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OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

In the Matter of

U.S.ARMY

(Jefferson Proving Ground Site)

Docket No. 40-8838-MLA

SUB-1435

July 27, 2005

**COMMENTS BY SAVE THE VALLEY, INC.**  
**RE REQUEST FOR ALTERNATE DECOMMISSIONING SCHEDULE**

On June 27, 2005, the Nuclear Regulatory Commission ("NRC" or "Commission") published in the Federal Register notice of consideration of a possession only license amendment ("POLA") request<sup>1</sup> submitted by the U.S. Army ("Army") for its Jefferson Proving Ground ("JPG") facility near Madison, Indiana, the opportunity for the public to provide comments, and the opportunity for interested persons to request a hearing. *See* 70 Fed. Reg. 36,964. Pursuant to Section III of the Federal Register Notice, Save the Valley, Inc. ("STV") respectfully submits its Comments on the Army POLA while expressly reserving its right also to submit on or before August 26, 2005, a Request for Hearing pursuant to Section II of the Notice.<sup>2</sup>

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<sup>1</sup>See Letter from the Army Requesting an Alternate Decommissioning Schedule for the Decommissioning of Jefferson Proving Ground and Transmitting a Technical Memorandum, Field Sampling Plan, and Health and Safety Plan, dated May 25, 2005 (available for inspection and copying at [www.nrc.gov](http://www.nrc.gov) from the Publicly Available Records (PARS) component of NRC's document system (ADAMS) under accession number ML051520319).

<sup>2</sup>STV also expressly reserves its right to submit on or before July 29, 2005, its invited Response to the Commission's Memorandum and Order in this docket of June 20, 2005, and the Army's Motion to Dismiss in subdocket ASLBP 04-819-04 of July 19, 2005.

## **I. SAVE THE VALLEY'S INTEREST IN THE POLA.**

STV was incorporated in 1974 as a nonprofit environmental organization based in the Madison, Indiana area. STV was founded with the purpose of protecting the environment of the Ohio River Valley in Southeastern Indiana and Northeastern Kentucky between Lawrenceburg, Indiana and Louisville, Kentucky. This area includes the Jefferson Proving Ground and its surroundings.

The JPG site is located in Jefferson County, Indiana, which has a population of approximately 31,705 people. Madison is the nearest population center, with a population of approximately 12,000 people, or more than one-third of the Jefferson County population. There are approximately 86,000 people living in the counties within a 15 mile radius of the DU area.

Residents of the area surrounding JPG either use public water from a municipal system, or deep wells. Prominent water pathways on-site are Big Creek, Graham Creek, Otter Creek, Harberts Creek, and several smaller creeks that are sub-basins of the Muscatatuck River, White River, and the Ohio River. The Ohio River is located eight miles south of the JPG site.

Between 1984 and 1994, the Army test fired depleted uranium (DU) projectiles which resulted in depositing approximately 220,000 pounds of DU projectiles and fragments at the JPG site. Members of STV live primarily on property or in communities near the site. Some of these members live on property that is traversed by Big Creek immediately downstream from JPG. Other STV members hold property interests in land elsewhere which may be affected by DU migration. These STV members are concerned about the effects of DU migration on their health and property, as well as on human health and the environment in the Big Creek area generally. STV members, as well as local public officials, have expressed concern about the potential

health effects to the general public of DU migration. STV, as an organization located in the general vicinity of the DU area, also has an interest in the air, land, wildlife and other natural resources that could be affected by the proposed license amendment. Because of the concerns of its members and its interests as an organization, STV has been represented on the JPG Restoration Advisory Board since its inception.

## **II. PROCEDURAL HISTORY**

In December, 1999, the Commission published a notice of opportunity for hearing in connection with the Army's application for an amendment to its materials license (SUB-1435) that would authorize the decommissioning of its JPG site. *See* 64 Fed. Reg. 70,294 (December 16, 1999). Under that license, the Army had engaged in activities on the site between 1984 and 1994 that had produced approximately 220,000 pounds of depleted uranium ("DU") projectiles and fragments. In its application for amendment to its license, the Army sought authorization for the termination of its license and restricted release of the site. Before the amendment sought by the Army could be approved, however, the Commission would have to make the findings required by statute and regulation, to be documented in a Safety Evaluation Report and an Environmental Assessment.

In response to the December 1999 notice of hearing, STV filed a timely hearing request which was granted by the Presiding Officer based on a determination that STV had established, as required by 10 C.F.R. § 2.1205(h), both its standing and the existence of an area of concern that was germane to the subject matter of the proceeding. *See* LBP-00-9, 51 NRC 159 (2000). That decision also noted that the Army had indicated "a distinct possibility that the current decommissioning plan will undergo revision in material respects" and had explicitly requested

“that further proceedings be held in abeyance pending the outcome of its anticipated further interaction with the NRC Staff with regard to [that] plan.” Id., at 3.

Nothing transpired on the adjudicatory front for some time after the decision granting the hearing request, apart from the submission by the Army of quarterly status reports. During that time, the Army also provided its decommissioning plan to STV for its consideration and received comments back from STV. Id. In June, 2001, the Army furnished the NRC with an entirely new plan, which it characterized as its “final decommissioning/license termination plan.” Id. The new License Termination Plan (“LTP”) received a very cool reception from the NRC staff. Although the 1999 site decommissioning plan had obtained the staff acceptance on administrative review that generally precedes the commencement of a technical review, such acceptance of the 2001 LTP was withheld due to a number of deficiencies which the NRC Staff indicated required correction before it could initiate a technical review. Id., at 3-4. The NRC Staff also expressed a desire to discuss the deficiencies with the Army in order both to ensure that the licensee understood the Staff’s concerns and to develop a schedule for resubmission of the LTP. The Staff subsequently provided formal notification that it considered the 2001 LTP to supersede the 1999 site decommissioning plan, with the consequence that the latter would receive no further review. Id., at 4.

After receiving assurances that the 2001 LTP would go through the process of public comment solicitation and an opportunity to request a hearing, STV moved that its request for hearing be held in abeyance to conform to a new timeline for review by the NRC staff because the second LTP was very different from the first. The Presiding Officer found that although the second, revised LTP was a new plan, analytically there was no material difference between the

then current situation and the more typical one where a plan is submitted which then must undergo substantial revision before a hearing can be held on the plan. See LBP-01-32, at 7. The Presiding Officer also found that the Army had not withdrawn its application and the NRC Staff had not formally denied it but rather the two parties were working to cure the deficiencies and develop a new LTP. Id. The Presiding Officer granted STV's request that the proceedings continue to be held in abeyance pending submission of the Army's new LTP. See id., at 10.

On June 27, 2002 the Army submitted its Revised Decommissioning Plan ("DP"). In the Revised DP, the Army identified the benefits of DU remediation at JPG to include: averted population dose, avoided regulatory and institutional costs, increased land value, aesthetics, and reduced public opposition. The total discounted benefit accruing from decontamination of the DU Impact Area to terminate the license without restrictions was estimated to range from \$268,286 to \$349,429 (see Table 7-1). The Army proposed, however, to do no remediation or monitoring and continued to rely solely on institutional controls. As a result, the Revised DP did not resolve the basic concerns previously expressed by STV regarding the Army's earlier plans.

In an October 17, 2002 memorandum, the NRC Staff reported that it had accepted for technical review the Revised DP, together with the environmental report that was submitted by the Army in connection with that DP. The technical review was projected to require two full years for completion. On November 14, 2002, the NRC published in the Federal Register notice of consideration of the Army's license amendment request and opportunity for interested parties to provide comments and request a hearing. *See* 67 Fed. Reg. 69,049. On December 12, 2002, STV filed its comments and request for a hearing on the Revised DP. The principal concerns identified by STV were that the Revised DP did not meet certain criteria for restricted release

established by 10 C.F.R. § 20.1403 and site characterization was inadequate to verify compliance with any of the requirements of 10 C.F.R. § 20.1403. Concurrently, STV moved to defer the requested hearing until completion of the NRC Staff's technical review of the Revised DP. The Army objected to STV's hearing request on the grounds that the identified concerns were not germane to approval of its Revised DP. However, if a hearing was to be held, the Army agreed it should be deferred. On February 6, 2003, the Presiding Officer granted both STV's request for a hearing and its motion to defer the hearing pending completion of the Staff's technical review. See LBP-03-02, at 5-7.

In the event, the Staff's technical review raised some of the same concerns regarding the adequacy of the Army's site characterization that STV had identified. In fact, the Staff advised the Army that certain additional site-specific sampling and modeling would be required. In response, the Army expressed concern to the Staff that such site characterization activities would endanger the safety of DA and contractor personnel due to the presence of unexploded ordnance ("UXO"). As a result, on February 4, 2003, the Army submitted a contingent request for an alternate schedule for the filing of a decommissioning plan for the termination of its JPG license pursuant to 10 C.F.R. § 40.42(g)(2). The Army proposed negotiation with the Staff of a license amendment that would create a 5-year, possession-only license renewable for an indefinite time period, i.e. "until such time as the UXO is no longer explosive or there are safe ways available to handle UXO, permitting adequate site characterization." See NRC Staff's Comments in Response to Memorandum and Order, dated March 19, 2003, at 2. The negotiations between the Army and the Staff culminated in the submission of a proposed POLA on September 22, 2003,

which the Staff accepted for technical review on October 21, 2003.<sup>3</sup>

On October 28, 2003, the Commission published in the Federal Register notice of consideration of the Army's new POLA request and of the opportunity for interested persons to request a hearing. *See* 68 Fed. Reg. 61,471. In response, STV timely filed yet another hearing request on November 26, 2003, again accompanied by a motion asking that the hearing await the completion of the Staff's technical review of the new POLA proposal. Once again, STV cited as a reason for its hearing request concerns regarding inadequate site characterization. STV also raised legal concerns regarding the Army's request for an indefinite delay of decommissioning and challenged the factual basis for the Army's claims that UXO dangers warranted such delay. On January 7, 2004, the ASLBP granted both STV's request for a hearing in subdocket 04-819-04 and its motion to defer that hearing pending completion of the Staff technical review. *See* LBP-04-01, at 3-5.

On June 1, 2004, the Presiding Officer issued an unpublished order in which he called upon the NRC Staff to submit a report "setting forth with particularity the present state of the technical review and furnishing the Staff's best current estimate as to when the review will be completed." *See* LBP 05-09, at 4. In a June 8 response, the Staff stated that it had informed the Army in a May 20, 2004 letter that it required further information to complete its evaluation of the Environmental Radiation Monitoring (ERM) Program Plan that had been submitted in

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<sup>3</sup>In the wake of those developments, and given that decommissioning was no longer being considered by either the Army or the Staff, the pending decommissioning proceeding instituted by STV was dismissed as moot on December 10, 2003. The dismissal was, however, expressly stated to be without prejudice to the subsequent filing by STV of a motion to revive that proceeding and its associated hearing should the decommissioning of the site once again receive active Staff consideration at the Army's behest. *See* LBP-03-28, 58 NRC 437.

support of the Army's most recent POLA request. The Army had been given until August 30, 2004 to supply the information and sought, assuming that it proved adequate, the Staff advised that it thought it could complete the technical review and issue an environmental assessment (EA) and safety evaluation report (SER) "between early January and early March 2005." Id.

In an October 4, 2004 order (unpublished), the Presiding Officer took note of the August 30 deadline for the Army's submission of the additional information and asked the Staff to advise whether it had been received and, if so, whether it was deemed sufficient to enable the issuance of an EA and SER no later than March, 2005. Id. In an October 14, 2004 response, the Staff reported that it was still in need of additional information to enable it to have "sufficient data to complete its evaluation of the ERM Program Plan and issue an EA and SER." Staff thus no longer believed that the technical review might be completed by March, 2005. Rather, it anticipated "a delay of approximately two months in preparing its analyses commensurate with the additional time required for the Licensee to furnish the necessary information." The Staff added that it "would be able to provide a more precise estimate for completion of its technical review following actual receipt of the requested information." Id., at 4-5.

Finally, in a March 3, 2005 order (unpublished), the Presiding Officer once again endeavored to determine where matters stood. In its March 18 response to that order, the Staff advised that the information the Army had supplied in November, 2004 and January, 2005 was "not sufficient to allow the Staff to proceed with preparation of an EA or SER." Id., at 5. The Staff went on to note that, based upon a January 31, 2005 letter that it had received from the Army, it was not clear "how the Licensee intends to proceed." At the Staff's request, however, the Army "agreed to provide a letter clarifying its planned path forward with regard to the



pending license amendment request.” Pending that clarification, the Staff was “not in a position to provide an estimated issuance date for the EA and SER.” Id.

Given the extended delay in the Staff’s technical review and the continued uncertainty regarding the Army’s intentions, the Presiding Officer issued a Memorandum on March 31, 2005, bringing the unsatisfactory state of, and protracted delays in the Army’s decommissioning activities at the JPG site to the Commission’s attention. *See* LBP 05-09, 61 NRC \_\_\_\_\_. Before the Commission acted on the Presiding Officer’s Memorandum, however, the Army submitted a letter clarifying the intent of its pending POLA request on May 25, 2005. In particular, the Army clarified that, rather than delay decommissioning at the JPG site indefinitely, it intended to submit a decommissioning plan for restricted release of the site within five years of approval of its POLA request. In view of this clarification, the Staff considered the May 25, 2005 letter to be a new POLA request superseding the Army’s September 22, 2003 POLA request and therefore directed publication of its June 27, 2005 Federal Register notice of opportunity for comment and request for hearing. *See* 70 Fed. Reg 36,964 (June 27, 2005).

In the interim, on June 20, 2005, the Commission issued a Memorandum and Order directing the Army and the Staff and inviting STV to respond to the Presiding Officer’s March 31, 2005 Memorandum. The Army submitted its response on July 8, 2005, and the Staff submitted its response on July 20, 2005. On July 19, 2005, the Army sent a letter to the Staff formally withdrawing its September 22, 2003 POLA request and confirming that its May 25, 2005 letter constituted a new POLA request. On the same date, the Army also filed a separate motion to dismiss ASLBP subdocket 04-819-04. STV’s responses to the Commission’s June 20, 2005 Memorandum and Order and the Army’s July 19, 2005 motion to dismiss are due on or

before July 29, 2005.

**III. STV's COMMENTS: THE FIELD SAMPLING PLAN, HEALTH AND SAFETY PLAN, AND TIMETABLE AND BUDGET SUBMITTED IN SUPPORT OF THE REQUESTED POLA ARE INADEQUATE AND DEFICIENT IN MEETING THE STANDARDS OF 10 CFR § 40.42(g)(2).**

NRC regulations state that an alternate schedule for the filing of a decommissioning plan may be approved only if it meets three requirements:

1. It is necessary to the effective conduct of decommissioning operations;
2. It presents no undue risk from radiation to the public health and safety; and
3. It is otherwise in the public interest.

10 CFR 40.42(g)(2). In offering these comments, STV seeks to explain its concerns that the Field Sampling Plan, Health and Safety Plan, and timetable and budget submitted by the Army in support of its requested POLA are inadequate and deficient in meeting the standards of 10 CFR § 40.42(g)(2). Should these concerns not be resolved in the interim, STV will request a hearing to present them pursuant to 10 CFR § 2.309 on or before August 26, 2005.

**A. General Concerns**

STV recognizes and appreciates that the Army's most recent POLA request differs materially from its prior requests for which STV has sought hearings. In particular, the current request proposes to address serious deficiencies in site characterization identified by the Staff and STV which have heretofore precluded development of an appropriate decommissioning plan for JPG. In STV's view, this is potentially a major step forward in the Army's approach to JPG decommissioning. Additionally, in SAIC the Army has hired a contractor with the experience and expertise to design and conduct the necessary site characterization activities and analyses.

Finally, in proposing a Health and Safety Plan, the Army is recognizing the reality that the necessary site characterization activities may be safely performed notwithstanding the presence of UXO at the JPG DU site. From STV's perspective, this is also potentially a major step forward in the Army's approach to JPG decommissioning.

However, STV has three general areas of concern regarding the Army's most recent request:

1. The Field Sampling Plan ("FSP") has a number of serious and glaring deficiencies which, if not corrected, will prevent the FSP from providing the data necessary for proper site characterization;

2. The Health and Safety Plan ("HASP") has a number of serious and glaring deficiencies which, if not corrected, will impede the Army in conducting the field sampling activities necessary for proper site characterization; and

3. The timetable and budget for implementing the FSP and HSP and then finally preparing and submitting a decommissioning plan for JPG are too vague and indefinite to truly represent an alternate schedule for decommissioning as contemplated by 10 CFR 40.42(g)(2).

Each of these general concerns are discussed in detail below. Taken together, these concerns lead STV to question the seriousness and sincerity of the Army's intentions with respect to its most recent POLA request.

#### **B. FSP Concerns.**

In its requests for hearings on prior Army POLA requests, STV has repeatedly identified two primary concerns regarding JPG site characterization. First, without adequate site characterization, the Army cannot properly estimate the long-term risk to public health and

safety from radiation resulting from an indefinite delay in decommissioning and decontamination. Second, without expanded and improved ground and surface water monitoring, the Army will not be able to detect whether that risk is increasing over time as decommissioning and decontamination are delayed.

To construct an adequate exposure scenario for a site, the licensee must utilize accurate and complete information about the site and the surrounding area. Site characterization plays a foundational role in making calculations and determinations about radioactive dose, environmental remediation, and institutional controls at a site. If the site characterization is inaccurate or invalid, the calculations and determinations required to predict future effects on public health and safety will be equally erroneous and the source term model will be invalid.

As previously noted by both STV and the Staff during the review of prior POLA requests, the JPG Conceptual Site Model (CSM), is generic, flawed, inaccurate and incomplete. Specifically, the Army has failed to present verifiable data regarding dose modeling or the effects on exposure pathways of meteorological, geological, animal, and human features specific to JPG and the surrounding area. This failure results in an inability by the Army to predict with accuracy the effects from radiation on public health and safety of an indefinite delay in decommissioning and decontamination. While it should and could correct this failure, the FSP proposed in conjunction with the current POLA does not do so.

Specifically, the FSP has the following noteworthy shortcomings:

1. The EI geophysical study which will follow the fracture analysis study is supposed to find karst features and location of the water table. From these studies, 10 to 20 pairs of monitoring wells are proposed to attempt to tie into “conduits” of ground water flow. This study may help to site monitoring wells, but it would also be very worthwhile to have done stream gaging studies first, to include the surface water data into the search for likely conduits. The surface water zones of strong gain would be a very strong indicator of the discharge point of a

ground water “conduit.” The FSP alludes to doing this in its discussion of well location criteria, but the time table shown indicates stream studies will follow the ground water studies by a year.

2. The discussion in section 6.2.1 is disturbing in its failure to set out the chemistry of the monitoring system at this stage and its cavalier dismissal of ground water as a direct exposure route to humans due to its poor quality. The “poor quality” that is being cited is, in part, a function of existing data being sampled from wells that are definitely not in “conduits” that would presumably flush well and carry good water; instead, the data are drawn from tight, clayey wells that may well have had multiple types of contaminating material falling into them due to poor maintenance.

3. The wells to be used for staging should not be limited *by assumption* to six wells, as proposed in 6.2.2. Six may be enough, but it also may not be. The actual number should be a function of results achieved, not assumptions made. (It is hoped that the last sentence in this section mistakenly left an “s” off the word “well.”)

4. The FSP specifies that the “conduit” wells will be paired, but did not describe the relationship of the positions of the two wells at each well site. Presumably the objective is to get a handle on vertical gradients at each site, but that is not explained or discussed. Nor is there an indication of whether the “paired” well will be above or below the “conduit” well or whether that relative position would change depending upon unspecified geologic or hydrogeologic conditions.

5. The FSP also specifies that a boring that does not produce enough water for a well will be abandoned. If lack of production occurs because the system is tight (impermeable), that makes some sense. However, the nature of karst terrain is that conduits may not produce water because the flow is highly transient and, unless there is a new flow event at the time of drilling, a well may be dry even though it is in an appropriate and important location. If the problem is a temporary lack of water, and not a permanent lack of permeability, consideration should be given to monitoring the boring for enough time to be sure it never flows before abandoning it.

6. The FSP anticipates that all new wells to be completed will be in “conduit” settings in bedrock. This may be short-sighted. Certainly, most off-site transport is likely to be through bedrock karst. But, the projectiles and the DU reside in the till and/or the weathered bedrock/colluvium. Simply because good, shallow wells were not completed in the original set of JPG wells does not mean that properly located and completed shallow wells are not necessary to characterize properly the hydrogeology of the site.

7. The FSP apparently does not envision testing the new wells for permeability. Granted, if a particular well is sunk into a nice chunk of karst, it will not be feasible to measure permeability. But, the nature of karst is to be hard to locate precisely, so it is likely that at least some of the wells will simply be in bedrock with some enhanced permeability, which should be measured if it can be. Moreover, the conductivity of the rock adjacent to and feeding the conduit is a major determinant of flow through the system. The same holds true for aquifer testing. If

pumping the aquifer shows interconnection among two or more of these conduit pairs, that result will say volumes about the system transporting DU from the site.

8. Geophysical testing and video taping of all of the well drilling should be required. Trying to understand from cuttings, particularly air-drilled cuttings, what material has been drilled through and in which a well is being completed is virtually a lost cause. Logging and videoing the wells as they are being drilled actually records what the boring encountered and provides much valuable information for reasonably interpreting the water data that is later collected over time.

9. Specifying the exact number and precise locations of the surface water sampling points at the outset of FSP implementation is not a good idea. Until the ground water data show where to look for discharges, such points cannot be reasonably selected. It is also not clear why the surface water sampling locations and the sediment samples need be in the same location(s). Sediment buildup has nothing to do with the location of base flow connections between ground and surface water. Similarly, the FSP concept of putting in only five gaging stations which are sited before the ground water system is better understood is both too limited in number and may well be counter productive in location.

10. The entire Kd exercise is inaccurate, unreliable, and, particularly when it forms such a key element of the modeling, rife with opportunities for abuse. It is described in the FSP text as “an important input parameter” for the results of exposure calculations. But, the exercise does not yield a real number and its functionality is based upon assumptions that are known to be invalid. The biggest erroneous assumption is the one spelled out in the text: “the underlying assumption is that rapid equilibrium is reached between the dissolved and sorbed concentrations of a chemical species, and that these two concentrations are linearly related through the Kd factor.” At best, there are an infinite number of Kd values based upon the infinite number of combinations of soil types, sorbent contents, ground water compositions and oxidation states that may exist along the flow path from any individual DU projectile. USEPA tried to use the Kd approach in its modeling for solid wastes, and only recently completed spending almost 5 years to find an alternative way because Kds just do not work. They don’t even work for such simple, monovalent contaminants as lead or cadmium; it is preposterous to rely on the Kd approach for something that is so pH-Eh dependent as the uranium system. Field observations should be used to calibrate geochemical modeling with a program on a par with Geochemist’s Workbench, with a lot of soil analyses to identify the abundances of sorbents in the soil that will control the mobility of the uranium. And, if the exposure program that SAIC is using requires the Kd approach, it should also be replaced with one that has more sophistication.

11. FSP lacks any plan for analysis of penetrators for transuranics such as plutonium, americium, technetium and neptunium or other impurities such as uranium-236. In Table 4-1, p. 4-3 of the FSP it states that 24 penetrators will be collected to establish a corrosion/dissolution rate”. However, there is no mention in the plan to assay the rounds for these other elements. This failure was challenged in previous Army plans by the NRC Staff (Sept. 27, 2001) and ATSDR (Oct. 30, 2002).

12. The background levels being proposed in the FSP are inappropriate. There is an assumption that natural uranium could exist in the rock and geological formations of JPG. This could be true. However, given the nature and chronology of DU use at JPG, standard fate and transport theory would say that DU onsite but away from the DU area and even offsite would have increased since DU was first used at JPG. Conditions such as the air and water dispersal of aerosolized or particulate DU that occurs when the DU projectiles land on hard objects (rocks, other DU and UXO projectiles, etc.), and the physical movement of DU fragments due to flooding that occurs especially in the spring would all contribute to this increase.

13. Risk Assessment Guidance for Superfund (RAGS) and eco-risk texts (e.g., Suter, G.W. II, et al) say a monitoring site is inappropriate for background if it is potentially contaminated by the contaminant of concern. Therefore, two alternatives could be used for the “background” readings that could be used for the assessments and models:

a) Data obtained from USGS cores, or any other soil, water and air data obtained prior to the start of DU testing (i.e. 1983 or earlier) is preferred.

b) For fill-in data, potential “background” samples (air, water, and soil) that clearly do not have the DU isotope ratio signature could be used. However, it is better to be conservative in what is considered to be a background isotope ratio.

14. Air remains a concern as evidenced by the air sampling requirements to be implemented for the field workers (Health and Safety Plan, 4.2.2.1). If short-term air exposure is a concern for the workers, long-term air exposure is a concern for residents in surrounding communities, as well as for the animals living in the JPG ecosystem.

15. In order to really do a site-specific eco and Human Health (HH) risk assessment, understanding the fate and transport (F&T) of DU within the JPG ecosystem is critical. For most effective monitoring to develop such a model, standard eco-risk-associated field sampling practices specify samples from different parts of the ecosystem within the same approximate period of time and definitely within the same field season in order to identify the distribution of the contaminant (DU) at that time. Further it is best to take multiple samples over time. Thus, to truly model F&T within the JPG ecosystem (which is NOT the Yuma or Aberdeen Proving Ground ecosystem), a particular sample should be taken from all media and relevant biota at approximately the same time and such samples repeated on multiple occasions. Ideally, samples should also be taken under different types of field conditions, as appropriate for the changes that occur at the site of concern. For example, at a site that floods, as JPG does, samples should be taken from all media and biota at high flow (flood season) and low flow. Similarly, in a seasonal environment like JPG, samples should be taken from all media and biota in different seasons. When reproduction is seasonal for the biota of potential concern, seasonal sampling is of special concern.

16. Deer are not the most representative biota to sample. Nonetheless, when data from samples early and late in DU testing are not combined, it is evident that DU levels in the deer are

increasing. Looking at what little data is available, the bioaccumulation factors (BAFs) for vegetation and the aquatic filter feeders (both of which are eaten by higher animals and humans – such as crayfish) are relatively high, on the order of  $10^2$  to  $10^3$  times as high as the BAFs for persistent, bioaccumulative, and toxic chemicals (PBTs) listed as being of concern by the U.S. EPA and the Persistent Organic Pollutants (POPs) Treaty. Clearly, vegetation and aquatic filter feeders are better indicators of DU migration into the eco-food chain than are deer.

17. Some non-standard tools are not being brought in, but should be. These would help the future eco and HH risk modeling. For example, GIS modeling of individual data points (all samples) will help identify migration and will better pinpoint movements of DU into and through JPG and its surrounding ecosystem. Identification of individual vegetation samples will also help identify whether there is preferential uptake of DU into specific types of plants – as is indicated by the relatively new phyto-remediation technologies being funded at Purdue by EPA.

18. DU dissolution rates should be tested using different soils and under different site-specific wetness and temperature regimes in order to truly model DU dissolution at JPG.

19. The Independent Technical Review Team Leader for the HSP and FSP is the same person as the Project Manager (Corinne Shia, SAIC). To achieve the purpose of “independent” technical review, it would be appropriate to have these roles performed by different individuals.

### **C. HASP Concerns**

In its request for hearing on the Army’s 2003 POLA request, STV pointed out that the Army had not provided an adequate factual basis for its contention that necessary site characterization activities could not be carried out due to the presence of UXO at the JPG site. In its most recent POLA request, the Army has addressed this concern by proposing both the FSP and the HASP, a combination which STV believes to be appropriate. However, STV does have multiple noteworthy concerns with the HASP:

1. The HASP is very generic and not site-specific in nature, without identification of the particular UXO hazards to be addressed or the specific locations in which they are found. Notably,

a. Table 2-1, “DU Impact Area Site Characterization Project Onsite Tasks” (page 2-2), lists “Installation of 10 multi-well clusters ...”, “Collect 24 samples (penetrators) from the DU Impact Area”, and an optional task to sample “other biota (plants, earthworms, birds, mammals, and fish)” as project tasks that will be accomplished. It is possible that UXO may be encountered while performing these operations, but there is very little specific information on the UXO safety precautions required to be followed during these activities. For example, common industry practice is to have a UXO specialist locate a clear entry and exit pathway for the drill rig and then ensure that no subsurface metal objects are located at the well location. Then, the UXO specialist usually performs downhole geophysical avoidance surveys during the well drilling operation (this is usually done by hand boring the cleared area as far as possible and then



removing the drill from the well at 2-ft. increments to check that no metal objects are in the path of the drill until a specified depth is reached).

b. In section 8.12, "Drill Rig Operations," there are also no specific precautions described for UXO. The text in this section appears to be standard drill rig precautions and should be modified to emphasize the potential UXO hazards that may be encountered during this intrusive operation and what specific UXO avoidance measures will be used to ensure the safety of the drillers.

c. Section 8.13 on "Unexploded Ordnance" is more general boilerplate. There is no site-specific information presented. This is highly unusual for field operations on a known UXO contaminated site. In what specific locations are the samples going to be collected? What is the type and density of UXO that is expected to be encountered in these locations? How deep are these UXO expected to penetrate (important information for the drillers)?

d. Appendix B is an "Example Activity Hazard Analysis." However, since this HASP is intended to be a site-specific health and safety plan it would be most appropriate to include the completed activity hazard analyses instead of just an example. Since this HASP does not contain the site-specific activity hazard analyses, when will they be completed and how will they be presented to the site personnel?

2. The HASP is not effectively integrated with the FSP. Specifically,

a. The person identified in Table 3-1 to serve as Field Manager for the FSP (Seth Stephenson) possesses the training and experience required to serve as the UXO expert on the project. However, he is the only UXO support person listed for the project. One UXO specialist is only able to monitor one field operation at a time, such as one sampling team or one drill rig. It is not likely that he will be able to perform any additional duties associated with being the Field Manager when sampling operations are being conducted because his presence will be required at the sampling site as the UXO expert. It is likely to be much more efficient to have the project Field Manager and UXO support specialist(s) be different people.

b. The last bullet in Section 4.0 notes that UXO is present at the site and also states that, "Site investigation plans will be adjusted, as appropriate and necessary, to ensure that the H&S of all field personnel are always protected." This type of statement shows an almost complete lack of knowledge and concern for UXO on the project. Accepted safety procedures on UXO sites require plans to be developed to safely perform sampling operations before beginning work, thereby minimizing the need to adjust the plans to maintain safety once sampling has begun. There is a virtually no planning for UXO safety incorporated into the sampling procedures included in the FSP.

c. Section 4.2 on "Applicable Regulations/Standards" does not mention any of the guidance documents covering UXO avoidance and safety procedures for environmental

sampling projects. These documents are available on the website of the U.S. Army Corps of Engineers Engineering and Support Center, Huntsville, Alabama.

d. Section 6.1 describes the field procedures that will be accomplished during “Geophysics (Electrical Imaging).” This process involves driving electrodes into the ground and transmitting electrical current between the electrodes. This involves UXO hazards caused by driving the electrodes into the ground and also by emitting electromagnetic radiation which may be a potential initiation source for electrically initiated ordnance. UXO safety procedures must be specified to support this sampling procedure and the issues involved with electromagnetic radiation must be incorporated in the plan.

e. Section 6.2 on sampling “Groundwater” contains no information on UXO avoidance or safety even though this section describes drilling wells. For example, Figure 6-1, the “Drill Rig Operational Checklist,” lists numerous safety requirements including fire extinguishers, grounding the drill rig, watching for electrical lines, etc. However, there is *nothing* on the safety requirements for drilling in an area contaminated with UXO. Also, page 6-14 references setting three or four steel well guards in concrete 2-ft. into the ground around each well. But, again, there is no mention of having UXO safety support for this intrusive operation.

f. Sections 6.5 and 6.6 relate, respectively, to “Soil Sampling” and “Sediment Sampling.” They contain no information on or references to specific UXO safety procedures for performing these two intrusive operations.

#### **D. Timetable and Budget Concerns**

A major STV concern with the Army’s prior POLA request was that the indefinite postponement of decommissioning and decontamination at JPG is inimical rather than necessary to the conduct of effective decommissioning operations. The whole purpose of 10 C.F.R. § 40.42 is **timely** decommissioning and decontamination. In particular, the NRC said in proposing the rule in 1993:

The lack of definitive criteria as to when licensees shall commence and complete decommissioning their facilities has resulted in instances where the Commission has had to issue orders to establish schedules for timely decommissioning. Because timeliness in decommissioning is a generic issue, the Commission is proposing to amend its regulations to clearly delineate the licensee's responsibility for timely decommissioning. **The proposed rule would provide the needed regulatory basis for compelling decommissioning in a timely manner. In addition, the proposed rule would place a limit on the time permitted to decontaminate and decommission and place the burden of proof directly on**

**the licensee to demonstrate that a longer period of time is required for completing decommissioning.**

*See* 58 Fed. Reg. at 4100 (emphasis added).

Here, the alternate schedule being proposed fails to “place a limit on the time permitted to decontaminate and decommission” the site. Instead, it simply extends the time for submission of a DP by five years following approval of the current POLA request. In effect, the current five-year POLA request appears to be no more than the first installment of the indefinite POLA with five year renewals previously proposed but recently withdrawn by the Army. The current proposal also fails to “place the burden of proof directly on the licensee to demonstrate that a longer period of time is required for completing decommissioning.” Instead, it effectively places the burden on STV (or any other concerned group in the future) to demonstrate that a shorter, definite period is required. This effectively turns the Timely Decommissioning Rule on its head and creates precisely the type of situation which the rule was adopted to correct and prevent: the indefinite postponement of the decommissioning and decontamination of licensed sites. And, it does so at an SDMP site.

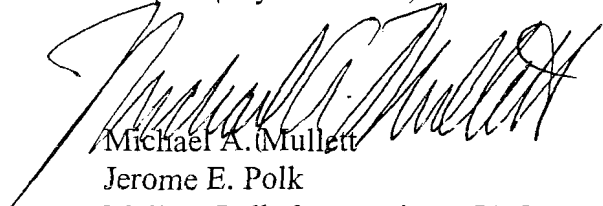
The indefiniteness of the Army’s alternate schedule is compounded by the vagueness of its funding. All the Army says in its May 25 letter to the NRC Staff is, “All actions under the plan are subject to funding of course.” There is no specific budget for the overall plan, its principal components, or the individual years in the five-year implementation period. There is no formally expressed or executed statement of intention on the part of an Army official with the authority to approve or even to request the necessary funds. This effectively turns the relationship between the NRC as regulator and the Army as licensee on its head, making the Army the ultimate authority by virtue of its budgeting decisions and funding requests as to

whether and when the JPG site is characterized, decommissioned and decontaminated in accordance with NRC regulations. This inverted relationship promises nothing other than continuation of the pattern of repeated delays and changes in Army plans which has characterized the past ten years and recently resulted in the resulting unacceptable situation with respect to JPG decommissioning and decontamination being referred to the Commission for its consideration.

#### **IV. CONCLUSION**

STV requests that the Commission and the Army take notice of STV's comments and modify the proposed FSP, HASP and alternate decommissioning schedule and budget commitment accordingly. Otherwise, STV will have no alternative but to request a hearing to present its multiple and substantial concerns with the Army's current POLA request to the NRC and take such other actions as may be available to it to achieve meaningful progress in the near-term on the decommissioning and decontamination of the JPG site.

Respectfully submitted,

A large, stylized handwritten signature in black ink, appearing to read "Michael A. Mullett".

Michael A. Mullett

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of  
  
U.S.ARMY  
  
(Jefferson Proving Ground Site)

Docket No. 40-8838-MLA  
  
SUB-1435  
  
July 27, 2005

**CERTIFICATE OF SERVICE**

I hereby certify that copies of the foregoing Comments have been served this 27<sup>th</sup> day of July, 2005, upon the following persons by electronic mail (where indicated) and by U.S. Mail, first class postage prepaid:

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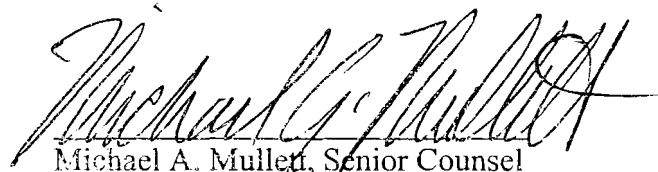
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A handwritten signature in black ink, appearing to read "Michael A. Mullett", is written over a horizontal line.

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*Jerome E. Polk, Lead Counsel*

July 27, 2005

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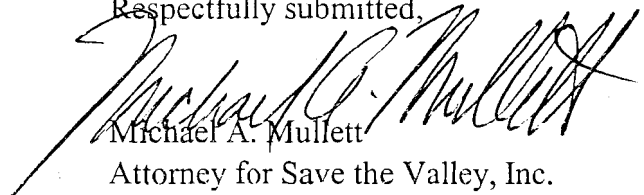
Re: Comments by Save the Valley, Inc. re Request for Alternate Decommissioning Schedule  
In the Matter of the U.S. Army (Jefferson Proving Ground Site), Docket No. 40-8838-  
MLA

Dear Dr. McLaughlin:

In response to the Nuclear Regulatory Commission's June 27, 2005 Federal Register Notice, enclosed please find the Comments by Save the Valley, Inc. re Request for Alternate Decommissioning Schedule filed by the U.S. Army with respect to the Jefferson Proving Ground Site in Docket No. 40-8838-MLA.

Thank you for the attention to Save the Valley's Comments from you and your associates.

Respectfully submitted,

  
Michael A. Mullett  
Attorney for Save the Valley, Inc.

cc: Service List – Docket No. 40-8838-MLA