REVISIONS
0 DRAWN BY: JLB DATE: 4-13-07 PREPARED BY: RAB DATE: 4-13-07 REVIEWED BY: SRM DATE: 4-17-07
1 ADD APPENDIX R & ADD SI/RH BOUNDARY DRAWN BY: JLB DATE: 6-13-07 PREPARED BY: RAB DATE: 6-13-07 REVIEWED BY: SRM DATE: 6-14-07
2 REVISED V/V STEM LEAK-OFFS TO (NX2), REVISED 2RH B-1 LEAKOFF TO (NX2) AND HIGHLIGHTED PI-11106 & 2PT-621 DRAWN BY: JLB DATE: 9-4-07 PREPARED BY: WJI DATE: 9-4-07 REVIEWED BY: SRM DATE: 9-14-07

INSIDE CONTAINMENT | OUTSIDE CONTAINMENT

SHIELD BUILDING

SI PUMPS (SIS)(110E034 SH 2) (LR-XH-1001-7)

6" FLUSHING CONNECTION

(6-2RH-8) RF-15 2RH-7-6 3/4-T58

2RH-11-11 2RH-10-1 2RH-11-9 4350202

2-HIC 625 31239 F.O

6-RH-601R-10 (6-2RH-10B)

2RH-11-16 (1/2-2RH-57) (3/4 2RH 36) (1/2-2RH-56) 2RH-64

2-FE 928 8-RH-601R 8x6

REACTOR VESSEL (SIS) LOW HEAD INJECTION (LR-XH-1001-6)

2RH-11-13 2-8717B 8-G54 I.B III

2-FT 928 2RH-2-5

2-8716B 3-G54 2-HCV-625 3-BA-54D

2-TI 623 12152

8-RH-601R-9 (8-2RH-9B)

(6-2RH-8)

4350201 2-HIC 624 31238 F.O

2RH-2-6 2-8717A 8-G54 2RH-11-14 2RH-11-10

10RH-601R-11 10"x10"x3" RED. TEE

2-8716A 8-G54 2-HCV-624 8-BA-54D

2RH-10-2 2RH-11-12

6RH-601R-10 (6-2RH-10A)

2-TI 622 12151

B RH-601R-9 (8-2RH-9A)

COMPONENT COOLING WATER (LR-39246)

COMPONENT COOLING WATER (LR-39246)

RESIDUAL HEAT EXCHANGER ITEM: AHRS 1 (1/1)

RESIDUAL HEAT EXCHANGER ITEM: AHRS 2 (1/1)

3/4-RH-601R 2SM-7-4 SM-204 (LR-39238) (3/4-2RH-37)

3/4-RH-601R 2-RH-7-10 LOCAL SAMPLE (3/4-2RH-38)

(2-2RH-18)

27031 2-FE 626 (3/4-2RH-39)

2-FT 626 2-FICA 626 4154101 LO

12-RH-601R-6 (12-2RH-6A)

23061 (3/4-2RH-40)

2PT 620 PT 17153 PI 11105

(3/4-2RH-27) 21162 11531 2-PI 653A

CONTAINMENT SUMP B (SIS) (110E034 SH. 1) (LR-XH-1001-6)

4250201 2-TR 630 2-TE 627 15348 00000 (10-2RH-5A)

RWST (SIS) (110E034 SH.2) (LR-XH-1001-7)

(2-8811A) (2-8810A) 12-RH-601R-5 (12-2RH-5A)

(8-2RH-5A) 2RH-11-2 2RH-1-2 2RH-5-2 2-8711A 8-G54 2RH-3-2 FE 27252

(1/2-2RH-53) (2-2RH-17) 2-RH-601R 2-T58 (1/2-2RH-52)

2-8710A 8-C54

2-RH-601R (2-2RH-7A)

2-RH-7-4 3/4-T58 (3/4"-2RH-21) (3/4-2RH-23) (3/4-2RH-25) 3/4-T58 12x10

ES 19630 (1/1) ITEM: APRH 1 8x6 (3/4-2RH-18) (3/4"-2RH-29) 3/4-T58

PT 17154 PI 11291 2-PIC 629 4154001 2-PT 629

8RH-601R-7 (8 2RH-7A) 1/2"2RH-61 2RH-2-2 2-8713A 8-G54 2RH-11-4 2RH-3-4

2-8712A 8-C54 2-T58 2RH-4-2 RHCL

COOLING WATER TEST LINE TO SUMP NO 21 SEE DWG. NF-39217-2

RESIDUAL HEAT REMOVAL PUMPS IB ⟷ III (2-2RH-43)

DRAIN TO RESIDUAL HEAT PIT SUMP NO 21

CASING DRAIN

(LR-39246) CCW

2RH-7-8

NOTE 6

21163 2-PT 628 2-PIC 628 4154002 PI 11292 PT 17156

11533 2-PI 653B PI 11106 2PT 621 DPI 18353

(10-2RH-58) (2-8811B) (2-8810B) 12-RH-601R-5 (12-2RH-5B)

(3/4-2RH-31) (3/4-2RH-30) 3/4-T58 12X10 (3/4"-2RH-33) (3/4"-2RH-34)

ES 19631 (1/1) ITEM: APRH 2 8X6

(3/4-2RH-24) 3/4-T58 (3/4"- 2RH-22) 2RH-7-3

2RH-7-7 (NF-39246) CCW

CASING DRAIN

2RH-3-3 2-8712B 8-C54

2RH-11-3 2RH-2-1 2-8713B 8-G54 1/2"2RH-66 2RH-4-1 RHCL

COOLING WATER TEST LINE TO SUMP NO 22 SEE DWG LR-39217-2

2-RH-601R (2-2RH-7B) 2-T58 IB ⟷ III (2-2RH-44)

DRAIN TO RESIDUAL HEAT PIT SUMP NO 22

(3/4-2RH-13) (3/4-2RH-14) (3/4-2RH-15)

2RH-1-4 2RH-11-8 2-8714A 8-G54 (1/2-2RH-54) 2RH-11-7 2RH-1-3 2RH-11-5 1/2"2RH-65

8-RH-601R (8-2RH-8) (1/2-2RH-55) 2RH-2-3 2-8715A 8-G54 2RH-7-5 3/4-T58

2-8714B 8-G54 3/4-T58 2RH-7-13 (3/4-2RH-16) 2RH-7-11 3/4-T58 (3/4-2RH-44)

(1-2RH-44) 5"

(1-2RH-43) 5" 5"

8RH-601R-7 (8-2RH-7B)

3/4-T58 2RH-7-14 (3/4-2RH-14) 6-RH-601R-8 (6-2RH-8) 2-8715A 8-G54 2RH-2-4 2RH-11-6 1/2"2RH-62

PER I&C SHT. # 2-HC 626A 31240 FC IFCV-626 6BA-54R 2RH-11-15 1/2"2RH-68

SI PUMPS (LR-XH-1001-7)

6RH-601R-10 (6-2RH-10A)

2-8804A (3/4-2RH-26)

2-8804B (3/4-2RH-32)

2-8804C (3/4-2RH-28)

2-8804D (3/4-2RH-22)

12-RH-601R-6 (12-2RH-6B)

2-RH-601R (2-2RH-1B)

2-T58 2RH-5-1 NOTE 6 (1/2-2RH-49)

2-RH-601R (2-2RH-18) DPI 18354 FE 27253 (1/2-2RH-50)

SHIELD BUILDING

INSIDE CONTAINMENT | OUTSIDE CONTAINMENT

REACTOR VESSEL (SIS) LOW HEAD INJECTION (LR-XH-1001-6)

LOOP B ACCUMULATOR INJECTION LINE (SIS) (LR-XH-1001-6)

32169 2-8803A 2RH-7-19 3/4-T58 (3/4-2RH-41)

2-8703 10VM585D 10RH-601R-11 (10-2RH-11)

2-RH-601R (2-2RH-11) 2RH-6-1 3/4-C58 3/4-RH-601R (3/4-2RH-11) 3/4-T58 2RH-7-1

2-8802

LETDOWN LINE (CVCS) 110E039 SH. 1 (LR-XH-1001-4)

110E013 (H1AW-1001-3) PRT (RCS)

(8-2RH-1A) 2RH-8-1 2-8705 2RV556JWB 2RH-601R (2-2RH-3)

LOOP A HOT LEG (RCS) 110E013 (LR-XH-1001-3)

32192 32193 2-8702A 8-GM585D 2-8701A 8-GM585D 10"x8" (3/4 2RH 42) 10RH-601R-3

2RH-7-15 3/4-T58 2RH-7-17 3/4-T53 10RH-601R-3 (10-2RH-3)

8-RH-2501R-1 (8-2RH-1B) (10-RH-601R-3)

32232 32233 2-8702B 8-GM585D 2-8701B 8-GM585D 10"x8"

LOOP B HOT LEG (RCS) 110E013 (LR-XH-1001-3)

2RH-7-16 3/4-T58 (3/4-2RH-20)

CONTAINMENT SUMP B (SIS)(110E034 SH. 1) (LR-XH-1001-6)

15451 2-TE 630 2-TR 630 4250202 2RH-3-1 2-8710B 8-C54 10x8

8-RH-601R-4 (8-2RH-4B) 1/2"2RH-67 2RH-11-1 2-8711B 8-G54 2RH-1-1

RWST (SIS) (110E034 SH.2) (LR-XH-1001-7)

(2-8810B) 12-RH-601R-4 (12-2RH-4B)

(10-2RH-5B) (2-8811B)

(8-2RH-5B) 2RH-11-3 2-8711B 8-G54 2RH-3-2 FE 27252

(1/2-2RH-53) (2-2RH-17) 2-RH-601R 2-T58 (1/2-2RH-52)

2-8710A 8-C54

2-RH-601R (2-2RH-7A)

2-RH-7-4 3/4-T58 (3/4"-2RH-21) (3/4-2RH-23) (3/4-2RH-25) 3/4-T58 12x10

ES 19630 (1/1) ITEM: APRH 1 8x6 (3/4-2RH-18) (3/4"-2RH-29) 3/4-T58

PT 17154 PI 11291 2-PIC 629 4154001 2-PT 629

8RH-601R-7 (8 2RH-7A) 1/2"2RH-61 2RH-2-2 2-8713A 8-G54 2RH-11-4 2RH-3-4

2-8712A 8-C54 2-T58 2RH-4-2 RHCL

COOLING WATER TEST LINE TO SUMP NO 21 SEE DWG. NF-39217-2

RESIDUAL HEAT REMOVAL PUMPS IB ⟷ III (2-2RH-43)

DRAIN TO RESIDUAL HEAT PIT SUMP NO 21

CASING DRAIN

(LR-39246) CCW

2RH-7-8

NOTE 6

21163 2-PT 628 2-PIC 628 4154002 PI 11292 PT 17156

11533 2-PI 653B PI 11106 2PT 621 DPI 18353

(10-2RH-58) (2-8811B) (2-8810B) 12-RH-601R-5 (12-2RH-5B)

(3/4-2RH-31) (3/4-2RH-30) 3/4-T58 12X10 (3/4"-2RH-33) (3/4"-2RH-34)

ES 19631 (1/1) ITEM: APRH 2 8X6

(3/4-2RH-24) 3/4-T58 (3/4"- 2RH-22) 2RH-7-3

2RH-7-7 (NF-39246) CCW

CASING DRAIN

2RH-3-3 2-8712B 8-C54

2RH-11-3 2RH-2-1 2-8713B 8-G54 1/2"2RH-66 2RH-4-1 RHCL

COOLING WATER TEST LINE TO SUMP NO 22 SEE DWG LR-39217-2

2-RH-601R (2-2RH-7B) 2-T58 IB ⟷ III (2-2RH-44)

DRAIN TO RESIDUAL HEAT PIT SUMP NO 22

(3/4-2RH-13) (3/4-2RH-14) (3/4-2RH-15)

2RH-1-4 2RH-11-8 2-8714A 8-G54 (1/2-2RH-54) 2RH-11-7 2RH-1-3 2RH-11-5 1/2"2RH-65

8-RH-601R (8-2RH-8) (1/2-2RH-55) 2RH-2-3 2-8715A 8-G54 2RH-7-5 3/4-T58

2-8714B 8-G54 3/4-T58 2RH-7-13 (3/4-2RH-16) 2RH-7-11 3/4-T58 (3/4-2RH-44)

(1-2RH-44) 5"

(1-2RH-43) 5" 5"

8RH-601R-7 (8-2RH-7B)

3/4-T58 2RH-7-14 (3/4-2RH-14) 6-RH-601R-8 (6-2RH-8) 2-8715A 8-G54 2RH-2-4 2RH-11-6 1/2"2RH-62

PER I&C SHT. # 2-HC 626A 31240 FC IFCV-626 6BA-54R 2RH-11-15 1/2"2RH-68

SI PUMPS (LR-XH-1001-7)

6RH-601R-10 (6-2RH-10A)

2-8804A (3/4-2RH-26)

2-8804B (3/4-2RH-32)

2-8804C (3/4-2RH-28)

2-8804D (3/4-2RH-22)

12-RH-601R-6 (12-2RH-6B)

2-RH-601R (2-2RH-1B)

2-T58 2RH-5-1 NOTE 6 (1/2-2RH-49)

2-RH-601R (2-2RH-18) DPI 18354 FE 27253 (1/2-2RH-50)

SHIELD BUILDING

INSIDE CONTAINMENT | OUTSIDE CONTAINMENT

LR - LEGEND

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

LR - SYSTEMS

RH - RESIDUAL HEAT REMOVAL
CC - COMPONENT COOLING
CL - COOLING WATER
SI - SAFETY INJECTION
RC - REACTOR COOLANT
VC - CHEMICAL AND VOLUME CONTROL
SM - PLANT SAMPLE SYSTEM

REFERENCE DRAWINGS:
1. LEGEND 110F015
2. LINE LIST 206C928

NOTES:
1. ALL ITEM NUMBERS INCLUDE PREFIX NSPAC.
2. ALL PIPE SHOWN SOLID ON THIS SHEET TO BE Q.A. TYPE IA.
3. FOR ROUTING OF VALVE STEM LEAKOFF (INSIDE CONTAINMENT) SEE DWG. NF-39250
4. ◁ DENOTES CATEGORY I VENTILATION ZONE
   CAT. I
5. (1/1) DENOTES EQUIPMENT QA TYPE/DESIGN CLASS
6. ORIFICE SHOULD BE FIELD FABRICATED FROM A 1/16" THICK STAINLESS STEEL BLANK WITH 25/32 ± 1/64 DIA. HOLE DRILLED IN ITS CENTER
7. STEM LEAKOFF ROUTED TO COLLECTION TROUGH IN RESIDUAL HEAT PIT

THIS DIAGRAM REPLACES WESTINGHOUSE DWG. NO. 110E129 REV. 8

REFERENCE DWG X-HIAW-1001-8 REV. P

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.

DWN	DATE	SIGNIFICANT NO.	8630			2	J104 9870	1	4822
CHECKED		GROUP	1	2	3	4	5	CL	6
PROJECT NO.									
APP'D & CERT.									
FILMED									

LICENSE RENEWAL BOUNDARY DWG
FLOW DIAGRAM
RESIDUAL HEAT REMOVAL SYSTEM-UNIT 2

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

SCALE NONE | REV 2

LR-XH-1001-8

LR-XH-1001-8.DGN WSP GENERATION CAD