



OTHER SYS. THIS P&ID: Z102-141, Z102-139, Z102-143, Z102-129, Z102-128, Z102-148, E31 & P11 NOTE: ALL LINES IDENTIFIED AS E31 ARE E31 BACK TO LINER.

- NOTES:
1. ALL EQUIPMENT NUMBERS ON THIS DRAWING ARE PREFIXED BY 01041 UNLESS OTHERWISE NOTED.
 2. ALL VALVE POSITIONS SHOWN ARE FOR NORMAL SYSTEM OPERATIONS AND NOT NECESSARILY FOR REFUELING OPERATIONS.
 3. ALL INSTRUMENT NUMBERS ON THIS DRAWING ARE PREFIXED BY 1041 UNLESS OTHERWISE NOTED.
 4. THIS P&ID REDRAWN FROM G.E. P&ID NO. 105D49178A FUEL POOL COOLING & CLEANUP SYSTEM.
 5. DRAIN WATER WILL DISCHARGE TO THE UPPER CONTAINMENT POOL THROUGH THE RHR DEWISERS.
 6. SECTION III CLASS 3 PIPING CLASSIFIED AS NON-B AND NON-SEISMIC CATEGORY I, WILL NOT REQUIRE AN "N" STAMP.
 7. DELETED
 8. SPRAY NOZZLES SHALL BE WM STEINER MODEL SF5045G OR EQUAL SOLID JET SQUARE SPRAY TYPE.
 9. ALL PIPING 2" & SMALLER IS CLASSIFIED AS III-"B" RADIATION LEVEL.
 10. THE FOLLOWING AIR-OPERATED VALVES ARE CLASSIFIED AS "Q" FOR STRUCTURAL PURPOSES ONLY AND ARE NOT REQUIRED TO FUNCTION FOLLOWING A DESIGN BASIS ACCIDENT: F002, F032, F033 & F047.
 11. CONSULT THE FOLLOWING DRAWINGS FOR THE PHYSICAL ARRANGEMENT OF THE LEAK DETECTION LINE DRAINS FOR AUXILIARY BUILDING POOLS:
1. 9645-C-15157
2. 9645-C-1408
3. 9645-C-1406
4. 9645-C-1409
 12. FOR PENETRATION DETAILS SEE DRAWING 945-C-1004.
 13. CONSULT THE FOLLOWING DRAWINGS FOR THE PHYSICAL ARRANGEMENT OF THE LEAK DETECTION LINE DRAINS FOR THE CONTAINMENT POOLS:
1. 9645-C-1078A
2. 9645-C-1093B
3. 9645-C-1095
4. 9645-C-1097
5. 9645-C-1094
 14. ALL STARTUP STRAINERS SHALL BE REPLACED BY RING SPACERS IN ACCORDANCE WITH THE LATEST REVISION OF 9645-MS-03.
 15. DIFFUSER PIPE DESIGN, MATERIALS, AND FABRICATION TO BE EQUIVALENT TO PIPING CLASS HCX (PRESSURE TESTING AND ASME STAMPING ARE NOT REQUIRED).
 16. THE ASME SECTION III CODE BOUNDARY FOR THE LEAK CHASE PIPING SHALL BE AT THE VENDOR FURNISHED LEAK CHASE TO THE LEAK CHASE PIPING CONNECTION. THE INTERCONNECTING ATTACHMENT WELD SHALL BE A NON-ASME SECTION III WELD. HYDROSTATIC TESTING IS NOT REQUIRED. A DYE PENETRANT TEST SHALL BE PERFORMED EXCEPT ON THE PIPING COVERED BY NOTE 5.
 17. THE INTERCONNECTING ATTACHMENT WELDS AT THE SKIMMER PIPING TO SKIMMER BOXES SHALL BE NON-ASME SECTION III WELDS. HYDROSTATIC TESTING IS NOT REQUIRED. A DYE PENETRANT TEST SHALL BE PERFORMED.
 18. THE BELLOWS TEST CONNECTIONS (PP) AND THE TRANSFER TUBE TEST CONNECTIONS (3/4"-HBC-232 AND THE ASSOCIATED VALVES) ARE TO BE ROUTED TO AN ACCESSIBLE AREA OUTSIDE OF THE CORRIDOR AREA SHIELD WALL. SEE INSTRUMENT INSTALLATION DETAIL FOR MATERIAL REQUIREMENTS FOR BELLOWS TEST CONNECTION (PP).
 19. THE HCX DESIGNATION APPLIES TO "Q" PIPING DESIGNED PER CLASS HCX, INSTALLED PER ANSI B31.1 REQUIREMENTS. SERVICE CONDITIONS, SEISMIC CATEGORY AND INSULATION CLASS ARE IDENTICAL TO HCC-44. SEE NCR-2343, 4266, 4823 AND 5234.
 20. DELETED

CONTAINMENT BUILDING POOL VALVE CHART

VALVE NOS.	ZONE LOCATIONS	NUMBER OF LINER PLATE CONNECTIONS PER HEADER
F307A	WEST WALL	6
F307B	NORTH WALL	6
F307C	EAST WALL	6
F307D	SOUTH WALL	6
F309A	EAST WALL	6
F309B	SOUTH WALL	6
F309C	NORTH WALL	7
F309D	WEST WALL	7
F311	SOUTH WALL	7
F312	EAST WALL	7
F313A	NORTH WALL	6
F313B	SOUTH WALL	6
F313C	EAST WALL	6
F313D	SOUTH WALL	6
F315A	WEST WALL	4
F315B	NORTHWEST WALL	4
F315C	NORTHEAST WALL	4
F315D	SOUTHWEST WALL	4
F315E	EAST WALL - EL. 167'-6"	4
F315F	EAST WALL - EL. 164'-6"	4

26. ALL LEAK CHASE SYSTEM ISOLATION VALVES SHOWN ON THE P&ID OR LISTED IN THE TABLES SHALL BE LOCKED OPEN.
27. CAPPED PORTION OF TRANSFER CANAL LEAK CHASE COLLECTOR NOT USED (NCR-1726). LEAKAGE TO LEAK DETECTION DIRECTED THRU TRANSFER CANAL FLOOR DRAIN LINER.

AUXILIARY BUILDING POOL VALVE CHART

VALVE NOS.	ZONE LOCATIONS	NUMBER OF LINER PLATE CONNECTIONS PER HEADER
F289A	NORTH WALL - SEE NOTE 22	3
F289B	WEST WALL - SEE NOTE 21	2
F289C	EAST WALL - NORTH ZONE	2
F289D	EAST WALL - SOUTH ZONE	2
F289E	SOUTH WALL - SEE NOTE 23	3
F290A	NORTH EAST FLOOR ZONE	1
F290B	CENTRAL FLOOR ZONE	1
F290C	NORTHWEST FLOOR ZONE	1
F290D	SOUTHWEST FLOOR ZONE	1
F290E	SOUTHEAST FLOOR ZONE	1
F292A	NORTH WALL ZONE	3
F292B	SOUTH WALL ZONE	2
F292C	EAST WALL ZONE	4
F292D	WEST WALL ZONE	4
F294A	NORTH WALL ZONE	2
F294B	SOUTH WALL ZONE	2
F294C	EAST WALL ZONE	2
F294D	WEST WALL ZONE	2

- NOTES CONTINUED
21. THE ENTIRE WEST WALL OF THE SPENT FUEL POOL HAS TWO LINER PLATE DRAIN CONNECTIONS IN THE SOUTHERN ZONE. LEAK DETECTION FOR THE ENTIRE WALL IS PROVIDED BY THESE CONNECTIONS. THE EXISTING TWO DRAIN CONNECTIONS ON THE NORTHERN ZONE HAVE BEEN CAPPED OFF.
 22. THE ENTIRE NORTH WALL OF THE SPENT FUEL POOL HAS THREE LINER PLATE DRAIN CONNECTIONS FOR LEAK DETECTION (SEE NCR NO. 5479), TWO OF WHICH ARE USED.

23. THE ENTIRE SOUTH WALL OF THE SPENT FUEL POOL HAS THREE LINER PLATE DRAIN CONNECTIONS FOR LEAK DETECTION.
24. CAPPED PORTION OF TRANSFER TUBE LEAK CHASE COLLECTOR NOT USED (SEE NCR NO. 3480). LEAKAGE TO LEAK DETECTION DIRECTED THROUGH SPENT FUEL POOL GATE LEAK CHASE COLLECTOR.
25. THE ASME SECTION III CODE BOUNDARY FOR THE DRAIN PIPING SHALL BE AT THE VENDOR FURNISHED BOUND TO THE DRAIN PIPING CONNECTION. THE INTERCONNECTING ATTACHING WELD SHALL BE A NON-ASME III WELD. HYDROSTATIC TESTING IS NOT REQUIRED. A DYE PENETRANT TEST SHALL BE PERFORMED.

COMPONENTS SUBJECT TO AMR

- NON-SAFETY RELATED SYSTEMS & COMPONENTS AFFECTING SAFETY RELATED SYSTEMS AMM20
- FUEL POOL COOLING AND CLEANUP SYSTEM AMM21

011	AS-BUILT PER DRN 6500	WH	N/A	N/A	WE	3-10
010	ISSUED IN RESPONSE TO DCA-NPE-16-027	BECHTEL	SIGN-OFF			-99

GRAND GULF NUCLEAR STATION
UNIT 1
NUCLEAR PLANT ENGINEERING

UPDATED FINAL SAFETY ANALYSIS REPORT
FIGURE NUMBER - 9.1-027

P & I DIAGRAM
FUEL POOL COOLING AND CLEANUP SYSTEM

SCALE: NONE DRAWING No. M-1088D REV. 011
LDC 98-099 HYBRID OFN: m1088d.dgn

NO.	DATE	DESCRIPTION	BY	ENG	CHK	APP
REVISIONS						
LRA-M-1088D						

10-13-2011

D093