



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION REPORT  
Model No. CNS 10-160B Package  
Certificate of Compliance No. 9204  
Revision No. 4

## SUMMARY

By application dated November 18, 1999, Chem-Nuclear Systems, LLC, requested an amendment to Certificate of Compliance No. 9204, for the Model No. CNS 10-160B package. Chem-Nuclear requested that the authorized contents be revised to include source material and special nuclear material as authorized contents, in addition to byproduct material. Based on the statements and representations in the application, the staff agrees that these changes do not affect the ability of the package to meet the requirements of 10 CFR Part 71.

### 1.0 GENERAL INFORMATION

#### 1.1 Contents

The applicant requested that source material and special nuclear material be included as authorized contents for the package. No changes were requested in the maximum quantity of radioactive material per package. The package contents are limited as follows: (1) not more than 2,000 times a Type A quantity, (2) decay heat not more than 100 watts, (3) fissile material not to exceed the mass limits in 10 CFR 71.53, and (4) weight of contents, including shoring, secondary containers, and optional shield insert not to exceed 14,500 pounds. Since the package does not provide double containment, the maximum quantity of plutonium per package is limited to 0.74 TBq (20 curies) as required by 10 CFR 71.63.

### 2.0 STRUCTURAL

The requested change to add source material and special nuclear material as authorized contents does not affect the structural evaluation of the package. The maximum weight of the package contents was not changed.

### 3.0 THERMAL

The requested change does not affect the thermal evaluation of the package. No changes in decay heat were requested, and the addition of source material and special nuclear material as authorized contents does not change the thermal properties of the package.

#### **4.0 CONTAINMENT**

The applicant stated that the requested change does not affect the containment evaluation for the package. The containment analysis is based on an assumed total source term of 2,000 times an A<sub>2</sub> quantity, without reference to specific radionuclides. Since there is no change in the maximum source term, or in the physical form of the contents (i.e., solid or solidified wastes, or dewatered resins or process solids within secondary containers), the containment evaluation for the package is not affected by the requested change. The leak testing performed on the package is also not affected.

#### **5.0 SHIELDING**

The shielding evaluation is based on a gamma source independent of radionuclide. The requested change does not affect the shielding evaluation performed for the package.

#### **6.0 CRITICALITY**

The contents are limited to fissile exempt quantities as specified in 10 CFR 71.53. Therefore the requested change does not affect the criticality safety of the package.

#### **7.0 OPERATING PROCEDURES**

The requested change does not affect the operating procedures for the package, including leak testing.

#### **8.0 ACCEPTANCE TESTS AND MAINTENANCE PROGRAM**

The requested change does not affect the acceptance tests or maintenance program for the package, including leak testing.

#### **CONCLUSION**

The Certificate of Compliance has been revised to specify that authorized contents may include source material and special nuclear material in addition to byproduct material in the form of solid or solidified wastes, or dewatered resins or process solids within secondary containers. The Certificate has been revised to clarify that the maximum quantity of plutonium per package is 0.74 TBq (20 curies), as required by 10 CFR 71.63. Based on the statements and representations in the application, the staff agrees that this change does not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Issued with Certificate of Compliance No. 9204, Revision No. 4,  
on February 4, 2000.