

May 1, 2015

Dr. Robert Cherry, Radiation Safety Staff Officer
U.S. Army Installation Management Command
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Building 2261
2405 Gun Shed Road
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SUBJECT: MARCH 24, 2015 MEETING SUMMARY REGARDING THE PROGRAMMATIC APPROACH TO AMEND SOURCE MATERIALS LICENSE NO. SUC-1593 TO ADD THE REMAINING U.S. ARMY INSTALLATIONS POSSESSING DEPLETED URANIUM FROM THE DAVY CROCKETT WEAPON SYSTEM (DOCKET NO.: 040-09083)

Dear Dr. Cherry:

The U.S. Army Installation Management Command (the Army) requested a second pre-license amendment application submission meeting with the U.S. Nuclear Regulatory Commission (NRC) staff to discuss various topics related to the Army's approach to add the remaining sites subject to License Condition No. 12 containing depleted uranium (DU) from the Davy Crockett weapon system to Source Materials License No. SUC-1593. The NRC staff refers to these types of meetings as readiness reviews. The first readiness review occurred on February 19, 2015 (ADAMS Accession No. ML15065A361). The second readiness review occurred on March 24, 2015, at the NRC Headquarters office. The scope of the Army's amendment application, among other topics as identified in the agenda (Agencywide Documents Access and Management System [ADAMS] Accession No. ML15078A425) was discussed at the second readiness review meeting.

The enclosed meeting summary identifies significant issues and information gaps between the second draft of the Army's application and the technical content expected in an amendment application of this type. The NRC staff's expectation is that the Army will consider the NRC's observations from this readiness review before finalizing its application. In addition, the NRC anticipates that the Army will meet its commitment of submitting its amendment application to the NRC by June 1, 2015 (ADAMS Accession No. ML15091A280).

R. Cherry

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In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

If you have any questions regarding the meeting summary, please contact me. I can be reached at (301) 415-6822 or by e-mail at Amy.Snyder@nrc.gov.

Sincerely,

/RA/

Amy M. Snyder, Senior Project Manager
Materials Decommissioning Branch
Division of Decommissioning, Uranium Recovery,
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Docket No.: 040-09083
License No.: SUC-1593

Enclosure: As stated

R. Cherry

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If you have any questions regarding the meeting summary, please contact me. I can be reached at (301) 415-6822 or by e-mail at Amy.Snyder@nrc.gov.

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***via email**

NRC – ARMY
Summary of March 24, 2015
Pre-License Amendment Application Meeting
(Readiness Review)
Source Materials License No. SUC-1593

Background:

On October 23, 2013, the U.S. Nuclear Regulatory Commission (NRC) issued Source Materials License No. SUC-1593 to the U.S. Army Installation Management Command (the Army) to allow the possession of depleted uranium (DU) from the Davy Crockett M101 spotting rounds [Agency Document Access and Management System (ADAMS) Accession No. ML13259A062] located at the two sites in Hawaii. License Condition No. 12 of Source Materials License No. SUC-1593 states: “The licensee will provide the [NRC] with license amendment requests to incorporate the following list of sites: Forts Benning and Gordon (Georgia); Fort Campbell (Kentucky); Fort Carson (Colorado); Fort Hood (Texas); Fort Knox (Kentucky); Joint Base Lewis-McChord and the Yakima Training Center (Washington); Fort Bragg (North Carolina); Fort Polk (Louisiana); Fort Sill (Oklahoma); Fort Jackson (South Carolina); Fort Hunter Liggett (California); Fort Greeley (Alaska); Fort Dix (New Jersey); and Fort Riley (Kansas) on this license in accordance with a schedule developed by the Army.”

The Army decided to follow a Programmatic Approach to address License Condition No.12 of Source Materials License No. SUC-1593, as described in the enclosure to the November 12, 2014, letter from the NRC to the Army (ADAMS Accession No. ML14293A129). The Army requested a second pre-license amendment application meeting (readiness review). The second such meeting was held on March 24, 2015, at the NRC Headquarters, in Washington D.C.

Purpose:

The purpose of a readiness review is to allow the NRC staff to: (1) identify information gaps between the draft application and the technical content expected to be included in the final application submitted to the NRC (referred to as Technical Information Gaps or TIGs); (2) identify major technical or policy issues that may adversely impact the docketing or technical review of the application (referred to as Significant Issues or SIs); and (3) become familiar with the application, particularly in areas where prospective applicants are proposing new concepts or novel design features. The results of a readiness review are intended to inform a prospective applicant in finalizing its application and assist the NRC staff in planning NRC resources in preparation for the review once the application is formally submitted.

The Army submitted its second draft license amendment application (ADAMS Accession No. ML15078A094) to the NRC about a week before the March 24th meeting. The meeting notice and agenda is found at ADAMS Accession No. ML15078A425. The list of attendees who participated in the second readiness review is found at the end of the meeting summary.

Opening Remarks:

As part of its opening statements, the NRC stated that:

- Protection of public health and safety and the environment are the NRC’s chief priorities.

- The most important licensing priority under source materials license no. SUC-1593 is for the Army to comply with License Condition 12 by amending its license to include the remaining 15 Army installations with DU from the Davy Crockett M101 Spotting Rounds.
- The Army is obligated by License Condition No. 12 to add the additional sites (located across the USA) to the license. This is done by a license amendment. When the Army submits its license amendment application, the NRC staff will conduct an acceptance review. If the application is of high quality and is detailed enough for the NRC staff to accept it for a detailed technical review, the NRC will docket the application and begin its detailed technical review. The Army has not yet submitted its amendment application.
- The Army requested that the NRC staff conduct a second pre-license application submission meeting or a readiness review of its second draft amendment application. The NRC noted that the readiness review process is not a licensing action. Further, the NRC stated that a readiness review does not conform to, nor is it part of, the NRC's official acceptance review process and does not predetermine whether the application (once submitted) will be docketed for a detailed technical review.
- This meeting (March 24) is the second such meeting. From the first readiness review meeting which occurred on Feb 19th (ADAMS Accession No. ML15065A361), the NRC staff understands that the Army intends to address all the sites in its amendment application and plans on using the Programmatic Approach to licensing. The NRC noted that if this happens, the current license remains in effect and only will be modified if the NRC approves the amendment request and amends the license.
- A Programmatic Approach to licensing the sites identified in License Condition No. 12 would require the Army to provide program descriptions for NRC review. The Army would need to "fully describe" a methodology for developing and implementing site-specific program plans for all installations on the license. These actions, if approved, would be tied to the license in the form of one or more license conditions that would be inspectable and enforceable. The Army may choose to perform bounding assessments (evaluations) for all sites, groups of sites, or individual sites as part of its technical basis for licensing.
- At the Feb 19th readiness review meeting, the NRC staff identified significant issues (SIs) and technical gaps of information (TIGs) based on its review of the Army's first draft amendment application.
- The Army has submitted its second draft. The NRC understands that the Army prepared its second draft after considering the staff's observations from the Feb 19th readiness review meeting.
- A Programmatic Approach may be the most efficient way to bring all the remaining sites under NRC authority without jeopardizing the protection of health, safety and the

environment. This approach is not prohibited in the regulations and can include all the sites that have this source material.

- The scope and purpose of a readiness review are the same as identified at the February 19th readiness review meeting (ADAMS Accession No. ML15065A361), except the subject of the NRC staff's review for March 24th meeting is the Army's second draft amendment application.

The Army, in its opening remarks, stated that it is a priority for the Army to license the remaining sites that have DU from the Davy Crockett weapon system. The Army communicated that it appreciates that the NRC staff is conducting a pre-licensing amendment review and believes that this meeting will be very beneficial for the Army when it further develops its amendment application.

Programmatic Approach: [Significant Issue (SI)]

The Army noted that it is in the process of conducting additional research regarding new information obtained about Fort Dix, located in New Jersey and Fort Greeley, located in Alaska. The Army said that it now believes that Fort Greeley has no DU. The Army said that it now believes that there is little or no DU at Fort Greeley. It believes that the depleted DU munitions that were fired were retrieved or picked up in the past, but a few rounds of fired DU munitions may still remain there. The Army informed the NRC that it believes the amount of DU is below the 15 lb (6.81 kg) limit identified in 10 CFR 40.22(a) and asked the NRC staff what needs to be submitted if the Army wants to pursue a general license.

The NRC staff:

- Reiterated the guidance it provided to the Army at the February 19th readiness review meeting (ADAMS Accession No. ML15065A361) on this topic, with the following additional information:
 - If the Army believes the amount of DU at a site is within the quantity specified in 10 CFR 40.22 (a), it should provide justification to support why the material at the site meets the requirements of 10 CFR 40.22(a) and why the Army should be under NRC's authority as a general license for that site **(SI)**.
- Reiterated the guidance it provided at the February 19th readiness review meeting (ADAMS Accession No. ML15065A361) regarding the NRC's expectations for proposed changes to the current license conditions **(SI)**.

NRC's Regulations that Implement the National Environmental Protection Act: (all TIGs)

The Army reviewed its draft application with the NRC staff and said that it believes a Categorical Exclusion or CATX is appropriate for this type of amendment application.

The Army said that it believes that it has analyzed all the proposed actions under its previous NEPA analysis for SUC-1593.

Based on its review of the Army's draft of its documentation to address the National Environmental Protection Act (NEPA), the NRC staff observed the following:

- For a DU possession-only situation, the NRC staff believes that for this type of license amendment, a Categorical Exclusion or CATX, appears to be appropriate under 10 CFR 51.22(c)(14)(xv). The NRC will make a decision on the National Environmental Policy Act (NEPA) level after the Army's final amendment application has been submitted and the NRC has been able to evaluate the proposed action.
- If the Army believes that the proposed action fits the CATX, it should ensure that it identifies the proposed action as a CATX and provide sufficient justification for use of the CATX. The information should be provided separate from the license application.
- The NRC staff said that if the Army believes that a CATX is appropriate for its proposed actions, the Army should review the Statements of Consideration and the Endangered Species Act and Section 106 of the National Historical Preservation Act (NHPA) [sometimes referred to as Section 106] Consultation guidance that the NRC staff provided to the Army previously (ADAMS Accession Nos. ML15061A192 and ML15068A101) when preparing its justification.

The Army said it understood the importance of fulfilling the NEPA and NHPA requirements for the amendment.

The NRC staff reminded the Army that if the Army believes its proposed undertaking (addition of sites to the license) is a CATX, then the level of detail of the information that it provides to the NRC would be much less than that needed for an Environmental Report and should only address whether all resource areas meet the conditions identified in the Statements of Consideration for the categorical exclusion under 10 CFR 51.22(c)(14)(xv).

Environmental Radiation Monitoring Plan (ERMP) and Performance Assessment Observations: (SIs and TIG)

The NRC staff said that:

- Although the Army provided more detail in its second draft of its Programmatic Environmental Radiation Monitoring Plan (ERMP), it does not appear to be in a format that could be readily and consistently adapted to each site or could be inspected against. For an ERMP to be congruent with the tenants of the Programmatic Approach, the Army should reconsider the format and layout of its draft ERMP and ensure that it could be used in inspection space **(SI)**.
- Alternatively, the Army could consider using the framework and layout of the February 2012 draft ERMP for Schofield Army Barracks at each site. The NRC staff noted that this document was not approved by the NRC, but thought that the format was one that could be inspected against and that a Garrison Radiation Safety Officer (RSO) could use in developing a site specific ERMP **(SI)**.

The Army said that:

- It could not predict every IF...THEN circumstance in the programmatic ERMP. It thought that there could be infinite number of possibilities but not all of them are significant.
- The ERMP remains the most challenging aspect of the amendment application.
- It intends to address both the resting state of the DU and the state of the DU under conditions of ground disturbance (i.e., High explosives, fires, etc.) in its bounding performance assessment.

The NRC staff:

- Communicated to the Army that the NRC staff believes that a licensee should be able to provide a Programmatic ERMP that adequately addresses the amount of IF... THEN Criteria if the licensee focuses on criteria that are risk significant to health and safety while at the same time provides enough environmental radiation monitoring plan design instruction so that anyone could use it to develop a site specific ERMP. The NRC staff said that it does not expect an infinite number of Programmatic Criteria **(SI)**.
- Provided example as related to the level of detail it would expect to see in an application:
 - If the Army uses the term “significant” it must define what significant means.
 - Criteria for sampling vegetation in the case of grazing cattle on the site would need to include guidance on how to determine how many samples to take, where to take the samples and when the samples should be taken. The NRC staff said that the current draft of the Army’s Programmatic ERMP for vegetation sampling under cattle grazing leaves many questions unanswered such as: Would the sampling occur on vegetation areas only or anywhere on the site, such as, in areas of bare soil? When would samples be taken--- in the spring after snow cover is gone or anytime of the year? How would the number of samples be decided and what would be the basis for the number of samples?
- Emphasized that the site specific ERMPs must tie back to the Army’s Programmatic ERMP. For example, upon inspection, if an NRC inspector asks how the number of vegetation samples was obtained in a situation where cattle are known to graze on the site, the Garrison Radiation Safety Office should be able to provide documentation that ties back to the Programmatic ERMP guidance or criteria and the site-specific ERMP. **(SI)**.
- Reiterated from the February 19, 2015 meeting that:
 - The Army in its application should clearly identify the Army’s methodology and describe the Army’s rationale for how the Army will determine the type of environmental monitoring and frequency (effluent, environmental surveillance,

media and analysis parameters) that would be applied to each specific site to be licensed. The NRC explained that the generic program plans would be like cookbooks that if followed would lead to acceptable site-specific programs **(SI)**

- The Army's Programmatic ERMP should include or reference a process and criteria which will be followed to come to determinations about what, where, when, how and why environmental media should be sampled or environmental monitoring should be performed **(SI)**.
- Emphasized that for any proposed change to an existing license condition related to environmental radiation monitoring, the Army should refer to the related additional environmental guidance that the NRC staff provided on February 27, 2015 (ADAMS Accession No. ML15061A168) **(TIG)**.
- Emphasized that for the amendment application that the Army should not just refer to old modeling results; rather the Army should submit new modeling analysis if it pursues a Programmatic Approach.
- Clarified the additional guidance on environmental monitoring provided to the Army on February 27, 2015 (ADAMS Accession No. ML15061A168) as follows:
[On page 1 (first two bullets)] If the Army performs an acceptable bounding analysis, then it is not required to submit site-specific performance assessments. The word "either" should be inserted before the first bullet and the term "or" should be inserted after the first bullet.

Radiation Safety Program Plan Observations:

Overall, the NRC staff believes that the Army's second draft of the Programmatic Radiation Safety Program Plan provides adequate guidance so that it could be inspected against. However, there is some information that should be included. Specifically, the staff observed the following:

- Although the Army did discuss compliance with 10 CFR 20.1302 (annual public dose compliance demonstration), it did not provide the detail regarding how it proposes to demonstrate compliance on an annual basis. A description of how the Army will comply with 10 CFR 20.1302 (annual public dose compliance demonstration) at each site should be included in the amendment application. A licensee can demonstrate compliance with this requirement either by measurement or calculation. Also, the NRC staff noted that a licensee could vary how it conducts its compliance demonstration from year to year, switching from a measurement approach to a calculation approach. If a licensee wants such an option, then it should, in its application, describe its methods for both approaches **(TIG)**.
- The Army's second draft did include some information on how the Army will comply with 10 CFR 20, Subpart F—Surveys and Monitoring, but it did not provide enough detail that identifies what criteria that the Army would use at its sites to demonstrate compliance with 10 CFR 20.1302. Also, the Programmatic Radiation Safety Plan appears to lack

information about the Army's strategy for detecting unplanned releases or spread of contamination. The NRC staff reemphasized from the February 19 meeting with the Army that the type of facility or site and its operation and therefore its potential hazard, should drive the extent of a licensee's environmental monitoring and survey program. The NRC staff noted that a licensee's strategy for routine as well as periodic environmental monitoring should be addressed in its application (**TIG**).

The Army said that:

- It understands that it must address both the resting state and ground disturbing events in its application.
- It may conduct air sampling during a simulated exercise to address or supplement its analysis of ground-disturbing events.
- It plans to provide additional IF...THEN criteria in its application as needed for the Programmatic Approach to licensing.

Public Comments:

There were no members of the public that attended the meeting in person at the NRC Headquarters. There were several members of the public who participated in the teleconference as observers. In the morning, during the time allotted for the public to ask questions of the NRC staff, Mr. Jim Albertini, of Malu 'Aina Center for Non-violent Education & Action asked if the staff will answer the questions sent via email before the meeting. The NRC staff said that it believes that it already responded to Mr. Albertini's questions that relate to this pre-amendment meeting (ADAMS Accession No. ML15104A138).

In the afternoon, there were several questions from Ms. Cory Harden of Hilo, Hawai'i and Dr. Michael Reimer, retired geologist. Ms. Harden had several questions regarding the status of the current license conditions, air sampling and ground water sampling at Pohakuloa Training Area (PTA). Dr. Reimer commented on the potential need for groundwater monitoring and consideration of the mechanisms of transport of possible DU and progeny transport into the groundwater specific to PTA. The comments and questions that they asked were similar to those that they submitted to via email (ADAMS Accession Nos. ML15084A191 and ML15083A491) to the NRC in advance of the March 24th meeting.

Closing Remarks:

The NRC stated that the meeting was beneficial and that the NRC staff believes its observations should inform the Army's development of its amendment application. The readiness review also will assist the NRC staff in planning NRC resources in preparation for the review once the application is formally submitted.

The Army stated that it also agrees that the meeting was beneficial.

The Army asked if the second draft of its Programmatic ERMP would likely be accepted as it is currently written. The NRC said that it probably would not be accepted due to insufficient detail in the draft and the expected difficulty in using the document to guide inspections. NRC normally does not accept submittals for detailed technical reviews that it believes will likely

result in excessive requests for additional information and therefore insufficient use of its resources.

The Army asked whether monitoring groundwater would be an acceptable strategy to address the potential issue of finding groundwater at shallow depth. The NRC staff said that Army used its modeling as part of its technical basis for the licensing (SUC-1593) to determine whether it believed groundwater monitoring was necessary. The NRC staff agreed with the Army's approach. The NRC staff said that performing groundwater monitoring would not address whether there are any impacts to the Army's technical basis for why groundwater modeling was not necessary.

The Army asked how much lead time the NRC staff would need if the Army decides that it wants to ask for an extension to submit its amendment application by April 17, 2015¹. The NRC staff informed the Army that it would need about 14 working days advanced notice.

Action Items:

- 1) It is the NRC's goal to have the meeting summary documenting staff observations within 30 working days of this meeting.
- 2) The Army agreed that it would be beneficial to review the Statements of Consideration and the Endangered Species Act and Section 106 of the NHPA [sometimes referred to as Section 106] Consultation guidance that the NRC staff previously provided to the Army (ADAMS Accession Nos. and ML15068A101) when preparing its justification for why it believes a CATX applies to its proposed actions.
- 3) For each site that the Army believes has a very small amount of DU, the Army will decide whether it plans to apply for an exemption request or to provide justification in its application of why it believes it meets the requirements for a general license in accordance with 10 CFR 40.22(a). Alternatively, if the Army believes no DU is present at a site, it will provide its rationale to support its conclusions in its application and describe the reason for its change in position from the current license.
- 4) The NRC will provide clarification with regard to the first two bullets in the additional environmental guidance that it provided to the Army previously (ADAMS Accession No. ML15061A168). Clarification was provided on page 7 of this meeting summary (Complete).
- 5) The Army agreed to address in its application the resting state of DU as well as how DU behaves in the environment under conditions of ground disturbance.
- 6) The Army agreed to refer to the two readiness review meeting summaries and the staff's technical evaluation for SUC-1593 when preparing proposed changes to license conditions.

¹ The Army requested an extension to its submittal date of April 17, 2015 to June 1, 2015 (ADAMS Accession No. ML15091A280).

- 7) The Army agreed to provide in its application a detailed discussion of its technical basis for its ERMP and to provide more detailed programmatic (IF... THEN) criteria so that it can be used to develop site specific ERMPs that are capable of being inspected.
- 8) If Army's technical licensing basis changes due to its exploratory groundwater drilling at shallow depths, the NRC expects that the Army will inform the NRC and update its technical basis, as appropriate.
- 9) The Army will consider the NRC staff's request to allow approximately 14 working days advance notice if the Army plans on requesting an extension to its current submittal date of April 17th. The Army submitted its request on March 27 (ADAMS Accession No. ML15091A280). (Complete)

List of Attendees:

*(attended via telephone)

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Varghese Kurian
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