

Attachment 1

Safety Analysis for Proposed Amendment No. 1 to the Rancho Seco ISFSI Technical Specifications and Request for Exemption from 10 CFR 72.44(d)(3)

Background

NRC regulation 10 CFR 72.44(d) states the licensees authorized to store spent nuclear fuel under 10 CFR Part 72 must have Technical Specifications that require submitting an annual report that specifies the quantity of radionuclides released to the environment in liquid and gaseous effluents during the previous 12 months of operation. The report is to be submitted within 60 days after the end of the 12-month monitoring period.

Accordingly, Rancho Seco Independent Spent Fuel Storage Installation (ISFSI) Technical Specification Section 5.5.2.d contains the requirement to submit this annual effluent report. Rancho Seco has submitted this report for the years 2001¹, 2002, and 2003.

The design basis for the Rancho Seco ISFSI is such that it is a passive system that generates no effluents during fuel storage. In the Safety Evaluation Report (SER) issued with the license, the NRC concluded that there are no effluents that could be released from the ISFSI. In 1997, the Radiation Protection Department began taking bi-annual soil samples in the drainage area of the ISFSI. The results of the soil sample analyses have confirmed that there are no radionuclides in the soil that are above background levels and that there are no effluents generated or released from the Rancho Seco ISFSI.

Based on the history of the soil sample analyses results, which have confirmed that there are no effluents from the Rancho Seco ISFSI, the Sacramento Municipal Utility District (SMUD) is requesting a permanent exemption from the requirements in 10 CFR 72.44(d)(3) and an amendment to the Rancho Seco ISFSI Technical Specifications to delete Section 5.5.2.d, which requires Rancho Seco to submit an annual effluents report.

Exemption Request

In accordance with the provisions of 10 CFR 72.7 "Specific Exemptions" SMUD requests an exemption from certain requirements in 10 CFR 72.44 "License Conditions." Specifically, we request a permanent exemption from 10 CFR 72.44(d)(3), which requires that:

An annual report be submitted to the Commission in accordance with Sec. 72.4, specifying the quantity of each of the principal radionuclides released to the environment in liquid and in gaseous effluents during the previous 12 months of operation and such other information as may be required by the Commission to estimate maximum potential radiation dose commitment to the

¹ Spent nuclear fuel was first transferred to the ISFSI in April 2001. Fuel transfer was completed in August 2002.

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public resulting from effluent releases. On the basis of this report and any additional information that the Commission may obtain from the licensee or others, the Commission may from time to time require the licensee to take such action as the Commission deems appropriate. The report must be submitted within 60 days after the end of the 12-month monitoring period.

The results of soil sample analyses for samples taken before fuel transfer, during fuel transfer, and after the completion of fuel transfer (i.e., through several seasonal changes since 1997) have confirmed that there are no radionuclides in the soil that are above background levels and there are no effluents released from the Rancho Seco ISFSI. Accordingly, the Technical Specification requirement to submit an annual report of effluents released from the ISFSI is not relevant, is not needed, and is an unnecessary administrative burden.

Basis for the Exemption

The design basis for the Rancho Seco ISFSI is such that it is a passive system that generates no effluents during fuel storage. The following excerpts from the ISFSI Final Safety Analysis Report (FSAR) support this design basis:

ISFSI FSAR Section 3.3.2.2 "Ventilation – Offgas" states:

There are no radioactive releases of effluents during normal and off-normal storage operations. Also, there are no credible accidents, which cause significant releases of radioactive effluents from the DSC. Therefore, there are no off-gas or monitoring system requirements for the HSM.

ISFSI FSAR Section 4.2.2.3 "10 CFR 72.126 Criteria for Radiological Protection" states:

Effluent control - No radioactive releases are considered credible at the Rancho Seco ISFSI.

ISFSI FSAR Section 7.6.1 "Effluent and Environmental Monitoring Program" states:

No effluents are released from the ISFSI during operation. Effluents released during DSC loading are treated using existing RSNGS systems as described in Chapter 6. Since no effluents are released from the Rancho Seco ISFSI site, no effluent monitoring program is required.

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ISFSI FSAR Section 7.6.4 "Liquid Release" states:

No liquids are released from the Rancho Seco ISFSI.

Rancho Seco ISFSI Technical Specification Section 5.5.2.b states:

Operation of the Rancho Seco ISFSI will not create any radioactive materials or result in any credible liquid or gaseous release.

In the Safety Evaluation Report issued with the license, the NRC concluded that there are no effluents that could be released from the ISFSI. The following excerpts from the NRC SER support this conclusion:

NRC Safety Evaluation Report Section 3.6 "Analytical Sampling" states:

... no gaseous or liquid effluents are expected from the operation of the ISFSI during either normal, off-normal, or accident conditions. Therefore, the staff concluded that a means of monitoring and measuring the amount of radionuclides in effluents during normal operation or accident conditions, to comply with 10 CFR 72.122(h)(3), is not required.

NRC Safety Evaluation Report Section 11.4 "Public Exposures from Normal and Off-Normal Conditions" states:

... there will be no gaseous or liquid radioactive effluents from normal operations of the ISFSI, so the dose to the off-site public is attributable to direct radiation from the spent fuel stored in the DSCs.

NRC Safety Evaluation Report Section 14.2 "Offgas Treatment and Ventilation" states:

Because no effluents are expected under normal or accident conditions, the requirements of 10 CFR 72.126(c)(1), are considered not applicable.

NRC Safety Evaluation Report Section 14.4 "Radiological Impact of Normal Operations" states:

No liquid materials will be present at the ISFSI and the site is not susceptible to surface flooding. There are no credible scenarios by which liquid or gaseous effluents could be released from the DSC. Therefore, the staff concludes that the applicant has met the requirements of 10 CFR 72.122(b)(4).

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The Radiation Protection Department began taking soils samples² in the drainage area of the ISFSI in 1997, after the construction of the ISFSI pad. Fuel transfer to the ISFSI began in April 2001 and was completed in August 2002. Radiation Protection will continue to take soil samples through 2004.

The results of the soil sample analyses have demonstrated that there are no radionuclides in the soil that are above background levels, thus confirming that there are no effluents generated or released from the ISFSI. Since the history of soil sample analyses has confirmed that there are no radionuclides in the soil that are above background levels and that there are no effluents released from the ISFSI, the Technical Specification requirement to submit an annual ISFSI effluent report is not relevant, is not needed, and is an unnecessary administrative burden.

Authority to Grant the Exemption Request

Under 10 CFR 72.7 "Specific Exemptions" the NRC may grant exemptions from the requirements in 10 CFR Part 72 if it determines that the exemption is authorized by law; will not endanger life, property, or the common defense; and is otherwise in the public interest.

The results of soil sample analyses have confirmed that there are no effluents released from the Rancho Seco ISFSI. Granting this exemption will relieve Rancho Seco staff of an unnecessary administrative burden and will not endanger life, property, or the common defense.

Requiring Rancho Seco staff to continue with taking these samples and submitting an annual effluent report provides no added benefit and will divert resources to comply with this unnecessary administrative burden. Consequently, the exemption is in the public interest.

Conclusion

Under 10 CFR 72.7 "Specific Exemptions" the NRC may grant exemptions from the requirements in 10 CFR Part 72 if it determines that the exemption is authorized by law; will not endanger life, property, or the common defense; and is otherwise in the public interest.

The design basis for the Rancho Seco ISFSI is such that it is a passive system that generates no effluents during fuel storage. In the Safety Evaluation Report issued with the license, the NRC concluded that there are no effluents that could be released from the

² These soil samples are "administrative" and are not formally part of the Radiological Environmental Monitoring Program (REMP).

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ISFSI. The results of soil sample analyses for samples taken through several seasonal changes before fuel transfer, during fuel transfer, and after fuel transfer have confirmed that there are no radionuclides in the soil that are above background levels and there are no effluents released from the Rancho Seco ISFSI.

Requiring Rancho Seco staff to continue submitting an irrelevant annual effluent report provides no added benefit and will divert resources needed to comply with this unnecessary administrative burden. Granting an exemption from the requirements of 10 CFR 72.44(d)(3) is authorized by law; will not endanger life, property, or the common defense; and is otherwise in the public interest.

Therefore, the NRC should grant the exemption request and proposed Technical Specification amendment.

Attachment 2

Revised Technical Specification pages 5.5-3 and 5.6-2

5.0 ADMINISTRATIVE CONTROLS

5.5 Programs

5.5.2 Radiological Environmental Monitoring Program

- a. The radiological environmental monitoring program ensures the annual dose equivalent to any real individual located outside the ISFSI controlled area does not exceed the annual dose limits in 10 CFR 72.104(a).
- b. Operation of the Rancho Seco ISFSI will not create any radioactive materials or result in any credible liquid or gaseous effluent release.
- c. Dosimetry will be used to monitor direct radiation around the ISFSI

5.0 ADMINISTRATIVE CONTROLS

5.6 Lifting Controls

5.6.2 Cask Drop

Inspection Requirement

The DSC will be inspected for damage after any transfer cask drop of fifteen inches or greater through air.

Background

Cask/DSC handling and loading activities are controlled under the 10 CFR 50 license until a loaded cask/DSC is placed on the transporter, at which time fuel handling activities are controlled under the 10 CFR 72 license. Although the probability of dropping a loaded cask/DSC while en route from the Fuel Storage Building to the ISFSI is small, the potential exists to drop the cask 15 inches or more.

Safety Analysis

The analysis of bounding drop scenarios shows that the transfer cask will maintain the structural integrity of the DSC pressure containment boundary from an analyzed drop height of 80 inches. The 80-inch drop height envelops the maximum vertical height of the transfer cask when secured to the transport trailer while en route to the ISFSI.

Although analyses performed for cask drop accidents at various orientations indicate much greater resistance to damage, requiring the inspection of the DSC after a drop of 15 inches or greater ensures that:

1. The DSC will continue to provide confinement
2. The transfer cask can continue to perform its design function regarding DSC transfer and shielding.

Attachment 3

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5.5.2 Radiological Environmental Monitoring Program

- a. The radiological environmental monitoring program ensures the annual dose equivalent to any real individual located outside the ISFSI controlled area does not exceed the annual dose limits in 10 CFR 72.104(a).
- b. Operation of the Rancho Seco ISFSI will not create any radioactive materials or result in any credible liquid or gaseous effluent release.
- c. Dosimetry will be used to monitor direct radiation around the ISFSI
- d. ~~In accordance with 10 CFR 72.44(d), a periodic report will be submitted specifying the quantity of each of the principal radionuclides released to the environment in liquid and gaseous effluents during the previous calendar year of operation.~~