237127A-M218

SPENT FUEL POOL COOLING WATER FOR FLUSHING SAMPLE LINES (SEE KK 100-44)

SV-33666 FPC18-1 FPC14-9 FPC14-12

SERVICE WATER SYSTEM SEE M202 SHT 2

SER 49001-161 A 47004-24 SERVICE WATER LOW PRESS. DPI 11055

FOR CONT. SEE M202 SHT 2 (B-12)

SPENT FUEL POOL HEAT EXCHANGER

R-1 RECORD PURP.

FPC13-11 FPC10-4 FPC15-1 FPC14-11 FPC10-5 DH

FPC9-3 FPC9-4 SPECTACLE FLANGE FPC13-12

DPI 11035 DPI 11036

FPC14-2 FPC7-5 FPC14-10 SAMPLE FPC7-4 DPI 11015

FPC7-18 FPC7-16 FPC14-1 FPC7-17 DPI 11030 FPC14-4 FPC7-8 FPC14-3

FPC14-6 FPC14-8 FPC9-1 FPC9-2 FPC8-2 FPC8-3 FPC14-5 FPC14-7

SPENT FUEL POOL DEMIN. POST FILTER

SPENT FUEL POOL DEMIN. PRE-FILTER

SPENT FUEL POOL FILTER 1A

SPENT FUEL POOL FILTER 1B

FPC10-3 FPC3-1 FPC4-1 FPC2-1 PI 11073 ES 46521 SEE NOTE NO.1

FPC3-2 FPC4-2 FPC2-2 PI 11074 ES 46522 SEE NOTE NO.1

SPENT FUEL POOL PUMP 1A

SPENT FUEL POOL PUMP 1B

FPC11-1 DH

BORIC ACID ADDITION SEE CV DIAGRAM X-K100-36 (E-7) FPC7-7

REACTOR MAKE-UP WATER SEE M209 FPC7-6 FPC13-13 T1 12086

6" EMERGENCY SERVICE WTR. SUPPLY TO SPENT FUEL POOLS SEE M202 SHT 2

FPC10-8 FPC17-1 FPC5-1 FPC13-16 D

T1 12012 FPC10-7 FPC5-3 TC 26311 CONTROL T1 12087 A 47004-25 HIGH TEMP.

6" CAPPED CONN'S FPC10-6 FPC5-2

SER 49001-158 SER 49001-197

LA 16641 LA 16640 HIGH & LOW LEVEL A 47004-15

FPC9-5 SPECTACLE FLANGE FPC13-15 FPC10-2 FPC10-1

SER 49001-156 HIGH LEVEL SER 49001-155 HIGH LEVEL

SER 49001-160 LOW LEVEL SER 49001-159 LOW LEVEL

SPENT FUEL POOL 1B SPENT FUEL POOL 1A

R-1 RECORD PURP.

CABLE TROUGH FLOOR DRAIN PIPING (FOR CONT. SEE M671) COLLECTION BOX (TYP)

SPENT FUEL POOL 1B ZONE NO.1 ZONE NO.2 ZONE NO.3 UNDERWATER LIGHTING CONDUITS SPENT FUEL POOL 1A ZONE NO.4 ZONE NO.5

ZONE NO.10 ZONE NO.9 ZONE NO.8 ZONE NO.7 ZONE NO.6

FUEL TRANSFER CANAL

1"x 3/4" (TYP) LIQUID DYE INJECTION 5 PLACES (TYP) 1/2" VALVES

FPC12-5 FPC12-4 FPC12-3 FPC12-2 FPC12-1 FPC12-6 FPC12-7 FPC12-8 FPC12-9 FPC12-10

FPC13-1 FPC13-2 FPC13-3 FPC13-4 FPC13-5 FPC13-10 FPC13-9 FPC13-8 FPC13-7 FPC13-6

COLLECTION TROUGH FLOOR DRAIN PIPING (FOR CONT. SEE M671) 1 1/2"

ALL VALVES & PIPING Q.A. TYPE 2

ALL VALVES & PIPING IN NON-SV ZONE

SPENT FUEL POOL LEAK DETECTION SYSTEM

NOTE: ALL PIPING & EQUIPMENT IS IN SV ZONE.

REFUELING WATER STORAGE TANK (275,300 GAL) SEE S1 DIAGRAM DWG. X-K100-29

CV 31293 FPC16-1 DPI 11014 RESIN FILL FPC7-3 FPC8-1 FPC7-11 FPC7-10 FPC7-9 VENT DEMINERALIZED WATER FOR FLUSHING & BACKWASH SEE M209 BACKWASH FPC7-15 FPC7-14 FPC7-12 FPC7-13 TO SPENT RESIN FLUSHING LINE SEE M350 DRAIN HEADER TO SLUDGE INTERCEPTOR TANK SEE M350

SPENT FUEL POOL DEMINERALIZER (W)

RESIDUAL HEAT REMOVAL SYSTEM SEE DWG. X-K100-18

RESIDUAL HEAT REMOVAL HEAT EXCHANGER 1A (W)

TO SPENT FUEL PIT WD87-1 WD87-2 TO FLOOR DRAIN EL EL 649'-6"

FUEL TRANSFER CANAL 3" TYGON TUBING FROM FUEL TRANSFER CANAL SUMP PUMP

FUEL TRANSFER CANAL SUMP PUMP DISCHARGE

PB 19515 PI 11104 FPC7-19 FPC6-1 FPC7-2 FPC7-1

REFUELING WATER PURIFICATION PUMP

LEGEND

2 — INDICATES DRAIN TO FLOOR DRAIN SYSTEM

DH — INDICATES DRAIN TO DRAIN HEADER. SEE AUXILIARY BUILDING EQUIPMENT DRAIN DIAGRAM M350

(1) TEMPORARY STRAINER IS PLACED IN THE SPOOL PIECE DURING INITIAL FLUSHING OPERATIONS. STRAINER MUST BE REMOVED BEFORE PLANT START-UP. CAPPED LINES ARE CONNECTED TO PRESSURE GAUGES DURING INITIAL FLUSHING.

(S) INSTALL SOLENOID VALVE IN DIRECTION OF ARROW.

REVISIONS

P AT SHT. 1-2, REF DWG. KK100-44 WAS KK100-44-1 & NOTED AT LN. A-6, REF. PIPING DIA. & VLV NOS. FPC14-12 & SOLENOID VLV FPC14-11 AT H-9 ADDED SOLENOID VALVE REFERENCE IN LEGEND PER DCR 534. BY: J. SPICE 3-19-81 CHKD: SS 3-25-81 APPD: WRP 3-25-81 FILMED: 10-2-80 — INFO XFERRED TO THIS DWG. PER DCR 534. BY: J. SPICE 3-29-81 CHKD: DCR 6-4-81 APPD: RWD 2-3-82 FILMED: 2-18-82

Q ADDED NOTE 1 TO LEGEND, REVISED QTY AT FPC13-8 A-3. BY: KBOTT 2-23-82 CHKD: SP 2-22-82 APPD: RWD 2-24-82 FILMED: 3-2-82

QH ADDED FUEL TRANSFER CANAL SUMP PUMP DISCHARGE DETAIL PER DCR 1313 BY: JT 2-23-83 CHKD: SP 3-1-83

K DELETED VENT VLV SEE RED. QH APPD: LRS 6-1-83 FILMED: 6-2-83

S-1 ADDED PURP. REVISED REF. DWG. NOS. M202 SHT 2 TO M202 DWG. FPC 10-1-87 DCR 1313 11-3-87 APPD: PPB 11-3-87

INFO TRANSFERRED FROM FEI BY WIS PER RECORD PRINT BY: RM 12-22-87 CHKD: [illegible] 1-4-88

5 RECORD DWG COMPL. SEE REV R-1 APP'D: SB 1-4-88 FILMED (MY) 1-20-88

G AT A-11 CHGD Q.A. TYPE I TO II, AT I-12 ADDED NOTE 3 AT FPC13-10 REF. DPI 11055 HEADER, ANNUNCIATOR NO. 6 SYMBOL E-3 & DELETED E-3 TYPE, ADDED NOTE 4 TYPE ADDED SEQUENTIAL EVENT RECORDER & ANNUNCIATOR NOS. 6 & SYMBOL E-3 & ADDED FPC 18-1 AT E-3 & E-12 LIQUID DYE, WAS NITROGEN GAS. BY: WIS DSN. WAL. CK. R.S. 9-30-71 REC. DWG. FILMED 10-1-71

H AT F-5 ADDED NOTE 2 ALL PIPING & EQUIP IN SV ZONE, AT A-11 ADDED ALL PIPING & VALVES IS IN NON-SV ZONE. BY: RWP 11-1-77 DR. WAL. CK. R.S. 11-1-77 FILMED 11-1-77

J AT A-10 CHGD LOCATION OF EMERG. SERVICE WTR SUPPLY CONN. (CAPPED 6" CONN'S), RELOCATED MISSING CHECK VLV. FPC5-1 FROM EMERG. SERVICE WTR. SUPPLY TO HEAT EXCH. DISCH. LINE 4 REPLACED IT WITH SWING CHECK VA. FPC (7)-1 CHGD LOCATION OF VENT VLV. FPC13-12, TO-26311 & TI-12086 VLV. FPC15-16 WAS FPC13-14. PIPING UPSTREAM OF VLVS. FPC10-6 & FPC10-7 WAS Q.A. TYPE 3, DELETED VENT VLV. C.S.O.-34, AT B-8 ADDED VENT VLV. FPC13-15. AT F-2 CHGD VALVE [illegible] DR. WAL. CK. RVL. 3-28-78 REC. 4-17-78 2ND LEV. REV. 4/18/78 FILMED 5-3-78

K AT F-5 CHGD TEE & LINE SIZE WAS 1" DR. R.N. CK. R.E. 6-22-82 REC. 7-7-82 2ND LEV. REV. 8/26/82 FILMED 9-22-82

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DESIGN SECTION APPROVALS

SECTION	APPROVED	DATE
ELECTRICAL	[illegible]	12/29/87
I&C CONTROL	—	—
LIGHTING	—	—
MECHANICAL	—	—
ARCHITECT	M.L.	12-29-87
MECH. PIPE & STRS.	F.P.	12-30-87
REF. ANAL. & SHIP.	—	—
WELDING	[illegible]	12-29-87
HYDRAULIC	—	—
STRUCTURAL	—	—
INSTRUMENTS	J.T.	12-16-87

WISCONSIN LAWRENCE E NEWHART JR E-11254 GLEN ELLYN ILLINOIS REGISTERED PROFESSIONAL ENGINEER SEAL

CONTROL LOGIC DIAGRAM 237127A-M734

WISCONSIN PUBLIC SERVICE CORPORATION KEWAUNEE NUCLEAR POWER PLANT - UNIT NO. 1 CARLTON, KEWAUNEE COUNTY, WISCONSIN

FLOW DIAGRAM SPENT FUEL POOL COOLING AND CLEAN-UP SYSTEM

Designed By Pioneer Service & Engineering Co. Chicago

DESIGN	DETAILED	AUTH
L.J.F. 6-18-68	— —	R.L.G.
SCALE NONE	CHECKED R.J.C. 10-29-68	
APPROVED L.E. Newhart 12-1-69	PROJECT & DWG. NO. 237127A-M218	Sht. S Rev.

237127A-M218

TI APERTURE CARD

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