



Exelon Generation®

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RS-13-228

10 CFR 71.95

September 11, 2013

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

Exelon Generation Company, LLC  
10 CFR 71, "Packaging and Transportation of Radioactive Material"  
NRC Docket No.71-0008

Subject: Report In Accordance With 10 CFR 71.95 Related to the Pressure Drop Testing  
of the EnergySolutions 8-120B Shipping Cask

Reference: Letter from D. B. Shrum (EnergySolutions) to M. Lombard (U. S. NRC),  
"10 CFR 71.95 Report on the 8-120B Cask," dated August 14, 2013

In accordance with 10 CFR 71.95, "Reports," Exelon Generation Company, LLC (EGC) is submitting the attached report pursuant to 10 CFR 71.95(a)(3) regarding potential instances in which the conditions of approval in Certificate of Compliance (CoC) #9168 for the EnergySolutions Model 8-120B shipping cask, which has been in use at all EGC nuclear facilities for some time, may not have been observed in making shipments. This report is based on EGC's discovery of the potential condition on August 14, 2013, as discussed in the referenced letter.

The potential condition involves a discrepancy in the vent port seal air pressure drop test hold time between EnergySolutions Test Procedure TR-TP-002 and the Safety Analysis Report (SAR) for the 8-120B shipping cask (i.e., a 20 minute hold time in accordance with the test procedure, versus the 60 minutes required by the SAR supporting the CoC).

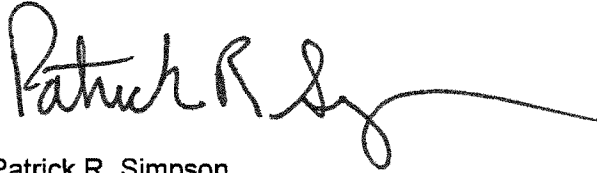
The attached notification was developed by the certificate holder, but it is applicable to use of the 8-120B shipping cask at EGC. Since the the discrepancy between the EnergySolutions Air Pressure Drop Test Procedure, TR-TP-002, and the 8-120B SAR has existed since February 2001, EGC cannot rule out the possibility that shipments may have occurred where the subject vent port seal was opened and a 20-minute leak test was performed in accordance with TR-TP-002 in lieu of the 60-minute test required by the 8-120B SAR.

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U. S. Nuclear Regulatory Commission  
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All future EGC shipments will be made using new cask lids, which were deployed for use by EnergySolutions on September 1, 2013. Test procedures for future shipments will be consistent with the test requirements for the new lids.

There are no new regulatory commitments contained in this submittal. If you have any questions concerning this report, please contact Mitchel A. Mathews at 630-657-2819.

Respectfully,

A handwritten signature in black ink, appearing to read "Patrick R. Simpson", with a long horizontal flourish extending to the right.

Patrick R. Simpson  
Manager – Licensing  
Exelon Generation Company, LLC

Attachment: Letter from D. B. Shrum (EnergySolutions) to M. Lombard (U. S. NRC),  
"10 CFR 71.95 Report on the 8-120B Cask," dated August 14, 2013

Exelon Generation Company LLC

10 CFR 71.95 Report Related to the Pressure Drop Testing of the  
EnergySolutions 8-120B Shipping Cask

Attachment

Letter from D. B. Shrum (EnergySolutions) to M. Lombard (U. S. NRC), "10 CFR 71.95  
Report on the 8-120B Cask," dated August 14, 2013



August 14, 2013

Dear Valued Customer:

In late May, 2013, an 8-120B cask user discovered a discrepancy between EnergySolutions' air pressure drop test procedure TR-TP-002 and the 8-120B Safety Analysis Report (SAR). EnergySolutions' air pressure drop test procedure TR-TP-002 described a 20-minute hold time for the pre-shipment leak test of the cask vent port. The 8-120B SAR, however, specifies a hold time of 60 minutes for the test; therefore the conditions of approval in the Certificate of Compliance may not necessarily have been observed in making shipments. TR-TP-002 is the basis for leak tests on all EnergySolutions shipments, as well as the suggested procedure content for most shipments. Based on a review performed by EnergySolutions of past revisions of CoCs, SARs and cask handling procedures, it appears that this discrepancy has existed for approximately 12 years, spanning approximately 88 cask users and approximately 1,400 shipments.

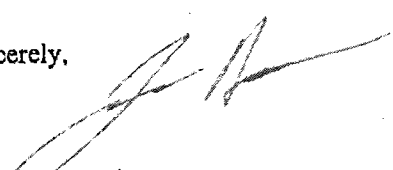
EnergySolutions has completed its review of the event and developed our report in accordance with 10 CFR 71.95(a)(3). Additionally, EnergySolutions approached the NRC the week of August 4, 2013, with a proposal to make a single notification on behalf of all our cask users. The initial discussion led EnergySolutions to believe that the NRC would grant this request. However, in recent discussions with the NRC, they informed us that each licensee must file their own report as required by 10 CFR 71.95.

EnergySolutions filed the attached report containing the information required by 10 CFR 71.95 on August 14, 2013. In the report, EnergySolutions describes the cause of the discrepancy and provides an analysis demonstrating there is no safety significance. We expect that the information required for individual users to make their own notifications is contained in this report. Because the discrepancy spans over 12 years, we understand from the NRC that they do not expect a detailed review of shipments and specific instances of non-compliance to be identified as part of each licensee's 10 CFR 71.95(a)(3) report. Reference to this report in individual user reports would be appropriate if you so choose.

We sincerely apologize for any inconvenience this issue may have caused within in your organization. Our corrective actions as a result of this issue are intended to prevent recurrence of similar issues and to ensure the highest quality of products and services that we provide.

For additional details, please contact Phillip Thomas at [pthomas@energysolutions.com](mailto:pthomas@energysolutions.com) or 803-541-5044.

Sincerely,



James D. Harris  
V.P. and General Manager, Cask Logistics  
Logistics, Processing and Disposal  
EnergySolutions, LLC

Attachment: Letter and Report to NRC on 8-120B Cask

cc: Tony Didgeon  
Mark Lewis  
Dan Shrum

740 Osborn Road • Barnwell, South Carolina 29812  
803.259.1781 • Fax 803.259.1477

August 14, 2013

CD13-0232

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

**Subject: 10 CFR 71.95 Report on the 8-120B Cask**

Dear Mr. Lombard:

EnergySolutions hereby submits the attached report providing the information required by 10 CFR 71.95(a)(3) for instances in which the conditions of approval in the Certificate of Compliance for the 8-120B Cask (Certificate of Compliance #9168) may not have been observed in making certain shipments. The circumstances described in this report are applicable to all licensed users of the cask.

If you have any questions regarding this submittal, please contact me at 801-649-2109.

Sincerely,



Daniel B. Shrum  
Senior Vice President, Regulatory Affairs  
EnergySolutions

Attachment: Failure to Observe Certificate of Compliance Conditions for the 8-120B Vent Port Leak Test Hold Time

cc: Michele Sampson, Chief  
Thermal and Containment Branch

Pierre M. Saverot  
Licensing Branch



## Failure to Observe Certificate of Compliance Conditions for the 8-120B Vent Port Leak Test Hold Time

August 14, 2013

### 1) Abstract

This report provides the information required by 10 CFR 71.95(a)(3) for instances in which the conditions of approval in the Certificate of Compliance for the 8-120B Cask (Certificate of Compliance #9168) may not have been observed in making certain shipments. The circumstances described in this report are applicable to all licensed users of the cask. EnergySolutions' air pressure drop test procedure TR-TP-002 describes a 20-minute hold time for the pre-shipment leak test of the cask vent port. The 8-120B Safety Analysis Report (SAR), however, specifies a hold time of 60 minutes for the leak test of the vent port; therefore the conditions of approval in the Certificate of Compliance may not necessarily have been observed in making shipments. TR-TP-002 is the basis for leak tests on all EnergySolutions shipments, as well as the suggested procedure content for most shipments by our authorized users.<sup>1</sup>

The 8-120B CoC requires the package to be prepared for shipment and operated in accordance with Chapter 7 of the SAR, and tested and maintained in accordance with Chapter 8 of the SAR. TR-TP-002 captures the applicable SAR requirements and provides further detail for the development of a shipper's operating procedure. Recently, an 8-120B cask user identified the hold time discrepancy between TR-TP-002 and the SAR (i.e., 20 versus 60 minutes). Based on a review of past revisions of CoCs, SARs, and cask handling procedures, it appears that this discrepancy has existed for approximately 12 years, spanning approximately 88 cask users and approximately 1,400 shipments.

Upon notification and after confirmation of the discrepancy, EnergySolutions revised TR-TP-002 to incorporate the SAR required 60-minute vent port leak test. This change to TR-TP-002 was communicated to all EnergySolutions registered cask users on June 13, 2013. The SAR requires pre-shipment leak testing of the vent port only when the port has been opened since the preceding vent port leak test. EnergySolutions issued a notice to registered cask users on July 2, 2013 to clarify this issue. Operation of a package vent port is infrequent. However some vent ports may have been opened during the past 12 years; and therefore the pre-shipment leak testing would have been required.

The licensing basis for the pre-shipment leak tests for all three of the 8-120B lid containment seals is a pressure drop calculation for the largest of the three seals (the primary lid seal). The required hold time is therefore conservative for the two seals with smaller test volumes. Because of the small size of the vent port seal test volume, EnergySolutions has determined that the 20-minute hold time meets the same criterion by which the 60-minute hold time was derived for the larger primary lid seal. In fact, in the case of the vent port leak test, the 20-minute hold time provides substantial margin for detecting any leakage from the vent port. It therefore follows that there is no safety significance associated with the condition.

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<sup>1</sup> Since registered users of the 8-120B package are licensees, these licensees would normally prepare and issue an approved procedure to control their pre-shipment activities.



Furthermore, there is no continuing safety concern as new lids are required to be used after August 31, 2013 with different testing procedures.

Due to the long timeframe over which this condition has existed, the large number of 8-120B cask users, the many shipments that have occurred, the difficulty of determining which if any shipments may have been out of compliance, and the finding of no significant safety impact, EnergySolutions hereby submits this notification to summarize the issue as it applies to all 8-120B users. Because of the imminent rollout of new lids and related test procedures, no further corrective actions by certificate users are necessary to address this leak test procedure.

## 2) Narrative Description of the Event

### a) Status of Components

All 8-120B components are operating normally.

### b) Dates of Occurrences

February 2001 to present.

### c) Cause of Error

Discrepancy between EnergySolutions air pressure drop test procedure TR-TP-002 and Chapter 8 of the 8-120B SAR.

### d) Failure Mode, Mechanism, and Effects

Not applicable; no 8-120B packaging components have failed.

### e) Systems or Secondary Functions Affected

Not applicable.

### f) Method of Discovery of the Error

The condition was identified by an 8-120B cask user.

## 3) Assessment of Safety Consequences

There is no safety consequence of performing the pre-shipment leak test of the 8-120B cask vent port using a 20-minute hold time versus the 60-minute hold time that is required by the 8-120B CoC. The required hold time varies in proportion to the test volume if the test pressure and acceptance criterion remain unchanged. Larger test volumes require longer hold times. The test volume includes the free volume of the space to be tested and the volume of the test manifold. For the original subject 8-120B lids, Section 4.4 of the July 2012 SAR Addendum shows the calculation basis for a 60-minute hold time. Only one calculation was presented for the large primary lid containment seal. Since the other seals have smaller test volumes, a 60-minute hold time was conservatively specified for all seals, including the vent port.



The SAR test volume for the primary containment seal was 103.2 cc. For the pre-shipment vent port leak test, there is no safety impact from a 20-minute hold time provided that the test volume is less than or equal to the 20/60 times the primary containment seal test chamber volume, or  $(20/60) * 103.2 = 34.4$  cc. The vent port test volume is equal to the combined volume of the test manifold (10 cc) plus a very small residual volume inside the vent port, which is less than 34.4 cc. Therefore, pre-shipment leak tests of the vent port performed using a 20-minute hold time are adequate to demonstrate compliance with maximum leak rate acceptance criteria, and there is no safety consequence from testing vent ports for 20 minutes instead of 60 minutes.

#### 4) Planned Corrective Actions

As noted above, upon notification and after confirmation of the discrepancy, *EnergySolutions* revised TR-TP-002 to incorporate the SAR required 60-minute vent port leak test and notified registered cask users of the change.

Beginning September 1, 2013, the 8-120B fleet will ship with a new lid design, authorized in the latest revision of the CoC.<sup>2</sup> Thereafter, the 8-120B cask may no longer be used with the old seals that were authorized in Revision No. 17 of the 8-120B CoC. Shipments with the new lids will be required to use the seals authorized in Revision 19 of the CoC. The *EnergySolutions* air pressure drop test procedure TR-TP-002 is being revised and reissued based on the requirements of Revision 19 of the 8-120B CoC. These revisions are reviewed and approved by the *EnergySolutions* Cask Licensing Manager to assure that they are compliant with the requirements of the CoC.

*EnergySolutions* also has initiated a lifecycle procedure for managing Type B casks to assure that CoC requirements flow through the design, fabrication, and operational phases. This is a new procedure that also would identify existing inconsistencies and prevent future inconsistencies between the SAR and operating procedures. The procedure will be effective August 19, 2013.

The error in incorporating the revised 60-minute vent port leak rate criteria into TR-TP-002 raises a question as to whether there are other similar errors involving the flow-down of requirements into operating procedures. Accordingly, *EnergySolutions* plans to conduct a review of the 8-120B and other *EnergySolutions* Type B packagings to verify that CoC and SAR requirements have been accurately translated into the prescribed operating procedures. If any such discrepancies are found, *EnergySolutions* will expand the scope of these reviews as necessary.

#### 5) Previous Similar Events Involving the 8-120B

No previous similar events have been identified.

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<sup>2</sup> No shipments have been made using the new lids to date.



6) Contact for Additional Information

Dan Shrum  
EnergySolutions  
Senior Vice President, Regulatory Affairs  
(801) 649-2109

7) Extent of Exposure of Individuals to Radiation or Radioactive Materials

None.