UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

September 7, 2012

SECRETARY

COMMISSION VOTING RECORD

DECISION ITEM: SECY-12-0079

TITLE: PARTIAL CLOSURE OF PETITION FOR RULEMAKING (PRM-72-6) C-10 RESEARCH AND EDUCATION FOUNDATION, INC.

The Commission acted on the subject paper as recorded in the Staff Requirements Memorandum (SRM) of September 7, 2012.

This Record contains a summary of voting on this matter together with the individual vote sheets, views and comments of the Commission.

Annette L. Vietti-Cook
Secretary of the Commission

Attachments:
1. Voting Summary
2. Commissioner Vote Sheets

cc: Chairman Macfarlane
Commissioner Svinicki
Commissioner Apostolakis
Commissioner Magwood
Commissioner Ostendorff
OGC
EDO
PDR

SECY NOTE: TO BE RELEASED TO THE PUBLIC 5 WORKING DAYS AFTER DISPATCH OF THE LETTER TO THE PETITIONER.

VOTING SUMMARY - SECY-12-0079

RECORDED VOTES

	APRVD	DISAPRVD	ABSTAIN	NOT PARTICIP	COMMENTS	DATE
CHRM. MACFARLANE	X	X			X	8/28/12
COMR. SVINICKI	X				X	8/21/12
COMR. APOSTOLAKIS	X				X	8/3/12
COMR. MAGWOOD	X				X	8/20/12
COMR. OSTENDORFF	X				X	7/18/12

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: Chairman Allison M. Macfarlane

SUBJECT: SECY-12-0079 – PARTIAL CLOSURE OF PETITION FOR RULEMAKING (PRM-72-6) C-10 RESEARCH AND EDUCATION FOUNDATION, INC.

Approved __X__ Disapproved __X__ Abstain _____

Not Participating _____

COMMENTS: Below ___ Attached _X_ None ___

SIGNATURE

8/28/12

DATE

Entered on "STARS" Yes _X_ No ___

Chairman Macfarlane's Comments on SECY-12-0079,
"Partial Closure of Petition for Rulemaking (PRM-72-6) C-10 Research and Education Foundation, Inc."

I approve the staff's recommendation to deny petitioner requests 1, 3, 5, 6, 7, 8, 10, and 12; to consider petitioner request 11 in rulemaking; and to defer petitioner requests 4 and 9. I disapprove of the staff's proposal to deny petitioner request #2. Given the uncertainty involved with the ultimate outcome of the waste confidence rule, I believe that it is premature to deny this request at this time. The docket for PRM-72-6 should remain open, and the deferred petitioner requests will be considered later to either be denied or accepted into the rulemaking process, with subsequent Commission approval of that decision consistent with NRC procedures.

I appreciate the staff's careful consideration of the issues contained in this petition. In particular, I appreciate how the staff was careful to explain that the NRC's denial of petitioner request #12 is solely based on process considerations, and does not mean that the NRC disagrees with the important safety consideration of understanding age-related material degradation in dry cask storage systems. Denial of petitioner request #12 is solely based on the fact that a change to NRC regulations is not the mechanism for initiating research funding.

8/28/12

Allison M. Macfarlane Date

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: COMMISSIONER SVINICKI

SUBJECT: SECY-12-0079 – PARTIAL CLOSURE OF PETITION FOR RULEMAKING (PRM-72-6) C-10 RESEARCH AND EDUCATION FOUNDATION, INC.

Approved __XX__ Disapproved _____ Abstain _____

Not Participating _____

COMMENTS: Below _XX_ Attached _XX_ None ___

I approve publication of the *Federal Register* Notice, subject to the edits proposed by Commissioner Ostendorff and subject to the further edits attached.

SIGNATURE

08/21/12
DATE

Entered on "STARS" Yes ✓ No ___

SUPPLEMENTARY INFORMATION:

Background

On November 24, 2008, C-10 Research and Education Foundation, Inc. filed a petition for rulemaking. The petition was docketed by the NRC and assigned Docket No. PRM-72-6. On March 3, 2009 (74 FR 9178), the NRC published a notice of receipt and request for comment for PRM-72-6.

The petitioner requested that the NRC amend Title 10 of the *Code of Federal Regulations* (10 CFR) Part 72, ""Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater than Class C Waste," to revise the NRC requirements for interim dry cask storage of spent fuel. Specifically, the petitioner requested that the NRC's regulations be amended to:

1) Require that the NRC prohibit non-conforming pre-built full-scale casks, specifically built for NRC certification testing, from being put into production under industry pressure to "accept-as-is."

2) Require that the NRC~~'s~~ base its certification of casks ~~be based~~ on upgraded code requirements, which include design criteria and technical specifications for a 100-year-minimum age-related degradation timeframe, upgraded from the current "inadequate" 20-year design specification. The NRC must also require an NRC regulatory and public review of an in-depth technical evaluation of the casks done at the 20-year certificate of compliance (CoC) reapproval interval to effectively catch and address cask deterioration.

3) Require that the NRC approve, as part of the original independent spent fuel storage installation (ISFSI) certification process and construction license, a method for dry cask transfer capacity that will allow for immediate and safe maintenance on a faulty or failing cask.

On December 16, 2009 (74 FR 66589), the NRC published a notice of availability and solicitation of public comments for Draft Technical Basis for Rulemaking Revising Security Requirements for Facilities Storing Spent Nuclear Fuel and High-Level Waste. In this draft technical basis, the NRC describes the objectives, conceptual approaches, and potential solutions. The NRC staff expects that the rulemaking, ~~when completed~~if approved by the Commission, will result in risk-informed, performance-based regulations, with both site-specific and generally licensed ISFSIs having consistent regulations. The NRC staff received comments on the draft regulatory basis from several stakeholders who were opposed, for different reasons, to the draft technical basis. For this reason, the NRC staff, in SECY-10-0114 (ADAMS Accession No. ML101880013) recommended that the schedule for the rulemaking effort be extended to allow the staff to further evaluate these comments and their implications. The Commission approved the NRC staff's recommendation in its staff requirements memorandum, SRM-SECY-10-0114 (ADAMS Accession No. ML103210025), and reaffirmed the direction for the ISFSI security rulemaking in SRM-SECY-07-0148 (ADAMS Accession No. ML073530119).

On February 16, 2011 (76 FR 8872), the NRC issued the Final Rulemaking "License and Certificate of Compliance (CoC) Terms." This rulemaking extended the duration of ISFSI licenses and storage cask CoCs to 40 years, clarified the difference between "renewal" versus "reapproval" terminology in 10 CFR Part 72, and codified the requirements for an aging management plan for both general and specific licensees.

In addition, since the petition was filed, in response to direction provided by the Commission in SRM-COMDEK-09-0001, the staff has initiated a thorough review of whether regulatory changes will be needed to support the safe and secure storage of spent nuclear fuel (SNF) for multiple renewal periods.

Radioactive Waste." The ASME stated that all five of the petitioner's requests that make specific reference to the ASME Codes and Standards would be resolved by the NRC's full endorsement of the ASME Code because it includes the latest edition and addenda of the Code, code stamping, materials and fabrication and testing.

NRC Response:

The NRC staff is reviewing the ASME B&PV Code, Section III, Division 3 for endorsement. If endorsed, the staff intends to develop guidance for licensees and vendors to use in future design and fabrication of dry storage casks.

Other Comments:

In a comment dated on May 4, 2009 (ADAMS Accession No. ML091250353), the Berkeley Fellowship of Unitarian Universalists Social Justice Committee supported rulemaking to strengthen the NRC quality assurance rules on the design and manufacture of dry casks. All other comments were submitted in a standard form letter. These comments requested: 1) HOSS requirements at all nuclear power plants, as well as away-from-reactor dry cask storage sites; and 2) that nuclear power facilities be required to promptly transfer spent fuel from the pools to dry casks. Approximately 100 comments included additional information that fell outside the scope of rulemaking, and were not considered in this PRM.

NRC Response:

Regarding comments about HOSS requirements at all nuclear power plants, as well as away-from-reactor dry cask storage sites, as discussed in the response to petitioner's Request 11, the NRC agrees that HOSS requirements at nuclear power plants should be considered in a future rulemaking. With regard to comments regarding a requirement that nuclear power

and accepted, rejected or reworked in accordance with documented procedures. Prior to nonconforming parts being used in a storage cask that is placed into service, the certificate holder/fabricator must perform a review under 10 CFR 72.48 to ensure that its use will not affect the ability of the storage cask to safely store spent fuel. The NRC will perform a safety review of any non-conformances in response to requests for a certificate or license amendment. In addition, 10 CFR 72.122 requires both general and specific licensees to design, fabricate, test and erect structures, systems and components that are important to safety to quality standards that are commensurate with its importance to safety.

Also, the NRC inspection program confirms that non-conforming casks and materials are not placed into service. This inspection program is designed to confirm that fabrication activities are performed in accordance with the requirements in 10 CFR Part 72, the applicable CoC, the Safety Analysis Report, and the CoC holder's NRC-approved Quality Assurance program. Both CoC holders and general licensees are periodically inspected in accordance with the NRC's inspection program. The petitioner did not provide any new or significant information indicating that any storage casks have been loaded and placed on a storage pad that does not conform to the design approved by the NRC. Accordingly, for the reasons previously discussed, the NRC is denying this request.

Petitioner Request 2 – Require that NRC certification of casks be based on upgraded code requirements, which include design criteria and technical specifications for a 100-year-minimum age-related degradation timeframe, upgraded from the current inadequate 20-year design specification. Also, require an NRC regulatory and public review of an in-depth technical evaluation of the casks done at the 20-year CoC reapproval interval to effectively catch and address cask deterioration.

The petitioner asserted that the federal government has not created a permanent high-level radioactive waste repository and therefore, States will inherit the responsibility of high-

plan for both general and specific licensees. Along with the rulemaking, the NRC issued NUREG-1927, "Standard Review Plan for Renewal of Spent Fuel Dry Cask Storage System Licenses and Certificates of Compliance" (ADAMS Accession No. ML100350309), to provide staff guidance on reviewing renewal requests for ISFSI licenses and spent fuel storage cask certificates of compliance.

With respect to the petitioner's assertions regarding degradation of the storage cask and fuel, the NRC addressed aging and potential degradation mechanisms of spent fuel in storage casks in the February 2011 rulemaking (76 FR 8872). In that rulemaking, the NRC stated that, based on the research performed at Idaho National Laboratory and described in NUREG/CR-6381, the NRC expects very little, to no, degradation of the spent fuel or cask internals at the end of an extended storage period up to 60 years. Finally, in SECY-11-0029, "Plan for the Long Term Update to the Waste Confidence Rule and Integration with the Extended Storage and Transportation Initiative ~~[EST]~~" (ADAMS Package Accession No. ML110330445), the NRC staff described the work that will be done to identify and resolve any regulatory and/or technical gaps that may exist for application of current regulations to longer periods of extended storage. The NRC staff will provide the public with an opportunity to comment on the draft gap assessment report, and will treat the current petition request as a public comment on this activity. As described in SECY-11-0029, the NRC staff will evaluate the need for rulemaking to address any gaps that are identified for extended storage and transportation.

Petitioner Request 3: Require that the NRC approve, as part of the original ISFSI certification process and construction license, a method for dry cask transfer capacity that will allow for immediate and safe maintenance on a faulty or failing cask. The temperature of the fuel inside a dry storage cask may reach 400 degrees Fahrenheit, while irradiated waste storage pool water is kept at 100 degrees Fahrenheit. Reinsertion of the canister into the

Additionally the petitioner stated that 10 CFR 72.122(a) and 10 CFR 72.234(b) require that structures, systems and components important to safety be designed, fabricated, and tested to quality standards commensurate with the importance of the function performed. However, the petitioner asserted that the NRC has not updated its use of the ASME B&PV Code and grants the utilities and their vendors numerous exemptions. The petitioner stated that while the NRC allows exemptions to vendors by justifying vendor compliance to "merely the maximum extent possible," the NRC simultaneously cites vendors and manufacturers with numerous violations and then approves repeated corrective actions, which has resulted in dry cask design, fabrication and performance issues remaining unresolved. The petitioner stated that the NRC should not issue "justifications and compensatory measures" for ASME codes or allow conformance with safety regulations "to the extent practical." The petitioner asserted that the ASME codes should be enforced unconditionally, without exception or exemption.

The petitioner cited an example request from a dry cask storage vendor seeking exemptions to certain portions of the ASME Code and a set of technical specifications that the NRC issued for a storage cask that states "The 32PTH DSC is designed, fabricated and inspected to the maximum practical extent in accordance with ASME B&PV, Code Section III, Division 1, 1998 Edition with Addenda through 2000, Subsections NB, NF, and NG for Class 1 components and supports. Code alternatives are discussed in 4.4.4." Although the petitioner referenced Section 4.3 of the technical specifications, the NRC believes the petitioner meant Section 4.4, which provides the codes and standards that apply to this particular storage cask.

NRC Response: The NRC is denying ~~the~~ petitioner's Requests 5 through 8, because the NRC has determined that revising the regulations is not the most effective or efficient method to adopt the ASME Code for the design and fabrication of spent fuel dry storage casks. As stated in NUREG-1567, the industry has adopted, and the NRC has accepted, ASME Code Section III, Division 1 and Division 2 as acceptable standards for the design and fabrication of

As stated in NUREG-1567, the industry has adopted, and the NRC has accepted, ASME Code Section III, Division 1 and Division 2 as acceptable standards for the design and fabrication of dry storage casks. It is expressly understood, by the NRC and industry, however, that dry storage casks are not pressure vessels and, as such, ASME Code Section III could not be implemented without allowing some exceptions to its requirements. Therefore, the NRC allows specific exceptions to the code for those requirements that are not applicable or practical to implement for spent fuel dry cask storage systems. Further, the petitioner asserted that adherence to ASME B&PV Code and NCA 3800 of the ASME Code is required to meet the quality assurance requirements in 10 CFR Part 50, Appendix B. Storage casks are not, however, required by the NRC's regulations to meet the requirements of 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities."

The NRC staff is reviewing ASME Section III, Division 3, "Containments for Transportation and Storage of Spent Nuclear Fuel and High-Level Radioactive Waste" for endorsement. If endorsed, the staff intends to develop guidance for use in future fabrication of dry storage casks.

Petitioner Request 10: Require real-time heat and radiation monitoring at ISFSIs at all nuclear power plant sites and away-from-reactor storage sites maintained by the utilities and that the monitoring data be transmitted in real-time to affected State health, safety, and environmental regulators.

The petitioner referenced a paper from PATRAM '98: 12th International Conference on the Packaging and Transportation of Radioactive Materials, written by a non-NRC employee asserting that the NRC has declared that a storage cask shares the same class of importance to safety (Class 1 in ASME Code Section III terminology) as a reactor vessel, yet an NRC proposed rule regarding miscellaneous changes to 10 CFR Part 72 (63 FR 31364, June 9, 1998), states that NRC distinguishes between wet and dry storage requirements. The petitioner

~~stated~~ notes that in that Part 72 rulemaking, the NRC chose not to require control systems for dry cask storage systems at ISFSIs.

The petitioner also stated that another example showing the differentiation between wet and dry storage is that the NRC does not require a method for licensees to provide positive means to verify that solid neutron absorbing materials have continued efficacy after being placed in an inert environment in dry storage. The petitioner stated that the NRC regulations in 10 CFR 72.124(b) provide that for dry storage, in lieu of a positive means to test for continued efficacy, a demonstration that solid neutron absorbing materials do not undergo significant degradation during storage is sufficient. The petitioner further asserted that the Point Beach incident in May 1996, the evidence provided from the Surry reactor's inner seal failures, and the NRC reports of salt-water air corrosiveness at seacoast reactors are proof that the assumption that the corrosive environment that is present in wet storage is not present during dry storage is invalid.

The petitioner also stated that the NRC has determined that it is not practical to penetrate the integrity of storage casks to measure the efficacy of neutron absorbing materials. Finally, the petitioner states that NRC regulations do not require adequate technical radiation and heat monitoring data to protect nuclear workers, assure public safety and provide for future cask fabrication, material specifications and performance analysis.

NRC Response: The NRC is denying ~~the~~ petitioner's Request 10, because regular monitoring for radiation at and near ISFSIs is currently required by § 72.44(d)(2) for specific licensees, with reporting required at 12-month intervals as specified in § 72.44(d)(3), and similarly for general licensees in 10 CFR 50.36(a)(2). There have not been any instances of measurable radiation doses from ISFSIs at the site boundaries. The storage cask technical specifications require that concrete storage casks with vents for natural convection provide

Petitioner Request 11: Require HOSS at all nuclear power plants as well as away-from-reactor dry cask storage sites; and that all nuclear industry interim on-site or off-site dry cask storage installations or ISFSIs be fortified against terrorist attack. In addition, all sites should be safeguarded against accident and age-related leakage.

NRC Response: The NRC concludes that the petitioner's Request 11 warrants consideration in rulemaking. It will be considered as part of the NRC's effort to revise the security requirements for ISFSIs and monitored retrievable storage (MRSs) installations. The Commission has directed the NRC staff to update the security requirements for ISFSIs and MRSs (SRM-SECY-10-0114 and SRM-SECY-07-0148 – ADAMS Accession No. ML103210025 and ML073530119 respectively). Further information regarding NRC action on petitioner Request 11 will be available at http://www.regulations.gov by searching on Docket ID NRC-2009-0558.

Petitioner Request 12: Establish funding to conduct on-going studies to provide the data required to accurately define and monitor for age-related material degradation, assess the structural integrity of the casks and fuel cladding in "interim" waste storage.

NRC Response: The NRC is denying ~~the~~ petitioner's Request 12 because rulemaking is not the appropriate mechanism for establishing funding for conducting research. The NRC has cooperated with other interested agencies to support materials aging studies, and is participating in an Electric Power Research Institute program that evaluates materials aging issues.

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: Commissioner Apostolakis

SUBJECT: SECY-12-0079 – PARTIAL CLOSURE OF PETITION FOR RULEMAKING (PRM-72-6) C-10 RESEARCH AND EDUCATION FOUNDATION, INC.

Approved X **Disapproved** _____ **Abstain** _____

Not Participating _____

COMMENTS: Below ___ Attached ___ None X

SIGNATURE

3/3/12
DATE

Entered on "STARS" Yes ✓ No ___

AFFIRMATION ITEM

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: COMMISSIONER MAGWOOD

SUBJECT: SECY-12-0079 – PARTIAL CLOSURE OF PETITION FOR RULEMAKING (PRM-72-6) C-10 RESEARCH AND EDUCATION FOUNDATION, INC.

Approved X **Disapproved** _____ **Abstain** _____

Not Participating _____

COMMENTS: **Below** X **Attached** X **None** ___

Approved subject to the attached edits.

SIGNATURE

20 August 2012

DATE

Entered on "STARS" **Yes** X **No** ___

endorsement of the ASME Code because it includes the latest edition and addenda of the Code, code stamping, materials and fabrication and testing.

NRC Response:

The NRC staff is reviewing the ASME B&PV Code, Section III, Division 3 for endorsement. If endorsed, the staff intends to develop guidance for licensees and vendors to use in future design and fabrication of dry storage casks.

Other Comments:

In a comment dated on May 4, 2009 (ADAMS Accession No. ML091250353), the Berkeley Fellowship of Unitarian Universalists Social Justice Committee supported rulemaking to strengthen the NRC quality assurance rules on the design and manufacture of dry casks. All other comments were submitted in a standard form letter. These comments requested: 1) HOSS requirements at all nuclear power plants, as well as away-from-reactor dry cask storage sites; and 2) that nuclear power facilities be required to promptly transfer spent fuel from the pools to dry casks. Approximately 100 comments included additional information that fell outside the scope of rulemaking, and were not considered in this PRM.

NRC Response:

Regarding comments about HOSS requirements at nuclear power plant ISFSIs and away-from-reactor dry storage sites, in the response to the petitioner's Request 11, the NRC notes that it has conducted considerable analyses regarding the safety of dry storage casks in use in the United States. The agency has, consistently, found that the robust nature of the dry storage systems approved by the NRC under 10 CFR Part 72 and 10 CFR Part 50 assures the protection of public health, safety, and security. Nevertheless, the NRC is in the process of reviewing a potential rulemaking regarding enhancements to the security of spent fuel dry storage facilities. As the substance of Request 11 is relevant to this rulemaking, the NRC will examine this item in the context of this rulemaking process.

With regard to comments regarding a requirement that nuclear power facilities promptly transfer spent fuel from pools to dry casks, the NRC remains confident that both wet and dry storage systems are fully protective of public safety and security. However, as an element of the NRC's post-Fukushima review, the agency is conducting a detailed assessment of the safety benefits and challenges that could result from the expedited transfer of spent fuel from pools to dry casks.

~~Regarding comments about HOSS requirements at all nuclear power plants, as well as away-from-reactor dry-cask storage sites, as discussed in the response to petitioner's Request 11, the NRC agrees that HOSS requirements at nuclear power plants should be considered in a future rulemaking. With regard to comments regarding a requirement that nuclear power facilities promptly transfer spent fuel from the pools to dry casks, as discussed in the response to petitioner's Request 3 the NRC disagrees, because storage in both spent fuel pools and dry casks are safe and secure modes of storing spent fuel.~~

Petition Resolution

For the reasons discussed in this section, the NRC is considering this petition in part, denying it in part, and reserving it in part for a future rulemaking determination. The NRC is denying the petitioner's Requests 1, 2, 3, 5 through 8, 10, and 12, as listed in the Background section of this document, because the petitioner has not provided new and significant information that would warrant the NRC revising its regulations. Request 11 will be considered, as part of the ongoing ISFSI security rulemaking effort (Docket ID NRC-2009-0558). In this section, the description of each request being denied, reserved for future rulemaking determination, and considered in future rulemaking is summarized immediately before the NRC response.

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: COMMISSIONER OSTENDORFF

SUBJECT: SECY-12-0079 – PARTIAL CLOSURE OF PETITION FOR RULEMAKING (PRM-72-6) C-10 RESEARCH AND EDUCATION FOUNDATION, INC.

Approved __X___ Disapproved _____ Abstain _____

Not Participating _____

COMMENTS: Below ___ Attached _X__ None ___

SIGNATURE

7/18/12
DATE

Entered on "STARS" Yes _X_ No ___

On December 16, 2009 (74 FR 66589), the NRC published a notice of availability and solicitation of public comments for Draft Technical Basis for Rulemaking Revising Security Requirements for Facilities Storing Spent Nuclear Fuel and High-Level Waste. In this draft technical basis, the NRC describes the objectives, conceptual approaches, and potential solutions. The NRC staff expects that the rulemaking, ~~when completed~~if approved by the Commission, will result in risk-informed, performance-based regulations, with both site-specific and generally licensed ISFSIs having consistent regulations. The NRC staff received comments on the draft regulatory basis from several stakeholders who were opposed, for different reasons, to the draft technical basis. For this reason, the NRC staff, in SECY-10-0114 (ADAMS Accession No. ML101880013) recommended that the schedule for the rulemaking effort be extended to allow the staff to further evaluate these comments and their implications. The Commission approved the NRC staff's recommendation in its staff requirements memorandum, SRM-SECY-10-0114 (ADAMS Accession No. ML103210025), and reaffirmed the direction for the ISFSI security rulemaking in SRM-SECY-07-0148 (ADAMS Accession No. ML073530119).

On February 16, 2011 (76 FR 8872), the NRC issued the Final Rulemaking "License and Certificate of Compliance (CoC) Terms." This rulemaking extended the duration of ISFSI licenses and storage cask CoCs to 40 years, clarified the difference between "renewal" versus "reapproval" terminology in 10 CFR Part 72, and codified the requirements for an aging management plan for both general and specific licensees.

In addition, since the petition was filed, in response to direction provided by the Commission in SRM-COMDEK-09-0001, the staff has initiated a thorough review of whether regulatory changes will be needed to support the safe and secure storage of spent nuclear fuel (SNF) for multiple renewal periods.

NRC Response:

As described below in the response to Petitioner Request 9, the NRC is still considering the request to require a hot cell transfer station for decommissioned reactor facilities as part of its review of potential regulatory changes to accommodate the storage of SNF for multiple renewal periods. Therefore, at this time, the NRC does not agree with NEI that this request should be denied. Also as discussed below in the response to Petitioner Requests 5 through 8, the NRC agrees with NEI that there is no need for rulemaking regarding either ASME Code requirements ~~and~~ or to include funding to conduct effectiveness studies of age-related material degradation.

The NRC also agrees that including design criteria and technical specifications for a 100-year minimum age-related degradation timeframe is not warranted. The updated ASME Code requirements do not include design criteria and technical specifications for a 100-year minimum age-related degradation timeframe. In addition, when renewing licenses to store SNF, the NRC requires that licensees implement an aging management program to ensure that storage casks will perform as designed under extended license terms. Furthermore, as discussed in response to P~~p~~etitioner Request 2, the NRC is evaluating material degradation and other issues for extended storage and transportation that might last beyond 100 years. The NRC is evaluating this in the context of SECY-11-0029, "Plan for the Long Term Update to the Waste Confidence Rule and Integration with the Extended Storage and Transportation Initiative" (ADAMS Accession Number ML110330445).

The NRC disagrees with NEI that the security assessments, by themselves, are sufficient to preclude the need for any rulemaking to enhance security at ISFSIs. As such, the NRC is considering Request 11, as part of the ongoing ISFSI security rulemaking effort.

STARS Comments:

In its letter dated May 18, 2009 (ADAMS Accession No. ML091410360), the STARS organization opposed the petition. It made the following assertions:

1) The proposed changes would impose significant additional costs on the NRC and the industry with no safety benefit.

2) The NRC should continue to allow exceptions to the ASME Code requirements for dry storage casks. This is consistent with other similar existing regulations that recognize the need for exceptions and alternatives to the ASME Code. Because dry storage casks are not pressure vessels, it is virtually impossible to implement the ASME Code without allowing exceptions to some of the requirements.

3) There is no need for rulemaking to include funding to conduct effectiveness studies of age-related material degradation. As part of an NRC research program, a dry storage cask from the ISFSI at the Surry Power Station was opened at the Idaho National Engineering Laboratory after the fuel had been stored approximately 15 years. The findings confirmed the condition of the fuel to be acceptable during the 15-year storage period (SECY-09-0069, Proposed Rule: 10 CFR Part 72 License and Certificate of Compliance Terms (RIN 3150-AI09), ADAMS Package Accession No. ML090610154).

NRC Response:

Regarding the STARS comments, the NRC agrees that ASME Code exceptions should continue to be allowed as discussed ~~in the~~below in NRC response to Petitioner Requests 5 through 8. As stated in the response to ~~the P~~petitioner~~'s~~ Request 12, rulemaking is not the appropriate mechanism for establishing funding for conducting research. With regard to materials aging studies, the NRC has initiated independent research on the impacts of long term storage for multiple renewal periods. has cooperated

spent fuel from the pools to dry casks. Approximately 100 comments included additional information that fell outside the scope of rulemaking, and were not considered in this PRM.

NRC Response:

Regarding comments about HOSS requirements at all nuclear power plants, as well as away-from-reactor dry cask storage sites, as discussed in the response to Ppetitioner~~'s~~ Request 11, the Commission has previously concluded that the massive and robust nature of the dry spent fuel storage system designs (approved by the NRC under 10 CFR Part 72) provides reasonable assurance of adequate protection of public health and safety and the common defense and security. Consequently, the NRC's current view is that these facilities remain safe and secure. While the NRC has not concluded that the use of HOSS should be mandated, the NRC is currently considering a rulemaking to enhance security at ISFSIs and monitored retrievable storage installations (MRSs). Because this issue is relevant to this rulemaking, the NRC will address this item in the context of this proposed rule. ~~the NRC agrees that HOSS requirements at nuclear power plants should be considered in a future rulemaking~~. With regard to comments regarding a requirement that nuclear power facilities promptly transfer spent fuel from the pools to dry casks, ~~as discussed in the response to petitioner's Request 3 the NRC disagrees, because~~ storage in both spent fuel pools and dry casks are safe and secure modes of storing spent fuel. However, the NRC is considering the expedited transfer of spent fuel from pools to casks as part of our evaluation of whether regulatory changes are necessary based on the Fukushima event.

Comment [a1]: This issue is not discussed in the NRC's response to Request 3

Petition Resolution

For the reasons discussed in this section, the NRC is considering this petition in part, denying it in part, and reserving it in part for a future rulemaking determination. The NRC is denying ~~the~~ Ppetitioner~~'s~~ Requests 1, 2, 3, 5 through 8, 10, and 12, as listed in the Background section of this document, because the petitioner has not provided new and significant information that would warrant the NRC revising its regulations. Request 11 will be considered, as part of the ongoing ISFSI security rulemaking effort (Docket ID NRC-2009-0558). In this section, the description of each request being denied, reserved for future rulemaking determination, and considered in future rulemaking is summarized immediately before the NRC response.

Action on Requests 4 and 9 are reserved for future rulemaking determinations. Request 4, which requested that the NRC require that dry casks are qualified for transport at the time of onsite storage approval certification, is being evaluated as part of COMSECY-10-0007, "Project Plan for the Regulatory Program Review to Support Extended Storage and Transportation of Spent Nuclear Fuel" (ADAMS Accession No. ML101390413). The staff identified storage and transportation compatibility as a potential policy issue in COMSECY-10-0007, Enclosure 1, Appendix A, "Project Plan for the Extended Storage and Transportation Regulatory Program Review," (ADAMS Accession No. ML101390426).

Request 9, which requested that the NRC require a safe and secure hot cell transfer station coupled with an auxiliary pool as part of an upgraded ISFSI design certification and licensing process, is still being evaluated by staff as part of its review of the regulatory changes that might be necessary to safely store fuel for multiple renewal periods. Additionally, as discussed in Section 3.1 of Enclosure 1 of COMSECY-10-0007, research is needed to develop the safety basis for the behavior of high burnup fuel during extended storage periods. Whether the fuel retains sufficient structural integrity for extended storage and eventual transportation may affect whether the NRC would require dry transfer capability at decommissioned reactors

storing high burnup fuel.

The docket for PRM-72-6 will remain open and consist of ~~the~~ Ppetitioner's Requests 4 and 9. Once the Commission takes action on the two remaining requests, the NRC will publish another document in the *Federal Register* to give notice of the Commission's decision.

Petitioner Request 1: Prohibit non-conforming pre-built full-scale casks, specifically built for NRC certification testing, from being put into production under industry pressure to "accept-as-is."

NRC Response: The NRC is denying ~~the~~ Ppetitioner's Request 1. The NRC's regulations provide that only those casks that have been approved under the procedures of Subpart L, 10 CFR Part 72 and subsequently listed in § 72.214, "List of Approved Spent Fuel Storage Casks," may be used under a 10 CFR Part 72 general license.[1] The NRC is not aware of, nor did the petition state where any non-conforming, pre-built, full-scale casks were placed into service.

The NRC requires in 10 CFR 72.170, "Nonconforming materials, parts, or components", that storage cask vendors/fabricators establish measures to control materials, parts, or components that do not conform to their requirements in order to prevent their inadvertent use or installation, that includes procedures for identification, documentation, segregation, disposition, and notification to affected organizations. Non-conforming items must be reviewed and accepted, rejected or reworked in accordance with documented procedures. Prior to nonconforming parts being used in a storage cask that is placed into service, the certificate holder/fabricator must perform a review under 10 CFR 72.48 to ensure that its use will not affect the ability of the storage cask to safely store spent fuel. The NRC will perform a safety review of any non-conformances in response to requests for a certificate or license amendment. In

[1] The CoC holder or its contractor fabricates dry storage casks in accordance with the CoC and sells them to 10 CFR Part 72 general licensees, who are nuclear power plant operators.

limited data to determine the extent of degradation of storage casks and the spent fuel it contains. The petitioner cited "The Dry Cask Storage Characterization Project," a study jointly funded by the NRC, the Electric Power Research Institute, and the U.S. Department of Energy that is detailed in NUREG/CR-6831 (ADAMS Accession No. ML032731021), "Examination of Spent PWR Fuel Rods after 15 Years in Dry Storage" and NUREG/CR-6745, "Dry Cask Storage Characterization Project—Phase 1: Castor V/21 Cask Examination and Opening" (ADAMS Accession No. ML013020363). The petitioner also refers to the opening of, subsequent to this study, several storage casks at the Surry ISFSI due to inner seal failures. These casks were opened after a shorter storage duration than the cask opened in the study. The petitioner stated that although the spent fuel in these cases was found acceptable, there were signs of degradation, and therefore, there is no conclusive data for integrity of casks or the condition of the nuclear fuel.

NRC Response: The NRC is denying ~~the~~ P~~p~~etitioner~~'s~~ Request 2. With respect to the request that the NRC incorporate the latest version of the ASME B&PV Code in its regulations, the NRC has determined that amending its regulations to incorporate the latest versions of the AMSE B&PV Code is not necessary to ensure that adequate codes and standards are applied for the material selection, fabrication, design, examination, and testing of dry cask storage systems. As stated in the NRC's standard review plans for spent fuel storage, NUREG-1536 and NUREG-1567, the NRC staff reviews ISFSI and storage cask designs to verify that they incorporate appropriate national codes and standards, in order to comply with NRC regulations. Storage casks approved by the NRC are designed and fabricated to the ASME B&PV Code, Section III, Division 1 for steel confinements and Division 2 for concrete containments. While Section III, Division 3 of the ASME B&PV Code has been specifically written by ASME for containment systems for spent fuel transportation packages and storage casks, it has not been endorsed by the NRC. The NRC staff is reviewing ASME Code Section III, Division 3 and if

With respect to the petitioner's assertions regarding degradation of the storage cask and fuel, the NRC addressed aging and potential degradation mechanisms of spent fuel in storage casks in the February 2011 rulemaking (76 FR 8872). In that rulemaking, the NRC stated that, based on the research performed at Idaho National Laboratory and described in NUREG/CR-6381, the NRC expects very little, to no, degradation of the spent fuel or cask internals at the end of an extended storage period up to 60 years. Finally, in SECY-11-0029, "Plan for the Long Term Update to the Waste Confidence Rule and Integration with the Extended Storage and Transportation Initiative [EST]" (ADAMS Package Accession No. ML110330445), the NRC staff described the work that will be done to identify and resolve any regulatory and/or technical gaps that may exist for application of current regulations to longer periods of extended storage. The NRC staff will provide the public with an opportunity to comment on the draft gap assessment report, and will treat the current petition request as a public comment on this activity. As described in SECY-11-0029, the NRC staff will evaluate the need for rulemaking to address any gaps that are identified for extended storage and transportation.

Petitioner Request 3: Require that the NRC approve, as part of the original ISFSI certification process and construction license, a method for dry cask transfer capacity that will allow for immediate and safe maintenance on a faulty or failing cask. The temperature of the fuel inside a dry storage cask may reach 400 degrees Fahrenheit, while irradiated waste storage pool water is kept at 100 degrees Fahrenheit. Reinsertion of the canister into the pool and resultant steam flash is a risk to workers, and would thermally shock the fuel rods, potentially damaging the fuel assemblies.

NRC Response: The NRC is denying ~~the~~ Ppetitioner's Request 3. Dry cask storage systems are designed to be robust, and operating experience indicates that they have been safely used to store fuel for over 20 years. Additionally, pursuant to 10 CFR 72.236(h), "Specific

However, the petitioner asserted that the NRC has not updated its use of the ASME B&PV Code and grants the utilities and their vendors numerous exemptions. The petitioner stated that while the NRC allows exemptions to vendors by justifying vendor compliance to "merely the maximum extent possible," the NRC simultaneously cites vendors and manufacturers with numerous violations and then approves repeated corrective actions, which has resulted in dry cask design, fabrication and performance issues remaining unresolved. The petitioner stated that the NRC should not issue "justifications and compensatory measures" for ASME codes or allow conformance with safety regulations "to the extent practical." The petitioner asserted that the ASME codes should be enforced unconditionally, without exception or exemption.

The petitioner cited an example request from a dry cask storage vendor seeking exemptions to certain portions of the ASME Code and a set of technical specifications that the NRC issued for a storage cask that states "The 32PTH DSC is designed, fabricated and inspected to the maximum practical extent in accordance with ASME B&PV, Code Section III, Division 1, 1998 Edition with Addenda through 2000, Subsections NB, NF, and NG for Class 1 components and supports. Code alternatives are discussed in 4.4.4." Although the petitioner referenced Section 4.3 of the technical specifications, the NRC believes the petitioner meant Section 4.4, which provides the codes and standards that apply to this particular storage cask.

NRC Response: The NRC is denying ~~the~~ Ppetitioner~~'s~~ Requests 5 through 8, because the NRC has determined that revising the regulations is not the most effective or efficient method to adopt the ASME Code for the design and fabrication of spent fuel dry storage casks. As stated in NUREG-1567, the industry has adopted, and the NRC has accepted, ASME Code Section III, Division 1 and Division 2 as acceptable standards for the design and fabrication of dry storage casks. It is expressly understood, by the NRC and industry, however, that dry storage casks are not pressure vessels and, as such, ASME Code Section III could not be implemented without allowing some exceptions to its requirements. Therefore, the NRC allows

placed in an inert environment in dry storage. The petitioner stated that the NRC regulations in 10 CFR 72.124(b) provide that for dry storage, in lieu of a positive means to test for continued efficacy, a demonstration that solid neutron absorbing materials do not undergo significant degradation during storage is sufficient. The petitioner further asserted that the Point Beach incident in May 1996, the evidence provided from the Surry reactor's inner seal failures, and the NRC reports of salt-water air corrosiveness at seacoast reactors are proof that the assumption that the corrosive environment that is present in wet storage is not present during dry storage is invalid.

The petitioner also stated that the NRC has determined that it is not practical to penetrate the integrity of storage casks to measure the efficacy of neutron absorbing materials. Finally, the petitioner states that NRC regulations do not require adequate technical radiation and heat monitoring data to protect nuclear workers, assure public safety and provide for future cask fabrication, material specifications and performance analysis.

NRC Response: The NRC is denying ~~the~~ P~~p~~etitioner's Request 10, because regular monitoring for radiation at and near ISFSIs is currently required by § 72.44(d)(2) for specific licensees, with reporting required at 12-month intervals as specified in § 72.44(d)(3), and similarly for general licensees in 10 CFR 50.36(a)(2). There have not been any instances of measurable radiation doses from ISFSIs at the site boundaries. The storage cask technical specifications require that concrete storage casks with vents for natural convection provide cooling to the canister and have temperature-monitoring devices or periodic visual monitoring to ensure that the inlet and outlet vents are free of blockage that would inhibit convective airflow.

The applicant demonstrates performance of the thermal design and thermal limits through analyses during the certification and licensing process. The cask systems are also periodically examined by the licensee to verify there are no adverse conditions that would impede thermal performance. Given the surveillance, monitoring, and inspection programs, the

NRC Response: The Commission has previously concluded that the massive and robust nature of the dry spent fuel storage system designs (approved by the NRC under 10 CFR Part 72) provides reasonable assurance of adequate protection of public health and safety and the common defense and security. Consequently, the NRC's current view is that these facilities remain safe and secure. While the NRC has not concluded that the use of HOSS should be mandated, ~~The NRC concludes that the petitioner's Request 11 warrants consideration in rulemaking. It will be considered as part of the NRC's effort to revise the security requirements for ISFSIs and monitored retrievable storage (MRSs) installations. t~~The Commission has directed the NRC staff to consider -updatinge the security requirements for ISFSIs and MRSs (SRM-SECY-10-0114 and SRM-SECY-07-0148 – ADAMS Accession No. ML103210025 and ML073530119 respectively). Because Petitioner Request 11 raises issues that are relevant to this rulemaking, the NRC will address this item in the context of this proposed rule. Further information regarding NRC action on Ppetitioner Request 11 will be available at http://www.regulations.gov by searching on Docket ID NRC-2009-0558.

Petitioner Request 12: Establish funding to conduct on-going studies to provide the data required to accurately define and monitor for age-related material degradation, assess the structural integrity of the casks and fuel cladding in "interim" waste storage.

NRC Response: The NRC is denying ~~the~~ Ppetitioner~~'s~~ Request 12 because rulemaking is not the appropriate mechanism for establishing funding for conducting research. The NRC has initiated independent research on the impacts of the long term storage of SNF for multiple renewal periods, cooperated with other interested agencies to support materials aging studies, and is participating in an Electric Power Research Institute program that evaluates materials aging issues.