

June 12, 2008  
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**Re: Citizen Action New Mexico Opposition to Approval for Revision 12 of the Sandia National Laboratories (SNL) Federal Facility Compliance Order (FFCO) Site Treatment Plan (STP) Compliance Plan Volume (CPV).**

Dear Dr. Hunter,

In reviewing Revision 12 to the SNL FFCO, Citizen Action New Mexico would like to call your attention to the requirement for SNL to include the “Yardholes” wastes in Revision 12. As discussed below and verified by the Department of Energy’s own documents, the 30 plus yardholes located at SNL contain mixed wastes regulated under the Resource Conservation and Recovery Act (RCRA) that are required to be included in Revision 12. To our knowledge, the mixed wastes in the yardholes have not been included in any SNL Revisions to the SNL FFCO. Citizen Action is in opposition to the approval of Revision 12 until such time as SNL has identified the additional mixed wastes in the yardholes and appropriately included them in Revision 12.

Citizen Action obtained information from a Freedom of Information Act Request (FOIA) request that the waste from numerous experiments with the reactor fuels had been disposed of in various areas known as “Yardholes” at SNL.

<http://www.radfreenm.org/pages/nr/041504.html> The yardholes were over 30 primitive holes dug in the ground; some were lined and some were unlined. One of the yardholes was a water filled hole under the Hot Cell Facility monorail at SNL and contained a spent fuel element from the Savannah River Site. SNL has kept secret from the public the types and amounts of the contents of the various yardholes. The yardholes contain nuclear materials and/or hazardous wastes that should be disposed of or regulated under the Resources Conservation and Recovery Act (RCRA), the Atomic Energy Act, Nuclear Regulatory Commission (NRC) regulations, or Department of Energy (DOE) Orders.

A “SNL Site Team Report on Spent Fuel,” October 1993 (“Yardholes report”), assessed vulnerabilities of the DOE storage of irradiated reactor fuel and other irradiated nuclear materials (RINM). The 1993 Yardholes report stated: “The vulnerability identified was the lack of approved Safety Analysis Reports.” The report identified the existence of the Yardholes at the location of the Sandia Pulse Reactors (19 yardholes) and the Hot Cell Facility (13 yardholes under the HCF Monorail) associated with the Annular Core Research Reactor (ACCR).

The Yardholes report, Appendix 1 C. Sandia Pulsed Reactor Facility states:

p.1 – “None of the reactor irradiated materials discussed below are classified.” (Emphasis supplied).

p. 3 – “... [A] status book is kept updated with the most current information including the date the storage activity took place, the name of the experiment, the dose rate along with the survey date and the hole involved.

p. 4 - Contamination: It is assumed that small amounts of contamination are present inside some of the holes due to the process of irradiation with the ACRR central cavity. Every experiment package removed from s storage hole is treated as potentially contaminated upon removal until surveyed and released by the Health Physics Technician.”

p. 4 – “One item of concern is the issue of classifying the Yardholes and the NOVA [North Vault] as nuclear facilities.”

p. 7 - "The other concern is the ultimate recovery and disposition of these nuclear materials, All of the materials are currently stored on site since there is no approved method of disposal.....There are various concerns associated with the long term storage of any radioactive material, specifically leachability of material, decay rates and potential corrosion of the containment packages due to environmental conditions."

The Yardholes report, Appendix 1 D. Hot Cell Facility, p. 2, identifies “hazardous materials such as cadmium, silver, lead, metallic sodium, etc.” These materials may constitute hazardous or mixed hazardous waste under RCRA.

The Yardholes report, Appendix 5 Tiger Team Findings, identified additional concerns:

“1. A/CF-04: Need for an air monitoring program to meet 40 CFR 61, Subpart H. Hot Cell Facility and ACRR are mentioned.”

“2. RAD/CF-01: Need for a program to monitor continuous and batch discharges of liquid and radiological effluents. Tech Area V is mentioned.”

“3. AX.02-01: Monitoring and disposal of hazardous and radioactive effluents. Hot Cell stack monitor is mentioned. Hot Cell, ACRR and SPR are mentioned.”

Other Tiger Team concerns involved: storage of fissile material, safety analyses for fissile material storage, posting of fissile material storage limits, emergency response procedures, criticality alarms, need for a review process responsive to safety needs and need for effective procedures for radiation protection.

On the basis of information about the yardholes that Citizen Action provided to the New Mexico Environment Department (NMED), in or about March 2006, NMED began an inquiry into the yardholes at Sandia National Laboratories.

<http://www.radfree.nm.org/pages/nr/121305.html> The concerns of NMED documented the storage of metal-bearing materials potentially regulated as hazardous or mixed waste under the Resources Conservation and Recovery Act (RCRA). The 1993 Yardholes report, according to NMED, listed “Metals that include cadmium, lithium, silver and sodium; other potentially reactive materials in storage in the below grade storage facilities were also documented.”

Rather than provide any information to the NMED, SNL sent a June 9, 2006 letter of reply that asserted that the materials were excluded from review under RCRA as source, special nuclear or by-product material as defined by the Atomic Energy Act. As I discuss below, the assertion that the wastes do not contain RCRA wastes are contradicted by Sandia documents. Additionally, SNL is required under the FFCO to reveal the types and amounts of mixed wastes in its STP, but has not done so.

SNL has not presented:

- what types of wastes are present in over 30 yardholes;
- the volume of those wastes;
- the containers for the wastes;
- the pathways for disposition of the wastes;
- how much of the wastes remain;
- whether the wastes are being added on an ongoing basis to the yardholes;
- whether new yardholes are being created;
- what releases of yardhole wastes there may have been to the environment.

Sandia's continued secrecy about the yardholes' wastes only serves Sandia to prevent public action for protection of the public health and safety interest and the environment. Sandia is required to furnish the information about the nature of the mixed wastes in the yardholes both to public organizations such as Citizen Action and the New Mexico Environment Department (NMED) for protection of the public health and environment from the dangerous nature of the wastes, the lack of monitoring for releases from the wastes, the potential for catastrophic criticality releases of fission materials, the leakage of the wastes to the groundwater, soil and air. The Tiger Team assessment found no air monitoring program or liquid effluent monitoring for the wastes at the HCF, ACRR and SPR.

Without clear knowledge about the character of the wastes in the yardholes, the NMED and the public are further prevented from seeking regulatory action or relief under RCRA, Nuclear Regulatory Commission regulations or under DOE Orders for the appropriate disposal pathways and timetable for removal or treatment for these mixed wastes.

The yardhole wastes are an issue that also has not been appropriately discussed in the SNL RCRA Part B permit process.

The Material Management Plan presents options for the disposal of the "excess materials" at SNL as being at the Nevada Test Site, WIPP, Envirocare, Idaho National Environmental and Engineering Laboratory (INEEL), Savannah River Site SRS), and Argonne National Laboratory West (ANL/W). Much uncertainty about the disposal pathway exists, however:

p.1- "Sandia is considered a small site in nuclear material management; however, while the inventory at Sandia may not be a large volume, there are a large number of unique items many of which have been irradiated, making SNL a very difficult site for material disposition."

p.3- "...[T]here is a sizeable quantity of excess radioactive materials with no defined use from historical operations."

DOE's assertion that hazardous materials (regulated under RCRA) were excluded is contradicted by "A Material Management and Disposition Plan for the Excess Materials at Sandia National Laboratories," July 2002, Document Number SAND 2002-1785P (SNL 2002) ["Material Management Plan"] at <http://emi-web.inel.gov/Nissmg/SNLMMP-0707.pdf>. This document was also obtained by Citizen Action after a FOIA appeal. Statements showing RCRA mixed wastes and radioactive wastes that are uncharacterized and present potential risks of criticality releases of fissionable materials are potentially contained in yardhole wastes:

p. 4 – "The type and quantity of material intended for processing in the AHCF [Auxiliary Hot Cell Facility] are defined by Sandia's legacy materials, including radioactive, transuranic, and mixed wastes that are inappropriate for processing at the RMWMF [Radioactive Waste Management Facility] due either to their form or quantity."

p. 5- "Following the above methodology provides the structured rigor necessary to facilitate material disposition within the highly regulated and hazardous material environment.

p. 7- Americium/Beryllium Sources – "These items must be characterized by Sandia to determine their waste profile characteristics and criticality potential. Because these items contain LEU [low-enriched uranium], there is potentially a need to perform a criticality analysis. The material should be segregated into potentially RCRA material and non-RCRA material."

p.8- "If contamination is above RCRA regulatory limits, disposition of the Mixed Low Level Waste (MLLW) at Envirocare is currently recommended.

p.9- There are approximately 9 kg of solid materials containing chemically reactive lithium, a RCRA regulated constituent. Any disposition as waste will require stabilization to meet RCRA land disposal requirements."

p.11- Fission Foils – "These items can probably be classified as transuranic waste (TRU) satisfying the WIPP [Waste Isolation Pilot Plant] acceptance criteria of having at least 110 nCi/g, but an extensive characterization effort may be required to send these items to WIPP."

p.12- A potential disposition path is as remote handled low level waste (RH LLW); other potential end states (post treatment) are to disposition as LLW, MLLW, or HLW/SNF."

Sincerely,

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