Los Alamos Environmental Restoration Records Processing Facility

ER Record I.D.# 0006854

DATE RECEIVED: 07-30-92 PROCESSOR: KD

ENTERED

LOS ALAMOS

LOS ALAMOS NATIONAL LABORATORY

ENVIRONMENTAL RESTORATION
Records Processing Facility
ER Record Index Form
(Side 1 of 2)

Part I: Complete all fields; indicate if not applicable or appropriate; please write legibly.

DOCUMENT TO: File DOCUMENT DATE: 11/01/83

ORIGINATOR NAME: A. J. Ahlquist ORGANIZATION: HSE-8

SYMBOL: HSE 8-83-733 PAGE COUNT: 8

SUBJECT/TITLE: Conversations with Dantos Russo Re TA-33 10/27/83

RECORD TYPE (Circle relevant type for primary record; type of attachments should be selected on *Keywords List*):

Analytical Data	FAX	Map	Plan	Study
Chain-of-Custody	Figure	Memo	Procedure	Telephone Record
Computer Output	Form	Microform	Purchase Request	Transcription
Contract	Interview	Notebook	Receipt Acknowledgment	Video
Controlled Distribution	Letter	Personal Notes	Report	Work Plan
Drawing	Logbook	Photo	Review	Other

RECORD CATEGORY: P
(P for Programmatic or R for Reference)

RECORD PACKAGE #: —

RECORD FILMED (Y/N): Y

RECORD LOCATION: —
(Indicate location of record if not filmed.)

Part II: Complete all fields; indicate if not applicable or appropriate; please write legibly. Use *ER Record Index Form Attachment Sheet* if needed.

ATTACHMENTS FILMED (Y/N): Y
(Were attachments to this record filmed?)

LOCATION: —
(Indicate location of attachments.)

TECH AREA(S)	ADS NO(S)	WBS NO(S)	STRUCTURE NO(S)/MDA
LIST RELEVANT TECH AREA(S)	LIST RELEVANT ADS NO(S).	LIST RELEVANT WBS NO(S).	LIST RELEVANT STRUCTURE NO(S)/MDA.
33	1122	1.5.16	33-21 33-86 33-MDA K 33-Area 6 33-113 33-20 33-31 33-MDA D 33-MDA C

32256

Part III: Complete all fields; indicate if not applicable or appropriate; please write legibly. Use *ER Record Index Form Attachment Sheet* if needed.

PRS NO(S)	DOCUMENT TO	ORIGINATOR NAMES
LIST RELEVANT PRS NO(S)	*LIST MULTIPLE RECIPIENTS*	*LIST MULTIPLE ORIGINATORS*
—	—	—

CORRECTION (Y/N): —
(Is this a correction to a record previously processed?)

CORRECTED #: —
(If answer is Yes, please give ER Record # for corrected record.)

CORRECTION DESCRIPTION (Optional): —

SUPERCEDE: — **REPLACE:** — **DELETE:** — **ADD:** — **REVISE:** —

ATTACHMENT LIST

a) letter	—	Ahlquist	—	Notes; Re- Area G at TA-33 — 12/30/83
b) Personal notes	—	—		TA-33 — —
c) Report	—	—	—	Chamber # 2 — —
d) Notes	—	—	—	New TA-33 — —
e) letter	Ahlquist	Bert		Personal — —

KEYWORDS: Circle relevant KEYWORDS from the list below for ER Record #: 0006854

MISCELLANEOUS (List other indexing criteria as necessary; please write legibly): Tech Area,

Abandon
Aboveground Tank
Absorption
Abstract
Accelerator
Access
Accident
Accumulation
Acid
Active
Administrative
ADS (Activity Data Sheet)
Adsorption
AEC (Atomic Energy Commission)
Aerial
Agenda
Agreement
Air
Alpha
Americium
Analysis
Analytical
AOC (Area of Concern)
Approval
Aquifer
ARAR (Applicable, Relevant, or Appropriate Requirements)
Archeology
Archive
Area
Arsenic
Asbestos
Asphalt
Assessment
Audit

Bacteria
Barium
Baseline
BCP (Baseline Change Proposal)
Beds
Burned Area
Beryllium
Beta
Biology
Blank
Boiler
Boneyard
Buried
Burn
Burn Site

Cadmium
Caisson
Calibration
Canyon
Capacitor
Caustic
CEARP (Comprehensive Environmental Assessment and Response Program)
Cement
CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)
Certification
Cesium
Chain-of-Custody
Chamber
Change Control
Change Order
Charge
Chart
Checklist
Chemical
Chromium
Cleanup
Clearance
Clothing
Closure
CMI/RA (Corrective Measures Implementation/Remedial Action)
CMS/FS (Corrective Measures Study/ Feasibility Study)
Comment
Committee
Community Relations
Compliance
Compressed Gas
Computer Modeling
Computer Output
Concern
Concrete
Concurrence
Configuration
Construction
Container
Containment
Contaminant
Contract
Control

Controlled Distribution
Core
Corrective Action
Correspondence
Criteria

Data
Deadline
Debris
Decision Analysis
Decommission
Decontamination
Deficiency
Deliverables
Demolition
Description
Detection
Detonation
Development
Discharge
Disposal
Documentation
DOE (Department of Energy)
DQO (Data Quality Objectives)
Draft
Drainage
Draining
Drawing
Drilling
Drop Tower
Drum
Dry Well
Dump
Duplicates

Ecology
Effluent
EIS (Environmental Impact Statement)
Emission
Engineering
Environmental
EPA (Environmental Protection Agency)
Equipment
ERDA (Energy Research and Development Administration)
Erosion
Error
ES&H (Environment, Safety, and Health)
Estimate

Evacuation
Evaluation
Evaporator
Excavation
Exclusion
Exhaust
Experiment
Explosive
Exposure
Extension
Extraction

Facility
Farm
FAX
Fence
Field
Figure
Filter
FIMAD (Facility for Information Management, Analysis, and Display)
Finding
Fire
Firing Site
Fiscal
Five Year Plan
Flowchart
Fluid
Form
Framework
Free
Fuel

Gamma
Gas
Generation
Generic
Geochemistry
Geology
Geophysics
Glass Breaker
Glove Box
Graph
Guidance
Gun

Handling
Hazardous
Health
HE (High Explosive)
History
Hole
Home Owner

HSWA (Hazardous and Solid Waste Amendments)
Hydrology
Hygiene

Implementation
Implosion
Impoundment
Inactive
Incinerator
Industrial
Injection Well
Inorganic
Inspection
Installation
Interim
Interim Action
Internal
Interview
Inventory
Investigation
IRM (Interim Remedial Measure)
Isotope
IWP (Installation Work Plan)

Lab Job
Laboratory
Lagoon
Land
Landfill
Laundry
Leach
Lead
Leak
Legal
Letter
Limit
Lines
Liquid
List
Log
Logbook

Magazine
Management
Manhole
Map
Material
MDA (Material Disposal Area)
Media
Meeting

Memo
Mercury
Metal
Microform
Minimization
Minutes
MIS (Management Information System)
Mixed Waste
MOA (Memo of Agreement)
Model
Modification
Money (Allocation, Appropriation, Budget, Cost, Funding, etc.)
Monitoring
Monthly Report
Mortar Impact Area
MOU (Memo of Understanding)
MSA (Major System Acquisition)

NEPA (National Environmental Policy Act)
NFA (No Further Action)
Nitrate
NMED (New Mexico Environmental Division)
NMEID (New Mexico Environmental Improvement Division)
NOD (Notice of Deficiency)
Non-explosive
Notebook
Notification
NPDES (National Pollutant Discharge Elimination System)
NRC (Nuclear Regulatory Commission)
Nuclear

Observation
Off-gas
Oil
Open
Open Burning
Operation
Order
Organic
Organization
OSHA (Occupational Safety & Health Administration)
OU (Operable Unit)
Outfall
Outline

PA/RFA (Preliminary Assessment /RCRA Facility Assessment)
PCB (Polychlorinated Biphenyl)
Permit
Personal Notes
Personnel
Personnel Qualification
Photo
Pilot Study
Pipe
Pit
Plan
Plant
Plutonium
Pollution
Polonium
Polaroid
Potential
Presentation
Prevention
Priority
Procedure
Program
Programmatic
Project
Project Leader
Propellant
Property
Proposal
Protection
Protocol
PRS (Potential Release Site)
Public
Pump
Purchase Request

Quality
QA (Quality Assurance)
QP (Quality Procedure)
Quarterly Report

Radioactive
Radiochemistry
Radionuclide
Rationale
RCRA (Resource, Conservation, and Recovery Act)
Reactor
Receipt Acknowledgment
Recommendation
Reconnaissance
Records
Recovery
Recycle
Reduction
Reference
Regulation
Release
Remediation
Removal
Report
Request
Requirements
Research
Resin Bed
Resolution
Resource
Response
Restoration
Restriction
Results
Review
Revision
RFI/RI (RCRA Facility Investigation/Remedial Investigation)
Risk
RPF (Records Processing Facility)

Safety
Salamander
Salvage
Sample
Sampling Plan
Sanitary
Satellite
Schedule
Scope
Scrap Detonation Site
Screening
Scrubber
Security
Seep
Seminar
Semivolatile
Septic
Sewer
Shaft
Shell
Shot
Silver
Site
Sludge
Soil
Solid
Solvent
SOP (Standard Operating Procedure)
SOW (Statement of Scope of Work)
Specific
Spill
Stack
Standard
Statistics
Steamline
Steel
Storage
Strontium
Structure
Study
Subcontractor
Subsurface
Summary
Sump
Support
Surface
Surveillance
Survey
Swipe
SWMU (Solid Waste Management Unit)
System

Tank
Task
TCLP (Toxicity Characteristic Leaching Procedure)
TDD (Technical Document Description)
Technical
Technical Team
Technology
Telephone Record
Test Area
Testing
TLD (Thermoluminescent Dosimeter)
TOC (Table of Contents)
Townsite
Toxic
Tracking
Training
Transcription
Transfer
Transformer
Transport
Treatment
Trench
Trip Report
Tritium
TRU (Transuranic)
TSCA (Toxic Substances Control Act)
Tuballoy
Tuff

Underground
Uranium
Urine
USGS (United States Geological Survey)
UST (Underground Storage Tanks)
Utility

Validation
Variance
VE (Value Engineering)
Ventilation
Verification
Video
Volatile
Volume

Warehouse
Waste
Water
WBS (Work Breakdown Structure)
Weapon
Well
Work
Working Group

Zinc

(9)

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO FILE

DATE November 1, 1983

FROM A. J. Ahlquist, HSE-8 A. John Ahlquist MAIL STOP/TELEPHONE K490/667-7952

SYMBOL HSE8-83-733

SUBJECT CONVERSATIONS WITH HARLOW RUSS RE TA-33 10/27/83

On 10-27-83 Karen Balo, HSE-7, and I talked with Harlow Russ about things that occurred at TA-33, HP-Site, that might relate to hazardous material use and disposal. Mr. Russ joined the Laboratory in 1944. He is now retired and works as a consultant to WX-1. Much of the work at TA-33 involved the use of initiators for weapons.

Bldg. TA-33-21. This building was designed for use with polonium--it even had an end that was designed for easy removal in case of contamination. At one time plutonium was being used there and a spill occurred. The building ventilation system deposited this material through the building. The building was not used after this time--it was torn down and hauled off site. (JA note: In 1975, I was involved in environmental sampling after this building was removed. The building area and sump associated with this facility were sampled. Results are in a LA report by Ray Garde and Al Valentine.)

Bldg. TA-33-86 and K Sump. Tritium, some plutonium, and ^{235}U or combinations thereof have been used in this building. Tracers of ^{233}U ($\leq$5g) have also been used. There is an active material vault where these materials have been temporarily stored. Early 3-stage pressure pumps had a stage of oil and then a stage of mercury. The flat plates containing the mercury were not always a good seal and mercury would get into the third stage where tritium was. The pumps would then have to be cleaned out. (The pumps had gold wires in the third stage to detect the mercury.) Beryllium was also used in metal form. Mr. Russ is not aware of any Be accidents. In the south part of the building in a room with a roll-up door, experiments were done for a high temperature fluidized bed reactor. Depleted uranium was used to mockup the reactor. The uranium particles were cooled by hydrogen flow that vented through the roof of the building. (A large radar or microwave was used to generate the heat for simulation.) This working model was later shipped to Brookhaven. Several accidents involving tritium release occurred ($\leq$10 g of tritium). The original stack was 35' lower than it is now.

The K sump was used to catch drainage from the laboratories. In the drainage area to the east, near a bank, cattails were found to grow. The USGS did some sort of monitoring there.

Area 6. The small collection of buildings west of the main guard gate is called Area 6. Original work in this area was to do gun shots for initiator development. The model initiators would be hit with a projectile fired from a gun inside Bldg. 16. Projectiles and fragments would be stopped in a combination of sand, sawdust, and vermiculite from which they could be recovered. (These materials were in front of an earth berm.) The guns would get contaminated with materials (e.g., Po, Be), and then be painted, get contaminated, get another layer of paint, etc. Some of the projectiles used were uranium-faced. The guns were fired with compressed air or explosive charges.

Wooden buildings HP-1 and HP-2 were built on skids and were moved in circa 1946-'47 and work went on in them until 1962-63 in support of the above tests. Then some solid state physics involving ferroelectricity went on there. Some materials used were $BaTiO_3$ and lead zircinate titinate. Also some silverplating was done.

Because of a decision by R. Reider, H-3, and D. Clayton, SP, it was decided to dump uranium chips from machine work in HP-113 in a gully just west of Area 6. Later large capacitors from the fusion project, Sherwood, were also dumped here. (Karen Balo noted she believed this area had been cleaned up in the mid-70s.)

Bldg. HP-113. In the late 1960s, uranium (mostly DU, perhaps some natural) was machined in this building. Chips were collected in barrels and then dumped into a steel collection box located just over a bank east of the building. Also, depleted and normal uranium were stored in HP-113, in large amounts. The material was then hauled away until the decision was made to dump the stuff by Area 6. There may also have been some uranium machining done in the main shop in Building HP-39.

Bldg. 20. Tons of uranium and beryllium were stored in and around Bldg. 20. Recovered scrap from various shots, e.g., uranium mixed with tungsten carbide and beryllium, was stored south of this building for awhile.

Firing Area near Waste Area D. Structure 87 was used as a control room. A tunnel goes from there to just south of structure 98. Tests conducted were acceleration tests on artillery shells, which were all recovered. Some projectiles had plutonium. Lots of uranium projectiles were also fired. There is a high probability of finding uranium

contamination almost anywhere you look. Uranium projectiles would catch on fire, fragments would start brush fires, etc. Other potential environmental contaminants include Be, beryllium carbide (an easily dispersed ceramic), tungsten, and tungsten carbide. Structure 116 was an 8 inch gun position (~100 T gun). Occasionally the blast pad east of HP-135 was used for a mobile 8 inch howitzer (gun on tank tracks). Both 8 inch guns fired uranium projectiles or projectiles with sources in them. All sources (fired into sawdust) were recovered. Large liquid scintillation tanks were set up near structure 98. Uranium projectiles were fired at ferroelectric models and neutron measurements were made.

Firing Area near Waste Area E. There is a cable tunnel from HP-24 to HP-26 (an implosion pad). Towers (HP-85 and HP-43) in an area known as Area A were built to help mock up gadgets for Eniwetok. Break-up shots were fired in the tower area and at the ends of the short roads NE of HP-26. Some penetrator tests for the Navy were done at the tower area by free recoil firing with projectiles going into a cliff. A gun was fired out of HP-25 into a berm. Breakup shots included uranium, tungsten, tungsten carbide, beryllium, and beryllium oxide. Tritium reservoirs also underwent acceleration tests here. Leaking reservoirs called blivits were set out around HP-63, were fenced off and the tritium was allowed to leak away. One should expect to find uranium around HP-25 and 26. In the control room at HP-26 implosion tests were done on initiators surrounded by neutron counters. Some tests involved up to 2-3,000 lbs of HE. Occasionally, fragments would get to Bandelier. Thus the other firing point (near waste Area D) was created to provide a larger safe radius. Mr. Russ does not know much about the material buried in Pits 1-6 in waste Area E. Material there was buried early. Trenches were built east of the two underground chambers (HP 70 and HP-71). These trenches were used starting in about 1949 and used $\geq$20 years (perhaps until 1973). They would contain uranium from the breakup shots.

AJA:mlk

Cy: W. R. Hansen/A. K. Stoker, HSE-8
N. M. Becker, W. D. Purtymun, HSE-8
K. A. Balo, HSE-7, MS E516

[redacted] 12/30/83

RE: Area 6 at TA-33

NOTES:

I reviewed a picture notebook titled "LASL Solid Radioactive Waste - Special Activities - Events" in custody of HSE-7. The photographs showed a messy dumping ground - looks a lot like Area M does today. The only difference is this was mostly over a bank. Area M is relatively level. The entire mess was picked up and hauled to Area G at TA-54. Notes indicate the material was D-38, capacitors, metal turnings, old tires, fluorescent lighting tubes, etc. Surveys after the event (by H-1 & H-8) showed no significant (i.e. measureable) radioactivity left. The dump was cleaned up in December 1974.

A. John Gilligan

TA-33

- Do we know where Area L's "leached over a nearby hillside & covered with clean soil" is? This would appear to contain HE, Be, & Po & should be investigated
- The early documents make it appear that the inside of the bldgs were pretty dirty - therefore I think even sanitary drains, tanks, cesspools, etc, are suspect & should be investigated

TA-33-4 = Underground chamber 1
TA-33-6 = Underground chamber 2
TA-33-29 = HP-29 Underground chamber 3
TA-33 = New Area No. 6 = fenced area south of and adjacent to TA-33-29

Chamber #2:

Shaft leading to chamber ≈ 6' x 8' and extends downward for 46', shored with 2" x 12" timbers with 8" x 8" extending from top to bottom in all four corners

concrete room extended south from shaft. reinforced with steel, 12' ceiling and diagon-shaped — measured 14' from side to side.

Door made of steel plate and wood filled, edges were wedge-shaped, so that the more pressure applied on the door from within, the tighter it would seal. secured by a steel latch 3/8" thick and 3"-4" wide operated by a handle on the outside of the door

New TA-33

Most tritium used in experiments is collected [illegible] to Compound at TA-33 for recovery and reuse. The 1984 tritium release quantity is [illegible].

Spent nonradioactive [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] for [illegible] [illegible] disposal.

John A

I read these reports and really have no additional comments. The history of TM-33 was most interesting. Must have been fun cleaning this place up. Now it only gets contaminated with foul language.

Bert