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MPC&D 06-059

June 5, 2006

ATTN: Document Control Desk
Director, Spent Fuel Project Office
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Rancho Seco Independent Spent Fuel Storage Installation
Materials License No. SNM-2510
Docket 72-11
RANCHO SECO ISFSI FINAL SAFETY ANALYSIS REPORT, REVISION 3

Attention: Randy Hall

Attached is Revision 3 to the Rancho Seco Independent Spent Fuel Storage Installation (ISFSI) Final Safety Analysis Report (FSAR). The updated ISFSI FSAR reflects NRC orders, facility license amendments, and facility changes made pursuant to 10 CFR 72.48, through May 2006.

The enclosed attachments include removal/insertion instructions for the changed pages, a List of Effective Pages, and the affected FSAR pages. Vertical lines in the right hand margin of the affected FSAR pages indicate the area of changed text. "Revision 3 " is also typed at the bottom right of each changed page.

If you, or members of your staff, have questions requiring additional information or clarification you may contact me at (916) 732-4843.

Sincerely,

Robert E. Jones
Superintendent, Nuclear Quality, Licensing, and Administration

cc w/attachments: NRC, Region IV

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California
County of SACRAMENTO } ss.

On JUNE 5, 2006 (Date) before me, JEANNETTE REYNAGA, NOTARY PUBLIC (Name and Title of Officer (e.g., "Jane Doe, Notary Public")),
personally appeared ROBERT EDWARD JONES (Name(s) of Signer(s)),

☐ personally known to me
☑ proved to me on the basis of satisfactory evidence

to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(~~ies~~), and that by his/~~her/their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

WITNESS ~~my~~ hand and official ~~seal~~.

JEANNETTE REYNAGA
COMM. # 1574986
NOTARY PUBLIC·CALIFORNIA
SACRAMENTO COUNTY
COMM. EXP. MAY 1, 2009

Signature of Notary Public

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ISFSI FSAR REVISION 3 REMOVAL/INSERTION INSTRUCTIONS

Remove	Insert
List of Effective Pages (pp 1-8)	List of Effective Pages (pp 1-8)
Volume I, Pages 1.1-1 through 1.2-3	Volume I, Pages 1.1-1 through 1.2-3
Volume I, Pages 2.1-1 through 2.1-4	Volume I, Pages 2.1-1 through 2.1-4
Volume I, Pages 3.1-1 through 3.2-1	Volume I, Pages 3.1-1 through 3.2-1
Volume I, Pages 9.1-1 thru 9.1-4	Volume I, Pages 9.1-1 thru 9.1-4

Page or Figure Number	ISFSI FSAR Revision No.
Volume I	
i	Revision 0
ii	Revision 0
iii	Revision 0
iv	Revision 0
v	Revision 0
vi	Revision 0
vii	Revision 0
viii	Revision 0
ix	Revision 0
x	Revision 0
xi	Revision 0
xii	Revision 0
xiii	Revision 0
xiv	Revision 0
xv	Revision 0
1.1-1	Revision 3
1.2-1	Revision 0
1.2-2	Revision 0
1.2-3	Revision 3
1.2-4	Revision 0
1.3-1	Revision 0
1.3-2	Revision 0
1.4-1	Revision 0
1.5-1	Revision 0
1.6-1	Revision 0
Figure 1-1	Revision 0
Figure 1-2	Revision 0
Figure 1-3	Revision 0
Figure 1-4	Revision 0
Figure 1-5	Revision 0
Figure 1-6	Revision 0
Figure 1-7	Revision 0
2.1-1	Revision 0
2.1-2	Revision 3
2.1-3	Revision 3
2.1-4	Revision 0
2.2-1	Revision 0
2.2-2	Revision 0
2.3-1	Revision 0

Page or Figure Number	ISFSI FSAR Revision No.
2.3-2	Revision 0
2.3-3	Revision 0
2.3-4	Revision 0
2.3-5	Revision 0
2.4-1	Revision 0
2.4-2	Revision 0
2.4-3	Revision 0
2.4-4	Revision 0
2.4-5	Revision 0
2.5-1	Revision 0
2.6-1	Revision 0
2.6-2	Revision 0
2.7-1	Revision 0
Table 2-1	Revision 0
Table 2-2	Revision 0
Table 2-3	Revision 0
Table 2-4	Revision 0
Table 2-5	Revision 0
Figure 2-1	Revision 0
Figure 2-2	Revision 0
Figure 2-3	Revision 0
Figure 2-4	Revision 0
Figure 2-5	Revision 0
Figure 2-6	Revision 0
Figure 2-7	Revision 0
Figure 2-8	Revision 0
Figure 2-9	Revision 2
3.1-1	Revision 3
3.1-2	Revision 0
3.1-3	Revision 0
3.2-1	Revision 0
3.2-2	Revision 0
3.2-3	Revision 0
3.2-4	Revision 0
3.2-5	Revision 0
3.2-6	Revision 0
3.2-7	Revision 0
3.3-1	Revision 0
3.3-2	Revision 0
3.3-3	Revision 0
3.3-4	Revision 0
3.3-5	Revision 0

Page or Figure Number	ISFSI FSAR Revision No.
3.3-6	Revision 0
3.3-7	Revision 0
3.3-8	Revision 0
3.3-9	Revision 0
3.3-10	Revision 0
3.3-11	Revision 0
3.3-12	Revision 0
3.3-13	Revision 0
3.3-14	Revision 0
3.3-15	Revision 0
3.4-1	Revision 1
3.4-2	Revision 0
3.4-3	Revision 0
3.5-1	Revision 0
3.6-1	Revision 0
3.7-1	Revision 0
3.7-2	Revision 0
Table 3-1	Revision 0
Table 3-2	Revision 0
Table 3-3	Revision 0
Table 3-4	Revision 0
Table 3-5	Revision 0
Table 3-6	Revision 0
Table 3- 7	Revision 0
Table 3-8	Revision 0
Table 3-9	Revision 0
Table 3-10	Revision 0
Table 3-11	Revision 0
Table 3-12	Revision 0
Table 3-13	Revision 0
Table 3-14	Revision 0
Table 3-15	Revision 0
Table 3-16	Revision 0
Table 3-17	Revision 0
Table 3-18	Revision 0
Table 3-19	Revision 0
Table 3-20	Revision 0
Table 3-21	Revision 0
Table 3-22	Revision 0
Table 3-23	Revision 0
Figure 3-1	Revision 0

Page or Figure Number	ISFSI FSAR Revision No.
Figure 3-2	Revision 0
Figure 3-3	Revision 0
Figure 3-4	Revision 0
Figure 3-5	Revision 0
Figure 3-6	Revision 0
Figure 3- 7	Revision 0
Figure 3-8	Revision 0
Figure 3-9	Revision 0
Figure 3-10	Revision 1
Figure 3-11	Revision 1
4.1-1	Revision 0
4.2-1	Revision 0
4.2-2	Revision 0
4.2-3	Revision 0
4.2-4	Revision 0
4.2-5	Revision 0
4.2-6	Revision 0
4.2-7	Revision 0
4.2-8	Revision 2
4.2-9	Revision 2
4.2-10	Revision 0
4.2-11	Revision 0
4.2-12	Revision 1
4.3-1	Revision 0
4.3-2	Revision 0
4.3-3	Revision 0
4.4-1	Revision 0
4.5-1	Revision 2
4.6-1	Revision 0
4.7-1	Revision 0
4.7-2	Revision 0
4.7-3	Revision 2
4.8-1	Revision 2
5.1-1	Revision 0
5.1-2	Revision 0
5.2-1	Revision 0
5.2-2	Revision 0
5.3-1	Revision 0
5.4-1	Revision 0
5.5-1	Revision 0
5.6-1	Revision 0

Page or Figure Number	ISFSI FSAR Revision No.
5.7-1	Revision 0
Figure 5-1	Revision 0
Figure 5-2	Revision 0
Figure 5-3	Revision 0
Figure 5-4	Revision 0
6.1-1	Revision 0
6.2-1	Revision 0
6.3-1	Revision 0
6.4-1	Revision 0
6.5-1	Revision 0
6.6-1	Revision 0
7.1-1	Revision 0
7.1-2	Revision 2
7.1-3	Revision 1
7.1-4	Revision 0
7.2-1	Revision 0
7.2-2	Revision 2
7.3-1	Revision 0
7.3-2	Revision 0
7.4-1	Revision 0
7.4-2	Revision 0
7.4-3	Revision 0
7.5-1	Revision 0
7.5-2	Revision 2
7.6-1	Revision 2
7.6-2	Revision 2
7.7-1	Revision 0
Table 7 -1	Revision 0
Table 7-2	Revision 0
Table 7-3	Revision 0
Table 7 -4	Revision 0
Figure 7-1	Revision 0
Figure 7-2	Revision 0
Figure 1-3 8.1-1	Revision 0
8.1-2	Revision 0
8.1-3	Revision 0
8.1-4	Revision 0
8.1-5	Revision 0
8.1-6	Revision 0
8.1-7	Revision 0

Page or Figure Number	ISFSI FSAR Revision No.
8.1-8	Revision 0
8.1-9	Revision 0
8.1-10	Revision 0
8.1-11	Revision 0
8.1-12	Revision 0
8.1-13	Revision 0
8.1-14	Revision 1
8.2-1	Revision 2
8.2-2	Revision 0
8.2-3	Revision 1
8.2-4	Revision 2
8.2-5	Revision 2
8.2-6	Revision 0
8.2-7	Revision 0
8.2-8	Revision 2
8.2-9	Revision 2
8.2-10	Revision 1
8.2-11	Revision 0
8.2-12	Revision 0
8.2-13	Revision 0
8.2-14	Revision 0
8.2-15	Revision 0
8.3-1	Revision 0
8.3-2	Revision 0
8.4-1	Revision 0
8.5-1	Revision 0
8.5-2	Revision 0
Table 8-1	Revision 0
Table 8-2	Revision 0
Table 8-3	Revision 0
Table 8-4	Revision 0
Table 8-5	Revision 0
Table 8-6	Revision 2
Table 8- 7	Revision 0
Table 8-8	Revision 0
Table 8-9	Revision 0
Table 8-10	Revision 0
Table 8-11	Revision 0
Table 8-12	Revision 0
Table 8-13	Revision 0
Table 8-14	Revision 0
Table 8-15	Revision 0

Page or Figure Number	ISFSI FSAR Revision No.
Table 8-16	Revision 1
Table 8-17	Revision 1
Table 8-18	Revision 0
Table 8-19	Revision 1
Table 8-20	Revision 1
Table 8-21	Revision 2
Table 8-22	Revision 2
Table 8-23	Revision 2
Table 8-24	Revision 0
Table 8-25	Revision 1
9.1-1	Revision 2
9.1-2	Revision 3
9.1-3	Revision 3
9.1-4	Revision 0
9.2-1	Revision 0
9.2-2	Revision 0
9.2-3	Revision 0
9.3-1	Revision 0
9.3-2	Revision 0
9.3-3	Revision 0
9.4-1	Revision 2
9.4-2	Revision 0
9.4-3	Revision 0
9.5-1	Revision 0
9.6-1	Revision 0
9.6-2	Revision 0
9.7-1	Revision 0
10.1-1	Revision 0
10.2-1	Revision 0
10.2-2	Revision 0
10.2-3	Revision 0
10.2-4	Revision 0
10.2-5	Revision 0
10.3-1	Revision 0
10.3-2	Revision 0
10.3-3	Revision 0
10.3-4	Revision 0
10.3-5	Revision 0
10.3-6	Revision 0
10.3-7	Revision 0
10.3-8	Revision 0
10.3-9	Revision 0

Page or Figure Number	ISFSI FSAR Revision No.
10.3-10	Revision 0
10.3-11	Revision 0
10.3-12	Revision 0
10.3-13	Revision 0
10.3-14	Revision 0
10.3-15	Revision 0
10.4-1	Revision 0
Table 10-1	Revision 0
11.1-1	Revision 0
11.2-1	Revision 0
11.3-1	Revision 0
Volume II	
1.1-1	Revision 0
2.1-1	Revision 0
3.1-1	Revision 0
3.2-1	Revision 0
3.2-2	Revision 0
3.3-1	Revision 0
3.4-1	Revision 0
3.5-1	Revision 0
3.6-1	Revision 0
3.6-2	Revision 0
3.7-1	Revision 0
Table 3-1	Revision 0
Table 3-2	Revision 0
Table 3-3	Revision 0
Table 3-4	Revision 0
Table 3-5	Revision 0
Table 3-6	Revision 0
Table 3- 7	Revision 0
Table 3-8	Revision 0
4.1-1	Revision 0
5.1-1	Revision 0
5.1-2	Revision 0
5.2-1	Revision 0
5.2-2	Revision 0
5.2-3	Revision 0
5.3-1	Revision 0

1. INTRODUCTION AND GENERAL DESCRIPTION OF INSTALLATION

1.1 Introduction

The Nuclear Regulatory Commission (NRC) issued an operating license, DPR-54, for Rancho Seco Nuclear Generating Station (RSNGS) in August 1974, and the plant began commercial operation in April 1975. The current operating license will expire on October 11, 2008. However, as a result of a public referendum of Sacramento Municipal Utility District (District) voters on June 6, 1989, RSNGS has ceased operation, and the reactor has been permanently defueled. Accordingly, on May 20, 1991, the District submitted its Proposed Decommissioning Plan [1.1.1] to the NRC discussing the method to be used to decommission RSNGS. This plan was approved by an NRC order dated March 20, 1995. The District subsequently revised the decommissioning plan to a Post Shutdown Decommissioning Activities Report (PSDAR) to meet the requirements of the revised regulations (10 CFR 50.82) regarding decommissioning.

Consistent with Rancho Seco PSDAR, the Independent Spent Fuel Storage Installation (ISFSI) is intended to provide dry storage capacity for Rancho Seco spent nuclear fuel and Greater than Class C (GTCC) radioactive waste. The storage system will be designed for 50 year service, and licensed for 20 years in accordance with 10 CFR 72. Construction of the Rancho Seco ISFSI was completed during 1996 and operation is planned to begin during 1999.

1.1.1 Principal Function of the Installation

The Rancho Seco ISFSI design provides temporary dry storage for 100% of the Rancho Seco spent fuel assemblies (SFAs) and GTCC waste in order to complete full plant dismantlement. It is designed with safety features that eliminate the need for an operable spent fuel pool to recover from certain unlikely accident scenarios. The spent fuel will be stored in this manner until it is accepted by the Department of Energy (DOE).

1.1.2 Proposed Location of the ISFSI

The Rancho Seco ISFSI will be located within the Owner Controlled Area of the Rancho Seco site which is owned and operated by the District. The Rancho Seco site comprises approximately 2,480 acres in Sacramento County, California. It is characterized by isolation from population centers, a sound foundation for structures, and favorable conditions of meteorology, seismology, and hydrology.

The proposed location of the ISFSI site within the Rancho Seco site is approximately 600 feet west of the Interim Onsite Storage Building (IOSB). The Owner Controlled Area boundary lies approximately 1200 feet to the west of the ISFSI and 1500 feet to the north. Figure 1-1 shows a general layout of the site.

1.2 General Description of the Installation

The installation exists on a concrete slab approximately 225 feet long, 170 feet wide, and 2 feet thick at the location of the HSMs. The primary mode of storage is within the Horizontal Storage Modules (HSMs) that will be located on the ISFSI pad. The slab is surrounded by a security fence. Figure 1-2 shows a general view of the Rancho Seco ISFSI layout.

The principal ISFSI design criteria are provided in Chapter 3, but are summarized as follows:

Installation Capacity	All RSNGS Fuel (493 SFAs)
Fuel Parameters	Bound RSNGS SFAs
Design Life[1]	50 Years
Earliest Operation[2]	6/96
Maximum Crane Load	130 tons
Environmental Conditions	Bound RSNGS Conditions
ISFSI Fence Dose Rates	≤2 mrem/hr
Site Boundary Dose Rates	≤25 mrem/yr
Criticality Factor	≤0.95

Details of the design criteria and design descriptions, for the ISFSI components used for storage are provided in Chapters 3 and 4 of Volume I (for the Dry Shielded Canisters (DSCs)), Volume II (for the HSMs), and Volume III (for the cask). A summary overview of these components follows.

Note:

Initially, the MP187 cask was intended to be licensed under 10 CFR 72 for storage of a DSC if required to recover from an off-normal event at the ISFSI. Accordingly, much of the original analysis addressed vertical storage of a loaded DSC in the cask at the ISFSI. Although the cask is no longer being licensed for storage under 10 CFR 72, many of the calculational results remain bounding and are still relevant to this SAR revision.

1.2.1 Horizontal Storage Module

The HSM is a low profile, reinforced concrete structure designed to withstand all normal condition loads as well as the abnormal condition loads created by earthquakes, tornadoes, flooding, and other natural phenomena. The HSM is also designed to withstand abnormal condition loadings postulated to occur during design basis accident conditions such as a complete loss of ventilation.

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1. The expected life is much greater (hundreds of years), however 50 years is assumed for service conditions.

2. This date is used to determine radiological sources and heat loads.

The Rancho Seco HSM design is similar to the Standardized NUHOMS®-24P HSM design [1.1.2]. The general features of the HSM are shown in Figure 1-3.

Quantity	22[3]
Capacity Each	1 Dry Shielded Canister (DSC)
Arrangement	2x11 Array
Size	15'-0" H, 9'-8" W, 19'-0" L
Approximate Weight, Empty	242,000 lbs

1.2.2 Dry Shielded Canister (DSC)

The DSC is a high integrity stainless steel, welded pressure vessel that provides confinement of radioactive materials, encapsulates the fuel in an inert atmosphere, and provides biological shielding (in the axial direction) during DSC closure, transfer and storage. It provides full canisterization for the fuel prior to storage in either the HSMs or cask.

Since the Rancho Seco ISFSI must provide 100% storage for RSNGS fuel and control components, three types of DSCs are required. The design requirements and design descriptions for each of the three DSCs are provided in Chapters 3 and 4 of this Volume. A general overview of the DSC is shown in Figure 1-4.

The Rancho Seco DSC designs are based on the Standardized NUHOMS®-24P DSC design [1.1.2], except that they include fixed neutron absorbers in order to expedite the licensing of the NUHOMS®-MP187 for offsite transport (10 CFR 71). In addition, modifications have been made to the cavity, basket, and spacer disc designs to qualify the Rancho Seco DSCs for offsite transport. These modifications are described in more detail in Section 4.2.5.2.

Quantity	21
All 3 DSC Types:	
External Size	67.25"ϕ x 186"
Shell Thickness (nominal)	0.625"
Approximate Weight, Loaded	81,000 lbs
Internal Atmosphere	Helium

[3] The Rancho Seco ISFSI uses 21 HSMs for storing spent nuclear fuel and the 22nd HSM for storing GTCC waste.

Fuel/Control Components (FC) DSC:	
Capacity Each	24 SFAs + CCs
Internal Cavity Length	173"
Neutron Absorber	Borated Panels
Quantity	18
Fuel-Only (FO) DSC:	
Capacity Each	24 SFAs
Internal Cavity Length	167"
Neutron Absorber	Borated Panels
Quantity	2
"Failed"-Fuel (FF) DSC:	
Capacity Each	13 SFAs
Internal Cavity Length	167"
Neutron Absorber (criticality control by geometry)	N/A
Quantity	1

1.2.3 NUHOMS®-MP187 Cask

The design of the Rancho Seco ISFSI includes one NUHOMS®-MP187 cask which is licensed under 10 CFR 71. The cask can be used for on-site transfer and offsite transport of a DSC without the need for additional fuel handling. This eliminates any need to return a DSC to the RSNGS spent fuel pool and allows abandonment of this pool as part of RSNGS' decommissioning.

The cask transfer mode is functionally identical to that described in the Standardized NUHOMS® SAR [1.1.2]. It provides the biological shielding and structural support necessary to carry a DSC through the various phases of drying, sealing, and transfer to the HSM for storage.

The cask has a transport mode which, although not the subject of this license application, is worth noting because the offsite transport requirements form the basis for many of the NUHOMS®-MP187 Cask's design features.

2. SITE AND ENVIRONMENT

2.1 Geography and Demography

2.1.1 Site Location

The Rancho Seco site is located in the southeast part of Sacramento County, California. It occupies all or parts of Sections 27, 28, 29, 32, 33, and 34 of Township 6 North, Range 8 East. The site is approximately 26 miles north-northeast of Stockton and 25 miles southeast of Sacramento, as shown in Figure 2-1. The Rancho Seco Nuclear Generating Station and Rancho Seco ISFSI are shown in Figure 2-2.

More generally, the site is located between the Sierra Nevadas to the east and the Coast Range along the Pacific Ocean to the west in an area of flat to lightly rolling terrain at an elevation of approximately 200 above feet mean sea level. To the east of the site the land becomes more rolling, rising to an elevation of 600 feet at a distance of about seven miles, and increasing in elevation thereafter approaching the Sierra Nevada foothills.

The approximate coordinates of the site are 38°-20'-40" North Latitude and 121°-07'-10" West longitude, or 4245500 Mn and 664400 Me Universal Transverse Mercator coordinates.

As shown in Figure 2-3, the Rancho Seco ISFSI is located west of the site's Industrial Area, approximately 600 feet west of the Interim On-site Storage Building. The Rancho Seco ISFSI is approximately 225 feet X 170 feet in size.

2.1.2 Site Description

The entire Rancho Seco site is approximately 2480 acres with all acreage being owned by the District. The nearest population center of 25,000 or more is Lodi, about 17 miles southwest of the site. The area around the site is almost exclusively agricultural, or is used as grazing land.

The climatology of the Rancho Seco site is typical of the Great Central Valley of California. Cloudless skies prevail during summer and much of the spring and fall seasons due to the pacific anticyclone off the California coast which prevents Pacific storms from entering inland. The rainy season usually extends from October through May. Atmospheric dispersion factors for the site are considered favorable.

Groundwater in the site area occurs under free or semi-confined conditions. It is stored chiefly in the alluvium, the older alluvial type deposits, and the Mehrten Formation. Groundwater movement in the area is to the southwest with a slope of about ten feet/mile.

There is no indication of faulting beneath the site. The nearest fault system, the Foothill Fault System, is about ten miles east of the site and has been inactive since the Jurassic

Period, some 135 million years ago. Ground accelerations of no greater than 0.05g are anticipated at the site during the life of the plant.

The soils at the Rancho Seco site are sufficiently strong to safely support the Rancho Seco ISFSI structure and appurtenant facilities. These soils can be categorized as hard to very hard silts and silty clays with dense to very dense sands and gravels.

2.1.2.1 Other Activities Within the Site Boundary

The Rancho Seco ISFSI lies wholly within the 2,480 acre Rancho Seco Nuclear Generating Station site. This site is owned and controlled by the District, who has full authority to determine all activities within the site including the exclusion and removal of individuals and property.

SMUD has completed construction of a 500-MW natural gas fired power plant located approximately ½ mile south of the Industrial Area boundary.

Access for transmission lines and water lines is from the west and south sides of the property.

2.1.2.2 Boundaries for Establishing Effluent Release Limits

There are no radioactive effluent releases associated with the Rancho Seco ISFSI. The boundaries for effluent releases from the Rancho Seco site are described in the Offsite Dose Calculation Manual (ODCM) [2.2.1].

2.1.3 Population Distribution and Trends

The land surrounding the site is presently undeveloped and is used primarily for grazing beef cattle and other agricultural activities. The most recent population distribution estimates are contained in the "Evacuation Time Estimate for the Rancho Seco Plume Exposure Pathway Emergency Planning Zone" [2.2.2].

There are five counties (Amador, San Joaquin, Sacramento, El Dorado, and Calaveras) within a 15-mile radius of Rancho Seco. Only very small portions of El Dorado and Calaveras counties are within the 15-mile radius of Rancho Seco. There is no significant projected growth within these portions of these two counties. The projected development within Amador, Sacramento, and San Joaquin counties is discussed in Section 4.2 of the Rancho Seco ISFSI Environmental Report, Revision 1 [2.2.3]. A five-mile radius area surrounding the Rancho Seco facility is defined as the low population zone. This area is primarily farm land and vineyards, with few tourist attractions and little seasonal variation in the population.

The Rancho Seco Reservoir and Recreation Area (Rancho Seco Park) attracts a number of day visitors to the area. The average annual number of visitor days at the park for the last four years is 114,860 visitor days.

Additionally, a wildlife sanctuary has been built at Rancho Seco Park. It is estimated that an additional 625 cars could visit the park during special functions at this facility.

A survey of the area beyond the 5-mile radius shows that the nearest population concentration is approximately 6.5 miles from the plant site. The nearest population center of 25,000 or more is Lodi, 17 miles south-southwest of the site. Other population centers of greater than 25,000 people include Sacramento at 25 miles, Stockton at 26 miles, and Modesto at 50 miles.

There are 16 special facilities in Amador and Sacramento Counties within a 10½ mile radius of Rancho Seco. They consist of five public schools (one high school and four elementary schools), one private elementary school, one treatment center for TB and alcoholic patients, four residential care homes, an adult training center for developmentally disabled, a California Department of Forestry Fire Academy, the Preston School of Industry, a nudist ranch, and Mule Creek State Prison. A summary of these facilities is shown in Table 2.2-3 of Rancho Seco Defueled Safety Analysis Report (DSAR), Amendment 4 [2.2.4].

2.1.4 Uses of Nearby Land and Waters

2.1.4.1 Land Use

The site area is almost exclusively agricultural. DSAR, Amendment 4 Figure 2.2-4 provides a description of agriculture and residential activities within a 5-mile radius of the site. There are no commercial dairy farms within this 5-mile radius.

There are at present three large-scale commercial dairies in the vicinity, each with over 200 cows. The closest dairy is approximately 8 miles northwest of the site. A ranch 1 mile east of the site has dairy cows for domestic use only.

Proposed land use for the southeast section of Sacramento County as adopted by the Sacramento Planning Department is predominantly (70 percent) agricultural and is expected to remain agricultural. Approximately 2000 acres of vineyards are being developed on land in proximity to the Rancho Seco site.

2.1.4.2 Access and Egress

As shown in Figure 2-2, State Route 104 runs just north of the site in a general east-west direction and connects with State Route 99 to the west and State Route 88 to the east.

The Twin Cities Access Road, identified in Figure 2-2, is the main access road to the plant and to nearby recreational facilities. The access road to the plant is not a through road and is designed to handle heavy construction vehicles.

Rail access to the site is available via a rail spur from the existing Southern Pacific Railroad line that runs roughly parallel to State Route 104 adjacent to the site. The routing of the rail spur is shown in Figure 2-2.

2.1.4.3 Water Supply

Potable water for the Rancho Seco site is obtained from the site well. Water for RSNGS is from the Folsom South Canal. The Bureau of Reclamation constructed the canal as part of the Central Valley Project. A pipeline and pumping station are located between the plant and the Folsom South Canal.

3. PRINCIPAL DESIGN CRITERIA

This Section establishes the design criteria for the Rancho Seco ISFSI. These include environmental parameters which the facility must withstand, fuel clad temperature limits, DSC design criteria, etc. Design criteria unique to HSM storage are addressed separately in Volume II.

3.1 Purpose of Installation

The Rancho Seco ISFSI is designed to provide interim storage for 100% of the RSNGS spent fuel assemblies and control components. The facility must store 100% of the spent fuel assemblies and control components since the RSNGS spent fuel pool will be decommissioned as a part of the overall plant decommissioning effort.

3.1.1 Material to be Stored

RSNGS fuel is Babcock & Wilcox 15X15 Mark B PWR fuel. The fuel will be stored as non-consolidated fuel assemblies both with and without non-fuel hardware/control components. Since this is a 100% fuel storage campaign, provisions are made to store assemblies with cladding degradation in a specifically designated DSC.

The total amount of uranium to be stored at the ISFSI is approximately 220.32 metric tons of intact and damaged fuel assemblies.

The Rancho Seco ISFSI is also designed to store Rancho Seco GTCC radioactive waste. Appendix C discusses the storage of GTCC waste.

3.1.1.1 Physical Characteristics

The physical characteristics of the fuel to be stored are described in detail in Section 3.2 of DSAR, Amendment 4 [3.3.1] and are summarized in Table 3-1. The characteristics of the control components are also described in detail in Section 3.2 of DSAR, Amendment 4 and are summarized in Table 3-2.

3.1.1.2 Thermal Characteristics

Since Rancho Seco is in a permanently defueled configuration, the heat load for all 493 fuel assemblies has been quantified prior to ISFSI design and operation.

The ISFSI is designed to store the hottest 24 (or 13 in the case of the FF-DSC) RSNGS fuel assemblies in any single DSC assuming storage campaign initiation after June 1996. Actual heat loads should be much less since many RSNGS fuel assemblies have only a fraction of the design basis thermal power.

The maximum single assembly decay heat power, including control components, is less than 0.679 + 0.085 = 0.764 kW where 0.679 kW is the bounding decay heat from the fuel

assembly only and 0.085 kW the bounding decay heat from the control component. For the cask thermal analysis, the total decay heat power in the cask inner cavity of 13.5 kW is used to be consistent with the 10 CFR 71 application for certification of the MP187 package. Therefore, the combined heat load for the 24 fuel assemblies is 13.5 kW per FO- or FC-DSC and 9.93 kW for the 13 failed fuel assemblies in the FF-DSC. These heat loads are considerably less than the DSC heat load for the Standardized NUHOMS®-24P system (24 kW) [3.3.2]. Heat loads were calculated using the computer code ORIGEN2. The calculations are fully described in Volume IV, Calculation 2069.0401.

3.1.1.3 Radiological Characteristics

Since Rancho Seco is in a permanently defueled configuration, the radiological sources for all 493 fuel assemblies have been quantified prior to ISFSI design and operation.

The worst case neutron and gamma-ray source terms were determined assuming a fuel loading date after June 1996. The fuel assembly with the largest neutron source term is a 3.18 weight percent U_{235} initial enrichment, 38,268 MWd/MTU burnup assembly cooled for 13 years. The fuel assembly with the largest gamma-ray source term is a 3.21 weight percent U_{235} initial enrichment, 34,143 MWd/MTU burnup assembly cooled for 7 years. The control component with the largest gamma-ray source is an axial power shaping rod assembly.

The maximum neutron and gamma-ray source terms were combined to form a composite design basis assembly for use in all shielding calculations. The neutron and gamma-ray source strengths and spectra are given in Chapter 7, Tables 7-1 and 7-2, respectively. Radiological source terms were calculated using the computer code ORIGEN2. The calculations are fully described in Volume IV, Calculation 2069.0500.

There are two primary Regenerative Neutron Source assemblies that will be stored inside fuel assemblies. These sources have a sixty-day half-life, and have been removed from the reactor. over 20 years. The neutron dose from these sources has essentially decayed to zero. There are also two californium neutron sources that will be stored in fuel assemblies at the ISFSI. These sources are such that they do not provide any significant contribution to the calculated neutron source for the shielding dose analysis. The control components do not contain any fissionable nuclides; therefore, no fission products or fission gases are generated in the control components. The control components contain activation products after irradiation; however, no gaseous effluents will be available for release.

There will also be 26 retainer clips that will be inserted as part of the fuel control components. The retainer clips are made of stainless steel and an inconel spring, and are relatively small and light weight (4.8 pounds each). The inclusion of these clips will not result in a significant addition to the neutron or gamma sources for the shielding dose analyses.

3.1.2 General Operating Functions

The Rancho Seco ISFSI is similar to the Standardized NUHOMS® System. Each aspect of criticality control, radiation protection, containment, and heat rejection is accomplished through passive means. Additional discussions concerning the general operating functions pertaining to the ISFSI are discussed in detail in Section 3.1.2 of the Standardized NUHOMS® SAR [3.3.2].

See Appendix B for Standardized SAR, Section 3.1.2 (pages 3.1-3 to 3.1-6).

3.1.2.1 Handling and Transfer Equipment

The handling and transfer equipment of the Rancho Seco ISFSI are similar to those discussed in Section 3.1.2.1 of the Standardized NUHOMS® SAR [3.3.2].

See Appendix B for Standardized SAR, Section 3.1.2.1 (pages 3.1-3 to 3.1-6).

3.1.2.2 Waste Processing, Packaging and Storage Areas

There are three types of contaminated waste produced as a result of dry storage activities. These are the contaminated water drained from the DSC cavity, the potentially contaminated air and helium evacuated from the DSC, and the wet and dry active waste from the loading, drying, sealing, and decontamination of the DSC. All contaminated water is returned to either the spent fuel pool or the plant's liquid radioactive waste system. All potentially contaminated air and helium will be filtered, monitored, and discharged through the RSNGS Auxiliary Building Stack, or filtered in the event a cask is loaded at the ISFSI. The dry active waste will be disposed of in accordance with existing RSNGS radioactive waste handling procedures.

3.2 Structural and Mechanical Safety Criteria

The Rancho Seco ISFSI system components which are important to safety include the reinforced concrete HSM and its DSC support structure, the FO-DSC, FC-DSC, FF-DSC, the cask, and lifting yoke including any extensions. Since the cask will not be lifted over 80 inches once placed on the transfer trailer, the lifting yoke is not important to safety for storage purposes; however, it is given this classification to satisfy the evaluation of lifting the cask onto the transfer trailer under the Rancho Seco 10 CFR 50 license. Since the Rancho Seco ISFSI is an independent, passive system, no other components or systems contribute to its safe operation. Many of the components are similar to the Standardized NUHOMS® system components analyzed in the Standardized NUHOMS® SAR [3.3.2].

The extreme environmental and natural phenomena design criteria for the Rancho Seco ISFSI components are discussed below.

The design criteria for the Rancho Seco ISFSI components which are important to safety for HSM storage are discussed in Volume II, Section 3.2.

The design criteria for the Rancho Seco ISFSI components which are important to safety for cask handling are discussed in the following sections. The DSC and cask loading conditions for cask handling operations are summarized in Table 3-3 and Table 3-4, .

3.2.1 Tornado and Wind Loadings

3.2.1.1 Applicable Design Parameters

The Standardized NUHOMS® SAR [3.3.2] design parameters were used to define the design basis tornado (DBT) and wind loadings for the Rancho Seco ISFSI. The Standardized NUHOMS® system was designed to operate anywhere within the 48 contiguous states, and therefore its design conditions bound Rancho Seco site-specific conditions.

3.2.1.2 Determination of Forces on Structures

The design basis forces on the cask and reinforced concrete HSM are described in Section 3.2.1.2 of the Standardized NUHOMS® SAR [3.3.2]. The maximum DBT design pressure loads of 397 psf on the windward side and -357 psf (suction) on the leeward side of the HSM are assumed to act as uniform pressure loads on the HSM walls. The effects of the DBT wind loads on sliding and overturning stability of the HSM are considered in addition to the resulting concrete forces and moments. The HSM tornado winds analysis results are contained in Volume II, Section 8.3.1.

See Appendix B for Standardized SAR, Section 3.2.1.2 (pages 3.2-2 to 3.2-3).

9. CONDUCT OF OPERATIONS

This chapter describes the organization and general plans for operating the Rancho Seco ISFSI. The organization section includes a brief description of the responsibilities of managers, supervisors, and other key personnel. The training program for the plant staff is described, along with a more general discussion of replacement and retraining plans. Standards and procedures that govern daily operations and the records developed as a result of these operations are also discussed, as are the controls used to promote safety and ensure compliance with the license and the regulations under which the facility operates.

Initially, the managerial and administrative controls for the conduct of operations at the Rancho Seco ISFSI will be built upon the existing organization under the 10 CFR 50 license. The Manager, Plant Closure and Decommissioning is currently responsible for the overall operation and maintenance of RSNGS and for ensuring the safe storage of the spent nuclear fuel and irradiated core components. This individual will continue to be responsible for safe storage of the fuel, and will be responsible for the safe operation of the Rancho Seco ISFSI.

The administrative and procedural controls under the 10 CFR 50 license will be expanded to include the requirements of the 10 CFR 72 license. Programs such as radiation protection, environmental monitoring, emergency preparedness, quality assurance, and training will be adapted as necessary to ensure the safe operation and maintenance of the ISFSI. The District has submitted an ISFSI security program for approval which addresses the differences between the ISFSI security requirements and the 10 CFR 50 security plan.

Upon termination of the 10 CFR 50 license, those license requirements will be removed from the procedures. Appropriate 10 CFR 72.48 reviews will be conducted to ensure continued compliance with ISFSI license requirements. This process will result in stand-alone ISFSI programs that implement the 10 CFR 72 license. The District will maintain the appropriate administrative and managerial controls at the Rancho Seco ISFSI until the DOE takes title to the fuel.

9.1 Organizational Structure

9.1.1 Corporate Organization

The District's organization and its relationship to the nuclear organization is presented in Figure 12.1-1 of DSAR, Amendment 4 [9.9.1]. The Rancho Seco ISFSI will be designed, constructed, tested, and operated under the same organization responsible for RSNGS. This organization is described in DSAR, Amendment 4, Section 12.1.

9.1.1.1 Corporate Functions, Responsibilities, and Authorities

The District's Board of Directors is the policy-making body which has ultimate responsibility for the Rancho Seco ISFSI license. The General Manager (GM) is the District's Chief Executive Officer, and reports directly to the Board. The GM, through the Assistant General

Manager (AGM), Energy Supply, has corporate responsibility for overall safety and operation of the facility and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the facility to ensure nuclear safety.

9.1.1.2 In-House Organization

The plant organization is shown in DSAR, Amendment 4 [9.9.1], Figure 12.1-2. The nuclear organization is described in DSAR, Amendment 4, Section 12.1.

9.1.1.3 Interrelationship with Contractors and Suppliers

The prime contractor for design and analysis of the Rancho Seco ISFSI dry shielded canisters, horizontal storage modules, auxiliary and transfer equipment and casks is Transnuclear West, Inc. of Fremont, California. The prime contractor for the design of the Rancho Seco ISFSI civil facilities, including the storage pad, fencing and lighting system, etc. was Impell Corporation of San Ramon, California. Construction of the Rancho Seco ISFSI was the responsibility of BRCO Constructors, Inc. of Loomis, California. The Rancho Seco ISFSI is owned and operated by the District.

9.1.1.4 Technical Staff

The Corporate technical staff supporting the Rancho Seco ISFSI is described in DSAR, Amendment 4 [9.9.1], Section 12.1.

9.1.2 Operating Organization, Management and Administrative Control System

9.1.2.1 Onsite Organization

The RSNGS organization is responsible for operation of the Rancho Seco ISFSI. This organization is described in DSAR, Amendment 4 [9.9.1], Section 12.1.

9.1.2.2 Personnel Functions, Responsibilities and Authorities

The responsibilities and authority of major RSNGS positions or departments are summarized below. RSNGS personnel are selected and trained for their assigned duties, with particular emphasis on the supervisory, technical, and operating staffs to assure safe and efficient operation of the RSNGS.

AGM, Energy Supply

The AGM, Energy Supply is responsible for the overall Rancho Seco facility and the Rancho Seco organization. This includes ensuring the safe storage of irradiated core components, ensuring effective day-to-day operations, and maximizing the effectiveness of nuclear policies and procedures.

The AGM, Energy Supply is supported by the following onsite organization:

Manager, Plant Closure and Decommissioning

The Manager, Plant Closure and Decommissioning is responsible for the management of the overall facility, the operation and maintenance of the RSNGS and Rancho Seco ISFSI, and ensuring the safe storage of irradiated core components, and shall delegate in writing the succession of his responsibilities during his absences.

Quality /Licensing/Administration is responsible for ensuring that quality assurance, licensing, regulatory compliance, and administrative support, including records preservation are implemented in accordance with regulatory requirements. The Quality organization has the authority to take any issue regarding the quality of operations at Rancho Seco to the AGM, Energy Supply.

Engineering is responsible for the resolution of engineering, design, and other technical issues required to support the ISFSI 10 CFR 72 licensing process, as well as resolving similar issues associated with activities conducted under the RSNGS 10 CFR 50 license.

Security is responsible for site security during routine, emergency, and contingency operations. Security is also responsible for the implementation and maintenance of the Physical Protection Plan.

Radiation Protection/Chemistry is responsible for health physics surveillance, radiological and chemical analyses, personnel monitoring and record keeping, radwaste management, emergency preparedness, and environmental monitoring.

Maintenance is responsible for ensuring the Rancho Seco ISFSI operations are conducted in accordance with Technical Specifications, federal and state regulations, Physical Protection Plan, and plant procedures and has the primary responsibility for cask and canister handling operations.

ISFSI Technicians are engaged in a continual retraining program, as described in Section 9.3, to ensure that ISFSI operations are conducted in a safe and efficient manner.

ISFSI Technicians check, analyze, and log system parameters, and initiate corrective actions when abnormal conditions exist. ISFSI Technicians perform initial fire response and notifications in accordance with the fire protection program.

Individuals on shift are trained and qualified to implement appropriate radiation protection procedures.

9.1.3 Personnel Qualification Requirements

Each member of the RSNGS staff meets or exceeds the minimum qualifications of ANSI N18.1-1971 for comparable positions, except the Radiation Protection/Chemistry Superintendent who meets or exceeds the qualifications of Regulatory Guide 1.8, September 1975. Plant personnel are selected and trained for their assigned duties to ensure safe and efficient Rancho Seco ISFSI operations.

Training, retraining, and replacement training programs for the operating staff and security force are maintained and conducted in accordance with approved procedures.

9.1.4 Liaison with Other Organizations

Interface with DOE, Transnuclear West, and other outside organizations is performed in accordance with contractual agreements.