



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

February 25, 2016

MEMORANDUM TO: Sheena Whaley, Chief  
Rulemaking and Project Management Branch  
Division of Material Safety, State, Tribal  
and Rulemaking Programs, NMSS

FROM: Steve Ruffin, Acting Chief **/RA/**  
Spent Fuel Licensing Branch  
Division of Spent Fuel Management, NMSS

SUBJECT: USER NEED FOR RULEMAKING FOR CERTIFICATE OF  
COMPLIANCE RENEWAL, INITIAL ISSUE AND AMENDMENT NOS. 1  
THROUGH 6 TO VENTILATED STORAGE CASK (VSC-24) SYSTEM

The following information is being provided to request rulemaking support for the following Spent Fuel Management (SFM) 10 CFR Part 72 licensing activity:

1. Changes to 10 CFR 72.214 rule text (changes appear in bold):

Certificate Number: 1007

Initial Certificate Effective Date: May 7, 1993

**Renewed Initial Certificate Effective Date:** [insert 75 days from date of FR publication]

**Renewed Amendment No. 1 Effective Date:** [insert 75 days from date of FR publication]

**Renewed Amendment No. 2 Effective Date:** [insert 75 days from date of FR publication]

**Renewed Amendment No. 3 Effective Date:** [insert 75 days from date of FR publication]

**Renewed Amendment No. 4 Effective Date:** [insert 75 days from date of FR publication]

**Renewed Amendment No. 5 Effective Date:** [insert 75 days from date of FR publication]

**Renewed Amendment No. 6 Effective Date:** [insert 75 days from date of FR publication]

SAR Submitted by: EnergySolutions.

SAR Title: Final Safety Analysis Report for the VSC-24, Ventilated Storage Cask System

Docket Number: 72-1007

Certificate Expiration Date: May 7, 2013

Renewed Certificate Expiration Date: May 7, 2053

Model Number: VSC-24

On October 12, 2012 (Agencywide Documents Access and Management System (ADAMS) accession number ML12290A139), as supplemented February 14, 2013 (ML130500219), April 4, 2014 (ML14099A192), October 24, 2014 (ML14301A283), and June 26, 2015 (ML15182A163), EnergySolutions submitted a renewal application for Ventilated Storage Cask (VSC-24), Certificate of Compliance (CoC) No. 1007, for a period of 40 years beyond the initial certificate term.

CONTACTS: Jose R. Cuadrado, DSFM/NMSS  
(301) 415-0606

### Technical Specifications and Certificate of Compliance Conditions: Proposed Changes

The technical basis sections were removed from technical specifications of the initial issue and Amendments 1 and 2. Text was added to Table 1, "Characteristics of Spent Fuel To Be Stored in the VSC-24 System," of Attachment A, "Conditions for System Use and Technical Specifications," as follows:

Amendment 4 and  
Amendment 5      Decay Power Per Assembly  
(see Note 3)

Note 3: For casks loaded after the effective date of the renewal of the CoC (and its amendments), the maximum decay power per assembly is limited to 0.625 kW to preclude possible zinc-zircaloy interactions.

Amendment 6      Decay Power Per Assembly  $\leq 1$  kW <sup>(3)</sup>

<sup>(3)</sup> For casks loaded after the effective date of the renewal of the CoC (and its amendments), the maximum decay power per assembly is limited to 0.625 kW to preclude possible zinc-zircaloy interactions.

Administrative changes are discussed in the SER.

The proposed changes to the CoC initial issue and Amendments 1 through 3, to support the VSC-24 storage system CoC renewal, unless specified otherwise (see Exceptions), are as follows:

#### 1. RENEWAL

##### ii. AUTHORIZATION UNDER RENEWED COC

No new VSC-24 storage system structures, systems and components (SSCs) may be constructed or put into service under this amendment to the CoC after the effective date of the renewal of the CoC. However, for VSC-24 systems that have been put into service and are in operation under this amendment as of the effective date of the renewal of the CoC, cask operations, including performance of maintenance and repairs of SSCs, may continue in accordance with the conditions of this CoC.

##### ii. 72.212 EVALUATIONS FOR RENEWED CoC USE

Any general licensee operating VSC-24 storage systems as of the effective date of the renewal of the CoC shall:

- a. as part of the evaluations required by 72.212(b)(5), include evaluations related to the terms, conditions, and specifications of this CoC amendment as modified (i.e., changed or added) as a result of the renewal of the CoC,

- b. as part of the document review required by 72.212(b)(6), include a review of the FSAR changes resulting from the renewal of the CoC and the NRC Safety Evaluation Report related to the renewal of the CoC, and;
- c. ensure that the evaluations required by 72.212(b)(7) and (8) capture the evaluations and review described in (a.) and (b.) of this CoC condition.

### iii. FSAR UPDATE FOR RENEWED CoC

The CoC holder shall submit an updated FSAR to the Commission, in accordance with 10 CFR 72.4, within 90 days after the renewal of the CoC has been approved by the Commission. The updated FSAR shall reflect the changes and CoC holder commitments resulting from the review and approval of the renewal of the CoC. The CoC holder shall continue to update the FSAR pursuant to the requirements of 10 CFR 72.248.

### iv. OPERATING PROCEDURES FOR SYSTEMS IN SERVICE LONGER THAN 20 YEARS

The general licensee (i.e., the user) that operates VSC-24 storage system SSCs for more than 20 years shall establish, implement, and maintain written procedures for each aging management program (AMP), including the lead cask inspection program, described in Section 9.3.3, "Aging Management Program" of the FSAR. The procedures shall be consistent with the AMP descriptions in the FSAR and shall include provisions for changing AMP elements as necessary and within the limitations specified in other CoC conditions and technical specifications to address new information on aging effects that is derived from the results of AMP inspections and/or industry operating experience. Each procedure shall contain a reference to the specific aspect of the AMP element implemented by that procedure, and that reference shall be maintained even if the procedure is modified.

The general licensee shall establish and implement these written procedures within 180 days of the effective date of the renewal of the CoC or the 20<sup>th</sup> anniversary of the loading of the first VSC-24 cask at its site, whichever is later. The general licensee shall maintain these written procedures for as long as it (the licensee) continues to operate VSC-24 storage system SSCs that have been in service for longer than 20 years.

### v. AMENDMENTS FOR RENEWED CoC

All future amendments to this CoC shall also include evaluations of the impacts of the changes in the amendment on aging management activities for the VSC-24 storage system, modifying the TLAAs and AMPs, including the lead cask inspection program, accordingly.

### vi. PERIODIC TOLLGATE ASSESSMENTS

The general licensee shall perform and maintain records of periodic tollgate assessments as part of the 'Operating Experience' element of each AMP, including the lead cask inspection program, that are consistent with the general description of the assessment elements and report contents in Section 9.3.5, "Periodic Tollgate Assessments" of the FSAR.

## vii. ADDITIONAL DESIGN CONDITIONS FOR RENEWED CoC

As of the effective date of the renewal of the CoC, the following conditions apply to the VSC-24 design feature alternatives:

- a. The galvanized steel grate described in Note 6 of FSAR Drawing No. VCC-24-002 may not be used on any currently in service VSC-24 VCCs.
- b. The fiberglass screen material for the air outlet screens listed in Note 4 of FSAR Drawing No. VCC-24-004 may not be used on any currently in service VSC-24 VCCs after the VCC has reached an in-service life of 20 years.

Exceptions

Conditions No. 1, 6, and 7 of Amendment 0 have been deleted.

Conditions No. 3 and 4 of Amendment 1 have been deleted.

The proposed changes to the CoCs for Amendments 4 through 6, to support the VSC-24 storage system CoC renewal, are as follows:

## 1. RENEWAL

## i. 72.212 EVALUATIONS FOR RENEWED CoC USE

Any general licensee that initiates spent fuel dry storage operations with the VSC-24 storage system after the effective date of the renewal of the CoC and any general licensee operating VSC-24 storage systems as of the effective date of the renewal of the CoC, including those that put additional VSC-24 SSCs into service after that date, shall:

- a. as part of the evaluations required by 72.212(b)(5), include evaluations related to the terms, conditions, and specifications of this CoC amendment as modified (i.e., changed or added) as a result of the renewal of the CoC,
- b. as part of the document review required by 72.212(b)(6), include a review of the FSAR changes resulting from the renewal of the CoC and the NRC Safety Evaluation Report related to the renewal of the CoC, and
- c. ensure that the evaluations required by 72.212(b)(7) and (8) capture the evaluations and review described in (a.) and (b.) of this CoC condition.

## ii. FSAR UPDATE FOR RENEWED CoC

The CoC holder shall submit an updated FSAR to the Commission, in accordance with 10 CFR 72.4, within 90 days after the renewal of the CoC has been approved by the Commission. The updated FSAR shall reflect the changes and CoC holder commitments resulting from the review and approval of the renewal of the CoC. The CoC holder shall continue to update the FSAR pursuant to the requirements of 10 CFR 72.248.

iii. OPERATING PROCEDURES FOR SYSTEMS IN SERVICE LONGER THAN 20 YEARS

The general licensee (i.e., the user) that operates VSC-24 storage system SSCs for more than 20 years shall establish, implement, and maintain written procedures for each aging management program (AMP), including the lead cask inspection program, described in Section 9.3.3, "Aging Management Program" of the FSAR. The procedures shall be consistent with the AMP descriptions in the FSAR and shall include provisions for changing AMP elements as necessary and within the limitations specified in other CoC conditions and technical specifications to address new information on aging effects that is derived from the results of AMP inspections and/or industry operating experience. Each procedure shall contain a reference to the specific aspect of the AMP element implemented by that procedure, and that reference shall be maintained even if the procedure is modified.

The general licensee shall establish and implement these written procedures within 180 days of the effective date of the renewal of the CoC or the 20th anniversary of the loading of the first VSC-24 cask at its site, whichever is later. The general licensee shall maintain these written procedures for as long as it (the licensee) continues to operate VSC-24 storage system SSCs that have been in service for longer than 20 years.

iv. AMENDMENTS FOR RENEWED CoC

All future amendments to this CoC shall also include evaluations of the impacts of the changes in the amendment on aging management activities for the VSC-24 storage system, modifying the TLAAs and AMPs, accordingly.

v. PERIODIC TOLLGATE ASSESSMENTS

The general licensee shall perform and maintain records of periodic tollgate assessments as part of the 'Operating Experience' element of each AMP, including the lead cask inspection program, that are consistent with the general description of the assessment elements and report contents in Section 9.3.5, "Periodic Tollgate Assessments" of the FSAR.

vi. ADDITIONAL DESIGN CONDITIONS FOR RENEWED CoC

As of the effective date of the renewal of the CoC, the following conditions apply to the VSC-24 design feature alternatives:

- a. The galvanized steel grate described in Note 6 of FSAR Drawing No. VCC-24-002 may not be used on any new or currently in service VSC-24 VCCs.
- b. The fiberglass screen material for the air outlet screens listed in Note 4 of FSAR Drawing No. VCC-24-004 may not be used on any new or currently in service VSC-24 VCCs after the VCC has reached an in-service life of 20 years.

2. The proposed CoCs and TSs, and preliminary SER have been placed in ADAMS (see references below) and are available for your use in the rulemaking package. The Division of Spent Management will designate these documents as Official Agency Records after the Executive Director for Operations has approved the package (ADAMS Package No. ML16057A113).

Docket No. 72-1007

- ADAMS References:
1. Proposed CoC No. 1007, Initial Issue (ML16057A127)
  2. Proposed TS, Attachment A, Initial Issue (ML16057A139)
  3. Proposed CoC No. 1007, Amendment 1 (ML16057A189)
  4. Proposed TS, Attachment A, Amendment 1 (ML16057A211)
  5. Proposed CoC No. 1007, Amendment 2 (ML16057A216)
  6. Proposed TS, Attachment A, Amendment 2 (ML16057A322)
  7. Proposed CoC No. 1007, Amendment 3 (ML16057A333)
  8. Proposed TS, Attachment A, Amendment 3 (ML16057A358)
  9. Proposed CoC No. 1007, Amendment 4 (ML16057A449)
  10. Proposed TS, Attachment A, Amendment 4 (ML16057A511)
  11. Proposed CoC No. 1007, Amendment 5 (ML16057A593)
  12. Proposed TS, Attachment A, Amendment 5 (ML16057A600)
  13. Proposed CoC No. 1007, Amendment 6 (ML16057A617)
  14. Proposed TS, Attachment A, Amendment 6 (ML16057A630)
  15. Preliminary SER (ML16057A667)

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Docket No. 72-1007

- ADAMS References:
1. Proposed CoC No. 1007, Initial Issue (ML16057A127)
  2. Proposed TS, Attachment A, Initial Issue (ML16057A139)
  3. Proposed CoC No. 1007, Amendment 1 (ML16057A189)
  4. Proposed TS, Attachment A, Amendment 1 (ML16057A211)
  5. Proposed CoC No. 1007, Amendment 2 (ML16057A216)
  6. Proposed TS, Attachment A, Amendment 2 (ML16057A322)
  7. Proposed CoC No. 1007, Amendment 3 (ML16057A333)
  8. Proposed TS, Attachment A, Amendment 3 (ML16057A358)
  9. Proposed CoC No. 1007, Amendment 4 (ML16057A449)
  10. Proposed TS, Attachment A, Amendment 4 (ML16057A511)
  11. Proposed CoC No. 1007, Amendment 5 (ML16057A593)
  12. Proposed TS, Attachment A, Amendment 5 (ML16057A600)
  13. Proposed CoC No. 1007, Amendment 6 (ML16057A617)
  14. Proposed TS, Attachment A, Amendment 6 (ML16057A630)
  15. Preliminary SER (ML16057A667)

**ADAMS Package No.:ML1605A113      Memo: ML16057A118**

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<b>OFC</b>	DSFM		DSFM		DSFM		DSFM		DSFM	E
<b>NAME</b>	DDunn		MCall		JBorowsky		DTang			JCuadrado
<b>DATE</b>	2/22/16		2/23/16		2/23/16		2/24/16			2/23/16
<b>OFC</b>	DSFM		DSFM		DSFM		DSFM		OGC	DSFM
<b>NAME</b>	WWheatley		ACsontos		JPiotter		MRahimi		ACoggins	SRuffin
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