

December 17, 2002 (11:29AM)

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judges:
Alan S. Rosenthal, Presiding Officer
Thomas D. Murphy, Special Assistant

In the Matter of

U.S.ARMY

(Jefferson Proving Ground Site)

Docket No. 40-8838-MLA

ASLBP No. 00-776-04-MLA

December 16, 2002

**REQUEST FOR HEARING AND COMMENTS ON REVISED
DECOMMISSIONING PLAN BY SAVE THE VALLEY, INC.**

On November 14, 2002 the Nuclear Regulatory Commission ("NRC") published in the Federal Register notice of consideration of the license amendment request¹ submitted by the U.S. Army for its Jefferson Proving Ground facility near Madison, Indiana, and of the opportunity for providing comments and requesting a hearing. 67 Fed. Reg. 220 In accordance with the this Federal Register Notice, and pursuant to 10 C.F.R. Part 2, Subpart L and 10 CFR 20.1405, Save the Valley, Inc. ("STV") respectfully submits its Request for Hearing and Comments on Revised Decommissioning Plan.

I. PROCEDURAL HISTORY AND FACTS

A. Procedural History and Facts of the Case

In December, 1999, the Nuclear Regulatory Commission published a notice of opportunity for hearing in connection with the U.S. Army's application for an amendment to its

¹See U.S. Department of the Army Soldier and Biological Chemical Compound, Decommissioning Plan for License SUB-1435, Jefferson Proving Ground, Madison, Indiana, June 2002 [hereinafter Revised LTP].

materials license (SUB-1435) that would authorize the decommissioning of its Jefferson Proving Ground (JPG) site located near Madison, Indiana. 64 Fed. Reg. 70294 (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 subsequent to 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 proposal 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 for request of 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 LTP. In the Revised LTP, the Army identifies 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 is estimated to range from \$268,286 to \$349,429 (see Table 7-1). The Army has proposed, however, to do no remediation or monitoring and continues to rely solely on institutional controls. As a result, the Revised LTP does not resolve the basic concerns previously expressed by STV regarding the Army's earlier plans.

The NRC Staff reported that it had accepted the Army's most recent LTP, together with the environmental report that was submitted by the Army in connection with that plan, in an October 17, 2002 memorandum. This memorandum also reported that the Revised LTP will receive a full technical review that is projected to require two full years for completion.

On November 14, 2002, the NRC Staff published in the Federal Register notice of consideration of amendment request for the U.S. Army's Jefferson Proving Ground facility at Madison, Indiana, and opportunity for providing comments and requesting a hearing. 67 Fed. Reg. 220.

STV recognizes that a comparison of this latest LTP with the previous two iterations would lead a reasonable person – and has led STV – to conclude that it is significantly and materially different from the earlier submissions. This conclusion is buttressed by the fact that the Army's Revised LTP has been accepted by the NRC Staff for a full technical review, which means that it must be materially different from the 2001 LTP rejected by the Staff. However, STV submits that the filing of the Revised LTP does not change the nature of the proceeding or create a new one and that the procedural framework established in LBP-01-32 still applies. Consequently, STV submits its Comments and Request for Hearing within that procedural framework.

II. INTEREST OF THE INTERVENOR

A. STV has standing because it already has met the requirements for and been found to have standing earlier in this docket.

The genesis of this proceeding, Docket No. 40-8838, was the Commission's publication of notice of hearing (64 Fed. Reg. 70294, December 16, 1999) in connection with the Army's application for an amendment to its material license (SUB-1435) that would authorize the decommissioning of its Jefferson Proving Grounds Site located in Madison, Indiana. In response to that notice, STV filed a timely hearing request which was "granted in LBP-00-9, 51 NRC 159 (2000) 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-01-32, at 2-3.

Although the Army has submitted a new LTP, its goal and purpose is fundamentally and essentially the same as the first LTP it filed in this proceeding – amending its material license (SUB-1435) and decommissioning, subject to conditions, related areas of the Jefferson Proving Ground. In addition, although the Army's LTP has undergone significant revision, the basic nature of this proceeding and its subject matter have not changed.

Further, in the Memorandum and Order Granting Request to Put Hearing into Abeyance issued November 7, 2001, the Presiding Officer found that STV need not again plead its standing for the purposes of granting this Hearing Request. Id., at 9. Specifically, the Presiding Officer stated, "I can perceive no good reason for putting STV to the burden, light as it may turn out to be, of having to reestablish its standing to question an Army decommissioning plan (no matter how denominated) for the JPG site." Id.

Therefore, STV has standing with respect to a hearing on the Army's Revised LTP because STV has already met the requirements of and been found to have standing with respect to the Army's first decommissioning proposal and the ongoing subject matter of this docket..

B. Save The Valley has an interest in this proceeding.

STV was incorporated in 1974 as a nonprofit environmental organization and is 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.

Between 1984 and 1994, the Army engaged in activities at the Jefferson Proving Ground that produced approximately 220,000 pounds of depleted uranium (DU) projectiles and fragments at that site. The JPG site is located in Jefferson County, Indiana, which has a population of approximately 31,705 people. See Revised LTP, at 3-1 & 2. Madison, Indiana is the nearest population center and has a population of 12,004 people, or approximately one-third of the Jefferson County population. Id. There are approximately 85,782 people living in the surrounding counties covering a 15 mile radius of the DU area. Id.

Public water from a municipal system, or deep wells, is used by nearby communities or individuals. Id. 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. Id. The Ohio River is located 8 miles south of the site. Id.

Members of STV live primarily on property or in communities near the Jefferson Proving Ground. Some of these members live on property that is traversed by Big Creek downstream from the JPG. Other STV members hold property interests in land 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. All 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 and/or termination.

C. STV's request for a hearing is timely.

Pursuant to 10 CFR § 2.1205(a), "any person whose interest may be affected by a proceeding for the grant, transfer, renewal, or licensee-initiated amendment of a license subject to this subpart may file a request for a hearing." When a non-applicant requests such a hearing, the request must be filed within thirty days from the agency's publication in the Federal Register of a notice referring or relating to a licensing action. 10 CFR § 2.1205(d). In computing any period of time, the day of the act, event, or default after which the designated period of time begins to run is not included but the last day of the period being computed is included unless it is a Saturday, Sunday, or legal holiday, in which case the period runs until the end of the next day which is neither a Saturday, Sunday, nor holiday. See 10 CFR § 2.710.

Documents are filed with the Office of the Secretary in adjudications subject to subpart L either: (1) By delivery to the Rulemakings and Adjudications Staff of the Office of the Secretary at One White Flint North, 11555 Rockville Pike, Rockville, MD 20852; or (2) By mail, telegram or facsimile addressed to the Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Rulemakings and Adjudications Staff. Filing by mail, telegram or facsimile is complete as of the time of deposit in the mail, with the telegraph company, or upon

facsimile transmission. Filing by other means is complete as of the time of delivery to the Rulemakings and Adjudications Staff of the Office of the Secretary. See 10 CFR 2.1203(b).

The NRC published notice of opportunity for hearing on November 14, 2002. Thirty days from the publication date would be December 14, 2002, which is a Saturday, and therefore the deadline for requesting a hearing would be Monday, December 16, 2002. STV's request for hearing filed by mail (and e-mail) on Monday, December 16, 2002 is therefore timely.

III. STV's COMMENTS AND AREAS OF CONCERN PURSUANT TO 10 CFR § 2.1250: THE LTP IS INADEQUATE AND DEFICIENT IN MEETING CERTAIN OF THE REQUIREMENTS OF 10 CFR § 20.1403 AND SITE CHARACTERIZATION IS INADEQUATE TO VERIFY COMPLIANCE WITH ANY OF THE REQUIREMENTS OF 10 CFR § 20.1403.

In an informal proceeding under § 2.1205(e), "areas of concern" constitute the general subject matter of issues that a petitioner seeks to litigate. Sequoyah Fuels Corporation, 50 N.R.C. 386, 395 (1999). These statements of concern must be sufficient to establish that the issues the petitioner seeks to raise fall generally within the range of matters properly subject to challenge in the proceeding. See NRC Statement of Considerations for 10 C.F.R. Part 2: Informal Hearing Procedures for Materials Licensing Adjudications, 54 Fed. Reg. 8269, 8272 (1989).

NRC regulations state that termination of a materials license, such as the Army's license at JPG, subject to restricted conditions is acceptable only if the LTP meets five criteria.

Specifically, to meet the required standards, the Revised LTP must do all of the following:

1. Demonstrate further reductions in residual radioactivity at JPG necessary to comply with the rules would result in net public or environmental harm or were not being made because the residual levels are "As Low As Reasonably Achievable" ("ALARA"), i.e., that further reductions in residual radioactivity are not technically achievable, would be prohibitively expensive, or would result in net public or environmental harm;
2. Demonstrate it has made provisions for legally enforceable institutional controls that provide reasonable assurance that the "total effective dose equivalent" ("TEDE") from residual radioactivity distinguishable from

background to the average member of the critical group will not exceed 25 mrem (0.25 mSv) per year;

3. Provide sufficient financial assurance to enable an independent third party to assume and carry out responsibilities for any necessary control and maintenance of the site;

4. Submit an LTP to the Commission indicating the Army's intent to decommission in accordance with the rules and documenting in the LTP how the advice of individuals and institutions in the community who might be affected by the decommissioning have been sought and incorporated, as appropriate, following analysis of that advice; and

5. Demonstrate that residual radioactivity at JPG has been reduced so that if the institutional controls fail, there is reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group would not exceed certain standards and is as low as reasonably achievable.

See 10 C.F.R. § 20.1403. STV's fundamental concern is that the Revised LTP submitted by the Army fails to meet certain of these key criteria necessary for it to be acceptable. Furthermore, STV is concerned that the Revised LTP inadequately characterizes the site and the nature of the risks it poses. STV believes that the Army's characterization is so flawed, incomplete and inaccurate that it is impossible to verify that the Revised LTP meets any of the criteria of 10 C.F.R. § 20.1403.

The Army considered two alternatives for license termination. The first was decontamination to allow unrestricted release in accordance with the requirements of 10 CFR § 20.1402. The second was termination of the license with restrictions according to the requirements of 10 CFR § 20.1403. The Army has proposed termination of its license without decontamination or monitoring and relies exclusively on institutional controls to satisfy the requirements of 10 CFR § 20.1403. The Army's choice to rely solely on institutional controls, however, fails to meet the necessary criteria.

A. **The Army fails to meet the criteria of 10 C.F.R. § 20.1403.**

1. **The Revised LTP fails to satisfy the ALARA standard.**

The Revised LTP relies exclusively on institutional controls and involves no remediation or monitoring. The Army claims that ALARA analysis demonstrates that terminating the JPG license with institutional restrictions but no remediation would be consistent with the ALARA requirement of 20.1403(a). Revised LTP, at 7-6. The Army supports this claim by arguing that the cost of detecting and removing UXO and DU from the DU Impact Area to meet unrestricted release requirements is greater than the benefit that would accrue from detection and removal actions. Revised LTP, at 6-2 (emphasis added). The Army, however, misses the mark with its ALARA analysis. ALARA is not a mere cost benefit test and its application is not limited only to comparing the Army's plan for restricted release to unrestricted release.

"As low as is reasonably achievable," or "ALARA," is defined as:

making every reasonable effort to maintain exposures to radiation as far below the dose limits in this part as is practical consistent with the purpose for which the licensed activity is undertaken, taking into account the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed materials in the public interest.

See 10 CFR § 20.1003. This standard requires both an evaluation of considerations in addition to economic costs and benefits and a comparison of the Army's proposed plan to other restricted release alternatives which include partial remediation and continued monitoring in addition to institutional controls.

The Army also claims that in addition to the ALARA analysis it performed a "net public or environmental harm" analysis in accordance with the NMSS Decommissioning SRP (NRC 2000). See Revised LTP, at 7-7. The Army claims this latter analysis indicates that, for most

situations, the benefits are less than the net public or environmental harm associated with remediation and monitoring. Id. However, the Army's analysis significantly overstates the costs and difficulties associated with remediation and monitoring of the DU area.

For example, during the period of DU ordnance testing, the Army routinely conducted sweeps of the DU Impact Area to retrieve DU rounds. See Revised LTP, at 4-1. Since the account contained in the Revised LTP does not indicate exactly when recovery sweeps were done, it is difficult to estimate how much retrievable DU munitions remain on the ground's surface. The Army is also less than clear with respect to the purpose(s) for which the prior recovery sweeps were performed. However, given that DU in substantial amounts was previously recovered for some purpose, it follows that DU rounds should be recoverable subsequently to determine precisely their composition and radiological and toxicological properties, as well as for remediation.

The Army also conducted surveys of the DU impact area without incident after it had stopped ordnance testing. With regard to those surveys, the Army stated:

It is important to note that **no areas** or surfaces within the 1,300-acre (5.3-km²) JPG DU Impact Area **were inaccessible** for this survey. Due to the potential presence of UXO, suitable precautions were taken in the field to prevent the occurrence of any accidents involving such UXO. The only other hazard present, which did not hinder the conduct of the survey, was the presence of sometimes rugged and steep terrain.

Revised LTP, at 4-10 (emphasis added).

The Army's contention now that such retrieval would be impossible is belied by its own characterization survey. See Revised LTP, § 4.2.2. The Army's own description of its sampling program indicated that "no areas or surfaces within the 1,300-acre DU Impact Area were inaccessible for this survey." The Army further describes how it sampled soil beneath DU imbedded rounds, taking "suitable precautions" to prevent the occurrence of any accidents

involving UXO at the site. Inasmuch as it was able to recover DU in the past without incurring harm from the UXO, the Army should be able to conduct similar retrieval actions in the future for testing and remediation.

The Army's ALARA analysis is also incomplete and inaccurate because it only looked at the costs and benefits of mitigating and monitoring radiological contamination and not the other toxic effects of DU. For example, DU is a heavy metal. The Army may be required by state or federal agencies other than the NRC to engage in mitigation and monitoring activities relative to these other toxic effects. If so, the incremental costs of also mitigating and monitoring radiological effects in a combined program could be substantially less than the costs of the stand-alone effort assumed by the Army.

In sum, STV submits that a proper ALARA analysis would show that the JPG LTP should include at least some remediation and some monitoring for at least a period of years, neither of which are included in the Revised LTP.

2. The LTP does not provide adequate institutional controls.

Much of the Army's rationale supporting the Revised LTP seems to be predicated on the assumption that "institutional controls" will be enforceable for a period of time which, given the half-life of depleted uranium, can best be described as infinite. The Army's proposed institutional controls include fences, road barricades, warning signs around the facility, continued Army ownership of land, various land use restrictions, and the threat of prosecution for trespassing on federal land. See Revised LTP, at 16-1. These institutional controls fall short of reducing risks to public health and the environment even over the near term, let alone for the entire length of time for which they will be needed.

For example, the Army has already found migration of DU into the soil, the ground water, and native flora. Such contamination pays no heed to property lines or deed restrictions on land use. Chain link fences, road barricades and warning signs will not prevent air, soil, water or biotics from migrating outside the current DU impact area. Despite physical barriers, signs, and the threat of federal prosecution for trespassing, institutional controls already in place, it is common knowledge that hunters, hikers and others still enter areas currently restricted by the Army.

Other institutional controls, such as water use restrictions on the JPG site, also fall short of addressing the problem. Residents near the JPG boundaries utilize wells for their drinking water and livestock. Onsite water use restrictions will have no impact on DU migration into off-site water sources.

Furthermore, the Army does not intend to implement an environmental monitoring and control program after its license is terminated even though it intends continue to hold title to the land. See Revised LTP, at 11-1. Little is known in the scientific literature regarding environmental weathering and migration of DU left in place. Without monitoring, it will be impossible to assess the effectiveness of the institutional controls over time.

3. The LTP does not provide adequate financial assurance, only a commitment to request adequate financial resources in the future.

The Army claims that, as a federal government entity, it will satisfy the financial assurance requirement with a Statement of Intent. See Revised LTP, at 15-1. That statement of intent would indicate that the Commanding General of SBCCOM has the authority and responsibility to request funds for implementation and maintenance of institutional controls to ensure compliance with restricted release criteria as specified in 10 CFR 20.1403 (b). Id. Merely having the authority and responsibility to “request funds” is not the same as making those funds

available or even having the authority to guarantee the availability of funding. Given the current fiscal condition of the federal government and the current political environment, the Commanding General of SBCCOM cannot guarantee the necessary financial resources in the short term, let alone 20 or 30 years from now.

4. The Army has not responded to prior public criticisms of its decommissioning plan by proposing solutions to problems presented, but has instead offered only additional or expanded explanations for why problems will not be solved or alleviated.

The Army claims to have responded to public comment and concern by presenting an expanded discussion and analysis of exposure scenarios, providing an expanded discussion of institutional controls, including the enforcement of access controls by the U.S. Army or permitted federal agencies, and providing an expanded discussion of the license termination alternatives. Expanding discussion to further rationalize previously made choices or to describe additional alternatives that were not chosen is not the same as responding to public concerns by providing, in whole or in part, solutions to those concerns. Rather than squarely meeting the Army's obligation to address the public's input and concerns, the Revised LTP simply offers additional or expanded explanations for ignoring that input and those concerns.

5. The revised LTP does not protect the public from residual radioactivity if institutional controls fail

A licensee is also required to submit information with respect to what happens if the institutional controls fail. The Revised LTP is insufficient in this respect because it fails to adequately address the very real risk that proposed institutional controls will not be effective. For example, to local residents it is generally known that trespass into the JPG areas (either intentional or inadvertent) is relatively common. Such trespass is often not discovered while it occurs, although signs of trespass are often discovered later. Further, if past experience is used

as an indicator, it is unlikely that local officials will aggressively pursue enforcement of trespass penalties related to the JPG site.

This failure is troubling for a number of reasons. First, the large amount of unexploded ordnance (UXO) places every trespasser at risk for stepping on shallow imbedded ordnance and detonating it. This phenomenon has the potential to result in serious bodily injury to trespassers who are unfamiliar with the dangers posed by the UXO. Another reason that potential future trespass is troubling is because trespassers could pick up DU rounds or fragments and remove them from the area. This certainly is a possibility, given curiosity seekers' proclivities for both trespass and picking up what is not theirs and transporting it away. If and when this occurs at the JPG site in the future, DU contamination could easily be spread far away from the site and have the potential to impart radioactivity to both the trespassers and others who later come into contact or proximity with the DU rounds or fragments.

B. The Army's characterization of the site is flawed, inadequate and incomplete, making it impossible to verify that the Revised LTP meets the necessary criteria for approval.

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 pursuant to 10 C.F.R. § 20.1403 will be equally erroneous and the source term model will be invalid.

The Army's Revised LTP, as well as its related choice of the JPG Conceptual Site Model (CSM), are flawed, inaccurate and incomplete. Specifically, the Army fails to present verifiable data regarding dose modeling or the effects on exposure pathways of meteorological, geological,

animal, and human features of JPG and the surrounding area. This failure results in an incomplete LTP that cannot be verified as meeting any of the criteria necessary for approval.

1. The Army's Dose Modeling is inaccurate and incomplete.

Licensees requesting decommissioning must submit estimates of the potential future dose that could be caused by residual radioactivity remaining at the site after decommissioning activities are undertaken. See NMSS Decommissioning Program, Standard Review Plan 16.0: Restricted Use/Alternate Criteria (NUREG-1727), at 5.1. Dose limits are designed to allow the licensee and the NRC to take site-specific information into account in determining acceptable concentrations of residual radioactivity at the site. Id.

The Army's Dose Modeling is flawed because its conclusion that the TEDE limit will not exceed 25 mrem/yr is based on a generic rather than a site-specific model. Furthermore, the assumptions underlying its generic model are flawed when applied to JPG. For example, the Army assumes an average distribution of DU rather than concentrated pockets of the material. This assumption will generate concentration numbers in the model which are lower than those actually occurring. The dose measurement calculation also is flawed with respect to estimated doses for on-site recreationists, hunters, and fishermen as well as water users downstream of the JPG site. STV is also concerned that the Army's dose model is strictly hypothetical with respect to changes over time.

Further, it is apparent that the DU at JPG has not been tested for impurities, including the amounts of Plutonium, U-236, Neptunium, Americium, and other transuranics that it may contain. In order to assess fully the possible exposure risks to the environment and human health, the Army should know the exact composition of the JPG DU in terms of its constituent

radioactive elements. The Army has yet to do such an analysis and without doing so, it cannot perform complete and accurate dose modeling.

In addition, the Army has provided insufficient data on the migration of DU contamination from the DU impact area into surrounding environmental media, including groundwater, surface water, air soil, and biota (both plant and animal). While some data are provided characterizing the DU impact area itself, very little data has been developed regarding the extent of DU contamination and migration outside the impact area. Moreover, the Army's characterization of the surrounding area for purposes of defining exposure pathways includes some startling inaccuracies.

For example, the Army identifies Bedford as the nearest downstream population center with a public water supply which could be affected by off-site migration of DU contamination. However, there are at least two public water supply systems that are closer to JPG than Bedford and which obtain their water from the Muscatatuck River downstream from the point at which Big Creek joins the river. Those two systems are Stucker Fork Water Utility, serving western Jefferson County and eastern Scott County, as well as the Scottsburg Water Department, which serves eleven thousand (11, 000) customers in Scott County.

2. The Army's analysis is also inaccurate and incomplete with respect to key phenomena affecting exposure pathways, such as Indiana's weather, geology and hydrology.

The Revised LTP is inaccurate or incomplete with respect to weather phenomena in Indiana. For example, it does not consider tornadoes, which are common in Indiana, and their effect on soil and vegetation merely because the area lacks buildings which could be affected. In addition, the LTP is wrong – again, startlingly so – with regard to the direction of prevailing winds at the JPG site.

The Army's analysis of geological conditions is also questionable. STV believes the Army has either overlooked or ignored the impacts of significant unconsolidated glacial deposits and karst in the JPG area. Located under the topsoil, the relatively porous layers of glacial till material allow water and other substances to flow readily through the ground. Karst refers to regions of limestone or other soluble rocks, where drainage has been largely diverted into subterranean routes. The topography of these areas is dominated by sinkholes, sinking streams, large springs, and underground caves. Groundwater will often travel through such formations at a faster rate and by more unpredictable routes than through other formations. In addition, the area has been subject to test-firing of exploding ordinance which may have exacerbated the natural fractures. The presence of such formations generally requires data and modeling that the Army has either not performed or not made available.

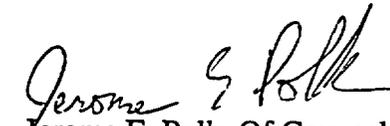
Although the Army observes that the JPG area has an expanding beaver population which is creating new water impoundments, the Army has failed to consider the impacts such impoundments can have on the water table or on water flows.

In some instances the Army has relied solely on state databases, such as those regarding adjacent wells, which are often incomplete and inaccurate. The Army concedes the existence of domestic and stock groundwater wells in close proximity to JPG's western boundary, down-gradient from the DU area, but states that "it is unknown if these wells currently are operational." See Revised LTP, at p. 3-21. These wells are, in fact, currently in use for human consumption and present a real potential of human DU contamination given the ability of DU to migrate through groundwater.

IV. CONCLUSION

For the foregoing reasons, STV requests that the Commission take notice of STV's intervenor status and schedule a hearing to address its concerns as outlined in this document. In view of the fact that the NRC staff's technical review will not be complete for two years, STV has concurrently filed a motion requesting that the requested hearing be deferred until the technical review is complete. Should this motion be granted, STV further requests leave to supplement its areas of concern prior to the hearing should additional concerns be discovered after more extensive review.

Respectfully submitted,



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CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing Motion have been served this 12th day of December, 2002 upon the following persons by electronic mail and by U.S. Mail, first class postage prepaid.

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