SHEET KEYNOTES

N001 FINISHED FLOOR ELEVATION OF FIRE PUMP ROOM IS 1037.91.

N002 FINISHED SLAB ELEVATION OF SERVICE YARD IS 1037.75

N003 PW/PCW AND FP LINES SHALL BE RUN AT A ELEVATION OF 1048.0. PIPING SHALL PENETRATE THE FOUNDATION WALL AND BE FLANGED APPROXIMATELY 6" INCHES FROM THE INTERIOR FACE OF THE WALL. EXTERIOR PIPING SHALL EXTEND 5 FEET AND BE CAPPED.

N004 F.P. DRAIN LINE SHALL BE RUN AT A ELEVATION OF 1041.5 AND SHALL BE CAPPED APPROXIMATELY 6" INCHES FROM FACE OF WALL AT EACH END. PIPE TO BE SLOPED AT 1/4" PER FT.

N005 FIRE PUMP TEST LINE SHALL BE RUN AT A ELEVATION OF 1041.5 AND SHALL BE FLANGED APPROXIMATELY 6" INCHES FROM FACE OF WALL AT EACH END. PIPE TO BE SLOPED AT 1/4" PER FT.

N006 EXTERIOR PIPING SHALL EXTEND 5' FEET FROM BUILDING AND BE CAPPED.

N007 PIPES TO BE STUBBED 12" AFF WITH BLIND FLANGE FOR FUTURE CONNECTION.

N008 SUMP BASIN: 30" DIA. X 5'-0" DEEP. THE POLYFIBER BASIN SHALL BE ENCASED IN CONCRETE PIT (50" I.D W/ 6" WIDE WALLS). STEEL BASE PLATES TO BASIN TO PIT.

N009 GREASE INTERCEPTOR: 23"W X 32-1/4"LONG X 53-1/2" DEEP. INLET INVERT AT -2'-10" (1053.69) BELOW FINISHED FLOOR. INTERCEPTOR TO BE ENCASED IN 6" THICK CONCRETE ENCASEMENT PIT. ALLOW 2"+/- GROUT TO SET FLUSH WITH FLOOR.

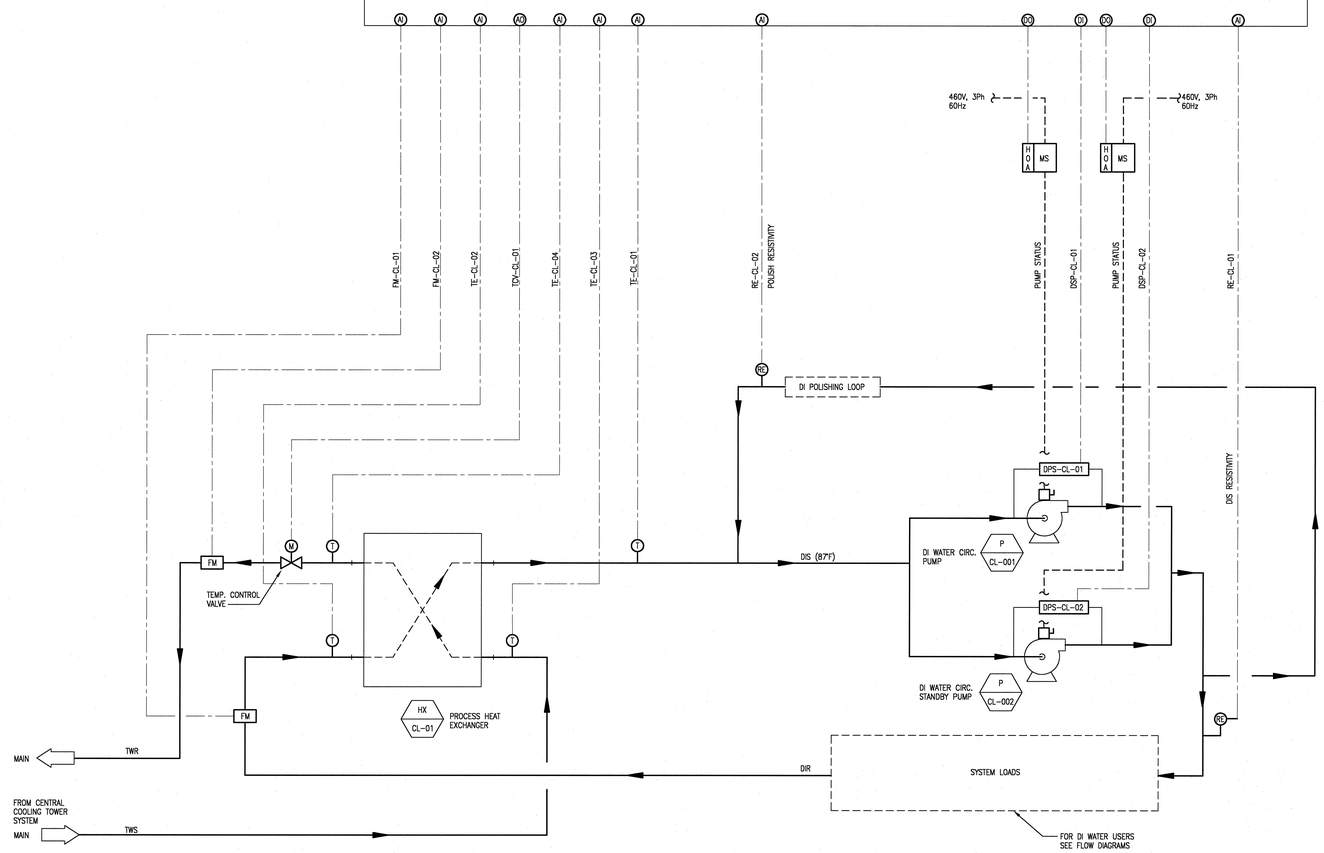
N010 BACKFLOW PREVENTER SHALL BE OF THE REDUCED PRESSURE TYPE

N011 PROVIDE LOCKABLE BALL VALVE PER SPECIFICATION 15100

CONTROL POINT LIST CENTRAL LAB. AND OFFICE BUILDING.

CENTRAL LAB/OFFICE BLDG		CONNECTED POINTS																	SOFTWARE												
		OUTPUT FROM DDC						INPUT TO DDC											ALARMS						APPLICATIONS						
		DIGITAL			ANALOG			DIGITAL						ANALOG					DIGITAL			ANALOG									
POINT DESCRIPTION	GRAPHIC DISPLAY(WINDOWS BASED SOFTWARE)	CONTROL RELAY	HAND/OFF/AUTO	OPEN/CLOSE	CONTROL POINT ADJUSTMENT	PROPORTIONAL CONTROL		CONTACT CLOSURE	PULSE	DIFFERENTIAL PIPES SWITCH	PRESSURE SWITCH	AUXILIARY CONTACT	GENERAL ALARM	TEMPERATURE (F)	% RELATIVE HUMIDITY	RESISTIVITY	POSITION SENSOR	FLOW	CONTACT CLOSURE--DIRY FILTER	CONTACT CLOSURE--EQUIPMENT FAILURE		HIGH LIMIT	LOW LIMIT	RUN TIME		DUTY CYCLING	START/STOP	ECONOMIZER OFF/AUTO	REHEAT COIL RESET	LEAD/LAG	CHILLED WATER RESET	FAILURE MODE
TOWER WATER RETURN CONTROL VALVE TCV-CL-01	X					X																									
P-CL-01 PUMP- DPS-CL-01	X	X								X										X				X			X				
P-CL-02 PUMP- DPS-CL-02	X	X								X										X				X			X				
DI RESISTIVITY - MAIN LOOP RE-CL-01	X															X						X	X								
DI RESISTIVITY - POLISHING LOOP RE-CL-02	X															X						X	X								
DI LOOP FLOW METER, FM-CL-01																		X													
TW FLOW METER, FM-CL-02																		X													
DI WATER SUPPLY TEMPERATURE TE-CL-01	X													X								X	X								
DI WATER RETURN TEMPERATURE TE-CL-02														X								X	X								
TW SUPPLY TEMPERATURE TE-CL-03														X								X	X								
TW RETURN TEMPERATURE TE-CL-04														X								X	X								

DDC CONTROL SYSTEM



SEQUENCE OF OPERATION

1. GENERAL:
THE SYSTEM PUMP SHALL BE ENERGIZED THROUGH THE INTEGRATED CONTROL SYSTEM (ICS) AND SHALL RUN CONTINUOUSLY. SHOULD A PUMP FAIL TO START, OR FAIL DURING OPERATION, THE DDC CONTROL SYSTEM SHALL DEENERGIZE THE FAILED PUMP AND SEND A SIGNAL TO ENERGIZE THE STAND-BY PUMP AND INDICATE AN ALARM CONDITION. DDC FLOW METERS AND TEMPERATURE SENSORS SHALL PROVIDE MONITORING INPUT TO THE CONTROL SYSTEM.

2. DI WATER TEMPERATURE:
A TEMPERATURE SENSOR TE-CL-01 IN THE DI WATER SUPPLY LINE SHALL PROVIDE INPUT TO THE DDC CONTROL SYSTEM. THE DDC CONTROL SYSTEM SHALL MODULATE TCV-CL-01 CONTROL VALVE IN THE TOWER WATER RETURN LINE AS REQUIRED TO MAINTAIN THE DI WATER SUPPLY TEMPERATURE AT 87° F.

3. RESISTIVITY:
A RESISTIVITY SENSOR RE-CL-01 IN THE MAIN DI WATER CIRCULATING LOOP SHALL PROVIDE INPUT TO THE DDC CONTROL SYSTEM. THE DDC CONTROL SYSTEM SHALL MODULATE TCV-CL-02 POLISH LOOP CONTROL VALVE AS REQUIRED TO MAINTAIN THE RESISTIVITY IN THE MAIN LOOP AT 1 TO 3 MEG-OHM (ADJUSTABLE). A RESISTIVITY SENSOR RE-CL-02 IN THE DI POLISHING LOOP SHALL PROVIDE INPUT TO THE DDC CONTROL SYSTEM. SHOULD THE POLISH LOOP RESISTIVITY DROP BELOW 1 MEG-OHM AN ALARM CONDITION SHALL BE SHOWN AT THE DDC CONTROL SYSTEM.

COOLING TOWER/DI WATER CONTROL DIAGRAM - CENTRAL LAB. AND OFFICE BUILDING

NO SCALE

NO REPRESENTATION OR WARRANTY, EXPRESSED OR IMPLIED, IS MADE AS TO THE ACCURACY, COMPLETENESS OR USEFULNESS OF THE INFORMATION OR STATEMENTS CONTAINED IN THESE DRAWINGS, OR THAT THE USE OR DISCLOSURE OF ANY INFORMATION, APPARATUS, METHOD, OR PROCESS DISCLOSED IN THESE DRAWINGS MAY NOT INFRINGE PRIVATE RIGHTS OF OTHERS. NO LIABILITY IS ASSUMED WITH RESPECT TO THE USE OF, OR FOR DAMAGES RESULTING FROM THE USE OF ANY INFORMATION, APPARATUS, METHOD, OR PROCESS DISCLOSED IN THESE DRAWINGS. DRAWINGS MADE AVAILABLE FOR INFORMATION TO BIDDER ARE NOT TO BE USED FOR OTHER PURPOSES AND ARE TO BE RETURNED UPON REQUEST OF THE FORWARDING CONTRACTOR.

NUMBER OF SECTION OR DETAIL
DRAWING ON WHICH SECTION OR DETAIL IS SHOWN OR TAKEN
SECTION AND DETAIL KEY

THIS DOCUMENT CONTROLLED BY
CHANGE CONTROL SYSTEM 4
ENGINEERING PROCEDURE SNS-ENG-0001

REV	CHANGE TYPE	CHANGE CONTROL SYSTEM	CHANGE REQUEST NUMBER	DESCRIPTION	DSN	CHK	DEPT	DATE	PE	DATE	PJ	DATE	REQ	DATE	UTB	DATE	RPE	RPE NO	DATE	SC	AW	WRS	RL	WRS	BWJ	--	WRS	--	WAS
0				CERTIFIED FOR CONSTRUCTION - MAY 15, 2001	EB	KJH											BWJ	105869	5/15/01										
				REVISION OR ISSUE PURPOSE				REVISION APPROVALS												SQUAD CHECK									

RPE	BRUCE W. JOHNSON, REGISTERED ENGINEER, AGRICULTURE, No. 105869, STATE OF TENNESSEE	0 5/14/01 REV. DATE
DSN	M. WITHROW	05/15/01
DRW	T. WHITE JR.	05/15/01
CHK	B. JOHNSON	05/15/01
DEPT		
PE		10/1/01
PJ		10/1/01
REQ		
UTB		10/8/01

DRAWING APPROVALS

108031400-P8E-8600-A077

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managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-000R22725
UT-BATTELLE, LLC, in Oak Ridge, Tennessee

PROJECT NAME:
SPALLATION NEUTRON SOURCE
CENTRAL LAB AND OFFICE BUILDING
DEIONIZED WATER CONTROLS
TW/DI WATER PROCESS COOLING SYSTEM

1	48	49	50	PLANT	BLDG	FL	SH.	OF	TYPE	CLASS
3	P	X	X	8	8600		1	1	S	U
51		52		53	WBS					REV
NC		NA			1.8.3.14		P8.10.40			0