

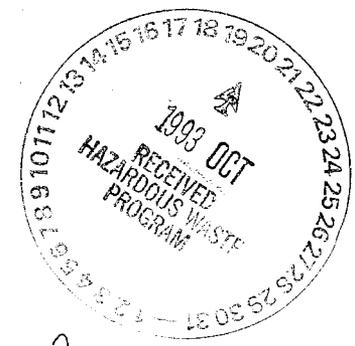


**Department of Energy**  
 Field Office, Albuquerque  
 Los Alamos Area Office  
 Los Alamos, New Mexico 87544

*Cornelius*

OCT 18 1993

*TA-35  
TA-55*



*need 2 copies*

Ms. Barbara Hoditschek  
 Permit Section Coordinator  
 Hazardous and Radioactive Materials Bureau  
 New Mexico Environment Department  
 P. O. Box 26110  
 Santa Fe, NM 87502

Dear Ms. Hoditschek:

Following a meeting on September 24, 1993, amongst the Department of Energy, the Los Alamos National Laboratory (LANL), and New Mexico Environment Department (NMED) personnel, Mr. Amindyas requested further information regarding the projection of the Guaje Mountain fault which passes through Technical Area 35. That request was transmitted directly to LANL via facsimile on September 27, 1993. The enclosed document provides a response to Mr. Amindyas' request.

Also incorporated into the enclosure is a response to an additional request made by your staff during a telephone conversation between LANL and NMED personnel on September 30, 1993. During that conversation, LANL was asked to include a discussion of building inspections in the response to the initial inquiry. If you would like to discuss this matter further or if you have any questions, please contact Jon Mack of my staff at 665-5026.

Sincerely,

*Joseph C. Vozella*

Joseph C. Vozella, Chief  
 Environment, Safety and Health  
 Branch

LESH:7JM-083

Enclosure

cc w/enclosure:  
 J. Mack, ES&H, LAAO  
 T. Gunderson, EM-DO, LANL,  
 MS-J591  
 T. Grieggs, EM-8, LANL,  
 MS-K490

*TK*



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Response to request for clarification of geology for the proposed RD&D project at TA-35-128 Packed Bed Reactor/Silent Discharge Plasma Treatment Unit. This request was made by FAX transmittal from the NMED to LANL on 9/27/93. For clarity, each question is repeated below and immediately followed by the Laboratory's response.

1. *Provide a brief geologic description of the RD&D facility area (i.e., types of rock assemblages and their ages.)*

**RESPONSE:**

The following geologic description is based on mapping of the area containing TA-35 by LANL geologists in 1990 (Vaniman and Woheltz, 1990). At TA-35, all of the exposed rocks are of the Tshirege member of the Bandelier Tuff which is about 1.13 million years old. The surface and near surface rock consists of nonwelded to moderately-welded tuff (Unit 3), ranging from 50-100 feet thick along the mesa top. Underlying this is a layer of nonwelded tuff ranging in thickness from 15 to 80 feet (Unit 3 nw). The lowermost exposed layer consists of moderately- to densely-welded tuff with a thickness of 90-150 feet (Unit 2).

2. *How (on what basis) did LANL deduce that a fault probably passes east of the PBR/SDP Lab?*

**RESPONSE:**

The projected fault line is based on information gathered during a seismic hazard evaluation for TA-55 in 1990 by LANL geologists (Vaniman and Wohletz, 1990).

To the north of Los Alamos the presence of the Guaje Mountain fault is indicated by discrete fault scarps. However, in the area surrounding TA-35 similar scarps have not been observed. Instead, the projected fault line is based on dispersed surface features which represent the most probable southern extension of the fault. Surface features evaluated include fractures, micrograbens, and "zipper joints."

3. *Mention in your response that experiments (pilot-scale) will be conducted in building 128 but large-scale treatment of the hazardous waste shall be conducted at a new location away from the subject fault zone.*

**RESPONSE:**

The Laboratory believes that, because the PBR/SDP project located in TA-35-128 is a pilot-scale experiment, any release that might occur as a result of seismic activity, would pose little or no threat to human health or the environment. Previous bench-scale studies using surrogate materials, similar to those proposed under the RD&D permit application, have not exceeded any Laboratory safety or environmental criteria.

Volumes of waste to be treated and the rates of treatment as proposed in the permit application are adequate to demonstrate, as pilot-scale, the effectiveness of the technology. It is anticipated that if the project were to be modified for large-scale treatment test a new experimental location would be selected. However, should additional geological information become available which verifies no Holocene movement in the area of the projected fault line, the Laboratory may choose to continue larger scale experiments in building 128 (see response to questions 2 and 4). However, any increase in scale of the project would require a modification to the RD&D permit and subsequent approval by your office.

During a telephone conversation between Laboratory and NMED personnel on 9/30/93, NMED requested that the Laboratory perform annual visual inspections of building 128 to ensure that no structural damage has occurred due to ground movement. Inspections of Laboratory buildings, including TA-35-128, are conducted by the Laboratory's Maintenance Group, ENG-6, on a regular basis (currently every six months). These inspections include visual checks for damage or deterioration related to the physical structure of the building (i.e., Cracks in foundations or walls, deterioration of materials, settling of foundation or walls, any other signs of settling or building movement) as well as checks of mechanical and electrical systems. For any damage or deterioration observed during the inspection, appropriate documentation is generated and corrective action taken. Consequently, we do not believe that any additional efforts at inspection are necessary.

4. How old is the fault? Basis? C13/C14?

**RESPONSE:**

TA-63 is the proposed location for the new Hazardous Waste Treatment Facility. As required to comply with the seismic standard in HWMR-7, Pt. IX, 270.14(b) (11)(ii), subsurface exploration was performed at TA-63 during the fall of 1992 and summer of 1993 by Woodward-Clyde Federal Services under contract to LANL. Exploratory trenches were excavated across TA-63 within the bounds of the proposed treatment facility as well as across the projected extension of the Guaje Mountain fault immediately to the west of the proposed site, and directly south of TA-35-128. As a result of that work it was concluded that "no faults which have had displacement in Holocene time are present at TA-63 or in the vicinity of the Guaje Mountain fault projection. In addition, no lineations which suggest the presence of a fault (which has had displacement in Holocene time) are present within 200 feet of the proposed Hazardous Waste Treatment Facility." (See attached letter). The overlying material was dated by a combination of 14C analysis and estimates of soil development rates.

A subsequent fifth question was forwarded via phone. The question and its response follows:

5. *What plans do you have for testing the ambient air around the facility?*

**RESPONSE:**

LANL does not propose to do any ambient air monitoring at this location as a result of this unit being located there. It is proposed specific pieces of equipment and valves be monitored as per Subpart BB of 40 CFR Part 264 of RCRA. It is anticipated that the Air Quality Section EM-8 will conduct this monitoring activity.

September 22, 1993

Mr. John Tegtmeier  
Los Alamos National Laboratory  
EM-7, MS-K517  
Los Alamos, NM 87545

Subject: **EVALUATION OF THE POTENTIAL FOR SURFACE FAULTING AT  
TECHNICAL AREA 63**

Dear Sir:

Compliance with the seismic standard listed in 40 CFR 264.18(a) is required for portions of new facilities where treatment, storage, or disposal of hazardous waste will be conducted. Because the proposed Hazardous Waste Treatment Facility (HWTF) at Technical Area 63 (TA-63) will be used for treatment of hazardous waste, portions of this facility must not be located within 200 feet of a fault which has had displacement in Holocene time.

To demonstrate compliance with this seismic standard, subsurface exploration (trenching) was conducted during the fall of 1992 and the summer of 1993. As required by 40 CFR 270.14(b)(11)(ii)(B), trenches were excavated across the full east-west extent of TA-63 including the proposed HWTF treatment building site. The trenches were oriented perpendicular to the north-south trending Guaje Mountain fault which was suspected to pass within 3,000 feet of the proposed facility. In addition, a 492-foot trench was excavated across the mapped projection of the fault just west of Pajarito Road and TA-63.

Based on the subsurface exploration, we can conclude that no faults which have had displacement in Holocene time are present at TA-63 or in the vicinity of the Guaje Mountain fault projection. In addition, no lineations which suggest the presence of a fault (which has had displacement in Holocene time) are present within 200 feet of the proposed HWTF facility. Formal results will be summarized in a report to be issued after review by DOE Headquarters in late 1993 or early 1994.

Mr. John Tegtmeier  
September 22, 1993  
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Please feel free to call if you have any questions.

Best regards,  
**WOODWARD-CLYDE FEDERAL SERVICES**

*Ivan G. Wong*

Ivan G. Wong  
Vice-President and Manager  
Seismic Hazards Branch

cc: Dean Keller, ENG-DO  
Jamie Gardner, EES-1