EQUIPMENT DESIGNATIONS

D – Drum
EHTR – Electric Heater
EJR – Ejector
FLT – Filter
FH – Flexible Hose
HX – Heat Exchanger
IX – Ion Exchange Column
MO – Motor
P – Pump
RD – Rupture Disc
RV – Relief Valve
SEP – Separator
TK – Tank
VACP – Vacuum Pump

VALVE DESIGNATIONS

CKV – Check Valve
FCV – Flow Control Valve
HCV – Hand Control Valve
HV – Manual Block Valve
PCV – Pressure Control Valve
PRV – Pressure Regulating Valve
SV – Actuated Block Valve (Remote)
TCV – Temperature Control Valve
XV – Manual Block Valve With Remote Operator

MISCELLANEOUS DESIGNATIONS

CN – ControlNet
DN – DeviceNet
D2 – Deuterium
EN – Ethernet
FC – Fail Closed
FLP – Fail Last Position
FO – Fail Open
H2 – Hydrogen
H20 – Water
I/P – Current To Pneumatic Conversion
LLL – Low Level Liquid
LO – Locked Open
N2 – Nitrogen
O2 – Oxygen
PCE – Primary Confinement Exhaust
SP – Setpoint
TBD – To Be Determined

NOZZLE DESIGNATIONS

P – Process
S – Spare
I – Instrument, Inspection
V – Gas, Vapor, Relief

INSTRUMENT DESIGNATIONS

AI – Analyzer Indicator
AIC – Analyzer Indicator Controller
ASH – Analyzer Switch High
CAH – Conductivity Alarm High
CI – Conductivity Indicator
CSH – Conductivity Switch High
FAL – Flow Alarm Low
FALL – Flow Alarm Low–Low
FI – Flow Indicator
FIC – Flow Indicator Controller
FSL – Flow Switch Low
HS – Hand Switch
LAH – Level Alarm High
LAHH – Level Alarm High–High
LAL – Level Alarm Low
LALL – Level Alarm Low–Low
LI – Level Indicator
LSH – Level Switch High
LSHH – Level Switch High–High
LSL – Level Switch Low
LSLL – Level Switch Low–Low
PAH – Pressure Alarm High
PAHH – Pressure Alarm High–High
PAL – Pressure Alarm Low
PDAH – Pressure Differential Alarm High
PDALL – Pressure Differential Alarm Low–Low
PDI – Pressure Differential Indicator
PI – Pressure Indicator
PIC – Pressure Indicator Controller
PSH – Pressure Switch High
PSHL – Pressure Switch High–Low
RO – Restrictive Orifice
RV – Relief Valve
TAH – Temperature Alarm High
TAHH – Temperature Alarm High–High
TI – Temperature Indicator
TIC – Temperature Indicator Controller
VXI – Accelerometer X Position Indicator
VYI – Accelerometer Y Position Indicator
VZI – Accelerometer Z Position Indicator
VXSH – Accelerometer X Position Vibration Switch High
VYSH – Accelerometer Y Position Vibration Switch High
VZSH – Accelerometer Z Position Vibration Switch High
XA – Operation Status Alarm
XI – Miscellaneous Indicator
ZIC – Position Indicator Controller
ZSH – Position Switch High
ZSL – Position Switch Low

LINE SERVICE DESIGNATIONS

BDCE – Beam Dump Confinement Exhaust
CHWR – Chilled Water Return
CHWS – Chilled Water Supply (45° F)
CON – Condensate
DIR1 – Deionized Water Return (High–Temp)
DIR2 – Deionized Water Return (Low–Temp)
DIS1 – Deionized Water Supply (87° F)
DIS2 – Deionized Water Supply (70° F)
DWP – Deionized Water Purge
HEL – Helium
HG – Mercury
HOG – Hot Offgas
HVS – H_2 Vent/Stack Gas
HWP – Heavy Water Purge
IA – Instrument Air
MUL – Multiple Use Utility
NIT – Nitrogen
POW – Polished (Deionized) Water
PRR – Pressure Relief
CHWR(1) – Chilled Water Return
CHWS(1) – Chilled Water Supply (55° F)
SAM – Gas Sample
TWR – Tower Water Return
TWS – Tower Water Supply (82° F)
WHR – Heavy Water Return (Primary Cooling Water)
WHS – Heavy Water Supply (Primary Cooling Water)
WLR – Light Water Return (Primary Cooling Water)
WLS – Light Water Supply (Primary Cooling Water)
VAC – Vacuum
VNT – Vent to PCE

INTERLOCK DESIGNATIONS

M – Machine Protection System
T – Target Protection System
P – Process
PPS – Personal Protection System
1 – Shuts Off Proton Beam
2 – Failure of Primary Cooling Loop Pump Results in the Following Sequence:

- Open Spare Pump Suction and Discharge Valves.
- Close Primary (Failed) Pump Suction and Discharge Valves.
- Start Spare Pump.

3 – Initiates Controlled Inerting of Moderators and Shuts Down the Mercury Pump.
4 – High–High Level in Drain Tank Shuts Off Water Addition to Drain Tank.
5 – High–High Gas/Liquid Separator Level Shuts Off Water Addition to the Cooling Loop.
6 – Low–Low Gas/Liquid Separator Level Shuts Down Cooling Loop Pumps.
7 – Low–Low Level in the Drain Tank Shuts Off Water Addition to the Cooling Loop.
8 – High Pressure in the Primary Confinement Exhaust Stack Prevents Access to the Transfer Cell.
9 – High–High Level in the Mercury Pump Reservoir Shuts Off the Mercury Addition to the Mercury Loop.
10 – Low Pressure in the Mercury Pump Seal Shuts Down the Mercury Pump.
11 – Low–Low Level in the Mercury Pump Reservoir Shuts Down the Mercury Pump.

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DRAWING ON WHICH SECTION OR DETAIL IS SHOWN
SECTION AND DETAIL KEY

THIS DOCUMENT CONTROLLED BY
CHANGE CONTROL SYSTEM 3
ENGINEERING PROCEDURE SNS-TS-G001

REV	CHANGE TYPE	CHANGE CONTROL SYSTEM	CHANGE REQUEST NUMBER	DESCRIPTION	BY	CHK	SECT	DEPT	DATE	PE	REQ	DATE	UTB	DATE	RPE	RPE NO	DATE	ST	CV	EC	EE	EM	IE	M	PD	SE	AR
0				CERTIFIED FOR CONSTRUCTION, 1-18-02	CMM	JPF	—	—	01/02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

REVISION OR ISSUE PURPOSE — REVISION APPROVALS — SQUAD CHECK

REV.	DATE	DRAWING APPROVALS		
		RPE		
		DSGN	CMM	1-17-02
		DRW	CMM	1-17-02
		CHKR	JPF	1-17-02
		SECT	—	
		DEPT	—	
		PE	—	
		PJ	—	
		REQ	—	
				1-18-02
				1-18-02
				1/18/02
		UTB		

PROCESS DRAWING NO.
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PROJECT NAME:
SPALLATION NEUTRON SOURCE

TARGET AND BEAM STOP UTILITIES
PIPING AND INSTRUMENTATION DIAGRAMS
LEGEND

1	48	49	50	PLANT	BLDG	FL	SH.	DF	TYPE	CLASS
3		X	X	8			2	2		U
51		52		53	WBS	106060000–				REV
NC		NA		IN		J8E–8700–A001				0