

**Concerned Citizens for Nuclear Safety
Dr. Maureen Merritt
Tewa Women United**

February 2, 2015

By email to: DarenK.Zigich@state.nm.us

Daren Zigich, P.E.
Air Quality Bureau
New Mexico Environment Department
525 Camino de los Marquez, Suite 1
Santa Fe, NM 87505-1816

Re: Air Quality Operating Permit Application No. P100-R2
NSR Permit No. 2195H and 2195BM1
TEMPO/IDEA ID No. 856 - PRT20050001
Los Alamos National Laboratory

Dear Mr. Zigich:

Please find below the responses of Concerned Citizens for Nuclear Safety (CCNS), Dr. Maureen Merritt, and Tewa Women United (TWU) regarding the New Mexico Environment Department (NMED) January 26, 2015 response to our January 18, 2015 public comments and questions regarding the draft-proposed Los Alamos National Laboratory (LANL) Title V Air Quality Operating Permit No. P-100-R2 in the above-referenced Title V air quality-operating permit. We understand that the NMED intends to issue the permit on or before February 28, 2015.

We respectfully request that NMED pull the draft permit in order to investigate whether the Permittees have underestimated their hazardous air pollutant (HAP) and volatile organic compound (VOC) emissions, thereby exceeding the permit threshold limits.

Request for Pubic Hearing. We begin by stating there is substantial public interest in this permit and we have requested that a public hearing be held. In the event that the commenters, your agency and LANL cannot negotiate final terms of the permit -- there is substantial public interest sufficient to warrant a public hearing -- and we specifically request that a public hearing be held to address our outstanding concerns detailed in this letter and our January 18, 2015 comments.

Environmental Justice. We note that NMED did not respond to our environmental justice comments referencing five local, regional and international Women Declarations. We provided the comments to demonstrate the on-going environmental justice issues associated with the permit and the on-going issues and concerns for the permitted and unpermitted emissions from LANL and how protection of the most vulnerable, including women and children, are the priority.

Governor Bill Richardson signed the *New Mexico Environmental Justice Executive Order 2205-056*, on November 18, 2005. NMED states the following on its website:

The State of New Mexico is committed to affording all New Mexicans, including people of color and low-income communities, fair treatment and meaningful opportunities for involvement in the development, implementation and enforcement of environmental laws and regulations regardless of race, creed, color, national origin, gender, disability, religious or political affiliation, income or educational level. <http://www.nmenv.state.nm.us/NMED/EJ/index.html>, accessed on 2/2/15.

As requested below, we ask the Department to review several no permit required determinations with the Department’s environmental justice lens. The 50-mile radius of LANL contains the highest number of minority and low-income peoples of any of the Department of Energy (DOE) sites in the U.S. See Final Site-Wide Environmental Impact Statement for Continued Operation of Los Alamos National Laboratory, Los Alamos, New Mexico, DOE/EIS-0380, May 2008, Fig. 4-33 on p. 474 and Fig. 4-34 on p. 476 at <http://energy.gov/sites/prod/files/EIS-0380-FEIS-01-2008.pdf>

Further, the Environmental Protection Agency (EPA) requires analysis of the cumulative effects of operations to minority and low-income populations from polluting facilities. LANL has taken the approach of keeping its emissions below the threshold for a “major” source classification. We believe with the emissions from the facilities described meet the requirements for inclusion in the Title V permit.

Exceedances of Facility-Wide Allowable Emissions. In our review of the draft permit, however, we find that for three source categories in Table 106.A, the total emissions significantly exceed the limits established in Table 106.B for the facility-wide allowable emissions. The three categories are:

<u>Emission</u>	<u>Table 106.B Facility-Wide Allowable Emissions</u>	<u>Table 106.A Allowable Emissions Per Source Category</u>	<u>Percentage Increase Above Allowable Emissions</u>
NOx tons per year (tpy)	245.0	286.65	17%
CO tpy	225.0	285.50	27%
TSP tpy	120.0	164.30	37%

We request that the Department explain how the exceedances are allowed under a permit with minor source threshold limits.

Unpermitted Emissions. We remain concerned about the unpermitted emissions are not included in the Title V draft permit. We believe that if the unpermitted emissions were included in the Title V permit, they would push LANL into the major source category. We cite three examples below. The first example is the recent April 30, 2014 approval by the Department of the LANL request for no permit required determination for the Technical Area 54 (TA-54), Material Disposal Area L (MDA L) Soil Vapor Extraction (SVE) System. See LA-UR-14-22478, ENV-DO-14-0098. We learned about this following the January 25, 2015 *Santa Fe New Mexican* article, entitled "LANL vents toxic ground vapors, raising air quality concerns."

The Permittees' application contains egregious mathematical addition errors that may result in LANL further exceeding the Table 102.B for the "Total Potential Hazardous Air Pollutants (HAPs) that exceed 1.0 tons per year" limits of 8.0 tpy for individual HAPs and an annual limit of 24.0 tons.

Soil Vapor Extraction at MDA L. For example, in the "Annual Emission Estimates T-54 MDA L Soil Vapor Extraction" worksheet, the Permittees state the Total HAPs + VOCs are 2.73 tpy (1.13 tpy VOCs + 2.70 tpy HAPs). Our addition reveals a total of 3.83 tpy.

Further, in the "Maximum Emissions, tpy, MDA L SVE East" worksheet, the Permittees state the Total HAPs + VOCs are 3.91 tpy (1.43 tpy VOCs + 3.78 tpy HAPs). Our addition reveals 5.21 tpy.

Finally, in the "Maximum Emissions, tpy, MDA L SVE East and SVE West Totals, the Permittees state the Total HAPs + VOCs are 6.64 tpy (2.57 tpy VOCs + 6.48 tpy HAPs). Our addition finds 9.04 tpy, which may exceed the Individual HAP limit.

Based on LANL's application, we find a 36% increase in the estimate maximum emissions (6.64 tpy v. 9.04 tpy) from the MDA L SVE unit.

These egregious errors lead us to request that NMED conduct further investigation into the Permittees' application. We find sloppy addition, which may be indicative of serious, fundamental errors in the application. We request that NMED pull the draft Title V permit until such investigation is finalized. We further request that the investigation report is provided in a timely manner to the public for review and comment.

Further, with respect to MDA L SVE No Permit Required Determination, the Department did not require carbon filtration for the system. As noted in the

Recommendation for Interim Measure for Volatile Organic Constituent Contaminant Source Removal in MDA-L and MDA-G, Recommendation No. 2010-05 of the Northern New Mexico Citizens' Advisory Board (NNMCAB), an activated carbon filtration was required on ground surface for the SVE demonstration project.

http://www.nnmcab.energy.gov/recommendations/2010_Recs/NNMCAB_Recommendation_2010-05.pdf

Moreover, the Permittees make reference to the activated carbon filtration demonstration test in their analysis, but do not specifically describe that the data is from a SVE with carbon filtration. That data masks the unmitigated VOC emissions now allowed by the Department through the no permit required determination. The Permittees do not describe how the carbon filtration data compares to the assumed data from unfiltered releases in the computer models. In fact, Permittees used the exhaust data to match flow-rate versus pressure drop and concentrations in the exhaust gas. Obviously, that would not work for unmitigated, unfiltered emissions from the SVE.

We quote the Permittees' application:

A three-dimensional multiphase numerical model of a volatile organic compound (VOC) vapor plume in the subsurface at LANL was developed using a site-scale numerical model. The site-scale numerical model evolved over many years (1999-2006) and has been used to evaluate the nature and extent of the subsurface contaminant 1,1,1-trichloroethane (TCA) associated with waste disposal. **This model was refined to include a 2006 soil-vapor extraction (SVE) pilot test and calibrated permeabilities for the site were developed to match flow-rate versus pressure drop and concentrations in the exhaust gas.** A blind validation simulation that begins with the pre-SVE test in 2006 and predicts present day (2010) plume concentrations yields a data/model correlation coefficient (r^2) for over 150 data model pairs that is greater than 90% in the year 2010. The ability of the model to align with data after four years that include two active SVE demonstration tests provides confidence that the model captures the dominant physical transport processes at the site, and can thus be used with confidence to explore future scenarios of site behavior. For the air quality estimate of VOC removal, the model was run from 2010 to 2014 **assuming** both SVE boreholes are pumped at maximum capacity for 1 year. Given that TCA is typically close to 70% of the total plume mass, a conservative estimate of expected effluent from the SVE units for the year is on the order of 1 ton. [Emphasis added.]

Permittees' April 30, 2014 letter to NMED re: No Permit Required Determination - TA-54 MDA L Soil Vapor Extraction, ENV-DO-14-0098, LA-UR-14-22478.

The NNM CAB Recommendation states:

This short-term pilot test demonstrated the efficiency of removing several hundred pounds of VOC contaminants from the ground in about three weeks. Such a removal of the VOC contaminant source material from MDA-L is consistent with good practice prior to constructing the final remedy at MDA-L.

During the three-week test, several hundred pounds of VOC contaminants were captured. This is much more than the estimated one ton per year estimated by the Permittees in their application to the Department for a no permit required determination, based on unfiltered releases. We respectfully request that the Department explain their reasoning for granting the determination to Permittees last April.

Further, the NNM CAB states:

The intent of this recommendation is to remove large volumes of liquid waste VOCs from the ground and to prevent these contaminants from moving into the groundwater or to the atmosphere.

Under the Department's determination, hundreds, if not thousands, of pounds of VOCs are being disposed in the atmosphere to the detriment of those living downwind and downstream of LANL in the Rio Grande Watershed, including the Bandelier National Monument, a Class 1 Clean Air Act Designated Area. Those emissions are being distributed into the environment, not captured to protect public health and the environment.

Further, we have questions about the MDA L SVE project to determine whether the operations should, in fact, be covered by the Title V permit. They are:

1. What is the aboveground treatment process once the vapors are extracted? Is it a carbon adsorption method or a combination of several methods? If so, what are they?
2. What are LANL's end points for satisfactory completion of SVE remediation? Please provide numbers.
3. Is the MDA-L-SVE unit being used as an interim measure? If so, then what is the final process to be used?
4. The Permit request characterizes TCA (1,1,1, trichloroethane) as not a VOC and therefore HAP. But TCA is a VOC, just exempted from reporting per EPA NESHAP regulations. Is this the regulator loophole that allows LANL to release literally tons of toxic material into the air annually without special permits?

5. TCA is estimated to be 70% of the total plume mass. It is considered a "possible carcinogen" per EPA, OSHA and NIOSH. TCA does have liver and kidney toxicity leading to organ failure via acute or chronic exposure over time.
6. What are the regulated maximum worker and public exposure limits from the three agencies (EPA, OSHA and NIOSH)?
7. What analysis did the Department do to analyze the physics supporting the SVE? Did the analysis include the flow, rate, soil type, moisture content, composition of gases, liquids, etc., all of which influence the end result.

SET and MES. The requested investigation should include a review of other Department no permit required determinations, including the Solar Evaporative Tanks (SET) at TA-52 and the Mechanical Evaporator System (MES) located at TA-50, Bldg. 250.

The Department approved the no permit required determination for the MES on September 20, 2010 by the Department. Given the egregious mathematical errors in the MDA L SVE application, we request that the Department review the application for the MES. The MES is described as:

The effluent evaporator is constructed of 316 stainless steel, and has approximate dimensions of 17' x 9' x 10' (L x W x H). The evaporator is equipped with two natural-gas burners with low-NO_x controls, a 6000-CFM blower, a heat exchanger, and a stack mist eliminator. It has a capacity of 4.5 million BTU per hour. The evaporator and its components are protected within a weather-resistant housing identified as Building 50-250, which is located about 20 feet east of Room 34B of Building 50-01.

From the treated water storage tanks in Room 34B, water is pumped into a reservoir (capacity of ~ 1700 gallons) at the evaporator. Water in the reservoir is heated to boiling, and leaves via the stack as a vapor. Evaporation lowers the water level in the reservoir, and triggers a call for more water to be automatically fed to the reservoir. Either or both burners can be used to heat the water.

"Radioactive Liquid Waste Treatment Facility Discharges in 2011," by J.C. Del Signore, March 2012, LA-UR-12-21423, p. 9 of 9.

It is difficult to believe that the MES emissions are not covered by the Title V permit.

Beryllium. We respectfully request that all beryllium operations be monitored and NMED require reporting for all beryllium operations.

We note that NMED did not respond to the CCNS May 18, 2012 letter to Judy Fisher, Enforcement Manager for the Air Quality Bureau regarding "Denial of enforcement

action, failure to report on beryllium emissions from the Sigma Facility, per permit # P100R1 (AIRS no. 35-028-00001) issued August 7, 2009.”

Permit Condition A707.D. We respectfully request that the Department require that any request for a “date of initial startup of each new or modified source” be posted to the Permittees’ Electronic Public Reading Room at <http://epr.lanl.gov/oppie/service>. Posting permit deliverables is a requirement under the NMED Hazardous Waste Permit for LANL. See Permit Conditions 1.10 and 1.10.1.
http://www.nmenv.state.nm.us/HWB/documents/Parts_1_through_11.pdf

Thank you for your careful consideration of our responses to the Department’s comments. We look forward to receiving the Department’s answers to our requests and questions. Please contact us with any questions, comments and concerns.

Sincerely,

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