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December 11, 2008

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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
License Nos. DPR-42 and DPR-60

Responses to NRC Requests for Additional Information Dated November 25, 2008 Regarding Application for Renewed Operating Licenses

By letter dated April 11, 2008, Northern States Power Company, a Minnesota Corporation, (NSPM) submitted an Application for Renewed Operating Licenses (LRA) for the Prairie Island Nuclear Generating Plant (PINGP) Units 1 and 2. In a letter dated November 25, 2008, the NRC transmitted Requests for Additional Information (RAIs) regarding that application. This letter provides responses to those RAIs.

Enclosure 1 provides the text of each RAI followed by the NSPM response.

If there are any questions or if additional information is needed, please contact Mr. Eugene Eckholt, License Renewal Project Manager.

Summary of Commitments

This letter contains no new commitments or changes to existing commitments.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on December 11, 2008.

Michael D. Wadley
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Northern States Power Company - Minnesota

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NRR

Enclosure (1)

cc:

Administrator, Region III, USNRC
License Renewal Project Manager, Prairie Island, USNRC
Resident Inspector, Prairie Island, USNRC
Prairie Island Indian Community ATTN: Phil Mahowald
Minnesota Department of Commerce

Enclosure 1
NSPM Responses to NRC Requests for Additional Information
Dated November 25, 2008

RAI 3.3.2.2.6-1

Prairie Island Nuclear Generating Plant (PINGP) Units 1 and 2 have Boraflex that is no longer credited for criticality in the spent fuel pools. There is no indication whether or not they still monitor the Boraflex for degradation. Past operating experience indicates that there can be blistering and bulging of the Boraflex material and the cladding surrounding the material. This can cause potential fuel handling safety issues.

Although Boraflex is not credited for criticality in the PINGP Unit 1 and 2 spent fuel pools, degradation of the material may impede safe handling of the spent fuel if blistering and/or bulging of the rack occurs. How will potential degradation of Boraflex material be identified and monitored during the proposed period of extended operation? If degradation of Boraflex is identified, what mitigation strategies will be employed?

NSPM Response to RAI 3.3.2.2.6-1

The spent fuel storage racks are described in the PINGP USAR, Section 10.2.1. Criticality is prevented by the design of the racks which limits fuel assembly interaction by fixing the minimum separation between assemblies, and by maintaining soluble neutron poison in the spent fuel pool water. No mitigative strategy is required for monitoring the spent fuel pool Boraflex material used in the design of spent fuel storage rack fuel module assemblies. The design of the PINGP spent fuel storage rack fuel module assemblies allows for the release of gasses created by the degrading Boraflex material without degrading the surrounding stainless steel material.

The spent fuel storage rack fuel module assembly design at PINGP incorporates Boraflex which differs from the design that incorporates Boral™. Boraflex is a material composed of 46% silica, 4% polydimethyl, and 50% boron carbide. The fuel module assemblies consist of an inner stainless steel casing, a layer of Boraflex neutron absorbing material, and an outer stainless steel casing (see sketch below). The inner and outer square stainless steel casings are tubular. The outer casing holds the Boraflex in place and is only one-quarter the thickness of the inner casing. The outer casing is attached to the inner casing by four spot welds at the top and bottom of the outer casing on each of the four sides. Thus, the outer casing is not leak tight. This vented cavity design allows the release of gasses and ingress of water to alleviate the potential for cell wall bulging as a result of the Boraflex material off gassing.

Industry OE indicates that Boraflex degrades over time, but the degradation process does not impede the ability to remove or accept fuel since the fuel module assembly's open flow design allows gasses to vent safely to the spent fuel pool water. Bulging, blistering, or other deformation, known to occur in poorly vented designs, is not applicable at PINGP.

Enclosure 1
NSPM Responses to NRC Requests for Additional Information
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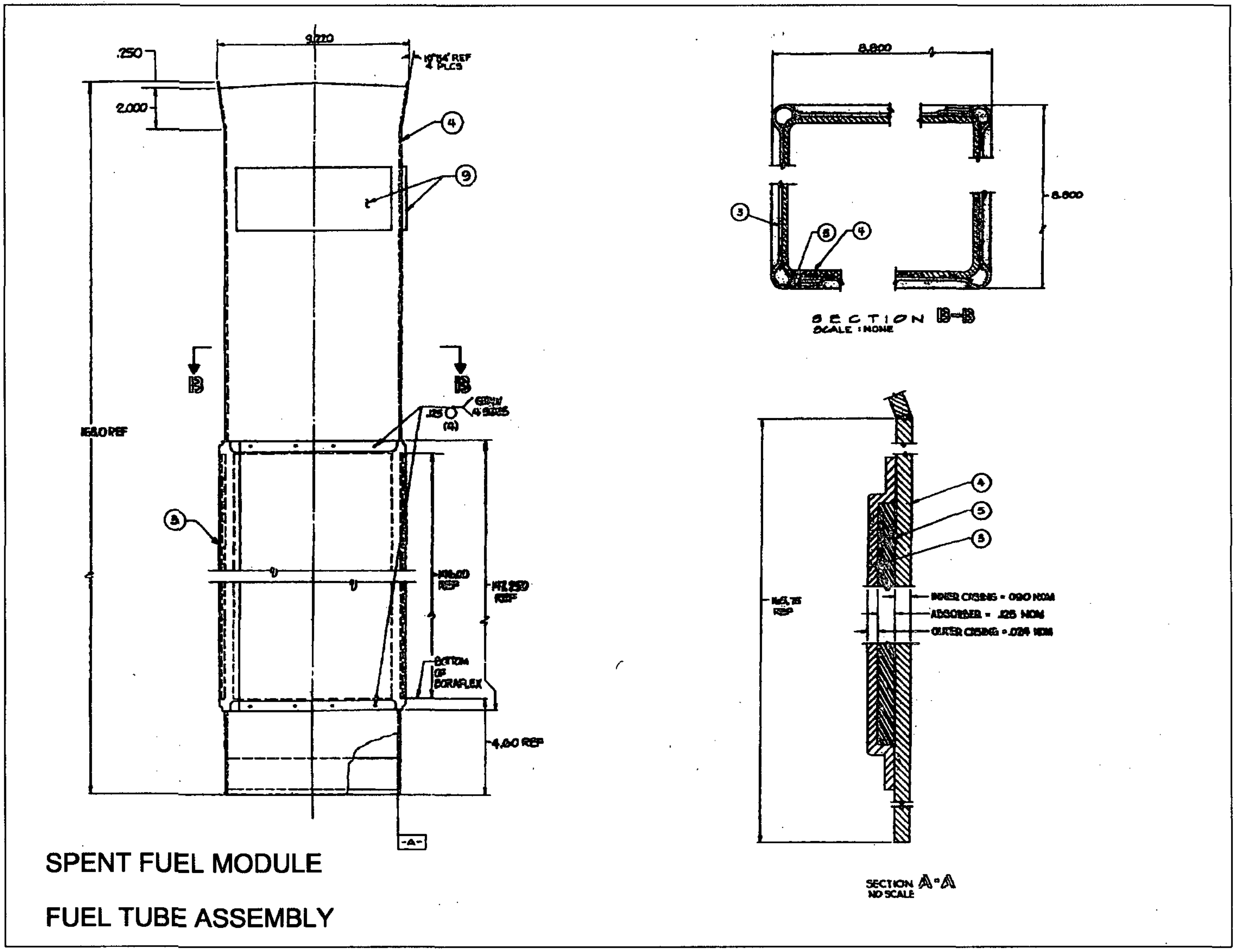
Sketch of Spent Fuel Rack Fuel Module Assembly



Although not in use at PINGP, Boral™ is another neutron absorber material used in the design of spent fuel storage rack fuel module assemblies. It is technically a cermet, and is classified as a metal matrix neutron absorber manufactured by hot rolling a cubic aluminum ingot containing powdered aluminum and boron carbide to a final gage. Sheets of Boral™ are encapsulated between aluminum sheets to form storage tubes. Industry operating experience indicates that this design was not properly vented resulting in gas pressure buildup between the sheets causing blistering, deformation and/or swelling of the module assemblies. This experience with Boral™ is not applicable to the Boraflex used at PINGP.

Enclosure 1
NSPM Responses to NRC Requests for Additional Information
Dated November 25, 2008

RAI 2.1.1.4.3-1

NUREG 1801, "Generic Aging Lessons Learned Report," Volume 2, Revision 1, (GALL) AMP XI.S8, Protective Coating Monitoring and Maintenance Program, is not credited for aging management in the licensee's application. In the application it states that "PINGP does not credit coatings inside containment to assure that the intended functions of coated structures and components are maintained." However, in addition to using the Protective Coating Monitoring and Maintenance Program to ensure the function of coated structures and components, the GALL Report states that "Proper maintenance of protective coatings inside containment is essential to ensure operability of post-accident safety systems that rely on water recycled through the containment sump/drain system." Although the applicant does not credit the program for aging management, there needs to be adequate assurance that there is proper maintenance of the protective coatings in containment, such that they will not degrade and become a debris source that may challenge the Emergency Core Cooling Systems performance. Therefore the staff requires the following additional information:

Please describe in detail the coatings assessment program referenced in the supplemental response to Generic Letter 2004-02 (dated February 28, 2008). How will the program ensure that there will be proper maintenance of the protective coatings inside containment and ensure operability of post-accident safety systems that rely on water recycled through the containment sump/drain system in the extended period of operation? Also, describe the frequency and scope of the inspections, acceptance criteria, and the qualification of personnel who perform containment coatings inspections.

NSPM Response to RAI 2.1.1.4.3-1

The coatings assessment program at PINGP, described in the supplemental response to GL 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during DBA at Pressurized-Water Reactors" (dated 2-28-08), ensures proper maintenance of coatings through implemented activities that perform inspections and assessment of the condition of coatings inside containment to confirm that the volume of debris that could block the sump recirculation strainers remains conservatively low.

Plant procedures provide the means to check the condition of coatings as a potential source of debris that could block the sump recirculation strainers. These procedures provide requirements for personnel qualification, inspection procedures, criteria for recording degradation, acceptance criteria, and tracking of unqualified coatings and degraded coatings. Containment coatings are subject to ongoing oversight that ensure compliance with the current licensing basis. These activities, however, do not prevent coating failures, and are used only to minimize debris that could be generated during a LOCA.

In accordance with the PINGP coating assessment program, a visual inspection for degraded qualified coatings inside the Containment Building is performed every outage. Degraded qualified coating is a previously qualified coating that exhibits any defects such as blistering, cracking, flaking, peeling, delaminating or rusting. An inspection for unqualified coatings, to verify compliance with the design basis for the sump screen, is performed every other outage, and was completed for both Units in 2008. An unqualified coating is a coating that cannot be attested to having passed the required laboratory testing, including irradiation and simulated Design Basis Accident (DBA), or has inadequate quality documentation to support its use as being DBA qualified. Unqualified coating is found on equipment such as motor control centers, control valves, unistrut, cabinets, etc., and is applied by the original equipment manufacturer.

The scope of coatings inspections include interior accessible coated surfaces of the Reactor Containment Vessels, Unit 1 and Unit 2, and the equipment permanently contained therein.

Acceptance criteria for coatings are based on industry guidance in ASTM D714-04, "Standard Method for Evaluating Degree of Blistering of Paints" and ASTM D610-01, "Standard Method for Evaluating Degree of Rusting of Painted Steel Surfaces." Evidence of a degraded condition includes blistering, cracking, flaking, peeling, delaminating, rusting and discoloration. Any degraded condition is documented and measurements are taken to clearly characterize the degradation. When the condition of the coating is in question, a destructive test can be performed to more accurately assess the condition of the coating. Destructive test methods include ASTM D4541, "Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers," or D6677, "Standard Test Method for Evaluation by Knife." Any identified degradation is dispositioned in accordance with the Corrective Action Process.

The method of performing the coatings inspection, including the degradation recording criteria, is based on ASTM D5163, "Standard Guide for Establishing Procedures to Monitor the Performance of Coating Service Level 1 Coating Systems in an Operating Nuclear Power Plant."

Qualification of personnel who perform the containment coatings inspections is in accordance with ANSI N45.2.6 as defined in the PINGP coating assessment program.