SAMPLE NO. SS-	35	36	(33)	13	34	38	SEE BELOW						10	11	14	37	33	49
SAMPLE SOURCE	1A STEAM GENERATOR BLOWDOWN	1B STEAM GENERATOR BLOWDOWN	(MIXED BED DEMIN OUTLET)	14A & 14B HEATER COMM. INLET	CONDENSATE PUMP DISCH.	FEEDWATER INLET TO STEAM GEN.	CONDENSER HOTWELLS AND CROSSOVERS	DRAIN COOLERS	FEEDWATER HEATER VENTS (STEAM)			FEEDWATER HEATER DRAINS	MOISTURE SEPARATOR DRAINS	2A STEAM GEN. MAIN STEAM LEG	2B STEAM GEN. MAIN STEAM LEG	FEEDWATER PUMP SECTION	HTR DRAIN PUMP DISCH. HEADER	MIXED BED DEMIN OUTLET PIPE	HEATING PLANT FW PUMP DISCH.
PRESSURE P.S.I.A. (MIN-MAX)	720-898	720-898	25-50	315	315	720-1000	29" VAC - 14.7		1.7-50	45-163	93-370	14-370	46-167	720-898	720-898	315	315	25-50	150-160
TEMP - F (MIN-MAX)	506°-532°	506°-532°	50°-100°	204°-277°	92°	318°-432°	79°-		121°-282°	275°-365°	323°-437°	168°-373°	276°-367°	506°-532°	506°-532°	271°-362°	300°	50°-100°	250°-260°
FLOW - ML/MIN	1600	1600	1600	1650	2000	1150	500		500	500	500	500	500	500	500	500	500	500	500

REVISIONS

0
DRAWN BY: JLB
DATE: 2-22-07
PREPARED BY: WJO
DATE: 2-22-07
REVIEWED BY: SRM
DATE: 2-22-07

1
ENLARGED BOUNDARY FLAGS, ADDED LR NOTE, AND HIGHLIGHTED PC COOLERS 2, 5, 10, 11, 13, 14, 33, 33-1, 35, 36, 37, 38, 49, M3, M4, & M6 (of 3).
DRAWN BY: JLB
DATE: 8-28-07
PREPARED BY: WJI
DATE: 8-28-07
REVIEWED BY: SRM
DATE: 8-28-07

ROOT VALVES
MANIFOLDS
REMOTE COOLERS
PUMPS AND ACCESSORIES
SAMPLE LINES
PANEL SHUT-OFF VALVES
PRIMARY COOLERS
PRESSURE REGULATING AND DRAG VALVES
GRAB SAMPLES
COLD LAB SECONDARY COOLERS
HOT LAB SECONDARY COOLERS
SPECIFIC CONDUCTIVITY
CATION CONDUCTIVITY
pH
DISSOLVED OXYGEN
HYDRAZINE
PHOSPHATE
DISSOLVED SILICA
BACK PRESSURE REGULATING OR RELIEF VALVES

12 45 46 47 48 39 40 19 20 21 22 23 24 15 16 17 18 25 26 27 28 29 30 41 42 43 44
1A 1B 1A 1A 1B
1B 1A PT1 PT2 PT1 11A 11B 11A 11B 12A 12B 13A 13B 14A 14B 15A 15B 13A 13B 14A 14B 15A 15B 1A 1B 2A 2B
M1 12 M1 45 M1 46 M1 47 M1 48 M1 39 M1 40 M2 19 M2 20 M2 21 M2 22 M2 23 M2 24 M3 15 M3 16 M4 17 M4 18 M5 25 M5 26 M5 27 M5 28 M5 29 M5 30 M6 41 M6 42 M6 43 M6 44

33B (UNIT #2) 33A (UNIT #1)
RETURN TO DEMIN
P33
P8
FS 33
BPV 33
PI 33
TO HOT LAB PNL
SS-237
SS-214
SS-211
SS-210
M-26
M-24
SS-11-1
FW OXYGEN/CPM MONITORING PANEL SEE TECH MANUAL NF-60349-1
PC-2A
PT 2
95° COMP CLG WTR LR-39246-2 B-10
PC 2
1 FW HTR VENTS SAMPLE PUMP
SS-4-37
DP1
DP2
PS 2
PRV-95-1
MV-GV-1
DIAPHRAGM PUMP
CC-PT 5
95° COMP CLG WTR LR-39246-2 B-11
PC 5
1 FW HTR DRAINS SAMPLE REMOTE COOLER
CC-PS 5
PRV 95-7
PRV M5 DP5
SO 35 SO 36 SO 33-1 SO 13 SO 34 SO 38 SO 4-1 SO 4-2 SO 24-1 SO 24-2 SO 3 SO 2 SO 5 SO 6-1 SO 6-2 SO 26-1 SO 26-2 SO 10-1 SO 10-2 SO 210-1 SO 210-2 SO 11-1 SO 11-2 SO 211-1 SO 211-2 SO 14-1 SO 14-2 SO 214-1 SO 214-2 SO 37-1 SO 37-2 SO 237-1 SO 237-2 SO 33 SO 49
CV 1 CV 2 CV 4 CV 24 CV 5 CV 6 CV 26 CV 10 CV 210 CV 11 CV 211 CV 14 CV 214 CV 37 CV 237
RETURN
FROM HOT LAB PANEL UNIT 2 COOLER MANIFOLD
TO HOT LAB PANEL UNIT 2 COOLER MANIFOLD
COMPONENT COOLING SYSTEM LR-39246
PC 35 PC 36 PC 33-1 PC 13 PC 38 PC M3 PC M4 PC M6 PC 10 PC 11 PC 14 PC 37 PC 33 PC 49
HEATER
PT 35 PT 36 PT 33-1 PT 13 PT 38 PT 3 PT 4 PT 6 PT 10 PT 11 PT 14 PT 37 PT 33 PT 49
PS 35 PS 36 PS 33-1 PS 13 PS 38 PS 3 PS 4 PS 6 PS 10 PS 11 PS 14 PS 37 PS 33 PS 49
TO UNIT 2 SAMPLE PANEL LR-XH-248-1-2
TO CORROSION MONITOR
PRV 95-3
SUPPLY
X PRV 35 X PRV 36 SS 33-2 PRV 13 PRV 34 PRV 38 PRV M3 PRV M4 X DV 10 X DV 11 PRV 14 PRV 37
CT 35 CE 35 PI 35 TI 35 PT 35 PT 36 GV 35 GV 36 C
HOT LAB SAMPLE SINK
COLD LAB SAMPLE SINK A
TI M1 TI M2 TI M3 TI M4 TI M5 TI M6 TI 10 TI 11 TI 14 TI 37 TI 33 TI 49
PI M1 PI M2 PI M3 PI M4 PI M5 PI M6 PI 10 PI 11 PI 14 PI 37 PI 33 PI 49
BPV 1 GV 1 BPV 2 GV 2 RV M3 GV 3 RV M4 GV 4 BPV 5 GV 5 RV M6 GV 6 BPV 10 GV 10 BPV 11 GV 11 RV 14 GV 14 RV 37 GV 37 RV 33 GV 33 GV 49 RV 49
R
COLD LAB SAMPLE SINK B
FROM UNIT 2 SAMPLE DRAIN LR-XH-248-1-2
TI 36 FI 36 BPV 36 BPV 35 SV 35 SV 36 SV 33-1
11/12 S/G SAMPLE STREAM SELECTOR SWITCH
SEE NOTE #1
ST 13 ST 34 ST 38 SC 13 SC 34 SC 38 SS 13 SS 34 SS 38
RETURN
CHILLED WATER 76° ± 1° F FROM COLD LAB CHILLER UNIT LR-XH-248-1-3
SUPPLY
CE 36
CT 36
ST 36 SC 36 SS 36
TI 13 PI 13 TI 34 34 TI 38 PI 38
FI 36-1 CE 35/36 CT 35/36 DEMIN
FI 36-2 pHE 35/36 pHT 35/36 H/L
FI 36-3 35/36 35/36
FI 36-4 SE 35/36 ST 35/36
FI 34-1 CE 34 CT 34 CCT 38 CFI 38 CE 38 CCE 34 CCT 34 CCE 38 DOA 34 CCT 38 FI 34-3 DOE 34 DOT 34
470090605 A
470090405 A
470090305 A
470090505 A
MAIN PANEL CP H/L
FI 38 pHE 38 pHT 38 SO 38-2 HZE 38 HZI 38 HZT 38 HZS 38
BPV 2 RV 13 RV 34 BPV 38
TO/FROM UNIT 2 COOLER LR-XH-248-1-2
TO/FROM HOT LAB CHILLED WATER UNIT LR-XH-248-1-3

LEVEL CONTROL LL-SW
SAMPLE RECOVERY TANK
OVERFLOW TO GRAVITY WASTE DRAIN
RESTRICTED BYPASS
SO R P7 SV R BPV R
RETURN TO CONDENSER HOTWELL

LEGEND
= SURVEY CONNECTION
= WASTE DRAIN
R = RECOVERY DRAIN
X = DRAG VALVE

NOTES:
1. MOUNTED ON UNIT 1 HOT LAB PANEL.

LR - LEGEND
IN SCOPE FOR LR PER 10 CFR 54.4(a)(1) 10 CFR 54.4(a)(3)
IN SCOPE FOR LR PER 10 CFR 54.4(a)(2)
OUT OF SCOPE
DENOTES SYSTEM BOUNDARY BREAK

LR - SYSTEMS
CC - COMPONENT COOLING
SM - PLANT SAMPLE SYSTEM

LR NOTES:
RECOVERY TANK SYSTEM NOT IN SCOPE DUE TO NO SYSTEM PRESS & NO CC LINES BELOW TANK

REFERENCE DWG. X-HIAW-248-1-1 REV. 76
VENDOR - LEEDS & NORTHRUP CO. DWG. # X-PID-3700-104

This map /document is a tool to assist employees in the performance of their jobs. Your personal safety is provided for by using safety practices, procedures and equipment as described in safety training programs, manuals and SPAR's.

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE _____ REG.NO. _____

DWN	DATE
CHECKED	
PROJECT NO.	
APP'D & CERT.	
FILMED	

SIGNIFICANT NO.	8630				100	M430 *0700	1	3830
GROUP	1	2	3	4	5		CL	6

LICENSE RENEWAL BOUNDARY DWG GRAB SAMPLE PANEL, SURVEY PANEL AND HOT LAB UNIT 1 P & ID

NORTHERN STATES POWER COMPANY
Xcel Energy
PRAIRIE ISLAND NUCLEAR GENERATING PLANT
RED WING, MINNESOTA

SCALE NONE REV 1
LR-XH-248-1-1

$$USERNAME$$
$$$$$$SYTIME$$$$$$$$$$$$SYDATE$$$$$$
$$$$$$$$$$DESIGNFILE$$$$$$$$$
LR-XH-248-1.DGN [MSP GENERATION CAD]

D-130

LR-XH-248-1-1