4129 - R16
3789 R4

47W855-1

REV NO	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	MECH	SUPV	RECD	APPD
11	2699	4-15-74	RJS	MJ	JLF	[illegible]					
	ADDED HYDROSTATIC TEST PRESSURES										
12	31,284	12-19-74	ABL	JG	[illegible]	[illegible]					
	Add VALVE TAG NO. 1-78-600 & 2-78-600 PER FCR M-10,487. ADD NOTE NO 12 PER ECN										
13	SI	2-7-75	[illegible]								
	REV NOTE 7 TO READ 1" HOLE PER FCR A-274; REV FUEL TRANSFER TUBE PER FCR M-10346										

REV NO	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	MECH	SUPV	RECD	APPD
14	SI#3789, 3910	12-13-73	[illegible]								
	REV FUEL XFR TUBE PER SI#19 FOR FCR M10566, ADD VALVE ID (1-62A-500 & 2-62A-500), INTERFACE COORDS, FSAR FIG. REF. & VLV 531 BOUNDARY CORRECTION PER 3739, ANTI-SIPHON HOLE SIZE FITTING FOR FOR MARINE										

PRIMARY WATER SYSTEM 47W810-1 COORD B-10

FROM RESIN FILL TANK

SPENT FUEL PIT DEMINERALIZER

NOTE: DO NOT EXCEED DESIGN FLOW LIMITS THROUGH THE DEMINERALIZER

VENT SCREEN

NSS SFST 47W809-4 COORD B-6

STATION DRAINAGE SYSTEM 47W852-2 COORD C-7

CVCS HOLD-UP TANKS 1-3 47W811-3 COORD A-2

SPENT FUEL PIT FILTER

SPENT FUEL PIT HEAT EXCHANGERS

STATION DRAINAGE SYSTEM 47W852-2 COORD B-12

CCS RETURN HEADER 2-3 47W813-1 COORD C-8

CCS SUPPLY HEADER 2-3 47W813-1 COORD C-8

CCS RETURN HEADER 1-3 47W813-1 COORD C-8

CCS SUPPLY HEADER 1-3 47W813-1 COORD C-8

RESIDUAL HEAT REMOVAL SYSTEM 47W810-1 COORD C-7

RESIDUAL HEAT REMOVAL SYSTEM 47W810-1 COORD C-7

FLOW RESTRICTING ORIFICE - NOTE 10

FLOW RESTRICTING ORIFICE SEE NOTE 10

LOCK SIMPLEX

DEMINERALIZED WATER SYSTEM MAKE-UP 47W851-1 COORD D-2

LOW LEVEL ALARM-EL 748'-11"
MIN MIN OPER LEVEL-EL 743'-11"
MIN MAX OPER LEVEL WITHOUT SPENT FUEL CASK-EL 749'-21"
MAX HI-LEVEL OF SFP AREA (WITH CASK IN LOADING AREA) EL 749'-9"

SPENT FUEL PIT

STRAINERS

EL 709.23

EL 731.0

EL 725.92

TRANSFER CANAL

3/4" HOLE (NOTE 7)

1" HOLE (NOTE 7)

HI-LEVEL OF SFP AREA AND TRANSFER CANAL AND REACTOR BLDG REFUELING CAVITY (WITH CASK IN LOADING AREA) - EL 749'-9"

HI-LEVEL OF SFP AREA AND TRANSFER CANAL (WITH CASK IN LOADING AREA) - EL 749'-9"

SPENT FUEL PIT SKIMMER STRAINER

SPENT FUEL PIT SKIMMER FILTER

SPENT FUEL PIT SKIMMER PUMP

CAP 100 GPM - 50 FT TDH

SUCTION CLEANING CONNECTION

CVCS RECIRC PUMP 47W809-3 COORD F-9

ECN 4619

ECN 4230

SPENT FUEL PIT PUMPS

CAP 2300 GPM - 125 FT TDH

SEAL DRAIN

CASING VENT

TEST CONN

REFUELING WATER PURIFICATION PUMPS CAP. 200 GPM @ 170 FT TDH

REFUELING WATER PURIFICATION FILTERS

SAMPLE

FBOA

CASING DRAIN

SEAL DRAIN

STATION DRAINAGE SYSTEM 47W852-2 COORD E-9

STATION DRAINAGE SYSTEM 47W852-2 COORD E-11

STATION DRAINAGE SYSTEM 47W852-2 COORD B-2

STATION DRAINAGE SYSTEM 47W852-2 COORD C-5

STATION DRAINAGE SYSTEM 47W852-2 COORD B-2

STATION DRAINAGE SYSTEM 47W852-2 COORD E-9

STATION DRAINAGE SYSTEM 47W852-2 COORD E-11

STATION DRAINAGE SYSTEM 47W852-2 COORD B-2

UNIT 2 REFUELING CAVITY

CONT SH 47W351-1

NSS REACTOR COOLANT DRAIN TK 47W830-1 COORD B-3

8-600 VENT OPEN TO ANNS ATM @ EL 752'-8"

I-62A-500

FUEL TRANSFER TUBE

UNIT 1 REFUELING CAVITY

CONT SH 47W851-3

NSS REACTOR COOLANT DRAIN TK 47W830-1 COORD B-3

FSAR FIG. 9.1-3

FUEL TRANSFER CANAL

GATE

FUEL ELEVATOR

6 REACTORS

UNIT 1 REFUELING CAVITY

SPENT FUEL PIT EL 709.23

BOTTOM OF SLOT EL 725'-11"

EL 730.0

FUEL CASK LOADING AREA EL 709.48

KEY PLAN
NTS

NOTES CONTINUE:

12. CLASS G PIPING LABELED WITH FBOA IS ANALYZED FOR SEISMIC CAT. I(L) PRESSURE BOUNDARY RETENTION IS WITHIN THE SCOPE OF THE HYDROSTATIC QA PROGRAM (THE VALVE SEAT TERMINATES THE FBOA BOUNDARY). ALL REMAINING CLASS G PIPING IS SEISMICALLY SUPPORTED FOR POSITION RETENTION ONLY.

ECN 4619

NOTES:

1. THIS FLOW DIAGRAM IS FOR UNIT 1 AND UNIT 2.
2. ALL VALVES ARE THE SAME SIZE AS THE PIPE UNLESS OTHERWISE NOTED.
3. UNIT 1 VALVES HAVE PREFIX "1" UNIT 2 VALVES HAVE PREFIX "2". VALVE WITH NO PREFIX NO. ARE COMMON TO BOTH UNITS. VALVE ARE SYS 78 (SFP) UNLESS NOTED BY A DIFFERENT SYS NO. LOCATED BETWEEN PREFIX AND VALVE NO.
4. L.O. DENOTES VALVE TO BE LOCKED OPENED. L.C. DENOTES VALVES TO BE LOCKED CLOSED.
5. ALL PRESSURE, SAMPLE AND TEST CONNECTIONS ARE 8" UNLESS OTHERWISE NOTED.
6. THE CLASSIFICATION OF THE PIPING SYSTEM IS INDICATED BY [illegible].
7. LOCATE HOLE IN PIPE 2 FEET BELOW NORMAL WATER LEVEL.
8. TEMPORARY STRAINER IS PLACED IN THE SPOOL PIECE DURING INITIAL FLUSHING OPERATIONS. STRAINER MUST BE REMOVED BEFORE PLANT START-UP. TEST CONNECTION IS CONNECTED TO PRESSURE GAUGE DURING INITIAL FLUSHING.
9. SYSTEM DESIGN PARAMETERS ARE AS FOLLOWS:

SUB-SYSTEM	PRESSURE	TEMPERATURE
SPENT FUEL PIT COOLING	150 PSIG	200° F
SPENT FUEL PIT SKIMMER	150 PSIG	200° F
REFUELING WATER PURIFICATION	150 PSIG	200° F

10. SPOOL PIECES IN THIS LINE TO BE INSTALLED FOR GREN REACTOR COOLING DURING FLOODS ABOVE PLANT GRADE ONLY. ORIFICES ARE TO BE REMOVED.
11. [188] [225] INDICATES THE HYDROSTATIC TEST PRESSURE CONST SHALL DETERMINE IF THE COMPONENTS IN THE SYSTEM ARE LIMITING COMPONENTS TO THE HYDROSTATIC TEST ASME CODE CASES INVOLVING HYDROSTATIC TESTING MAY BE USED IF EN DES

REFERENCE DWGS: APPROVES THEIR APPLICATION.

WESTINGHOUSE DRAWING:

[illegible] - FLOW DIAGRAM, SPENT FUEL PIT COOLING SYSTEMS

[illegible] - PROCESS FLOW DIAGRAM, SPENT FUEL PIT [illegible]

[illegible] DRAWINGS

[illegible] - MECHANICAL FUEL HANDLING AND CLEANING SYSTEM

[illegible] - LOGIC DIAGRAM

[illegible] - LOGIC DIAGRAM

[illegible] - WELD MAPPED TO "ARCHITECT"

[illegible] - SEAL LIP MATERIAL

[illegible] - DESIGN CRITERIA FOR FLOOD PROTECTION BARRIERS

[illegible] - DESIGN CRITERIA FOR [illegible]

REV NO	DATE	WDGE	CHKD	SUPV	NSP	SUBMITTED
DSGN		RGS	JLF	SUPV.	JLF	
DRWN		AGS	RWB	NSP	[illegible]	
CHKD		CC	JLF			
RECD		CWT		ENGINEER		
COMP						
CHKD						

TI APERTURE CARD

THIS DRAWING IS UNDER CONFIGURATION CONTROL

REV NO	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	MECH	SUPV	RECD	APPD
15	4619	7-17-75	RGS	MJ	JLF	[illegible]					
	REV CL G DSN TO CLG PER NCR M8N(B)8512 & ECN 4619. ADDED CL G PRESSURE BOUNDARY OR SEPARATORS PER NCR M8N(B)8512 & ECN 4230 (UNIT 1) & 4229 (UNIT 2).										
16	3889, 3893	1-14-76	MH	MH	[illegible]	[illegible]					
	ADDED VENT VALVES 1-515 AND 2-515 & 1-573 AND 2-573										

POWERHOUSE

AUX & REACTOR BUILDING UNITS 1 & 2

MECHANICAL-FLOW DIAGRAM
FUEL POOL COOLING
AND CLEANING SYSTEM

WATTS BAR NUCLEAR PLANT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED

KNOXVILLE 7-17-73 | 65 | 4 | 47W855-1 R16

RECORD DRAWING AS CONSTRUCTED