 isolation valve	OP	_____
CO-IV595	CO-PI-2008 and CO-PS-1109 common drain	CL	_____
CO-IV596	CO-PI-2009 isolation valve	OP	_____
CO-IV597	CO-PS-1111 isolation valve	OP	_____
CO-IV598	CO-PI-2009 and CO-PS-1111 common drain	CL	_____
CO-IV599	CO-PI-2010 isolation valve	OP	_____
CO-IV600	CO-PS-061 isolation valve	OP	_____
CO-IV601	CO-PI-2010 and CO-PS-061 common drain	CL	_____

APPENDIX A
 Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-IV602	CO-P1-2011 isolation valve	OP	-----
CO-IV603	CO-PS-062 isolation valve	OP	-----
CO-IV604	CO-P1-2011 and CO-PS-062 common drain	CL	-----
CO-IV605	CO-P1-2012 isolation valve	OP	-----
CO-IV606	CO-PS-063 isolation valve	OP	-----
CO-IV607	CO-P1-2012 and CO-PS-063 common drain	CL	-----
CO-IV608	CO-PT-1112 isolation valve	OP	-----
CO-IV609	CO-PT-1112 drain valve	CL	-----
CO-V63	Cond. pump dish to O ₂ analyzer (overhead at cond. polishing units)	OP	-----
CO-V12	Cond. polishing bypass (overhead above bent ducting at polishers)	OP	-----
CO-V105	Cond. pumps dish Hdr drain isolation (overhead at polishing units)	CL	-----
CO-V106	Cond. pumps dish Hdr. drain (overhead at polishing units)	CL	-----
CO-V187	Cond. polishing outlet drain isol (overhead at polishing units)	CL	-----
CO-V188	Cond. polishing outlet drain (overhead at polishing units)	CL	-----
CO-V64	Cond. polishing outlet at O ₂ analyzer (taps off emerg. feed line in overhead)	OP	-----
CO-V27C	Cond. booster pump 2C suction	LOCKED/OP	-----
CO-V28E	CO-FS-1130 instr. root (CO-P-2C suct)	OP	-----
CO-V28F	CO-FS-1130 instr. root (CO-P-2C suct.)	OP	-----
CO-IV5	Vent valve for CO-P-2C flow switch ind. (in overhead) CO-FS-1130	CL	-----

APR 23 1979

2105-2.1
Revision 3
12/22/77

APPENDIX A
Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-IV6	Vent valve for CO-P-2C flow switch ind. (in overhead) CO-FS-1130	CL	_____
CO-IV11	Vent valve (in overhead) for CO-P-2C suction strainer ind.	CL	_____
CO-IV12	Vent valve (in overhead) for CO-P-2C suction strainer ind.	CL	_____
CO-V129C	Booster pump 2C suction strainer drain	CL	_____
CO-V95E	CO-DPI-1163 instr. root (CO-P-2C suction strainer)	OP	_____
CO-V95F	CO-DPI-1163 instr. root (CO-P-2C suction strainer)	OP	_____
CO-V124C	CO-PS-1111 instr. root (booster pump 2C suction)	OP	_____
CO-V130C	Booster pump 2C suct. strainer flush	CL	_____
CO-V134C	Booster pump 2C vent	CL	_____
CO-V31C	Cond. booster pump 2C vent isolation	CL	_____
CO-V32C	CO-P1-3017 instr. root (booster pump 2C disch)	OP	_____
CO-V36C	Cond. booster pump 2C recirc isol	OP	_____
CO-V35C	Cond. booster pump 2C recirc control	A	_____
CO-V136C	Booster pump 2C disch bypass	CL	_____
CO-V34C	Cond. booster pump 2C disch isolation	LOCKED/OP	_____
CO-V194C	Booster pump 2C disch drain isolation	CL	_____
CO-V195C	Booster pump 2C disch drain	CL	_____
CO-V27B	Cond. booster pump 2B suction	LOCKED/OP	_____
CO-V28C	CO-FS-1127 instr. root (CO-P-2B suction)	OP	_____
CO-V28D	CO-FS-1127 instr. root (CO-P-2B suction)	OP	_____
CO-IV3	Vent valve (in overhead) for CO-FS-1127	CL	_____

CCJ
APR 23 1977

2106-2.1
Revision 3
12/22/77

APPENDIX A
Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-IV4	Vent valve (in overhead) for CO-FS-1127	CL	_____
CO-IV7	Vent valve (in overhead) for CO-P-2B suction strainer ind.	CL	_____
CO-IV8	Vent valve (in overhead) for CO-P-2B suction strainer ind.	CL	_____
CO-V95D	CO-DP1-116Z instr. root (CO-P-2B suction strainer)	OP	_____
CO-V95C	CO-DP1-116Z instr. root (CO-P-2B suction strainer)	OP	_____
CO-V129B	Booster pump 2B suction strainer drain	CL	_____
CO-V124B	CO-PS-1109 instr. root (booster pump 2B suction)	OP	_____
CO-V130B	Booster pump 2B suct. strainer flush	CL	_____
CO-V01B	Cond. booster pump 2B vent isolation	CL	_____
CO-V134B	Booster pump 2B vent	CL	_____
CO-V02B	CO-P1-207 instr. root (booster pump 2B disch)	OP	_____
CO-V06C	Cond. booster pump 2B recirc isolation	OP	_____
CO-V06B	Cond. booster pump 2B recirc control	A	_____
CO-V34B	Cond. booster pump disch. isolation	LOCKED/OP	_____
CO-V135B	Booster pump 2B disch bypass	CL	_____
CO-V194B	Booster pump 2B disch isolation	CL	_____
CO-V195B	Booster pump 2B disch drain	CL	_____
CO-V173B	FW Htr FW-J-2B outlet drain isolation (in overhead above CO-P-2B)	CL	_____
CO-V174B	FW Htr FW-J-2B outlet drain (in overhead above CO-P-2B)	CL	_____
CO-V210B	FW Htr FW-J-2B outlet sample conn (in overhead above CO-P-2B)	CL	_____

APPENDIX A
Valve Line-up

System:	Condensate System	Date
VALVE NO.	DESCRIPTION	POSITION INITIAL
CO-V251B	FW Htr FW-J-2C outlet sample conn (in overhead above CO-P-2B)	CL
CO-V27A	Cond. booster pump 2A suction	LOCKED/OP
CO-V30	CO-PT-1141 instr. root (cond. booster pump suct)	OP
CO-V28A	CO-FS-1114 instr. root (cond. booster pump suct)	OP
CO-V28B	CO-FS-1114 instr. root (cond. booster pump suct)	OP
CO-IV1	Vent valve for CO-P-2A (in overhead) CO-FS-1114	CL
CO-IV2	Vent valve for CO-P-2A (in overhead) CO-FS-1114	CL
CO-IV9	Vent valve (in overhead) for suction strain ind.	CL
CO-IV19	Vent valve (in overhead) for suction strain ind.	CL
CO-V95A	CO-DPI-1161 instr. root (cond. booster pump strain)	OP
CO-V95B	CO-DPI-1161 instr. root (cond. booster pump suction strainer)	OP
CO-V124A	CO-P3-1114 instr. root (booster pump suction)	OP
CO-V130A	Booster pump 2A suction strainer flush valve	CL
CO-V129A	Booster pump 2A suction strainer drain valve	CL
CO-V31A	Booster pump 2A vent isolation valve	CL
CO-V134A	Booster pump 2A vent valve	CL
CO-V32A	CO-PI-2010 instr. root valve (booster pump 2A disch)	OP
CO-V35A	Booster pump 2A recirc control valve	A
CO-V36A	Booster pump 2A recirc isolation valve	OP
CO-V34A	Booster pump 2A discharge isolation	LOCKED/OP
CO-V136A	Booster pump 2A disch bypass	CL
CO-V194A	Booster pump 2A disch drain isolation	CL

APR 23 1977

2106-2.1
Revision 2
11/22/77

APPENDIX A
Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-V195A	Booster pump 2A disch drain	CL	_____
CO-V37	CO-PI-1112 instr. root (booster pump 2A disch) (overhead at polisher)	OP	_____
CO-V20	Cond. booster pumps disch sampling (overhead at polisher)	OP	_____
CO-V57	Booster pump bypass to condensor 1A (air operated valve)	A	_____
CO-V58	Cond. dump valve inlet isolation	OP	_____
CO-V223	Cond. dump valve drain	CL	_____
CO-V59	Cond. dump valve inlet isolation	A	_____
CO-V60	Cond. dump valve outlet isolation	OP	_____
CO-V62	Cond. dump valve bypass	CL	_____
CO-V259	Unit I/II cond. return X-conn isolation	L.C.	_____
CO-V260	Unit I/II cond. return X-conn valve	CL	_____
CO-V261	Unit I/II cond. return X-conn drain valve	CL	_____
CO-V249	Low point drain (turb. exh hood spray line) (on station by turbine bldg sump pump cont. panel)	CL	_____
CO-V250	Low point drain (turb exh hood spray line)	CL	_____
CO-V268	FW Htr FW-J-2B inlet drain (13th stage)	CL	_____
CO-V267	FW Htr FW-J-2B inlet drain isolation (13th stage)	CL	_____
CO-V55	LP FW Htr bypass (overhead above vent ducting past "C" booster pump toward feedwater)	CL	_____
CO-IV610	(Rack 407F) CO-PI-2024 Isolation valve (between booster pumps and heater drain pumps)	OP	_____
CO-IV611	(Rack 407F) CO-PS-1146 isolation valve	OP	_____
CO-IV612	(Rack 407F) CO-PI_2024 and CO PS-1146 common drain	CL	_____

2106-2.1
Revision 2
11/22/77
APR 23 1979

APPENDIX A
Valve Line-up

System:	Condensate System	Date
VALVE NO.	DESCRIPTION	POSITION INITIAL
CO-IV613	(Rack 407B) between booster pumps and heater drain pumps CO-DPIS-1167-high side isol	OP _____
CO-IV614	(Rack 407B) CO-DPIS-1167 high side vent	CL _____
CO-IV615	(Rack 407B) CO-DPIS-1167 high side drain	CL _____
CO-IV616	(Rack 407B) CO-DPIS-1167 low side isolation	OP _____
CO-IV617	(Rack 407B) CO-DPIS-1167 low side vent	CL _____
CO-IV618	(Rack 407B) CO-DPIS-1167 low side drain	CL _____
CO-IV619	(Rack 407B) CO-DPIS-1167 equalizing valve	CL _____
CO-IV620	CO-FT-070 high side isolation (Rack 407B)	OP _____
CO-IV621	CO-FT-070 high side vent (Rack 407B)	CL _____
CO-IV622	CO-FT-070 high side drain (Rack 407B)	CL _____
CO-IV623	CO-FT-070 low side isolation (Rack 407B)	OP _____
CO-IV624	CO-FT-070 low side vent (Rack 407B)	CL _____
CO-IV625	CO-FT-070 low side drain (Rack 407B)	CL _____
CO-IV626	CO-FT-070 equalizing valve (Rack 407B)	CL _____
CO-V80	CO-PT-098 instr. root (FW pumps suction Hdr) overhead above heater drain pumps on top of vent duct close to wall	OP _____
CO-V51	CO-PS-3422 instr. root (JG FW pump suction) overhead above heater drain pumps on top of vent duct close to wall	OP _____
CO-V53B	CO-FT-070 instr. rt. (FW pump 1B suction) above Htr. drain pump	OP _____
CO-V53D	CO-FT-070 instr. rt. (FW pump 1B suct) (above Htr drain pump)	OP _____
CO-V132B	SG feed pump 1B suct strainer flush isolation	CL _____

APR 23 1979

2106-2.1
Revision 5
04/27/78

APPENDIX A
Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-V96B	CO-DPIS-1167 instr. rt. (FW-P-1B suct. strainer)	OP	_____
CO-V96D	CO-DPIS-1167 Instr. Rt. (FW-P-1B suction strainer)	OP	_____
CO-V131B	SG Feed pump 1B suction strainer drain isolation	CL	_____
CO-V149B	SG Feed pump 1B suction strainer drain	CL	_____
CO-V54B	CO-PS-1146 instr. root (FW pump 1B suction)	OP	_____
CO-V159B	FW-P-1B seal wtr. backpress cont. vlv. outlet	OP	_____
CO-V160B	FW-P-1B seal wtr backpress cont. valve	A	_____
CO-V233B	CO-PC-3433 instr. rt. (FW-P-1B seal water)	OP	_____
CO-V234B	CO-P1-3433 Instr. rt. (FW-P-1B seal water)	OP	_____
CO-V229B	CO-DPC-3433 Inst. rt. (FW -P-1B seal water)	OP	_____
CO-IV39	Vent valve for CO-DPC-3433	CL	_____
CO-V231B	CO-DPC-3433 Inst. rt. (FW-P-1B seal water)	OP	_____
CO-IV37	Vent valve for CO-DPI-3433	CL	_____
CO-V161B	SG Feed pump 1B drain	CL	_____
CO-V163B	SG Feed pump 1B drain isol	CL	_____
CO-V164B	SG Feed pump 1B drain isol	CL	_____
CO-V162B	SG Feed pump 1B drain isol	CL	_____
CO-V88B	SG feed pump 1B seal water isol	CL	_____
CO-V89B	SG feed pump 1B seal water control	A	_____
CO-V230B	CO-DPC-3433 instr. rt. (FW-P-1B seal water)	OP	_____
CO-IV40	Vent valve for CO-DPC-3433 (in overhead)	CL	_____
CO-V226	FW-P-1B seal water supply line drain	CL	_____
CO-V232B	CO-DP1-3433 (FW-P-1B seal water)	OP	_____

194 143

APPENDIX A
Valve Line-up

System:	Condensate System	Date
VALVE NO.	DESCRIPTION	POSITION INITIAL
CO-IV38	Vent valve for CO-DPI-3433 ind. RACK 403B (By 'B' feed pump)	CL _____
CO-IV627	CO-PS-3422 isolation valve	OP _____
CO-IV628	CO-PS-3422 drain valve RACK 403F (By 'B' feed pump)	CL _____
CO-IV629	CO-PI-098 isolation valve	OP _____
CO-IV630	CO-PI-098 drain valve	CL _____
CO-V221B	FW-LC-3435 instr. root (SGFP bracket leakoff TK2B)	OP _____
CO-V220B	FW-LC-3435 instr. root (SGFP bracket leakoff TK2B)	OP _____
CO-V219B	SGFP bracket leakoff TS2B drain isolation	CL _____
CO-V222B	SGFP bracket leakoff TK2B drain RACK T-10 (South side 'B' feed pump)	CL _____
CO-IV631	CO-PI-3433 isolation valve	OP _____
CO-IV632	CO-PI-3433 drain valve	CL _____
CO-IV71A	CO-DPI-3433 high side isolation	OP _____
CO-IV71B	CO-DPI-3433 lo side isolation	OP _____
CO-IV71C	CO-DPI-3433 high side vent	CL _____
CO-IV71D	CO-DPI-3433 lo side vent	CL _____
CO-IV71E	CO-DPI-3433 equalizing valve	CL _____
CO-IV41	CO-DPI-3433 lo side drain	CL _____
CO-IV42	CO-DPI-3433 high side drain	CL _____

2106-2.1
Revision 2
11/22/77
APR 23 1979

APPENDIX A
Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-IV70B	CO-DPC-3433 lo side isolation	OP	_____
CO-IV70C	CO-DPC-3433 high side vent	CL	_____
CO-IV70D	CO-DPC-3433 lo side vent	CL	_____
CO-IV70E	CO-DPC-3433 equalizing valve	CL	_____
CO-V53A	CO-FT-069 instr root (FW pump 1A suct)	OP	_____
CO-V53C	CO-FT-069 instr root (FW pump 1A suct)	OP	_____
CO-V96A	CO-DPIS-1168 instr root (FW-P-1A suct. strainer)	OP	_____
CO-V96C	CO-DPIS-1168 instr root (FW-P-1A suct. strainer)	OP	_____
CO-V54A	CO-PS-1144 instr root (FW pump 1A suction)	OP	_____
CO-V132A	SGIP 1A suct strainer flush isolation	CL	_____
CO-V149A	SGFP 1A suct strainer drain	CL	_____
CO-V131A	SGFP-1A suct strainer drain isolation	CL	_____
CO-V164A	SGFP 1A drain isolation	CL	_____
CO-V231A	CO-DPI-3432 instr root (SGFP-1A seal water)	OP	_____
CO-IV44	Vent valve for CO-DPC-3432	CL	_____
CO-V159A	SGFP-1A seal water back-press cont. vlv outlet	OP	_____
CO-V160A	SGFP-1A seal water back-press cont. valve	A	_____
CO-V233A	CO-PC-3432 instr root (SGFW-1A seal water)	OP	_____
CO-V234A	CO-PI-3432 inst root (SGFW-1A seal water)	OP	_____
CO-V229A	CO-DPC-3432 instr root (SGFW 1A seal water)	OP	_____
CO-IV46	Vent valve for CO-DPI-3432	CL	_____

2106-2.1
Revision 5
04/27/78
APR 23 1979

APPENDIX A
Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-V232A	CO-DPI-3432 instr. root (SGFP-1A seal water)	OP	_____
CO-IV45	Vent valve for CO-DPC-3432	CL	_____
CO-V89A	SGFP-1A seal water control	A	_____
CO-V88A	SGFP-1A seal water isolation	CL	_____
CO-V230A	CO-DPC-3432 instr. root (SGFP-1A seal water)	OP	_____
CO-IV47	Vent valve for CO-DPI-3432	CL	_____
CO-V161A	SGFP-1A drain	CL	_____
CO-V225	SGFP-1A seal water supply line drain	CL	_____
CO-V162A	SGFP-1A drain isolation	CL	_____
CO-V163A	SGFP-1A drain isolation	CL	_____
RACK T-9 (East side of 'A' feed pump)			
CO-IV633	CO-PI-3432 isolation valve	OP	_____
CO-IV50	CO-PI-3432 drain valve	CL	_____
CO-IV69A	CO-DPI-3432 hi side isol	OP	_____
CO-IV69B	CO-DPI-3432 lo side isol	OP	_____
CO-IV69C	CO-DPI-3432 hi side vent	CL	_____
CO-IV69D	CO-DPI-3432 Lo side vent	CL	_____
CO-IV69E	CO-DPI-3432 equalizer valve	CL	_____
CO-IV49	CO-DPI-3432 hi side drain	CL	_____
CO-IV48	CO-DPI-3432 lo side drain	CL	_____
CO-IV68A	CO-DPC-3432 hi side isolation	OP	_____
CO-IV68B	CO-DPC-3432 lo side isolation	OP	_____

194 146

APPENDIX A
Valve Line-up

AFR 2 3 1979

2106-2.1
Revision 2
11/22/77

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-IV68C	CO-DPC-3432 hi side vent	CL	_____
CO-IV68D	CO-DPC-3432 lo side vent	CL	_____
CO-IV68E	CO-DPC-3432 equalizing valve	CL	_____
CO-V221A	FW-LC-3436 instr root (SGFP bracket leakoff TK2A)	OP	_____
CO-V220A	FW-LC-3436 instr root (SGFP bracket leakoff TK2A)	OP	_____
CO-V219A	SGFP-1A bracket leakoff TK2A drain isol.	CL	_____
CO-V222A	SGFP-1A bracket leakoff TK2A drain	CL	_____
CO-V173A	FW Htr FW-J-2A outlet drain isol (in overhead)	CL	_____
CO-V174A	FW Htr FW-J-2A outlet drain (in overhead)	CL	_____
CO-V251A	FW Htr FW-J-2A outlet sample conn (in overhead)	CL	_____
CO-V210A	FW Htr FW-J-2A outlet sample conn (in overhead)	CL	_____
CO-V90A	CO-LG-092 inst root (at hotwell)	OP	_____
CO-V90B	CO-LG-092 inst root	OP	_____
CO-V19A	CO-LT-332 inst. root	OP	_____
CO-V19B	CO-LT-332 inst. root	OP	_____
CO-V100A	CO-LS-092-1 instr. root	OP	_____
CO-V100B	CO-LS-092-2 instr. root	OP	_____
CO-V237	CO-LS-092-1 instr. root	OP	_____
CO-V238	CO-LS-092-1 inst. root	OP	_____
CO-V239	CO-LS-092-2 instr. root	OP	_____
CO-V240	CO-LS-092-2 instr. root	OP	_____
CO-V241	CO-LS-3426 instr. root	OP	_____
CO-V242	CO-LS-3426 instr. rt. (CO-C-1A level)	OP	_____

APPENDIX A
 Valve Line-up

System:	Condensate System	Date
VALVE NO.	DESCRIPTION	POSITION INITIAL
CO-V126A	CO-LC-092 instr. rt. (CO-C-1B level)	OP _____
CO-V126B	CO-LC-092 instr. rt. (CO-C-1B level)	OP _____
CO-V177	FW Htr FW-J-2A inlet drain isol. (past vac pumps West in overhead)	CL _____
CO-V178	FW Htr FW-J-2A inlet drain (past vac pumps West side in overhead)	CL _____
CO-V154A	Cond. 1A drain (under 1A hotwell)	CL _____
CO-V153A	Cond. 1A drain isolation (under 1A hotwell)	CL _____
CO-V154C	Cond. 1A drain (under 1A hotwell)	CL _____
CO-V153C	Cond. 1A drain isolation (under 1A hotwell)	CL _____
CO-V154B	Cond. 1A drain (under 1A hotwell)	CL _____
CO-V153B	Cond. 1A drain isolation (under 1A hotwell)	CL _____
CO-V154D	Cond. 1A drain (under 1A hotwell)	CL _____
CO-V153D	Cond. 1A drain isolation (under 1A hotwell)	CL _____
CO-V212	Gland stm cond drain tk level control valve outlet	OP _____
CO-V214	Gland stm cond drain tk level control vlv	A _____
CO-V216	Gland stm cond drain tk drain	CL _____
CO-V213	Gland stm cond drain tk level cont vlv inlet	OP _____
CO-V211B	CO-LC-3434 instr. rt. (gland stm cond drain tk)	OP _____
CO-V211A	CO-LC-3434 instr. rt. (gland stm cond drain tk)	OP _____
CO-V245	CO-LS-3434 vent (gland stm cond drain tk)	CL _____
CO-V253	CO-LC-3434 inst. root	OP _____
CO-V255	CO-LS-7094 inst. root	OP _____
CO-V256	CO-LS-7094 inst. root	OP _____

COA
 APR 23 1979 2106-2.1
 Revision 2
 11/22/77

APPENDIX A
 Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-V257	CO-LS-7095 inst. root	OP	_____
CO-V258	CO-LS-7095 inst. root	OP	_____
CO-V246	CO-LS-3434 drain (gland stm cond drain tk)	CL	_____
CO-V254	CO-LC-3434 inst. root	OP	_____
CO-V197	Cond. storage tanks to dem makeup line (by SSCCW coolers)	CL	_____
CO-V92C	EF-P-1 suction strainer lance conn	CL	_____
CO-V93C	EF-P-1 suction strainer lance drain	CL	_____
CO-V97E	CO-DP1-1166 instr. rt. (EF-P-1 suct strainer)	OP	_____
CO-V97F	CO-DP1-1166 instr. rt. (EF-P-1 suct strainer)	OP	_____
CO-V86C	CO-PS-827 instr. rt. (EF-P-1 suction)	OP	_____
CO-V125	EF-P-1 suction	L.O.OP	_____
CO-V235	Cond. storage tks to emerg. JGFP suction L.P. drain (located under grating in southwest corner)	CL	_____
CO-IV62	Vent valve for CO-DP1-1166	CL	_____
CO-IV63	Vent valve for CO-DP1-1166	CL	_____
RACK 437 (In corner by EF-P-1)			
CO-IV634	CO-P1-2027 isolation valve	OP	_____
CO-IV635	CO-PS-827 isolation valve	OP	_____
CO-IV636	CO-P1-2027 and CO-PS-827 common drain	CL	_____
CO-IV637	CO-DP1-1166 high side isolation	OP	_____
CO-IV638	CO-DP1-1166 high side vent	CL	_____
CO-IV639	CO-DP1-1166 high side drain	CL	_____

APPENDIX A
Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-IV640	CO-DP1-1166 low side isolation	OP	_____
CO-IV641	CO-DP1-1166 low side vent	CL	_____
CO-IV642	CO-DP1-1166 low side drain	CL	_____
CO-IV643	CO-DP1-1166 equalizing valve	CL	_____
CO-V192	Cond. pump to emerg. JG feed pump suct vent (in overhead by door entrance)	CL	_____
CO-V85	Cond. pump to EF-P-1 suction	L.O. OP	_____
CO-V87	Cond. to EF-P-2A/2B suction	OP	_____
CO-V82B	Storage tk to emerg. SG feed pumps suction	L.O. OP	_____
CO-V82A	Storage tk to emerg. SG feed pumps suction	L.O. OP	_____
CO-V206	Demin water to emerg. SG feed pump suction	CL	_____
CO-V83A	Emerg. SG feed pumps 2A suction	L.O. OP	_____
CO-V93A	EF-P-2A suction strainer lance drain	CL	_____
CO-V92A	EF-P-2A suction strainer lance conn	CL	_____
CO-V86A	CO-PS-1115 instr. rt. (EF-P-2A suction)	OP	_____
CO-V97C	CO-DPIS-1165 instr. rt. (EF-P-2A suction strainer)	OP	_____
CO-V97A	CO-DPIS-1165 instr. rt. (EF-P-2A suct. strainer)	OP	_____
CO-IV65	Vent valve for CO-DP1-1165	CL	_____
CO-IV64	Vent valve for CO-DP1-1165	CL	_____
RACK 439 (Between EF-P-2A and EF-P-2B)			
CO-IV644	CO-P1-2025 Isolation valve	OP	_____
CO-IV645	CO-PS-1115 isolation valve	OP	_____

APR 23 1979

2106-2.1
Revision 2
11/22/77

APPENDIX A
Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-IV646	CO-P1-2025 and CO-PS-1115 common drain valve	CL	_____
CO-IV647	CO-DP1-1165 high side isolation	OP	_____
CO-IV648	CO-DP1-1165 high side vent	CL	_____
CO-IV649	CO-DP1-1165 high side drain	CL	_____
CO-IV650	CO-DP1-1165 low side isolation	OP	_____
CO-IV651	CO-DP1-1165 low side vent	CL	_____
CO-IV652	CO-DP1-1165 low side drain	CL	_____
CO-IV653	CO-DP1-1165 equalizing valve	CL	_____
CO-V83B	Emerg. SG feed pump 2B suction	L.O. OP	_____
CO-V97B	CO-DPIS-1164 instr. rt. (EF-P-2B suct. strainer)	OP	_____
CO-V97D	CO-DP1-1164 instr. rt. (EF-P-2B suct. strainer)	OP	_____
CO-V93B	EF-P-2B suct. strainer lance drain	CL	_____
CO-V92B	EF-P-2B suct. strainer lance conn.	CL	_____
CO-V86B	CO-PS-1117 inst. rt. (EF-P-2B suction)	OP	_____
CO-IV66	Vent valve for CO-DP1-1164 ind.	CL	_____
CO-IV67	Vent valve for CO-DP1-1164 ind.	CL	_____
RACK 440 (In front of EF-P-2A by containment)			
CO-IV654	CO-P1-2026 isolation valve	OP	_____
CO-IV655	CO-PS-1117 isolation valve	OP	_____
CO-IV656	CO-P1-2026 and CO-PS-1117 common drain	CL	_____
CO-IV657	CO-DP1-1164 high side isolation	OP	_____
CO-IV658	CO-DP1-1164 high side vent	CL	_____

APPENDIX A
Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-IV659	CO-DP1-1164 high side drain	CL	_____
CO-IV660	CO-DP1-1164 low side isolation	OP	_____
CO-IV661	CO-DP1-1164 low side vent	CL	_____
CO-IV662	CO-DP1-1164 low side drain	CL	_____
CO-IV663	CO-DP1-1164 equalizing valve	CL	_____
CO-V44B	11th stage FW Htr. 3B inlet Px	CL	_____
CO-V45E	11th stage FW Htr. 3B outlet Px	CL	_____
CO-V169B	FW Htr. FW-J-4B outlet Hdr. drain	CL	_____
CO-V170B	FW Htr. FW-J-4B outlet Hdr drain	CL	_____
CO-V43B	13th stage FW Htr 2B outlet Px	CL	_____
CO-V42B	13th stage FW Htr 2B inlet Px	CL	_____
CO-V171B	FW Htr. FW-J-2B outlet Hdr vent	CL	_____
CO-V172B	FW Htr FW-J-2B outlet Hdr vent iso.	CL	_____
CO-V26	Gland steam condensor flow reg.	OP	_____
CO-IV664	(Rack 410) high side isolation CO-FC-67	OP	_____
CO-IV665	(Rack 410) high side vent CO-FC-67	CL	_____
CO-IV666	(Rack 410) high side drain CO-FC-67	CL	_____
CO-IV667	(Rack 410) low side isolation CO-FC-67	OP	_____
CO-IV668	(Rack 410) low side vent CO-FC-67	CL	_____
CO-IV669	(Rack 410) low side drain CO-FC-67	CL	_____
CO-IV670	(Rack 410) equalizing valve	CL	_____
CO-V14	Gland stm. condensor outlet Px	CL	_____
CO-V16	CO-FC-067 instr. root (GS-C-1 outlet)	OP	_____

APPENDIX A
Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-IV671	Vent valve to CO-FC-067	CL	_____
CO-V143	Gland stm cond. drain	CL	_____
CO-V142	Gland stm cond. vent	CL	_____
CO-V140	Gland stm cond. vent	CL	_____
CO-V141	Gland stm cond. drain	CL	_____
CO-V13	Gland stm cond. inlet Px	CL	_____
CO-V15	CO-FC-067 inst. root (GS-C-1 inlet)	OP	_____
CO-IV672	Vent valve to CO-FC-067	CL	_____
CO-V17	CO-LS-1138 inst. root (GS-C-1 level)	OP	_____
CO-V18	CO-LS-1138 inst. root (GS-C-1 level)	OP	_____
CO-V243	CO-LS-1138 vent (Gland steam cond)	CL	_____
CO-V244	CO-LS-1138 drain (Gland steam cond)	CL	_____
CO-V70	Cond. make-up valve bypass	CL	_____
CO-V69	Cond. make-up valve outlet	OP	_____
CO-V68	Cond. makeup valve	A	_____
CO-V71	Cond. make-up valve drain	CL	_____
CO-V67	Cond. make-up valve inlet	OP	_____
CO-V191	Cond. emerg. make-up valve inlet	OP	_____
CO-V190	Cond. emerg. make-up valve	A	_____
CO-V207	Cond. emerg. make-up Hdr drain	CL	_____
CO-V189	Cond. emerg. make-up valve outlet isolation	OP	_____
CO-V52B	SG Feed pump 1B suction (outbd Htr drain tk)	L.O. OP	_____
CO-V52A	SG Feed pump 1A suction (inbd Htr 3A)	L.O. OP	_____

194 153

APR 23 1979
2106-2.1
Revision 5
04/27/78

APPENDIX A
Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-V72A	CO-DPT-1169 inst. root (suction to F.P.)	OP	_____
CO-V72B	CO-DPT-1169 inst. root (suction to F.P.)	OP	_____
CO-V169A	FW Htr FW-J-4A outlet Hdr drain isolation	CL	_____
CO-V170A	FW Htr FW-J-4A outlet Hdr drain	CL	_____
CO-V45A	11th stage FW Htr 3A outlet Px	CL	_____
CO-V44A	11th stage FW Htr 3A inlet Px	CL	_____
CO-V171A	FW Htr FW-J-2A outlet Hdr vent	CL	_____
CO-V172A	FW Htr FW-J-2A outlet Hdr vent isolation	CL	_____
CO-V43A	13th stage FW Htr 2A outlet Px	CL	_____
CO-V42A	13th stage FW Htr 2A inlet Px	CL	_____
CO-V180	14th stage Htr drain cooler 1A inlet vent	CL	_____
CO-V181	14th stage Htr drain cooler 1A inlet vent	CL	_____
CO-V38A	14th stage Htr drain cooler 1A inlet	CL	_____
CO-V29A	14th stage Htr drain cooler 1A outlet Px	CL	_____
CO-V39A	14th stage Htr drain cooler 1A inlet Px	CL	_____
CO-V40A	14th stage FW Htr 1A inlet Px	CL	_____
CO-V41A	14th stage FW Htr 1A outlet Px	CL	_____
CO-V175A	FW Htr FW-J-2A inlet Htr vent	CL	_____
CO-V176A	FW Htr FW-J-2A inlet Hdr vent isolation	CL	_____
CO-V41B	14th stage FW Htr 1B outlet Px isol.	CL	_____
CO-V209	FW Htr FW-J-1B outlet Px	CL	_____
CO-V179	FW Htr FW-J-1A inlet Px	CL	_____
CO-V40B	14th stage FW Htr 1B inlet Px isol.	CL	_____

194 154

APR 23 1979

2106-2.1
Revision 5
04/27/78

APPENDIX A
Valve Line-up

System.	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-V199	Cond. 1A demin. water M/U	CL	_____
CO-V29B	14th stage Htr drain cooler 1B outlet Px	CL	_____
CO-V39B	14th stage Htr drain cooler 1B inlet Px	CL	_____
CO-V38B	14th stage Htr drain cooler 1B inlet	CL	_____
CO-V175B	FW Htr FW-J-2B inlet Hdr vent	CL	_____
CO-V176B	FW Htr FW-J-2B inlet Hdr vent isol.	CL	_____
CO-V8B	CO-C-1B exh hood cont. vlv inlet	OP	_____
CO-V133B	Turbine exh. hood 1B spray cont. vlv drain	CL	_____
CO-V9B	CO-C-1B exh. hood cont. vlv	A	_____
CO-V10B	CO-C-1B exh. hood cont. vlv outlet	OP	_____
CO-V11B	CO-C-1B exh. hood cont. vlv bypass	CL	_____
CO-V227B	CO-PI-2014 inst. rt. (cond. 1B turb. exh. hood supply)	OP	_____
CO-V227A	CO-PI-2013 inst. rt. (cond. 1A turb. exh. hood supply)	OP	_____
CO-V11A	CO-C-1A exh. hood cont. vlv bypass	CL	_____
CO-V10A	CO-C-1A exh. hood cont. vlv outlet	OP	_____
CO-V-9A	CO-C-1A exh. hood cont. vlv	A	_____
CO-V133A	Turbine exh. hood 1A spray cont. vlv drain	CL	_____
CO-V8A	CO-C-1A exh. hood cont. vlv inlet	OP	_____
CO-IV51	Rack T-12 CO-PI-2013 isol.	OP	_____
CO-IV52	Rack T-12 CO-PS-3946 isol.	OP	_____
CO-IV53	Rack T-12 2013 & 3946 drain	CL	_____
CO-IV54	Rack T-12 CO-PI-2014 isol.	OP	_____

194 155

APR 23 1979

2106-2.1
Revision 4
03/30/78

APPENDIX A
Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-IV55	Rack T-12 CO-PS-3944 Isol.	OP	_____
CO-IV56	Rack T-12 2014 & 3944 drain	CL	_____
CO-V47A	10th stage FW Hdr 4A outlet Px	CL	_____
CO-V46A	10th stage FW Htr 4A inlet Px	CL	_____
CO-V167A	FW Htr FW-J-4A outlet Hdr vent (under vent ducting in overhead)	CL	_____
CO-V168A	FW Htr FW-J-4A outlet Hdr vent isol. (under vent ducting in overhead)	CL	_____
CO-IV673	Rack 417 CO-PT-1126 isolation	OP	_____
CO-IV674	Rack 417 CO-PI-2021 isolation	OP	_____
CO-IV675	Rack 417 CO-PI-2021 & 1126 drain	CL	_____
CO-V48A	8th stage FW Htr 5A inlet Px	CL	_____
CO-V49A	CO-PT-1126 inst. rt. (FW Htr 5A outlet)	CL	_____
CO-V165A	FW Htr F-J-5A outlet Hdr vent	CL	_____
CO-V166A	FW Htr F-S-5A outlet Hdr vent isolation	CL	_____
*CO-V50A	8th stage FW Htr 5A outlet	OP	_____
*CO-V50B	8th stage FW Htr 5B outlet	OP	_____
CO-V165B	FW-Htr F-J-5B outlet Hdr vent	CL	_____
CO-V166B	FW-Htr-F-J-5B outlet Hdr vent isolation	CL	_____
CO-V49B	CO-PT-1129 inst. rt. (FW Hdr 5B outlet)	CL	_____
CO-V48B	8th stage FW Htr 5B inlet Px	CL	_____
CO-V167B	FW Htr FW-J-4B outlet Hdr vent	CL	_____
CO-V168B	FW Htr FW-J-4B outlet Hdr vent isolation	CL	_____
CO-IV676	Rack 416 CO-PT-1129 isolation	OP	_____

*CO-V-50 A/B may be closed as designated by S/S or S/F depending on which FW heater spring is to be used for FW heating.

2106-2.1
Revision 2
APR 23 1979 11/22/77

APPENDIX A
Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-IV677	Rack 416 CO-PI-2022 isolation	OP	_____
CO-IV678	Rack 416 CO-PI-1129, PI-2022 drain	CL	_____
CO-V47B	10th stage FW Htr 4B outlet Px	CL	_____
CO-V46B	10th stage FW Htr 4B inlet Px	CL	_____
CO-V157	Gland stm desuper Htr cont. vlv outlet	OP	_____
CO-V158	Gland stm desuper Htr cont. vlv	A	_____
CO-V155	Gland stm desuper Htr cont. vlv inlet	OP	_____
CO-V156	Gland stm desuper htr cont. vlv bypass	CL	_____
CO-V248	CO-T-1B sample conn.	CL	_____
CO-V-76B	CO-T-1B Isolation valve	OP	_____
CO-V224B	CO-LT-073 inst. root	OP	_____
CO-V77C	CO-LS-107 inst. root	OP	_____
CO-V77D	CO-LS-108 inst. root	OP	_____
CO-V98B	Cond. storage tank 1B emerg. SG. feed pumps	L.O. OP	_____
CO-V139B	CO-T-1B drain	CL	_____
CO-V73B	Cond. storage tk. 1B drain isol.	CL	_____
CO-IV72	CO-T-1B/CO-LS-107 isolation	OP	_____
CO-IV75	CO-T-1B/CO-LS-107 drain	CL	_____
CO-IV73	CO-T-1B/Co-LG-107 isolation	OP	_____
CO-IV74	CO-T-1B/Co-LS-108 isolation	OP	_____
CO-IV76	CO-T-1B/CO-LS-108 ; LG-107 drain	CL	_____
CO-V247	CO-T-1A sample conn.	CL	_____
CO-V224A	CO-LT-072 inst. root (CO-T-1A level)	OP	_____

APR 23 1979

11/22/77

APPENDIX A
Valve Line-up

System:	Condensate System	Date	
VALVE NO.	DESCRIPTION	POSITION	INITIAL
CO-V77A	CO-LS-105 inst. root (CO-T-1A)	OP	_____
CO-V77B	CO-LS-106 inst. root (CO-T-LA)	OP	_____
CO-V98A	CO-T-1A emergency SG feed pumps	L.O. OP	_____
CO-V139A	CO-T-1A drain valve	CL	_____
CO-V73A	CO-T-1A drain isolation valve	CL	_____
CO-V76A	CO-T-1A isolation valve	OP	_____
CO-IV77	CO-T-1A/Co-LS-106 isolation	OP	_____
CO-IV78	CO-T-1A/CO-LG-105 isolation	OP	_____
CO-IV79	CO-T-1A/CO-LS-105 isolation	OP	_____
CO-IV80	CO-T-1A/CO-LS-105 drain	CL	_____
CO-IV81	CO-T-1A/CO-LG-105 & LS-106 drain	CL	_____
CO-V289	Unit I/II cond. return drain (outside turbine bldg door in corridor)	CL	_____
CO-V262	Unit I/II cond. return vent vlv (outside aux fldg above roll-up door)	CL	_____
CO-V266	Unit I/II cond. return drain vlv (by steel door to Unit I)	CL	_____

TMI DOCUMENTS

DOCUMENT NO: TM-023

COPY MADE ON 5/3/79 OF DOCUMENT PROVIDED BY
METROPOLITAN EDISON COMPANY.

W.R.M.

Wilda R. Mullinix, NRC

7906140274

194 105