



- NOTES:
1. ALL EQUIPMENT NUMBERS ON THIS DRAWING ARE PREFIXED BY NSP1 UNLESS OTHERWISE NOTED.
 2. ALL INSTRUMENT NUMBERS ON THIS DRAWING ARE PREFIXED BY SP21 UNLESS OTHERWISE NOTED.
 3. THIS P&I IS NOT "O" LISTED. "O" IDENTIFICATION IS FOR BIDDING AREAS ONLY, AS SHOWN.
 4. DELETED
 5. DELETED
 6. DELETED
 7. DELETED
 8. FOR LINES CONTAINING CONCENTRATED SULFURIC ACID, PIPING SHALL BE SCH 80 AND VALVES SHALL BE OF CARPENTER 20 CONSTRUCTION FOR WELDED PARTS, UNLESS OTHERWISE NOTED.
 9. THE FOLLOWING LINES CARRYING CAUSTIC WADA LOCATED BOTH OUTDOORS AND INSIDE THE WATER TREATMENT BUILDING SHALL BE EQUIPPED WITH HEAT TRACING TO PREVENT FREEZING. JSD-112, JSD-23, JSD-29 (PORTIONS WITHIN THE WATER TREATMENT BUILDING)
 10. ALL LIQUID CARRYING INSTRUMENT TUBING CONNECTED TO THE DEMINERALIZER WATER STORAGE & CAUSTIC STORAGE TANKS SHALL BE HEAT TRACED TO PREVENT FREEZING.
 11. LINES DESIGNATED AS EQUIPMENT WASHDOWN CONN. ARE PROVIDED FOR THE FLUSHING OF PIPING SYS. PRIOR TO SERVICING OF MECH. EQUIP. THE VALVES AND FLANGES ASSOCIATED WITH EACH CONN. ARE TO BE ROUTED DOWN TO & LOCATED WITHIN 3 TO 5 FT. OF THE FLOOR.
 12. DELETED
 13. BURIED C.S. PIPING WHICH IS NORMALLY COATED & WRAPPED, IS TO BE HEAT TRACED AS FOLLOWS:
 A. STRIP THE COATING & WRAPPING FROM THE PORTION TO BE HEAT TRACED.
 B. SANDBLAST PER SSPC-SP-6 (NEAR WHITE).
 C. APPLY ONE COAT OF MOHR 69 TO ACHIEVE A DRY FILM THICKNESS OF 3.0 TO 5.0 MIL.
 D. INSTALL ELECTRIC HEAT TRACING.
 E. WRAP PIPE WITH 1/2" PITTSBURGH CORNING CELLULAR GLASS INSULATION.
 F. APPLY PITTSBURGH CORNING PITTWRAP JACKETING PER MANUFACTURER'S RECOMMENDED INSTALLATION DETAILS. JACKET & ENDS TO BE SEALED TO BE VAPOR PROOF.
 G. HEAT TRACING USED SHOULD LIMIT MAX. PIPE TEMP. TO 150°F & MIN. PRODUCT TEMP. TO 70°F. THE ABOVE REQUIREMENTS ARE SPECIFICALLY FOR LINE F-1000S AND HEAT TRACING SHOULD BE APPLIED DOWN TO 5'-0" BELOW GRADE. HEAT TRACED PIPING SHOULD BE LOCATED IN SUCH A WAY THAT IT MAY BE EASILY EXCAVATED FOR REPAIR OF THE HEAT TRACING.
 14. ALL PIPING 2" AND SMALLER IS CLASSIFIED B-4" RADIATION LEVEL.
 15. ALL START UP FITTINGS SHALL BE REPLACED BY RING SPACERS IN ACCORDANCE WITH THE LATEST REV. OF ME-03, GENERAL NOTE 17.

- NOTES: (CONT.)
16. VENDOR VALVE NUMBERS ARE IN THE PARENTHESES.
 17. PROCESS PIPE & SLEEVE ARE ONE & THE SAME WITHIN THE AREA MARKED "SCH. CHG." THE DIMENSIONS ARE INDICATED ON DWG. C-0054 FOR DRYWELL PENETRATIONS AND DWG. C-0044 FOR CONTAINMENT PENETRATIONS.
 18. ROUTING OF DEMINERALIZED WATER TO VARIOUS INSTRUMENT RACKS AND PANELS WILL BE DETERMINED BY THE FIELD.
 19. PIPING FROM CHEMICAL ADDITION TANKS TO REGEN. WASTE NEUTRALIZING TANK SHALL BE AS SHORT AS POSSIBLE WITH NO LOKS OR LOW POINTS.
 20. TEMPORARY N₂ SPARGER CONNECTION ALL MATERIAL INCLUDING SST. FULL COUPLING NOZZLE FOR TANK PENETRATION IS TO BE SUPPLIED BY BECHTEL AND INSTALLED BY TANK SUBCONTRACTOR.
 21. VALVES F336, F337 & F380 SHALL BE 600# BALL VALVES, SW, MATERIAL CLASS ESD (C-6). FIELD TO PROCURE CONTRAMATICS BALL VALVE MODEL C-122-06. VALVE F380 SHALL BE INSTALLED AS A LOW POINT DRAIN ON THE VERTICAL RISER INTO THE TANK. VALVE F338 SHALL BE A 90° CHECK VALVE, SW, MATERIAL CLASS ESD.
 22. VALVES F370 & F386 SHOULD BE PLACED AS CLOSE AS POSSIBLE TO THE CAUSTIC ADDITION TANK. VALVES F371 & F387 SHOULD BE PLACED AS CLOSE AS POSSIBLE TO THE ACID ADDITION TANK. VALVES F370 & F387 TO BE THROTTLED AS NECESSARY TO CONTROL TANK FILL RATES.
 23. SEE INSTALLATION DETAIL J-0108L.
 24. VALVES F391, F397, F392, F393, F394, F395, F396, F397, F398, F399, & F400 SHALL BE SAUNDERS PATENT WIER TYPE TEFLON DIAPHRAGM VALVES (PPL LINED), BECHTEL CONSTRUCTION TO PROCURE.
 25. DELETED.
 26. VENDOR TRAILER AUTOMATIC START/STOP FUNCTION IS RELEVANT TO DEMIN STORAGE TANK LEVEL.
 27. POWER TO PRESSURE SWITCH AND TO HEAT TRACE AT F341 VALVE SUPPLIED FROM VENDOR TRAILER.
 28. P21 SYSTEM COMPONENTS: C812, ACID METERING PUMP, C814, ACID ADDITION PUMP, C817A/B, ACID TRANSFER PUMPS, C818A/B, CATION EXCHANGERS AND D822A/B, ANION EXCHANGERS, ARE COMPONENTS UTILIZED FOR WATER REGENERATION PROCESSES AND AS SUCH ARE, "NOT NORMALLY USED."

NO.	DESCRIPTION	REV.	DATE	BY	CHK	APP
837	AS-BUILT PER EC 13132 INCORP. ECN 21915	WE	N/A	N/A	SP	CW
836	AS-BUILT PER DRN 8536	WE	SIGN-OFF	N/A	DN	RECORD
835	AS-BUILT PER MCP 92/1064 INC. CN 97/0018	WE	N/A	N/A	BH	11-1-82
834	AS-BUILT PER ER 98/0427-02-08	WE	N/A	N/A	BH	7/1/81
833	AS-BUILT PER DRN 7356	WE	N/A	N/A	SP	7/8/80

GRAND GULF NUCLEAR STATION
 UNIT 1
 NUCLEAR PLANT ENGINEERING

UPDATED FINAL SAFETY ANALYSIS REPORT
 FIGURE NUMBER - 09.2-011

P & I DIAGRAM
 MAKE UP WATER TREATMENT SYS.
 UNIT 1

SCALE: NONE DRAWING No. M-0033A REV. 037

HYBRID DFN: m0033a.dgn

COMPONENTS SUBJECT TO AMR

NON SAFETY RELATED SYSTEMS & COMPONENTS AFFECTING SAFETY RELATED SYSTEMS AMM20

NO.	DATE	DESCRIPTION	BY	ENG	CHK	APP
REVISIONS						
LRA-M-0033A						

D107