

**CERTIFICATE OF COMPLIANCE  
FOR SPENT FUEL STORAGE CASKS**

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The U.S. Nuclear Regulatory Commission is issuing this Certificate of Compliance pursuant to Title 10 of the Code of Federal Regulations, Part 72, "Licensing Requirements for Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste" (10 CFR Part 72). This certificate is issued in accordance with 10 CFR 72.238, certifying that the storage design and contents described below meet the applicable safety standards set forth in 10 CFR Part 72, Subpart L, and on the basis of the Final Safety Analysis Report (FSAR) of the cask design. This certificate is conditional upon fulfilling the requirements of 10 CFR Part 72, as applicable, and the conditions specified below.

Certificate No.	Effective Date	Expiration Date	Docket No.	Amendment No.	Amendment Effective Date	Package Identification No.
1007	05/07/93	05/07/13	72-1007	1	05/30/00	USA/72-1007

Issued To: (Name/Address)

Pacific Sierra Nuclear Associates  
3600 Glen Canyon Road  
Scotts Valley, CA 95066

Safety Analysis Report Title

Pacific Sierra Nuclear Associates  
Final Safety Analysis Report for the  
Ventilated Storage Cask System

**CONDITIONS**

1. Casks authorized by this certificate are hereby approved for use by holders of 10 CFR Part 50 licenses for nuclear power reactor sites under the general license issued pursuant to 10 CFR 72.210, subject to the conditions specified by 10 CFR 72.212 and the attached Conditions for Cask Use and Technical Specifications.

2. Cask Description

- a. Model No.: Ventilated Storage Cask (VSC-24)

- b. Description

The VSC-24 system and its analyses and operations are described in the Pacific Sierra Nuclear Associates, Safety Analysis Report for the Ventilated Storage Cask System (SAR) (Docket 72-1007). The Nuclear Regulatory Commission (NRC) has reviewed the SAR as documented in the Safety Evaluation Reports (SERs) for the VSC-24 system, through Certificate of Compliance Amendment 1. A brief summary is provided below.

The VSC-24 system that is certified is described in NRC's SERs and SAR Sections 1, 3, 4, 5, 6, and 7 (drawings are contained in SAR Appendix 1). The VSC-24 is a vertical cask system composed of a steel multi-assembly sealed basket (MSB) and a ventilated concrete cask (VCC). The welded MSB provides confinement and criticality control for the storage and transfer of irradiated fuel. The VCC provides radiation shielding, while allowing cooling of the MSB and fuel by natural convection during storage.

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The MSB consists of a steel cylindrical shell with a thick shield plug and steel cover plates welded at each end. The shell length is fuel-specific. An internal fuel basket is designed to hold 24 pressurized water reactor (PWR) fuel assemblies. The steel basket is a welded structure consisting of 24 square storage locations. Each storage location encloses one irradiated fuel assembly. Support in the horizontal direction is provided by curved supports located at each end and the center of the basket assembly. The basket aids in the insertion of the fuel assemblies, enhances subcriticality during loading operations, and provides structural support during a hypothetical drop accident. The MSB is installed vertically in the VCC.

The VCC is a reinforced concrete cask in the shape of a right circular cylinder. The VCC has openings for air flow. Four air inlets are located at the bottom, and four air outlets located at the top. The air inlets and outlets are protected from debris intrusion by wire mesh screens during storage operation. The internal cavity of the VCC, as well as inlets and outlets, are steel-lined. The inner and outer reinforcement cages are formed by horizontal hoop and vertical hook bars. Additional reinforcement is provided at the VCC bottom and around openings. After the MSB is inserted, a shield ring is placed over the MSB/VCC gap and the cask weather cover is installed. The MSB is shielded, supported, and protected by a multi-assembly transfer cask (MTC) during fuel loading and MSB transfer operations.

The MTC is designed and fabricated as a lifting device to meet NUREG-0612 requirements. Other transfer and auxiliary equipment (vacuum drying system, trailer, skid) are also used during canister loading, closure, and transfer operations, but not during dry storage.

The VCC, MSB, and MTC are identified in the SAR as the only components of the VSC-24 system that are important to safety.

Fuel assemblies are stored in the VSC-24 system according to the following sequence of operations: (1) a transfer cask containing an empty MSB is positioned in the spent fuel pool; (2) fuel assemblies are loaded in the MSB; (3) a shielding ring is placed on the MSB and the MTC is used to remove the MSB from the spent fuel pool; (4) the MSB is drained, dried, sealed, and refilled with helium; (5) the MSB, in the MTC, is transferred and placed vertically into the VCC; (6) the VCC is then transferred to the storage location via a truck trailer, and is positioned at the storage pad via a hydraulic roller skid, for normal operation storage.

c. Drawings

The drawings for the VSC-24 dry irradiated fuel storage cask system are contained in Appendix 1 of the SAR.

d. Basic Components

The basic components of the VSC-24 system, that are important to safety, are the MSB, VCC, and MTC. These components are described in Section 1.2 of the SAR.

3. Cask fabrication activities shall be conducted in accordance with a quality assurance program as described in Section 13.0 of the SAR.

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4. Notification of cask fabrication schedules shall be made in accordance with the requirements of 10 CFR 72.232(c).

FOR THE NUCLEAR REGULATORY COMMISSION

**/RA/ original signed by /s/**

E. William Brach, Director  
Spent Fuel Project Office  
Office of Nuclear Material Safety  
and Safeguards

Attachment: Conditions for Cask Use and  
Technical Specifications

Dated: May 26, 2000



