VISTA
ENGINEERING TECHNOLOGIES

November 19, 2008

AREVA NP Inc.
2101 Horn Rapids Road
Richland WA, 99354
Attn: Jim Perryman

Subject: Tank Integrity Assessment Report for Areva Component Chemical Waste Tank System

Dear Mr. Perryman:

Vista Engineering Technologies, LLC is pleased to submit the attached Tank Integrity Assessment Report for Areva Component Chemical Waste Tank System prepared per the requirements of WAC 173-303-640, Tank Systems.

The attached report details the inspections conducted during the week of 9/22/08 on the subject tank, and provides the independent assessment and certification statement for the tank system pursuant to WAC 173-303-810(13)(a) per our service agreement.

If you have any questions, please do not hesitate to call me directly at (509) 737-1377.

Sincerely,

11/19/08

James T. Lovelady, PE
Senior Engineer

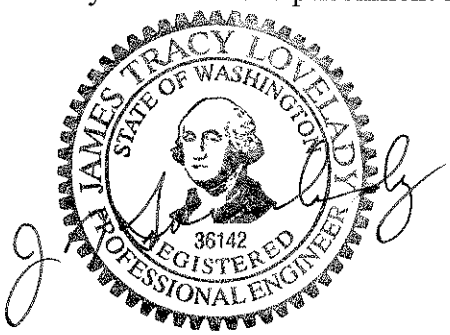
Tank Integrity Assessment Report for Areva Component Chemical Waste Tank System

Summary:

The results of the independent Tank Integrity Assessment performed by Vista Engineering Technologies, LLC on behalf of Areva are presented below. Results of the assessment demonstrate that the Component Chemical Waste Tank System (inner and outer tank assemblies) is structurally sound with required seismic restraints and protective bollards present and in good repair. Full capacity leak tests demonstrate that there are no leaks within either of the tank assemblies or from any tank wall thru-fittings. Interfacing equipment, piping, and supports are adequately designed to prevent inadvertent loads into the Polyethylene tank assemblies. The indication and alarm systems are verified as operative and in current calibration. The Component Chemical Waste Tank System satisfies the requirements of WAC 173-303, and the installation will continue to satisfy those requirements for a two year period prior to re-examination, assuming the procedures, processes and stored chemicals associated with the containment system remain unchanged during that period.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

11/19/08
James T. Lovelady, PE



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Existing Containment Tank Design:

The Component Chemical Waste Tank System inspected during this independent assessment has been in place and in use since October 1994. The double containment on-ground system consists of two high density cross-linked polyethylene tanks produced by Poly Cal Plastics, in accordance with ASTM D1998-91. The inner tank is identified as stock number 09-U, (7'-5" OD, 7'-2" H) with a capacity of 2000 gal. The outer tank is constructed of two sections using stock number SP-882-XL (10'-0" OD). The two sections are mated together above the containment level using a bolted flange.

The dual tanks are secured to an outdoor 6" thick reinforced concrete slab on grade. Six embeds are installed equally spaced around the bottom of the outer tank to prevent lateral movement during a seismic event. Seismic restraint cables are attached to the embeds on the bottom end, and join together at a common ring which rests on the center of the tank top.

Bollards are installed around the slab to protect the tank and exterior piping from inadvertent damage from factory traffic on the adjacent paved areas.

The tank vent is adequately sized and free flowing. The vent is connected to a scrubber system, such that fresh air is drawn continuously into the tank, with the vent gasses processed through the scrubber. The system is constructed to prevent positive pressure in the tank.

Dangerous Characteristics of the Waste(s):

The vessel is used for temporary storage of process effluent. The components of the effluent are dilute Nitric acid, dilute Ammonium Nitrate, and dilute Hydrochloric Acid.

Corrosion Resistance:

The containment system is constructed of cross-linked polyethylene. Industry standards and Manufacturer recommendations confirm that the tank material is appropriate for the waste contained. Pipes and fittings connected to the vessel are either stainless steel or polypropylene.

Integrity Assessment:

WAC 173-303-640 of the Washington Administrative Code points to the Washington State Department of Ecology Publication No. 94-114, "*Guidance for Assessing and Certifying Tank Systems that Store and Treat Dangerous Waste,*" as a reference for conducting independent assessments of Tank systems. This document was used to develop the following sequence of inspections to satisfy the requirements of the WAC.

1. Visual Inspection:

Due to the age of the polyethylene tank, greater than 10 years, the obvious concern was to examine the tank for environmental stress cracking due to UV exposure and the chemical makeup of the typical contents stored in the tank. The inner tank and interstitial were first pumped out and flushed with fresh water and pumped as dry as possible. The method used to identify environmental stress cracking (surface crazing) was to use a water based, felt tip marker to stain selected 2-3 sq in areas for detailed inspection. The applied "stain" is wiped off the surface prior to drying, leaving any stress cracking highlighted. Tank manufacturers specify this method be used when sacrificial coupons are not installed during the initial tank installation, and it is standard industry practice.

Efficacy of the method was verified on the outer tank top prior to proceeding: since the exterior tank lid has been exposed to the environment since the system was installed, it was expected to show signs of ultraviolet degradation. While the inspection did demonstrate evidence of environmental stress cracking on the tank top surface, it was mild based on experience inspecting similar tank installations. The surface remains smooth and there is minimal discoloration. Once validated, the same procedure was used to inspect the tank walls, the tank bottoms, areas near fittings or outlets, any edges or seams, and areas of concern exposed during the gross visual inspection.

Entry into the inner tank was not an option due to the geometry of the installation. The inspection method described above was repeated on a total of twelve locations on the inner tank surface using a boroscope/video system to examine the stained surface for stress cracking (four at the tank bottom, two at the bottom radius, two at tank seams, and four random locations on vertical tank walls). No chemical stress cracking or degradation was identified. The top of the inner tank was accessible with no extraordinary means. Examination of four separate locations on the inner tank top showed no signs of chemical or environmental degradation. This is an expected result due to the inner tank being effectively shaded by the outer tank.

Access to the interstitial was arranged for examination of the outer wall of the inner tank and the inner wall of the outer tank. Eight locations on each of these walls were stained and inspected with no stress cracking found. Four locations on the outer tank bottom (bottom of the interstitial) were examined, with no anomalies noted.

The exterior surface of the outer tank walls were examined in detail--since the outer tank lid showed signs of stress cracking, it was likely that the vertical walls of the outer tank would be similarly impacted from environmental exposure. Sixteen separate areas were examined, and no indication of cracking, crazing, or degradation was noted. A single surface anomaly at the upper seam (5'-8") on the side of the tank nearest the Component Center Fan Room did absorb stain, but it was determined to be a result of the manufacturing process. Examination of this location from the interstitial side showed a virgin surface. Subsequent leak testing showed no change in appearance of the anomaly and no indication of any leakage.

2. Leak test

   The inner tank was filled to 100% full (77" above tank bottom) with fresh water and allowed to sit over night. Since the interstitial was rinsed and pumped dry prior to filling the inner tank, it would capture any leakage from the inner tank providing positive indication of a pass or fail condition. No leaks were indicated during the test, and there was no localized bulging of the tank walls confirming structural integrity of the inner tank.

   With the inner tank still filled, the interstitial was filled with fresh water to just below the fill level of the inner tank (74" above tank bottom) to prevent compressive loads on the inner tank. The tanks were again allowed to sit over night to allow any leaks to accumulate and be noticed. No leaks were indicated during the test, and no localized bulging of the outer tank was noted, confirming structural integrity of the outer tank/secondary containment vessel. The contained volume within the tank system during the leak test sequence equates to an additional 1600 gallons of fluid, or 80% above the design capacity of 2000 gallons for the primary tank.

3. Level / Leak Indication Systems

   The leak test of the inner tank allowed for a practical test of the tank level indication system. With the tank in the 100% full condition, the indication system indicated 87% full, with the audible alarm set to trigger at 85%. Investigation into the anomaly showed that the capacitive liquid level probe was corroded due to prolonged exposure to the chemical contents of the tank. A replacement probe was subsequently installed and calibrated correcting the condition. A copy of the new calibration sheet was provided as evidence of the repair after the new probe was installed and verified.

   During inspection of the interstitial, a checkout of the leak indication system was performed. The leak system has two separate channels, with the as-found condition demonstrating that only one channel was operating. The reason for the failure of the second channel was corrosion of the probe wire. The condition was corrected and both channels were verified as indicating a "leak" independently prior to exiting the interstitial.

4. Mechanical Connections:

   a.) Seismic restraints, foundation attachments, and wear plates between the restraint cables and the outer tank top were all intact and in satisfactory condition.
   b.) The concrete pad is in good condition with only typical surface cracking present. There are no indications of uneven settling.
   c.) There is no evidence of leakage of the interfacing piping system.
   d.) The vent system is clear and free flowing. The system is adequately designed to prevent positive pressure within the tank system.
   e.) All connections to the tank are "flexible" and do not introduce loads into the tank.

Conclusions:

The Component Chemical Waste Tank is structurally sound and capable of safely storing the effluent from the Areva Component Center Processes. The chemical constituents of the effluent are dilute enough that there is no physical evidence of degradation of the inner (primary) storage tank. The primary tank is totally contained with the outer (secondary containment) tank, and is adequately protected from environmental degradation. If the conditions and processes used at the Component Center remain unchanged, and the effluent remains similar to its historical make up, the primary tank can be expected to remain adequate for another two years, after which reassessment is recommended.

The tank top of the secondary containment vessel is beginning to show signs of UV degradation. At this point in time, stress cracking is minor, with very little or no stain being drawn into surface imperfections. The surface remains smooth with very little discoloration. Since the tank top is not part of the secondary containment system (it serves as a cover preventing rain from entering the interstitial and is attached via a non-fluid tight bolted flange connection to the tank) it is not an issue for containment. The underside surface of the outer tank top remains a virgin surface. The outer tank walls of the secondary containment vessel show no signs of chemical or environmental degradation. The outer tank was filled to 180% of the primary tank containment volume during the leak test procedure confirming structural integrity of the vessel. The secondary containment vessel can be expected to remain adequate for another two years, after which reassessment is recommended, with particular emphasis on the condition of the outer tank top due to environmental exposure.

The tank level indicator has been recently replaced due to corrosion effects, so it is recommended that the unit be examined closely during its periodic calibrations to address corrosion issues and ensure proper operation. Likewise, the leak detector wires are subject to corrosion, so it is an obvious recommendation to initiate a scheduled activity to check these probes for corrosion during periodic maintenance.

The Areva Component Chemical Waste Tank satisfies all Washington State Department of Ecology requirements specified in WAC 173-303. Any change in the Component Center processes producing effluent stored in this tank or in the chemical makeup of the effluent should prompt an internal Areva review to determine its potential impact on the containment system. It is recommended that the inspection interval be placed at two years for this tank system due to the age of the system.

References:

1. WAC 173-303, Dangerous Waste Regulations.
2. Publication No. 94-114, *"Guidance for Assessing and Certifying Tank Systems that Store and Treat Dangerous Waste,"* Washington State Department of Ecology, 1994.
3. ASTM D1998-94, "Standard Specification for Polyethylene Upright Storage Tanks," American Society for Testing and Materials, 1994.