April 30, 2009

MEMORANDUM TO: Eric Benner, Chief
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Office of Nuclear Material Safety
and Safeguards

FROM: Shana Helton, Senior Project Manager **/RA/**
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SUBJECT: APPLICABILITY OF THE GENERAL CATEGORICAL EXCLUSION IN 10 CFR 51.22(c)(11) TO PROPOSED AMENDMENT 3 TO SNM-2510 FOR THE RANCHO SECO INDEPENDENT SPENT FUEL STORAGE INSTALLATION

By letter dated November 5, 2008, as supplemented on January 27, 2009 (Agencywide Documents Access and Management System Accession Nos. ML083190249 and ML090370875, respectively), the Sacramento Municipal Utility District (SMUD) submitted proposed amendment 3 to Special Nuclear Materials (SNM) License No. 2510 for the Rancho Seco independent spent fuel storage installation (ISFSI) (Docket No. 72-11). The Rancho Seco ISFSI is located at the Rancho Seco Nuclear Generating Station at 14440 Twin Cities Road in Herald, California.

This memo documents the staff's rationale for finding that the general categorical exclusion in 10 CFR 51.22(c)(11) applies to the proposed amendment. In making this finding, the staff used the guidance contained in NUREG-1748, "Environmental Review Guidance for Licensing Actions Associated with NMSS Programs," including the "CATX Checklist" in Appendix B of the NUREG. The results of the staff's regulatory and technical review will be documented separately in a Safety Evaluation Report.

**Action Description**

The applicant requested a revision to Technical Specification (TS) 2.1.1, "Fuel Stored at the ISFSI," to allow for storage of six damaged fuel assemblies in five canisters that currently only may hold intact fuel. The canisters were loaded in 2001; at the time, the applicant had classified the six damaged fuel assemblies as intact based on the results of an assessment done in mid-1996. At the time of that assessment, the applicant classified fuel as damaged if cladding failures with breeches greater than 25% of the circumference of the fuel pin and at least the length of a fuel pellet (~ 0.34 inches across the cladding and 0.7 inches along the cladding)

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were present. The applicant used the results of this inspection to determine which assemblies must be placed in a failed fuel (FF) dry storage canister (DSC).

The inspection criteria used by the applicant in the late-1990s were based upon the best available guidance at the time. However, over time, the criteria have evolved and by the time the ISFSI Final Safety Analysis Report was issued, the criteria used to inspect and classify the fuel became more restrictive. TS 1.1 defines an intact fuel assembly as one with no known or suspected cladding defects greater than hairline cracks or pinhole leaks. The applicant identified six fuel assemblies that had been loaded as intact by the old definition (no defects greater than 0.34 inches across the cladding and 0.7 inches along the cladding), but which must be classified as damaged by the new definition (defects greater than hairline cracks or pinhole leaks). These six assemblies were loaded into five fuel-with-control-component (FC) DSCs.

TS 2.1.1 only allows intact fuel to be placed in a fuel-only (FC) DSC. Therefore, to restore compliance with the ISFSI TS, the applicant submitted an amendment to revise TS 2.1.1 to add a footnote allowing these six damaged fuel assemblies to be stored in FC-DSCs.

**Checklist Question A: Is the proposed action consistent with the Statements of Consideration for the categorical exclusion chosen?**

The staff reviewed the Statements of Consideration for 10 CFR 51.22(c)(11), and determined that the proposed licensing action is consistent with the intended application of this categorical exclusion. The staff finds that the proposed licensing action does not result in any significant adverse incremental impact to the environment. Further, the staff finds that the proposed licensing action does not significantly alter the previously evaluated environmental impacts associated with the licensed operation, taking into account construction impacts, types and amounts of effluents released by the operation, occupational exposure of employees, or potential accidents. Nor does the proposed action affect the scope or nature of the licensed activity. Therefore, the staff finds that the proposed action is consistent with the Statements of Consideration for 10 CFR 51.22(c)(11).

**Checklist Question B: Is the proposed action likely to significantly affect any aspect of the natural environment?**

The staff does not find that the proposed action is likely to affect or alter: endangered or threatened species, or its critical habitat; natural ecosystems; water supplies of humans, animals, or plants; wetlands; or any other environmental media or resource not listed above. Therefore, the staff finds it appropriate to answer "no" to this question.

**Checklist Question C: Is the proposed action likely to significantly affect any aspect of the cultural environment including those that might be related to environmental justice?**

The staff considered the possible impacts on historic, cultural, and scientific resources, including whether the licensing action is likely to have physical, visual, or other effects on: districts, sites, buildings, structures and objects that are included in the National Register, or a State or local register of historic places; places of traditional cultural value for Native American group or other community; known archeological sites, or land identified by archeologists consulted by NRC as having high potential to contain archeological resources; any practice of religion (e.g., by impeding access to a place of worship); minority or low income groups that are disproportionate with its impacts on other groups. The staff also considered unique practices or lifestyles (e.g., subsistence fishing in a pollutant discharge area) and any adverse economic impacts on such a

group. The staff finds that the proposed action does not impact any of the above considerations, and thus finds it appropriate to answer "no" to this question.

**Checklist Question D: Is the proposed action likely to generate a great deal of public interest about any environmental issue?**

It is not likely that the proposed licensing action will generate a great deal of public interest.

**Checklist Question E: Is there a high level of uncertainty about the proposed action's environmental impacts?**

The proposed amendment only serves to rectify the discrepancy between fuel that is actually loaded in the canisters and the requirements of the technical specifications. The fuel was loaded in the canisters in the 2001 timeframe. Since that time, the applicant has not observed any increase in effluents or radiation exposure. The six damaged fuel assemblies that the proposed licensing action addresses were at one point classified as intact, and therefore have fairly small flaw sizes. The functional differences between the FC-DSCs and the FF-DSCs relate only to transportation and retrievability of the fuel canisters. The proposed licensing action only relates to storage, and does not allow for transport of the DSCs, which would have to be addressed in a future licensing action. Further, since tip-over of the casks is not a postulated event for this site, the storage of the six damaged fuel assemblies do not create the potential for a significant increase in the potential for or consequences from the postulated radiological accidents. Therefore, the staff finds that there is not a high level of uncertainty about the proposed licensing action's environmental impacts.

**Analysis of criterion in 10 CFR 51.22(c)(11)**

10 CFR 51.22(c)(11) states, "Issuance of amendments to licenses for fuel cycle plants and radioactive waste disposal sites and amendments to materials licenses identified in 10 CFR 51.60(b)(1) which are administrative, organizational, or procedural in nature, or which result in a change in process operations or equipment, provided that (i) there is no significant change in the types or 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.

The proposed action clearly does not result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite. Further, since the six assemblies addressed in the proposed license amendment have a lower source term than the design basis already approved by the NRC, the proposed action clearly does not have the potential to significantly increase individual or cumulative occupational radiation exposure. Further, as the ISFSI has already been loaded, and the proposed amendment is retroactive in nature, the proposed action does not pose a significant construction impact. Lastly, as the proposed license amendment only addresses storage at this time (a future license amendment will be needed to address transporting the DSCs), and tip over is not a credible accident condition for the Rancho Seco ISFSI, the proposed license amendment does not significantly increase the potential for or consequences from radiological accidents.

Therefore, the proposed action meets all four criterion of 10 CFR 51.22(c)(11).

**Conclusions**

The action clearly qualifies for the categorical exclusion listed in 10 CFR 51.22(c)(11) and requires no further environmental review. In addition to the considerations given above, the storage of the damaged fuel assemblies in the FC-DSCs is bounded by prior analyses, which have already been evaluated for environmental impacts. The table below shows that the proposed action is bounded by the existing licensing basis:

Table 1. Comparison of licensing action to design basis.

| | Cladding temperature | Source term | Criticality | Seismic |
|---|---|---|---|---|
| Damaged fuel in FC-DSC (propsed action) | 544 | Source term from the damaged assemblies is bounded by the design-basis intact fuel | 0.9151 | N/A |
| Design-basis fuel in FC-DSC | 701 | | 0.929 | N/A |

Given the above considerations, the staff finds that the categorical exclusion of 10 CFR 51.22(c)(11) applies to the proposed licensing action.

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