

**Section 1, 12 and Appendix I Contains SUNSI**  
**Withhold from Public Disclosure in accordance with 10CFR 2.390**

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L-PI-18-018  
10 CFR 50.71(e)

U S Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Prairie Island Nuclear Generating Plant Units 1 and 2  
Dockets 50-282 and 50-306  
Renewed License Nos. DPR-42 and DPR-60

Updated Safety Analysis Report (USAR) Revision 35

Pursuant to 10CFR 50.71(e) and Nuclear Regulatory Commission (NRC) specific exemption granted May 22, 2006 (ADAMS Accession Number ML061110032), Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (hereafter "NSPM"), by this letter submits USAR page revisions for the Prairie Island Nuclear Generating Plant (PINGP), Units 1 and 2.

Enclosure 1, Information Regarding Changes to the USAR, identifies those changes made based on approved license amendments, changes made under the provisions of 10 CFR 50.59, 10 CFR 50.46, and editorial changes including deletion of particular information and the basis for that deletion.

Enclosure 2, Updated Safety Analysis Report, is a CD-ROM containing USAR Revision 35 in its entirety. This revision was made pursuant to 10 CFR 50.71(e), using the guidance of NEI 98-03, Rev. 1, "Guidelines for Updating Final Safety Analysis Reports." NSPM requests that USAR Revision 34 be destroyed or marked superseded.

Enclosure 3, Report Consistent with 10 CFR 54.37(b), contains a report consistent with 10 CFR 54.37(b) which describes how the effects of aging of newly-identified structures, system, or components will be managed, such that the intended functions described in 10 CFR 54.4 will be effectively maintained during the license renewal period of extended operation.

Enclosures 4, Additional information regarding changes to PINGP Fire Protection Program since May 3, 2017, identify changes made to Fire Protection Program documents that are incorporated in the USAR by reference.

A053  
A006  
NRR

If there are any questions or if additional information is needed, please contact Ms. Pamela Johnson at 651-267-6829

Summary of Commitments

This letter contains no new commitments and no revisions to existing commitments.

I certify that the information presented herein accurately presents changes made since the last updating submittal up through April 5, 2018.

A handwritten signature in black ink, appearing to read "Scott Sharp", is written over the printed name.

Scott Sharp

Site Vice President, Prairie Island Nuclear Generating Plant  
Northern States Power Company - Minnesota

Enclosures (4)

cc: Administrator, Region III, USNRC  
Project Manager, PINGP, USNRC  
Resident Inspector, PINGP, USNRC

**ENCLOSURE 1**

**Information Regarding Changes to the USAR**

**5 pages to follow**

## ENCLOSURE 1

### INFORMATION REGARDING CHANGES TO THE USAR

Changes were made to the Updated Safety Analysis Report (USAR) which is identified in the following list by their input numbers (with which side-barred changes are denoted). Note that USAR Input Numbers can be searched on the USAR CD-ROM, Enclosure 2, to locate each change.

USAR Input No.	Revised Section	Basis	Description
01496158	7	50.59 Screening 5073, Rev. 0	This change reflects EC 23906 which upgraded the steam generator narrow range level channels to be RG 1.97 compliant per NRC SER dated November 30, 2015.
01512064	1, 6, 7	50.59 Screening 5149, Rev. 1	This change reflects EC 25498 which installed two new radiation monitors designated as 1R-10 and 2R-10.
01520694	14	50.59 Screening 5243, Rev. 0	This change reflects the updated generic PWROG analysis and procedural guidance (ERG) to improve the margin for available CST water (Ref. CN-LIS-09-87) during natural circulation cooldowns.
01521484	5, 6	50.59 Screening 5071, Rev. 2	This change reflects EC 25820 which replaced the Unit 1 Containment Fan Coil Units' coils with coils having a different heat transfer rate. For convenience, this USAR change was implemented along with USAR changes 01544428 and 0154453. The combined Section 5 markup for 01521484, 01544428 and 01544531 is included with the record for 01544531.
01521758	12	50.59 Evaluation 1129, Rev. 0	This change reflects a new inspection method for special lifting devices. In lieu of the surface NDE defined in ANSI N14.6-1978, volumetric NDE using acoustic emission techniques is now used supplemented by ultrasonic (UT) techniques as needed.

USAR Input No.	Revised Section	Basis	Description
01527524	App L	50.59 Screening 5224, Rev. 0	This change updates and clarifies descriptions of the metal fatigue calculations which have already been incorporated into the design bases. The information being revised is based upon information in USAR Section 4.1.4 and the table of license renewal commitments in App L.5.
01528294	7	Applicability Determination 2289, Rev. 0	This editorial change replaced the word "Badkup" with "Backup".
01528499	10	50.59 Screening 5233, Rev. 0	This change reflects EC 27321 which changed the lowest start setpoint of the standby station air compressor from 90 psig to 86 psig.
01528803	3	50.59 Screening 5239, Rev. 0	This change reflects reactor vessel calculation updates for improved mid grid fuel design. The calculations were revised under EC 26847.
01532406	4	50.59 Screening 5205, Rev. 0	This change reflects EC 26565 which replaced the 12 Reactor Coolant Pump.
01533095	6	NRC SER dated 6/16/16 for LA 217/205	This change reflects the incorporation of TSTF-523, Revision 2, "Generic Letter 2008-01, Managing Gas Accumulation" into the PINGP Technical Specifications.
01536995	4	50.59 Screening 5293, Rev. 0	This change reflects replacement steam generators' stress & fatigue analysis report revision performed under EC 19568.
01540080	7	50.59 Screening 2098, Rev. 0	This change corrects the error documented by CAP 01538994 that a USAR figure showed a seismic accelerometer previously removed from service and did not show an seismic accelerometer that is in service.
01541376	7, 14	Applicability Determination 2386, Rev. 0, 50.59 Screening 5325, Rev. 0, and LA 211/199	This change incorporates a new BEACON WCAP and Advanced Nodal Code (ANC) references.

Enclosure 1 – USAR Changes

<b>USAR Input No.</b>	<b>Revised Section</b>	<b>Basis</b>	<b>Description</b>
01544103	14	50.59 Screening 5318, Rev. 1	This change reflects EC 27440 which processed a new calculation supporting natural circulation cooldown.
01544428	5	Applicability Determination 2441, Rev. 0	This change reflects EC 27918 under which the Unit 1 CFCU Proto-HX model was revised due to discovery of an input error. For convenience, this USAR change was implemented along with USAR changes 01521484 and 01544531. The combined Section 5 markup for 01521484, 01544428 and 01544531 is included with the record for 01544531.
01544531	5	50.59 Screening 5342, Rev. 0	This change reflects EC 27919 "U2 Vacuum Breaker Capability." The EC documents the development of a heat exchanger modeling the Unit 2 CFCU's with new replacement coils in order to evaluate the Unit 2 Containment Vacuum Breaker capability. This is similar to what was done for the replacement Unit 1 CFCU coils by EC25820. For convenience, this USAR change was implemented along with USAR changes 01521484 and 01544428. The combined Section 5 markup for 01521484, 01544428 and 01544531 is included with the record for 01544531.
01546878	10	50.59 Screening 5354, Rev. 0	This activity revised the description of the Station Air Compressors to include being able to run independently in Auto mode.
01549825	App I	Applicability Determination 2549, Rev. 0	This editorial change corrects an equipment identification number.
01551325	6, 10	LA 213/201, Applicability Determination 2581, Rev. 0	This change reflects license amendments regarding revision to Technical Specification 3.5.3, "ECCS - Shutdown". The amendments changed Mode Applicability to eliminate the potential for non-conservative plant operation.

<b>USAR Input No.</b>	<b>Revised Section</b>	<b>Basis</b>	<b>Description</b>
01551562	App D	Applicability Determination 2575, Rev. 0	This editorial change corrects an inaccurate Table D.4-1 heading.
01558038	14	Applicability Determination 2631, Rev. 0	This editorial change corrects miscellaneous formatting errors and misspellings.
604000000010	10	Applicability Determination 2576, Rev. 0	This editorial change reflects CLB regarding surveillance of fuel assembly bulge joints and adds a sentence to note that RCS sulfate limits are based on the EPRI PWR Primary Water Chemistry Guidelines.
604000000023	6	Applicability Determination 3220, Rev. 0	Clarifies that the codes and testing standards described for ECCS valves, including a 30 minute hydro test, represent original design requirements. The change also states that acceptable equivalent modern standards for design, fabrication, and testing of valves may be used for replacement components or system modifications in accordance with site design change processes.
604000000027	App K	50.59 Screening 5399, Rev. 0	This change reflects a new containment integrity analysis.
604000000035	App L	Applicability Determination 2868, Rev. 1	This change updates Appendix L.2.28 by removing the revision number from referenced ASME Section XI Code Case N-729. This is acceptable as the applicable Code Case revision is controlled by site ISI program.
604000000040	9	10CFR50.54(q) Review # 2007-0050	This editorial change clarifies R-15 use and removes reference to MIDAS, which is no longer in use.
604000000061	14	Applicability Determination 2753, Rev. 0	This editorial change adds vertical axis units to Fig 14.6-14.
604000000073	4	50.59 Screening 4915, Rev. 0	This change reflects EC 6DOC00019607 which implements Leak Before Break for the SI and RHR branch lines of piping.

Enclosure 1 – USAR Changes

USAR Input No.	Revised Section	Basis	Description
604000000080	6	Applicability Determination 2862, Rev. 0	This editorial change adds a reference to Sec 14.9 in Sec 6.4.
604000000121	10	License Amendment 11/30/2017	This change reflects a new spent fuel pool criticality safety analysis.
604000000150	10	50.59 Screening 5481, Rev. 2	This change reflects EC 6DOC00028471 which removed the safety related active isolation function from the CL Strainer Backwash Valves and downgraded the backup air supply for those same valves.
604000000160	12	Editorial	This editorial change is based on LA 206/193 for application of AST, dated 1/22/2013. The USAR discussion is updated to reflect PINGP's actual commitments as related to reactor vessel head and upper internals movements.
604000000161	14	Editorial	This change is editorial as it is based on LA 206/193 (1/22/2013) and LA 166/156 (9/10/2004). The USAR discussion better describes PINGP's actual commitment language as related to administrative controls for containment closure during fuel handling operations.

Summaries of evaluations prepared under the provisions of 10CFR 50.59 were submitted separately under letter from Scott Sharp to Document Control Desk, L-PI-17-051, "50.59 Evaluation Summary Report", dated December 28, 2017 (ADAMS Accession No. ML17362A148)



**ENCLOSURE 2**

**Updated Safety Analysis Report, Revision 35**

**Updating Instruction**

**CD-ROM**

**2 pages to follow**

## ENCLOSURE 2

### UPDATED SAFETY ANALYSIS REPORT (USAR)

#### Updating Instructions

A complete copy of USAR Revision 35 is included on the enclosed CD-ROM.

Contact Northern States Power Company, a Minnesota corporation (NSPM), at 651-267-6829 if you require additional assistance.

#### Revision 35 (CD-ROM)

File name	Size	Disclosure status
(000)– USAR.pdf	599 KB	Non-proprietary
(001) – USAR SECTION 01.pdf	6,140 KB	Non-proprietary
(002) – USAR SECTION 02.pdf	6,529 KB	Non-proprietary
(003) – USAR SECTION 03.pdf	1,358 KB	Non-proprietary
(004) – USAR SECTION 04.pdf	4,351 KB	Non-proprietary
(005) – USAR SECTION 05.pdf	4,891 KB	Non-proprietary
(006) – USAR SECTION 06.pdf	5,275 KB	Non-proprietary
(007) – USAR SECTION 07.pdf	4,087 KB	Non-proprietary
(008) – USAR SECTION 08.pdf	2,715 KB	Non-proprietary
(009) – USAR SECTION 09.pdf	5,204 KB	Non-proprietary
(010) – USAR SECTION 10.pdf	14,839 KB	Non-proprietary
(011) – USAR SECTION 11.pdf	11,496 KB	Non-proprietary
(012) – USAR SECTION 12.pdf	6,209 KB	Non-proprietary
(013) – USAR SECTION 13.pdf	152 KB	Non-proprietary
(014) – USAR SECTION 14.pdf	12,065 KB	Non-proprietary
(015) – USAR SECTION APP D.pdf	288 KB	Non-proprietary

<b>File name</b>	<b>Size</b>	<b>Disclosure status</b>
(016) – USAR SECTION APP E.pdf	9,803 KB	Non-proprietary
(017) – USAR SECTION APP F.pdf	5,848 KB	Non-proprietary
(018) – USAR SECTION APP G.pdf	7,002 KB	Non-proprietary
(019) – USAR SECTION APP H.pdf	1,934 KB	Non-proprietary
(020) – USAR SECTION APP I.pdf	10,346 KB	Non-proprietary
(021) – USAR SECTION APP J.pdf	934 KB	Non-proprietary
(022) – USAR SECTION APP K.pdf	411 KB	Non-proprietary
(023) – USAR SECTION APP L.pdf	475 KB	Non-proprietary
Section 1 redacted files	5,451KB	Withhold under 10CFR 2.390
Section 12 redacted files	3,311KB	Withhold under 10CFR 2.390
Appendix I redacted files	1,947KB	Withhold under 10CFR 2.390

**ENCLOSURE 3**

**Report Consistent with 10 CFR 54.37(b)**

**2 pages to follow**

## ENCLOSURE 3

### Report Consistent with 10 CFR 54.37(b)

This summary report is in lieu of adding a level of detail to the Prairie Island Nuclear Generating Plant (PINGP) Updated Safety Evaluation Report (USAR) that is greater in the remainder of the USAR, including the License Renewal Supplement in Appendix L. The contents of this report are consistent with the requirements of 10 CFR 54.37(b) and the guidance of Regulatory Issue Summary (RIS) 2007-16, "Implementation of the Requirements of 10 CFR 54.37(b) for Holders of Renewed Licenses" (ADAMS Accession Number ML100250279).

A review of engineering changes, equipment list changes, USAR changes, changes to equipment credited to 10 CFR 54.4(a)(3) regulated events, and changes to time limited aging analyses (TLAA) was conducted for the review period from December 5, 2015 to November 20, 2017. These changes were reviewed to identify components installed before June 27, 2011 that had not previously been screened or screened incorrectly for being in scope of License Renewal Aging Management. From the review process, all but one newly identified component was found to already have been subject to existing Aging Management Programs (AMPs) in accordance with applicable aging management tables in PINGP's License Renewal Application (LRA). With the conclusion of this review, all aging effects requiring management are being managed to ensure License Renewal intended functions are effectively maintained throughout the period of extended operation.

The one "newly identified" component that did not fall into an existing category (component type/material/environment combination) in its associated system (Fire Protection) Table 3.3.2-9 in PINGP's LRA was **058-281** (122 DD FIRE PMP CLG WTR DISCH TO HX PRV STRNR). The impact on existing aging management programs are discussed below. The table provided in the LRA is not actually being revised. However, the table below indicates the changes that would have been required to address this newly identified component in LRA 3.3.2-9.

Aging Management discussion of filter/strainer 058-281:

Bronze filter/strainer **058-281** is in the Fire Protection System. Its internal environment is raw water, and its external environment is plant indoor air – uncontrolled. Since no bronze filter/strainer housings were listed in PINGP's License Renewal Application in the Fire Protection System (LRA Table 3.3.2-9), 058-281 was determined to be a newly identified SSC that would have been subject to an aging management review or evaluation of time-limited aging analysis in accordance with 10 CFR 54.21.

10 CFR 54.37(b) states that the FSAR update IAW 10 CFR 50.71(e) must describe how the effects of aging will be managed such that the intended

function(s) in 10 CFR 54.4(b) will be effectively maintained during the period of extended operation. In the case of 058-281, its internal surfaces aging effects will be managed by the Fire Water Aging Management Program. Bronze was found to be not susceptible to selective leaching during License Renewal implementation. Therefore, 058-281 will not be added to the Selective Leaching of Materials AMP. Bronze Filter/Strainer Housings will be added to PINGP's Fire Water Aging Management Program.

If the actual LRA Table 3.3.2-9 were updated for the material and environment combinations of 058-281, the addition would look like the following table entry below.

**Summary of Addition to LRA Table 3.3.2-9**

<b>Component Type</b>	<b>Intended Function</b>	<b>Material</b>	<b>Environment</b>	<b>Aging Effects Requiring Management</b>	<b>Aging Management Program</b>
Filter/Strainer Housings	Pressure Boundary	Bronze	Plant Indoor Air – Uncontrolled (External)	None	None
Filter/Strainer Housings	Pressure Boundary	Bronze	Raw Water (Internal)	Loss of Material - Crevice Corrosion	Fire Water System Program
				Loss of Material - Fouling	Fire Water System Program
				Loss of Material - MIC	Fire Water System Program
				Loss of Material - Pitting Corrosion	Fire Water System Program

## **ENCLOSURE 4**

**Additional information regarding changes to  
PINGP Fire Protection Program since May 3, 2017**

**2 pages to follow**

## ENCLOSURE 4

### **Additional information regarding changes to PINGP Fire Protection Program since May 3, 2017**

#### F5 Appendix E

*No changes*

#### F5 Appendix F

*The following changes were issued in rev 34 of F5 Appendix F (issued 11/9/17 in 6PCR01509780)*

Figure 1.1-1: Clarification that ceiling of 121 MDFP room is a F5 Appendix K required fire barrier.

Section 3.0: Deluge system protecting 2M transformer changed from manually actuated to automatic deluge system actuated by linear heat detection and added description of incipient detection system.

Section 4.2.1: Deluge system protecting 2M transformer changed from manually actuated to automatic deluge system.

Table 6-1:

Fire Area 5, 14, 21, 70, 89, 94 and 131 – updated combustible loading and fire loading.

Fire Area 18 - added incipient detection system.

Fire Area 28e - updated to list linear heat detection and automatic deluge system DA-10 which protects the 2M transformer.

Table 6-3:

DM-4 changed to DA-10 (2M transformer deluge system) in the list of fire protection systems.

Revised to show Carbon Dioxide system is actuated by multi-criteria detectors.



## Enclosure 4 (Continues)

### F5 Appendix K

*The following changes were issued in rev 24 of F5 Appendix K (issued 11/9/17 in 6PCR01509782)*

Section 5.0: Removed the quoted section from operating license and referenced the license condition. Revised quoted section from the QATR for consistency.

Section 6.1: Added clarification note to issue separate fire impairments for equipment issues.

Section 7.1: Added description of incipient detection system.

Section 7.2: Added functional requirements for incipient detection system.

Section 7.6: Deluge system protecting 2M transformer changed from manually actuated to automatic deluge system actuated by linear heat detection.

Section 7.9: Added clarification that detection zones 12 and 14 must be functional for CO2 to be functional. Added conditions that must be met when the fire watch must leave the relay room for personnel safety.

Section 7.16: Added clarification on how to administratively control the Auxiliary Feedwater Pump Room trench covers and added a description of electrical raceway fire barriers.

Section 7.17: Added clarification that all electrical raceway fire barriers are required by F5 Appendix K.

Section 8.4: Added a surveillance requirement to test the incipient system annually.

Table 1: Updated to change columns that show detectors required pre and post modification to columns that show high voltage and low voltage detection systems.

Attachment 4: Added attachment as an administrative aid for logging fire impairments.