UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of	)	
	)	Docket No. 72-10-ISFSI-2
Northern States Power Co.	)	
	)	
(Prairie Island Nuclear Generating Plant, Independent Spent Fuel Storage Installation)	)	ASLBP No. 12-922-01-ISFSI-MLR-BRD01

NORTHERN STATES POWER COMPANY'S MOTION FOR SUMMARY DISPOSITION OF THE PRAIRIE ISLAND INDIAN COMMUNITY'S CONTENTION 6 (HIGH BURNUP FUEL)

I. INTRODUCTION

Pursuant to 10 C.F.R. § 2.1205 and the Atomic Safety and Licensing Board's ("ASLB" or the "Board") Amended Initial Scheduling Order (February 1, 2013), Northern States Power Company, a Minnesota corporation, d/b/a/ Xcel Energy ("NSPM") moves for summary disposition of the Prairie Island Indian Community's ("PIIC" or "Community") Contention 6 regarding potential degradation of high burnup fuel during the extended storage period. NSPM seeks summary disposition on the grounds that no genuine issue of material fact exists and NSPM is entitled to a decision as matter of law. 10 C.F.R. § 2.710(d)(2). This Motion is supported by (1) the Statement of Material Facts as to which NSPM asserts that there is no genuine dispute (Attachment 1), and (2) the Declaration of Terry A. Pickens in support of NSPM's motion ("Decl.") (Attachment 2 with Enclosures 1 through 11 thereto).[1]

[1] For ease of reference, a List of Enclosures is provided in Attachment 3. The Enclosures are numbered in the order that they are introduced in the Pickens' Declaration.

II. PROCEDURAL BACKGROUND

NSPM applied to the Nuclear Regulatory Commission ("NRC" or the "Commission") in October 2011 to renew Materials License No. SNM-2506 for the Prairie Island Independent Spent Fuel Storage Installation ("PI ISFSI" or "ISFSI") (the "Application"). On August 24, 2012, PIIC submitted a Request for Hearing and Petition to Intervene in License Renewal Proceeding for the Prairie Island Independent Spent Fuel Storage Installation (the "Petition" or "Pet."). The Petition's Contention 6 alleged that "NSPM's license renewal application is deficient because it did not adequately address the potential degradation of high burnup fuel due to aging during storage, subsequent handling, and transportation." Pet. at 52.[2] PIIC alleged that NSPM has "not adequately addressed potential fuel cladding degradation from hydriding effects, oxidation, clad creep, embrittlement, and thermal-driven cracking and leakage." Pet. at 54. The Petition asserted that the uncertainties in data "compel the implementation of efforts and development of a rigorous plan to address the gaps and uncertainties before an additional 40 years of storage is finally authorized." *Id.*

In its Memorandum and Order (Ruling on Request for Hearing and Petition to Intervene), issued December 20, 2012, the Board admitted Contention 6 as follows:

> PIIC has raised a genuine dispute that Northern States' application did not sufficiently consider the uncertainties associated with long-term dry storage of high-burnup fuel.

Northern States Power Co. (Prairie Island Nuclear Generating Plant Independent Spent Fuel Storage Installation) LBP-12-24, 76 N.R.C. 503, 528 (2012) ("LBP-12-24").

[2] The Petition also raised issues regarding NSPM taking "full burnup credit" in its criticality analysis. Pet. at 54. PIIC withdrew this portion of its contention at oral argument. LBP-12-24, 76 N.R.C.at 156 n.122.

As this Motion, the Statement of Material Facts, and the Pickens Declaration demonstrate, the claims set forth in PIIC's Contention 6 related to potential degradation of high burnup fuel raise no genuine issue of material fact. NSPM has completed calculations, which are part of its current licensing basis, that demonstrate that the high burnup fuel cladding will remain below the temperatures specified in NRC guidance for ensuring that the postulated aging mechanisms will not occur. Furthermore, NSPM has revised its Application by submitting an aging management program ("AMP") that will gather data from a U.S. Department of Energy ("DOE") project, the High Burnup Fuel Cask Research and Development Project (the "DOE Cask Demonstration Project"), to confirm its licensing basis analysis. Finally, the NRC Staff has prepared a draft renewed PI ISFSI license that contains a license condition requiring NSPM to submit an analysis of the ability of the high burnup fuel cladding to perform its intended function, which relies on this confirmatory data, prior to the time that the first high burnup fuel stored in the PI ISFSI exceeds twenty years of storage. The NRC Staff has issued the Calvert Cliff's Nuclear Power Plant ISFSI renewed license relying on substantially the same license condition. For these reasons, NSPM is entitled to a decision as a matter of law of PIIC's Contention 6.

III. STATEMENT OF LAW

A. NRC Legal Standards for Summary Disposition

In ruling on motions for summary disposition in 10 C.F.R. Subpart L proceedings, the Board applies the standards in 10 C.F.R. Subpart G. 10 C.F.R. § 2.1205(c). The standards in Subpart G provide that summary disposition is appropriate where the record demonstrates that (1) no genuine dispute exists regarding any material fact, and (2) the moving party is entitled to a decision as a matter of law. 10 C.F.R. § 2.710(d)(2).

When a summary disposition motion is supported by affidavits in accordance with 10 C.F.R. § 2.710(b), the "party opposing the motion may not rest upon mere allegations or denials," but must, by affidavit or as otherwise provided in the rule, set forth "specific facts showing that there is a genuine issue of fact" warranting a hearing. 10 C.F.R. § 2.710(b); *See Entergy Nuclear Generation Co.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 N.R.C. 287, 297 (2010); *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-02-8, 55 N.R.C. 171, 195 (2002). "Bare assertions or general denials are not sufficient. Although the opposing party does not have to show that it would prevail on the issues, it must at least demonstrate that there is a genuine factual issue to be tried." *Advanced Medical Systems, Inc.* (One Factory Row, Geneva, Ohio, 44041), CLI-93-22, 38 N.R.C. 98, 102 (1993) (footnotes omitted). "[Opponents] have to present contrary evidence that is so significantly probative that it creates a material factual issue." *Id*. at 102 n.13 (citing *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-92-8, 35 N.R.C. 145, 154 (1992)).

B. Applicable License Renewal Requirements for High Burnup Fuel

An ISFSI license may be renewed for a period of up to 40 years by filing an application at least two years before the expiration of the existing license. 10 C.F.R. § 72.42 (a) and (b). The Commission has stated that, if the applicant demonstrates "appropriate aging management and maintenance programs", then "a renewal term up to 40 years is reasonable and provides adequate protection of public health and safety." 76 Fed. Reg. 8,872, 8,880 (Feb. 16, 2011). The NRC has developed guidance for reviewing ISFSI license renewal applications, which is contained in NUREG-1927, *Standard Review Plan for Renewal of Spent Fuel Dry Cask Storage System Licenses*

and Certificates of Compliance (March 2011) ("NUREG-1927").[3] NUREG-1927 provides a systematic approach to identify structures, systems and components ("SSCs") that are within the scope of license renewal, identify and analyze the potential aging effects, and develop AMPs to ensure that SSCs continue to meet their intended function throughout the period of extended operation. An AMP is used to prevent, mitigate, monitor for, or identify aging effects during the extended license period and must address ten elements.[4] NUREG-1927 at ix, 23-24.

With respect to the intended functions of high burnup fuel, 10 C.F.R. § 72.122(h)(1) requires that spent fuel cladding be protected during storage against degradation that leads to gross ruptures, or the fuel must be otherwise confined such that the fuel degradation will not pose operational safety problems with respect to its removal from storage. Additionally, storage systems must be designed to allow ready retrieval of the spent fuel for further processing or disposal. 10 C.F.R. § 72.122(l). The NRC has provided guidance in NUREG-1927 and other guidance documents that address how applicants can demonstrate compliance with 10 C.F.R. §§ 72.122(h)(1) and 72.122(l) in support of an ISFSI license renewal application.

NUREG-1927 provides that applicants must identify whether SSCs within the scope of the license renewal are subject to an aging effect. For high burnup fuel, NUREG-1927 states that the NRC Staff should assess whether the applicant has considered the most recent revision of Interim Staff Guidance-11, Revision 3, *Cladding Considerations for the Transportation and Storage of Spent Fuel* (Nov. 2003) ("ISG-11"), and research results in this area. NUREG-1927 at 20. ISG-11 specifies the acceptance criteria needed to provide reasonable assurance that commercial spent fuel

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[3] Available at ADAMS Accession No. ML111020115.

[4] An AMP must address the following ten elements: (1) scope of the program; (2) preventive actions; (3) parameters to be monitored or inspected; (4) detection of aging effects; (5) monitoring and trending; (6) acceptance criteria; (7) corrective actions; (8) confirmation process; (9) administrative controls; and (10) operating experience. NUREG-1927 at 23-24.

is maintained in the configuration that is analyzed in the Safety Analysis Reports ("SAR") for spent fuel storage and thus meets the requirements of 10 C.F.R. § 72.122. *See* Enclosure 5 at 1-3. Certification and licensing of high burnup fuel for storage has been permitted for an initial 20 year-term using the guidance contained in ISG-11. Enclosure 6 at 1. ISG-11 provides temperature limits on the calculated maximum fuel cladding temperature that will prevent "potential" detrimental effects such as cladding creep[5] and hydriding.[6] *Id.* at 1-2.

Since the issuance of ISG-11, the NRC Staff has taken the position that, because ISG-11was based on short term laboratory tests and analysis, the guidance in this document may not be applicable beyond twenty years of storage. Enclosure 6 at 1. Therefore, the NRC issued additional guidance to address extended storage of high burnup fuel in Interim Staff Guidance- 24, *The Use of a Demonstration Program as a Surveillance Tool for Confirmation of Integrity for Continued Storage of High Burnup Fuel Beyond 20 Years* (July 14, 2014)("ISG-24"). Although there is no evidence to suggest that high burnup fuel cannot be stored safely beyond twenty years, ISG-24 states that "[a]dditional confirmatory data or a commitment to obtain data on [high burnup fuel] and taking appropriate steps in a learning [AMP][7] will provide further information that will be useful in assuring the storage and retrievability of [high burnup fuel] for extended durations beyond 20 years." Enclosure 6 at 1.

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[5] Creep is the dominant mechanism for cladding deformation under normal conditions of storage. Enclosure 5 at Appendix A p. 1. Appendix A describes the studies that provide the basis for "reasonable assurance that creep under normal conditions of storage will not cause gross rupture of the cladding and that the geometric configuration of the spent fuel will be preserved provided that the maximum cladding temperature does not exceed 400°C (752°F)." *Id*. at 2. Creep becomes less of a concern during later stages of dry storage because temperature and stress of the cladding decrease. *Id*. at 1.

[6] Hydriding is a materials phenomenon that results from the dissolution of hydrogen into the fuel cladding. The hydrogen in the cladding forms zirconium hydride precipitates, or particles. At elevated temperatures, the zirconium hydrides will dissolve, and as the cladding temperature decreases over time, the zirconium hydrides precipitate or reform in a manner that could cause the cladding to become brittle. Enclosure 5 at Appendix A p. 2.

[7] A learning AMP is one that is periodically updated to incorporate the current state of knowledge. Enclosure 6 at 5.

Because the interior of the loaded dry storage casks, and thus the fuel cladding, cannot be readily inspected, other methods, such as data from a surrogate demonstration project, must be relied on to obtain confirmatory data. ISG-24 provides guidance for determining whether a demonstration project has the necessary properties to qualify as a method to demonstrate the integrity of high burnup fuel for continued storage. Enclosure 6 at 1. This guidance provides eight conditions that a demonstration project must meet. [8]

In conclusion, to demonstrate that high burnup fuel cladding will meet its intended function during an extended license period, an application must (1) demonstrate that the temperature limits in ISG-11 are met; (2) submit an AMP that contains the ten elements in NUREG-1927 and provides confirmatory data that the high burnup fuel continues to perform its intended function; and, if the AMP relies on a demonstration project, (3) demonstrate that the project meets the requirements of ISG-24.

IV. THERE IS NO GENUINE DISPUTE REGARDING ANY MATERIAL ISSUE

The high burnup fuel issue here is PIIC's assertion, as defined in LBP-12-24, that NSPM has not addressed the uncertainties associated with extended storage of high burnup fuel. As discussed below, these uncertainties are associated with storage beyond twenty years. NSPM has addressed

[8] If an applicant intends to rely on a demonstration project, ISG-24 provides that the following conditions must be met: (1) the fuel in the demonstration project should be representative of the applicant's fuel in terms of burnup and type of fuel cladding; (2) the calculated fuel temperatures in the application must be bounded by the temperatures in the demonstration project or the models used to predict temperatures in the application must be benchmarked against the temperatures in the demonstration project; (3) the interior of the demonstration cask should be quantitatively monitored for moisture, oxygen, and fission gas if the applicant intends to rely on gas analysis to establish the condition of the fuel; (4) demonstration cask internal temperature monitoring should be conducted at a frequency that is suitable for determining a temperature profile over the duration of the demonstration project; (5) when the demonstration cask is opened some population of rods should be examined to determine the properties of rods that affect degradation such as cladding creep, fission gas release, hydride reorientation, cladding oxidation, and cladding mechanical properties; (6) the demonstration program should include at least two full fuel assemblies; (7) data from the demonstration program must be indicative of a storage duration long enough to justify extrapolation to the total storage time requested, but no less than 10 years; and (8) a learning AMP should be periodically re-evaluated given the current state of knowledge regarding the ability of high burnup fuel to meet the regulatory requirements while in dry cask storage. Enclosure 6 at 3-5.

these uncertainties by supplementing its application with a high burnup fuel AMP that will gather data to confirm the PI ISFSI licensing basis analysis thereby ensuring that the high burnup fuel cladding will continue to perform its intended function throughout the extended storage period. This AMP contains the ten elements in NUREG-1927 and relies on a demonstration program that meets the eight conditions in ISG-24. Furthermore, the NRC Staff has drafted a license condition requiring NSPM to submit an analysis, prior to twenty years of high burnup fuel storage, confirming that the high burnup fuel will perform its intended function or discontinue use of the cask storing high burnup fuel. The Calvert Cliffs Nuclear Power Plant ISFSI renewed license was approved and issued relying on substantially the same high burnup fuel AMP and license condition.

A. The PI ISFSI Application Demonstrates Compliance with the Temperature Limits in ISG-11

NSPM has demonstrated that the high burnup fuel cladding will remain below the temperature limits in ISG-11, which provides the basis for demonstrating that the fuel will perform its intended function during storage. ISG-11 provides that there is reasonable assurance that creep under normal conditions of storage will not cause gross rupture of the cladding and that the geometric configuration of the fuel will be preserved provided that the maximum cladding temperature does not exceed 400^{o}C (752^{o}F). Enclosure 5 at Appendix A p. 2. This temperature limit also assures that hydride re-orientation does not occur. *Id*.

NSPM's Application, which includes the PI ISFSI SAR, provides a thermal performance analysis of the cask and its components. *See* PI ISFSI SAR at Section A3.3.2.2. The SAR identifies the heat removal design criteria for the TN-40HT cask, which include "[m]aintaining fuel cladding integrity during storage" by ensuring that ISG-11 fuel cladding temperature limits are met. *Id.* at A3.3-3. For normal conditions of storage and short term loading operations such as vacuum drying, the fuel cladding temperature limit is 400^{o}C (752^{o}F).

The clad temperatures are at their peak during the vacuum drying process because the fuel is being cooled by air rather than water or helium. Decl. at ¶ 17. The SAR cask thermal performance evaluation includes a calculation of the time it takes to reach the maximum fuel cladding temperature of 400°C (752°F) while the fuel is being cooled by air. SAR at A3.3.2.2.5.1. This evaluation shows that the fuel cladding would not reach the 400°C (752°F) limit until after 35 hours of vacuum drying. *Id.* at Figure A3.3-26. The PI ISFSI Technical Specifications provide that the helium back fill must be established within 34 hours of beginning vacuum drying operations, thereby ensuring that the ISG-11 cladding temperature limit is not exceeded. Decl. at ¶ 17. In NSPM's experience with loading high burnup fuel in the TN-40HT casks, the longest vacuum drying time has been 28 hours and seven of the nine currently loaded casks have taken under 24 hours for vacuum drying. *Id.* Thus, NSPM's ISFSI design and loading operations ensure that the high burnup fuel continues to perform its intended function during storage.

B. The High Burnup Fuel AMP Meets the Requirements of NUREG-1927

NSPM has developed and submitted to the NRC a learning AMP for monitoring the performance of high burnup fuel during extended storage that meets the requirements of NUREG-1927. Decl. at ¶ 14; Enclosure 3 at 7-13. This AMP will collect data to confirm that the high burnup fuel will continue to meet its licensing basis and thus confirm that the high burnup fuel continues to perform its intended function during extended storage. The NRC Staff issued Request for Additional Information ("RAI") 3-2 to NSPM requesting that NSPM "[p]rovide justification for the acceptability of the storage of high burnup (HBU) fuel by providing a strategy that includes an aging management program (AMP) to demonstrate that HBU fuel is protected against possible degradation that may lead to gross ruptures for periods beyond 20 years and potential operational safety issues during removal from storage." *See* Enclosure 2 at 3. NSPM responded that it intended

to rely on the DOE Cask Demonstration Project to provide data. In a follow-up RAI, RAI-12, the NRC Staff requested that NSPM submit an AMP for high burnup fuel that addresses the ten elements of NUREG-1927 set forth in Section III. B, above. Enclosure 3 at 5.

NSPM submitted a high burnup fuel AMP that addresses the ten elements set forth in NUREG-1927. *See* Enclosure 3 at 7-13; Decl. at ¶¶ 14-23. Element 1, the scope of the program, includes the high burnup fuel stored in the TN-40HT cask and reliance on the DOE Cask Demonstration Project as a surrogate program to monitor the condition of the high burnup fuel.[9] *Id*. at 8; Decl. at ¶ 15. Element 2, Preventive Actions, states that the high burnup fuel AMP is a condition monitoring AMP and provides that the initial design limits on cask loading operations provide preventive actions that mitigate the potential for degradation. *Id*. at 8; Decl. at ¶ 17. In particular, degradation due to oxidizing mechanisms, creep, and hydriding is mitigated by design limits requiring a dry inert environment, which is accomplished by a vacuum drying process and backfilling the cask with helium within a required time period. Decl. at ¶ 17.

AMP Element 3 (Parameters Monitored), AMP Element 4 (Detection of Aging Effects), and AMP Element 5 (Monitoring and Trending), all rely on the DOE Cask Demonstration Project. Enclosure 3 at 9; Decl. at ¶ 18. The DOE Cask Demonstration Project will collect information from an instrumented cask under conditions that replicate actual loading, drying and storage conditions experienced by high burnup fuel. Decl. at ¶ 18. The DOE Cask Demonstration Project data will be provided to NSPM, and NSPM will evaluate the data to determine (1) whether degradation is occurring, and (2) the actions required to manage fuel and cladding performance. NSPM will also gather, evaluate and trend information related to high burnup fuel from other sources through its

[9] The AMP also provides for use of an alternative program meeting the guidance in ISG-24 if for any reason NSPM cannot rely on the DOE Cask Demonstration Project. *Id*. at 8; Decl. at ¶ 15.

Operating Experience ("OE") Program and Corrective Action Program ("CAP"). Decl. at ¶ 18. All data and information will be evaluated as they become available. There will also be formal evaluations of data from the DOE Cask Demonstration Project and other available sources at preselected times or "Toll Gates" to determine the continued ability of the high burnup fuel to perform its intended function. *Id.* at ¶ 19. The first Toll Gate assessment is in 2028, less than twenty years from the time that NSPM began storing high burnup fuel.[10]

AMP Element 6, Acceptance Criteria, identifies the acceptance criteria against which the fuel performance data obtained from the DOE Cask Demonstration Project and other sources are evaluated. AMP Element 7 (Corrective Actions), AMP Element 8 (Confirmation Process), AMP Element 9 (Administrative Controls), and AMP Element 10 (Operating Experience) rely on established processes, such as the CAP, the Quality Assurance Program, and the OE Program, to ensure that available data is trended, and that effective, timely corrective actions are taken when issues are identified.

The NRC Staff prepared a draft renewed license, included as Enclosure 10, containing a license condition requiring that NSPM submit the evaluation of the results of the first Toll Gate assessment by April 4, 2028, to serve as confirmation that the high burnup fuel continues to perform as expected per ISG-11. Enclosure 10 at ¶ 26. The license condition specifies that the evaluation shall include an assessment of the ability of stored high burnup fuel assemblies to continue to perform their intended function(s). *Id.* The license condition also provides that, if the assessment concludes that the high burnup fuel is unable to perform its intended function(s), NSPM must cease use of such cask or submit a license amendment request to modify this license condition. *Id.* The

[10] NSPM began storing high burnup fuel at the PI ISFSI on April 4, 2013. Decl. at ¶ 15. Thus, NSPM will not exceed twenty years of high burnup fuel storage until April 4, 2033.

approved and issued renewed license for the Calvert Cliffs ISFSI, included as Enclosure 11, contains substantially the same license condition. Enclosure 11 at ¶ 22.

C. The High Burnup Fuel Aging Management Plan Relies on a Demonstration Project that Meets the Requirements of ISG-24

In RAI 12, the NRC Staff also stated that, because NSPM's AMP relies on the DOE Cask Demonstration Project, its AMP should be consistent with ISG-24. Enclosure 3 at 5. As previously described (*see* fn 8 supra), ISG-24 provides eight conditions that a demonstration project must meet. These eight conditions are addressed by NSPM's AMP and the DOE Cask Demonstration Project.

Condition 1 is that the fuel in the demonstration project should be representative of the applicant's fuel in terms of burnup and type of fuel cladding. NSPM is licensed to store fuel with an average assembly burnup of up to 60 GWd/MTU in TN-40HT casks in a dry helium environment. Decl. at ¶ 15. However in practice, to provide margin, NSPM typically removes fuel from use at lower burnup levels. *Id.* The cladding materials for the high burnup fuel to be stored at the PI ISFSI are Zircaloy-4 and Zirlo^{TM}. *Id.* The cladding material for the high burnup fuel currently in storage is Zirlo^{TM}. *Id.* The highest burnup fuel assembly currently in storage at the PI ISFSI is 54.1 GWd/MTU. The DOE Cask Demonstration Project will include four different kinds of cladding – Zircaloy-4, low-tin Zircaloy-4, Zirlo^{TM}, and M5^{TM}. *Id.* at ¶ 16. Currently, the highest burnup fuel assembly selected for the DOE Cask Demonstration Project with Zirlo^{TM} cladding is 55.5 GWd/MTU, which is above the burnup level of the highest burnup fuel currently stored at the PI ISFSI.[11] *Id.* Thus, the selection of fuel in the DOE Cask Demonstration Project is representative of the high burnup fuel stored in the PI ISFSI.

[11] ISG-24 provides that, if the fuel in the application is higher burnup than that in the demonstration project, the applicant must demonstrate, through evidence based on testing, that the fuel in the demonstration project is

The DOE Cask Demonstration Project meets ISG-24 Condition 2, which requires that the temperatures in the Application be bounded by the temperatures in the demonstration project or the models in the Application must be benchmarked against the temperatures in the demonstration project. [12] The DOE Cask Demonstration Project cask will have thermocouples inserted at various locations to allow for continuous monitoring of fuel cladding temperature throughout vacuum drying and storage. Decl. at ¶ 18. Peak cladding temperatures occur during the vacuum drying process, and therefore, the peak cladding temperatures of the fuel in the demonstration project will be available to NSPM soon after loading the casks, currently scheduled for 2017. *Id.* Thus, as required by ISG-24 Condition 2, NSPM will have the data early in the demonstration project to show that the temperatures in its application are bounded by the project or to benchmark its temperature models against the temperatures obtained from the project. *Id.*

The DOE Cask Demonstration Project meets ISG-24 Conditions 3 and 4, which address the data that should be monitored and the frequency of temperature monitoring. The DOE Cask Demonstration Project will include periodic cask cavity gas monitoring for fission gases, cavity pressure, moisture and hydrogen, which meets ISG-24 Condition 3. Decl. at ¶ 18. As previously stated, inserted thermocouples will allow for continuous temperature monitoring, which meets the requirement of ISG-24 Condition 4. *Id.*

The DOE Cask Demonstration Project also meets ISG-24 Conditions 5 through 7, which specify that (1) some population of rods in the project should be examined for properties that indicate

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representative of the applicant's fuel. If NSPM cannot make such a demonstration, the high burnup fuel AMP allows for the use of an alternative program. Decl. at ¶ 16.

[12] The temperatures referred to in ISG-24 are the peak cladding temperatures expected during the vacuum drying process. In the Application, these temperatures are calculated to determine whether the limits in ISG-11 are met. ISG-24 requires that the models used to calculate these temperatures be benchmarked against the data obtained in the demonstration project. Decl. at ¶ 18.

degradation; (2) at least two full fuel rods should be included in the project; and (3) the duration of the project should be at least ten years. Enclosure 6 at 4-5. The DOE Cask Demonstration Project consists of 32 fuel rods of various burnups and cladding types loaded into an instrumented cask, far greater than that required by ISG-24. Decl. at ¶ 16. This cask will remain in storage at the Dominion North Anna ISFSI for ten years or longer. *Id.* After this period of storage, the cask will be transported to a facility capable of handling the fuel in dry conditions and performing the testing necessary to determine the aging effects specified in ISG-24 Condition 5. *Id.* at ¶ 18.

Finally, NSPM's high burnup fuel AMP is a learning AMP that meets ISG-24 Condition 8. The high burnup fuel AMP relies on established processes, including its Quality Assurance Program, OE Program and CAP, to collect and evaluate information related to high burnup fuel and take appropriate corrective action based on this data. Decl. at ¶ 23. The AMP also includes formal Toll Gate assessments that rely on the current state of knowledge to assess whether the high burnup fuel cladding continues to perform its intended function. *Id.*

V. CONCLUSION

NSPM's Application demonstrates that its high burnup fuel cladding will not be subject to the aging mechanisms identified in PIIC's Contention 6. NSPM's current licensing basis demonstrates that the maximum fuel cladding temperature will not exceed the limits provided in ISG-11. NRC guidance indicates that meeting this guidance is sufficient to show that the fuel cladding will meet the requirements of 10 C.F.R. §72.122 for the first twenty years of storage. Furthermore, NSPM has submitted a high burnup fuel AMP that will confirm its current licensing basis for high burnup fuel and that the high burnup fuel cladding will continue to perform its intended function for the duration of the extended ISFSI license period. This AMP relies on the DOE Cask Demonstration Project to gather data to confirm the models used to calculate the maximum fuel clad temperature

and the conclusion that degradation will not occur under the conditions of storage. NSPM's high burnup fuel AMP contains each of the NUREG-1927 elements and the DOE Cask Demonstration Project meets the conditions provided in ISG-24. Thus, NSPM's AMP provides an acceptable method for ensuring that the high burnup fuel cladding will continue to perform its intended function throughout the extended license period. NRC has also drafted a license condition requiring an analysis of the AMP confirmatory data prior to exceeding twenty years of high burnup fuel storage at the PI ISFSI. Taken together, these actions demonstrate that NSPM's Application meets the requirements of 10 C.F.R. § 72.122(h)(1) and 10 C.F.R. § 72.122(l).

VI. CERTIFICATION

In accordance with 10 C.F.R. § 2.323(b), counsel for NSPM made a sincere effort to resolve the matters at issue in the instant Motion prior to the filing of the Motion. Counsel for the PIIC stated that PIIC opposes this Motion. Counsel for NRC Staff stated that it takes no position on this Motion and reserves the right to respond.

I certify that this motion is not interposed for delay, prohibited discovery, or any other improper purpose, that I believe in good faith that there is no genuine issue as to any material fact relating to this motion, and that the moving party is entitled to a decision as a matter of law, as required by 10 C.F.R. §§ 2.1205 and 2.710(d).

Respectfully Submitted,

/Signed electronically by Jay E. Silberg/

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Dated: March 27, 2015

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
Before the Atomic Safety and Licensing Board

In the Matter of	)	
	)	Docket No. 72-10-ISFSI-2
Northern States Power Co.	)	
	)	
(Prairie Island Nuclear Generating Plant, Independent Spent Fuel Storage Installation)	)	ASLBP No. 12-922-01-ISFSI-MLR-BRD01

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing "Northern States Power Company's Motion for Summary Disposition of the Prairie Island Indian Community's Contention 6 (High Burnup Fuel)" has been served through the E-Filing system on the participants in the above-captioned proceeding, this 27th day of March 2015.

/Signed electronically by Kimberly A. Harshaw/

Kimberly A. Harshaw