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**DTE Energy**



10 CFR 71.95

September 9, 2013  
NRC-13-0052

Director, Division of Spent Fuel Storage and  
Transportation, Office of Nuclear  
Material Safety and Safeguards

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington D C 20555-0001

Reference: Fermi 2  
NRC Docket No. 50-341  
NRC License No. NPF-43


Subject: 10 CFR 71.95 Report - Failure to Observe Certificate of Compliance  
Conditions for the 8-120B Vent Port Leak Test Hold Time

DTE Electric Company (DTE) hereby submits the enclosed 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) were not observed in making a shipment. The circumstances described in this report are specific to DTE at the Fermi 2 nuclear plant.

This letter contains no new regulatory commitments.

Should you have any questions or require additional information, please contact Mr. Zackary W. Rad, Manager, Licensing at (734) 586-5076.

Sincerely,

  
Kent Stott  
Acting SVP for J.T. Conner

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cc: NRC Project Manager  
NRC Resident Office  
Reactor Projects Chief, Branch 5, Region III  
Regional Administrator, Region III  
Supervisor, Electric Operators,  
Michigan Public Service Commission  
Chief, Thermal and Containment Branch  
Pierre M. Saverot, Licensing Branch

**Enclosure to  
NRC-13-0052**

Fermi 2 NRC Docket No. 50-341  
Operating License No. NPF-43

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

## **10 CFR 71.95 Report - Failure to Observe Certificate of Compliance Conditions for the 8-120B Vent Port Leak Test Hold Time**

### **1. Abstract**

This report provides the information required by 10 CFR 71.95, "Reports," for instances in which the conditions of approval in the Certificate of Compliance (CoC) Number 9168, for the model 8-120B shipping cask, were not observed prior to making a shipment. The circumstances described in this report are applicable specifically to DTE Electric Company (DTE) at the Fermi 2 nuclear power plant. On July 12, 2013 DTE identified an instance of a failure to comply with the vent port leak test requirements contained in the subject CoC. Specifically, the CoC requires a 60 minute leak test in accordance with the 8-120B Cask Safety Analysis Report (SAR) and requires investigation and correction of any condition which results in a pressure drop of more than 1 psi over the test period.

On June 12, 2007, during preparations for shipment of the subject cask, the cask vent port plug was removed for inspection as part of the troubleshooting to address two consecutive vent port leak test failures. After replacing the vent port plug, the vent port was leak tested in accordance with the DTE handling procedure which specifies a 20 minute hold time. This hold time is not consistent with the 60 minute hold time specified in the SAR for the shipping cask and thus constitutes a non-compliance with the CoC.

There were no components or system failures that contributed to this event. As a corrective action, the DTE handling procedure has been revised to specify a one hour leak test requirement for the vent port. The cask CoC holder was informed of the discrepancy and industry notifications were made by the CoC holder. The CoC holder's procedure for leak testing the cask has also been revised. DTE has reviewed this event with Radiation Protection procedure technical reviewers to ensure that all requirements specified in cask CoC and SAR are appropriately embedded into the cask handling procedures.

### **2. Narrative Description of Event**

The model 8-120B is a cylindrical, carbon steel, lead shielded packaging designed for the transport of radioactive waste containers. The cask has both a full opening primary lid and a smaller inner secondary lid. Test ports for leak testing the package lids are located between the twin O-ring seals for both the primary and secondary lids. Each package is provided with a vent and optional drain port which can be used for inerting the cask cavity with nitrogen or used for venting pressure within the containment cavity which may be generated during transport, prior to lid removal. The vent hole in the primary lid is sealed with a removable plug and silicone gasket. There are no complex operational requirements associated with the package. An air test rig with a pressure gauge is bolted above each of the test ports or vent hole to pressurize the cavity. The air supply is isolated and the gauge is monitored to ensure a pressure drop of no more than 1 psi over the test period.

On June 12, 2007, an 8-120B shipping cask was loaded in compliance with DTE operating procedure 65.000.610, "Shipping Cask USA/9168/B(U)." While performing the leak testing of the cask prior to shipment, a test rig was installed over the vent port and pressurized.

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When the air supply was isolated, the test pressure of 18 psi could not be maintained, and as such the test failed to meet the acceptance criteria of no more than 1 psi pressure drop in the required test period. After inspection and tightening of all connections associated with the vent port test rig, an additional attempt was tried with the similar results.

The vendor, Energy Solutions, recommended removing the vent port and verifying cleanliness of the area and all connections of the test rig in accordance with their testing procedure. The vent port bolt/seal were removed, the area inspected and cleaned and the bolt/seal replaced. In accordance with station operating procedure 65.000.610, a 20 minute hold time for the pre-shipment leak test of the cask vent port was successfully completed. The CoC requires the package to be prepared for shipment and operated in accordance with Chapter 7 of the 8-120B shipping cask SAR, and tested and maintained in accordance with Chapter 8 of the SAR. However, the SAR specifies a hold time of 60 minutes for the leak test of the vent port; therefore the conditions of approval in the CoC were not observed in making this shipment. This failure to comply was identified on July 12, 2013 during an investigation into the potential discrepancy between site procedures, vendor procedure and the SAR.

- i. Status of inoperable components or systems**  
Not applicable. None of the components or systems were inoperable.
- ii. Dates and approximate times of occurrences**  
The testing error occurred on June 12, 2007 at 1650 ETD and was discovered on July 12, 2013.
- iii. Cause of Error**  
Procedure discrepancies regarding adequate hold time requirements between DTE operating procedure, Energy Solutions vendor procedure (TR-TP-002) and the SAR.
- iv. Failure Mode, Mechanism, and Effects**  
Not applicable.
- v. Systems or Secondary Functions Affected**  
Not applicable.
- vi. Method of Discovery of the Error**  
The specific 60 minute leak test requirement was identified during a detailed review of the SAR conducted to support station operating procedure revision. The event was discovered during an extent of condition review of all DTE 8-120B cask shipments conducted since January 2000.

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**vii. Discussion of Cause**

This event was caused by procedural discrepancies regarding adequate hold time requirements between both the DTE operating procedure (65.000.610) and the Energy Solutions vendor procedure (TR-TP-002) as compared to the requirements described in the 8-120B cask SAR.

**viii. Manufacturer and Model Number**

Manufacturer: Energy Solution  
Mode Number: 8-120B

**ix. Quantities and chemical and physical form(s) of the package contents**

This shipment consisted of 120.3 cubic feet of dewatered powdered resin in solid form, 237 Curies of radioactivity, chemical form - metal oxides.

**3. Assessment of Safety Consequences**

Based on the investigation conducted by Energy Solutions, 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 as required by the CoC. As stated in the Energy Solutions 10CFR71.95 report on this issue, they have 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.

**4. Corrective Actions**

Upon discovery and confirmation of the procedure discrepancy that caused this event, station operating procedure (65.000.610) was revised. Energy Solutions revised their leak test procedure (TR-TP-002) to be in alignment with the SAR. Immediate compensatory measures included confirming no active and scheduled shipments with the 8-120B cask using the inaccurate station procedure.

DTE has reviewed this event with Radiation Protection procedure technical reviewers to ensure that all requirements specified in cask CoC and SAR are appropriately embedded into the cask handling procedures.

**5. Previous Similar Events**

Energy Solutions has submitted a 10CFR71.95 report dated August 14, 2013 with additional details on this condition/event discovery.

**6. Contact for Additional Information**

Bryan A. Weber  
DTE Electric Company - Principle Technical Specialist  
(734) 586-4926  
weberb@dteenergy.com

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**7. Extent of Exposure of Individuals to Radiation or Radioactive Materials**

The vent port was adequately sealed therefore no additional exposure of individuals to radiation or radioactive material occurred as the result of the reduced leak test time.