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August 4, 2017

L-PI-17-027
10 CFR 50.90

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

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

License Amendment Request to Revise the NDE Inspection Interval for Special Lifting Devices

Pursuant to 10 CFR 50.90, Northern States Power Company, a Minnesota Corporation, doing business as Xcel Energy (hereafter "NSPM"), hereby submits an amendment to the licensing basis for the Prairie Island Nuclear Generating Plant (PINGP). Specifically, the proposed change revises the PINGP Updated Safety Analysis Report (USAR) section 12.2.12.3, "Special Lifting Devices Evaluation," to modify the non-destructive examination (NDE) inspection interval for Special Lifting Devices from annually or prior to each use, typically at each refueling outage, to a ten year interval. The current NDE inspection interval is consistent with ANSI N14.6-1978, "American National Standard for Special Lifting Devices for Shipping Containers Weighing 10,000 Pounds (4500 kg) or More for Nuclear Materials." NSPM concludes that the proposed change to revise the inspection interval is appropriate as these devices are used under controlled conditions and at frequencies of use that are substantially less severe than those possible for the type of lifting device for which ANSI N14.6-1978 was originally prepared. Therefore, the proposed change continues to support the NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants Resolution of Generic Technical Activity A-36," defense-in-depth philosophy of assuring reliable operation of load handling systems through provision of sufficient equipment inspection.

This license amendment request does not require any changes to the PINGP Technical Specifications.

The enclosure provides NSPM's evaluation of the proposed change. Attachment 1 to the enclosure provides the marked-up PINGP USAR page. Attachment 2 to the enclosure provides a summary of the relevant indications evaluated from available NDE inspection results to date.

NSPM requests approval of the proposed amendment by July 20, 2018, with an implementation period of 60 days to support implementation prior to the PINGP Unit 1 refueling outage scheduled for fall 2018.

In accordance with 10 CFR 50.91, NSPM is notifying the State of Minnesota of this request by transmitting a copy of this letter and enclosure to the designated State Official.

If there are any questions or if additional information is needed, please contact Mr. Peter Gohdes at (612) 330-6503 or Peter.Gohdes@xenuclear.com.

Summary of Commitments

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

I declare under penalty of perjury, that the foregoing is true and correct.
Executed on August 4, 2017.

Scott Northard

Scott Northard
Site Vice President, Prairie Island Nuclear Generating Plant
Northern States Power Company – Minnesota

Enclosure

cc: Administrator, Region III, USNRC
Project Manager, Prairie Island, USNRC
Resident Inspector, Prairie Island, USNRC
State of Minnesota

ENCLOSURE

PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2

Evaluation of Proposed Change

Subject: License Amendment Request to Revise the NDE Inspection Interval for Special Lifting Devices

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ATTACHMENTS:

1. Updated Safety Analysis Report Page (Markup)
2. NDE Inspection Relevant Indication Evaluation Summary

License Amendment Request to Revise the NDE Inspection Interval for Special Lifting Devices

1.0 SUMMARY DESCRIPTION

Pursuant to 10 CFR 50.90, Northern States Power Company, a Minnesota Corporation, doing business as Xcel Energy (hereafter "NSPM"), hereby submits an amendment to the licensing basis for the Prairie Island Nuclear Generating Plant (PINGP). Specifically, the proposed change revises the PINGP Updated Safety Analysis Report (USAR) section 12.2.12.3, "Special Lifting Devices Evaluation," to modify the non-destructive examination (NDE) inspection interval for Special Lifting Devices from annually or prior to each use, typically at each refueling outage, to a ten year interval. The current NDE inspection interval is consistent with ANSI N14.6-1978, "American National Standard for Special Lifting Devices for Shipping Containers Weighing 10,000 Pounds (4500 kg) or More for Nuclear Materials." NSPM concludes that the proposed change to revise the inspection interval is appropriate as these devices are used under controlled conditions and at frequencies of use that are substantially less severe than those possible for the type of lifting device for which ANSI N14.6-1978 was originally prepared. Therefore, the proposed change continues to support the NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants Resolution of Generic Technical Activity A-36," defense-in-depth philosophy of assuring reliable operation of load handling systems through provision of sufficient equipment inspection.

This license amendment request does not require any changes to the PINGP Technical Specifications.

2.0 DETAILED DESCRIPTION

2.1 System Design and Operation

The proposed change affects the NDE inspection interval for the Special Lifting Devices at PINGP which are comprised of the following:

- Internals Lifting Rigs
- Reactor Head Lifting Rigs
- Turbine Spreader Assembly

Internals Lifting Rigs:

There are two Internals Lifting Rigs, one per unit, which are designed to lift either the upper or lower internals assembly in their respective unit. The Internals Lifting Rigs are fairly simple mechanical systems assembled from structural members, clevises, lugs, and pins. During normal plant operations, the devices are stored within the containment vessel of their respective units. The Internals Lifting Rigs are used to lift the upper internals assemblies every refueling outage while lifts of the lower internals assemblies are typically performed once every ten years in support of reactor vessel inspections. The lower internals assemblies are only lifted when all fuel is removed from the reactor vessel and are, therefore, not subject to

NUREG-0612. The lower internals assembly is approximately three times the weight of the upper internals assembly and is used as the bounding load for evaluation of the design margins for the Internals Lifting Rigs. The Internals Lifting Rigs are used in conjunction with each unit's respective Containment Polar Crane.

Reactor Head Lifting Rigs:

As with the Internals Lifting Rigs, there are two Reactor Head Lifting Rigs, one per unit, designed to lift the reactor vessel head in their respective unit. The Reactor Head Lifting Rigs are also fairly simple mechanical systems assembled from structural members, clevises, lugs, and pins. The Reactor Head Lifting Rigs are permanently attached to and used when removing and replacing the reactor vessel heads and are used in conjunction with each unit's respective Containment Polar Crane.

Turbine Spreader Assembly:

The common Turbine Spreader Assembly is used for disassembly and reassembly of turbine components. The Turbine Spreader Assembly was designed as not having any nuclear significance since it is to be used only in the turbine building. This device is essentially an I-beam spreader assembly which transfers the weight from slings connected to the lifted component via yokes and beam hangers to slings connected to the crane hook to carry large turbine components. It is stored in the interior turbine building and used during major high-pressure and low-pressure turbine component as well as generator rotor inspections. These inspections are infrequent in nature, but may involve multiple lifts. The Turbine Spreader Assembly is used in conjunction with the Turbine Building Crane.

The Turbine Spreader Assembly is considered a Special Lifting Device because, while there is no safeguards equipment on the turbine floor itself, the Unit 1 switchgear (4.16kV and 480V) are located in a Design Class I equipment area between the Unit 1 and 2 turbine building areas below the operating floor. A load drop accident, which may perforate the 18 inch thick concrete floor or cause excessive scabbing, could potentially damage the buses. Administrative controls are in place to prevent such a load drop condition from occurring.

2.2 Current Licensing Basis Requirements

The current licensing basis for the NDE inspection interval on the Special Lifting Devices is described in the USAR in section 12.2.12.3, "Special Lifting Devices Evaluation," which states that:

> Visual inspection and non-destructive examination (NDE) testing of major load carrying welds and any other critical areas is performed consistent with ANSI N14.6-1978 (Reference 73) annually or prior to each use of the Special Lifting Device, typically at each refueling outage (References 18, 37, 38, 39, and 32).

The basis for this interval is ANSI N14.6-1978 (Reference 1) which states in section 5.3, "Testing to Verify Continuing Compliance," sub-section 5.3.1 that:

> Each special lifting device shall be subjected annually (period not to exceed 14 months) to either of the following:
>
> (1) …
>
> (2) In cases where surface cleanliness and conditions permit, the load testing may be omitted, and dimensional testing, visual inspection, and nondestructive testing of major load-carrying welds and critical areas in accordance with 5.5 of this standard shall suffice. If the device has not been used for a period exceeding one year, this testing shall not be required. However, in this event, the test shall be applied before returning the device to service.

Therefore, the current licensing basis for the NDE inspection interval as described in the USAR is consistent with ANSI N14.6-1978, section 5.3.1(2).

2.3 Reason for the Proposed Change

The reason for the proposed change to the NDE inspection interval is primarily that ANSI N14.6-1978 was originally intended for devices used for handling shipping containers containing nuclear materials. In comparison, the Special Lifting Devices at PINGP are used under controlled conditions and at frequencies substantially less severe than those possible for the type of devices for which ANSI N14.6-1978 was originally intended. Consequently, NSPM concludes that performing NDE testing on a ten year interval in conjunction with continued visual inspection and dimensional testing consistent with ANSI N14.6-1978 ensures that major load-carrying welds and critical areas are adequately inspected to meet the intent of ANSI N14.6-1978 and NUREG-0612.

Additionally, the revision of the NDE interval will result in reductions to refueling outage durations (those outages during which NDE is not required). This will correspondingly result in decreases to inspection personnel radiation exposure as the Internals Lifting Rigs and Reactor Vessel Head Lifting Rigs are contaminated and in proximity to irradiated fuel.

2.4 Description of the Proposed Change

The proposed change is to state that NDE is to be conducted on a different interval than what is specified within ANSI N14.6-1978. As such, the licensing basis as described in the USAR is being revised as follows:

> ~~Visual inspection and non-destructive examination (NDE) testing of major load carrying welds and any other critical areas is performed consistent with ANSI N14.6-1978 (Reference 73) annually or prior to each use of the Special Lifting Device, typically at each refueling outage (References 18, 37, 38, 39, and 32).~~ *Load testing of the Special Lifting Devices is not required. Dimensional testing, visual inspection, and nondestructive testing of major load-carrying welds and*

critical areas are performed consistent with ANSI N14.6-1978, with the exception that nondestructive testing is conducted on a 10 year interval.

2.5 Facility Description

NSPM owns and operates the PINGP which is a two unit plant located on the right bank of the Mississippi River within the city limits of Red Wing, Minnesota. Each unit at PINGP employs a two-loop pressurized water reactor designed and supplied by Westinghouse Electric Corporation. The initial PINGP application for a Construction Permit and Operating License was submitted to the Atomic Energy Commission (AEC) on April 5, 1967. The Final Safety Analysis Report was submitted for application of an Operating License on January 28, 1971. Unit 1 began commercial operation on December 16, 1973 and Unit 2 began commercial operation on December 21, 1974.

The PINGP was designed and constructed to comply with NSPM's understanding of the intent of the AEC General Design Criteria (GDC) for Nuclear Power Plant Construction Permits, as published on July 11, 1967. PINGP was not licensed to NUREG-0800, Standard Review Plan.

3.0 TECHNICAL EVALUATION

On December 22, 1980, the NRC issued Generic Letter (GL) 80-113, "Control of Heavy Loads" (Reference 2), which noted issuance of NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants Resolution of Generic Technical Activity A-36" (Reference 3), and contained "several recommendations" for licensees relating to the handling of heavy loads. The purpose of the GL was to "request that [licensees] review the controls for handling of heavy loads to determine the extent to which the guidelines of [NUREG-0612] are presently satisfied at [the licensee's] facility, and to identify the changes and modifications that would be required in order to fully satisfy these guidelines." Enclosure 3 to the GL, "Request for Additional Information on Control of Heavy Loads," section 2.1.3.d, requested licensees to "describe any proposed alternatives and demonstrate their equivalency in terms of load-handling reliability."

NUREG-0612 was issued in July 1980, to provide "the results of the review of the handling of heavy loads" including "recommendations on actions that should be taken to assure safe handling of heavy loads." Within the report, recommended guidelines were included for adoption "to provide adequate measures that minimize the occurrence of the principal causes of load handling accidents and to provide an adequate level of defense-in-depth for handling of heavy loads near spent fuel and safe shutdown systems." With regards to Special Lifting Devices, defense-in-depth is accomplished through providing for "sufficient…equipment inspection to assure reliable operation of the handling system." Guideline 4 of NUREG-0612 (section 5.1.1(4)) states that "Special Lifting Devices should satisfy the guidelines of ANSI N14.6-1978." Additionally, Guideline 4 also notes that "certain inspections and load tests may be accepted in lieu of certain material requirements in the standard."

In responses to GL 80-113 dated February 3, 1982, and November 8, 1982 (References 4 and 5), Northern States Power Company (NSP), a predecessor license holder for PINGP, indicated that the Special Lifting Devices at PINGP were designed and built by Westinghouse circa

1970-71, prior to the existence of ANSI N14.6-1978, and therefore “not in strict compliance with all the ANSI N14.6 requirements.” The identified areas of non-strict compliance with ANSI N14.6-1978 and NUREG-0612 are summarized as:

- While high strength materials were used in construction of the Special Lifting Devices, the fracture toughness was not determined. However, per an analysis completed at the time, the resulting stresses were found to be within the allowable stresses.

- The Westinghouse Quality Release was considered to be an acceptable alternate for verifying that the criteria for certified material testing reports, NDE, and documentation required by Westinghouse drawings and purchasing documents were satisfied.

- An initial 150% load test followed by NDE of critical load bearing parts and welds was not performed. The devices were originally tested to 100% of the load. Furthermore, continued load testing to 150% of the maximum load is not possible at PINGP.

- Guideline 4 of NUREG-0612 requires that the stress design factor stated in section 3.2.1.1 of ANSI N14.6-1978 be based on combined maximum static and dynamic loads that could be imparted based on the characteristics of the crane which will be used. NSP investigated applicable cranes and determined the maximum dynamic impact factor to be 3% which excluded the flexibility of the ropes and cranes.

One of the identified areas of non-strict compliance was that NSP was unable to utilize continued load testing to 150% of the maximum load as a method to verify continued acceptability per ANSI N14.6-1978 section 5.3.1(1). Therefore, NSP applied the combination of visual inspection and dimensional and NDE testing as outlined in ANSI N14.6-1978 section 5.3.1(2).

On June 6, 1983, the NRC issued a safety evaluation (SE) for completion of the “Phase I Control of Heavy Loads issue for Prairie Island Nuclear Generating Plant Unit Nos. 1 and 2” (Reference 6). The staff concurred with the findings contained within the technical evaluation report (TER) completed by the Franklin Research Center which was attached to the SE. The TER concluded that the “special lifting devices subject to NUREG-0612 at Prairie Island Units 1 and 2 will provide a degree of mechanical reliability consistent with that inherent in Guideline 4” and “equivalent to that expected from an initial design in accordance with ANSI N14.6-1978.”

Currently, inspections of the Special Lifting Devices, as described in the PINGP USAR, are implemented as part of NSPM’s preventative maintenance program. The requirements listed in the preventative maintenance procedures are consistent with USAR section 12.2.12.3 and ANSI N14.6-1978. In addition to NDE, visual inspection (including dimensional measuring) of load bearing components to identify flaws or deficiencies that could lead to failure of the components is also completed prior to each use.

While NSPM proposes to change the NDE inspection frequency at PINGP to a ten year interval, visual inspections, including dimensional testing, will continue to be conducted on a

periodicity of annually or prior to each use, typically at each refueling, on the major load-carrying welds and critical areas of the Special Lifting Devices consistent with ANSI N14.6-1978.

NSPM has evaluated the proposed change and believes the ten year NDE inspection interval to be appropriate and not compromise the reliability of the devices for the following reasons:

- As was noted in the NSP responses to GL 80-113 previously discussed, even though the devices were not originally designed to NUREG-0612 and ANSI N14.6-1978, a stress analysis was completed that demonstrated that the actual factors of safety on material yield and ultimate stress substantially exceed those specified in ANSI N14.6-1978, as summarized by the TER. Therefore, concerns due to development of service related defects due to performing NDE on a ten year interval are mitigated through the use of high strength materials with significant structural margins.

- The requirements in ANSI N14.6-1978 were specifically written for devices used for lifting shipping containers with much greater utilization than the PINGP Special Lifting Devices. In contrast, the Special Lifting Devices at PINGP are used intermittently. The Reactor Head Lifting Rigs and Internals Lifting Rigs would not typically exceed two lifts per refueling outage for each device. The Turbine Spreader Assembly is used to lift a total of 11 components for either unit typically for turbine maintenance. These lifts comprise disassembly and reassembly of the high-pressure turbine, two low-pressure turbines, and generator on either unit which have a typical ten year preventive maintenance periodicity. Based upon the significant margins in design and low usage, any fatigue factors are considered to be effectively zero and would not be of concern for evaluation. Therefore, as these devices are not subject to large numbers of repetitive load cycles causing fatigue damage, it is concluded that performing NDE inspections less frequently will not result in reduction in reliability of the Special Lifting Devices due to concerns of service related defects attributed to fatigue.

- Visual inspection of the Special Lifting Devices' load bearing components, to identify flaws or deficiencies that could lead to failure of the components, is required prior to each use controlled by PINGP preventive maintenance procedures. This also includes dimensional testing as described in ANSI N14.6-1978. Visual inspection and dimensional testing prior to use will continue to provide for monitoring and indication of potential degradation to the devices.

- NSPM has reviewed available records of past NDE results which show that previous relevant indications have been evaluated (Attachment 2). In no instance did the indications noted through NDE result in service related defects or failures relative to the lifting function of the devices. This further supports the conclusion that, given the limited use and significant design margins, a ten year NDE inspection interval is appropriate.

- The Internals and Reactor Head Lifting Devices are stored and used within the containment vessel and the Turbine Spreader Assembly is stored and used in the turbine building. These areas are not subject to harsh external temperature variations or

> a normally wetted corrosive environment. Use and storage under these conditions provide assurances that the potential for deterioration due to environmental concerns is mitigated.

Therefore, NSPM concludes that revising the NDE inspection interval to ten years is appropriate, beneficial, and will not result in any appreciable reduction in the reliability of the Special Lifting Devices' load handling capabilities when contrasted with the NDE interval specified in ANSI N14.6-1978.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

The following NRC guidance document is applicable to the proposed change.

NUREG-0612

The report NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants, Resolution of Generic Technical Activity A36," identifies an acceptable method for Special Lifting Devices to be used in handling heavy loads in the area of the reactor vessel or spent fuel in the spent fuel pool. Section 5.1.1(4) (Guideline 4) of the NUREG states that:

> Special Lifting Devices should satisfy the guidelines of ANSI N14.6-1978, "Standard for Special Lifting Devices for Shipping Containers Weighing 10,000 pounds (4500 kg) or More for Nuclear Materials." This standard should apply to all Special Lifting Devices which carry heavy loads in areas as defined above. For operating plants certain inspections and load tests may be accepted in lieu of certain material requirements in the standard. In addition, the stress design factor stated in Section 3.2.1.1 of ANSI N14.6 should be based on the combined maximum static and dynamic loads that could be imparted on the handling device based on characteristics of the crane which will be used. This is in lieu of the guideline in Section 3.2.1.1 of ANSI N14.6 which bases the stress design factor on only the weight (static load) of the load and of the intervening components of the special handling device.

As this section of the NUREG indicates, there are allowances for proposing alternatives to ANSI N14.6-1978 requirements towards satisfying Guideline 4. NUREG-0612 section 5.1 indicates that the following sections provide guidelines on how the above defense-in-depth approach may be satisfied for various plant areas. One of the tenets of providing for defense-in-depth in NUREG-0612 is providing equipment inspection to assure reliable operation of the handling system. As the Special Lifting Devices at PINGP are used under controlled conditions at frequencies of use that are substantially less severe than those possible for the type of devices the ANSI N14.6-1978 was originally prepared, the proposed change ensures appropriate provisions for equipment inspection to assure reliable operation resulting in fulfillment of the guidelines of NUREG-0612.

Therefore, the proposed change does not affect plant compliance with this guidance and will ensure that the lowest functional capabilities or performance levels of equipment required for safe operation are met.

4.2 Precedent

This proposed change is consistent with Technical Evaluation Reports issued to Wisconsin Electric Power Company dated March 2, 1984 (Reference 7), for the Point Beach Nuclear Plant Units 1 and 2 and Wisconsin Public Service Corporation dated March 6, 1984 (Reference 8), for the Kewaunee Nuclear Power Plant.

These approved changes are similar to the changes proposed in this request. There are no differences between the plant and design licensing bases for PINGP and the units listed above that would affect the applicability of the change.

4.3 No Significant Hazards Consideration Determination

Pursuant to 10 CFR 50.90, Northern States Power Company, a Minnesota Corporation, doing business as Xcel Energy (hereafter “NSPM”), hereby submits an amendment to the licensing basis for the Prairie Island Nuclear Generating Plant (PINGP). Specifically, the proposed change revises the PINGP Updated Safety Analysis Report (USAR) to modify the non-destructive examination (NDE) inspection interval for Special Lifting Devices. The current NDE inspection interval is consistent with ANSI N14.6-1978, “American National Standard for Special Lifting Devices for Shipping Containers Weighing 10,000 Pounds (4500 kg) or More for Nuclear Materials.” NSPM concludes that the proposed change to revise the inspection interval is appropriate as these devices are used under controlled conditions and at frequencies of use that are substantially less severe than those possible for the type of lifting device for which ANSI N14.6-1978 was originally prepared. Therefore, the proposed change continues to support the NUREG-0612, “Control of Heavy Loads at Nuclear Power Plants Resolution of Generic Technical Activity A-36,” defense-in-depth philosophy of assuring reliable operation of load handling systems through provision of sufficient equipment inspection.

NSPM has evaluated whether a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No

   The proposed change does not impact the consequences of an accident previously evaluated as it only modifies an already existing NDE inspection interval and does not change the manner in which heavy loads are handled using these devices. The proposed change also does not significantly increase the probability of a previously evaluated accident as significant structural margins and high strength materials were

used in excess of those specified in ANSI N14.6-1978. Additionally, the use of each device is infrequent and concerns of degradation due to fatigue are negligible, especially when compared to what is possible for the type of devices for which ANSI N14.6-1978 and its corresponding NDE inspection interval were originally intended. Continued visual inspections and dimensional testing consistent with ANSI N14.6-1978 on a periodicity of annually or prior to each use, typically at each outage, will continue to provide a high degree of probability that any flaws will be detected and addressed.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any previously evaluated?

   Response: No

   The proposed change impacts the frequency of NDE inspections on the Special Lifting Devices. The proposed change, by its nature, does not alter the manner in which the devices are used and does not involve a physical change to the devices. It also does not change the manner in which heavy loads are handled using these devices.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

   Response: No

   The proposed change does not impact the designs or usage of the devices in any manner and, therefore, has no impact on the margins of safety for those designs. It modifies the frequency at which NDE inspections on major load carrying welds and other critical members are performed. However, given the evaluation of available past NDE inspection results, use of sufficient design margins and high strength materials, infrequent use and continued visual inspection and dimensional testing consistent with ANSI N14.6-1978, the proposed change will not result in any appreciable reduction in the reliability of the Special Lifting Devices load handling capabilities when contrasted with the frequency stipulated by ANSI N14.6-1978.

   Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, NSPM concludes that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c); and, accordingly, a finding of "no significant hazards consideration" is justified.

4.4 Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 REFERENCES

1. American National Standard Institute, ANSI N14.6-1978, "American National Standard for Special Lifting Devices for Shipping Containers Weighing 10,000 Pounds (4500 kg) or More for Nuclear Materials," dated February 15, 1978.

2. NRC Generic Letter, GL 80-113, "Control of Heavy Loads," dated December 22, 1980. (ADAMS Accession Number ML071080219)

3. NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants – Resolution of Generic Technical Activity A-36," dated July, 1980. (ADAMS Accession Number ML070250180)

4. Letter from Northern States Power Company (NSP) to the NRC, "Control of Heavy Loads (Special Lifting Devices)," dated February 3, 1982. (Legacy ADAMS Accession Number 8202160589)

5. Letter from NSP to the NRC, "Control of Heavy Loads (Response to Staff Concerns on the Six Month Submittal)," dated November 8, 1982. (Legacy ADAMS Accession Number 8211160170)

6. Letter from the NRC to NSP, “Safety Evaluation by the Office of Nuclear Reactor Regulation Related to the Control of Heavy Loads, Northern States Power Company, Prairie Island Nuclear Generating Plant, Unit Nos. 1 and 2, Docket Nos. 50-282 and 50-306,” dated June 6, 1983. (Legacy ADAMS Accession Number 8306170053)

7. Franklin Research Center Technical Evaluation Report, “Control of Heavy Loads (C-10), Wisconsin Electric Power Company, Point Beach Nuclear Power Plant Units 1 and 2,” dated March 2, 1984. (Legacy ADAMS Accession Number 8403070077)

8. Franklin Research Center Technical Evaluation Report, “Control of Heavy Loads (C-10), Wisconsin Public Service Corporation, Kewaunee Nuclear Power Plant,” dated March 6, 1984. (ADAMS Accession Number ML111672032)

ENCLOSURE, ATTACHMENT 1

PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2

License Amendment Request to Revise the NDE
Inspection Interval for Special Lifting Devices

UPDATED SAFETY ANALYSIS REPORT PAGE (Markup)

(1 Page Follows)

12.2.12.3 Special Lifting Devices Evaluation

The Special Lifting Devices for lifting heavy loads in the plant consist of the Turbine Spreader Assembly, the Upper Internals Lifting Rig, and the Reactor Head Lifting Rig (these are included in Table 12.2-40). ~~Visual inspection and non-destructive examination (NDE) testing of major load carrying welds and any other critical areas is performed consistent with ANSI N14.6-1978 (Reference 73) annually or prior to each use of the Special Lifting Device, typically at each refueling outage (References 18, 37, 38, 39, and 32).~~ In lieu of the surface NDE defined in ANSI N14.6-1978, a volumetric NDE using acoustic emission (AE) technique may be used. If indications are identified by AE, then supplemental ultrasonic (UT), Magnetic Particle (MT), or Liquid Penetrant (PT) techniques may be used for flaw characterization. (Reference 74)

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INSERT 1

As discussed in References 42 and 45, all special lifting devices to be utilized with the auxiliary building crane in the handling of heavy loads over safe shutdown equipment or spent fuel in the spent fuel pool will be designed to meet the requirements of ANSI N14.6 1986, “Standard For Special Lifting Devices for Shipping Containers Weighing 10,000 Pounds or More For Nuclear Materials”, as outlined in guideline (1)(a) of Section 5.1.6 of NUREG-0612.

The special lifting device utilized in handling the TN-40 and TN-40HT spent fuel storage casks at Prairie Island meets the requirements of ANSI N14.6 1986, as outlined in guideline (1)(a) of Section 5.1.6 of NUREG-0612. The testing plan for the TN-40 special lifting device is outlined in Reference 45. Except as noted in Reference 45, testing of the TN-40 special lifting device conforms with the requirements of ANSI N14.6 1986. The testing plan described in Reference 45 was found to be acceptable by the NRC in Reference 46.

12.2.12.4 Inspection, Testing and Maintenance of Cranes

Procedures for inspection, testing and maintenance of the cranes that are in use satisfy the criteria of ANSI B30.2-1976, Chapter 2-2.

12.2.12.5 Crane Operator Qualification

Crane Operators are qualified to operate overhead cranes as required by ASME B30.2.

INSERT 1:
Load testing of the Special Lifting Devices is not required. Dimensional testing, visual inspection, and nondestructive testing of major load-carrying welds and critical areas are performed consistent with ANSI N14.6-1978, with the exception that nondestructive testing is conducted on a 10 year interval.

ENCLOSURE, ATTACHMENT 2

PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2

License Amendment Request to Revise the NDE
Inspection Interval for Special Lifting Devices

NDE INSPECTION RELEVANT INDICATION EVALUATION SUMMARY

(1 Page Follows)

Table 1: Evaluation of Relevant Indications from Available NDE Inspection Results[1]

Lifting Device	**Date**	**Component**	**NDE Method**	**Indications[2]**	**Resolution**
U1 Reactor Head Lifting Rig	None				
U2 Reactor Head Lifting Rig	None				
U1 Internals Lifting Rig	None				
U2 Internals Lifting Rig	January, 1997	Torque Tube Guide Block	Magnetic Particle	2 1/4 inch linear indication found on fillet weld connecting the gusset plate to structural channel	Non-load path weld which was evaluated as not a defect of concern; weld was reworked.
	October, 2015	Reinforcement Plate to Channel of Upper Leg	Magnetic Particle	3/8 inch linear indication on weld	Attributed to fabrication defect at intersection of two welds. Weld repair performed.
	October, 2015	Torque Tube	Liquid Penetrant	1/4 inch diameter rounded indication on the torque tube full penetration weld (connection between adaptor and outer tube)	Attributed to handling impact location. No repair required; accepted by evaluation.
Turbine Spreader Assembly	None				

[1] Past performance of NDE, and therefore the number of NDE records available for review, was not consistent with the interval specified in ANSI N14.6-1978. This failure to incorporate the ANSI N14.6-1978 testing frequency resulted in a green non-cited violation (NCV) during the NRC inspection which concluded on December 31, 2015 (ADAMS Accession Number ML16042A073). Subsequently, NDE examinations have been conducted at a frequency of annually or prior to each use (typically each refueling outage) consistent with ANSI N14.6-1978.

[2] The indications summarized in this table are those considered relevant and requiring evaluation per the criteria contained within the current edition of ASME Boiler and Pressure Vessel Code, Section III, Division 1, as specified by ANSI N14.6-1978 section 5.5.2.