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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
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LISLE, ILLINOIS 60532-4352

March 5, 2007

MEMORANDUM TO: Jamnes L. Cameron, Chief  
Decommissioning Branch (DB)  
Division of Nuclear Materials (DNMS), RIII

Blair Spitzberg, Chief  
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SUBJECT: CHRONOLOGY AND BACKGROUND REGARDING DISCOVERY OF  
DEPLETED URANIUM AT SCHOFIELD BARRACKS, OAHU, HAWAII

During November 2006, Region III was contacted by the Army to report their discovery of depleted uranium (DU) contamination at a munitions test range located in Oahu, Hawaii. Region III was contacted by the Army because the Region has oversight of the Rock Island, IL license. In addition, Region III had completed a license amendment and inspection of the Lake City Army Ammunition Plant for the recovery of DU projectiles. Region IV was contacted to ensure proper coordination and jurisdiction of initial NRC actions because Hawaii is located in Region IV.

The Army determined that the DU contamination was the result of previous testing of the Army's former "Davy Crockett Weapon System" at the Schofield Barracks range. The system was fielded in the late 1950's and was withdrawn from service in the late 1960's. The Davy Crockett weapon system consisted of two types of recoilless rifle weapons. One type was the Battle Group Atomic Weapon System M28 that was considered the light weapon. The second type was the Battle Group Atomic Weapon System M29 that was considered the heavy weapon.

The Davy Crockett projectile was approximately 7.5 inches long, 20mm in diameter, weighed approximately one pound, and contained about 0.45 lbs of DU. The 20mm XM101 cartridge was a low velocity cartridge that was used to determine the impact point for the 279mm projectile fired from the light XM28 Davy Crockett weapon system. Upon impact, the XM101 projectile emitted a puff of white smoke. The 20mm spotting rounds were fired prior to firing the XM390 projectile from the XM28 Light Weapon System. Rounds were fired and corrections were made until fire was adjusted on target.

The following is a summary of Army and NRC actions taken to address the DU contamination issue:

August 2005	During unexploded ordnance removal activities at Schofield Barracks, Army range personnel discovered the remnants of a 20mm Davy Crockett spotter round containing DU.
Summer 2006	After a controlled grass burn, Schofield personnel surveyed a portion of the range and discovered several additional DU fragments.
November 2006	<ul style="list-style-type: none"><li>● The Army notifies Region III that Davy Crockett rounds have been identified at the Schofield Barracks range.</li> <li>● Region III notifies Region IV regarding the Army's discovery. The Army agrees to conduct a characterization survey and to provide a report to the NRC, since the extent of contamination has not been bounded. NRC and the Army have preliminary discussions of whether an NRC license would be necessary.</li></ul>
November 21	<p>The Army informs RIII and RIV that Army health physics and a decommissioning contractor will travel to Schofield on November 27 to conduct a scoping survey and to collect soil samples. The Army's goals are to gain an understanding of the range layout and history and to delineate the area of concern. The contractor plans to conduct a GPS walkover of the perimeter so the potentially impacted land area can be determined. Additionally, a few soil samples will be collected to determine the isotopic uranium ratio and to identify other hazards that may impact disposal of remediated soils.</p> <p>The Army also indicated that the St. Louis Corps of Engineers was contacted on November 6<sup>th</sup> to conduct a detailed historical archive search which may help in answering questions as to where to look for contamination. The Corps will check records at the National Archives and Federal Records Centers in both the Washington, D.C. and San Bruno, CA areas; Carlyle Barracks, PA and the National Personnel Records Center, St. Louis; as well as Schofield Barracks. They will prepare a report that will include all of the source documents and drawings of the facility.</p>
January 11	Army contacts RIII to advise them that the initial scoping survey has been completed. A conference call was set up with RIII, RIV, and Army to discuss the findings.
January 16	NRC and Army Conference Call/Telephone Conversation Record.

A general overview of the conference call is as follows:

- The Army and Cabrera Services visited Schofield Barracks range December 4-8, 2006 to conduct the scoping survey.
- The Army expects a written summary/report of the scoping survey from their contractor by the week of January 22, 2007.
- The Army determined that the impacted land area is substantially more than the few acres initially identified.
- The grass at Schofield grows several inches per day during the rainy season, which was just beginning when the Army team was there in December; thus, their next opportunity for further ground exploration will be the summer of 2007.
- The NRC staff asked if the public currently has access to the range, and were informed, that because of unexploded ordnance concerns, the public is not allowed on the firing range. The range is away from Honolulu and from populated areas. There is no direct public exposure problem.
- The Army uses the range for training and is currently using it for the Army's new Stryker brigades as well as conventional weapons training.
- It was indicated during the call that there is public interest in the DU issue and that the discovery came after the Army publicly stated that "We never had DU on Hawaii." This information was conveyed to Region III's and IV's State Liaison Officers.
- It was indicated during the call that an initial historical review of records revealed that the Davy Crockett Weapon System may have been used at a number of other military reservations. The Army's historical document review is supposed to be completed by March 30, 2007.
- All parties agreed that communication was a key and that monthly conference calls would be beneficial to all parties.
- The Army agreed to provide the NRC with a formal summary

of their findings, an outline of the Army intentions, and a rough time-line of proposed activities.

- All parties agreed that the approach should be to address Schofield first and the other potential locations later as information becomes available.

February 26

Army sends letter to the NRC describing Army actions and proposed schedule to address DU issue at Schofield Barracks and other potentially impacted sites. A copy of the Army's scoping survey findings was attached to the letter.

- Region III and Region IV discussed the letter and report and agreed to compare review findings, then transmit a response letter to the Army regarding our views and findings.
- Region III and Region IV agreed to set up a conference call (March 6) with FSME/DWMEP to brief headquarters on RIII and RIV actions to date, and to discuss future actions. These future actions include licensing requirements.

February 27

Region IV (W. Maier) held a telephone conversation with Russell Takata, Hawaii Radiation Control Program Director. During the call, Takata indicated that a state legislative initiative is being pushed ahead, which would require the Hawaii Department of Health to conduct some offsite (and onsite) monitoring and to conduct an environmental assessment on the storage and disposal of DU. The state legislators are being driven by local environmental activists.

The Department of Health is trying to convince the legislature that they will need assistance to accomplish the assigned tasks; however, Department Management does not want to be perceived by the legislators as obstructive. They have been trying to bring the Army into the loop through testimony. They also may ask the NRC for similar assistance. Mr. Takata was advised to contact both Darani Reddick, OGC, and Mr. Maier well in advance of any proposed testimony date, which he agreed to do.

March 1

D. Reddick, OGC e-mail indicated that the Commission Assistants had been briefed on February 28 regarding the possible development of a jurisdictional issue involving DU sampling at and around the Schofield Barracks site. Ms. Reddick indicated that she had seen legislation that would require soil samples within 500

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meters of the base, but she hadn't seen any legislation that would require on-base sampling or monitoring.

March 6 Scheduled telephone conference briefing by RIII and RIV with DWM. General agenda for the call is as follows:

- General briefing regarding actions by the Regions to date.
- Discuss initial review findings regarding the Army's February 26, 2007, letter and survey report.
- Issue response to Army letter.
- Coordination of future activities, including possible involvement of the State of Hawaii, and public affairs.
- Schedule next monthly telephone conference.

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