 <p>PROMOTE PROTECT PROSPER</p> <p>South Carolina Department of Health and Environmental Control</p>	<p align="center">South Carolina Department of Health and Environmental Control Bureau of Land & Waste Management Division of Waste Management</p>
<p align="center">CERTIFICATE OF COMPLIANCE</p>	
<p align="center">High Integrity Container</p>	

AMENDMENT M TO: **DHEC-HIC-PO-006 in its entirety**

ISSUED TO: **EnergySolutions, LLC**
140 Stoneridge Drive
Columbia, South Carolina 29210

1. Application:

This certificate is applicable to containers specified below for use at Chem-Nuclear Systems, LLC, burial facility at Barnwell, South Carolina for containment and disposal of solid low-level radioactive waste as specified in South Carolina Radioactive Material License No. 097.

2. General Design:

The design, materials, manufacture and use of the containers shall conform to the analysis and specifications which have received approval of the Department and the U.S. Nuclear Regulatory Commission including:

- A. Polyethylene High Integrity Container Specification, ES-C-007, Rev. 2
- B. Quality Assurance Plan for Crosslinked Polyethylene High Integrity Containers, QP-002, Rev. 4
- C. CNSI Polyethylene Overpack HIC Passive Vent Design, No. RA-0461-5, September 30, 1985.
- D. Duratek/CNS Drawings:
 - 1) B-121-D-0014, Rev. 4, Lifting Basket for 60 Gallon OP
 - 2) C-003-001456-001, Rev. 0, Poly HIC Filter Vent
 - 3) C-003-001456-005, Rev. 0, Overpack Vent Installation
 - 4) C-003-001456-006, Rev. 3, Poly HIC Overpack
 - 5) C-121-D-0052, Rev. 3, Poly HIC Container (3-Pack Arrangement)

- 6) C-121-D-0073, Rev. 5, Lifting Basket HIC Overpack
- 7) C-121-D-0133, Rev. 7, NAVSEA 7000 Overpack Lifting Basket

3. Applicable Approved Containers:

This certificate shall apply to all 60 gallon, small, medium, large, and 246 gallon overpack high integrity containers.

4. Quality Assurance:

The containers shall be manufactured, stored, and used in accordance with the quality assurance documents and procedures which have received approval of the Department including QP-002, Rev. 3, "Quality Assurance Plan for Crosslinked Polyethylene High Integrity Containers".

5. User Requirements:

Use of this container shall be in accordance with Chem-Nuclear Operating Procedure FO-OP-019, Rev.13, Polyethylene High Integrity Container Overpack Handling Procedure.

6. Specific Limitations:

The following specific limitations for the containers described and identified in this certificate shall apply and be strictly adhered to:

- A. Free Standing Liquid: Any free standing liquid must be non-corrosive and less than one percent (1%) by waste volume.
- B. Radiation: All waste forms shall not exceed 1.0×10^8 rads (β, γ) maximum integrated dose to the container. If the specific activity of dewatered resins exceeds 350 $\mu\text{Ci/cc}$ of isotopes greater than five year half lives, documentation must be provided which shows that the maximum integrated dose to the container will not exceed 1.0×10^8 rads (β, γ).
- C. Chemicals: Organic solvents, petrochemicals, concentrated acid and other chemicals specified in CNS procedure FO-OP-019, Rev.13, are not allowed to be introduced into the container nor the container subjected to these materials.
- D. Thermal: The container and contents must be kept below 170°F for handling, lifting, and disposal. At no time can the container be subjected to temperature in excess of 200°F due to a process or its contents.
- E. Ultraviolet: The containers shall not be stored in such a way as to cause exposure to sunlight or other ultraviolet radiation to exceed one (1) year.
- F. Vent: A passive vent as per applicable drawings and reports of Section 2, General Design, is mandatory.

- G. Weight: The weight of the container and contents must not exceed the values in the following at any time:

Container	Empty Wt. (lbs.)	Max Total Wt. (lbs)
60 Gallon	125	1200
Small	250	2500
Medium	305	2500
Large	330	2500

- H. Volumes: The disposal volume for each container shall be as follows for the purpose of burial records. The internal volume shall be for Chem-Nuclear License criteria.

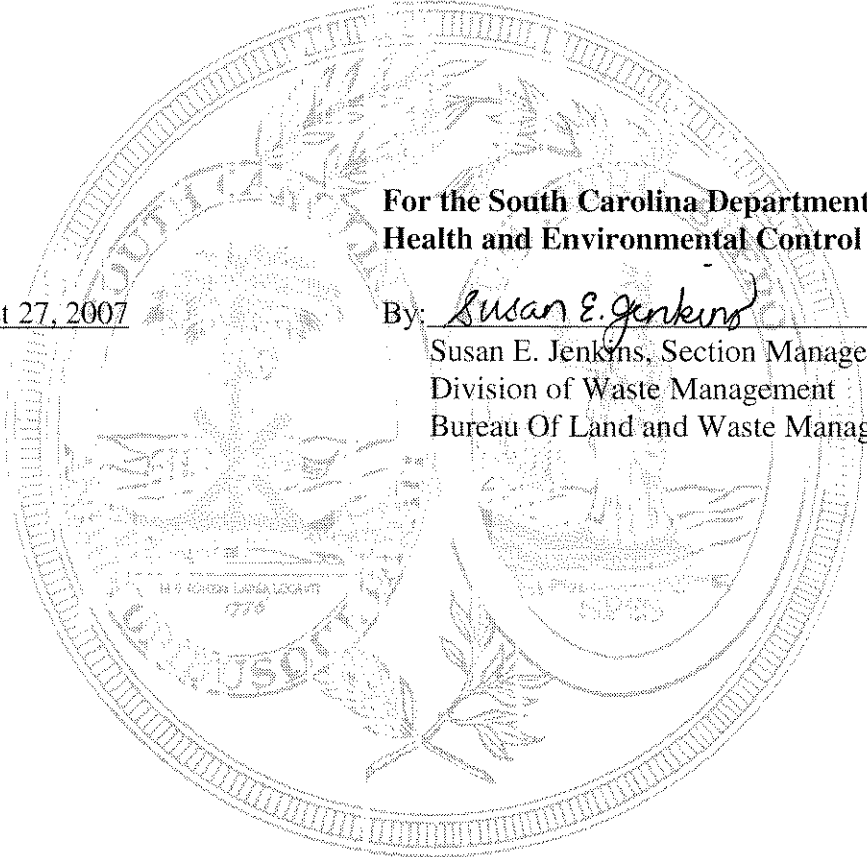
Container Model	Internal Volume Cubic Feet	Disposal Volume Cubic Feet
60 Gallon	8.4	10.2
Small	23.8	28.0
Medium	33.5	38.3
Large	36.8	41.8
246 Gallon	32.7	36.5

- I. The High Integrity Container is limited to the following waste forms (Classes A, B, and C):
- (1) Dewatered bead resins, powdered resins, and diatomaceous earth
 - (2) Compressible and noncompressible solid waste
 - (3) Filter elements and cartridges
 - (4) Solidified resins, sludges, and liquid waste
 - (5) Incinerator ash, residuals, or equivalent waste which has been rendered non-dispersable in a binding matrix.
- J. Waste such as mechanical or cartridge filters, scrap, or other sharp objects placed in the container shall not cause internal damage to the container nor shift about during transportation and handling. All voids shall be filled.
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Any modifications or changes of the container design, materials or usage are subject to prior approval of the Department.

This approval is contingent and does not constitute a final determination by the Department. These containers will be subjected to further evaluation and assessed for their integrity and ability to meet all specified conditions and criteria.

Should such an evaluation determine that additional requirements are necessary, appropriate modifications shall be made before their continued use. This Certificate is subject to revocation if warranted.



**For the South Carolina Department of
Health and Environmental Control**

Issue Date: August 27, 2007

By: Susan E. Jenkins
Susan E. Jenkins, Section Manager
Division of Waste Management
Bureau Of Land and Waste Management