

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
DIVISION OF FUEL CYCLE SAFETY, SAFEGUARDS, AND ENVIRONMENTAL REVIEW

FINAL ENVIRONMENTAL ASSESSMENT
FOR THE AMENDMENT OF THE U.S. NUCLEAR REGULATORY
COMMISSION LICENSE NO.: SNM-2504 FOR THE FORT ST. VRAIN
INDEPENDENT SPENT FUEL STORAGE INSTALLATION IN PLATTEVILLE,
COLORADO

DOCKET NO.: 72-09

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ACRONYMS

ac	acres
ADAMS	Agencywide Documents Access and Management System
CFR	<i>Code of Federal Regulations</i>
CDPHE	Colorado Department of Public Health and Environment
DOE	U.S. Department of Energy
EA	environmental assessment
EIS	Environmental Impact Statement
EJ	environmental justice
ESA	Endangered Species Act
FSAR	final safety analysis report
FSC	Fuel Storage Container
FSV	Fort St. Vrain
FONSI	finding of no significant impact
FR	<i>Federal Register</i>
ft	feet
FWS	U.S. Fish and Wildlife Service
HA	hectares
HTGR	High Temperature Gas Cooled Reactors
in	inches
ISFSI	independent spent fuel storage installation
kW	kilowatt
km	kilometers
mi	miles
mrem	millirem
mSv	miliSievert
MVDS	Modular Vault Dry Storage
NEPA	National Environmental Policy Act
NGS	Nuclear Generating Station
NHPA	National Historic Preservation Act
NRC	U.S. Nuclear Regulatory Commission
PSCo	Public Service Company of Colorado
RAI	request for additional information
REMP	Radiological Environmental Monitoring Program
ROI	Region of Influence
SHPO	State Historic Preservation Officer
SNM	Special Nuclear Materials
TLD	thermoluminescent dosimeter
TS	technical specifications
USCB	U.S. Census Bureau
yr	year

FINAL ENVIRONMENTAL ASSESSMENT FOR
THE PROPOSED LICENSE AMENDMENT OF
U.S. NUCLEAR REGULATORY COMMISSION LICENSE NO.: SNM-2504
FOR THE FORT ST. VRAIN
INDEPENDENT SPENT FUEL STORAGE INSTALLATION

1.1 INTRODUCTION

By letter dated February 17, 2015, as supplemented on March 9 and March 18, 2015, the U.S. Department of Energy (DOE), Idaho Operations Office (DOE or the licensee) submitted an application to the U.S. Nuclear Regulatory Commission (NRC) requesting to amend Special Nuclear Materials License Number SNM-2504 (license SNM-2504) for the Fort St. Vrain (FSV) Independent Spent Fuel Storage Installation (ISFSI) located near Platteville in Weld County, Colorado (DOE, 2015a). DOE is requesting to amend the Technical Specification (TS) 3.3.1, "Seal Leak Rate," in accordance with Section 72.56 of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater than Class C Waste." The NRC noticed the license amendment request and opportunity to request a hearing and petition for leave to intervene in the *Federal Register* (FR) on April 20, 2015 (80 FR 21772).

The irradiated fuel in the ISFSI is contained in fuel storage containers (FSC) which are sealed with double metal O-ring seals between the FSC body and the lid (DOE, 2015a). TS 3.3.1 in Appendix A of license SNM-2504 requires that the FSC or storage well seal leak rate not exceed 1×10^3 reference cubic centimeters per second (ref-cm³/s). The TS requires the licensee to test the leak rate of one FSC from each vault every five years. The TS also calls for specific corrective actions to be performed within a specified amount of time if the leak rate limit is exceeded for one or two seals on FSCs or storage wells. DOE is requesting to revise the response time to complete some of the corrective actions in TS 3.3.1 if the leak rate limit is exceeded.

In accordance with NRC regulations at 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," that implement the National Environmental Policy Act of 1969 (NEPA), as amended,¹ the NRC staff's environmental review of the proposed license amendment is documented in this final environmental assessment (EA). The purpose of this document is to assess the potential environmental impacts of the proposed license amendment and alternatives.

The NRC is also conducting a safety evaluation of this license amendment request, which will be documented in a separate Safety Evaluation Report.

1.2 Background

In 1991, the Public Service Company of Colorado (PSCo) requested an NRC license to construct and operate an ISFSI to receive, possess, store, and transfer FSV High

¹ 42 U.S.C. 4321 et seq.

Temperature Gas Cooled Reactor (HTGR) spent fuel to the ISFSI in accordance with the requirements in 10 CFR Part 72. The NRC issued a 20-year license to PSCo in 1991. In support of the license application to construct and operate the FSV ISFSI, the NRC staff prepared a final EA and determined a finding of no significant impact (FONSI) was appropriate (NRC, 1991).

The FSV ISFSI uses Modular Vault Dry Storage (MVDS), which consists of a contained shield system designed for 40 years of interim storage of the FSV HGTR spent fuel. The FSV reactor was built and operated during the 1970's and 1980's. It was permanently shut down in 1989 and decommissioned (NRC, 1991). Between December of 1991 and June 10, 1992, PSCo loaded 1,458 fuel elements and six neutron source fuel elements into the ISFSI (DOE, 2009). Six vault modules store spent fuel within the MVDS. There are six fuel elements stored in a FSC and a total of 244 FSCs. The fuel was stacked into FSCs, closed, and the bolted lids were sealed with two metal O-rings. In December of 1995, DOE informed the NRC of its intent to procure the FSV ISFSI, take possession of the fuel stored in it, and transfer the license to DOE. In 1996 DOE took possession of the fuel stored in the ISFSI, but PSCo continued to manage the spent fuel until June 4, 1999, when the license was transferred to DOE (DOE, 2009).

On August 2, 2011, the NRC noticed the issuance of the renewed FSV ISFSI license SNM-2504 in the *Federal Register* (76 FR 46329). The renewed license expires on November 30, 2031. The NRC staff prepared an EA and determined a FONSI was appropriate (76 FR 30397) in support of the license renewal application review.

1.3 Proposed Action

TS 3.3.1 in Appendix A of license SNM-2504 requires that the FSC or storage well seal leakrate not exceed 1×10^3 ref-cm³/s. If the leak rate limit is exceeded for one or two seals on FSCs or storage wells, the TS requires the licensee to complete the following corrective actions within a specified amount of time:

- to restore the top seal integrity within seven days (required corrective action A.1.1) or transfer the FSC to a storage well (required corrective action A.1.2.1) and verify the integrity of the storage well within seven days (required corrective action A.1.2.2);
- perform leak test on two additional FSCs from each vault within 30 days (required action A.2); and
- submit a report to the NRC describing the condition, results of engineering evaluations, and actions taken within 90 days (required corrective action A.3).

DOE is requesting to revise the response times associated with some of these corrective actions. Specifically, DOE is requesting to revise TS 3.3.1 to lengthen the time allowed for corrective actions A.1.1, A.1.2.1, and A.1.2.2 from seven days to 21 days, and corrective action A.2 from 30 days to 45 days (see Table 1-1 of this final EA). DOE is also requesting an administrative change to add Section 5.5.5, "Aging Management Program," to the TS Table of Contents of Appendix A of license SNM-2504, which was inadvertently omitted when the license was renewed in 2011 (DOE, 2015a, 2015c). In addition, during NRC's review of the license

amendment request, staff also identified language in Item 6 of Subsection 5.5.2, “Essential Programs Control Program,” that need clarification, and found that the TS had not been updated to reflect that license SNM-2504 had been renewed. This portion of the action, that is administrative in nature (correcting TS 5.5.5, clarifying 5.5.2, and noting that the license was renewed) meets the categorical exclusion provision in 10 CFR 51.22 (c)(11) as the action relates to issuance of an amendment to a license for storage of spent fuel in an ISFSI, and (i) there is no significant increase in the amounts of any effluents that may be released offsite, (ii) there is no significant increase in individual or cumulative occupational radiation exposure, (iii) there is no significant construction impact, and (iv) there is no significant increase in the potential for or consequences from radiological accidents. This environmental assessment was prepared for the part of the proposed action not involving these administrative revisions.

Table 1-1. DOE Proposed Changes to Technical Specification 3.3.1, “Seal Leak Rate”

Corrective Action	Current Response Time (days)	Proposed Response Time (days)
A.1.1 To restore the top seal integrity or A.1.2.1 Transfer the FSC with a faulty (leaking) seal to a standby storage well and A.1.2.2 Verify the integrity of the storage well	7	21
A.2 Perform leak test on two additional FSCs from each vault	30	45
Source: DOE 2015a, c		

In a response to NRC’s request for additional information (RAI) (NRC, 2015a), DOE confirmed that these proposed revisions to TS 3.3.1 will not result in changes to routine operations or construction activities (DOE, 2015c).

1.3 Purpose and Need

TS 3.3.1 in Appendix A of license SNM-2504 requires that the FSC or storage well seal leak rate not exceed 1×10^3 ref-cm³/s. Performance of the seal leak test allows the licensee to continue to demonstrate confinement integrity (DOE, 2015c). If the leak rate limit is exceeded for one or two seals on FSCs or storage wells, DOE would be required to:

- restore the top seal integrity within or transfer the FSC to a storage well, and verify the integrity of the storage well within seven days;
- perform leak test on two additional FSCs from each vault within 30 days; and
- submit a report to the NRC describing the condition, results of engineering evaluations and actions taken within 90 days.

There are three storage wells, separate from the six vault modules, which could be used to store and confine the FSC (DOE, 2009). In its license amendment request and response to RAIs, DOE explained that it has procedures and equipment available to replace a failed seal, but additional time would be necessary to complete the facility reconfiguration activities to carry out the required corrective actions, including leak testing of 12 additional FSCs (two from each vault) (DOE, 2015a, c).

1.4 Scope of the Environmental Analysis

The NRC staff has evaluated the potential environmental impacts associated with the proposed action and alternatives to the proposed action, and has documented the results of the assessment in this final EA. The NRC staff performed this review in accordance with the requirements of 10 CFR Part 51 and staff guidance found in NUREG-1748, *“Environmental Review Guidance for Licensing Actions Associated with NMSS Programs”* (NRC, 2003).

The following documents were reviewed and considered in the development of this final EA:

- information contained in the license amendment request dated February 17, 2015, (DOE, 2015a) and supplemental information submitted in a response to NRC’s RAIs on August 17, 2015 (DOE, 2015c);
- NRC’s approval of DOE’s exemption request for the FSV ISFSI to delay the performance of an O-ring leak rate test and an aging management surveillance (80 FR 33299);
- information contained in previous NRC environmental review documents for the FSV ISFSI (NRC, 1991, 2011); and
- the FSV ISFSI final safety analysis report (FSAR) (DOE, 2010).

The NRC staff is using the EAs prepared for both the original license application (NRC, 1991) and renewal license application (NRC, 2011) as a foundation for this final EA and is only focusing on changes as a result of the proposed action. To limit redundancy and to focus this final EA on the proposed action, the NRC staff refers to past environmental review documents for more detailed descriptions of those aspects of analysis that remain unchanged.

1.4.1 Continued Storage of Spent Nuclear Fuel

On September 19, 2014, the NRC published a final rule at 10 CFR 51.23, “Environmental Impacts of Continued Storage of Spent Nuclear Fuel Beyond the Licensed Life for Operations of a Reactor” (79 FR 56238). That rule, effective October 20, 2014, codified the NRC’s generic determinations in NUREG-2157, *“Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel”* (NRC, 2014), regarding the environmental impacts of the continued storage of spent fuel. In Commission Order CLI-14-08, the Commission held that the revised 10 CFR 51.23 and associated NUREG-2157 cured the deficiencies identified by the court in *New York v. NRC*, 681 F.3d 471 (D.C. Cir., 2012) and stated that the rule satisfies the NRC’s NEPA obligations with respect to continued storage.

In EAs prepared for future reactor and spent fuel storage facility licensing actions, 10 CFR 51.23(b) now requires the NRC to consider the environmental impacts of continued storage, if the impacts of continued storage of spent fuel are relevant to the proposed action. In this case, the proposed action, if approved, will authorize DOE to extend the period of time required to complete some of the corrective actions in TS 3.3.1, as discussed in Section 1.2 of this final EA. The proposed action, however, will not change the ISFSI's authorized possession limits (e.g., it will not expand the ISFSI's capacity) or license term (e.g., it will not extend the term of the license), nor will it change the scope or nature of the activities currently licensed by the NRC. Further, the proposed action, if approved, will not change the spent fuel type authorized to be stored at the ISFSI. Therefore, the NRC has determined that the impacts of continued storage of spent fuel are not relevant to the proposed action. Accordingly, the NRC has not considered the environmental impacts of continued storage in this final EA.

2.0 ALTERNATIVES TO THE PROPOSED ACTION

The alternative considered in this final EA is the no-action alternative. Under the no-action alternative, the NRC would deny the license amendment request. Denial of the request would leave TS 3.3.1 as is, requiring DOE to complete the required corrective actions within the specified response times identified in TS 3.3.1 of Appendix A of license SNM-2504.

Leaving TS 3.3.1 as is might be feasible, but challenging to complete within the specified response times identified in TS 3.3.1 based on the facility reconfiguration activities that the licensee would need to carry out. As stated in the DOE's response to the RAIs, the current facility configuration allows DOE to perform a seal leak test on six FSC closures (one FSC in each of the six vaults) (DOE, 2015c). If the seal leak rate limit is exceeded, DOE would need to implement necessary facility reconfiguration to support the required corrective actions identified in TS 3.3.1 (DOE, 2015c).

Environmental impacts associated with the no-action alternative, however, would be no different than for the proposed action because the scope and nature of the activities under the no-action alternative and the proposed action only differ in the time allowed to complete those activities. The additional time allowed to complete these activities under the proposed action will not have an impact on the environment as evaluated in this EA. Given the challenges to perform the required corrective actions within the current allotted amount of time, the NRC staff finds that the proposed action is more favorable than the no-action alternative.

3.0 AFFECTED ENVIRONMENT

As discussed in NRC's EA for the FSV ISFSI license renewal (NRC, 2011), the ISFSI is located in Weld County, Colorado, 3.5 miles (mi) [5.6 kilometers (km)] northwest of the center of Platteville and 35 mi (56 km) north of Denver, Colorado. The ISFSI site, including the access road, constitutes approximately 20 acres (DOE, 2009). The general site layout is depicted in Figure 1.

The topography in the immediate vicinity of the site is relatively flat. The land use within the vicinity of the ISFSI is primarily for agricultural purposes. The major waterways are the South

Platte River and the St. Vrain Creek, which are sources of water for irrigation (DOE, 2009 and NRC, 1991). Nearby industrial facilities are primarily located in the town of Platteville. Geologically, the site is located in the Denver basin, and the area has been used by the natural gas and oil industry (DOE, 2009 and NRC, 1991).

The socioeconomic region of influence (ROI) is defined as the area in which FSV ISFSI employees and their families reside, spend their income, and use their benefits, thereby affecting economic conditions in the region. The socioeconomic ROI consists of Weld County, Colorado. Weld County had a total population in 2010 of 252,825 (USCB, 2010). Weld County experienced a 39.7 percent population growth between the years of 2000 and 2010 (USCB, 2000, 2010). The nearest community is the town of Platteville, which had a total population in 2010 of 2,485 and an estimated population in 2014 (as of July 1) of 2,608 (USCB, 2010). The nearest permanent resident is located 797 meters (2,600 feet) north from the facility (DOE, 2014, 2015c).

The National Register of Historic Places lists one historic site in Platteville, Colorado, Fort Vasquez, located 4 mi (6 km) southeast of the FSV ISFSI (NRC, 2011). Other significant sites include the Dent site about 4 1/2 mi (7 km) northeast of the ISFSI, which contains mammoth remains (NRC, 2011). The original FSV was 2 1/2 mi (4 km) northeast of the ISFSI but was abandoned in the 1840s (DOE, 2009).

DOE implements a radiological environmental monitoring program (REMP) for the FSV ISFSI in accordance with 10 CFR 72.44. The FSV ISFSI REMP report is submitted to the NRC annually in accordance with 10 CFR 72.44(d)(3). The REMP monitors direct radiation, which is the predominant radiation exposure pathway. The environmental radiation doses are measured using thermoluminescent dosimeters (TLDs). Twenty TLDs are located around the controlled area boundary of the ISFSI. According to the 2014 REMP report (DOE, 2014), operation of the ISFSI has not resulted in a dose greater than 0.15 mrem/yr to the nearest resident. DOE also monitors for tritium within the FSV ISFSI as a means of monitoring the effects of facility aging during the storage period (DOE, 2015c).

4.1 ENVIRONMENTAL IMPACTS

The NRC staff reviewed the applicant's license amendment request (DOE, 2015a) and environmental report (DOE, 2015c) and evaluated the potential environmental impacts to the various resources of the affected environment due to the proposed action. The NRC staff used the guidance outlined in NUREG-1748 (NRC, 2003) in its evaluation. In accordance with this guidance, the NRC staff evaluated the direct effects, indirect effects, and cumulative impacts that each resource area may encounter from the proposed action.

The NRC staff categorizes environmental impacts in terms of small, moderate, or large, defined as follows:

- SMALL—environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource.
- MODERATE—environmental effects are sufficient to alter noticeably, but not to destabilize important attributes of the resource.
- LARGE—environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

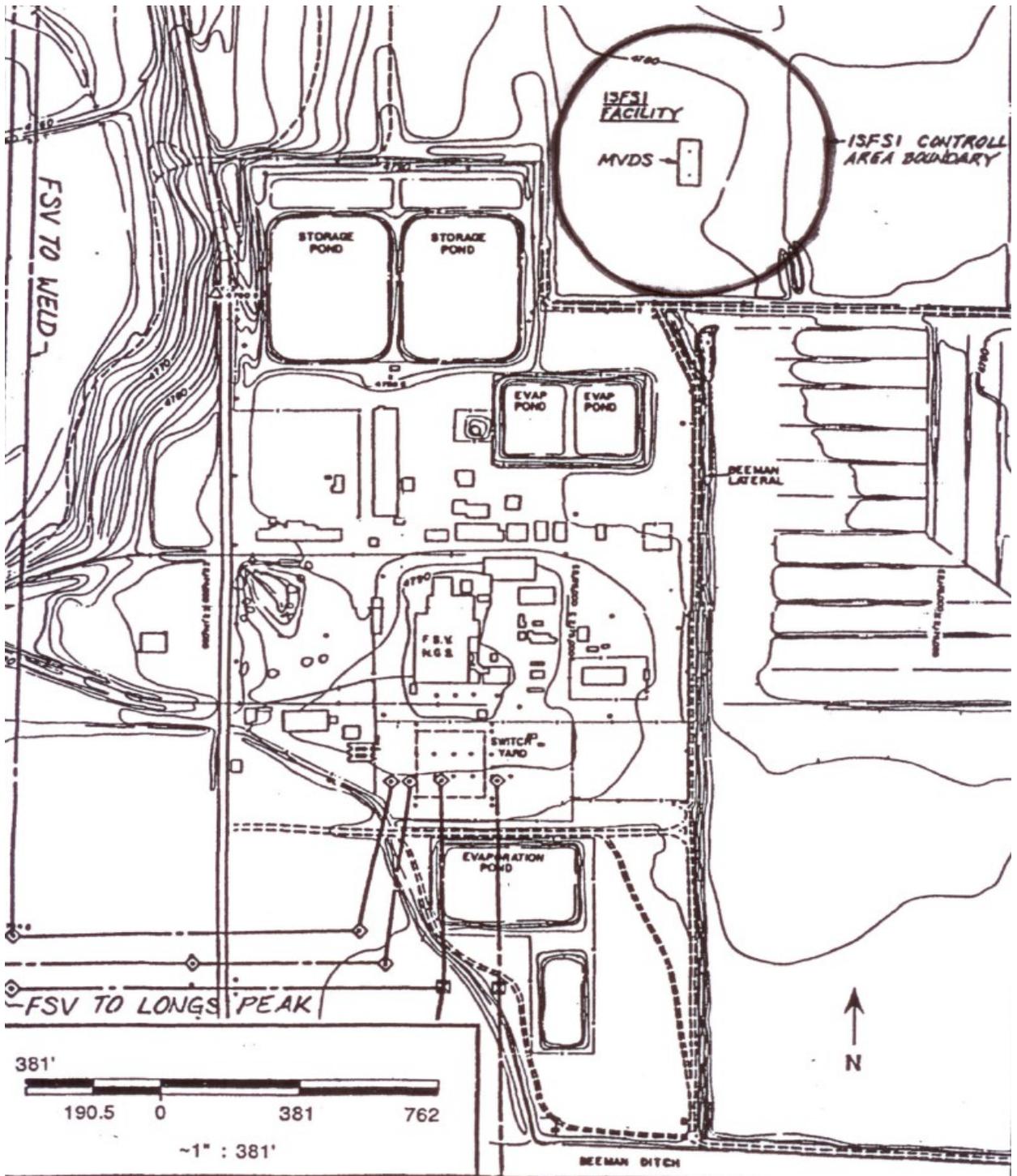


Figure 1-1. Fort St. Vrain ISFSI Site Layout (NRC, 1991)

4.2 Proposed Action

The proposed action is described above in Section 1.3. The environmental impacts for the proposed changes to TS 3.3.1, i.e. revising the response times to complete the required corrective action A.1.1 or action A.1.2.1 and A.1.2.2, and action A.2 as discussed in Section 1.2 of this final EA are addressed below.

4.2.1 Radiological Impacts

The FSV ISFSI is a passive system. All the FSV irradiated fuel has been loaded into the ISFSI. The ISFSI is located on an area of controlled land with a surrounding fence. The foundation's structure is designed to support the MVDS against the loads created by the structure weight, operating loads, and design basis earthquake (DOE, 2009). The MVDS is a reinforced concrete structure covered by a clad steel framework. The MVDS structure provides shielding and heat is removed by natural draft convection (DOE, 2009). The fuel was placed into FSCs, and the FSCs' lids were sealed using two metal O-rings, which are intended to prevent radiologically contaminated material from being released to the environment (DOE, 2015a).

As previously discussed, TS 3.3.1 requires that the FSC seal leak rate not exceed 1×10^3 ref-cm³/s. The leak rate test was originally performed in 1991 and subsequent leak rate tests were performed in 1996, 2001, 2005, and 2010. None of the prior leak rate tests exceeded the requirement of 1×10^3 ref-cm³/s (DOE, 2015d). In addition, the proposed action would be implemented if a FSC with a leaking seal is identified.

As discussed in Section 8.2.15 of the NRC staff-approved FSV ISFSI FSAR, the maximum credible accident results from the leak of one FSC in a vault module through the MVDS stack.² DOE discussed two postulated failure modes that could lead to a leak from one FSC in the vault module; one of these failure modes consists of the failure of the metal O-ring seals. DOE did not identify any credible failure mechanisms for the FSC O-rings (DOE, 2010). Also, DOE calculated the maximum exposure of 1 mrem whole body at the controlled area boundary from such an accident, which is within the 10 CFR 72.106 requirements (DOE, 2015c). Additionally, in its response to RAIs, DOE explained that lengthening the response times to complete the required corrective actions was not a factor considered in the design or failure modes of the FSCs (DOE, 2015c).

In addition, on March 19, 2015, DOE submitted an exemption request seeking to delay the performance of the O-ring leak rate test specified in TS 3.3.1 and an aging management surveillance to check six FSCs for hydrogen buildup, by one year (both were due no later than June 2015) (DOE, 2015b). In support of this exemption request, DOE estimated the average and maximum O-ring seal leak rates, and found both seal leak rate values below the leak rate limit of 1×10^3 ref-cm³/s. The NRC staff reviewed the test methods, the test pressures generated by previous leak rate tests, the correlations between the leak rate and the pressure drop across the seals that DOE used to estimate the O-ring seal leak rates and found that DOE used appropriate data and mechanistic relationships between the rate and the test

² Section 8.2.15 of the FSV FSAR discusses the maximum credible accident, which consists of the radiological release at the site boundary (approximately 100 meters) from the leak of one FSC in a vault module (DOE, 2010)

pressure to predict the FSC O-ring seal leak rates (80 FR 33299). The NRC staff also reviewed Section 8.2.15 of the FSV FSAR and DOE's analytical results of the consequences associated with a radiological release from an FSC (80 FR 33299). The NRC confirmed that even if the leak rate of 1×10^{-3} ref-cm³/s is exceeded: (i) the radiological consequences at the controlled area boundary would be within the requirements of 10 CFR 72.106; (ii) the radiological release caused by a leak rate greater than 1×10^3 ref-cm³/s past the redundant seals would be bounded by the maximum credible accident in the FSV FSAR; and (iii) the failure of the redundant metallic seals (loss of confinement) can be considered a low probability event during the entire storage period (80 FR 33299). The NRC approved the exemption request on June 11, 2015 (80 FR 33299).

In conclusion, the NRC finds that the proposed action would not result in an increased risk of accidents and there would be no additional radiological dose to workers and the public. Accordingly, the NRC staff concludes that the proposed action would result in a SMALL and not significant radiological impact to workers and the public.

4.1.1 Non-Radiological Impacts

The proposed action does not include any changes to routine operations, construction activities, or land-disturbing activities (DOE, 2015c). The proposed action will not require any additional workers (DOE, 2015c). Once the ISFSI is decommissioned and the ISFSI is removed, the land could be used for other purposes (DOE, 2015c). Therefore, the NRC staff finds that there would be no non-radiological impacts to resources including land use, geology and soils, water resources, ecology, threatened and endangered species, meteorology, climate, air quality, noise, occupational health, historic and cultural resources, visual and scenic resources, socioeconomic resources, transportation, and waste management. Accordingly, the NRC staff concludes that the proposed action would result in a SMALL and not significant non-radiological impacts to these resources.

4.3 Environmental Justice

Under Executive Order 12898 (59 FR 7629), federal agencies are responsible for identifying and addressing potential disproportionately high and adverse human health and environmental impacts on minority and low-income populations. In 2004, the Commission issued a policy statement on the treatment of EJ matters in NRC regulatory and licensing actions (69 FR 52040). Regarding EAs, the NRC's policy statement on EJ states, "...If there will be no significant impact as a result of the proposed action, it follows that an EJ review would not be necessary. However, the agency must be mindful of special circumstances that might warrant not making a FONSI. In most EAs, the Commission expects that there will be little or no offsite impacts and, consequently, impacts would not occur to people outside the facility. However, if there is a clear potential for significant offsite impacts from the proposed action then an appropriate EJ review might be needed to provide a basis for concluding that there are no unique impacts that would be significant. If the impacts are significant because of the uniqueness of the communities, then a FONSI may not be possible and mitigation or an Environmental Impact Statement (EIS) should be considered."

As discussed in Section 4.1.1 of this final EA, the proposed action would not result in additional radiological dose to workers and the public. As discussed in Section 4.1.2 of this final EA, there would be no non-radiological impacts associated with the proposed action. Therefore, the NRC staff does not expect that the proposed action would adversely affect any offsite population and, thus, no special circumstances have been identified.

5.0 CUMULATIVE IMPACTS

The NRC staff considered the impacts of the proposed action, as described in Section 4.0 of this final EA, combined with other past, present, and reasonably foreseeable future actions that could affect the same resources impacted by the proposed action. Because there are no expected off-site environmental impacts associated with the proposed action, the geographic area considered in this cumulative impacts discussion consists of the FSV ISFSI site. The time frame considered for future actions extends through September 2016 (i.e., 90 days³ after the due date for performing the O-ring seal leak rate test, which would need to be conducted no later than June 2016⁴).

In its responses to RAIs (DOE, 2015c), DOE described the past and present actions near the FSV ISFSI including construction activities, facility modifications to the FSV Generating Station that is nearby, and oil and gas well drilling in the vicinity of the facility. DOE concluded that there are no reasonably foreseeable actions near the FSV ISFSI that would result in cumulative impacts from the proposed action. In addition, DOE performs routine radiological monitoring activities. According to the 2014 REMP report (DOE, 2014), operation of the FSV ISFSI has not resulted in a dose greater than 0.15 mrem/yr to the nearest resident which is well below regulatory limits. In addition, as set forth in 10 CFR 51.2(a), the portion of this action that meets the categorical exclusion, as discussed in Section 1.3 of this EA, is in a category of actions that do not individually or cumulatively have a significant effect on the human environment.

Because the proposed action would result in SMALL and not significant radiological impacts to workers and the public, and DOE performs routine radiological monitoring and maintains an as low as is reasonably achievable program for the FSV ISFSI, NRC approval of the proposed license amendment request is anticipated to result in a SMALL and not significant cumulative impacts.

6.0 FEDERAL, STATE, AND LOCAL AGENCIES

DOE is responsible for complying with all NRC regulations and other applicable federal, state, and local requirements and statutes. DOE has stated that no additional permits, licenses, approvals, or other entitlements are necessary to carry out the proposed action (DOE, 2015c). rate test specified in TS 3.3.1, and an aging management surveillance to check six FCSs for hydrogen buildup. Both tests would need to be conducted no later than June 2016.

³ In accordance with TS 3.3.1, DOE has 90 days to complete the required actions under TS 3.3.1 if the seal leak rate limit is exceeded (80 FR 33299).

⁴ In June 2015, NRC approved DOE's exemption request to delay the performance of the O-ring leak.

7.1 CONSULTATIONS

The NRC staff is consulting with other agencies regarding the proposed action in accordance with NUREG–1748 (NRC, 2003). These consultations are intended to: (i) ensure that the requirements of Section 7 of the Endangered Species Act of 1973 (ESA),⁵ and Section 106 of the National Historic Preservation Act of 1966, amended (NHPA),⁶ are met; and (ii) provide the state liaison agencies with the opportunity to comment on the proposed action.

7.2 National Historic Preservation Act

Section 106 of the NHPA, requires federal agencies to consider the effects of their undertakings on historic properties. NHPA implementing regulations at 36 CFR Part 800, “Protection of Historic Properties,” define an undertaking as “a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency; those carried out with federal financial assistance; and those requiring a federal permit, license or approval.”⁷ Therefore, the NRC’s approval of the DOE’s license amendment request constitutes a federal undertaking. The NRC, however, has determined that the approval of this license amendment request is a type of undertaking that does not have the potential to cause effects on historic properties, assuming such historic properties were present, as the NRC’s approval of the license amendment request will not authorize or result in changes to licensed operations or changes in the types, characteristics, or quantities of radiological or non-radiological effluents released into the environment from the ISFSI, or result in the creation of any solid waste. Moreover, the approval of the license amendment request will not authorize any construction activity, facility modification, or any other land-disturbing activity. Therefore, in accordance with 36 CFR 800.3(a)(1), no consultation is required under Section 106 of the NHPA. The NRC staff, however, consulted with the Colorado Historical Society by letter dated June 23, 2015, (NRC, 2015c). On July 1, 2015, the Colorado State Historic Preservation Officer (SHPO) concurred with NRC’s determination that the proposed action does not have the potential to affect historic properties, if present (CO SHPO, 2015). In addition, the NRC staff also consulted with 11 Native American Tribes by letter dated June 23, 2015 (NRC, 2015e). Additionally, on September 23, 2015, the NRC notified the Advisory Council on Historic Preservation of the undertaking and NRC’s coordination of the Section 106 review with the NEPA review for this undertaking (NRC, 2015f).

7.3 The Endangered Species Act

Under Section 7 of the ESA and through its implementing regulations (50 CFR Part 402, Subpart B), prior to taking a proposed action, a federal agency must determine whether: (i) endangered and threatened species or their critical habitats are known to be in the vicinity of the proposed action and if so, whether (ii) the proposed Federal action may affect listed species or critical habitats. If the proposed action may affect listed species or critical habitats, the federal agency is required to consult with the U.S. Fish and Wildlife Service (FWS) and/or the U.S. National Marine Fisheries Service. The federal agency can either initiate the process

⁵ 16 U.S.C. 1536.

⁶ 16 U.S.C. 470 et seq.

⁷ See 36 CFR 800.16(y).

to prepare a biological assessment⁸ a biological assessment⁸ or alternatively, engage in informal consultation.⁹ In accordance with 50 CFR 402.13, the NRC has engaged in informal consultation with the FWS. The NRC has determined that the proposed action is not likely to adversely affect listed species or their critical habitats because the NRC's approval of DOE's license amendment request will not authorize or result in changes to licensed operations, or changes in the types, characteristics, or quantities of radiological or non-radiological effluents released into the environment from the ISFSI, or result in the creation of any solid waste. Moreover, the approval of the license amendment request will not authorize any construction activity, facility modification, or any other land disturbing activity. The NRC staff consulted with the FWS by letter dated June 23, 2015 (NRC, 2015c). On July 6, 2015, the FWS concurred with the NRC's determination that the proposed action is not likely to adversely affect listed species or critical habitats (FWS, 2015).

7.4 Colorado Department of Public Health and Environment

On July 24, 2015, the NRC consulted with the Colorado Department of Public Health and Environment (CDPHE) (NRC, 2015d). The CDPHE concurred with NRC's determination that the proposed amendment to the TS 3.3.1 will not affect local environmental resource areas via e-mail dated September 11, 2015 (CO DPHE, 2015). On December 5, 2015, a copy of the draft EA was sent to CDPHE for comment. CDPHE responded in an email dated January 7, 2016, from the Manager of the Radiation Program for the State of Colorado. The letter stated that the "CDPHE has no comments on the draft EA" (CO DPHE, 2016).

8.0 CONCLUSION AND FINDING OF NO SIGNIFICANT IMPACT

Based on its review of the proposed action, in accordance with the requirements in 10 CFR Part 51, the NRC staff has determined that approval of this license amendment request will not significantly affect the quality of the human environment.

As discussed in this final EA, the leak rate test was originally performed in 1991 and subsequent leak rate tests were performed in 1996, 2001, 2005, and 2010. None of the prior leak rate tests exceeded the limit of 1×10^3 ref-cm³/s (DOE, 2015d) in TS 3.3.1. No significant radiological or non-radiological impacts are expected to result from approval of this license amendment request. DOE has not identified any credible failure mechanisms for the FSC O-rings (DOE, 2010). Additionally, DOE explained that lengthening the response times to complete the required corrective actions was not a factor considered in the design or failure modes of the FSCs (DOE, 2015c). The NRC staff has determined that the proposed action will not authorize or result in changes to licensed routines operations, land-disturbing activities, or changes in the types, characteristics, or quantities of radiological or non-radiological effluents released into the environment from the ISFSI.

Therefore, the NRC staff has determined that pursuant to 10 CFR 51.31, preparation of an EIS is not required for this proposed action, and pursuant to 10 CFR 51.32, a FONSI is appropriate.

⁸ See 50 CFR 402.12

⁹ See 50 CFR 402.13.

9.0 LIST OF PREPARERS

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10.0 REFERENCES

This FONSI, final EA, and the references related to this review are available for public inspection and can be found online at the NRC's Electronic Reading Room or the NRC's webpage, www.nrc.gov. The Electronic Reading Room can be accessed at: <http://www.nrc.gov/readingrm/adams.html>. From this website, you can access the Agencywide Documents Access and Management System (ADAMS), which provides text and image files of NRC's public documents. The ADAMS accession numbers for the documents are provided in this Section.

If you do not have access to ADAMS or if there are problems in accessing ADAMS, contact the NRC's public document room staff at: 1-800-397-4209 or via email at: pdr@nrc.gov.

10 CFR 20. *Code of Federal Regulations*, Title 10, *Energy*, Part 20, "Standards for Protection Against Radiation." Washington, D.C.

10 CFR 51. *Code of Federal Regulations*, Title 10, *Energy*, Part 50, "Domestic Licensing of Production and Utilization Facilities." Washington, D.C.

10 CFR 72. *Code of Federal Regulations*, Title 10, *Energy*, Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater-Than-Class-C Waste." Washington, D.C.

36 CFR Part 800. *Code of Federal Regulations*, Title 36, *Parks, Forests, and Public Property*, Part 800, "Protection of Historic Properties." Washington, D.C.

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Mr. Nathan Small Chairman, Shoshone-Bannock Tribes - ML15168A792

Mr. Cyril "Whitey" Scott, Chairman, Rosebud Sioux Tribe - ML15168A792

Mr. John Robinson, President, Northern Cheyenne Tribe - ML15168A792

Mr. Donnie Cabniss, Chairman, Apache Tribe of Oklahoma -

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Ms. Amber Poppah, Chairwoman, Kiowa Indian Tribe of Oklahoma - ML15168A792

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