# CERTIFICATE OF COMPLIANCE FOR SPENT FUEL STORAGE CASKS



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. |
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Issued To: (Name/Address)

BNG Fuel Solutions Corporation
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Safety Analysis Report Title

Final Safety Analysis Report for the
Ventilated Storage Cask System

## APPROVED SPENT FUEL STORAGE CASK

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

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 each Certificate of Compliance amendment.

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.

The MSB consists of a steel cylindrical shell, sealed at the bottom end with a welded steel plate and at the top end with a welded steel shield lid and welded steel structural lid. The shell length is fuel-specific. The internal MSB 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 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 shielded, supported, and protected by an MSB transfer cask (MTC) during fuel loading and MSB transfer operations. The MTC has hydraulically operated doors at the bottom, through which the MSB is passed into the top of the VCC.

The fuel transfer and auxiliary equipment necessary for the Independent Spent Fuel Storage Installation operation are not included as part of the VSC-24 system approved by this Certificate of Compliance under 10 CFR Part 72, Subpart L. Such equipment may include, but is not limited to, special lifting devices, transfer trailers or equipment, and vacuum drying/helium leak test equipment.

The VCC is a reinforced concrete cask oriented as a right circular cylinder with an opening for the MSB at the top. The VCC also has openings for air flow. Four air inlets are located at the bottom and four air outlets are located at the top. The air inlets and outlets are protected from debris intrusion by wire mesh screens during storage operations. The internal cavity of the VCC, as well as inlets and outlets, are steel-lined. The inner and outer concrete reinforcement cages are formed by horizontal hoop and vertical hook bars. Additional concrete reinforcement is provided at the VCC bottom and around the openings. After the MSB is inserted, a shield ring is placed over the MSB/VCC annulus gap and a VCC weather cover is installed.

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.

**CONDITIONS**

1. HEAVY LOADS

Each lift of a loaded MSB within an MTC must be made in accordance with the existing heavy loads requirements and procedures of the licensed facility at which the lift is made. A plant-specific safety review (in accordance with 10 CFR 50.59 or 10 CFR 72.48, if applicable) is required to show operational compliance with existing plant-specific heavy loads requirements.

2. QUALITY ASSURANCE

Activities in the areas of design, procurement, fabrication, assembly, inspection, testing, operation, maintenance, repair, and modification of structures, systems and components that are important to safety shall be conducted in accordance with a Commission-approved quality assurance program which satisfies the applicable requirements of 10 CFR Part 72, Subpart G, or 10 CFR Part 50, Appendix B.

3. OPERATING PROCEDURES

Written operating procedures shall be prepared for cask handling, loading, movement, surveillance, and maintenance. The user's site-specific written operating procedures shall be consistent with the generic operating procedures described in the SAR and the attached Conditions for Cask Use and Technical Specifications.

4. AUTHORIZATION

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.

FOR THE NUCLEAR REGULATORY COMMISSION

**/RA/**

Robert Lewis, Chief
Licensing Section
Spent Fuel Project Office
Office of Nuclear Material Safety
and Safeguards

Attachment: Conditions for Cask Use and
Technical Specifications

Dated: 27 Sept 2005