



**DEPARTMENT OF THE ARMY**  
UNITED STATES ARMY GARRISON-ROCK ISLAND ARSENAL  
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ROCK ISLAND, ILLINOIS 61299-5000

REPLY TO  
ATTENTION OF

January 31, 2005

Office of the Garrison Manager

**SUBJECT: JEFFERSON PROVING GROUND (LICENSE SUB-1435)**

Tom McLaughlin  
Materials Decommissioning Branch  
Division of Waste Management and Environmental Protection  
Office of Nuclear Material Safety and Safeguards  
Two White Flint North  
11545 Rockville Pike  
Rockville, MD 20852-2738

Dear Mr. McLaughlin:

In a February 4, 2003 letter to the Nuclear Regulatory Commission (NRC), the Army made a contingent request for an alternate schedule for submittal of a Decommissioning Plan (DP) for the termination of the Jefferson Proving Ground (JPG) License SUB 1435 under restricted conditions (10 CFR 20.1403). The Army proposed that a license amendment be negotiated with the NRC that would create a 5-year renewable possession-only license for an indefinite period. As a result of this negotiation, the Army would withdraw its revised DP (June 2002) and Environmental Report (June 2002).

The NRC, in follow up correspondence (April 8, 2003 letter), agreed to consider a JPG 5 year renewable possession-only license amendment and delay further development of the JPG DP subject to fulfillment of certain conditions, including the validation of off-site transport models with site-specific data. The NRC further indicated that "under the unique circumstances of this case, where the collection of data to complete the DP in itself could create personnel safety hazards, and the licensee—a federal agency—is a stable and durable entity that can provide access controls and monitoring in accordance with NRC's requirements, extending the requirement to submit a DP until the necessary data can be safely collected and models validated could be approved under 10 CFR 40.42(g)(2) as it presents no undue risk from radiation to the public health and safety and is otherwise in the public interest."

This correspondence addresses two topics for which NRC has requested a response from the Army as they relate to the proposed JPG license amendment. The first topic is in reference to an October 20, 2004 letter in which NRC requested the offsite modeling input parameters for which site-specific data could not be obtained because of the presence of unexploded ordnance (UXO). The second topic follows up

on the Army's plans to fulfill data gaps on the depleted uranium (DU) Impact Area acknowledged in its response to the NRC's request for additional information (RAI) dated May 20, 2004. The RAIs were generated as a result of the Army's proposed revisions to the current Environmental Radiation Monitoring (ERM) Program submitted to the NRC in September 2003. The revised ERM program would be implemented when an amendment was granted for a possession-only license.

### **SITE-SPECIFIC DATA FOR OFFSITE TRANSPORT MODELING**

To address the issue of identifying offsite modeling input parameters for which site-specific data could not be obtained because of the presence of UXO, the Army evaluated the dose assessment procedure documented in the June 2002 DP and determined the impact of site-specific physical and exposure parameters on the total dose. The sensitivity analysis completed in this evaluation indicated three parameters for which site-specific data would enhance the accuracy and reliability of the model. A fourth parameter was identified that will be used to determine the future source term for the site. These four parameters include the following:

1. The extent and concentration of DU
2. Thickness of the contaminated zone
3. Distribution coefficient,  $K_d$
4. Solubility and dissolution rates of DU penetrator.

Assuming site-specific data were collected only for this subset of the input parameters, a field characterization approach was defined. This site characterization approach was then assessed to determine if site conditions (i.e. UXO presence) would preclude collection of this data based on three criteria, namely, type and distribution of UXO within the DU Impact Area; availability of UXO survey, removal; and monitoring technology to support safe operation, and historic operations and safety record within the DU Impact Area and at other similar sites nationwide. Even with the presence/participation of UXO avoidance/construction support, the potential for adverse human health/safety due to the presence of UXO north of the JPG firing line will not be eliminated. The Army has concluded that this subset of data collection could be planned and executed successfully assuming the implementation of stringent health and safety protocol, standards, and procedures and the availability of sufficient funds to support the campaign. This conclusion is valid for this limited scope effort only and presumes the effort would be completed as a one-time sampling/data collection event.

### **DU IMPACT AREA**

The Army has developed a conceptual approach to enhancing the understanding of the nature and extent of contamination in the DU Impact Area and the fate and transport of DU. This approach, to be implemented over a 5-year time frame, will allow the Army to collect additional data to support the decommissioning process and to


provide a basis for modifying the current monitoring program. The conceptual approach, outlined below, is subject to Army review and approval of the technical content, costs, and schedule:

- Sampling of deer to determine if DU is present in deer tissue (Year 1)
- Hydrogeologic studies to support siting and location of a revised well monitoring network and water budget calculations (Years 1 to 4)
- Multimedia sampling and monitoring to document the nature and extent of DU contamination and support determination of corrosion and solubility of DU corrosion products (Years 1 to 3)
- Updates to the site conceptual model (Years 2-4)
- Update the ERM Program (Year 4 or earlier)
- Initiate decommissioning planning (Year 5)

Subsequent to Army approval and the availability of funding, the Army will submit to NRC a proposed plan to gather the site specific data as identified above. Pending NRC review and approval/concurrence of this proposed plan, the Army staff would be available to discuss the site specific data plan with NRC staff prior to the commencement of field activities currently scheduled for fall 2005.

Ms. Joyce Kuykendall, US Army Research, Development and Engineering Command (RDECOM), may be contacted for additional information at (410) 435-7118 or joyce.kuykendall@us.army.mil.

Sincerely,



Alan G. Wilson  
Garrison Manager