Entergy Operations, Inc.
1448 S.R. 333
Russellville, AR 72802
Tel 479-858-4704

Stephenie L. Pyle
Manager, Licensing
Arkansas Nuclear One

0CAN021204

February 29, 2012

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

SUBJECT: Third Five-Year Surveillance of the First Ventilated Storage Cask
Arkansas Nuclear One – Units 1 and 2
Docket Nos. 50-313, 50-368 and 72-13
License Nos. DPR-51 and NPF-6

REFERENCES:

1. Entergy Operations, Inc. letter to the NRC, "Five Year Surveillance of the First Ventilated Storage Cask," dated January 10, 2002 (0CAN010202)

2. Entergy Operations, Inc. letter to the NRC, "Five Year Surveillance of the First Ventilated Storage Cask," dated April 30, 2007 (0CAN040703) (ML071240085)

Dear Sir or Madam:

In compliance with Section 1.3.3 of the Certificate of Compliance (CoC) for the Pacific Sierra Nuclear Associates Final Safety Analysis Report (FSAR) for the Ventilated Storage Cask (VSC-24) System (Docket 72-1007), this letter documents the results of the Five Year Interior Ventilated Concrete Cask (VCC) surface inspection.

Section 1.3.3 requires that the VCC interior surfaces and the Multi-assembly Sealed Basket (MSB) exterior surfaces of the first VSC-24 unit placed in service at each site shall be inspected, to identify potential air flow blockage and material degradation after every five years of service. The results of this inspection shall be documented, and a report, summarizing the findings shall be submitted within 30 days. This letter transmits the summary report of the third five-year inspection of the first VSC-24, cask serial number AVCC-24-01, loaded at Arkansas Nuclear One. This cask was loaded on December 17, 1996.

On January 31, 2012, the third five-year inspection was performed. The VSC-24 cooling paths were found to be free from air flow blockage. The VCC air inlet and outlet assemblies,

the VCC interior, and the MSB exterior were inspected and found to be in a condition normal for the VSC service environment and specified materials of construction described in the FSAR. The inspection did not identify any degradation mechanisms affecting system performance that were not identified in the FSAR. The inspection provides reasonable assurance that suitable conditions remain in the VCC / MSB annulus. A more detailed description of the inspection is attached.

References 1 and 2 provide the summary reports from the previous inspections of this cask.

The VSC-24 license holder has been contacted and updated with the results of this surveillance.

There are no regulatory commitments contained in this submittal.

Should you have any questions concerning this issue, please contact me.

Sincerely,

Original signed by David B. Bice for Stephenie L. Pyle

SLP/rwc

Attachment: Summary Report - Third Five-Year Inspection of Cask Serial Number AVCC-24-01

cc: Mr. Elmo E. Collins
Regional Administrator
U. S. Nuclear Regulatory Commission, Region IV
1600 East Lamar Boulevard
Arlington, TX 76011-4511

NRC Senior Resident Inspector
Arkansas Nuclear One
P.O. Box 310
London, AR 72847

U. S. Nuclear Regulatory Commission
Attn: Mr. Kaly Kalyanam
MS O-8 B1
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

Mr. Bernard R. Bevill
Arkansas Department of Health
Radiation Control Section
4815 West Markham Street
Slot #30
Little Rock, AR 72205

Attachment to

0CAN021204

Summary Report

Third Five-Year Inspection of Cask Serial Number AVCC-24-01

Summary Report
Third Five-Year Inspection of Cask Serial Number AVCC-24-01

Purpose:

Section 1.3.3 of the Certificate of Compliance (CoC) for the Pacific Sierra Nuclear Associates Final Safety Analysis Report (FSAR) for the Ventilated Storage Cask (VSC-24) System (Docket 72-1007) requires the Ventilated Concrete Cask (VCC) interior surfaces and Multi-assembly Sealed Basket (MSB) exterior surfaces of the first VSC unit placed in service at each site to be inspected every five years of service. This inspection is to identify potential air flow blockage and material degradation. This report summarizes the results of the five-year inspection performed on the first VSC-24 cask placed into services at Arkansas Nuclear One, cask serial number AVCC-24-01.

The initial inlet duct inspection was performed on January 10, 2012, with additional outlet duct inspection activities being performed on January 31, 2012. The loading of this cask was completed on December 17, 1996.

Inspection Equipment:

The inspection was performed using a video probe with a video controller with a built-in light source. The probe is a two-way articulating device with a usable length of approximately 35 feet. A straight, full focus camera lens was utilized for the inspection. A monitor was employed to view the inspection and the inspection was recorded.

Inspection Methodology:

Access for the inspection of the interior of the VCC and exterior of the MSB was provided through the VCC air inlet and outlet ports. The air inlet protective screens were removed and the outlet screens were partially removed to facilitate entry of the video probe. The screens were not left unattended while detached.

Inspection Summary of Results:

VCC Interior Surfaces:

The interior surfaces of the VCC were inspected which includes the air inlet, air outlet, and annulus region. The internal VCC components contained only small amounts of oxidation in localized areas during the inspection. There were no large build-ups of oxidation noted within the ducts and the small amount of oxidation observed has no impact on the design or function of the VCC internal components.

Some small stalactite deposits were noted on the outlet vent area at the edge of the annulus region. Samples of these deposits were taken during the 2001 inspection and were shown to be deposits of primarily calcium carbonate. The source of the material is believed to be

moisture seeping through the VCC inner shell joint. The calcium which leached from the concrete deposits is very small, does not impede air flow and is not expected to provide a means of degradation of the materials of the VCC due to the surface area involved and lack of reactive properties.

The design of the air ducts includes internal ledges. It was identified that debris is forming on some of the inside ledges. The debris was less than 0.25 inch pieces of material. The amount of material has no impact on air flow and does not impact the physical or design relationship of the MSB canister to the VCC.

MSB Exterior Surfaces:

Small areas of light to medium oxidation were noted on the exterior surface of the MSB. Approximately the top three inches and bottom three inches of the cask are now oxidizing and there are random spots along the side of the cask that are now pitting. The MSB is a carbon steel container covered with a zinc based epoxy coating. This coating is not credited for any safety related functions. As part of the design there is an oxidation allowance, which has not been exceeded. The inspection is consistent with the predictions of the corrosion analysis based on the visual inspection where only surface oxidation is identified. No blockage or large build-ups of oxidation were noted in the annulus region between the MSB and VCC.

The ceramic tiles supporting the MSB are performing as designed and there is no contact between the MSB and the VCC.

Conclusion:

The VSC cooling paths were found to be free from air flow blockage. The VCC air inlet and outlet assemblies, the VCC interior, and the MSB exterior were inspected and found to be in a condition normal for the VSC service environment and specified materials of construction described in the FSAR. The inspection did not identify any degradation mechanisms affecting system performance that were not previously identified in the FSAR. The inspection provides reasonable assurance that suitable conditions remain in the VCC / MSB annulus.