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

**SUSQUEHANNA STEAM ELECTRIC STATION  
NON-COMPLIANCE WITH MODEL 8-120B CASK  
CERTIFICATE OF COMPLIANCE NO. 9168  
PLA-7080**

**Docket Nos. 50-387  
and 50-388**

In accordance with 10 CFR 71.95(a)(3), PPL Susquehanna, LLC (PPL) submits this report for potential instances where the conditions of approval in Certificate of Compliance #9168 were not followed during shipments using an NRC approved EnergySolutions Model 8-120B transportation cask.

This letter and Attachment contain no regulatory commitments.

Should you have any questions regarding this submittal, please contact Mr. John Tripoli, Manager – Nuclear Regulatory Affairs at (570) 542-3100.

Sincerely,

J. A. Franke  
Site Vice President

Attachment: PPL Susquehanna, LLC 10 CFR 71.95(a)(3) Report – Non-Compliance with Model 8-120B Cask Certificate of Compliance

Copy: NRC Document Control Desk  
Mr. J. Greives, NRC Sr. Resident Inspector  
Mr. L. Winker, PA DEP/BRP  
Mr. J. Whited, NRC Project Manager

## **PPL Susquehanna, LLC 10 CFR 71.95(a)(3) Report – Non-Compliance with Model 8-120B Cask Certificate of Compliance**

### **Abstract**

In accordance with 10 CFR 71.95(a)(3), PPL Susquehanna, LLC (PPL) submits this report to the NRC for instances in which the conditions of approval in the Certificate of Compliance (CoC) for the Model 8-120B (CoC #9168) shipping cask were not observed in making a shipment. The PPL Susquehanna Steam Electric Station (SSES) procedure for handling the Model 8-120B cask describes a 20-minute hold time for the pre-shipment leak test of the cask vent port. This procedure was developed based on EnergySolutions' air pressure drop test procedure TR-TP-002. The Model 8-120B Safety Analysis Report (SAR) however, specifies a hold time of 60 minutes for the leak test of the vent port. As such, the conditions of approval in the CoC were not met in making shipments using this cask.

On June 13, 2013, PPL was made aware of a letter sent via email from EnergySolutions, dated June 13, 2013, alerting PPL of a discrepancy in their leak test procedures for the Model 8-120B cask. On August 14, 2013, PPL was made aware via email of a clarification letter from EnergySolutions, dated July 2, 2013, stating "...if the cask user did not remove the vent or drain port, the test is not required by the CoC. Therefore, even if the test was conducted for 20 minutes per EnergySolutions procedure, the user did not violate the Certificate of Compliance."

PPL reviewed testing and shipping records from February 2001 to present and identified five instances where PPL may not have met the requirements of the CoC. During this time period in which the procedure discrepancy was in effect, five PPL shipments may not have met the requirements of the CoC in that the cask vent port may have been removed prior to testing. These shipments were all transported safely with no impacts to public health and safety.

PPL has entered this issue into the Corrective Action Program (CAP) and will update the applicable procedures for leak testing Model 8-120B casks to conform to those prescribed in the current CoC, SAR and EnergySolutions' operating procedures prior to the next 8-120B cask shipment.

### **Narrative**

On June 13, 2013, PPL was made aware of a letter sent via email from EnergySolutions, entitled "Vent Leak Test Discrepancy EnergySolutions Model 8-120B Cask Compliance Notification (NRC Certificate of Compliance #9168)," dated June 13, 2013. The letter

described a discrepancy between the minimum required hold time in Chapter 8 of the July 2012, 8-120B SAR Addendum and the current EnergySolutions operating procedure TR-TP-002. Chapter 8 of the 8-120B SAR Addendum requires a 60-minute hold time for the pre-shipment leak test pressure of the primary lid, secondary lid, and the vent and drain ports. Although TR-TP-002 requires the leak test pressure be held for 60 minutes for the primary and secondary lid seals, it only required a 20-minute hold time for the vent port seal leak test pressure. Therefore, the operating procedure did not comply with the requirements of the 8-120B SAR Addendum. Because of this discrepancy, on August 14, 2013, EnergySolutions issued a letter advising licensees to evaluate their specific use of the Model 8-120B cask in accordance with the required 60-minute hold time for the vent port pre-shipment leak test to determine if a notification to the NRC under 10 CFR 71.95(a)(3) was required.

On August 14, 2013, PPL was also made aware of a July 2, 2013, follow-up letter sent via email from EnergySolutions entitled, "Clarification to Letter dated June 13, 2013 on Vent Port Leak Test Event Discrepancy." The letter stated that "... if the cask user did not remove the vent or drain port, the test is not required by the CoC. Therefore even if the test was conducted for 20 minutes per EnergySolutions procedure, the user did not violate the Certificate of Compliance."

A third letter from EnergySolutions, dated August 14, 2013, and received via email on August 14, 2013, provided a copy of EnergySolutions' 10 CFR 71.95 report on the 8-120B cask. The EnergySolutions 10 CFR 71.95 report provides their dates of occurrence as February 2001 to the present as well as a safety analysis which is also used in PPL's submittal.

Certificate of Compliance #9168, Condition 11 states that, "A pre-shipment leak test is required before each shipment of Type B quantities." The 8-120B SAR Addendum, Chapter 8, Section 8.2.2.2 further states: "In addition, prior to shipment, the vent and drain ports shall be tested by pressurizing the volume above the respective plug and stat-o-seal, anytime they have been removed during the cask loading operation...the test shall last for 1 hour."

PPL performed a review of cask shipment records for the specified time period (February 2001 to present). Records indicate that five Type B shipments with the Model 8-120B cask were made. For three (03-156, 03-157 and 12-015) of the five shipments, records do not indicate that pre-shipment vent port leak tests were performed. Records for the remaining two shipments (06-087 and 08-004) indicate that pre-shipment vent port 20-minute leak tests were performed; however supporting documentation does not indicate whether the vent ports, plugs or stat-o-seals were removed prior to testing.

### **Status of Components**

All Model 8-120B components were operating normally.

### **Dates of Occurrence**

<b>Shipment #</b>	<b>Date</b>	<b>Contents</b>	<b>Primary Lid</b>	<b>Secondary Lid</b>	<b>Vent</b>
03-156	10/13/2003	Filters and Velocity Limiters	60 min	60 min	n/a
03-157	10/31/2003	Filters, Velocity Limiters and DAW	60 min	60 min	n/a
06-087	11/10/2006	Velocity Limiters and Fission Chambers	60 min	60 min	20 min
08-004	02/08/2008	Filters and Hose	61 min	60 min	20 min
12-015	01/25/2012	Filters	60 min	60 min	n/a

### **Cause of Error**

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

### **Method of Discovery**

These occurrences were discovered as part of a detailed review of all PPL shipments with the 8-120B cask from February 2001 to present. The review was performed following receipt of EnergySolutions' August 14, 2013 letter and was completed on August 30, 2013.

### **Cause**

PPL did not challenge the operating procedure that contained the incorrect time requirement for cask vent port testing.

### **Assessment of Safety Consequences**

Based on the safety evaluation performed by EnergySolutions, 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. 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 is listed as 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 the total 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.

The shipments were transported safely with no impacts to public health and safety.

### **Corrective Actions**

PPL will update the applicable procedures for leak testing Model 8-120B casks to conform to those prescribed in the current CoC, SAR and EnergySolutions' operating procedures prior to the next 8-120B cask shipment.

### **Previous Similar Events**

EnergySolutions previously submitted a 10 CFR 71.95(a)(3) report to the NRC on August 14, 2013, which includes additional details regarding this condition/event discovery.

### **Contact for Additional Information**

John L. Tripoli, Manager Regulatory Affairs, (570) 542-3100

### **Extent of Exposure of Individuals to Radiation or Radioactive Materials**

None.