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0CAN040703

April 30, 2007

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

Subject: 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

Dear Sir or Madam:

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

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 in service. The results of this inspection shall be documented, and a letter report, summarizing the findings, shall be submitted within 30 days. This letter transmits a summary report of the second five year inspection of the first VSC-24, cask serial number AVCC-24-01, loaded at Arkansas Nuclear One (ANO) on December 17, 1996.

On April 11, 2007, the second five year inspection was performed. The VSC-24 cooling paths were found to be free from airflow blockage. The VCC air inlet & outlet assemblies, the VCC interior, and the MSB exterior which were inspected were found to be in a condition normal for the VSC-24 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 included as Attachment 1.

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There are no new commitments contained in this submittal.

Sincerely,

DEJ/SLP

Attachment(s)

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Attachment 1

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VSC-24 Five Year Inspection Summary Report

Dry Fuel Storage
VSC-24 Five Year Inspection
Summary Report

Purpose:

Section 1.3.3 of the VSC-24 CoC requires the VCC interior surfaces and MSB exterior surfaces of the first VSC unit placed in service at each site to be inspected to identify potential air flow blockage and material degradation after every five years in service. This report summarizes the results of the five year inspection performed on the first VSC-24 cask placed into service at ANO, cask serial number AVCC-24-01. The second five year inspection was started and completed on April 11, 2007. The loading of the first cask was completed on December 17, 1996.

Inspection Equipment:

The inspection was performed using a remote Everest VIT PLS-500 D with an Everest XL Pro Video controller containing a built in light source. It is an articulating probe with a usable length of approximately 25 feet. A straight, full focus, 80° field of view camera lens was utilized for the inspection. The probe was inserted the full length of the air channel for inspection purposes through the upper (outlet) ports. A 9" monitor/VCR was employed to view the inspection and recorded the inspection on a VHS tape. Since the probe cable was not suitable for an inspection from the bottom up, a large articulating mirror was employed to inspect the lower air channel areas.

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 and outlet protective screens were removed to facilitate entry of the video probe and mirror.

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. No blockage or large buildups of oxidation were noted in these areas during the inspection. Small areas of light to medium oxidation were noted. Some small stalactite deposits were noted on the northeast outlet vent area at the edge of the annulus region. Samples of these deposits were taken during the first five year inspection activities in December, 2001, and analyzed by the ANO Chemistry Department. The analysis showed that the deposits are made up of calcium and zinc. The source of the material is believed to be exposure of a small amount of concrete that seeped through at the air outlet duct to VCC inner shell joint during original construction. It is believed that condensation of moisture on the exposed concrete formed the calcium and zinc deposits. This transfer of moisture is from the warm high humidity air present on occasion at the ANO site as the air moves from the VCC annulus and turns sharply into the outlet duct work. The calcium is a major component of concrete and the zinc is present due to the coating used on the VCCs. The calcium leached from the concrete deposits is very small, does not impede airflow, and is not expected to provide a means of degradation of the materials of the VCC due to size and lack of reactive properties.

No debris larger than ¼" was found in any of the screened areas. The screens were found intact, undamaged, and to be performing their intended function. There was some standing water and a thin layer of mud and algae on the ISFSI pad inside the inlet port screens. The amount of material has no impact on airflow, does not impact the physical or design relationship of the MSB canister to the VCC, and the debris is not adversely reactive with the materials of the VCC.

MSB Exterior Surfaces:

Small areas of light to medium oxidation were noted on the exterior surface of the MSB. This oxidation on the surface of the MSB enamel coating is believed to be the result of the combination of grinding dust from the welding process during MSB sealing operations and water in the MSB transfer cask (MTC)/MSB annulus. Thus it is expected that the MSB vessel material is not the source of the visible oxidation, and that the oxidation does not affect the MSB coating integrity. Again no blockage or large buildups of oxidation were noted in the annulus region between the MSB and VCC.

Conclusion:

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