TRIP REPORT

To: File

Fr: Yolande Norman (U.S. NRC- Project Manager)

Site Visit: September 8, 2011

Re: Site Tour of the Shallow Land Disposal Area (SLDA)

Location: Parks Township, Armstrong County, Pennsylvania,

License No: SNM-2001

Docket No: 070-03085

Purpose: To observe remediation activities implemented by the US. Army Corp of Engineers

Participants: U.S. Nuclear Regulatory Commission (NRC) - Yolande Norman –Project Manager, Lydia Chang –Branch Chief, Special Projects Branch

Accompanied by: US. Army Corp of Engineers (USACE) - Bill Lenart, Jim Boyle
Cabrera contractor's to USACE - Dan Williams, Chuck Baylor
Licensee - BWX Technologies, Inc., - Lori Gallo

Field Conditions: Sunny, few clouds; Temp – 60-65^{0}F

Arrival Time: 11.45am

Departure Time: 2.10pm

Background

The Shallow Land Disposal Area (SLDA) site is an NRC licensed facility and is designated as part of the Formerly Utilized Sites Remedial Action Program (FUSRAP) administered by the U.S Army Corp of Engineers (USACE) . In July 2001, a Memorandum of Understanding [66 FR 36606] was executed between the U.S. Nuclear Regulatory Commission (NRC) and the USACE to minimize dual regulation. The selected remedial strategy at the SLDA site is to excavate and dispose of FUSRAP material from the ten (10) burial pits as outlined in the *Record of Decision –September 2007 (ML 07-2620222)* to meet Unrestricted Release in accordance with 10 CFR Part 20.1402.

On July 26, 2011, USACE informed the NRC that all radiologic material at the SLDA site will remain under the control and protection of Corp. until it is packaged and shipped off-site by Cabrera. This letter resolved the issue which was raised as to who would ensure the protection of the below DCGL material when it is temporarily stored on-site pending disposal off-site by Cabrera#2. On July 27, 2011, the Final Work Plans that addressed special nuclear material (i.e. Physical Security Plan, Criticality Safety, Material Control and Accounting Plan), were accepted by the NRC as they met requirements in 10 CFR Parts 70, 73 and 74. The Final Status Survey Plan was also accepted by the NRC.

On August 5, 2011, the Confirmatory Order was executed by the NRC. On September 8, 2011, USACE assumed physical control of the site and the SLDA license was suspended.

Site Tour

Upon our arrival at the SLDA site, NRC's staff was met at the security gate and escorted for the site tour by USACE personnel. During the site visit, the following areas were toured; Waste Water Treatment Plant, Material Processing Building, Trenches 2 and 3, and the Final Status Survey Pad.

Trench Excavation Activities

- Cabrera's planned day's activity was to remove a hot spot in Trench No. 2 which had 10% enriched uranium (U). Enriched U-233 >10% was being discovered in greater quantities while U-235 was being found is lesser quantities. The primary constituent being discovered is thorium -232 (Th-232).

- Excavation activities were in progress in Trench No. 2. The adjoining Trench No. 3 was also being prepared for excavation activities.

- Due to excessive debris material discovered in the overburden the process of segregation had become unexpectedly tedious. Some of the debris littered in the overburden included process tanks, pipes, glove boxes, and corroded drums.

- Cabrera explained that because Th is a gamma emitter it was triggering criticality safety mechanism in place. Due to the numerous false alarms, Cabrera is focusing its efforts on identifying an easier approach to field recognize Th-232. .

- The waste uncovered from Trench No. 2 was placed into a front-end loader truck. Then the truck traveled to an on-site weigh station where it is weighed prior to entering the Material Processing Building. Once the material is unloaded into bins inside the Building the truck is weighed again prior to returning to the trench. This weigh system is computerized and is a part of the site's overall inventory tracking system

- Excavation activities ceased at approximately 1.30pm on this date because the equipment was being used to troubleshoot some of the security infrastructure (e.g. repositioning of cameras field of view).

- NRC staff observed in-situ characterization of Trench No. 2 by ARSEC field personnel conducting walkover surveys and various color coded flags denoting depth and hot spots. ARSEC is the subcontractor to Cabrera conducting the final status surveys and in situ-characterization field surveys.

- The estimated depth to bedrock is 14ft across the SLDA site. 1ft incremental lifts are being completed on average every 3 days in Trench No. 2. Thus the estimated time to complete excavation activities in Trench No. 2 is 6 weeks.

Material Processing Building (MPB)

- Management of waste streams was in progress in the MPB which has restricted access to field personnel. ARSEC personnel manned the decontamination zone in the MPB. Segregation of the waste stream was in progress with field personnel appropriately attired in tyvek suits, breathing apparatus and protective gear (gloves, booties etc).

- The MPB is equipped with a series of high capacity air filtration system.

- Both the MPB and Final Status Survey Pad are lined with a 40 ml high density polyethylene (HDPE).

- Prior to entering and leaving the MPB, NRC staff and accompanying field personnel were subject to another security checkpoint.

Waste Water Treatment Plant (WWTP)

- The Waste Water Treatment Plant was in operation. USACE recently received permits to discharge the treated water into the nearby tributary. The average discharge rate to the tributary is 150 gallons per

minute. During the recent heavy rainfall event, the water treatment system effectively managed the additional volume of water.

- The treatment system was designed with duplicity to minimize delays. For example there are two MODFLOW tanks and double the amount of piping. The current operating capacity of the tanks is 150,000 gallons with a maximum operating capacity of 411,000 gallons.

- Any waste water or runoff from the site is pumped into double walled piping systems that run along the perimeter of the site before entering the MODFLOW tanks. The MODFLOW tanks are traversed by curtains that are utilized to remove solids.

- The liquid fraction is pumped into a Sludge Storage Tank in which polymers and caustic soda is added to adjust the ph level to remove more flocculants/solids. The liquid then enters the Mixing Tank and then the Inclined Plate Clarifier which siphons off more sludge. By the time the water enters the Pump Tank it typically has no solids and it is piped into two smaller tanks with 5 micron filters to remove any radiologic constituents. In process water sampling is periodically conducted at this juncture. The liquid is then pumped into Carbon Tanks, four in series that is monitored for breakthrough and changed out every 2 to 3 days. Next the liquid is piped into a series of Resin Tank which is periodically sampled. The treated water is discharge to the nearby tributary. Any sludge collected from the Waste Water Treatment Plant is drummed and transported to the MPB for segregation into the appropriate waste stream.

- The Waste Water Treatment Plant is also lined with a 40 ml HDPE.

- At the end of the work season, the sludge in the MODFLOW tanks will be vacuumed out and placed in drums inside the MPB.

Above DCGL Material - Off-site Waste Disposal/Shipment

- No appreciable quantity of material had accumulated for shipment. No shipment of material had occurred to date.

- Intermodals are expected the week of September 8, 2011. Approximately 200 intermodals will be delivered to the SLDA site.

- Once there is sufficient quantity of material for off-site disposal a representative of Energy Solution and Department of Energy will be present on-site.

Below DCGL Material - Off-site Waste Disposal/Shipment

- No <DCGL material has accumulated on-site.

- Once the <DCGL material is discovered the estimated turnaround time is 3 weeks for USACE to transfer this material to BWXT for packaging.

- A fence will be placed around the <DCGL Pad.

Schedule

- Field personnel work a standard 8 hour shift (6.30am – 3.30 pm) with a lunch period at noon. Due to the shortening day length, USACE is considering staggering this 8 hour shift, 30 minutes to 1 hour later.

- The security force is present on-site 24hours/7 days per week and the shift change occurs at odd periods so as not to coincide with major site activities (e.g. workers morning entry, lunch periods and afternoon exits).

- In mid-October, 2011 USACE plan on completing all trenching activities and to ship 100% of all the waste material accumulated to date.

- By-mid November 2011 the site will be winterized however there will be a security at the site.

- Field operations will cease during Fall and Winter seasons of each year.

- Air monitoring stations are currently in place.

Action Items

- NRC's project manager agreed with USACE to cancel future biweekly teleconference calls. Future communication on the project could be scheduled on an as-needed basis.
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- Given that daily quality assurance and quality control reports were being generated by Cabrera and sent to USACE, NRC staff indicated that this report would suffice. USACE indicated that they are currently developing a report format with Cabrera. NRC staff indicated an interest in periodically reviewing a project update report but that this documentation should not be generated specifically for the NRC.

- NRC encouraged USACE and their contractor that if the Final Work Plans required significant change or if processes could be improved to enhance field efficiency without compromising the safety while meeting requirements for 10 CFR 70, 73 and 74, that the NRC team be notified and involved in evaluating the circumstances.

- Cabrera indicated that the Final Work Plans approved by the NRC were currently surviving field procedures. In fact Cabrera was highly complimentary of the NMSS staff (Tom Pham and Steven Ward) in evaluating the practicality of the Material Control & Accounting Plan. Cabrera explained that the Criticality Safety pathways were a little cumbersome because of the unrecognizable geometries which were causing numerous false positives.

- NRC staff notified USACE that another site tour would be planned for mid-October 2011 so that the technical team could observe processes such as inventorying, packaging and shipment of material.