

## **RULEMAKING ISSUE AFFIRMATION**

May 3, 2010

SECY-10-0056

FOR: The Commissioners

FROM: R. W. Borchardt  
Executive Director for Operations

SUBJECT: FINAL RULE: 10 CFR PART 72 LICENSE AND CERTIFICATE  
OF COMPLIANCE TERMS (RIN 3150-AI09)

PURPOSE:

To request Commission approval to publish a final rule, in the *Federal Register*, that amends Title 10 of the *Code of Federal Regulations* (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." The amendments to 10 CFR 72.3, 72.24, 72.42, 72.212, 72.230, 72.236, 72.238, and 72.240 relate to the independent storage of spent nuclear fuel. These amendments extend and clarify the terms for storage cask Certificates of Compliance (CoCs) and for both general and specific independent spent fuel storage installation (ISFSI) licenses. The amendments also impose certain aging management requirements for both specific license and CoC renewals. Finally, the amendments also allow Part 72 general licensees to implement changes authorized by a later CoC amendment to a cask loaded under the initial CoC or an earlier CoC amendment (a "previously loaded cask"). This rulemaking is needed to improve the regulatory efficiency of Part 72. This paper does not address any new commitments or resource implications.

BACKGROUND:

In a Staff Requirements Memorandum (SRM) dated August 26, 2009, the Commission approved publication of the proposed rule on License and Certificate of Compliance Terms

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(SECY-09-0069, April 27, 2009). It was published in the *Federal Register* on September 15, 2009 (74 FR 47126). The comment period closed November 30, 2009, and five comment letters were received. Commenters on the proposed rule included a Federal agency, a stakeholder consortium, a licensee, an industry organization, and an Indian tribe. The comments are discussed in detail in the *Federal Register* notice (Enclosure 1). The Commission has considered all of the significant questions of policy in connection with the proposed rule and no significant adverse questions or comments have been received on the proposed rule or no substantial changes in regulatory text were necessary. However, recognizing that all of the Commissioners may not be familiar with the background on this issue, the staff has decided not to issue this Final Rule under the delegated authority granted to the Executive Director by the Commission in NRC Management Directive 6.3.

### DISCUSSION:

This final rule extends the initial and renewal license terms for specific ISFSI licenses from a term not to exceed 20 years to a term not to exceed 40 years. The final rule also requires that any license renewal application must include an analysis that considers the effects of aging on structures, systems, and components important to safety for the requested renewal term. As a basis for this rulemaking, the U. S. Nuclear Regulatory Commission (NRC) imposed certain aging management requirements for the renewals of the specific licenses for the Surry and H.B. Robinson ISFSIs.

At the present time, there are also no aging management requirements for renewals of CoCs (which apply to general licenses). Because the same cask design could be used at both specific and general license ISFSI sites, it is necessary and appropriate to impose the same aging management requirements on Part 72 general licensees. By implementing these aging management requirements for both specific license renewals and for CoC renewals, the final rule establishes regulatory consistency between specific and general licensees. Likewise, the final rule establishes regulatory consistency between general licenses and specific licenses by setting the renewal term for CoCs to a term not to exceed 40 years.

The CoC is the NRC's approval of a particular cask design and sets forth the terms and conditions under which Part 72 general licensees may use casks fabricated under that CoC at ISFSIs established under the Part 72 general license. Under 10 CFR Part 72, CoC holders periodically upgrade a cask's design through NRC approved CoC amendments. The NRC approval process for CoC amendments ensures that the proposed design upgrade continues to result in a cask that can safely store spent fuel assemblies (i.e., within the cask's analyzed condition). This final rule resolves a question concerning the application of changes authorized by a CoC amendment to a previously loaded cask (a cask loaded under the initial CoC or an earlier CoC amendment). Under the current rules, a general licensee seeking to implement changes authorized by a later CoC amendment to a previously loaded cask must apply to NRC for an exemption, if the CoC amendment alters the terms and conditions of the CoC under which the cask was loaded. The final rule will allow licensees to apply a CoC amendment to a previously loaded cask without prior NRC approval, provided the cask conforms to the amended CoC, and thus remains in an analyzed condition. The final rule reduces the number of exemption requests that licensees must prepare and the NRC must evaluate, thereby increasing the efficiency of NRC's regulatory process while maintaining safety and security, and reducing the regulatory burden on licensees and saving NRC resources. The final rule does not permit

partial implementation of a CoC amendment without prior NRC approval because this could result in a cask being in an unanalyzed condition.

The staff has developed regulatory guidance in the form of a standard review plan (SRP) entitled "Standard Review Plan for Renewal of Independent Spent Fuel Storage Installation Licenses and Dry Cask Storage System Certificates of Compliance." The SRP provides guidance to the staff in reviewing the effects of aging on storage casks or ISFSI sites. The SRP also assists potential applicants in identifying the primary elements to be included in a renewal application and measures necessary to ensure that the cask or ISFSI can be operated during the renewal period without undue risk to the health and safety of the public. The staff plans to publish the SRP following the publication of this final rule.

The staff assessed the revisions to 10 CFR Part 72 against the NRC's strategic performance goals to ensure adequate protection of public health and safety; and ensure adequate protection in the secure use and management of radioactive materials. The staff determined that the final rule is consistent with the NRC's strategic goals. Also, by eliminating unnecessary and costly exemptions which consume resources, the amendments support the NRC's organizational excellence objectives of ensuring that its actions are efficient, effective, realistic, and timely. In support of NRC's openness strategies, NRC held public meetings with stakeholders during the development of the technical bases and made preliminary draft rule language available on Regulations.gov for public review and comment.

#### AGREEMENT STATE ISSUES:

This rule is classified as compatibility category "NRC" and addresses only areas of exclusive NRC regulatory authority. Therefore, Agreement States would not need to make conforming changes to their regulations.

#### RECOMMENDATIONS:

That the Commission:

1. Approve for publication in the *Federal Register* the enclosed notice of final rulemaking (Enclosure 1).
2. To satisfy the requirement of the Regulatory Flexibility Act, 5 U.S.C. 605 (b), certify that this rule, if promulgated, will not have significant impact on a substantial number of small entities. This certification is included in the enclosed *Federal Register* notice.
3. Note:
  - a. That the Chief Counsel for Advocacy of the Small Business Administration will be informed of the certification and the reasons for it, as required by the Regulatory Flexibility Act, 5 U.S.C. 605(b);
  - b. A regulatory analysis has been prepared for this rulemaking (Enclosure 2);
  - c. An environmental assessment and an associated finding of no significant impact has been prepared for this rulemaking (Enclosure 3);

- d. The staff has determined that this action is not a “major rule,” as defined in the Congressional Review Act of 1996 [5 U.S.C 804(2)] and has confirmed this determination with the Office of Management and Budget (OMB). The appropriate Congressional and Government Accountability Office contacts will be informed;
- e. The appropriate Congressional committees will be informed;
- f. A press release will be issued by the Office of Public Affairs when the final rulemaking is filed with the Office of the Federal Register; and
- g. The final rule contains amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501, et seq.) that must be submitted to the OMB for its review and approval before publication of the final rule in the *Federal Register*.

COORDINATION:

The Office of the General Counsel has no legal objection to this final rule. The Office of the Chief Financial Officer has reviewed this Commission Paper for resource implications and has no objections.

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R. W. Borchardt  
Executive Director  
for Operations

Enclosures:

1. *Federal Register* Notice
2. Regulatory Analysis
3. Environmental Assessment

NUCLEAR REGULATORY COMMISSION

10 CFR Part 72

RIN: 3150-AI09

[NRC-2008-0361]

**License and Certificate of Compliance Terms**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Final rule.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is amending its regulations that govern licensing requirements for the independent storage of spent nuclear fuel. These amendments include changes that enhance the effectiveness and efficiency of the licensing process for spent nuclear fuel storage. Specifically, they extend and clarify the term limits for storage cask Certificates of Compliance (CoCs) and independent spent fuel storage installation (ISFSI) specific licenses. The amendments also provide consistency between the general and specific ISFSI license requirements, and allow general licensees subject to these regulations to implement changes authorized by an amended CoC to a cask loaded under the initial CoC or an earlier amended CoC (a “previously loaded cask”).

**DATES:** *Effective Date:* This final rule is effective on **insert 90 days from date of publication.**

**ADDRESSES:** You can access publicly available documents related to this document using the following methods:

**Federal e-Rulemaking Portal:** Go to <http://www.regulations.gov> and search for documents filed under Docket ID NRC-2008-0361. Address questions about NRC dockets to Carol Gallagher at 301-492-3668; e-mail [Carol.Gallagher@nrc.gov](mailto:Carol.Gallagher@nrc.gov).

**NRC's Public Document Room (PDR):** The public may examine and have copied for a fee publicly available documents at the NRC's PDR, Public File Area O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852-2738.

**NRC's Agencywide Documents Access and Management System (ADAMS):** Publicly available documents created or received at the NRC are available electronically at the NRC's electronic Reading Room at <http://www.nrc.gov/reading-rm/adams.html>. From this page, the public can gain entry into ADAMS, which provides text and image files of NRC's public documents. If you do not have access to ADAMS or if there are problems in accessing the documents located in ADAMS, contact the NRC's PDR reference staff at 1-899-397-4209, 301-415-4737, or by e-mail to [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov).

**FOR FURTHER INFORMATION CONTACT:** Keith McDaniel, Office of Federal and State Materials and Environmental Management Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone (301) 415-5252, e-mail: [Keith.McDaniel@nrc.gov](mailto:Keith.McDaniel@nrc.gov).

**SUPPLEMENTARY INFORMATION:**

I. Background

II. Discussion

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- R. If a general licensee selects and purchases a cask fabricated under an earlier CoC amendment, but does not load the cask, can the general licensee adopt the most recent CoC amendment for the empty cask before loading it?
- S. What are the NRC’s plans for providing guidance and examples of aging analyses and AMPs to licensees?
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- U. When are licensees required to submit cask registration letters?
- V. If a CoC is not renewed, how long would general licensees have to remove casks of that design from service?
- W. When NRC renews a CoC, are all amendments to that CoC simultaneously renewed as well?
- X. If a general licensee applies for the renewal of a given CoC (assuming the certificate holder went out of business or chose not to apply for the renewal of a given CoC), and if the NRC approves the renewal of that CoC, is the renewed CoC available only to that general licensee or is it available to all general licensees?
- Y. Can the requirements regarding TLAAs for CoC renewals be based upon a “current licensing basis” (CLB) patterned after 10 CFR Part 54?
- Z. What is the status of the draft NRC Regulatory Issue Summary (RIS) 2007-26 which was issued on January 14, 2008 (73 FR 2281)?

### III. Summary and Analysis of Public Comments on the Proposed Rule

#### IV. Discussion of Final Amendments by Section

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- VII. Voluntary Consensus Standards
- VIII. Environmental Assessment and Finding of No Significant Environmental Impact
- IX. Paperwork Reduction Act Statement
- X. Regulatory Analysis
- XI. Regulatory Flexibility Certification
- XII. Backfit Analysis
- XIII. Congressional Review Act

## **I. Background**

On April 29, 2002, the Virginia Power and Electric Company (Dominion) submitted an application to renew Special Nuclear Materials (SNM) License SNM-2501 for the Surry ISFSI. SNM-2501 authorizes the storage of spent nuclear fuel in casks at the Surry Nuclear Power Plant. In the renewal application, Dominion requested an exemption from the 20-year license renewal term specified in 10 CFR 72.42(a) and sought approval for a 40-year license renewal term. Similarly, on February 27, 2004, Progress Energy Carolinas, Inc. submitted an application for the renewal of H. B. Robinson's ISFSI license which requested an exemption from the provisions of § 72.42(a), so that the license renewal period for the H. B. Robinson ISFSI could be extended from 20 to 40 years.

The NRC staff determined the 40-year renewal exemption request to be a policy decision, not a technical one, because the safety evaluation indicated sufficient technical information had been provided in the application to grant the 40-year renewal period. As a result, a Commission paper (SECY-04-0175) entitled, "Options for Addressing the Surry Independent Spent Fuel Storage Installation License-Renewal Period Exemption Request," was

submitted on September 28, 2004, to request Commission approval of the Surry 40-year renewal exemption request.

On November 29, 2004, the Commission issued a Staff Requirements Memorandum (SRM) for SECY-04-0175, which authorized the NRC staff to approve a 40-year license renewal term for the Surry ISFSI, with appropriate license conditions to manage the effects of aging. The SRM further directed the NRC staff to: (1) initiate a program to review the technical basis for future rulemaking; (2) provide recommendations on the license term for Part 72 CoCs for spent nuclear fuel cask storage systems; and (3) apply the Commission-approved guidance for Part 72 renewals to future specific license exemption requests without further Commission approval. In response to this direction, the staff submitted a Commission paper (SECY-06-0152) entitled, "Title 10 Code of Federal Regulations Part 72 License and Certificate of Compliance Terms," on July 7, 2006, to recommend the scope of rulemaking.

In an SRM, dated August 14, 2006, the Commission authorized the staff to proceed with rulemaking proposals described in SECY-06-0152. In addition, the Commission specifically directed the staff to address the following points in the rulemaking: (1) clarify the start of the 20-year term limit for cask designs approved under general license provisions; (2) identify whether the cask vendor or licensee is responsible for applying for the CoC renewals; (3) discuss possible conflicts that could arise for storage cask designs that are granted a license term extension and that have been approved for transport with a different license term; (4) discuss how the cask expiration dates are tracked at each general license site so that it is clearly understood when the CoC for each cask design must be renewed; and (5) clarify the difference between CoC "approval" and "renewal."

As this rulemaking commenced, the NRC staff identified a related issue regarding its approval of Amendment 4 to CoC 72-1026, which revised cask monitoring and surveillance requirements for the BNG Fuel Solutions W-150 storage cask. Subsequent to the approval, the

certificate holder requested guidance from the NRC on the implementation of the changes authorized by the CoC amendment to previously loaded casks. In addition to this request, the NRC staff became aware of the belief among some general licensees that changes authorized by CoC amendments can be applied to previously loaded casks without prior NRC approval, if an analysis under § 72.48 is performed.

The NRC staff determined that under the current regulations, changes authorized by CoC amendments cannot be applied to previously loaded casks without express NRC approval, if such change results in a change to the terms or conditions of the CoC under which the cask was loaded. A previously loaded cask is bound by the terms and conditions (including the technical specifications) of the CoC applicable to that cask when the licensee loaded the cask. Therefore, under the current regulations, general licensees that want to apply changes approved by a CoC amendment to a previously loaded cask must request an exemption from the NRC if these changes alter the terms or conditions of the CoC under which that cask was loaded.

In the SRM for COMSECY-07-0032, dated December 12, 2007, the Commission stated that it did not object to the staff expanding the scope of the proposed rulemaking to include the following two issues: (1) to extend the terms of specific ISFSI licenses, for both initial and renewal terms, to not to exceed 40 years; and (2) to allow a general licensee to apply changes for a CoC amendment to a previously loaded cask without express NRC approval, while still ensuring that this action protects public health and safety.

In the August 14, 2006, SRM for SECY-06-0152, the Commission directed the NRC staff to be as transparent as possible in developing the proposed rule package, including making draft text available for comment to stakeholders, and holding public meetings, if necessary, before formal submission of the proposed rule to the Commission. In response, the NRC staff held public meetings on November 7, 2006, and February 29, 2008, to discuss the

technical basis of the rulemaking with stakeholders. In addition, on August 4, 2008, the NRC staff made preliminary draft rule text available for comment to stakeholders on Regulations.gov (Docket ID NRC-2008-0361). The only external stakeholders that submitted comments were the Nuclear Energy Institute and Florida Power and Light. The comments generally supported the rulemaking. The “Discussion” section of this document includes NRC responses to significant stakeholder comments.

The NRC published the proposed rule, “License and Certificate of Compliance Terms” in the *Federal Register* on September 15, 2009 (74 FR 47126), for public comment. The NRC received five comment letters on the proposed rule. These comments and the NRC responses are discussed in Section III of this document, “Summary and Analysis of Public Comments on the Proposed Rule.”

## **II. Discussion**

### *A. What action is the NRC taking, and why?*

The NRC is revising Part 72 requirements for specific and general ISFSI licensees and Part 72 requirements pertaining to CoCs to enhance the effectiveness and efficiency of the licensing process.

For specific ISFSI licenses, the Commission is codifying a technical approach consistent with that applied in granting the 40-year exemptions for the Surry and H. B. Robinson specific ISFSI license renewals, so that all specific ISFSI licensees will have the flexibility to request initial and renewal terms not to exceed 40 years while ensuring safe and secure storage of spent nuclear fuel.

For CoCs, the Commission is also allowing the flexibility for CoC applicants and CoC holders to request, respectively, initial terms and renewal terms not to exceed 40 years. The

response to Question “C” of this section discusses the technical basis for this change. Under this change, applicants and CoC holders will be required to demonstrate that design and operational programs are suitable for the requested term. The NRC staff has developed a standard review plan (SRP) for renewal applications. The final rule amendments also clarify the term (length) of the general license, particularly, as the general license term relates to CoC renewals (see the response to Question “I” of this section for further detail).

For both specific licenses and CoCs, the final rule adds a requirement that renewal applicants must provide time-limited aging analyses (TLAAs) and a description of an aging management program (AMP) (see the responses to Questions “F”, “G”, and “H”) to ensure that storage casks will perform as designed under extended license terms.

The NRC is replacing the term “reapproval,” which is used to describe the process of extending the CoC terms, to “renewal” for consistency with specific license terminology.

Question “E” of this section discusses the rationale for this change.

The final rule will also allow general licensees to implement changes authorized by a CoC amendment to a previously loaded cask, provided that the loaded cask then conforms to the CoC amendment codified by the NRC in § 72.214 and thus, continues to ensure the safe and secure storage of spent nuclear fuel. Question “N” of this section discusses the rationale for this change.

*B. Whom does this action affect?*

The final rule will affect Part 72 specific and general licensees and CoC holders and applicants for a CoC.

*C. Why is the NRC increasing initial terms and renewal terms for specific ISFSI licenses from not to exceed 20 years to not to exceed 40 years?*

The NRC is amending § 72.42 to increase the initial terms and renewal terms for specific ISFSI licenses from not to exceed 20 years to not to exceed 40 years . This increase is consistent with the NRC staff's findings regarding the safety of spent nuclear fuel storage, as documented in the renewal exemptions issued to the Surry and H. B. Robinson ISFSIs. During the review for the Surry and H. B. Robinson renewal applications, the NRC staff evaluated the technical data resulting from an NRC-supported research program at the Idaho National Laboratory (INL), formerly Idaho National Engineering and Environmental Laboratory, and also considered experience with spent fuel storage casks used at Surry. Under the INL research program, INL opened a storage cask after the fuel had been stored for approximately 15 years. At Surry, several casks were also opened after less than 15 years of storage as a result of some faulty weather covers, which were corrected. Summaries of the findings regarding the condition of the fuel and cask components follow:

(1) Cladding creep is a time-dependent change in the dimension of the cladding resulting from high temperature and stress. It was considered as a potential degradation mechanism during storage. Confirmatory inspection of the spent fuel stored at INL verified that no cladding creep had occurred. The spent fuel in storage at Surry also supports this finding. The NRC staff expects very little to no fuel degradation at the end of an extended licensing period. The established limits for cladding temperature during storage and, continually decreasing level of cladding stress and temperature, further remove creep as a degradation mechanism. Assessment indicated that cladding creep would not be an issue.

(2) The NRC staff also expects limited degradation of other internal components because there are no significant corrosive influences in the inert environment, either for the fuel or for other components. The INL inspection verified that there was no indication of corrosion for any internal canister components. The NRC staff has also concluded that radiation levels are too low to significantly alter the properties of the metals for any storage canister

components.

(3) The other external components of the storage systems (which are exposed to weathering effects) would already be covered by an inspection and corrective action program, or routine maintenance, to ensure that any degradation will be identified and assessed for its importance to safety, and will be addressed through corrective actions to ensure continued safe operation of the storage system.

Based on these findings, the Commission concludes that, with appropriate aging management and maintenance programs, license terms not to exceed 40 years are reasonable and protect public health and safety.

*D. Can applicants apply for an initial term or renewal term greater than 40 years?*

This final rule amends § 72.42 by extending the term allowed for specific ISFSI licenses from not to exceed 20 years to not to exceed 40 years. This extension applies to both the initial terms and renewal terms. Any request for a term greater than 40 years would be processed as an exemption under § 72.7. The NRC does not plan to ordinarily grant license term requests for greater than 40 years. As discussed in Question “C” of this section, the NRC believes that terms that do not exceed 40 years are reasonable and provide adequate protection of public health and safety, if the applicant demonstrates to the NRC appropriate aging management and maintenance programs.

If an applicant requests a specific license term greater than 40 years, that applicant would have to provide information on the long-term material degradation of spent fuel storage casks, as well as associated aging management activities, to justify safe operation during such an extended period, and the NRC would need to evaluate this information.

*E. Why is the NRC changing the word “reapproval” to “renewal”?*

The NRC is changing the word “reapproval” to “renewal” in the final rule to be consistent with the terminology used in other license requirements under Part 72. Currently, § 72.240 uses “reapproval” to describe the process of extending the terms of CoCs. However, this terminology differs from other sections in Part 72. For example, § 72.42 uses the word “renewal” to define the process for extending the term of specific ISFSI licenses, and § 72.212(a)(3) uses “renewals” to define the process for the continued use of storage casks of a particular design under a general license. Although “reapproval” and “renewal” are similar words, they are subject to different regulatory interpretations. “Renewal” typically implies a process whereby the term of an existing license or CoC is extended. As such, a renewal reaffirms the original design basis, perhaps with some modifications. “Reapproval,” on the other hand, implies a process to reevaluate the original design basis in accordance with current review standards, which may be different from the standards in place when the cask design was initially certified.

In addition, the Statements of Consideration (SOC) for the final rule (55 FR 29184; July 18, 1990) that added the general license provisions to Part 72 stated that “[t]he procedure for reapproval of cask designs was not intended to repeat all the analyses required for the original approval.” The referenced SOC also reported that, “[t]he Commission believes that the staff should review spent fuel storage cask designs periodically to consider any new information, either generic to spent fuel storage or specific cask designs, that may have arisen since issuance of the Certificate of Compliance.” Clearly, measures would need to be taken if the “new information” involves safety concerns. These measures would depend on the nature of the safety concerns and the cask design. Requests for Additional Information (RAIs) may be generated during the renewal process to prompt applicants for CoC renewals to address such safety concerns.

The NRC recognizes that a cask design certified years ago may not meet the latest

standards, yet that design may be fully acceptable to continue to store spent fuel already loaded into casks of that design. If the cask design were subject to a reapproval process, and as such, to current standards, there is the possibility that certain components of the original design would not meet the current standards. Under this scenario, general licensees would be forced to remove the cask from service and repackage the spent fuel. Obviously, there are significant safety considerations if spent fuel were to be repackaged. When considering repackaging, safety considerations associated with the repackaging operation should be weighed against any safety concerns with leaving the spent fuel in its existing storage container. Although the NRC continuously updates its review standards, no compelling safety concerns have been identified to date that warrant the removal of spent fuel from a cask design that does not meet the latest review standards.

Thus, the NRC concludes that the review of extending the term of a currently approved cask design is more in the nature of a renewal, as it is based on the cask design standards in effect at the time the CoC was approved, rather than a reapproval, which is based on the current standards. By replacing the word “reapproval” with the word “renewal,” the final rule revisions will remove ambiguity from the process for extending the terms of CoCs.

*F. Why is the NRC adding a definition for the term “time-limited aging analyses” (TLAAs)?*

Stakeholders asked for a definition of TLAAs when they reviewed the initial guidance document for the Surry and H. B. Robinson specific ISFSI license renewals. TLAA is a process to assess systems, structures, and components (SSCs) important to safety which have a time-dependent operating life. This final rule adds a definition of TLAA to the Part 72 definitions section, § 72.3, and makes revisions to §§ 72.42(a)(1) and 72.240(c)(2), respectively, because TLAAs will be required for the renewal of a specific license and for the renewal of a spent fuel storage cask CoC.

*G. What is an “aging management program” (AMP)?*

An AMP is a program for addressing aging effects that may include prevention, mitigation, condition monitoring, and performance monitoring. The final rule adds a definition of AMP to the Part 72 definitions section, § 72.3, because SSCs must be evaluated to demonstrate that aging effects will not compromise the SSCs’ intended functions during the renewal period.

*H. Why is the NRC requiring an AMP?*

The NRC is amending §§ 72.42 and 72.240 to require that applicants for specific license and CoC renewals describe in their applications a program for the management of issues associated with aging that could adversely affect SSCs. In this regard, degradation of the SSCs at an ISFSI, such as degradation due to corrosion, radiation, and creep, are time-dependent mechanisms and are expected to be addressed in renewal applications. AMP requirements will ensure that SSCs will perform as designers intended during the renewal period. AMP requirements will be reflected in the terms, conditions and technical specifications of the renewed CoC and thus made applicable to the general licensee per 10 CFR 72.212(b). For specific licensees, AMP requirements will be reflected in the terms and conditions of the renewed specific license.

*I. Why is the NRC changing the 20-year general license term for cask designs approved for use under the general license provisions? When would a general license term begin and end?*

The final rule changes the 20-year general license term limit for the storage of spent fuel in casks fabricated under a CoC to be consistent with the revisions to CoC initial and renewal terms (which establish a CoC term not to exceed 40 years).

Under § 72.210, a general license for the storage of spent fuel in an ISFSI at power reactor sites is issued to those persons authorized to possess or operate nuclear power reactors under 10 CFR Parts 50 or 52. The general license is limited to that spent fuel which the general licensee is authorized to possess at the site under the Part 50 or 52 license for the site. The general license is further limited to storage of spent fuel in casks approved and fabricated under the provisions of Subpart L of Part 72; the approved cask designs are listed in § 72.214. Currently, the general licensee's authority to use a particular cask design under an approved CoC terminates 20 years after the date that the general licensee first uses the particular cask to store spent fuel, unless the cask's CoC is renewed, in which case the general license terminates 20 years after the CoC renewal date. In the event the cask's CoC were to expire, any loaded spent fuel storage casks of that design will need to be removed from service after a storage period not to exceed 20 years.

This final rule amends §§ 72.3 and 72.212(a)(3) to clarify the term of the general license and to match the term of the general license to the term of the applicable CoC. The final rule also amends § 72.3 by adding a definition for the phrase "the term certified by the cask's Certificate of Compliance," which is defined to mean, for a CoC that is not renewed, the period of time commencing with the CoC effective date and ending with the CoC expiration date, and for a renewed CoC, the period of time commencing with the most recent CoC renewal date and ending with the CoC expiration date.

The final rule amends § 72.212(a)(3) to clarify that the term of the general license runs through any renewal periods, unless otherwise specified in the CoC. In addition, the final rule also amends § 72.212(a)(3) to clarify that the general license term for those casks placed into service during the final renewal term of a CoC (i.e., during the CoC term immediately preceding the expiration of the CoC), or similarly, during the term of a CoC that is not renewed, begins when the cask is first used (i.e., when the cask is loaded with spent fuel) and expires after a

storage period not to exceed the length of “the term certified by the cask’s Certificate of Compliance.”

The following scenarios are provided as illustrative examples:

Scenario 1: The CoC has a term of 20 years. The general licensee places a cask into service at the end of the 19<sup>th</sup> year of the CoC term. The CoC is not renewed and expires at the end of the 20<sup>th</sup> year; that is 1 year after the general licensee loaded the cask. The term of a general license for a cask shall be for a storage period not to exceed the term certified by the cask’s CoC (i.e., for a CoC that is not renewed, the period of time commencing with the CoC effective date and ending with the CoC expiration date). Thus, in this scenario, the general license commences upon loading at the end of the 19<sup>th</sup> year and runs for 20 years (terminating 19 years after the date of the CoC expiration, giving a storage period of 20 years).

Scenario 2: The initial CoC has a term of 20 years. The CoC is renewed (by rulemaking amending the appropriate entry in § 72.214) for 40 years. The general licensee places a cask into service at the end of the 39<sup>th</sup> year of the renewal term. The CoC is not renewed a second time and as such, expires 40 years after the effective date of the renewal amendment to § 72.214 (here, 1 year after the general licensee loaded the cask). The term of a general license for a cask shall be for a storage period not to exceed the term certified by the cask’s CoC (i.e., for a renewed CoC, that is the period of time commencing with the most recent CoC renewal date and ending with the CoC expiration date). Thus, in this scenario, the term of the general license for the cask would commence upon loading and terminate 40 years after loading (in this case, 39 years after expiration of the CoC, giving a storage period of 40 years).

Scenario 3: The initial CoC has a term of 20 years. The CoC is then renewed for 40 years. The general licensee places a cask into service at the end of the 39<sup>th</sup> year of the renewal term. The CoC is then renewed a second time for an additional 40 years. In this case,

the general license would run through the second renewal period. Thus, the general license for that cask would commence upon loading and terminate at the expiration of the CoC (giving a storage period of 41 years).

Scenario 4: The initial CoC has a term of 20 years. The CoC is then renewed for 40 years. The general licensee places a cask into service at the end of the 39<sup>th</sup> year of the renewal term. The CoC is then renewed two more times, each additional CoC renewal term being for a 40-year period. In this case, the general license would run through both renewal periods. Thus, the general license for that cask would commence upon loading and terminate at the expiration of the CoC (giving a storage period of 81 years).

Scenario 5: The initial CoC has a term of 20 years. The CoC is then renewed for 40 years. The CoC is then renewed a second and final time, but only for a 30 year period. The general licensee places a cask into service at the end of the 29<sup>th</sup> year of the final renewal term. In this scenario, the general license for that cask would be for a storage period not to exceed the term certified by the cask's CoC (for a renewed CoC, that is the period of time commencing with the most recent CoC renewal date and ending with the CoC expiration date). Thus, in this scenario, the general license for this cask would commence upon loading and terminate 30 years after loading (in this case, 29 years after expiration of the CoC, giving a storage period of 30 years).

In short, the general license term for any given cask will be, at a minimum, for a storage period not to exceed "the term certified by the cask's CoC" (as that term is defined in § 72.3). The rationale for extending the general license through any CoC renewal term is two-fold. First, the extension of the general license through a CoC renewal term is premised upon the licensee implementing all appropriate aging management requirements. Second, the NRC concluded that the occupational risks of taking a cask out of service and repackaging the spent fuel into another storage cask exceed the risks of leaving the spent fuel in the original cask.

*J. Are there possible conflicts that could arise for storage cask designs that are granted a term extension that are also approved for a different term limit as a transportation package?*

The Commission raised this issue in its SRM for SECY-06-0152, dated August 14, 2006. The NRC staff does not foresee any possible conflicts. The current regulations in Part 72 encourage, but do not require, storage cask designs to have a compatible, approved transportation cask. So called “dual use” systems must be separately certified under the requirements in 10 CFR Part 71 (transportation) and Part 72 (storage). Typically, the only common item between these systems is the inner canister, which holds the spent fuel contents.

Part 71 certificates for transportation packages are issued for a 5-year term whereas Part 72 CoCs are issued for much longer periods (under the current regulations, all approved CoCs have 20-year terms; under this final rule, the CoC term is extended to a not to exceed 40-year term). For each transportation cask certified under 10 CFR Part 71, the CoC specifies “approved contents.” The description of the approved contents for a spent fuel transportation package defines the acceptable fuel types and characteristics and, typically, it is the condition of the fuel, not its age that determines its acceptability. Spent fuel stored in casks, even for extended terms, is not expected to experience any significant degradation that would affect its acceptability to be shipped in a suitable transportation cask. The Part 72 general design criteria require fuel retrievability (§ 72.122(l)) and for CoC applications, the design of the storage cask should consider, to the extent practicable, compatibility with removal of the stored spent fuel from a reactor site, transportation, and ultimate disposition by the Department of Energy (§ 72.236(m)). Based upon the NRC supported INL research program and the Surry and H. B. Robinson ISFSI renewal applications, the NRC staff has concluded that typical spent fuel can be safely stored in casks without appreciable degradation.

If the condition of spent fuel, or its storage canister, was believed to have degraded

during extended storage such that it no longer met the criteria for approved contents, a licensee would have other alternatives for transport of that spent fuel. A new or modified approved transportation cask might be used, or the fuel might be repackaged, to place it in an acceptable configuration.

*K. How does the NRC track cask expiration dates?*

Section 72.212(b)(2) of the final rule will require general licensees to register use of each cask with the Commission no later than 30 days after using that cask to store spent fuel. To register casks, licensees must submit their name and address, reactor license and docket numbers, the name and title of a person responsible for providing additional information concerning spent fuel storage under the general license, the cask certificate number, the amendment number, if applicable, cask model number, and the cask identification number. With this information, the Commission will know the loading and expiration dates of each cask. This information will also enable the NRC to schedule any necessary inspections and will permit the NRC to maintain an independent record of use for each cask.

*L. Who is responsible for applying for CoC renewals?*

The final rule retains the structure of the current rule which emphasizes that the certificate holder (the cask vendor) applies for cask renewal. If the certificate holder chooses not to apply for the renewal of a particular cask design or is no longer in business, a licensee, a licensee's representative, or another certificate holder may apply for renewal in its place. If the applicant for CoC renewal seeks to fabricate this cask design, it must satisfy the applicable requirements of Part 72, including establishment and maintenance of the requisite quality assurance (QA) program (general licensees may rely upon previously established Part 50 or 71 QA programs if they meet the requirements of §§ 72.140 and 72.174).

*M. Does the NRC have a definition for “terms, conditions, and specifications” as they relate to the CoC?*

The NRC does not include a definition for “terms, conditions, and specifications” in the final rule because these words are generic in nature, and are used in other parts of the NRC’s regulations without definition.

*N. Can a licensee apply CoC amendments to previously loaded casks?*

This final rule amends § 72.212(b) to clarify that general licensees may apply changes authorized by a CoC amendment to a previously loaded cask provided that the licensee demonstrates, through a written evaluation, that the cask meets the terms and conditions of the subject CoC amendment (i.e., the loaded cask must conform to the CoC amendment codified by the NRC in § 72.214).

*O. May a general licensee implement only some of the authorized changes in a CoC amendment without prior NRC approval?*

If a general licensee elects to apply the changes authorized by a CoC amendment to a previously loaded cask, then the cask, after the changes have been applied, must conform to the terms and conditions (including the technical specifications) of the CoC amendment. Partial or selective application of some of the authorized changes, but not others, requires prior NRC approval (in this case, the general licensee would apply for an exemption). The basis for allowing licensees to apply the changes authorized by a CoC amendment to a previously loaded cask without prior approval from the NRC is that the cask will remain in an analyzed condition if, after the changes have been applied, it conforms to the terms and conditions of the CoC amendment. The NRC has previously stated, “a spent fuel storage cask will be relied on

to provide safe confinement of radioactive material independent of a nuclear power reactor's site, so long as conditions of the Certificate of Compliance are met" (54 FR 19381; May 5, 1989). However, partial or selective application of a CoC amendment's changes could result in a cask that would be in an unanalyzed condition.

In a related issue, the NRC agrees with an industry comment raised in response to the publication of the draft preliminary rule text (73 FR 45173; August 4, 2008). The draft preliminary rule text required that a general licensee ensure that once the changes authorized by a CoC amendment had been applied to a previously loaded cask, that the cask then "fully conforms" to the terms and conditions of the CoC amendment. The industry comment raised the concern that the phrase "fully conforms" was overly restrictive and requiring conformance with all the changes authorized by a CoC amendment would not be feasible or logical in certain instances, namely, in those cases where the amended CoC requirements do not apply to that particular general licensee site or ISFSI (e.g., requirements for pressurized water reactors (PWR) fuel at a boiling water reactor (BWR) plant).

In light of this comment, the final rule language now requires that the cask, once CoC amendment changes have been applied, "conforms" to the terms and conditions of the CoC amendment. Thus, CoC amendment requirements for PWR fuel need not be met at a BWR plant.

Similarly, if the CoC amendment includes changes to the Technical Specifications for loading, general licensees may have difficulty demonstrating that the previously loaded cask complies with the new loading requirements. As revised by this final rule, § 72.212(b)(5) will require general licensees to perform written evaluations prior to applying the changes authorized by an amended CoC to a previously loaded cask. If the evaluation indicates that the loading conditions under the initial or older CoC amendment would not affect the ability of the previously loaded cask to meet the storage or unloading requirements of the newer CoC

amendment, then the cask would be considered as conforming with the terms and conditions of the newer CoC amendment without having to meet the new loading requirements.

*P. Do later CoC amendments encompass earlier CoC amendments?*

No, later CoC amendments do not encompass earlier amendments unless the language of the later CoC amendment expressly indicates otherwise. Generally, when the NRC reviews an amendment to a CoC, the NRC staff considers the changes associated with the amendment request only and limits its review to the bounding conditions of the analysis. Specific changes associated with earlier CoC amendments for previously loaded casks are not considered during the review process for a later amendment. Thus, depending on the nature of the changes, later amendments do not necessarily encompass earlier amendments and sometimes may be inconsistent with earlier amendments.

*Q. Why can't general licensees use the § 72.48 process to apply CoC amendment changes to previously loaded casks?*

The principal requirement of § 72.48 regarding changes to cask designs is that the desired changes do not result in a change in the terms, conditions, or specifications incorporated in the CoC. A previously loaded cask is bound by the terms, conditions, and technical specifications of the CoC applicable to that cask at the time the licensee loaded the cask. Thus, under § 72.48, a licensee may only make those cask design changes that do not result in a change to the terms, conditions, or specifications of the CoC under which the cask was loaded. The final rule will not amend § 72.48, but will amend § 72.212 by authorizing a general licensee to apply the changes authorized by a CoC amendment to a previously loaded cask, provided that after the changes have been applied, the cask conforms to the terms and conditions, including the technical specifications, of the CoC amendment.

*R. If a general licensee selects and purchases a cask fabricated under an earlier CoC amendment, but does not load the cask, can the general licensee adopt the most recent CoC amendment for the empty cask before loading it?*

Adoption of the most recent CoC amendment depends on the nature of the changes between the CoC amendment under which the cask system was fabricated and the most recent amendment. CoC amendments are routinely requested by cask manufacturers or vendors (also referred to as the certificate holders) to account for advances in cask design and technology. Some amendments will be associated with cask hardware changes. A cask system that was purchased under an older amendment may or may not be able to be modified to a cask system that meets the most recent amendment.

As revised by this final rule, § 72.212(b)(5) will require that general licensees perform written evaluations demonstrating that the cask, once loaded with spent fuel, will conform to the terms, conditions and specifications of a CoC or an amended CoC listed in § 72.214. In the case of an unloaded cask fabricated under the initial or earlier CoC amendment, the cask cannot be loaded under a later CoC amendment if the § 72.212(b)(5) evaluation shows that the cask, once loaded, will fail to meet the terms, conditions and specifications of the later CoC amendment. If the evaluation demonstrates that the terms, conditions and specifications of the later CoC amendment are met, then the cask can be loaded under the later CoC amendment.

*S. What are the NRC's plans for providing guidance and examples of aging analyses and AMPs to licensees?*

The NRC has developed NUREG-1927 entitled, "Standard Review Plan for Renewal of Independent Spent Fuel Storage Installation Licenses and Dry Cask Storage System Certificates of Compliance." This SRP provides guidance to the NRC staff in reviewing the

licensees' programs for managing the effects of aging on spent fuel storage casks or ISFSI sites. Aging analyses and AMPs are two components of an overall program for managing the effects of aging. Because applicants will need to submit a TLAA and a description of their program to manage the effects of aging when applying for renewal of either CoCs or specific licenses under the final rule, this SRP will also assist potential applicants in identifying parameters to be included in a renewal application and measures necessary to ensure that the cask or ISFSI can be operated during the renewal period without undue risk to the public health and safety. The SRP will be published following the publication of this final rule.

*T. Could the NRC maintain the current paragraph designations of § 72.212(b)?*

The NRC understands the burden arising from changing the paragraph designations of a regulation. However, the NRC is rearranging the provisions of § 72.212(b) to better organize regulatory requirements. For example, the final rule will group recordkeeping requirements at the end of § 72.212(b) rather than dispersing them among other requirements, as is currently the case. The NRC's intent for rearranging § 72.212(b) is to make this provision more user-friendly. These changes are documented in Table 1 located in Section IV (Item 4) of this document (Discussion of Final Amendments by Section under the discussion pertaining to § 72.212).

*U. When are licensees required to submit cask registration letters?*

Under final § 72.212(b)(2), general licensees must submit a cask registration letter no later than 30 days after using that cask to store spent fuel. One registration letter may be submitted for a campaign that loads more than one cask, provided that the letter lists the cask certificate number, the amendment number, the cask model number, and the cask identification number of each cask covered by the campaign.

In addition, under final § 72.212(b)(4), general licensees must submit a cask registration letter no later than 30 days after applying the changes authorized by an amended CoC to a previously loaded cask. One registration letter may be submitted for a campaign that applies CoC amendment changes to more than one cask, provided that the letter lists the cask certificate number, the amendment number to which the cask will conform, the cask model number, and the cask identification number of each cask covered by the campaign.

*V. If a CoC is not renewed, how long would general licensees have to remove casks of that design from service?*

For those cask storage systems for which renewals are not planned, general licensees should plan ahead to remove these cask storage systems from service at or before the termination of the general license (see the response to Question “I” above). Because users are most aware of the general cask schedule and the number of casks to be removed from service at their sites, users are in the best position to develop a reasonable schedule for the removal.

*W. When the NRC renews a CoC, are all amendments to that CoC simultaneously renewed as well?*

Section 72.214 lists one expiration date for each CoC. Amendments under a CoC may have different effective dates; however, they share the same certificate number and docket number. Therefore, when the NRC renews a CoC, all amendments to that CoC are renewed as well.

*X. If a general licensee applies for the renewal of a given CoC (assuming the certificate holder went out of business or chose not to apply for the renewal of a given CoC), and if the NRC approves the renewal of that CoC, is the renewed CoC available only to that general licensee or*

*is it available to all general licensees?*

CoCs are generic designs and approved by rulemaking. The renewed CoC will be available to all persons who hold a general license under § 72.210.

*Y. Can the requirements regarding TLAAs for CoC renewals be based upon a “current licensing basis” (CLB) patterned after 10 CFR Part 54?*

The NRC does not believe that the Part 54 CLB is the appropriate basis for TLAAs in support of CoC renewals. The NRC does not believe that it is appropriate for the CLB to be applied to cask CoC renewals, which are generic. The CLB is typically the set of NRC requirements applicable to a specific plant and a specific licensee’s written commitments for ensuring compliance with and operation within applicable NRC requirements, including the plant specific design basis (including all modifications and additions to regulatory commitments over the life of the license) that are docketed and in effect.

*Z. What is the status of the draft NRC Regulatory Issue Summary (RIS) 2007-26 which was issued on January 14, 2008 (73 FR 2281)?*

The NRC decided not to finalize the draft RIS 2007-26 because § 72.212(b) provides a path forward for implementation of later CoC amendments to previously loaded casks. An Enforcement Guidance Memorandum (EGM), dated September 15, 2009, was issued in conjunction with the publication of the proposed rule to provide guidance to NRC inspectors for exercising enforcement discretion concerning deficiencies related to implementing changes, authorized by CoC amendments to previously loaded casks, that occurred prior to issuance of the EGM.

### **III. Summary and Analysis of Public Comments on the Proposed Rule**

This section presents a summary of the public comments received on the proposed rule and supporting documents, the NRC's response to the comments, and changes made in the final rule and supporting documents as a result of these comments.

The NRC received five comment letters on the proposed rule. These comments came from the Nuclear Energy Institute, the U.S. Department of Energy, Exelon Nuclear, Decommissioning Plant Coalition, and the Prairie Island Indian Community. Three of the commenters supported the new regulation, while two of the commenters expressed concern about the proposed regulation. The commenters opposed to the proposed regulation were primarily concerned about the increased license term extension from 20 to 40 years for specific ISFSI licensees. One of these commenters also had questions about the environmental review process. The other commenters provided comments on different topics within the proposed rule, including the proposed CoC terms, the CoC renewal process, the CoC amendment process, TLAAs, and spent fuel storage in general. These commenters made observations about these topics and recommended areas within the proposed rule where the NRC could make improvements. Two commenters suggested revisions to the proposed rule language and the SOC.

Copies of the public comments are available for review in the NRC Public Document Room, 11555 Rockville Pike, Rockville, MD 20852-2738. A review of the comments and the NRC responses follow:

## **GENERAL SUPPORT**

### **Comment 1:**

A commenter agreed with the proposed amendments and stated that they are in the public interest and are consistent with scientific evidence. The commenter also noted that the proposed regulation would reduce the costs incurred by licensees and the NRC as a result of preparing and reviewing applications and exemption requests. The commenter stated that the proposed rule would provide the NRC and regulated entities with greater regulatory certainty.

**Response:**

The NRC agrees with the comment.

**GENERAL OPPOSITION**

**Comment 2:**

A commenter suggested that the proposed revisions would negatively and directly impact their community and expressed opposition to extending specific ISFSI licenses by 40 years. The commenter also indicated that the proposed rule, along with the “scrapping” of Yucca Mountain, would lead to permanent spent fuel storage at nuclear power reactor sites. In addition, the commenter urged that the 20-year initial and renewal terms should remain unchanged. The commenter suggested that a 20-year term better protects the public because the casks are monitored more frequently.

**Response:**

The NRC acknowledges the concerns raised by the commenter. The Commission believes there is reasonable assurance that spent fuel can be stored safely and without significant environmental impacts at ISFSIs during the extended license terms authorized by the final rule. This reasonable assurance is partly based on the technical data gained from an NRC

supported research program and field data. Details are discussed in the response to Question “C” of the “Discussion” section of this document. Furthermore, this final rule would require all licensees to identify time-dependent degradations of the ISFSI SSCs when they apply for license renewal. If any aging issues which could adversely affect SSCs are identified, the final rule requires the license renewal applicant to describe an aging management program in its license renewal application. The aging management program will address the prevention and mitigation of aging effects. The NRC staff will evaluate the aging management program and will only approve the renewal application if the aging management program is deemed adequate.

An aging management program would require licensees to monitor the casks and take other measures to ensure public health and safety. Aging management program requirements will be reflected in the terms and conditions of the renewed specific license, which are enforceable by NRC. The NRC will monitor the licensee’s compliance with the terms and conditions of the license through the NRC’s inspection program. The NRC concluded that, with appropriate aging management and maintenance programs, a license term up to 40 years is reasonable and provides adequate protection of public health and safety.

**Comment 3:**

A commenter stated that the proposed rule, “like the proposed revision of the Waste Confidence Rule,” validated the commenter’s earlier concerns raised during the initial licensing process for the ISFSI located near its tribal boundary and “exposes the false assurances that the ISFSI is an interim or temporary solution.” The commenter added that the Commission’s position is to “simply streamline approvals for extending the term that spent fuel can be stored at either onsite or offsite ISFSIs.” The commenter suggested that “regulatory requirements should be further enhanced rather than relaxed.”

**Response:**

The NRC has not made any regulatory or policy decision which states that the storage of spent fuel at ISFSIs obviates the need for a permanent repository of spent fuel and other high-level waste. The establishment of such a repository is a national policy decision and is beyond the scope of this rulemaking.

The extension of specific license terms in § 72.42 does not relax any regulatory requirements. The rationale for extending the terms for specific ISFSI licenses, for both initial terms and renewals, is set forth in the responses to Questions “C”, “D”, and “F-H”, in Section II of this document. The rule requires that any applicant for license renewal demonstrate the safety of the continued storage of spent fuel for the requested term through TLAAs and the establishment of an AMP. If the applicant demonstrates to the NRC appropriate aging management and maintenance programs, then the NRC has concluded that a renewal term up to 40 years is reasonable and provides adequate protection of public health and safety.

**COG TERMS AND RENEWAL PROCESS****Comment 4:**

A commenter stated that the term “unloaded cask” in the fifth paragraph of Section II, “Discussion,” Question “E”, of the proposed rule is unclear. The commenter asked whether the term “unloaded cask” is limited to a cask that has never been loaded or if it also includes a cask that has been used but subsequently unloaded of stored fuel. The commenter added that the review of a generic CoC renewal should not depend on whether or not a particular cask is unloaded. The commenter requested that the NRC delete the final sentence of the fifth paragraph of Section II, “Discussion,” Question “E.”

**Response:**

In the context of the response to Question “E”, the NRC considered the term “unloaded cask” to be either a cask that has never been loaded or one that was loaded and then subsequently unloaded. In any event, the NRC agrees with the comment. When a CoC is renewed by the NRC, it is the cask design that is being renewed. It does not matter whether the cask is loaded or not. Therefore, clarifying changes have been made to the response to Question “E”, including the deletion of the sentence which contains the term “unloaded cask.”

**Comment 5:**

Two commenters requested that NRC clarify Section II, “Discussion,” Questions “I” and “V” and Section III, “Discussion of Proposed Amendments by Section,” Item 4 and § 72.212(a)(3) of the proposed rule. These sections of the SOC and § 72.212(a)(3) address the relationship between the term of a general license, the CoC term and renewal, and the date an individual cask is loaded.

One of the commenters stated that “[i]ndustry believes that each individual cask should be permitted to be operated for the full design life of the cask, including the full renewal period.” The commenter stated that aging management requirements would be implemented during the renewal period. This commenter then provided two examples: the first, “a cask loaded under an active CoC with a 20-year initial term and not renewed should be permitted to be operated under a general license for 20 years from the date of initial use, no matter when that cask is placed into service;” and the second, “a cask loaded under an active CoC with a 20-year initial term and renewed for 40 years should be permitted to be operated under a general license for 60 years from the date of initial use, no matter when that cask is placed into service.”

The commenter then asserted that each cask is fabricated to meet a specific design life and that the “successful renewal of the CoC extends that design life provided all design and

maintenance parameters that were part of the renewal approval are met.” The commenter further asserts that the design life “does not begin for each individual cask until the cask is loaded, i.e., the cask is experiencing the conditions contemplated in design.” The commenter concluded that “forcing casks to be taken out of service at an arbitrary date would result in unnecessary fuel repackaging and occupational radiation exposition with no commensurate public health and safety benefit.”

The second commenter made a similar comment, stating that the “cask life should be solely based on the qualification of the cask, and not on the CoC expiration date.” The commenter then suggested that “the NRC consider evaluating the lifespan of the fuel storage system based on date of loading (i.e., activation of the system) of the cask system in compliance with all applicable terms, conditions, and specification, and not based on other external factors.”

**Response:**

The NRC agrees, in part, and disagrees, in part, with the comments. The Part 72 regulations do not define the term “design life.” Rather, the Part 72 regulatory scheme is based on licenses, specific and general, and the terms of those licenses. The general license term is premised upon the CoC in effect at the time the cask was placed into service (i.e., loaded with spent fuel and deployed onto the ISFSI pad). As explained in the response to Question “I” of Section II, the general license term, for loaded casks, will run through any consecutive CoC renewal terms as the occupational risk of unloading a cask and repackaging the spent fuel into another storage cask exceeds the risk of keeping the spent fuel in the original cask.

The NRC agrees with the first commenter’s statement regarding the implementation of aging management requirements during the renewal period. The NRC further agrees with the first commenter’s first example regarding a cask fabricated under a 20-year CoC term, which is

not renewed. Under both the current regulation and the regulation as revised by this final rule, the general license term for such a cask would be 20 years, regardless of when during the 20-year CoC term the cask is placed into service. Of course, after the CoC expires, casks of that design could no longer be placed into service.

The NRC disagrees with the second example and the commenter's rationale to support that example. The commenter states "a cask loaded under an active CoC with a 20-year initial term and renewed for 40 years should be permitted to be operated under a general license for 60 years from the date of initial use, *no matter when that cask is placed into service*" (emphasis added). The NRC does not agree that successful renewals of the CoC cumulatively extend the general license term for that cask (the commenter uses the term "design life," which the NRC assumes to be the equivalent of the general license term desired by the commenter). The commenter uses the example of a CoC that has an initial term of 20 years followed by a renewal term of 40 years. The commenter then asserts that the design life of the cask would be 60 years. Thus, under this reasoning, a cask placed into service the day before the renewed CoC expires could be in service for 60 years. Essentially, the commenter appears to be asserting that the regulatory scheme should allow cumulative terms, such that each successive renewal of the CoC adds to the design life of the cask, and thus, to the term of the general license.

The intent of the amendments implemented by the final rule is that the use of a cask is determined by the general license term, which in turn is determined by the term specified in the applicable CoC in effect at the time the cask is placed into service; the general license term is not determined by adding all the successive CoC renewal terms to the initial CoC term. The term of the general license for any cask placed into service during a CoC renewal term is based upon the length of the renewal term (renewal date to expiration). Thus, if a CoC is renewed for

40 years and a cask fabricated under that CoC is placed into service during the 39<sup>th</sup> year of the renewal term, the general license for that cask would be 40 years.

According to the commenter, if the initial term of the CoC was 20 years, and the CoC was then renewed twice, each time for 40 years, then a cask placed into service on the last day of the second renewal period would have a general license of 100 years (essentially, 100 years beyond the CoC expiration date). It is not the intent of the NRC to allow for such extended, cumulative license terms.<sup>1</sup> Such an interpretation of the regulatory scheme implemented by this final rule is well beyond the regulatory norm and is not aligned with the stated purpose of this rulemaking, which was to extend specific license terms from not to exceed 20 years to not to exceed 40 years and then to make the terms of CoCs and general licenses equal with those of specific licenses.

The NRC disagrees with the second commenter, who stated that “cask life should be solely based on the qualification of the cask, and not on the CoC expiration date.” In this regard, the NRC will allow for casks already in service, i.e., those already loaded prior to any given CoC renewal, to remain in service through any future renewal periods, given that the occupational hazards associated with unloading a cask and repackaging the spent fuel into another storage cask exceed the risks of leaving that fuel in the original cask. However, this is not the same as allowing an unloaded cask (i.e., either a new cask or one formerly loaded and then subsequently unloaded) to be placed into service for a cumulative term that is equal to the length of the initial term and all renewal terms. The intent of this final rule is that the general

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<sup>1</sup> As background, see the response to Question 21 in the July 18, 1990 (55 FR 29186), final rule that promulgated Subparts K and L of Part 72. In particular, the NRC stated that “the 20-year storage period will also apply to new casks put into use after a Certificate of Compliance is reapproved.” Clearly, there was no intent that the storage period for a cask placed into service during the renewal term was to be for a term that was equal to the initial term plus the renewal term.

license term for any cask placed into service shall not be longer than the term certified by the then effective CoC, unless that CoC is renewed after that cask has been placed into service—in which case, the general license will terminate at the expiration of the CoC (i.e., at the end of the final CoC renewal term). Please see the response to Question “I” of this document for additional details, including examples of various general license scenarios.

In response to these comments, this final rule amends § 72.212(a)(3) to include clarifying language regarding general license terms and similarly, adds a definition of the phrase “the term certified by the cask’s Certificate of Compliance” to the Part 72 definitions section, § 72.3.

**Comment 6:**

A commenter requested that the NRC clarify the QA program requirements for general licensees that seek to fabricate casks (as discussed in Section II, “Discussion,” Question “L” of the proposed rule). The commenter asked whether a general licensee that seeks to fabricate a cask under its Part 50 QA program may apply its Part 50 QA program as long as it governs Part 72 activities.

**Response:**

Section 72.140 sets forth the requirements of a Part 72 QA program. Under § 72.140(d), a QA program previously approved by the Commission as satisfying the requirements of Appendix B to Part 50 or Subpart H of Part 71 will be accepted as satisfying the requirements of § 72.140(b), provided that the general licensee or other applicant meets the recordkeeping requirements of § 72.174. In filing the description of the QA program required by § 72.140(c), a general licensee who seeks to fabricate casks under a renewed CoC must notify the NRC, in accordance with § 72.4, of its intent to apply its previously-approved QA

program to Part 72 activities. The notification shall identify the previously-approved QA program by date of submittal to the Commission, docket number, and date of Commission approval.

**Comment 7:**

A commenter suggested that the word “terms” in the phrase “terms, conditions, and specifications” may be confused with the word “term” as in the “term certified in the cask CoC.” The commenter requested that the NRC revise Section III, “Discussion of Proposed Amendments by Section,” Item 4 to address this issue. The commenter requested that the NRC add a definition to § 72.3 for the phrase “term certified by the cask’s Certificate of Compliance.”

**Response:**

The NRC agrees that clarification is needed. The NRC added the following definition to § 72.3:

*“Term certified by the cask’s Certificate of Compliance, for the purposes of this part, means, for an initial CoC, the period of time commencing with the CoC effective date and ending with the CoC expiration date, and for a renewed CoC, the period of time commencing with the most recent CoC renewal date and ending with the CoC expiration date.”*

**Comment 8:**

One commenter asked if a “cask user or user’s representative” renews a CoC, then would that user or user’s representative become the CoC holder and, as a result, obtain all CoC holder responsibilities. In particular, the commenter questioned whether the user or user’s

representative would assume responsibility for cask Final Safety Analysis Report (FSAR) updating and reporting requirements under § 72.48.

**Response:**

In the SOC for the July 18, 1990, final rule which promulgated Subparts K and L of Part 72, the NRC stated its expectation that the cask vendor, if still in business and fabricating the subject cask design, would apply for cask renewal (55 FR 29184; July 18, 1990). If the certificate holder is no longer in business or chooses not to apply for the renewal of a particular cask design, then a cask user or user's representative (i.e., the licensee or licensee's representative) could apply to renew a CoC. If approved by the NRC, the cask user or representative would then become the CoC holder. In this capacity, the cask user or representative absorbs all CoC holder responsibilities, such as cask FSAR updating and reporting requirements under § 72.48.

**COC AMENDMENT PROCESS**

**Comment 9:**

A commenter objected to a sentence in the first paragraph of Section II, "Discussion," Question "O" that stated, "However, partial or selective application of a CoC amendment's changes would result in a cask that would be in an unanalyzed condition." The commenter asserted that this sentence was a "significant overstatement" as not all partial or selective application of a CoC amendment's changes would result in the cask being in an unanalyzed condition. The commenter requested that the sentence be deleted or that the first instance of "would" be replaced with the word "could."

**Response:**

The NRC agrees with the comment that, depending on the nature of changes in the amendment, partial or selective application of a CoC amendment's changes may not always result in the cask being in an unanalyzed condition. To minimize the possibility of the cask being in an unanalyzed condition, however, the general licensee is required to apply for an exemption in those cases where the general licensee seeks such a partial or selective application of the changes authorized by a later CoC amendment to a previously loaded cask. The NRC has revised the sentence in Section II, "Discussion," Question "O" of this document as follows:

"However, partial or selective application of a CoC amendment's changes could result in a cask that would be in an unanalyzed condition."

**Comment 10:**

A commenter suggested that the NRC should consider including in CoC amendments language addressing whether or not the CoC amendment encompasses all requirements of the initial CoC and previous amendments. The commenter asserted that such CoC amendment language would "significantly simplify" the adoption process for general licensees, "especially in cases where only the contents have changed and no cask hardware modifications are involved."

**Response:**

The approach suggested by the commenter is not within the scope of this rulemaking, as the commenter's recommended language would be placed within the text of the CoC amendment, not the NRC regulations. Moreover, the NRC has considered a process that requires the application of every Part 72 CoC amendment to include a basis which proposes

the applicability of the proposed amendment to previously loaded casks. The NRC staff's acceptance of the proposed applicability and its basis would then be documented in the CoC amendment and in the accompanying Safety Evaluation Report (SER). However, the NRC staff has concluded that conducting the requisite analyses to evaluate each prior CoC amendment in relation to the new amendment would impose more burdens on both the NRC and applicants as compared to the process in the final rule.

**Comment 11:**

With respect to Section II, "Discussion," Question "W" of the proposed rule, a commenter asked whether, after the renewal of a CoC, subsequent amendments to that CoC continue the existing amendment numbering or if the numbering for these amendments "start over" as the first amendment against the renewed CoC.

**Response:**

After a CoC is renewed, subsequent amendments to that CoC will continue with the existing numbering. For example, if there are seven amendments under a CoC before renewal, the next amendment, under the same CoC after renewal, will be Amendment No. 8.

**Comment 12:**

A commenter provided comments as requested under Section II, "Discussion," Question "AA" of the proposed rule. Question "AA" is not included in the SOC of this final rule because it was intended only to solicit comments on the particular items identified. Question "AA" solicited public comment on whether or not the evaluation required by proposed § 72.212(b)(5) should be reviewed and approved by the NRC. The commenter does not support NRC review of "evaluations performed pursuant to § 72.212(b)(5) to apply a later CoC amendment to

previously loaded casks.” The commenter suggested that NRC review of these evaluations would be “inappropriate and contrary to the concept of a general licensee.” The commenter stated that the NRC approves CoC amendments and that § 72.212 evaluations, and revisions to these evaluations, “are reviewed by NRC under the inspection program, at NRC’s discretion.”

**Response:**

The NRC agrees with the comment. The amendments implemented by this final rule do not require any prior NRC review or approval of the evaluations conducted by a general licensee pursuant to § 72.212(b)(5). After a general licensee has made the findings required by § 72.212(b)(5)(i)-(iii), it may apply the changes authorized by a later CoC amendment to a previously loaded cask. Of course, the NRC may review these evaluations through the NRC inspection program.

**Comment 13:**

A commenter described the proposed language in § 72.212(b)(7) that states, “and revise it to add a requirement to evaluate any changes to the site parameters determination and analyses required by § 72.212(b)(6),” as unnecessary and requested that the language of § 72.212(b)(7) be simplified. The commenter recommended that the NRC revise § 72.212(b)(7) from “paragraph (b)(5) of this section” to “paragraphs (b)(5) and (b)(6) of this section.”

**Response:**

The NRC agrees with the comment that § 72.212(b)(7) could be clarified by modifying the first sentence. Therefore, the NRC revised the first sentence of § 72.212(b)(7) as follows:

“Evaluate any changes to the written evaluations required by paragraphs (b)(5) and (b)(6) of this section using the requirements of § 72.48(c).”

**Comment 14:**

A commenter stated that the proposed 30-day timeframes for licensees to notify the NRC of the initial use of a cask and the application of a later CoC amendment to a previously loaded cask will cause the licensee an “unnecessary administrative burden.” Specifically, the commenter argued that the proposed rule language would require licensees to send two separate notifications into the NRC: (1) for new casks, licensees would need to notify the NRC within 30 days of deployment; and (2) for previously loaded casks, licensees would need to notify the NRC within 30 days of applying the changes authorized by a CoC amendment to a previously loaded cask. The commenter noted that applying the changes authorized by a CoC amendment to previously loaded casks is usually part of a larger campaign that includes deploying new casks. The commenter stated that allowing “120 days for both notifications would allow general licensees to combine these two notifications into one, in most cases.”

**Response:**

The NRC does not agree that the requirement to prepare two letters, one covering loading the new casks, and the second covering the application of the changes authorized by a later CoC amendment to previously loaded casks, is particularly burdensome. The NRC staff has concluded that the 30-day timeframe is a reasonable requirement.

The NRC acknowledges that applying the changes authorized by a later CoC amendment to previously loaded casks may be connected to a cask loading campaign. If the general licensee is loading new casks fabricated under a given CoC amendment and the changes authorized by that CoC amendment are also applied to previously loaded casks at the same time as explained by the commenter, one registration letter may be sufficient for that whole campaign, provided that the letter lists the cask certificate number, the appropriate CoC

amendment number, the cask model number, and the cask identification number of each cask, both new and previously loaded.

The commenter states that the § 72.212(b)(5) report, which would cover both the loading of the new casks and the implementation of the changes to the previously loaded casks, would be prepared well in advance of the loading campaign. Sections 72.212(b)(2) and (4), however, require the registration of the use of new casks and the application of changes authorized by a later CoC amendment to previously loaded casks, no later than 30 days after the action—not 30 days after the completion of the § 72.212(b)(5) report. Thus, even if the § 72.212(b)(5) evaluation report was completed well in advance of the campaign, the general licensee could time its actions such that changes to the previously loaded casks would be implemented at or near the same time that the new casks are deployed; and as such, have both parts of the campaign covered in one letter. In the event that the general licensee cannot time the loading of the new casks with the implementation of the changes authorized by the latter CoC amendment so as to have both actions covered by one 30-day letter, the licensee will be required to prepare two letters.

**Comment 15:**

A commenter requested that the NRC remove the word “all” from the first sentence of § 72.212(b)(4) to be consistent with the discussion provided in Section II, Question “O” of the proposed rule.

**Response:**

The NRC agrees with the comment that, in order to be consistent, the word “all” should be removed in the first sentence of § 72.212(b)(4). The NRC revised § 72.212(b)(4) accordingly.

**Comment 16:**

A commenter stated that § 72.212(b)(4) is unclear with regard to when the 30-day “clock” starts for licensees to notify the NRC. The commenter added that § 72.212(b)(4) is inconsistent with the wording used in § 72.212(b)(2). The commenter suggested the following language to replace the first sentence in § 72.212(b)(4): “Register each cask with the Nuclear Regulatory Commission no later than 30 days after applying the changes authorized by an amended CoC to a cask loaded under the initial or an earlier amended CoC.”

**Response:**

The NRC disagrees with the comment. The 30-day clock starts after the application of changes authorized by the CoC amendment to the previously loaded cask (a cask loaded under the initial CoC or an earlier CoC amendment). The language suggested by the commenter is not sufficient because there is no direct nexus between the phrase “each cask” with the phrase “the changes authorized by an amended CoC to a cask loaded under the initial or an earlier amended CoC.” The NRC concludes that the regulatory language of § 72.212(b)(4) is clear and will not be revised other than the deletion of the word “all” from the first sentence (as described in the response to Comment No. 15).

**Comment 17:**

A commenter stated that the proposed wording of § 72.212(b)(7) is unnecessarily complex and recommended the following language: “Changes to the written evaluations required by § 72.212(b)(5) of this section shall be reviewed in accordance with § 72.48(c), as applicable.” As an alternative, the commenter recommended that the NRC change the first word of this section of the proposed rule from “evaluate” to “review.” The commenter

suggested this revision because some general licensees could interpret the word “evaluate” as requiring a full § 72.48 evaluation, regardless of the nature of the change to the document.

**Response:**

The NRC disagrees with the comment. In response to Comment 13 the NRC revised § 72.212(b)(7) to read as follows:

“Evaluate any changes to the written evaluations required by paragraphs (b)(5) and (b)(6) of this section using the requirements of § 72.48(c).”

Both the language of the proposed rule and the above revised language follow the same logic and pattern as the regulatory language in effect before this final rule’s effective date (§ 72.212(b)(2)(ii) (2009)). The intent of this amendment was only to renumber the provision from § 72.212(b)(2)(ii) to § 72.212(b)(7) and make related clarifying changes (such as the reference to § 72.212(b)(6)). It is not the NRC’s intent to change the substantive meaning of this provision, and as such, the NRC does not agree with changing the word “evaluate” to “review.”

**Comment 18:**

A commenter stated that the addition of the phrase “and, for those casks to which the licensee has applied the changes of an amended CoC, the amended CoC” to § 72.212(b)(11) is unnecessary. The commenter suggested the following language instead: “Maintain a copy of the CoC and each amended CoC(s) applicable to casks loaded and deployed at the ISFSI, and the documents referenced in such Certificates for each cask model used for the storage of spent fuel until use of the cask model is discontinued.”

**Response:**

The NRC disagrees with the comment because CoC amendments may have a different design basis from the initial CoC as well as each other. Consequently, it is necessary for general licensees to maintain the initial CoC (along with documents referenced in the initial CoC) for those casks operating under the terms and conditions of the initial CoC and for those casks operating under the terms and conditions of a given CoC amendment, to maintain that CoC amendment (along with documents referenced in the amended CoC).

**Comment 19:**

A commenter stated that the rule applies to facilities that have one or more operating reactors. The commenter expressed concern that the proposed regulation would create unneeded burdens for permanently shut-down reactor sites. The commenter suggested that the NRC modify the proposed language in § 72.212(b) to address this issue, but did not provide alternative language. Specifically, the commenter raised concerns about the application of changes authorized by a later CoC amendment to a cask loaded under the initial CoC amendment or an earlier CoC amendment thereto (a “previously loaded cask”).

**Response:**

Part 72 does not draw a distinction between an operating facility and a decommissioned facility. The Part 72 regulations make a distinction between specific licenses and general licenses. Under § 72.210, a holder of a Part 50 or 52 power reactor license holds a Part 72 general license. Section 72.212 sets forth the conditions of a general license. If a decommissioned facility does not have an active Part 50 or 52 license, it would then not have a Part 72 general license; most likely, the facility would be operating under a specific Part 72 license. The application of changes authorized by a CoC amendment to a previously loaded

cask is not applicable to a specific license ISFSI, as those provisions of the final rule only apply to general licenses.

In the case of a decommissioned facility that does operate under a Part 50 or 52 license, and thus, has a Part 72 general license, this rule would apply to the same extent as it would for any other Part 50 or Part 52 licensee. In this regard, there is no reason to treat a generally licensed ISFSI at a decommissioned site any differently than a generally licensed ISFSI at an active Part 50 or 52 facility.

The commenter may have assumed that this rule requires general licensees to apply the changes authorized by a CoC amendment to any previously loaded casks within the licensee's control. This is not correct. Under this final rule, the application of the changes authorized by a CoC amendment to a previously loaded cask is at the discretion of the general licensee; unless otherwise directed by the NRC, the general licensee can choose to continue to use the cask in accordance with the CoC under which the cask was loaded.

## **TIME-LIMITED AGING ANALYSES AND AGING MANAGEMENT PROGRAMS**

### **Comment 20:**

A commenter asked the NRC to clarify when aging management requirements apply to casks, such as a cask placed into service during the renewal term of a CoC.

### **Response:**

Aging management requirements only apply after the cask is in service for the length of time equal to the term certified by the cask's initial CoC. For example, if the term of the initial CoC is 20 years, and a cask is placed into service at the end of the 19<sup>th</sup> year, then the general licensee would need to begin implementing the appropriate aging management requirements at

the end of the 39<sup>th</sup> year, assuming the CoC was renewed. The appropriate time to initiate the aging management requirements will be identified in the NRC approval of a CoC renewal application. Specifically, the aging management requirements will be made conditions or specifications of the CoC and thus applicable to general licensees per § 72.212(b). The response to Question “H” in Section II was revised in light of this comment.

**Comment 21:**

A commenter stated that the TLAAs for CoC renewals should be based on the CLB for the cask. The commenter described the CLB for the cask as the “original regulatory framework (i.e., the regulations, review guidance, and the associated SER(s)) under which the cask design, including amendments, was approved, plus any mandated or voluntary changes applied thereafter, as tracked by the CoC holder and discussed in the cask FSAR.” The commenter requested that the NRC clarify that at the time of renewal, the TLAAs do not have to adopt the latest regulatory framework unless that is part of the cask’s CLB.

**Response:**

The amendments to this final rule do not include a definition for CLB. The cask designs approved, both initially and for renewal, under the provisions of Subpart L of Part 72 are generic in nature. The CLB is appropriate for site specific licensing actions, not generic cask designs.

The certificate holder must submit the TLAA when it applies for renewal of a given CoC (for a CoC renewal that encompasses CoC amendments that each may have different design basis, the certificate holder will have to address how the TLAA applies to each CoC amendment covered by the CoC). The TLAA is an implicit part of any new storage canister evaluation even though it is not explicitly identified in the existing regulations. This may be illustrated by consideration of operationally induced degradation. Specifically, applicants must consider

operationally induced degradation and its effects as part of the new design engineering process. Such an evaluation becomes part of the applicants' demonstration that a new cask design will perform as specified throughout its initial license period.

For a renewal, the applicant bears the same burden of showing that the materials of construction (or components) will perform as required during the extended operational period. This extended operational life may not have been addressed in the original design consideration. Consequently, TLAs (and other issues) were explicitly identified in the proposed regulations. The evaluation effort for renewal shifts its focus from material selection, as would be the case for a new design certification, to existing material condition/degradation assessment. The NRC staff determined that this subtle but important distinction be clearly identified.

**Comment 22:**

A commenter requested that the NRC clarify what is meant by the term "site aging issues," as stated in Section II, "Discussion," Question "AA" of the proposed rule. The commenter stated that CoC holders should identify the cask design features that are subject to age-related degradation and address them in a bounding manner for use of a cask beyond the initial CoC term. The commenter suggested that cask users review the CoC holder's aging analysis and perform their own analyses to supplement or supersede the CoC holder's generic analysis.

**Response:**

To clarify the NRC's intent, the statement in the response to Section II, "Discussion," Question "AA" of the proposed rule should have read: "site specific aging issues" rather than "site aging issues." The NRC asked whether the requirement for an AMP for CoC renewals

should fully address possible aging issues related to a general licensee's specific site (e.g., different environmental conditions).

The NRC agrees with the comment that CoC holders should identify the cask design features that are subject to age-related degradation and address them in a bounding manner for use of a cask beyond the initial CoC term. The NRC further agrees that general licensees should review the CoC holder's aging analysis and perform their own analyses to supplement or impose upon themselves a more restrictive analysis, but they cannot supersede the CoC holder's analysis. Therefore, the general licensees' analyses would address possible aging issues at their sites.

Question "AA" is not included in the SOC of this final rule because it was intended only to solicit comments on the particular items identified.

**Comment 23:**

A commenter stated that AMP requirements, aging analyses, and other technical documents should be evaluated for a 20-year license renewal term instead of the proposed 40-year license renewal term.

**Response:**

The basis for the NRC to increase specific ISFSI license terms from not to exceed 20 years to not to exceed 40 years is discussed in Question "C" of the "Discussion" section of the proposed rule. The NRC staff concluded that, with appropriate aging management and maintenance programs, license terms up to 40 years are reasonable and provide adequate protection of public health and safety.

**GENERAL COMMENTS REGARDING SPENT FUEL STORAGE**

**Comment 24:**

A commenter disagreed with the proposed rule's allowance for unlimited specific license renewals. The commenter expressed concern that the "indefinite nature of the length of time" the NRC describes for storage at an ISFSI could create a "national landscape of ISFSIs" at decommissioned sites. The commenter added that indefinite storage of fuel at ISFSIs is in conflict with "the Commission's long held policy that it 'does not intend to support storage of spent fuel for an indefinitely long period.'" The commenter also suggested that the NRC clearly state this policy in the Supplemental Information of the final rule document so that the "Commission's intent is clear and consistent across its regulatory landscape, including its Waste Confidence decision." The commenter stated that since 1998, the "federal government has had the obligation, by contract, to remove spent fuel and greater than class C waste from" nuclear power plant sites. The commenter urged the NRC to maintain its expectation "that these sites and future like sites not proliferate and linger as de facto long-term storage facilities."

**Response:**

Please see the response to Comment 3.

**Comment 25:**

A commenter agreed with the NRC that, with appropriate aging management and maintenance programs, 40-year licenses "are reasonable and protect public health and safety and the environment."

**Response:**

The NRC acknowledges the commenter's support for the not to exceed 40-year license terms.

## **ENVIRONMENTAL REVIEW**

### **Comment 26:**

A commenter stated that it is unclear how the requirements of the National Environmental Policy Act (NEPA) will be met. The commenter asked if licensees are required to submit an environmental report with their 40-year license renewal. The commenter concluded that license renewals should include a public environmental review process, such as a draft environmental assessment posted for public comment.

### **Response:**

The NRC implements its obligations under NEPA through its regulations in 10 CFR Part 51. When a licensee applies for the renewal of a specific ISFSI license, the licensee is required to submit an environmental report under § 51.60(b)(1)(iii).

Under §§ 51.26, 51.27, 51.28, 51.29, 51.73 and 51.74, if the NRC prepares an environmental impact statement (EIS), the most comprehensive of the NEPA analyses, public participation would be required (the above provisions concern publication of a notice of intent, scoping, a request for comments on the draft EIS, and distribution of the draft EIS). If the NRC staff does not prepare an EIS, as determined by NRC staff's environmental assessment (EA), it will issue a finding of no significant impact (FONSI). The NRC may issue the FONSI in draft form, which will include a request for public comments (§ 51.33). Issuing a draft FONSI is discretionary with the NRC. After a FONSI is finalized, it must be published in the *Federal Register* (§ 51.35).

## MISCELLANEOUS ITEMS AND RULE LANGUAGE REVISIONS

### **Comment 27:**

A commenter stated that, contrary to the first sentence of Section II, "Discussion," Question "K" of the proposed rule, the current regulations do not require general licensees to maintain or submit a cask loading schedule to the NRC. The commenter requested that the NRC delete this language or revise the wording.

### **Response:**

The intent of the response to Question "K" of the proposed rule was to inform readers that general licensees keep track of loading and expiration dates of each loaded cask. The NRC understands, however, that this is not an express regulatory requirement. As such, the NRC has rephrased Question "K" to ask how the NRC tracks cask expiration dates and has made clarifying changes to the response to Question "K." The registration letters required by the regulations, as amended by this final rule, provides the NRC with the requisite information to track cask expiration dates.

### **Comment 28:**

A commenter suggested that in Section II, "Discussion," Question "T" of the proposed rule, the regulation should include a provision to permit licensees with existing § 72.212 reports to maintain the current regulatory numbering system and not have to revise these reports to reflect the redesignated sections within the proposed regulation.

### **Response:**

The NRC disagrees with the comment that a provision be added to the regulations. There is no requirement to revise past § 72.212 reports to reflect the redesignation of provisions in § 72.212(b) resulting from the amendments of this final rule. Past § 72.212 reports can remain formatted to the regulation that was in effect at the time the report was written. Section 72.212 reports written after the effective date of this final rule must conform to the redesignations in the final rule.

**Comment 29:**

A commenter stated that the phrase “no later than 30 days after using (loading) that cask” in Section II, “Discussion,” Question “U” of the proposed rule and § 72.212(b)(2) is too vague. The commenter suggested replacing the above language with the following: “placing the cask in storage at the ISFSI” to clearly establish a start date.

**Response:**

In response to the commenter, the NRC is not going to change the rule text; this rule language has been in effect since 1990 without any controversy. Rather, the NRC is clarifying its response to Question “U” of this document by removing the term “loading” from the response. It is the NRC’s position that the 30-day clock starts when the loaded cask has been deployed in the ISFSI.

**Comment 30:**

A commenter stated that the phrase “casks of that design” as used in § 72.212(a)(3) is unclear. The commenter recommended that the phrase be clarified or revised to be consistent with the language used earlier in the section, “cask[s] fabricated under a Certificate of

Compliance.” The commenter added that if the same meaning is not intended, then the NRC should define the two phrases in § 72.3.

**Response:**

The NRC agrees with the comment that the terminology in § 72.212(a)(3) is not consistent; the NRC intended for the meaning to be the same in both instances. The NRC has revised § 72.212(a)(3) and it no longer contains the phrase “casks of that design.”

**Comment 31:**

A commenter asked whether “cask user or user’s representative,” as used in § 72.212(a)(3), is equivalent to the term “any licensee,” as used in § 72.240(a). The commenter concluded that if these terms are equivalent, then the NRC should use the same term in both sections of the rule.

**Response:**

The final rule makes several revisions to § 72.212(a)(3), including deletion of the language referring to “any cask user or user’s representative.” The NRC staff concluded that this language was redundant of the language in § 72.240(a). This final rule also revises § 72.240(a) to allow a licensee, a licensee’s representative, or another certificate holder to apply for a cask renewal in the event that the original certificate holder is either no longer in business or chooses not to apply for renewal of the cask.

**Comment 32:**

A commenter requested that in § 72.212(b)(8), the NRC change “§ 50.59(c)(2)” to “§ 50.59(c).” The commenter suggested that the review of cask storage activities may require a full evaluation under § 50.59, which includes §50.59(c)(1).

**Response:**

The NRC agrees with the comment. Section 72.212(b)(8) has been changed accordingly.

**Comment 33:**

A commenter asked whether the phrase “a new protected area” in section § 72.212(b)(9)(iii) only applies to an ISFSI located outside a nuclear power plant’s protected area. The commenter requested that the NRC clarify this phrase.

**Response:**

The phrase “a new protected area” in § 72.212(b)(9)(iii) applies only to an ISFSI that is physically separate from a reactor’s protected area. As a further point of clarification, all references to “new protected area(s)” in § 72.212(b)(9) apply only to an ISFSI physically separate from a reactor’s protected area. The NRC notes that the phrase “new protected area” has been part of the regulatory language since the rule was promulgated in 1990. The intent of this final rule is only to renumber § 72.212(b)(5)(iii) to § 72.212(b)(9)(iii). As additional background, the March 27, 2009, power reactor security rule (74 FR 13926, 13970) revised § 72.212(b)(5)(iii) to update the cross reference to the applicable Part 73 section and add the word “personnel” before the word “searches.”

**Comment 34:**

A commenter stated that § 72.212(b)(12) uses the terms “cask supplier” and “cask vendor.” The commenter suggested that these terms are inconsistent with the term “CoC holder,” which the NRC uses elsewhere in the proposed rule. The commenter concluded that the terminology should be consistent throughout the rule.

**Response:**

The NRC agrees with the comment that the terminology should be consistent. Therefore, the NRC has replaced the terms “cask supplier” and “cask vendor” in § 72.212(b)(12) with the term “CoC holder.”

#### **IV. Discussion of Final Amendments by Section**

1. Section 72.3, Definitions.

The final rule adds definitions for “Aging management program,” “Term certified by the cask’s Certificate of Compliance,” and “Time-limited aging analyses.”

2. Section 72.24, Contents of application; Technical information.

The amendment to § 72.24(c) requires applicants seeking initial specific licenses or specific licensees seeking renewals to demonstrate in sufficient detail that the design of the ISFSI or monitored retrievable storage installation (MRS) is capable of performing the intended functions for the term requested in the application.

3. Section 72.42, Duration of license; renewal.

The amendment to § 72.42(a) extends the term for both an initial specific license and a license renewal from a term of not to exceed 20 years to a term not to exceed 40 years. The

final rule also adds a requirement that specific licensees seeking renewals submit a TLAA and a description of the AMP. Any license renewal application will be required to include an analysis that considers the effects of aging on SSCs important to safety for the requested renewal term.

The amendment to § 72.42(b) requires license renewal applications to include design bases information as documented in the most recently updated FSAR, as required by § 72.70.

4. Section 72.212, Conditions of general license issued under § 72.210.

The final rule makes several changes to § 72.212. The final rule revises § 72.212(a)(3) to clarify the term of the general license and to match the term of the general license to the term of the applicable CoC. The final rule amendment also clarifies that the term of the general license runs through any renewal periods, unless otherwise specified in the CoC. In addition, the final rule also amends § 72.212(a)(3) to clarify the general license term for those casks placed into service during the final renewal term of a CoC or during the term of a CoC that was not renewed. The final rule amendment also states that, upon expiration of the general license, all casks subject to that general license must be removed from service.

The final rule amends § 72.212(b) by redesignating and reorganizing the provisions of that section. The following table cross references the amended regulations with the regulations in effect immediately prior to the effective date of this final rule. Use of “modified” in Table 1 refers to a section whose content has been modified. Remaining table entries are either new provisions or provisions that have been redesignated but whose content is unchanged.

Table 1 - Cross Reference of Final Regulations with Prior Regulations

<b>Final Rule</b>	<b>Prior Rule</b>
§ 72.212(b)(1)	§ 72.212(b)(1)(i)
§ 72.212(b)(2)	§ 72.212(b)(1)(ii) (modified)
§ 72.212(b)(3)	New section not in prior rule
§ 72.212(b)(4)	New section not in prior rule
§ 72.212(b)(5)	§ 72.212(b)(2)(i) (modified)
§ 72.212(b)(5)(i)	§ 72.212(b)(2)(i)(A)
§ 72.212(b)(5)(ii)	§ 72.212(b)(2)(i)(B)
§ 72.212(b)(5)(iii)	§ 72.212(b)(2)(i)(C)
§ 72.212(b)(6)	§ 72.212(b)(3) (modified)
§ 72.212(b)(7)	§ 72.212(b)(2)(ii) (modified)
§ 72.212(b)(8)	§ 72.212(b)(4) (modified)
§ 72.212(b)(9)	§ 72.212(b)(5)
§ 72.212(b)(9)(i)	§ 72.212(b)(5)(i)
§ 72.212(b)(9)(ii)	§ 72.212(b)(5)(ii)
§ 72.212(b)(9)(iii)	§ 72.212(b)(5)(iii)
§ 72.212(b)(9)(iv)	§ 72.212(b)(5)(iv)
§ 72.212(b)(9)(v)	§ 72.212(b)(5)(v)
§ 72.212(b)(9)(vi)	§ 72.212(b)(5)(vi)
§ 72.212(b)(10)	§ 72.212(b)(6)
§ 72.212(b)(11)	§ 72.212(b)(7) (modified)
§ 72.212(b)(12)	§ 72.212(b)(8)(i)
§ 72.212(b)(12)(i)	§ 72.212(b)(8)(i)(A)
§ 72.212(b)(12)(ii)	§ 72.212(b)(8)(i)(B)
§ 72.212(b)(12)(iii)	§ 72.212(b)(8)(i)(C)
§ 72.212(b)(13)	§ 72.212(b)(9)
§ 72.212(b)(14)	§ 72.212(b)(10)
§ 72.212(c)	§ 72.212(b)(8)(ii) (modified)
§ 72.212(d)	§ 72.212(b)(8)(iii) (modified)
§ 72.212(e)	§ 72.212(b)(1)(iii)

The final rule redesignates current § 72.212(b)(1)(i) as § 72.212(b)(1) and makes minor editorial changes to this provision.

The final rule redesignates current § 72.212(b)(1)(ii) as § 72.212(b)(2) and further revises the provision to add a requirement that general licensees, when registering a cask no later than 30 days after loading, include the CoC amendment number, if applicable.

The final rule adds a new provision, § 72.212(b)(3), that requires general licensees to ensure that each cask used by the general licensee conforms to the terms, conditions, and specifications of a CoC or an amended CoC listed in § 72.214. Partial or selective application of the terms, conditions, and specifications of a CoC or an amended CoC, without prior NRC

approval, may result in a cask that is in an unanalyzed condition and is therefore, prohibited.

The final rule adds a new provision, § 72.212(b)(4), that requires general licensees to register those previously loaded casks no later than 30 days after applying the changes authorized by an amended CoC.

The final rule revises § 72.212(b)(2)(i) by requiring general licensees to prepare written evaluations before applying the changes authorized by an amended CoC to a previously loaded cask. Thus, the revised rule requires a written evaluation before loading the cask with spent fuel and an additional written evaluation before any changes authorized by a CoC amendment are applied to a previously loaded cask. The final rule redesignates current § 72.212(b)(2)(i) as § 72.212(b)(5).

The final rule revises § 72.212(b)(2)(i) to state that the written evaluation must establish that the cask, once loaded with spent fuel or once changes authorized by an amended CoC have been applied, will conform to the terms, conditions, and specifications of a CoC or amended CoC listed in § 72.214, and redesignates current § 72.212(b)(2)(i)(A) as § 72.212(b)(5)(i). The final rule redesignates current §§ 72.212(b)(2)(i)(B) and (C) as §§ 72.212(b)(5)(ii) and (iii), respectively.

The final rule redesignates current § 72.212(b)(3) as § 72.212(b)(6) and revises this provision to add a reference to an amended CoC and to update the cross-reference to paragraph (b)(5).

The final rule redesignates current § 72.212(b)(2)(ii) as § 72.212(b)(7) and revises this provision to add a requirement to evaluate any changes to the site parameters determination and analyses required by § 72.212(b)(6), using the requirements of § 72.48.

The final rule redesignates current § 72.212(b)(4) as § 72.212(b)(8).

The final rule revises current § 72.212(b)(5) to reflect changes made by the final rulemakings dated October 24, 2008, and March 27, 2009, and redesignates current

§§ 72.212(b)(5) and (b)(6) as §§ 72.212(b)(9) and (b)(10), respectively (see “Note on October 24, 2008, and March 27, 2009, Final Rule Revisions to § 72.212(b)(5), and Redesignation of § 72.212(b)(5) to § 72.212(b)(9)” at the end of this Section IV, below).

The final rule redesignates current § 72.212(b)(7) as § 72.212(b)(11) and revises this provision to add references to an amended CoC. The final rule also adds language to clarify that a licensee must comply with the technical specifications of the CoC, in addition to the terms and conditions of the CoC. Further, the revised language requires the licensee to comply with the terms, conditions, and specifications of the amended CoC for those casks to which the licensee has applied the changes of an amended CoC. The revised language further provides that licensees must also comply with the requirements of any aging management program put into effect as a condition of the NRC approving a CoC renewal application.

The final rule redesignates current §§ 72.212(b)(8)(i), (b)(9), and (b)(10) as §§ 72.212(b)(12), (b)(13), and (b)(14), respectively.

The final rule redesignates current §§ 72.212(b)(8)(ii), (b)(8)(iii), and 72.212(b)(1)(iii) as §§ 72.212(c), (d), and (e), respectively, and makes conforming cross-reference changes.

5. Section 72.230, Procedures for spent fuel storage cask submittals.

The final rule revises § 72.230(b) by adding language that establishes the term for a period not to exceed 40 years. The final rule further amends § 72.230(b) by replacing the words “for a period of at least 20 years” with “the term proposed in the application.”

6. Section 72.236, Specific requirements for spent fuel storage cask approval and fabrication.

The final rule revises § 72.236(g) by adding language that requires spent fuel storage casks to be designed to store spent fuel safely for the term proposed in the application, eliminating the current language that requires the cask design to store spent fuel safely for a

minimum of 20 years.

7. Section 72.238, Issuance of an NRC Certificate of Compliance.

The final rule revises § 72.238 by adding language that establishes the term for a CoC to be “not to exceed 40 years.”

8. Section 72.240 Conditions for spent fuel storage cask renewal.

The final rule revises the heading of § 72.240 and the language of §§ 72.240(a), (b), and (d) by replacing the word “reapproval” with “renewal.” The final rule further revises § 72.240(a) to establish that the CoC renewal term shall be “not to exceed 40 years.” The final rule also revises § 72.240(a) to clarify that in the event that a certificate holder does not apply for a CoC renewal, any general licensee that uses this cask model under the general license issued under § 72.210, any licensee’s representative, or another certificate holder may apply for renewal of the CoC.

The final rule adds a new § 72.240(c) to require the safety analysis report accompanying the renewal application to include design bases information as documented in the most recently updated FSAR, a TLAA of SSCs important to safety, and a description of the program for management of issues associated with aging that could adversely affect structures, systems, and components important to safety. The final rule redesignates § 72.240(c) as § 72.240(d) and revises this provision to add a requirement that any CoC renewal application must demonstrate compliance with the QA provisions of Subpart G of Part 72. The final rule also revises the last sentence of the provision to improve its readability.

The final rule adds a new § 72.240(e) that states the NRC may, as part of the approval of a CoC renewal application, revise the terms, condition, and specifications of the CoC to require that the licensee implement an aging management program.

Note on October 24, 2008, and March 27, 2009, Final Rule Revisions to § 72.212(b)(5), and Redesignation of § 72.212(b)(5) to § 72.212(b)(9):

This final rule redesignates § 72.212(b)(5) as § 72.212(b)(9). On October 24, 2008, the NRC issued a final rule, "Protection of Safeguards Information," (73 FR 63545, 63573) that revised § 72.212 by adding a new § 72.212(b)(5)(v) and redesignated the existing § 72.212(b)(5)(v) as § 72.212(b)(5)(vi). The new § 72.212(b)(5)(v) added language requiring a general licensee to "protect Safeguards Information against unauthorized disclosure in accordance with the requirements of § 73.21 and the requirements of § 73.22 or § 73.23 of this chapter, as applicable." The redesignated § 72.212(b)(5)(vi) was otherwise unchanged and continued to require "[f]or the purpose of this general license, the licensee is exempt from §§ 73.55(h)(4)(iii)(A) and 73.55(h)(5) of this chapter." These two cross referenced paragraphs dealt with reactor security requirements to (1) neutralize threats by interposing armed security personnel between the adversaries and reactor vital areas and (2) use force to prevent or impede attempted acts of theft of special nuclear material or radiological sabotage; and the NRC has historically not applied these requirements to ISFSI general licensees.

On March 27, 2009, the NRC published a final rule "Power Reactor Security Requirements," (74 FR 13925, 13970) which included a conforming change to the security requirements contained in § 72.212(b)(5)(ii)-(v). The changes to § 72.212(b)(5)(ii)-(v) in the March 2009 final rule were intended to clarify these regulations to better use plain language and to update the exemption cross references to the reactor security regulations contained in § 73.55, due to the extensive revision of § 73.55.

In the March 2009 final rule, the NRC revised § 72.212(b)(5)(v) to update the exemption language to read "[f]or the purpose of this general license, the licensee is exempt from requirements to interdict and neutralize threats in § 73.55 of this chapter." However, the amendatory language in the 2009 final rule (74 FR 13970, Item 8) which read "[i]n § 72.212,

paragraphs (b)(5)(ii), (b)(5)(iii), (b)(5)(iv), and (b)(5)(v) are revised to read as follows:” should instead have read “[i]n § 72.212, paragraphs (b)(5)(ii), (b)(5)(iii), (b)(5)(iv), and (b)(5)(vi) are revised to read as follows:” (emphasis added). Consequently, the NRC staff in developing the March 2009 final rule both (1) unintentionally eliminated language that had been added by the Commission in the October 2008 final rule that required general ISFSI licensees to protect Safeguards Information; and (2) unintentionally retained the incorrect exemption language in § 72.212(b)(5)(vi) (referring to §§ 73.55(h)(4)(iii)(A) and 73.55(h)(5)). The provision designated as § 72.212(b)(5)(v) by the March 2009 final rule was intended to replace § 72.212(b)(5)(vi), but did not accomplish that because of the above described mistake in the amendatory language.

Accordingly, to correct these errors, this final rule removes § 72.212(b)(5)(vi) (which was put in place by the October 24, 2008, final rule) and reinstates the provision added by the October 24, 2008, rule and then deleted by the March 27, 2009, rule, as a new § 72.212(b)(9)(vi). The remaining provisions of § 72.212(b)(5) are redesignated from § 72.212(b)(5)(i)-(v) to § 72.212(b)(9)(i)-(v).

## **V. Criminal Penalties**

For the purpose of Section 223 of the Atomic Energy Act (AEA), the Commission is amending 10 CFR Part 72 under one or more of Sections 161b, 161i, or 161o of the AEA. Willful violations of the rule would be subject to criminal enforcement.

## **VI. Agreement State Compatibility**

Under the “Policy Statement on Adequacy and Compatibility of Agreement State Programs” approved by the Commission on June 30, 1997, and published in the *Federal*

*Register* (62 FR 46517; September 3, 1997), this rule is classified as Compatibility Category “NRC.” Compatibility is not required for Category “NRC” regulations. The NRC program elements in this category are those that relate directly to areas of regulation reserved to the NRC by the AEA, as amended, or the provisions of Title 10 of the CFR. Although an Agreement State may not adopt program elements reserved to NRC, it may wish to inform its licensees of certain requirements via a mechanism that is consistent with the particular State’s administrative procedure laws but does not confer regulatory authority on the State.

## **VII. Voluntary Consensus Standards**

The National Technology Transfer Act of 1995 (Pub. L. 104-113) requires that Federal agencies use technical standards that are developed or adopted by voluntary consensus standards bodies unless using such a standard is inconsistent with applicable law or otherwise impractical. In this final rule, the NRC is clarifying the terms for spent fuel storage cask designs, or CoCs, and ISFSI licenses. In addition, the final action also allows Part 72 general licensees to implement changes authorized by an amended CoC to a cask loaded under the initial CoC or an earlier amended CoC (a “previously loaded cask”). This action does not constitute the establishment of a standard that establishes generally applicable requirements. For this reason, the NRC concludes that the Act does not apply to this final rule.

## **VIII. Finding of No Significant Environmental Impact: Availability**

The Commission has determined under the National Environmental Policy Act of 1969, as amended, and the Commission’s regulations in Subpart A of 10 CFR Part 51, not to prepare an environmental impact statement for this final rule because the Commission has concluded

on the basis of an environmental assessment that this final rule would not be a major Federal action significantly affecting the quality of the human environment. The NRC has prepared an environmental assessment and, on the basis of this environmental assessment, has made a finding of no significant impact. The amendments are procedural in nature whereby extended license and CoC terms and the implementation of CoC amendments to previously loaded casks could be achieved by exemptions under the current regulations. They will not have a significant incremental effect on the environment. Therefore, the NRC has determined that an environmental impact statement is not necessary for this rulemaking.

The determination of this environmental assessment is that there will be no significant impact to the public from this action.

This conclusion was published in the environmental assessment that was made available for comment for 75 days after publication of the proposed rule at the NRC Public Document Room, Room O-1F21, 11555 Rockville Pike, Rockville, MD 20852. No comments were received on the content of the environmental assessment. The environmental assessment is also available in ADAMS, accession number ML100710441.

### **IX. Paperwork Reduction Act Statement**

This rule contains new or amended information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). These requirements were approved by the Office of Management and Budget, control number 3150-0132. The burden to the public for these information collections is estimated to average -0.33 hours per response (or a reduction of approximately 1 hour for every three responses).

Send comments on any aspect of these information collections, including suggestions for reducing the burden, to the Information Services Branch (T-5 F52), U.S. Nuclear Regulatory

Commission, Washington, DC 20555-0001, or by Internet electronic mail to Infocollects.Resource@NRC.gov and to the Desk Officer, Christine Kymn, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0132), Office of Management and Budget, Washington, DC 20503. You may also e-mail comments to Christine\_J\_Kymn@omb.eop.gov or comment by telephone at (202) 395-4638.

#### Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid OMB control number.

### **X. Regulatory Analysis**

The Commission has prepared a regulatory analysis on this regulation. The analysis examines the costs and benefits of the alternatives considered by the Commission. The analysis is available in the NRC Public Document Room, Room O-1F21, 11555 Rockville Pike, Rockville, MD, and in ADAMS, accession number ML100710139. As part of the proposed rule, the NRC sought public comments on the draft regulatory analysis. The NRC did not receive any comments that addressed the regulatory analysis.

### **XI. Regulatory Flexibility Certification**

Under the Regulatory Flexibility Act of 1980 (5 U.S.C. 605(b)), the Commission certifies that this rule does not have a significant economic impact on a substantial number of small

entities. The majority of companies that own these plants do not fall within the scope of the definition of "small entities" set forth in the Regulatory Flexibility Act or the size standards established by the NRC (10 CFR 2.810).

## **XII. Backfit Analysis**

The NRC has determined that the backfit rule (§§ 50.109, 72.62, and the finality provisions of 10 CFR Part 52) does not apply to this final rule because these amendments do not involve any provisions that would impose backfits as defined in 10 CFR Chapter I. These amendments do not require the addition, elimination, or modification of structures, systems, or components of an ISFSI or of the procedures or organization required to operate an ISFSI. Therefore, a backfit analysis is not required.

## **XIII. Congressional Review Act**

Under the Congressional Review Act of 1996, the NRC has determined that this action is not a major rule and has verified this determination with the Office of Information and Regulatory Affairs of OMB.

### List of Subjects In 10 CFR Part 72

Administrative practice and procedure, Hazardous waste, Nuclear materials, Occupational safety and health, Penalties, Radiation protection, Reporting and recordkeeping requirements, Security measures, Spent fuel, Whistleblowing.

For the reasons set out in the preamble and under the authority of the Atomic Energy

Act of 1954, as amended; the Energy Reorganization Act of 1974, as amended; the Nuclear Waste Policy Act of 1982, as amended; and 5 U.S.C. 552 and 553; the NRC is adopting the following amendments to 10 CFR Part 72.

**PART 72-LICENSING REQUIREMENTS FOR THE INDEPENDENT STORAGE OF SPENT  
NUCLEAR FUEL, HIGH-LEVEL RADIOACTIVE WASTE, AND REACTOR-RELATED  
GREATER THAN CLASS C WASTE**

1. The authority citation for Part 72 continues to read as follows:

**Authority:** Secs. 51, 53, 57, 62, 63, 65, 69, 81, 161, 182, 183, 184, 186, 187, 189, 68 Stat. 929, 930, 932, 933, 934, 935, 948, 953, 954, 955, as amended, sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2071, 2073, 2077, 2092, 2093, 2095, 2099, 2111, 2201, 2232, 2233, 2234, 2236, 2237, 2238, 2282); sec. 274, Pub. L. 86-373, 73 Stat. 688, as amended (42 U.S.C. 2021); sec. 201, as amended, 202, 206, 88 Stat. 1242, as amended, 1244, 1246 (42 U.S.C. 5841, 5842, 5846); Pub. L. 95-601, sec. 10, 92 Stat. 2951 as amended by Pub. L. 102-486, sec. 7902, 106 Stat. 3123 (42 U.S.C. 5851); sec. 102, Pub. L. 91-190, 83 Stat. 853 (42 U.S.C. 4332); secs. 131, 132, 133, 135, 137, 141, Pub. L. 97-425, 96 Stat. 2229, 2230, 2232, 2241, sec. 148, Pub. L. 100-203, 101 Stat. 1330-235 (42 U.S.C. 10151, 10152, 10153, 10155, 10157, 10161, 10168); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note); sec.651(e), Pub. L. 109-58, 119 Stat. 806-10 (42 U.S.C. 2014, 2021, 2021b, 2111).

Section 72.44(g) also issued under secs. 142(b) and 148(c), (d), Pub. L. 100-203, 101 Stat. 1330-232, 1330-236 (42 U.S.C. 10162(b), 10168(c), (d)). Section 72.46 also issued under sec. 189, 68 Stat. 955 (42 U.S.C. 2239); sec. 134, Pub. L. 97-425, 96 Stat. 2230 (42 U.S.C. 10154). Section 72.96(d) also issued under sec. 145(g), Pub. L. 100-203, 101 Stat. 1330-235 (42 U.S.C. 10165(g)). Subpart J also issued under secs. 2(2), 2(15), 2(19), 117(a), 141(h),

Pub. L. 97-425, 96 Stat. 2202, 2203, 2204, 2222, 2224 (42 U.S.C. 10101, 10137(a), 10161(h)).  
Subparts K and L are also issued under sec. 133, 98 Stat. 2230 (42 U.S.C. 10153) and sec.  
218(a), 96 Stat. 2252 (42 U.S.C. 10198).

2. In § 72.3, definitions for *Aging management program*, *Term certified by the cask's Certificate of Compliance*, and *Time-limited aging analyses* are added in alphabetical order to read as follows:

**§ 72.3 Definitions.**

\* \* \* \* \*

*Aging management program*, for the purposes of this part, means a program for addressing aging effects that may include prevention, mitigation, condition monitoring, and performance monitoring.

*Term certified by the cask's Certificate of Compliance*, for the purposes of this part, means, for an initial CoC, the period of time commencing with the CoC effective date and ending with the CoC expiration date, and for a renewed CoC, the period of time commencing with the most recent CoC renewal date and ending with the CoC expiration date.

*Time-limited aging analyses*, for the purposes of this part, means those licensee or certificate holder calculations and analyses that:

- (1) Involve structures, systems, and components important to safety within the scope of the license renewal, as delineated in subpart F of this part, or within the scope of the spent fuel storage certificate renewal, as delineated in subpart L of this part, respectively;

(2) Consider the effects of aging;

(3) Involve time-limited assumptions defined by the current operating term, for example, 40 years;

(4) Were determined to be relevant by the licensee or certificate holder in making a safety determination;

(5) Involve conclusions or provide the basis for conclusions related to the capability of structures, systems, and components to perform their intended safety functions; and

(6) Are contained or incorporated by reference in the design bases.

3. In § 72.24, revise the introductory text of paragraph (c) to read as follows:

**§ 72.24 Contents of application: Technical information.**

\* \* \* \* \*

(c) The design of the ISFSI or MRS in sufficient detail to support the findings in § 72.40 for the term requested in the application, including:

\* \* \* \* \*

4. In § 72.42, revise paragraphs (a) and (b) to read as follows:

**§ 72.42 Duration of license; renewal.**

(a) Each license issued under this part must be for a fixed period of time to be specified

in the license. The license term for an ISFSI must not exceed 40 years from the date of issuance. The license term for an MRS must not exceed 40 years from the date of issuance. Licenses for either type of installation may be renewed by the Commission at the expiration of the license term upon application by the licensee for a period not to exceed 40 years and under the requirements of this rule. Application for ISFSI license renewals must include the following:

(1) Time-limited aging analyses that demonstrate that structures, systems, and components important to safety will continue to perform their intended function for the requested period of extended operation; and

(2) A description of the aging management program for management of issues associated with aging that could adversely affect structures, systems, and components important to safety.

(b) Applications for renewal of a license should be filed in accordance with the applicable provisions of subpart B of this part at least 2 years before the expiration of the existing license. The application must also include design bases information as documented in the most recently updated FSAR as required by § 72.70. Information contained in previous applications, statements, or reports filed with the Commission under the license may be incorporated by reference provided that these references are clear and specific.

\* \* \* \* \*

5. In § 72.212, revise paragraphs (a)(3) and (b) and add paragraphs (c), (d), and (e) to read as follows:

**§ 72.212 Conditions of general license issued under § 72.210.**

(a) \* \* \*

(3) The general license for the storage of spent fuel in each cask fabricated under a Certificate of Compliance shall commence upon the date that the particular cask is first used by the general licensee to store spent fuel, shall continue through any renewals of the Certificate of Compliance, unless otherwise specified in the Certificate of Compliance, and shall terminate when the cask's Certificate of Compliance expires. For any cask placed into service during the final renewal term of a Certificate of Compliance, or during the term of a Certificate of Compliance that was not renewed, the general license for that cask shall terminate after a storage period not to exceed the length of the term certified by the cask's Certificate of Compliance. Upon expiration of the general license, all casks subject to that general license must be removed from service.

(b) The general licensee must:

(1) Notify the Nuclear Regulatory Commission using instructions in § 72.4 at least 90 days before first storage of spent fuel under this general license. The notice may be in the form of a letter, but must contain the licensee's name, address, reactor license and docket numbers, and the name and means of contacting a person responsible for providing additional information concerning spent fuel under this general license. A copy of the submittal must be sent to the administrator of the appropriate Nuclear Regulatory Commission regional office listed in appendix D to part 20 of this chapter.

(2) Register use of each cask with the Nuclear Regulatory Commission no later than 30 days after using that cask to store spent fuel. This registration may be accomplished by submitting a letter using instructions in § 72.4 containing the following information: the licensee's name and address, the licensee's reactor license and docket numbers, the name and title of a person responsible for providing additional information concerning spent fuel storage under this general license, the cask certificate number, the CoC amendment number to which

the cask conforms, unless loaded under the initial certificate, cask model number, and the cask identification number. A copy of each submittal must be sent to the administrator of the appropriate Nuclear Regulatory Commission regional office listed in appendix D to part 20 of this chapter.

(3) Ensure that each cask used by the general licensee conforms to the terms, conditions, and specifications of a CoC or an amended CoC listed in § 72.214.

(4) In applying the changes authorized by an amended CoC to a cask loaded under the initial CoC or an earlier amended CoC, register each such cask with the Nuclear Regulatory Commission no later than 30 days after applying the changes authorized by the amended CoC. This registration may be accomplished by submitting a letter using instructions in § 72.4 containing the following information: the licensee's name and address, the licensee's reactor license and docket numbers, the name and title of a person responsible for providing additional information concerning spent fuel storage under this general license, the cask certificate number, the CoC amendment number to which the cask conforms, cask model number, and the cask identification number. A copy of each submittal must be sent to the administrator of the appropriate Nuclear Regulatory Commission regional office listed in appendix D to part 20 of this chapter.

(5) Perform written evaluations, before use and before applying the changes authorized by an amended CoC to a cask loaded under the initial CoC or an earlier amended CoC, which establish that:

(i) The cask, once loaded with spent fuel or once the changes authorized by an amended CoC have been applied, will conform to the terms, conditions, and specifications of a CoC or an amended CoC listed in § 72.214;

(ii) Cask storage pads and areas have been designed to adequately support the static and dynamic loads of the stored casks, considering potential amplification of earthquakes through soil-structure interaction, and soil liquefaction potential or other soil instability due to vibratory ground motion; and

(iii) The requirements of § 72.104 have been met. A copy of this record shall be retained until spent fuel is no longer stored under the general license issued under § 72.210.

(6) Review the Safety Analysis Report referenced in the CoC or amended CoC and the related NRC Safety Evaluation Report, prior to use of the general license, to determine whether or not the reactor site parameters, including analyses of earthquake intensity and tornado missiles, are enveloped by the cask design bases considered in these reports. The results of this review must be documented in the evaluation made in paragraph (b)(5) of this section.

(7) Evaluate any changes to the written evaluations required by paragraphs (b)(5) and (b)(6) of this section using the requirements of § 72.48(c). A copy of this record shall be retained until spent fuel is no longer stored under the general license issued under § 72.210.

(8) Before use of the general license, determine whether activities related to storage of spent fuel under this general license involve a change in the facility Technical Specifications or require a license amendment for the facility pursuant to § 50.59(c) of this chapter. Results of this determination must be documented in the evaluations made in paragraph (b)(5) of this section.

(9) Protect the spent fuel against the design basis threat of radiological sabotage in accordance with the same provisions and requirements as are set forth in the licensee's physical security plan pursuant to § 73.55 of this chapter with the following additional conditions and exceptions:

(i) The physical security organization and program for the facility must be modified as necessary to assure that activities conducted under this general license do not decrease the effectiveness of the protection of vital equipment in accordance with § 73.55 of this chapter;

(ii) Storage of spent fuel must be within a protected area, in accordance with § 73.55(e) of this chapter, but need not be within a separate vital area. Existing protected areas may be expanded or new protected areas added for the purpose of storage of spent fuel in accordance with this general license;

(iii) For the purpose of this general license, personnel searches required by § 73.55(h) of this chapter before admission to a new protected area may be performed by physical pat-down searches of persons in lieu of firearms and explosives detection equipment;

(iv) The observational capability required by § 73.55(i)(3) of this chapter as applied to a new protected area may be provided by a guard or watchman on patrol in lieu of video surveillance technology;

(v) For the purpose of this general license, the licensee is exempt from requirements to interdict and neutralize threats in § 73.55 of this chapter; and

(vi) Each general licensee that receives and possesses power reactor spent fuel and other radioactive materials associated with spent fuel storage shall protect Safeguards Information against unauthorized disclosure in accordance with the requirements of § 73.21 and the requirements of § 73.22 or § 73.23 of this chapter, as applicable.

(10) Review the reactor emergency plan, quality assurance program, training program, and radiation protection program to determine if their effectiveness is decreased and, if so, prepare the necessary changes and seek and obtain the necessary approvals.

(11) Maintain a copy of the CoC and, for those casks to which the licensee has applied the changes of an amended CoC, the amended CoC, and the documents referenced in such Certificates, for each cask model used for storage of spent fuel, until use of the cask model is

discontinued. The licensee shall comply with the terms, conditions, and specifications of the CoC and, for those casks to which the licensee has applied the changes of an amended CoC, the terms, conditions, and specifications of the amended CoC, including but not limited to, the requirements of any aging management program put into effect as a condition of the NRC approval of a CoC renewal application in accordance with § 72.240.

(12) Accurately maintain the record provided by the CoC holder for each cask that shows, in addition to the information provided by the CoC holder, the following:

- (i) The name and address of the CoC holder or lessor;
- (ii) The listing of spent fuel stored in the cask; and
- (iii) Any maintenance performed on the cask.

(13) Conduct activities related to storage of spent fuel under this general license only in accordance with written procedures.

(14) Make records and casks available to the Commission for inspection.

(c) The record described in paragraph (b)(12) of this section must include sufficient information to furnish documentary evidence that any testing and maintenance of the cask has been conducted under an NRC-approved quality assurance program.

(d) In the event that a cask is sold, leased, loaned, or otherwise transferred to another registered user, the record described in paragraph (b)(12) of this section must also be transferred to and must be accurately maintained by the new registered user. This record must be maintained by the current cask user during the period that the cask is used for storage of spent fuel and retained by the last user until decommissioning of the cask is complete.

(e) Fees for inspections related to spent fuel storage under this general license are those shown in § 170.31 of this chapter.

6. In § 72.230, revise paragraph (b) to read as follows:

**§ 72.230 Procedures for spent fuel storage cask submittals.**

\* \* \* \* \*

(b) Casks that have been certified for transportation of spent fuel under part 71 of this chapter may be approved for storage of spent fuel under this subpart. An application must be submitted in accordance with the instructions contained in § 72.4, for a proposed term not to exceed 40 years. A copy of the CoC issued for the cask under part 71 of this chapter, and drawings and other documents referenced in the certificate, must be included with the application. A safety analysis report showing that the cask is suitable for storage of spent fuel, for the term proposed in the application, must also be included.

\* \* \* \* \*

7. In § 72.236, revise paragraph (g) to read as follows:

**§ 72.236 Specific requirements for spent fuel storage cask approval and fabrication.**

\* \* \* \* \*

(g) The spent fuel storage cask must be designed to store the spent fuel safely for the term proposed in the application, and permit maintenance as required.

\* \* \* \* \*

8. Revise § 72.238 to read as follows:

**§ 72.238 Issuance of an NRC Certificate of Compliance.**

A Certificate of Compliance for a cask model will be issued by NRC for a term not to exceed 40 years on a finding that the requirements in § 72.236(a) through (i) are met.

9. In § 72.240, revise the section heading and paragraphs (a), (b), and (c), redesignate paragraph (c) as (d), and add new paragraphs (c) and (e) to read as follows:

**§ 72.240 Conditions for spent fuel storage cask renewal.**

(a) The certificate holder may apply for renewal of the design of a spent fuel storage cask for a term not to exceed 40 years. In the event that the certificate holder does not apply for a cask design renewal, any licensee using a spent fuel storage cask, a representative of such licensee, or another certificate holder may apply for a renewal of that cask design for a term not to exceed 40 years.

(b) The application for renewal of the design of a spent fuel storage cask must be submitted not less than 30 days before the expiration date of the CoC. When the applicant has submitted a timely application for renewal, the existing CoC will not expire until the application for renewal has been determined by the NRC.

(c) The application must be accompanied by a safety analysis report (SAR). The SAR must include the following:

(1) Design bases information as documented in the most recently updated final safety analysis report (FSAR) as required by § 72.248;

(2) Time-limited aging analyses that demonstrate that structures, systems, and

components important to safety will continue to perform their intended function for the requested period of extended operation; and

(3) A description of the aging management program for management of issues associated with aging that could adversely affect structures, systems, and components important to safety.

(d) The design of a spent fuel storage cask will be renewed if the conditions in subpart G of this part and § 72.238 are met, and the application includes a demonstration that the storage of spent fuel has not, in a significant manner, adversely affected structures, systems, and components important to safety.

(e) In approving the renewal of the design of a spent fuel storage cask, the NRC may revise the CoC to include terms, conditions, and specifications that will ensure the safe operation of the cask during the renewal term, including but not limited to, terms, conditions, and specifications that will require the implementation of an aging management program.

Dated at Rockville, Maryland, this \_\_\_\_\_ day of \_\_\_\_\_, 2010.

For the Nuclear Regulatory Commission.

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Annette Vietti-Cook,  
Secretary of the Commission.

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# **Regulatory Analysis for Final Rule - 10 CFR Part 72 License and CoC Terms**

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**U.S. Nuclear Regulatory Commission  
February 2010**



## EXECUTIVE SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) plans to publish a final rule (RIN: 3150-A109) [NRC-2008-0361] amending its regulations to clarify the license term limits for dry storage cask Certificates of Compliance (CoCs) and independent spent fuel storage installation (ISFSI) licenses.

The final rule will improve regulatory efficiency by providing a consistent basis for the scope, applicability, and terminology of CoCs and Part 72 ISFSI general license regulations to better align CoC regulatory requirements with ISFSI general license requirements. The amended regulations will also provide consistency between the Part 72 ISFSI general and specific license requirements.

Section 2 summarizes the technical basis for this rulemaking. Section 3 identifies the two alternatives evaluated in this rulemaking: no action and implementation of the final rule. Section 4 describes the analysis method and input assumptions. Section 5 presents the results and Section 6 presents the decision rationale. Section 7 lists the references used in this Regulatory Analysis. Appendix 1 provides input assumptions used in this Regulatory Analysis, current as of November 2009, including the names of storage casks, names of the licensed ISFSI locations, names of licensees pursuing a Part 72 general license, and names of licensees who had not at that time announced plans for ISFSI licensing. Appendix 2 provides input assumptions used in this Regulatory Analysis. Minor changes were made in the input assumptions used to support the final rule compared to the input assumptions used to support the proposed rule. There were no comments submitted during the proposed rule public comment period on the input assumptions used in the Regulatory Analysis.

This Regulatory Analysis provides an evaluation of two alternatives, one of which is taking no action and the other is implementing the final rule. The results show that the final rule will save either \$1.3 million or \$0.9 million over a 40 year analysis period (2008 dollars using a 3 percent or a 7 percent discount rate, respectively) compared to making no changes in the regulations. Most of the labor by licensees, CoC holders and the NRC staff is modeled in this regulatory analysis as a one-time event. Although these activities will occur in different years, the effort will occur only once in the 40 year analysis period and was modeled as occurring in the first year to simplify the analysis. Annual savings are modeled for Part 72 general licensees and the NRC staff as a result of amending 10 CFR 72.212(b)(4) to remove the requirement of the general licensee to submit an exemption request to apply changes authorized by an amended CoC to a cask loaded under the initial CoC or an earlier amended CoC. The NRC will benefit the most from the final rule, due to the submittal of fewer license renewal applications during the 40 year analysis period. The savings achieved by industry are due primarily to more efficient management of cask expiration dates, after the initial term, and ISFSI license expiration dates, as well as preparation of fewer exemption requests seeking to apply CoC amendments to previously loaded casks.

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## ACRONYMS AND ABBREVIATIONS

CFR	Code of Federal Regulations
CoC	Certificate of Compliance
COMSECY	A paper originating from a Commissioner who wants to bring an item to the attention of his or her fellow Commissioners, or a paper that originates from the NRC Executive Director for Operations (EDO), the Chief Financial Officer (CFO), or other Commission-level office seeking guidance from the Commission.
FR	Federal Register
INL	Idaho National Laboratory
ISFSI	Independent Spent Fuel Storage Installation
NRC	Nuclear Regulatory Commission
SAR	Safety Analysis Report
SECY	A paper addressing policy, rulemaking, or adjudicatory matters submitted to the Commission for consideration in a document style and format established specifically for the purpose.
SER	Safety Evaluation Report
SOC	Statements of Consideration
SRM	Staff Requirements Memorandum

## 1. INTRODUCTION

The NRC is amending regulations in Part 72 of Title 10 of the Code of Federal Regulations (CFR) to clarify the license term limits for dry storage cask CoCs and ISFSI licenses, provide consistency between the general license requirements and the specific ISFSI license requirements, and allow Part 72 general licensees to implement changes authorized by an amended CoC to a cask loaded under the initial CoC or an earlier amended CoC (a “previously loaded cask”). The Commission directed this rulemaking through a Staff Requirements Memorandum (SRM) for SECY-06-0152, dated August 14, 2006, as supplemented, by SRM for COMSECY-07-0032, dated December 12, 2007. The proposed rule was published in the *Federal Register* on September 15, 2009 (74 FR 47126).

Specifically, the amendments will allow for longer initial and renewal terms for Part 72 CoCs and licenses, clarify the general license storage term, clarify the difference between CoC “approval” and “renewal,” allow a licensee to apply the changes associated with a CoC amendment to a previously loaded cask without express NRC approval, provided the cask fully conforms to the terms, conditions, and specifications of the amended CoC, and make certain administrative and clarifying changes.

As of January 2010, there were 16 approved spent fuel storage cask designs listed in 10 CFR 72.214. However, because each amendment to a cask design is considered a separate and unique cask design, there were in practice 44 approved spent fuel storage cask designs including all amendments. As of November 2009, there were 15 Part 72 ISFSI specific licensees, 39 Part 72 ISFSI general licensees, and the licensees of another 16 power reactor sites were pursuing a Part 72 ISFSI general license. In November 2009, 13 power reactor sites had not announced intentions regarding an ISFSI. Appendix 1 provides detailed information as of November 2009 to support the analysis for this final rule, including the names of storage casks in use, names of the ISFSI locations, names of licensees pursuing a Part 72 general license, and names of licensees who have not announced plans for ISFSI licensing.

A description of the final rule and the need for the rule are discussed in the following two sections. Section 2 summarizes the technical basis for this rulemaking. Section 3 identifies the two alternatives evaluated in this rulemaking – a No Action alternative and an alternative assuming implementation of the rule. Section 4 describes the analysis method and input assumptions. Section 5 describes the Results. Section 6 discusses the Decision Rationale and Implementation of the preferred alternative, and Section 7 lists the References used in this regulatory analysis. Appendix 1 provides a listing of the approved storage casks and ISFSIs. Appendix 2 documents the input assumptions, which have not changed relative to those used for the proposed rule.

### 1.1 *Description of the Actions Taken in the Final Rule*

10 CFR Part 72 provides the requirements for: (a) specific ISFSI licenses, (b) CoCs for spent nuclear fuel dry cask storage systems, and (c) general licenses for ISFSIs at reactor sites. This rulemaking will affect the license terms for each type of license and CoC.

The first change is to extend the license term for Part 72 specific licenses from the current 20 years from the date of initial license issuance, or from the date of license renewal, to a length of time not to exceed 40 years from the date of issuance or license renewal. The exact

license term will be specified by the applicant in a license application. Current 10 CFR 72.42 specifies that the duration of a Part 72 specific license, either initial or license renewal, must be for a fixed period of time not to exceed 20 years from the date of issuance.

Another change is to extend the license term of a storage cask CoC from a period of at least 20 years to a period not to exceed 40 years. The current regulations require that the license applicant for a CoC submit a safety analysis report (SAR) showing that the cask is suitable for storage of spent fuel for a period of at least 20 years. The final rule will allow the CoC applicant, in a new CoC application, or the CoC holder, in a renewal application of a CoC, to submit the application for a proposed term not to exceed 40 years.

A general ISFSI license is available for use as long as the licensee is authorized to possess or operate a nuclear power reactor, under the provisions of Part 50. Therefore, the "term" for a general license is directly tied to the term of the associated Part 50 reactor license. However, the use of a specific cask design under a general license is otherwise tied to the CoC. If the license term of a storage cask CoC is extended to 40 years, the authority to use a specific cask design under a general license would also be extended to 40 years. Currently, the general licensee's authority to use a particular cask design for the storage of spent fuel in each cask fabricated under an approved CoC terminates 20 years after the date that the general licensee first uses the particular cask to store spent fuel. Under this final rule, the exact "term" to use a specific cask design under a general license will depend on action taken by the CoC holder to extend the term of the storage cask CoC. If the CoC holder does not extend the term of the storage cask, then the Part 72 general licensee may seek approval from the NRC for a renewal of the storage cask CoC.

Another action in this final rule allows general licensees to apply newer CoC amendments to previously loaded casks, provided that the loaded cask meets all terms and conditions of the amended CoC. Partial implementation of the changes in an amendment is prohibited as it would result in a cask that is in an unanalyzed condition and not fully compliant with any of the CoCs listed in 10 CFR 72.214. Currently, 10 CFR Part 72 does not allow for general licensees to apply changes authorized by CoC amendments to previously loaded casks without prior NRC approval, if the changes alter the terms or conditions of the CoC under which that cask was loaded. General licensees that want to implement such changes must apply to the NRC for an exemption.

The final rule evaluated in this regulatory analysis makes editorial corrections to other Part 72 rule text, but these corrections generate little or no impact on stakeholders or the NRC. For example, one rule text change that is considered to have no impact on stakeholders or the NRC is a change in terminology in 10 CFR 72.240 from CoC "reapproval" to CoC "renewal."

The final rule has no impact on Agreement States because 10 CFR Part 72 has a compatibility category of "NRC" which establishes regulatory program elements that cannot be relinquished to Agreement States under the Atomic Energy Act, as amended, or under provisions of Title 10 of the CFR.

## **1.2 Need for the Final Rule Actions**

The amended regulations will improve regulatory efficiency by providing a consistent basis for the scope, applicability, and terminology of CoC and Part 72 ISFSI license regulations.

The amended regulations also will better align CoC regulatory requirements with ISFSI general license requirements.

## **2. TECHNICAL BASIS FOR THE FINAL RULE**

Sections 2.1 through 2.5 provide the technical basis supporting the final rule. These sections cover (1) a longer term for an initial CoC application; (2) a longer term for a renewal CoC application; (3) the term limit for an approved storage cask design approved for use at a general site; (4) the implementation of later amendments to previously loaded casks; and (5) a new requirement for a CoC renewal application to include an aging management program related to the characteristics of the storage cask.

### **2.1 Specify a Maximum Term for an Initial CoC Application**

Currently, Part 72 does not specify an explicit limit on the initial term of a CoC for a spent fuel storage cask design. The NRC has historically authorized 20 year initial terms, as supported by the requirements of 10 CFR 72.230(b) and 72.236(g), and the Statements of Consideration (SOC) in the *Federal Register* (FR) notice for the final rule that added the general license provisions to Part 72 (55 FR 29184; July 18, 1990). Section 72.230(b) specifies that for a cask design certified for transportation of spent fuel under 10 CFR Part 71, a SAR showing that the cask is suitable for storage of spent fuel for a period of at least 20 years must be included in an application for a CoC for a spent fuel storage cask design. Section 72.236(g) requires that the spent fuel storage cask must be designed to store the spent fuel safely for a minimum of 20 years. The referenced SOC indicate that, “[t]he Commission believes that 20-year increments are appropriate for such cask design approvals, after which designs may be renewed.” Furthermore, the 20-year initial term for a Part 72 CoC is consistent with the initial term of a specific ISFSI license specified in 10 CFR 72.42(a).

Final rule changes to 10 CFR 72.230(b) and 72.236(g) will change the length of the term from a minimum of 20 years to a maximum term not to exceed 40 years for an initial CoC application.

Although CoC license applicants will have the flexibility to request a longer than 20 year initial term under this final rule, the maximum initial term will be limited to 40 years because of relatively limited empirical data available to evaluate the long-term material degradation issues of dry spent fuel storage casks. In 2003 and 2004, during the review for the Surry and H. B. Robinson renewal applications, the staff evaluated technical data resulting from an NRC-supported research program at the Idaho National Laboratory (INL) and dry spent fuel storage casks used at Surry. Under the INL research program, INL opened and inspected a dry storage cask after the fuel had been stored for approximately 15 years. At Surry, several casks were also opened after less than 15 years of storage as a result of some faulty weather covers which were corrected. Summaries of the findings regarding the condition of the fuel and cask components follow:

(1) Cladding creep is a time-dependent change in the dimension of the cladding resulting from high temperature and stress. It was considered as a potential degradation mechanism during storage. Confirmatory inspection of the spent fuel stored at INL verified that

no cladding creep had occurred. The spent fuel in dry storage at Surry also supports this finding. The NRC staff expects very little to no fuel degradation at the end of an extended licensing period. The established limits for cladding temperature during storage, and continually decreasing level of cladding stress and temperature, further remove creep as a degradation mechanism. Assessment indicated that cladding creep would not be an issue.

(2) The NRC staff also expects limited degradation of other internal components because there are no significant corrosive influences in the inert environment, either for the fuel or for other components. The INL inspection verified that there was no indication of corrosion for any internal canister components. The NRC staff has also concluded that radiation levels are too low to significantly alter the properties of the metals for any storage canister components.

(3) At Surry, the helium-filled region used metallic seals as the first and second containment seals. These were the only safety-related seals.

(4) The other external components of the storage systems (which are exposed to weathering effects) would already be covered by an inspection and corrective action program, or routine maintenance, to ensure that any degradation will be identified and assessed for its importance to safety, and will be addressed through corrective actions to ensure continued safe operation of the storage system.

Based on these findings, the staff believes that with appropriate aging management and maintenance programs, term that do not exceed 40 years are reasonable without undue risk to the public or to the environment. License terms longer than 40 years would require additional information on the long-term material degradation of dry spent fuel storage casks and would need to be evaluated by the staff.

The flexibility to request a longer initial CoC term does not involve any change to the design criteria for spent fuel storage casks. Consequently, new cask designs will meet the same design requirements as previously certified designs. Each CoC applicant seeking a longer initial term must justify in its application that the proposed cask design and associated support/operational programs (for example, including surveillance and maintenance) are suitable for storage of spent fuel for that requested term. This regulatory change in the final rule will affect applicants who request a longer initial CoC term. The staff will develop regulatory guidance to address the additional analyses or measures necessary to justify CoC initial terms of greater than 20 years to a maximum of 40 years.

## **2.2 Specify a Maximum Term for a Renewal CoC Application**

Current regulations do not specify the renewal term of a Part 72 CoC. The SOC referenced above (55 FR 29184) specify that the Commission believes that 20 year increments are appropriate for reapproval of a storage cask CoC and consistent with the 20 year license renewal period for specific licenses.

Final rule changes to 10 CFR 72.240(a) will provide CoC holders with the flexibility to request a reapproval term not to exceed 40 years.

For similar reasons as stated in Section 2.1, the NRC staff supports a renewal term not to exceed 40 years. If a CoC holder (applicant) requests a renewal term for a storage cask CoC, then the applicant must justify in the renewal application that the spent fuel storage cask design is suitable for the requested renewal term. This regulatory change in the final rule will affect applicants who request a CoC renewal term longer than 20 years. As planned for the change in term length for an initial CoC application, the staff will develop regulatory guidance to address the additional analyses or measures necessary to justify CoC renewal terms.

### **2.3 Clarify Term Limit for Cask Designs Approved for Use at General License Sites**

A Part 50 power reactor licensee may use a Part 72 ISFSI general license for spent fuel storage as long as the Part 50 license is maintained. Under current regulations, the Part 72 ISFSI general licensee's authority to use an approved cask design terminates 20 years after the date that the general licensee first loads spent fuel into the cask. If the CoC expires in the interim, any loaded spent fuel storage casks of that design would need to be removed from service after a storage period not to exceed 20 years. Neither the regulation nor the associated SOC for the final rule promulgating the regulation are clear as to whether each individual cask, once it is loaded with spent fuel under a valid CoC, may remain in service for a full 20 years, or whether a "20 year clock" is started at each site with the first loading of a cask of a given design. The 20 year expiration date is approaching for a number of storage casks at several generally licensed ISFSIs. To remain in use, the storage cask terms will need to be extended. Since the use of a specific cask design under a general license is tied to the CoC, general licensees will depend on the certificate owners to obtain renewal from the NRC for the cask designs used at their sites. If this is done, the general license authority for the continued use of the storage cask terminates 20 years after the CoC renewal date. If the CoC expires before a renewal is approved, spent fuel storage casks of that design need to be removed from service after the storage period not to exceed 20 years.

Because (1) the use of a specific cask design under a general license is tied to the CoC and (2) the final rule will increase CoC terms from 20 years to up to 40 years, the Commission is amending 10 CFR 72.212(a)(3) to specify that the license for storage of spent fuel in each cask will terminate after that particular cask is first used by the general licensee for a length of time equivalent to the licensed lifetime as certified by the cask's CoC at the time of loading. If a CoC expires, casks of that design must be removed from service after a storage period not to exceed a length of time equivalent to the licensed lifetime as certified by the cask's CoC at the time of loading. However, if the cask's CoC is renewed, the general license will then terminate when the CoC for that particular cask design expires. This change is not only consistent with the intent of the current regulations for general licenses, but also updates the current regulations due to revisions in other sections of Part 72 in this rulemaking. This provision in the final rule will affect all general licensees.

### **2.4 Implementation of Later Amendments to Previously Loaded Casks**

CoC amendments are routinely requested by the cask manufacturer or vendor (also referred to as the certificate holder). Upon NRC approval of a CoC amendment, general licensees can load empty casks meeting the technical specifications of that CoC amendment. However, general licensees that want to apply changes approved by a later CoC amendment to

a previously loaded cask must request an exemption from the NRC if such changes alter the terms or conditions of the CoC under which that cask was loaded. Even if a general licensee requested the certificate holder of the cask to submit an amendment request that is specific to the general licensee and obtained NRC approval for such an amendment, the general licensee could not apply this amendment to previously loaded casks. To take advantage of the CoC amendment under the current requirements, the licensee must apply to the NRC for an exemption.

The final rule will revise 10 CFR 72.212 to allow a general licensee to apply CoC amendment changes to a previously loaded cask provided that the licensee performs written evaluations meeting the requirements of 10 CFR 72.212(b). This process is parallel to an existing process which general licensees must follow before loading an empty cask under the general license. Specifically, Subpart K of Part 72 allows general licensees to select from the list of approved spent fuel storage casks from 10 CFR 72.214. Because the NRC has made a safety determination on each of the casks and amendments listed in 10 CFR 72.214, a later amendment that is codified by the NRC would automatically be included in the list. The final rule revision to 10 CFR 72.212 will require that, after application of the changes authorized by a CoC amendment, the loaded cask must conform to the terms and conditions of the subject CoC amendment.

This provision in the final rule will improve the effectiveness and efficiency of the regulatory process by reducing the regulatory burdens of both the NRC and general licensees. It will affect general licensees who desire to implement the changes from a later CoC amendment to a previously loaded cask.

## **2.5 CoC Renewal Application Requires Aging Analyses**

In 2004, the Commission authorized the staff to approve 40 year license renewal terms for the specific license for the Surry ISFSI [Reference 1]. In doing so, the NRC imposed, by license condition, certain aging management requirements to be performed by the licensees. Licensees must develop aging management plans to evaluate performance characteristics of the storage casks at those sites over time. Because the regulations are being changed to allow general and specific licensees to use storage casks over a renewed term not to exceed 40 years, the NRC staff is amending regulations to ensure that licensees perform aging analyses and provide detail on these analyses in their renewal applications.

The final rule will amend 10 CFR 72.24(c) to specify that the license term for an ISFSI license cannot exceed 40 years and will amend Section 72.42(a) to require specific licensees to implement an aging management program, as described by the CoC holder in its renewal application. The final rule will also amend 10 CFR 72.240(c) to require the contents of the SAR for the cask renewal application to include aging analyses that demonstrate that structures, systems, and components important to safety will perform their intended function for the period of extended operation requested in the license renewal. This new requirement will apply to the CoC holder or to the Part 72 general licensee if the CoC holder does not apply for renewal of a particular cask. The aging management requirements for general licensees are tied to the CoC; if the storage cask CoC requires an aging management program, the final rule will require general licensees to comply with these requirements.

The final rule changes to 10 CFR 72.42(a) and 72.240(c) will provide consistent program activities performed by specific and general license ISFSI installations during the period of extended operation.

### 3. IDENTIFICATION OF ALTERNATIVE APPROACHES

The NRC considered two alternatives for the final rule, described below.

#### 3.1 *Alternative 1: No-Action*

The No-Action alternative is to maintain the status quo. Under the No-Action alternative, the Commission would make no changes to the current regulations and, as a result, there would be no incremental costs or benefits. This is the baseline of the Regulatory Analysis.

#### 3.2 *Alternative 2: Implement the Regulations in the Final Rule*

This alternative would amend the regulations as described in Sections 2.1 through 2.5 to implement the final rule. Appendix 2 of this Regulatory Analysis shows the input assumptions for Alternative 2.

### 4. ANALYSIS OF VALUES AND IMPACTS

This section examines the values (benefits) and impacts (costs) expected to result from the NRC’s final rule. The benefits and costs are analyzed for Alternative 2 and are broken out by societal attributes considered important to evaluate a final rule. Because the benefits would exceed the costs, the overall impact of this final rule will be a net savings to both licensees and to the NRC.

Table 4-1 lists the attributes significant for this final rule with reference to their expected change. The benefits and costs for each attribute are quantified using a methodology described in Section 4.1. The attributes not expected to be affected by the final rule are listed below Table 4-1. All of these attributes are recommended for consideration during a rulemaking effort, in the Regulatory Analysis Technical Evaluation Handbook [Reference 2].

**Table 4-1: Listing of Societal Attributes that Will Be Affected by the Final Rule**

<b>Attribute</b>	<b>Expected Change</b>
<b><i>Industry Implementation</i></b>	Part 72 licensees and CoC holders will realize one-time costs and savings associated with specific sections of rule text in Alternative 2.
<b><i>Industry Operation</i></b>	Part 72 general licensees will realize annual savings associated with the amendment in section 72.212(b)(4) in Alternative 2.

<b><i>NRC Implementation</i></b>	The NRC will achieve one-time savings associated with the review of fewer license renewal applications by Part 72 specific licensees and CoC holders in Alternative 2. NRC will realize a one-time cost for the development of regulatory guidance.
<b><i>NRC Operation</i></b>	The NRC will realize annual savings associated with fewer exemption requests submitted in amended Section 72.212(b)(4) in Alternative 2.
<b><i>Regulatory Efficiency</i></b>	Licensees, CoC holders and the NRC will realize overall improved efficiencies as estimated in the total savings for the four attributes above.

The following attributes are not expected to be affected by the final rule

***Public Health (Accident)***                      ***Offsite Property***                      ***Occupational Health (Accident)***  
***Public Health (Routine)***                      ***Onsite Property***                      ***Occupational Health (Routine)***  
***Antitrust Considerations***                      ***General Public***                      ***Safeguards and Security***  
***Environmental Considerations***                      ***Other Government***                      ***Other Considerations***  
***Improvements in Knowledge***

Section 5 presents the results, in constant 2008 dollars. The results are shown for the one-time costs and savings and annual costs and savings that result from implementation of Alternative 2. The total costs and savings over the 40 year implementation period are estimated using 7 percent and 3 percent real discount rates. This final rule will result in a reduction in costs, so there will be net savings to both licensees and to the NRC.

The estimated total savings for Alternative 2 compared to Alternative 1 are \$1.3 million or \$0.9 million, discounted at 3 percent or 7 percent, respectively, over the 40 year analysis period.

#### ***4.1 Analytical Methodology***

This section describes the process used to evaluate values and impacts of the affected attributes for Alternative 2. Values (benefits) include any desirable changes. Impacts (costs) include any undesirable changes in affected attributes, such as increased costs. The following attributes have quantifiable values and impacts due to implementation of the final rule:

- Industry Implementation
- Industry Operation
- NRC Implementation
- NRC Operations

The NRC collected input assumptions from referenced sources when these were available. In some cases, the NRC was not aware of any input data and in these cases the NRC staff made an estimate based on best professional judgment. As part of the proposed rule, the NRC sought public comments on the accuracy of the input assumptions used in this regulatory analysis, and on the validity of the method to estimate values and impacts of the rule. The NRC did not receive any comments that addressed the regulatory analysis.

#### 4.1.1 General Assumptions

The general input assumptions for the analysis are discussed below.

- NRC wage rate: \$100/hour. This is NRC's incremental labor rate, which includes only the variable costs associated with implementation and operation costs of the rule.
- Industry wage rate: \$100/hour for licensee management and for administrative support. This represents a blended rate for executive level and administrative personnel who support regulatory compliance of a company operating under NRC regulations.
- The time period for the analysis is 40 years. This is considered a reasonable range of time to evaluate the values and impacts of an increased term because initial and renewal terms of ISFSI licenses and CoCs would increase from 20 years to 40 years.

#### 4.1.2 Specific Assumptions for Alternative 2

Under Alternative 2, the NRC will amend its regulations to implement the final rule. The specific assumptions for Alternative 2 are:

- For the purposes of modeling the costs and savings associated with the final rule, the analysis assumes the rule will be implemented in 2010.
- With regard to 10 CFR 72.42(a) and (b), it is assumed that two of the 13 power reactor sites that had not, as of November 2009, announced their intentions with respect to an ISFSI license, would apply for a Part 72 specific license for a period not to exceed 40 years. Under current regulations, these licensees would need to submit an initial application for 20 years and a renewal application for another 20 years to match the 40 year period in the initial application that will be allowed under amended 10 CFR 72.42(a). The licensee's labor saving in not submitting a renewal application is estimated to be 160 hours. This is a one-time savings. Also, it is assumed that 12 of the current 15 licensees with a Part 72 specific license will apply for a license renewal for a period not to exceed 40 years. These licensees would also save an estimated 160 hours each as a result of submitting only a single license renewal to cover the 40 year analysis period. These are modeled as one-time efforts for each licensee, in constant 2008 dollars.
- With regard to 10 CFR 72.212(a)(3), there are 39 licensees who, as of November 2009, held a Part 72 general license, and there are an estimated 29 new general licensees over the analysis period. It is assumed that the CoC is renewed by the CoC holder for each cask design used by all 39 current licensees and by all 29 new general licensees. There is no additional labor effort on the part of the general licensee to comply with new Section 72.212(a)(3) compared to the No Action alternative (Alternative 1). The only change in labor is due to the frequency in which the CoC holder applies for a CoC renewal, and this labor saving is modeled in 10 CFR 72.240(a).
- With regard to 10 CFR 72.212(b)(4), the same number of licensees is assumed as in Section 72.212(a)(3). Therefore, the analysis models the labor cost of 39 current general licensees and 29 new general licensees during the 40 year analysis period. Additional one-

time reporting is required under amended Section 72.212(b)(4) for these licensees. It is assumed that the 39 current general licensees each have five cask designs for which information will need to be reported in a registration letter, and it would require 4 hours to report the information for each cask design. For the 29 new general licensees, the analysis assumes an average of two cask designs for each. Fewer cask designs were assumed for the new licensees because they would have fewer casks on site compared to the current general licensees. It was also assumed that it will take the same amount of time, 4 hours, to report information in the registration letter. The labor effort to submit these registration letters is modeled as a one-time expense, in 2008 dollars, occurring during the 40 year analysis period.

Also modeled under 10 CFR 72.212(b)(4) is a savings associated with Part 72 general licensees who will no longer be required to submit an exemption request to the NRC to apply changes authorized by an amended CoC to a cask loaded under the initial CoC or an earlier amended CoC. These savings are modeled as annual recurring labor savings. The assumption is that the 39 current general licensees each would submit such an exemption request once every 10 years, or 0.1 on an annual basis. The labor effort on the part of the licensee to submit the exemption request was assumed to be 40 hours per request. For the 29 new general licensees, the analysis assumes the same frequency of exemption requests, equal to once every 10 years, or 0.1 on an annual basis. The labor effort avoided for these new general licensees was assumed to be 16 hours per request, lower than current general licensees because the new licensees would have fewer cask types on site.

- With regard to 10 CFR 72.212(b)(5)-(7), the same number of licensees is assumed as in Section 72.212(b)(4). Under Alternative 2, each of these will have an additional one-time reporting requirement of the documentation and results supporting written evaluations of specific cask design characteristics prior to the licensee's use of the cask under the new 40 year renewal term. This must be performed for each of the cask designs for which a renewal registration letter is being submitted. To perform and document the written evaluations in the renewal application, the analysis assumes 40 hours by each of the 39 current general licensees for each of their five cask designs, and a labor effort of 8 hours by each of the 29 new general licensees for each of their two cask designs. As noted above, the labor effort is less for the new licensees because they will have fewer cask types on site.
- With regard to 10 CFR 72.236(g), the analysis assumes no incremental costs or savings to CoC holders to design their casks to last for the longer term (i.e., a term not to exceed 40 years as opposed to the current 20 year term).
- With regard to the changes in 10 CFR 72.240(a), the following five companies are the holders of CoCs: General Nuclear Systems, Transnuclear, BNG Fuel Solutions, Holtec International, and Nuclear Assurance Corporation. An estimate is made that these holders apply for the renewal of 15 CoCs, not to exceed 40 years, for a cask design and that during the 40 year analysis period holders of an additional 10 CoCs of not yet approved cask designs apply for the extended term renewal. Thus, the holders of a total of 25 CoCs apply only once for term renewal under the final rule instead of twice as would occur under the alternative No Action. It is assumed that the labor savings is 160 hours for each of the renewals that are not required to be submitted.
- With regard to the changes to 10 CFR 72.240(c), the analysis assumes that the one-time labor effort for the aging analyses requires 40 hours for each for the 25 CoCs held by companies who apply for term renewal.

- For NRC costs, an estimate of \$50,000 is made to prepare a guidance document to implement the changes in this rule. Additional annual costs to review Part 72 licensee and CoC holder applications are not modeled because it is assumed these are offset by the savings in not reviewing exemption requests.
- For NRC savings, the analysis assumes that each of the 15 specific licensees will apply only once for license renewal over the 40 year analysis period, instead of twice, for a savings to the NRC staff of 200 labor hours. This is consistent with the site specific licensee costs modeled under 10 CFR 72.42(a), and is modeled as a one-time labor saving. The analysis also assumed that there will be labor savings due to the holders of 25 CoCs applying only once for license renewal instead of twice over the 40 year analysis period, for a one-time labor saving of 200 hours per application. Annual savings to the NRC will occur due to fewer exemption requests being submitted by Part 72 general licensees to allow the licensee to apply CoC amendment changes to a previously loaded cask. The NRC's labor saving is modeled with the same input assumptions as the savings for the Part 72 general licensee under Section 72.212(b)(4).

## 5. RESULTS

This section presents results of values and impacts that are expected to be derived from the final rule. The results are shown for each of the following four attributes:

- Industry Implementation
- Industry Operation
- NRC Implementation
- NRC Operation

The final rule is expected to provide values in other attributes, such as improvements in regulatory efficiency and improvements in general public confidence, but these are not quantified because they are expected to be small. The quantified values are presented in constant 2008 dollars, for both one-time and recurring annual efforts. The impact of the final rule over a 40 year analysis period is estimated using 3 percent and 7 percent real discount rates to show an overall net effect in terms of 2008 dollars. Alternative 1, the No-Action Alternative, provides a baseline against which the other alternative is assessed.

### 5.1 Summary of Results

Table 5-1 presents the net impact of the rule. A positive value below is a cost. A number in parentheses is a negative cost, or a savings.

**Table 5-1: Net Impact of Alternatives 1 and 2**

<b>Regulatory Alternative</b>	<b>40 year total at 3% discount rate (\$ 000)</b>	<b>40 year total 7% discount rate (\$ 000)</b>
1. No Action	0	0

2. Implement the final rule	(1,282)	(886)
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There are no costs or benefits associated with Alternative 1, the No Action alternative. No changes would be made to the regulation. The Part 72 licensees and CoC holders would continue to operate under existing terms for ISFSI and cask renewals, and the NRC would review and approve the applications based on the 20 year term length, with a 40 year term approved for individual exceptions to the regulation.

The major contributing savings under Alternative 2 are due to:

- A total of about \$468,000 in savings, in 2008 dollars at 3 percent discount rate over a 40 year analysis period, is due to amending Section 72.212(b)(4) to allow Part 72 general licensees to apply the changes in an amended CoC to a cask loaded under the initial CoC or an earlier amended CoC. This savings is offset by an estimated one-time cost of about \$100,000 in new reporting requirements associated with a registration letter to apply the changes authorized by an earlier amended CoC, and a one-time cost of about \$826,000 to perform the written evaluations prior to applying for the changes noted above.
- One-time savings of about \$225,000 will be realized by Part 72 specific licensees due to fewer license amendment submittals over the 40 year analysis period.
- One-time savings of about \$400,000 will be realized by CoC holders due to the need to apply for fewer license renewals, but this is offset by an estimated one-time cost of \$100,000 associated with the preparation of an aging analysis in the SAR for the period of extended operation for the cask design.
- Industry and the NRC will realize a total of \$1.3 million in savings at 3 percent discount rate over the 40 year analysis period. This is due to \$300,000 in savings due to the submittal of fewer Part 72 specific license renewal applications, \$500,000 in savings due to fewer CoC license renewal applications, and about \$467,000 in savings due to the submittal of fewer exemption requests from Part 72 general licensees.

Table 5-2 shows the estimated costs, by attribute, over the 40 year analysis period.

**Table 5-2: Estimated Values and Impacts by Attribute**

Attribute	Alternative 2 40 Year Total Cost (\$ 000)	
	3% Discount	7% Discount
Industry Implementation	404	404
Industry Operation	(468)	(270)
NRC Implementation	(750)	(750)
NRC Operation	(468)	(270)
<b>Total</b>	<b>(1,282)</b>	<b>(886)</b>

Note: Total may differ from sum of values due to rounding.

Table 5-3 shows the NRC final rule amendments and whether or not the amendment is estimated as a cost to industry and to regulators, or is insignificant and not included in the cost-benefit calculations. The line item input assumptions and results are shown in Appendix 2 for those amendments modeled as a cost to industry and to regulators.

**Table 5-3: Final Rule Amendments and Significance in the Cost-Benefit Analysis**

10 CFR Part 72 amendment description		Cost of amendment estimated as a licensee and/or NRC cost and included in cost-benefit analysis	Cost of amendment NOT estimated as a licensee and/or NRC cost and NOT included in cost-benefit analysis
72.3	Definitions.		X
72.24(c)	Requires a description of the design of the ISFSI or MRS to support the findings in 10 CFR 72.40 for the term requested in the application.		X
72.42(a)-(b)	Requires the licensee to specify in its Part 72 specific license application a fixed period of time, not to exceed 40 years from the date of issuance, for both initial and renewal applications, including aging analyses, current design basis information, and a description of the aging management program. Also requires applications filed consistent with subpart B at least 2 years before expiration of current license, with design bases information.	X	
72.212(a)(3)	Specifies that a Part 72 general license for each cask terminates at the end of the initial term based on cask loading date, and allows the general licensee to apply for a cask term renewal based on the CoC term for a cask design that it uses under its general license, pursuant to new 10 CFR 72.240(a).	X	
72.212(b)(1) - (3)	Existing notification, registration and conformance requirements for the Part 72 general license. The analysis does not estimate the additional cost to general licensees to submit the amendment number		X

	with the existing notification, because the incremental cost is insignificant.		
72.212(b)(4)	Specifies information that the Part 72 general licensee must submit in its registration letter after applying changes authorized by an amended CoC.	X	
72.212(b)(5) – (7)	Requires the Part 72 general licensee to perform written evaluations of three specifications prior to the cask's use and prior to applying changes authorized by an amended CoC to a cask loaded under the initial CoC or an earlier amended CoC, and to review the adequacy of site parameters in the SAR and SER of a CoC, and any changes to written evaluations.	X	
72.212(b)(8) – (10)	Existing requirements of Part 72 general licensees.		X
72.212(b)(11)	Requires a general licensee to maintain a copy of the amended CoC for those casks to which the licensee has applied the changes of an amended CoC and documents referenced in the amended certificate for each cask used for storage of spent fuel. Previously this section applied only to CoCs, and not amended CoCs. The analysis does not estimate the additional cost to general licensees to maintain this record because the incremental cost is insignificant.		X
72.212(b)(12) – (14)	Existing requirements of Part 72 general licensees.		
72.212(e)	Existing requirement specifying fee schedule.		X
72.230(b)	Specifies that casks certified for transportation of spent fuel may be approved for storage of spent fuel for a term not to exceed 40 years. A copy of the CoC, a SAR, and other information must be included in the application.		X
72.234(d)(2)(vii)	Re-designates 72.236(j) to 72.236(k)		X
72.236(g)	Requires CoC holders and applicants to design the cask to store the spent fuel safely for a term proposed in the application, and to permit maintenance as required.		X
72.238	Specifies that the NRC would issue a CoC for a cask model for a term not to exceed 40 years.	X	
72.240(a)	Allows a CoC holder to apply for spent fuel storage cask renewal for a term up to 40 years, and allows a Part 72 general licensee who uses a specific cask model to apply for renewal of that cask CoC if the certificate holder does not apply for renewal.	X	
72.240(c)	Requires in the renewal application a SAR including aging analyses for the cask structures, systems and components for the period of extended operation.	X	

## 6. DECISION RATIONALE AND IMPLEMENTATION

The assessment of costs and benefits discussed previously provides a sound basis for decision-making that leads the NRC to the conclusion that the final rule, if implemented, will result in net savings to industry and to the NRC due to improved efficiency of managing the terms for ISFSI licenses and for approved storage cask designs. The assessment provides a disclosure of information supporting the conclusion and an alternate approach to the regulatory objectives.

Two alternatives were evaluated in this Regulatory Analysis. Alternative 1 would take No Action and would maintain the regulations as currently written.

Alternative 2 will amend NRC regulations to allow a longer period for the term associated with a site-specific ISFSI, an ISFSI operating under a general license, and the storage cask in use at the site. The term will be extended from the current 20 year time period to a time period specified in an initial license application or a renewal license application, not to exceed 40 years. These changes will improve licensee and NRC management of relevant term expiration dates, at an estimated total savings of about \$1.3 million over a 40 year period at a 3 percent discount rate. The NRC will realize most of the savings, with licensees and CoC holders netting about \$64,000 in savings primarily due to the submittal of fewer license and CoC renewal applications as a result of the increase in term length from 20 years to 40 years. Alternative 2 is the approach taken in the final rule.

The final rule is planned for publication in the *Federal Register* in 2010.

## **7. REFERENCES**

- (1) Staff Requirements Memorandum dated November 29, 2004 [ML043500192], in response to SECY-04-0175 dated September 28, 2004, "Options for Addressing the Surry Independent Fuel Storage Installation License – Renewal Period Exemption Request" [ML010670073].
- (2) Nuclear Regulatory Commission, "Regulatory Analysis Technical Evaluation Handbook, Final Report," NUREG/BR-0184, January 1997.

## **Appendix 1: Approved Storage Cask and ISFSI Number and Location Information**

### **As of November 2009**

#### **Approved Storage Casks in 10 CFR 72.214 Currently In Use**

Certificate Number: 1000. General Nuclear Systems, Inc.  
Model Number: CASTOR V/21

Certificate Number: 1002. Nuclear Assurance Corporation  
Model Number: NAC S/T

Certificate Number: 1003. Nuclear Assurance Corporation  
Model Number: NAC-C28 S/T

Certificate Number: 1004. Transnuclear, Inc  
Amendments Numbers 1 - 9.  
Model Number: NUHOMS@-24P, -52B, -61BT, -32PT, -24PHB, and -24PTH.

Certificate Number: 1005. Transnuclear, Inc.  
Model Number: TN-24.

Certificate Number: 1007. BNG Fuel Solutions Corporation.  
Amendments Numbers 1 - 6.  
Model Number: VSC-24.

Certificate Number: 1008. Holtec International.  
Amendments Numbers 1 - 2.  
Model Number: HI-STAR 100.

Certificate Number: 1014. Holtec International.  
Amendments Numbers 1 - 5.  
Model Number: HI-STORM 100.

Certificate Number: 1015. NAC International, Inc.  
Amendments Numbers 1 - 4.  
Model Number: NAC-UMS.

Certificate Number: 1021. Transnuclear, Inc.  
Amendment Number 1.  
Model Number: TN-32, TN-32A, TN-32B

Certificate Number: 1025. NAC International, Inc.  
Amendments Numbers 1 - 5.  
Model Number: NAC-MPC.

Certificate Number: 1026. BNG Fuel Solutions Corporation.  
Amendments Numbers 1 - 4.  
Model Number: WSNF-220, WSNF-221, and WSNF-223 systems; W-150 storage cask; W-100 transfer cask; and the W-21 and W-74 canisters.

Certificate Number: 1027. Transnuclear, Inc.  
Amendment Number 1.  
Model Number: TN-68.

Certificate Number: 1029. Transnuclear, Inc.  
Amendment Number 1.  
Model Number: Standardized Advanced NUHOMS@-24PT1, NUHOMS@-24PT4.

Certificate Number: 1030. Transnuclear, Inc.  
Model Number: NUHOMS@ HD-32PTH

Certificate Number: 1031. NAC International, Inc.  
Model Number: MAGNASTOR.

**ISFSI site specific licenses**

1. GE Morris (wet)
2. Surry
3. H. B. Robinson
4. Oconee
5. Fort St. Vrain
6. Calvert Cliffs
7. Prairie Island
8. North Anna
9. TMI-2 Debris
10. Trojan
11. Rancho Seco
12. Diablo Canyon
13. Idaho Spent Fuel Facility
14. Humboldt Bay
15. Private Fuel Storage

**Planned ISFSI site (added for final rule)**

1. Salem

**ISFSI general licenses**

1. Maine Yankee
2. Vermont Yankee
3. Yankee Rowe
4. Haddam Neck
5. Millstone
6. Indian Point
7. Susquehanna
8. Peach Bottom
9. Oyster Creek
10. Hope Creek /Salem
11. North Anna\*
12. Surry\*
13. McGuire
14. Catawba
15. Robinson\*
16. Oconee\*
17. Sequoyah
18. Hatch
19. Farley
20. St. Lucie
21. Browns Ferry
22. River Bend
23. Grand Gulf
24. Arkansas Nuclear One
25. Calhoun
26. Dresden
27. Duane Arnold
28. Quad Cities
29. Columbia
30. Palo Verde
31. San Onofre
32. Davis Besse
33. Palisades
34. Big Rock Point
35. Point Beach
36. FitzPatrick
37. Seabrook

**Licensees Pursuing  
a General License**

1. Ginna
2. Braidwood
3. Brunswick
4. LaSalle
5. Byron
6. Cooper
7. LaCrosse
8. Turkey Point
9. Cooper
10. Kewaunee
11. Comanche Peak
12. Perry
13. Fermi
14. Cook
15. Crystal River
16. Waterford

**Sites with No  
Announced Intentions**

1. Pilgrim
2. Three Mile Island
3. Clinton
4. Callaway
5. Wolf Creek
6. South Texas Project
7. Shearon Harris
8. Summer
9. Vogtle
10. Zion
11. Beaver Valley
12. Watts Bar
13. Nine Mile Point

- 38. Monticello
- 39. Limerick

\*also site specific licensees

## Appendix 2: Input Assumptions and Line Item Results for Alternative 2

### Licensee Costs and Savings

	Description	No. of NRC Licensees or CoC Holders	No. of cask designs per NRC Licensee or CoC Holder	Hours per Licensee or CoC Holder	Wage Rate (\$/hr)	One-time Cost or Savings	Annual Cost or Savings	Total 40 Yr 3% NPV	Total 40 Yr 7% NPV
<b>Part 72</b>									
72.42(a) and (b)	Requires the licensee to specify in its application for a specific license a fixed period of time for a Part 72 specific license, not to exceed 40 years from the date of issuance, including aging analyses and an aging management program: --- initial applications.	2	-	-160	100	-\$32,000	-	-	-
	--- renewals.	12	-	-160	100	-\$192,000	-	-	-
72.212(a)(3)	Specifies that a Part 72 general license for each cask fabricated under a CoC terminates when the CoC for that particular cask design expires: --- current general licensees.	39	-	0					
	--- future general licensees.	29	-	0					
72.212(b)(4)	Specifies information that the Part 72 general licensee must submit in its registration letter after applying changes authorized by an amended CoC: --- current general licensees.	39	5	4	100	\$78,000	-	-	-
	--- future general licensees.	29	2	4	100	\$23,200	-	-	-
	Allows changes authorized by an amended CoC to a cask loaded under the initial CoC or an earlier amended CoC: --- current general licensees.	39	0.1	-40	100		-\$15,600	-\$360,590	-\$207,975
	--- future general licensees.	29	0.1	-16	100		-\$4,640	-\$107,253	-\$61,859
72.212(b)(5)-(7)	Requires the Part 72 general licensee to perform written evaluations of three specifications prior to its use and prior to applying changes authorized by an amended CoC to a cask loaded under the initial CoC or an earlier amended CoC, and to review the adequacy of site parameters in the SAR and SER of a CoC, and any changes to written evaluations: --- current general licensees.	39	5	40	100	\$780,000	-	-	-
	--- future general licensees.	29	2	8	100	\$46,400			
72.240(a)	Allows a CoC holder to apply for spent fuel storage cask renewal for a term not to exceed 40 years.	25	1	-160	100	-\$400,000	-	-	-
72.240(c)	Requires aging analyses in the Safety Analysis Report for the period of extended operation requested by: --- the CoC holder.	25	1	40	100	\$100,000	-	-	-
<b>SUBTOTAL</b>								-\$467,843	-\$269,834
+ one-time costs								\$403,600	\$403,600
<b>TOTAL</b>								-\$64,243	\$133,766

## Appendix 2 continued

### NRC Costs and Savings

10 CFR	Description	No. of CoC Applications (one time) or number of general licensees	No. of cask designs, or number of exemption requests per year	NRC Review Hours per Application or Exemption	Wage Rate (\$/hr)	One-time Cost or Savings	Annual Cost or Savings	Total 40 Year 3% NPV	Total 40 Year 7% NPV
<b>Part 72</b>									
72.42(a)	Allows NRC review of site specific license application under 40 year term instead of 20 year term.	15		-200	100	-\$300,000			
72.212(b)(4)	Allows a general licensee to apply CoC amendment changes to a previously loaded cask --- current general licensees	39	0.1	-40	100		-\$15,600	-\$360,590	-\$207,975
	--- future general licensees.	29	0.1	-16	100		-\$4,640	-\$107,253	-\$61,859
72.238	Allows NRC to issue a CoC for a cask model for a term not to exceed 40 years, instead of a term of 20 years.	25	1	-200	100	-\$500,000			
	Cost to develop final rule and guidance document.					\$50,000			
<b>SUBTOTAL</b>								-\$467,843	-\$269,834
+ one-time costs								-\$750,000	-\$750,000
<b>TOTAL</b>								-\$1,217,843	-\$1,019,834

ENVIRONMENTAL ASSESSMENT AND FINDING OF  
NO SIGNIFICANT IMPACT  
FOR THE  
FINAL RULE  
AMENDING 10 CFR PART 72  
LICENSE AND CERTIFICATE OF COMPLIANCE TERMS

Office of Federal and State Materials and Environmental Management Programs  
U.S. Nuclear Regulatory Commission  
April 2010

I. THE PROPOSED ACTION

The U.S. Nuclear Regulatory Commission (NRC) is issuing a final rule (RIN 3150-A109) that will amend its regulations that govern licensing requirements for the independent storage of spent nuclear fuel. These amendments include changes that extend and clarify the term limits for dry storage cask Certificates of Compliance (CoCs) and independent spent fuel storage installation (ISFSI) specific licenses, provide consistency between the general and specific ISFSI license requirements, and allow general licensees subject to these regulations to implement changes authorized by an amended CoC to a cask loaded under the initial CoC or an earlier amended CoC (a “previously loaded cask”).

II. THE NEED FOR THE PROPOSED ACTION

This rulemaking is needed to improve the regulatory efficiency of 10 CFR Part 72, which provides requirements for: (a) site-specific ISFSI licenses; (b) a general license for the storage of spent fuel in ISFSIs at reactor sites, and (c) dry storage cask CoCs.

“Dry storage” of spent fuel assemblies involves storing the assemblies in sealed casks on concrete pads after the assemblies have been removed from a reactor’s spent fuel storage pool (“wet storage”). A site-specific license is one issued to a particular licensee for a particular ISFSI; a general license is authorized for licensees holding a Part 50 or 52 reactor license, provided the general licensee meets the requirements of Subpart K of 10 CFR Part 72, which provides requirements for general licenses for the storage of spent fuel at power reactor sites.

This final rule will extend the initial and renewal license term limits for CoCs and site-specific ISFSI licenses from a term of not to exceed 20 years to a term of not to exceed 40 years (the term of the general license will be determined, in part, by the CoC chosen by the general licensee). Any license renewal application will be required to include an analysis that considers the effects of aging on structures, systems, and components (SSCs) important to safety for the requested renewal term. In approving the renewed site-specific licenses for the Surry and H.B. Robinson ISFSIs, the staff imposed certain aging management requirements. At the present time, there are no similar requirements for general licensees. Because the same approved cask system certified by a CoC could be used at both site-specific ISFSI sites and general license ISFSI sites, it is necessary and appropriate to impose the same aging management requirements on general licensees.

The final rule will establish a term not to exceed 40 years as the initial and renewal term limits for CoCs, whereas the current regulation does not specify a term. The current regulation, however, limits a general license to 20 years after the date that a particular cask model was first used by a general licensee to store spent fuel, unless the cask’s CoC is renewed, in which case the general license expires 20 years after the cask CoC renewal date. The rulemaking will remove the 20 year limit and instead would link the general license term to that of the CoC. Thus, the authority to use an approved cask under a general license, the CoC initial and renewal

terms, and the site-specific license initial and renewal terms would be for terms not to exceed 40 years, thereby achieving regulatory consistency.

Under 10 CFR Part 72, dry storage cask fabricators may periodically upgrade a cask's design and seek NRC approval of CoC amendments. The NRC approval process for CoC amendments ensures that a proposed design upgrade will continue to result in a cask that can safely store spent fuel assemblies (i.e., within the cask's analyzed condition). Under the current regulations, a previously loaded cask is bound by the terms, conditions, and technical specifications of the CoC applicable to that cask at the time the licensee loaded the cask. A general licensee seeking to implement changes from a later CoC amendment to a previously loaded cask must obtain NRC approval in the form of an exemption. The final rule will allow general licensees to apply the changes of a CoC amendment to a previously loaded cask, without prior NRC approval, provided the cask conforms to the amended CoC and, thus, remains in the analyzed condition. The general licensee will prepare a written evaluation documenting conformance with the amended CoC. This rulemaking will reduce the number of requests for exemptions that licensees must prepare and the NRC must evaluate, thus reducing the regulatory burden on licensees and saving NRC resources.

### III. ENVIRONMENTAL IMPACTS OF PROPOSED ACTION

The environmental impacts associated with storage of light water reactor spent fuel (including dry storage) have been previously considered in other Commission rules and licensing actions on which this assessment is based. The "Environmental Assessment for 10 CFR Part 72 Licensing Requirements for the Independent Storage of Spent Fuel and High-Level

Radioactive Waste,” NUREG-1092<sup>1</sup> (August 1984), and the Supplementary Information of the proposed rule published in the *Federal Register* on May 27, 1986 (51 FR 19106), contain specific analyses showing that the potential environmental impacts from dry storage of spent fuel in casks are small. The “Environmental Assessment for Proposed Rule Entitled ‘Storage of Spent Nuclear Fuel in NRC-Approved Storage Casks at Nuclear Power Reactor Sites’” for the proposed rule published in the *Federal Register* on May 5, 1989 (54 FR 19379), assessed the environmental impact of dry cask storage and concluded with a finding of no significant impact.

Dry storage of spent fuel has a long history, both in the United States and other countries. The NRC has considered environmental impacts associated with dry storage of spent fuel in other Commission rulemakings and licensing actions on which this assessment is based. In the statements of consideration to the NRC’s Waste Confidence rule issued in 1990 (55 FR 38474, 38511; September 18, 1990), the Commission stated that spent fuel can be stored safely and without significant environmental impact, in either wet storage or in wet storage followed by dry storage, for at least 100 years.

Environmental impacts caused by dry cask storage systems for spent fuel under either a site-specific or general license are not considered significant. No effluents have been detected from the sealed dry cask storage systems. However, activities associated with cask loading and decontamination may result in some small incremental liquid and gaseous effluent. Cask loading and decontamination will be conducted under 10 CFR Part 50 reactor operating licenses and effluents will be controlled within reactor technical specifications. Because reactor sites are relatively large, any incremental doses to the public offsite due to direct radiation exposure from the spent fuel storage casks are expected to be small and, even when combined with the dose

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<sup>1</sup>Copies of NUREG-1092 may be purchased from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 37082, Washington, DC 20013-7082. Copies are also available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161. A copy is also available for inspection and/or copying at the NRC Public Document Room, 11555 Rockville Pike, Rockville, MD 20852-2738.

contribution from reactor operations, will be well within the annual dose equivalent of 0.25 mSv (25 mrem) limit to the whole body specified in 10 CFR 72.104. Incremental impacts on collective occupational exposure due to dry cask storage of spent fuel under either a site-specific or general license are expected to be only a small fraction of that which occurs from operation of the nuclear power station.

The NRC has determined that the amendments to 10 CFR Part 72 to be implemented by this final rule will not change the current safety and environmental requirements for the storage of spent nuclear fuel so that no change in environmental impact is anticipated. Although the rulemaking will extend the initial and renewal license durations for ISFSIs, all ISFSIs will continue to remain under the NRC's regulatory control and inspections regime. In this regard, recent experience has shown that after a loaded storage cask is placed on the storage pad, relatively few inspection issues arise due to the passive nature of these facilities.

In addition, the final rulemaking amendments do not involve any change to the NRC's requirements for cask design. Applications for renewals of site-specific ISFSI licenses and CoC designs will be required to demonstrate, in time-limited aging analyses and in a description of an aging management program, that structures, systems, and components important to safety will continue to perform their intended function for the requested renewal term.

Allowing general licensees to apply changes authorized by CoC amendments to previously loaded casks without prior NRC approval will not have any significant effect on the environment, provided that the casks, once the changes have been implemented, conform to the terms, conditions, and specifications of the amended CoC. Each CoC amendment requires an NRC rulemaking before the amendment is effective. In these previous CoC amendment rulemaking proceedings, the Commission determined that compliance with the requirements of 10 CFR Part 72 will ensure adequate protection of public health and safety, and the environment. The NRC, through a safety evaluation report for the cask system in the

rulemaking, has determined that if the conditions specified in the CoC are met, adequate protection of public health and safety, and the environment will be maintained.

Based on this assessment of the proposed actions, the Commission finds that the flexibility to request longer initial and renewal ISFSI license or CoC terms, and the flexibility for general licensees to apply changes authorized by CoC amendments to previously loaded casks, will not have a significant environmental impact. The NRC concludes that the amendments to be implemented by this final rule are procedural in nature.

#### IV. ALTERNATIVES TO THE PROPOSED ACTION

The alternative to this proposed action is the no action alternative. The no action alternative would be to not issue the final rule, which would leave the current regulations in place. The NRC rejected this alternative because applicants applying for longer licenses and CoC terms, or general licensees implementing later amendments to previously loaded casks, would be forced to seek exemptions from the current regulations. Whether the final rule or current exemption method is used, the environmental impacts would be the same. Therefore, given that the final rule will have no significant effect on the environment, but will reduce burdens, no further alternatives need be considered.

#### V. ALTERNATIVE USE OF RESOURCES

There are no irreversible commitments of resources determined in this assessment.

## VI. AGENCIES AND PERSONS CONTACTED

No agencies or persons outside the NRC were contacted in connection with the preparation of this environmental assessment.

## VII. FINDING OF NO SIGNIFICANT IMPACT

The Commission has determined that the amendments to 10 CFR Part 72 to be implemented by this final rule, as described above, are procedural in nature. For the reasons stated above, the Commission has determined under the National Environmental Policy Act of 1969, as amended, and the Commission's regulations in Subpart A of 10 CFR Part 51, that this final rule is not a major Federal action significantly affecting the quality of the human environment, and therefore, an environmental impact statement is not required.