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Nuclear Watch of New Mexico (NWNM) respectfully submits these questions and comments to the National Nuclear Security Administration’s Sandia Site Office concerning on Environmental Assessment (EA) for the proposed consolidation of Neutron Generator Tritium Target Loading (NTTL) production at Sandia National Laboratories/New Mexico (SNL/NM) DOE/EA-1532, May 11, 2005, Predecisional Draft (hereinafter named “EA”). Any quotes from the EA in these comments are italicized. Each and every comment and question by us should, in our view, be directly responded to in the Final EA. NWNM is a public interest nonprofit organization with specific interests in virtually all issues pertaining to the Los Alamos National Laboratory (LANL), SNL/NM, the Waste Isolation Pilot Project (WIPP), and generally for the nuclear weapons complex as well.

General Comments

While noting that the address for mailing comments for the EA was in the NNSA’s press release on the subject, that contact information should have been in the body of the EA as well. Both documents should have provided a fax number and e-mail address to send comments to as well.

NEPA documents themselves (in this case this EA) and announcements of those documents should make clear that the listed reference documents are available upon request from the relevant DOE and/or NNSA office, with a specific contact person responsible for expediting requests.

This EA should give the conversion rate of curies (Ci) of tritium to grams.

This EA seems generally vague, perhaps intentionally so. The number of target tubes to be loaded is not given. From existing public record we can deduce that it is in the 2,000 to 3,000 units range. We know, for example, that under expanded nuclear weapons operations “[a]pproximately 2,000 neutron generators and associated neutron and switch tubes would be manufactured per year by 2008” at the Neutron Generator Production Facility (NGPF). Sandia National Laboratories (SNL)/New Mexico Site-Wide Environmental Impact Statement (SWEIS), DOE, 1999, Vol. 1, p. 3-16. The 1999 Los Alamos SWEIS states “LANL would use its thin film loading capability (involving chemically bonding tritium to a metallic surface) for tritium loading of neutron target tubes, processing approximately 3,000 units per year using small quantities of tritium.” Site-Wide Environmental Impact Statement for Continued Operations at the Los Alamos National Laboratory (LANL), DOE, January 1999, Vol. 1, p. 3-18. The final EA should give production rates of neutron target tube loading at the Neutron Generator Production Facility (NGPF).
As noted above, the SNL SWEIS refers to the year 2008. This EA states “preliminary studies indicate that one production loader operating three times a week in a 6-day week may be sufficient to meet production and development demands until at least 2008.” We ask that the final EA explain the significance of 2008.

All DOE facilities are now required to formulate by the end of FY 2006 a new Design Basis Threat analysis in order to increase the chances of successfully thwarting determined professional attackers. There is no mention of a DBT in this EA. What is the status of the NGPF’s Design Basis Threat? Describe the risks posed by an accident or by a terrorist event at or near SNL/NM Building 870. Describe in detail (including the use of GIS mapping) the areas that could be affected by a tritium airborne release due to accident or terrorist attack and the amounts of tritium potentially released. Please incorporate DBT analysis into this NEPA process. If not incorporated in whole or in part, please fully justify.

The EA’s premise that neutron target tube loading can be relocated to SNL hinges on the fact that the threshold limit for Hazard Category (HC)-3 nuclear facility is now 16,000 Ci, whereas it was 1,000 Ci. First, the EA does not specify that that threshold limit is for tritium only, which we believe to be the case, but please confirm. Also, please give the HC-3 threshold limits for other radioactive materials. Secondly, we note apparent self-interest in the raising of the tritium threshold limit in that, as best as we can trace it, it was a “Tritium Focus Group” of DOE tritium professionals that initiated it. Finally, please restate or elaborate upon the fact that the NGPF will never have greater than 16,000 Ci of tritium. The EA says, “During times when there are multiple sets of tritium gas standards in Building 870, the total tritium inventory may reach 12,000 Ci, but will not reach 16,000 Ci.” EA, p. 13. Earlier, the EA discusses at some length the fact that the tritium capture system (TCS) “would be replaced prior to the amount of tritium on the surfaces reaching 3,000 Ci.” It is also stated “An analytical approach is being developed to assay the molecular sieves” of the TCS. EA, p. 5. This pretty clearly implies that the tritium content of the six molecular sieves cannot at this time be determined. Therefore, it is perhaps not unreasonable for us to add up a possible 12,000 Ci of tritium inventory, 3,000 Ci on the interior surfaces of the TCS, and an unknown amount in the six molecular sieves, to arrive at an amount greater than the 16,000 Ci tritium HC-3 threshold limit. Please demonstrate how this is not possible.

This EA has no mention of costs. What is the total cost of relocating neutron target tube loading to SNL/NM? How much has been spent to date on neutron target tube loading at LANL’s Weapons Engineering Tritium Facility? Also, please clarify which NNSA budget category captures neutron target tube loading.

Neutron target tube loading is currently being performed at LANL’s Tritium Science Fabrication Facility (TSFF). Will TSFF be decommissioned and demolished? What NEPA document, if any, will address that? As you likely know, it has been announced that the NNSA Los Alamos Site Office is going to prepare a new SWEIS for LANL. Will that SWEIS consider implications of relocating neutron target tube loading to SNL, such as the decommissioning of TSFF?

The final EA needs to fully consider all Defense Nuclear Facilities Safety Board (DNFSB) concerns regarding High Energy Particulate Arrestors (HEPA) filters, active vs. passive confinement systems, and Leak Path Factors. The DNFSB’s concerns regarding the design and installation of both active and passive confinement systems in DOE nuclear facilities should be addressed. Please explain whether HEPA filters capture gaseous tritium to begin with.

The DNFSB should be consulted with in this National Environmental Policy Act process as “a cooperating agency” in risk analysis and facility design to mitigate risk.

Please describe in detail the design features of the proposed consolidation intended to prevent and extinguish fires, including how these systems will operate successfully while not deteriorating or otherwise adversely affecting ventilation systems used to contain tritium.
Please describe in detail the lightning protection system and the back-up power generating system and how these systems will operate successfully while protecting the ventilation systems used to contain tritium and other. We note how the DNFSB has generally found lightning protection to be inadequate at LANL.

Describe how the DOE will prepare local and state emergency responders to handle a tritium accident that results in an off-site release.

Specific Comments

1.0 PURPOSE AND NEED FOR AGENCY ACTION

The United States (U.S.) Department of Energy/National Nuclear Security Administration (DOE/NNSA) has been streamlining and consolidating the Nuclear Weapons Complex for many years to be more efficient and meet the production requirements of the Department of Defense.

The nuclear weapons complex’s production requirements are uncertain and a matter of congressional debate now. For example, recently from the House Appropriations Committee:

The budget request for direct stockpile support by weapon tail number is only ten percent of the total Weapons Activities request. Too much of the remaining 90 percent of the budget request supports a residual Cold War capacity within the weapons complex which is not needed for the long term sustainable stockpile... The Committee expects a rebaselined life extension program plan by weapon type, a Reliable Replacement Warhead program plan, and a Warhead Dismantlement plan that, taken together, will provide reliable nuclear deterrence with a post-2025 stockpile significantly smaller that the 2012 Nuclear Stockpile levels committed to in the Moscow Treaty and specified in the revised Nuclear Stockpile Plan.


Also:

The Committee expects a rebaselined life extension program plan by weapon type, a Reliable Replacement Warhead program plan, and a Warhead Dismantlement plan that, taken together, will provide reliable nuclear deterrence with a post-2025 stockpile significantly smaller that the 2012 Nuclear Stockpile levels committed to in the Moscow Treaty and specified in the revised Nuclear Stockpile Plan. The current Life Extension Plans will be scoped back to lower levels and the resources will be redeployed to support the Sustainable Stockpile Initiative. Id, p. 131.

So it’s fine for the NNSA to portray, as it commonly does, that DoD is its client, one with rigorous production demands. However, it is becoming increasingly evident that Congress is beginning to implement a vision of a much smaller stockpile with a yet more consolidated nuclear weapons complex required to support it. This likely falls on deaf ears, and is certainly not a show stopper that will keep the NNSA from issuing its near inevitable Finding of No Significant Impact for this EA, but it needs to be said that today’s self-declared production rates stand a very good chance of being overturned by Congress in the coming years.

1.1.1 No Action Alternative Facility Modification

All efforts would be made to decontaminate keyboards, computers, monitors and circuit boards but in the event that this material could not be released by radiological personnel, then this material will be disposed of in an approved facility in Utah.

First, we presume that the facility in Utah is Envirocare. Please clarify. Are there any plans/discussions on ever sending that type of waste to Waste Consolidated Specialists in Andrews County, TX?
Secondly, the statement puzzles us. We were under the impression that the tritium itself was being handled in
glove boxes that were within a “tritium envelope.” Please explain how keyboards, etc., which are manned by
humans, could possibly become contaminated if and when the TCS is replaced.

… neutron tube (a miniature accelerator)… Please explain. We are technically curious.

… lasers are used in the facility (DOE 1999a). What for?

2.2 Proposed Action
Under the proposed action two production loaders would be relocated from TA-16 at LANL to Building 870, which is
part of the NGPF at SNL/NM.

We know that TA-16’s Weapons Engineering Tritium Facility (WETF) was never able to establish neutron target
loading, and instead that activity was performed at LANL’s TA-21 Tritium Science Fabrication Facility
(TSFF). Therefore, obviously TSFF had loaders, but does WETF have them installed?

2.2.1 Proposed Action Facility Modification
Supplied gases would be supplied in a bottle storage area…

Please describe how many more storage bottles will be added due to this EA. Also describe the safety features of
these storage bottles.

1.1 Regional Setting and Air Quality
NESHAP regulations stipulate that direct stack or diffuse monitoring is only required if a facility has the potential to
produce an effective dose equivalent (EDE) to the MEI of greater than 0.1 mrem per year. There are no facilities with
this potential and no stack monitoring is required at SNL/NM.

We find that improbable. For example, our colleagues at the Project on Government Oversight (POGO) recently
publicized a December 2004 Department of Energy (DOE) report which they say shows serious deficiencies in
protecting workers and the community from a nuclear release or accident at Sandia. According to POGO, the NNSA
Site Office” found numerous missing safety controls needed to protect the public at three of Sandia’s five nuclear
facilities. The report found that the safety deficiencies were so pervasive at two of the reactors that the safety anal-
ysis would have to be entirely “redone.”

According to an attachment to the review, “Assessment Form 1 for Functional Area SPRF/CX, [Sandia Pulse
Reactor Facility Critical Experiment]” Sandia had underestimated the radiological doses to the public due to a
radioactive plume, in the event of an accident, by a factor of five, by miscalculating the true distance to the pub-
lic. Sandia had improperly claimed that a golf course, riding stables, a clubhouse, and public access roads did not
involve the public. The NNSA review concluded otherwise.

POGO also referred to Defense Nuclear Facilities Safety Board report that noted that nuclear safety protections at
Sandia are inadequate. That report allegedly found that no safety class systems to protect the public were in place
to prevent a radioactive plume from escaping from the Auxiliary Hot Cell Facility.

Thus we view the EA’s statement with some suspicion, and hope to see it more fully explained in the final EA or
withdrawn.

Section 4.1.2. Air Emissions
Actual tritium emissions from the facility have been estimated at less than 15Ci/yr.
Please explain why the actual tritium emissions are estimated. Are there not some actual numbers for the actual amount of tritium released?

Questions

What percentage of tritium does TCS remove from tritium operation gases before exhausting to the atmosphere?

LANL’s Weapons Tritium Engineering Facility (WETF) at Technical Area (TA)-16 has been attempting to receive target tube loading operations for several years. How much was spent trying to make WETF ready for these operations? Is this a waste of taxpayer’s monies to now move the operations to SNL/NM?

Should the NTTL mission consolidated at SNL/NM, what missions are to be performed at the floor space that’s freed up at LANL’s Technical Area-16?

What are the construction and annual operating costs for the consolidation proposed for SNL/NM? Will it be fully designed and reviewed, addressing environmental concerns, prior to construction?

Is any research is planned for the development of new types of neutron tube targets?

Respectfully submitted,

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Jay Coghlan