

Los Alamos

NATIONAL LABORATORY
Laboratory Counsel  *General Law Offices*

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Los Alamos, New Mexico 87545
(505) 667-3766, FAX:665-4424*

Date: July 14, 1998

Symbol: GL: 10520-9810/9824

Debra Gallegos
P.O. Box 26110
1190 St. Francis Drive
Harold Runnels Building, N4084
Santa Fe, NM 87502



RE: Compliance Order 98-02

Please find enclosed the Request for Hearing that has been signed by the United States Department of Energy (DOE) and by the Regents of the University of California (UC) in connection with Compliance Order HRM - 98-02. Also enclosed is the Certificate of Service signed by Joseph Rochelle.

Sincerely,

Joseph B. Rochelle
Staff Attorney

Cys: Nick Persampieri, NMED
Hortense Haynes, LAAO
LC/GL
File (2)

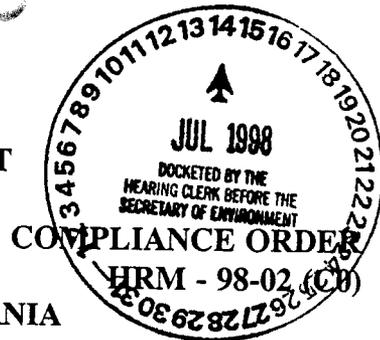


Generator

TC

STATE OF NEW MEXICO
ENVIRONMENT DEPARTMENT

IN THE MATTER OF
THE UNITED STATES DEPARTMENT OF ENERGY
AND THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
LOS ALAMOS, NEW MEXICO
NM0890010515



REQUEST FOR HEARING

Respondents, the United States Department of Energy and The Regents of the University of California, request a consolidated hearing on the captioned Compliance Order, HRM-98-02 pursuant to the provisions of Section 74-4-10 of the New Mexico Hazardous Waste Act, 1978, NMSA 1978 and 20 NMAC 1.5.200.

Respondents and Complainant, New Mexico Environment Department, have stipulated that Respondents shall have until August 10, 1998, within which to file their Answer and so no Answer is filed with this Request for Hearing at this time. A copy of Respondents Motion seeking this Extension and the proposed Order granting this extension, both with concurrence from Complainant's counsel, are attached hereto.

REGENTS OF THE UNIVERSITY OF CALIFORNIA

DATE: 7/14/98

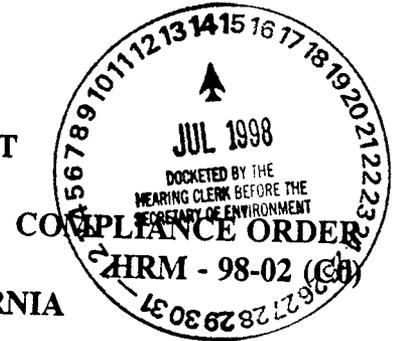
BY: Joseph B. Rochelle
Joseph B. Rochelle

UNITED STATES DEPARTMENT OF ENERGY

DATE: 7/14/98

BY: Hortense Haynes
Hortense Haynes *ay J. bk*

STATE OF NEW MEXICO
ENVIRONMENT DEPARTMENT



IN THE MATTER OF
THE UNITED STATES DEPARTMENT OF ENERGY
AND THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
LOS ALAMOS, NEW MEXICO
NM0890010515

MOTION FOR STIPULATED ORDER ALLOWING EXTENSION OF
TIMEFRAME UNTIL AUGUST 10, 1998 WITHIN RESPONDENTS
MAY FILE ANSWER

COME NOW Respondents, the United States Department of Energy (DOE) and the Board of Regents of the University of California (UC), with the concurrence of Complainant, and move the Hearing Officer to approve an extension of time until August 10, 1998, within which Respondents may file their answer to the above captioned Compliance Order (CO).

As grounds for this extension until August 10, 1998, Respondents state that the attorney handling this matter for the UC will be out of the State of New Mexico for an extensive period of time in July, 1998 and the interests of justice will be served if Respondents are granted an extension of time until August 10, 1998, within which to file an answer to the allegations in the CO.

Complainant concurs in this Motion and in the attached Order.

WHEREFORE, Respondents request approval of the attached Stipulated Order by the Hearing Officer.

Submitted and Approved:

REGENTS OF THE UNIVERSITY OF CALIFORNIA

DATE: 7/14/98

BY: Joseph B. Rochelle
Joseph B. Rochelle

UNITED STATES DEPARTMENT OF ENERGY

DATE: 7/14/98

BY: approved by telephone 7/14/98
Hortense Haynes
H. Haynes

APPROVED:

NEW MEXICO ENVIRONMENT DEPARTMENT
OFFICE OF GENERAL COUNSEL

DATE: 7/13/97

BY: approved by telephone 7/13/97
Nicholas F. Persampieri *no pbl*

STATE OF NEW MEXICO
ENVIRONMENT DEPARTMENT

IN THE MATTER OF
THE UNITED STATES DEPARTMENT OF ENERGY
AND THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
LOS ALAMOS, NEW MEXICO
NM0890010515

COMPLIANCE ORDER
HRM - 98-02 (C0)

STIPULATED ORDER ALLOWING EXTENSION UNTIL
AUGUST 10, 1998, WITHIN WHICH RESPONDENTS MAY
FILE ANSWER TO COMPLIANCE ORDER

Upon the Motion of Respondents, the United States Department of Energy and the Regents of the University of California, and with the concurrence of Complainant the New Mexico Environment Department, it is hereby stipulated by the parties that the timeframe within which Respondents may file their Answer to Compliance Order HRM-98-02 is extended until August 10, 1998.

The Hearing Officer having determined that good grounds exist for the Motion of Respondents, hereby orders that the 30 day timeframe provided for in the Compliance Order within which Respondents must file their answer be extended until August 10, 1998.

Hearing Officer

Submitted and Approved:

REGENTS OF THE UNIVERSITY OF CALIFORNIA

DATE: 7/14/97

BY: Joseph B. Rochelle
Joseph B. Rochelle

UNITED STATES DEPARTMENT OF ENERGY

DATE: 7/14/97

BY: approved by telephone 7/14/97
Hortense Haynes JHL

APPROVED:

NEW MEXICO ENVIRONMENT DEPARTMENT
OFFICE OF GENERAL COUNSEL

DATE: 7/14/98

BY: approved by telephone
Nicholas F. Persampieri 7/13/98

STATE OF NEW MEXICO
ENVIRONMENT DEPARTMENT

IN THE MATTER OF
THE UNITED STATES DEPARTMENT OF ENERGY
AND THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
LOS ALAMOS, NEW MEXICO
NM0890010515

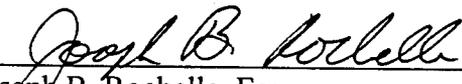
COMPLIANCE ORDER
HRM - 98-02 (C0)

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing Request for Hearing was hand-delivered on the 14th day of July, 1998, to the following individuals:

Nick Persampieri
General Counsel
New Mexico Environment Department
1190 Runnels Building
Santa Fe, NM 87505

Hortense Haynes
Counsel's Office
Department of Energy
Los Alamos Area Office
528 35th Street
Los Alamos, NM 87544



Joseph B. Rochelle, Esq.

DOE/LAO File 2390



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

JUL 09 1998



CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John Tymkowych
Enforcement Program Manager
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
2044 Galisteo St., Bldg. A
P. O. Box 26110
Santa Fe, NM 87505

Dear Mr. Tymkowych:

Subject: Extension Request for <90 Storage Area, Technical Area 16, Los Alamos National Laboratory (LANL)

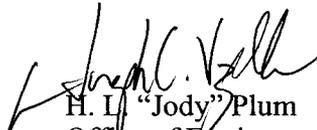
The purpose of this letter is to submit a 30-day extension request by the Department of Energy (DOE) and LANL for the storage of hazardous waste at Technical Area 16, Building 340. The waste management unit is Site ID No. 570, a less than 90-day storage area. The storage extension request is being made pursuant to the case-by-case determination basis of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Subpart III, 262.34(b).

The hazardous waste in question consists of waste contaminated with high explosives. Propane burners which are used to treat this waste are currently not operational and the Engineering Sciences and Application Division cannot treat the wastes currently in storage. The 90-day storage period ends on July 19, 1998.

Therefore, LANL is requesting this storage extension to determine and implement the appropriate waste management option for this waste. If allowed, the storage period will extend to August 17, 1998.

If you have further questions or concerns regarding this matter, please contact me at (505) 665-5042.

Sincerely,


H. L. "Jody" Plum
Office of Environment

LAAME:6JP-081

New Mexico Environment Department
Hazardous and Radioactive Materials Bureau
Review of Acceptable Knowledge for Waste Stream TA-55-43.01
Request for Supplemental Information No. 3
July 6, 1998

**Response to Answers Submitted
Regarding Acceptable Knowledge Documentation
Supporting the AK Summary Report for Waste Stream
TA-55-43.01 and for LANL Waste Determination Report
Submitted July 1, 1998**

by
John M. Tymkowych
RCRA Inspection and Enforcement Program Manager
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department

July 6, 1998

This document is prepared to formally record questions and responses regarding documentation which was submitted to Mr. Robert "Stu" Dinwiddie, RCRA Permits and Technical Program Manager and I in response to our questions regarding the Acceptable Knowledge (AK) claimed by LANL on the TA-55-43.01 waste stream.

The questions submitted by myself to LANL were directed at processes which generate the waste, specifically, the wastes which were referred to in their report in a vague fashion, e.g. "unspecified wastes", "other metals", "miscellaneous", "wastes generated by other groups", etc. The responses I received were adequate to answer some questions about the processes for some wastes however, other questions still remain as to other wastes and the processes or circumstances of their generation. The outstanding questions are as follows:

1. Please identify the wastes generated from the maintenance and repair of equipment inside and outside of the glove box, but in the same room. Please be specific to the maintenance or repair process, location, equipment, a list of the chemicals used in these activities repair processes, frequency of the maintenance or repair and management of wastes generated.
2. HEPA filters are included in this waste stream. An outstanding question regarding these filters is why there has never been an analyses performed on these filters?

New Mexico Environment Department
Hazardous and Radioactive Materials Bureau
Review of Acceptable Knowledge for Waste Stream TA-55-43.01
Request for Supplemental Information No. 3
July 6, 1998

3. Rags generated during the cladding and decontamination stage of the heat source fabrication process and other maintenance and repair operations are also of concern. The rags in the fabrication process are of concern due to the possibility of heavy metals accumulation during the decontamination step. Other rags used during maintenance are of concern because of the lack of information on the maintenance performed. Why have no analyses been performed on these rags?

4. LANL acknowledges that TRU debris waste from CLS-1 (Analytical Chemistry) is managed with other wastes from the Pu-238 processing line. What are the processes which generate this debris waste from CLS-1? How much and what kind of debris waste is/was generated? What kind of chemicals are present in CLS-1? Please provide an inventory.

New Mexico Environment Department
Hazardous and Radioactive Materials Bureau
Review of Acceptable Knowledge for Waste Stream TA-55-43.01
Request for Supplemental Information No. 3
July 6, 1998

Dr. Robert S. (Stu) Dinwiddie
Program Manager
RCRA Permits Management Program
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department

The New Mexico Environment Department (NMED) requests the following information on the Acceptable Knowledge Packet for Los Alamos National Laboratory TRU Waste Stream TA-55-43.01.

1. Numerous references have been made to a Los Alamos TRU Waste Sampling Plan, (TWCP-Plan-0.2.7-001, effective 05-07-97. NMED has not received a copy of this plan and its reported appendices to assist in our review.

Please provide NMED with a copy of this document to speed the review process.

2. DOE/LANL reports to the state that only five drums, LA00000055451, LA00000052686, LA00000055476, LA00000056091, and LA00000055625 have been visually examined and repackaged.

LANL document TWCP 1205 dated 04-07-98 indicated visual examination and repackaging of the following drums:

LA00000055938	LA00000055696	LA00000056090
LA00000055451	LA00000052686	LA00000055476
LA00000056091	LA00000055625	LA00000055437
LA00000055683	LA00000055431	LA00000055400

If the five drums that DOE/LANL states have been visually examined are subtracted from this list then there are written record provided to NMED for seven (7) additional drums that can not be accounted for on a visual examination video tape.

DOE/LANL needs to explain:

- A. why there is a difference in the written report contents with the list of drums included in the document.
- B. the presence or absence from the Visual Examination Video Tape of any of the additional seven (7) drums.

New Mexico Environment Department
Hazardous and Radioactive Materials Bureau
Review of Acceptable Knowledge for Waste Stream TA-55-43.01
Request for Supplemental Information No. 3
July 6, 1998

3. NMED representatives were told in a meeting on 24 June, 1998 that 20 drums had been processed and repackaged. If NMED adds the number of drums in the Visual Examination Report and the number of drums in the Repackaging Batch Data Report (TWCP 1215, 05-26-98) the grand total is sixteen (16) drums visually examined and repackaged.

DOE/LANL needs to identify the other four (4) drums visually examined and repackaged.

4. Visual Examination Data Report (TWCP 1205, 04-07-98) states that there are eight (8) accompanying videos. NMED has only received and viewed three videos, LA98-3.4.1-001, LA98-3.4.1-002, and LA98-3.4.1-003.
- A. What are the other five (5) videos:
1. numbers.
 2. contents.

5. DOE/LANL has indicated in meetings with NMED staff on 25 June, 1998 that three drums have completed the repackaging process. Information in the Repackaging Batch Data Report TWCP 1215, 05-26-98 indicates four (4) drums have been repackaged and the Visual Examination Data Report indicates that twelve (12) drums have been repackaged.

- A. DOE/LANL must provide a definitive explanation and description of every drum that has been visually examined and repackaged.
- B. DOE/LANL must explain the discrepancies noted above.

6. Waste Storage Records for drum LA00000055693 were submitted as part of the original packet to review on 18 May, 1998. Waste Storage Records were not submitted for this drum in the response to the first Request for Supplemental Information on 24 June, 1998. To further complicate the review this drum is not included in the Visual Examination, Repackaging, RTR, or the Headspace Gas Summary Data Reports. This drum is included on the RTR Video tape.

DOE/LANL needs to explain what has happened to this drum in reference to this review.

7. In the first Request for Supplemental Information issued 24 June, 1998 NMED stated that it had determined that each Waste Storage Records submitted for review " has been determined to be missing at least part of a form(s). NMED

New Mexico Environment Department
Hazardous and Radioactive Materials Bureau
Review of Acceptable Knowledge for Waste Stream TA-55-43.01
Request for Supplemental Information No. 3
July 6, 1998

asks that DOE/LANL submit new complete copies." This determination was based on a packet of five hundred twenty three (523) pages. If this packet was not complete at 523 pages NMED finds it difficult to understand how the three hundred sixty (360) pages submitted on 26 June, 1998 can be a "new complete copy" at 163 pages less than the first submittal.

Again NMED asks for a complete Waste Storage Record for these drums. DOE Staff has been provided with a page of document titles and waste drum information that was compiled from the documents included in the original submittal. These are all documents related to the Acceptable Knowledge documentation for this waste stream.

TO BERT

LANL's Responses to NMED's Response to Answers Submitted on July 6, 1998



Questions from John M. Tymkowych

1. Please identify the wastes generated from the maintenance and repair of equipment inside and outside of the glove box, but in the same room. Please be specific to the maintenance or repair process, location, equipment, a list of the chemicals used in these activities repair processes, frequency of the maintenance or repair and management of wastes generated.

Response: Maintenance activities on the heat source fabrication line involve replacement of equipment (for example, furnaces, electrical components, etc.) and glovebox components (for example, windows, gloves, etc.). No chemicals, solvents, or cleaning agents are used for in-line maintenance activities. Clean-up activities in the glovebox involve brushes and dry rags only. Replacement of glovebox components does involve activity outside the glovebox line in the room. Some debris waste generated in this activity will be contaminated at transuranic levels and will be included in waste stream TA-55-43, Lot No. 01. This consists of rags dampened with Fantastic. Outside the glovebox line, the only cleaning agent used for decontamination is Fantastic (nonhazardous by review of the MSDS). Maintenance activities are not routinely scheduled—equipment is operated to failure and then replaced, and gloveboxes are maintained on an as-needed basis. Failed equipment is not part of this waste stream.

2. HEPA filters are included in this waste stream. An outstanding question regarding these filters is why there has never been an analyses performed on these filters?

Response: Contaminated HEPA filters are typically not sampled for chemical assay. The heat source fabrication glovebox line is a closed system and the processes and environment enclosed are sufficiently known to characterize potential hazardous waste generation. HEPA filters are debris waste for which no sampling and analysis protocol has been approved for hazardous waste determinations.

As discussed in the LANL Waste Determination Report (TWCP-1253), the filters did not receive metals that may have existed in the plutonium as impurities because any emissions resulting from the heating process went directly to the basement filters which are not included in waste stream TA-55-43, Lot No. 01. In addition, because no listed waste was involved in these processes and no F-listed solvents are associated with the HEPA filter construction or testing, the filters are not a listed waste.

3. Rags generated during the cladding and decontamination stage or the heat source fabrication process and other maintenance and repair operations are also of concern. The rags in the fabrication process are of concern due to the possibility of heavy metals accumulation during the decontamination step. Other rags used during maintenance are of concern because of the lack of information on the maintenance performed. Why have no analyses been performed on these rags?

Response: Heat source cladding decontaminated with rags at the end of the fabrication process are composed of DOP-26 iridium alloy which consists of iridium and tungsten or platinum 30 rhodium alloy. These alloys are selected specifically for their high chemical stability even at elevated temperatures and contain no RCRA metals. Rags cannot accumulate RCRA-regulated heavy metals in this process or in any other fabrication or maintenance activity that would cause the waste to exceed the toxicity characteristic criteria.

The rags do not contain levels of Cr that have increased by the decontamination process. By dissolving any remaining Pu on the outside of the cladding, while it may contain Cr impurities, no increase in Cr/Pu ratio would occur due to a difference in solubility between Cr and Pu. This is because the solubility of the Cr would be controlled by not only its inherent ability to dissolve, but also by its availability to do so. The manner in which the Cr exists as an impurity in the Pu oxide structure precludes its dissolution without first dissolving the Pu. Consequently, the decontamination acid bath would not likely contain levels of Cr at a Cr/Pu ratio higher than the original configuration in the feedstock and intermediate steps. It follows that any excess acid that might be absorbed by the rags would contain Cr concentrations that did not increase the Cr/Pu ratio by the decontamination step. Because the Pu concentration is controlled by the thermal wattage limits for each drum, and the Cr to Pu ratio does not exceed the toxicity criteria for Cr, insufficient amounts of Pu, and hence, Cr could exist in the drums to be hazardous waste due to Cr.

With regard to rags from maintenance activities, the same reasoning would apply as above. No increase in the Cr to Pu ratio would occur due to these activities because no chemical change would cause Cr to be more soluble than Pu.

The heat source fabrication glovebox line is a closed system and the processes and environment enclosed are sufficiently known to characterize potential hazardous waste generation. The rags are debris waste for which no sampling and analysis protocol has been approved for hazardous waste determinations.

4. LANL acknowledges that TRU debris waste from CLS-1 (Analytical Chemistry) is managed with other wastes from the Pu-238 processing line. What are the processes which generated this debris waste from CLS-1? How much and what kind of debris waste

is/was generated? What kind of chemicals are present in CLS-1? Please provide an inventory.

Response: No debris waste is returned to the heat source fabrication glovebox line from CLS-1 (Analytical Chemistry). Only analytical solutions are returned and these are processed by precipitation and discarded in the hydroxide cake precipitate or in the filtrate. Those solutions contain the plutonium oxide feed or product material dissolved in hydrochloric acid, a small amount of nitric acid and an even smaller amount of hydrofluoric acid. The solution also contains some ascorbic acid and zirconyl chloride. No RCRA-regulated heavy metals or solvents are reagents in the analytical procedures. The hydroxide cake is managed as a debris waste stream, but not as part of waste stream TA-55-43, Lot No. 01. In fact, all debris from this end of the line process (process status code R-8) is segregated from waste stream TA-55-43, Lot No. 01. The hydroxide cake contaminated with discarded CLS-1 analytical returns and all other debris from the R-8 process will be characterized as part of another Pu-238 debris waste stream.

Questions from Stu Dinwiddie

1. Numerous references have been made to a Los Alamos TRU Waste Sampling Plan. TWCP-PLAN-0.2.7-001, effective 05-07-97. NMED has not received a copy of this plan and its reported appendices to assist in our review.

Please provide NMED with a copy of this document to speed the review process.

Response: LANL provided NMED a copy of the Sampling Plan on July 8, 1998.

2. DOE/LANL reports to the state that only five drums, LA00000055451, LA00000052686, LA00000055476, LA00000056091, and LA00000055625 have been visually examined and repackaged.

LANL document TWCP 1205 dated 04-07-98 indicated visual examination and repackaging of the following drums:

LA00000055938	LA00000055696	LA00000056090
LA00000055451	LA00000052686	LA00000055476
LA00000056091	LA00000055625	LA00000055437
LA00000055683	LA00000055431	LA00000055400

If the five drums that DOE/LANL states have been visually examined are subtracted from this list then there are written records provided to NMED for seven (7) additional drums that cannot be accounted for on a visual examination video tape.

DOE/LANL needs to explain:

A. Why there is a difference in the written report contents with the list of drums included in the document.

Response: TWCP 1205 lists the five drums that underwent visual examination on both the cover page as well as the batch report cover sheet. The list of drums NMED lists above can be found in the logbook page that was copied and included as part of the visual examination data package. It specifically says on that logbook page that those drums were on the videotapes of RTR that were being reviewed before repackaging operations — they were not the list of drums that underwent visual examination.

B. The presence or absence from the Visual Examination Video tape of any of the additional seven (7) drums.

Response: See response on item A above.

3. NMED representatives were told in a meeting on 24 June 1998 that 20 drums had been processed and repackaged. If NMED adds the number of drums in the Visual Examination Report and the number of drums in the Repackaging Batch Data Report (TWCP 1215, 05-26-98) the grand total is sixteen (16) drums visually examined and repackaged.

DOE/LANL needs to identify the other four (4) drums visually examined and repackaged.

Response: One cannot add the number of drums in the Visual Examination Report and the number of drums in the Repackaging Data Report to get the total number of drums repackaged. Five of the drums that were repackaged were also visually examined. TWCP 1215 gives information on the first five drums repackaged. The next two batches of drums repackaged are six drums each. Those data reports are being processed now and one of the data reports (TWCP-1254) was given to NMED on July 8. The remaining drums are in various stages of being repackaged and will be in subsequent batch data reports.

4. Visual Examination Data Report (TWCP 1205, 04-07-98) states that there are eight (8) accompanying videos. NMED has only received and viewed three videos, LA98-3.4.1-001, LA98-3.4.1-002, and LA98-3.4.1-003.

What are the other five (5) videos, (1) numbers and (2) contents.

Response: The eight videos refers to the original four videos and the four duplicate videos for record purposes, as follows:

LA98-3.4.1-001 contains Drum No. 55451.

LA98-3.4.1-002 contains Drum Nos. 52686 (2nd half), 55476, and 56091.

LA98-3.4.1-003 contains Drum Nos. 52686 (1st half), S815153, and S813552.

LA98-3.4.1-003z contains drum No. 55625.

LANL provided NMED on July 8, 1998 with video LA98-3.4.1-003z which was evidently not provided with the other three videos.

5. DOE/LANL has indicated in meetings with NMED staff on 25 June, 1998 that three drums have completed the repackaging process. Information in the Repackaging Batch

Data Report, TWCP-1215, 05-26-98 indicated four (4) drums have been repackaged and the Visual Examination Data Report indicates that twelve (12) drums have been repackaged.

A. DOE/LANL must provide a definitive explanation and description of every drum that has been visually examined and repackaged.

Response: The following is a list of drums (parent) from this waste stream that have undergone visual examination: 52686, 55451, 55476, 55625, and 56091.

The following is a list of drums (parent/daughter) from this waste stream that have been repackaged: 55476/57023, 56053/57029, 56053/57030, 55403/57033, 55695/57200, 52686/57020, 55683/57043, 55683/57044, 55683/57045, 55683/57046, 55400/57048. Six additional drums have been repackaged to date and the batch data report is in process.

B. DOE/LANL must explain the discrepancies noted above.

Response: There appears to be some confusion, in addition to the visual examination question (see response to number 5 above), related to “parent” drums versus “daughter” drums. Parent drums are the 36 drums on the list for this waste stream, some of which are repackaged into more than one daughter drum. The parent drums are: 52686, 55400, 55401, 55403, 55406, 55431, 55437, 55439, 55451, 55452, 55476, 55558, 55605, 55614, 55615, 55625, 55631, 55663, 55666, 55668, 55683, 55695, 55696, 55836, 55922, 55938, 56000, 56019, 56053, 56090, 56091, 56142, 56225, 56283, 56397, 56638.

6. Waste Storage Records for drum LA00000055693 were submitted as part of the original package to review on 18 May 1998. Waste Storage Records were not submitted for this drum in the response to the first Request for Supplemental Information on 24 June 1998. To further complicate the review, this drum is not included in the Visual Examination, Repackaging, RTR, or the Headspace Gas Summary Data Reports. This drum is included on the RTR video tape.

DOE/LANL needs to explain what has happened to this drum in reference to this review.

Response: LANL conducts RTR on drums in waste streams other than waste stream TA-55-43, Lot No. 01; for this reason, drum 55693 appears on the RTR videotape. However, drum 55693 is not part of waste stream TA-55-43, Lot No. 01; it belongs to a Pu-239 waste stream.

7. In the first Request for Supplemental Information issued 24 June 1998, NMED stated that it had determined that each Waste Storage Record submitted for review “has been determined to be missing at least part of a form(s). NMED asks that DOE/LANL submit new complete copies.” This determination was based on a packet of five hundred twenty three (523) pages. If this packet was not complete at 523 pages NMED finds it difficult to understand how the three hundred sixty (360) pages submitted on 26 June 1998 can be a “new complete copy” at 163 pages less than the first submittal.

Again, NMED asks for a complete Waste Storage Record for these drums. DOE Staff has been provided with a page of document titles and waste drum information that was compiled from the documents included in the original submittal. These are all documents related to the Acceptable Knowledge documentation for this waste stream.

Response: The 360-page package represented the documentation required by TA-55 in their waste management procedures. The difference between the 523 pages and the 360 pages is information that is ancillary (that is, not required by waste management procedures but was part of staff informational files). LANL has provided NMED with Waste Storage Records for each drum that consist of all information required by the waste management procedures. The following is an explanation of why the records do not necessarily match from one drum to the next (however, all required information is included in some format for every drum).

TRU Waste Storage Record and Waste Drum Report: The Waste Storage Record and Waste Drum Report will vary in format for the drums over the time period of this waste stream based on the following three stages of changes to procedures and forms:

- In the earliest stage, the waste drum report is an old version of the database record; few of the data packages have this version of the record; the package we are presenting to you also has the information printed in new version as well.
- In the next stage, the waste storage record is a new version of the database record; most of the data packages have this version.
- In the last stage, drums have been tracked on the Waste Management System and will not have a separate database report; all record keeping is done electronically (TWSR, DWLS, WODF); there are no hand-written records that need to be transcribed into the database.

Waste Profile Form and Waste Profile System:

Early versions of the Waste Profile Form, profile request, and the waste determination were all on the same form. Later versions of the Waste Profile Form, request with the signature and the profile request (Waste Profile Request) with the determination (printed out final Waste Profile System without signatures) are separate forms.

Discardable Waste Log Sheet:

Early versions of the Discardable Waste Log Sheet were a hand-written log that was reiterated in the computer printout. Later versions are only in the computer printout form. In the Waste Management System, there are no hand-written logs that are transcribed into the database.

Nuclear Material Summary Sheet:

Early versions of the Nuclear Material Summary Sheet are part of the computer summary. In later versions, i.e., printouts from the Waste Management System, the same data can be found on the Discardable Waste Log Sheet.

Hazmat Summary:

Early versions of the hazmat summary were part of the computer summary. In later versions, this information is on individual Waste Origination and Disposition Forms or TRU Waste Storage Records; no hazmat summary was printed out separately.

Health Physics Radioactive Materials Survey Tag:

Data from health physics radioactive materials survey tags are included in the TRU Waste Storage Records except for the 1-m dose, which is required for transportation; for some time, TA-55 was including copies of the Radioactive Materials Survey Tag to transmit the 1-m dose information. Because of this, only some of the packages include copies of the tag. The current version of the TRU Waste Storage Record includes a blank to enter the 1-m dose.

Drum Disposal Request and Authorization:

The Drum Disposal Request and Authorization was a Securities and Safeguards form used for special nuclear material control and accountability. When NMT-4 was controlling the on-site shipping, the form was used and maintained in their records. When NMT-7 began shipping, NMT-7 copied that form and made it part of the on-site shipping paperwork. Now, with implementation of the Waste Management System, special nuclear material approvals are done on-line and no paper copies are provided with the on-site shipping paperwork.

Data Management Information System Form:

LANL is not clear what form this references unless it is referencing page 2 of the TWSR.

LANL provided another set of Waste Storage Records (TWCP-1256) to NMED on July 8, 1998.

**Request for Supplemental Information and
Questions Regarding Acceptable Knowledge Documentation
Supporting the AK Summary Report for Waste Stream
TA-55-43.01**

**by
John M. Tymkowych
RCRA Inspection and Enforcement Program Manager
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department**

June 25, 1998

This document is prepared to formally record questions and responses regarding documentation which was submitted to NMED on May 18, 1998 in support of the Acceptable Knowledge Summary Report for Combustible/Noncombustible Waste Stream TA-55-43.01. The summary report is the resulting document produced by LANL to prove the non-mixed nature of the subject waste stream and was submitted to NMED in anticipation of shipment of the same to WIPP. Upon review of the report, questions regarding the completeness of the acceptable knowledge documentation and the acceptability of the documentation under the RCRA requirements for "process knowledge" became evident. Due to the questionable nature of the support documentation, Mr. Robert "Stu" Dinwiddie, RCRA Permits and Technical Program Manager and I were assigned to perform an in depth review of the documentation and determine the validity and completeness of the AK information. Based upon the review of the supporting documentation, the following questions and requests for documentation are as follows:

Document Title	Effective Date
Form: TWCP-887	8/21/97
Submitted By: Pamela Rogers	
Subject: Commingling of Defense and Nondefense TRU Waste	

Request: Please explain what the FFTF Project is/was, where does/did it take place and if any wastes from this project are present in the subject waste stream. Please provide documentation of this.

Form: TWCP-700	8/6/97
Submitted By: Pamela Rogers	
Subject: TA-55 Generator Attachment to Los Alamos Certification Plan	

Question: Section 2.0 identifies 004 and 005 waste streams as "newly generated", is there an old 004 and 005 or are they the same? Please explain.

Form: TWCP-701

8/6/97

Submitted By: Pamela Rogers

Subject: TA-55 Generator Attachment to Los Alamos Certification Plan

Questions:

Sec. 1.0 - Describes wastes generated by "other groups", please identify and describe the wastes from other groups and their management.

Sec. 2.1 - Please identify and provide information on the generation processes for the paper waste, rags and scrap metal.

Sec. 2.1.1 - What is meant by the term "miscellaneous"?

Sec. 2.1.2 - Please identify the "rags" and their generation process. Also, please explain what the term "similar materials" means.

Sec. 2.1.3 - What is the composition of the graphite crucibles, is it just graphite or are there other compounds used to fabricate them? Please provide information.

Sec. 2.2.1 - Please identify the composition of the metal valves, tools, cans, motors, and pumps. Also, please describe the "miscellaneous similar items".

Sec. 2.2.2 - Please identify the composition of the heating mantles and explain why leaded gloves are included if this document is for the 43.01 non-mixed waste stream.

Sec. 2.3 - Please identify the "unspecified wastes". What are the provision sections on the "major waste forms"?

Sec. 3.8.6 - Explain how visual inspection can identify all pyrophorics?

Form: TWCP-351

10/16/96

Subject: TA-55 Waste Management Procedure

Document: #539-GEN-R02

Questions:

Sec. 3.10 - Indicates that an individual will be assigned to establish and maintain an AK file for each activity. Where are these files, who are the individuals and are these records available? If so, please submit.

Page 3

Sec. 5.4 - Hazardous Chemicals, is there a list of all chemicals that were used and where they were used.

Form: TWCP-813 8/16/97
Submitted By: Pamela Rogers
Subject: Changes to EPA codes in TRU Waste Storage Database

Question: Please explain and provide documentation on why the AK determinations by Juan Corpion in 1992 are not acceptable.

Form: TWCP-1026 2/2/98
Submitted By: Pamela Rogers
Subject: Milliwatt Generator Project-Tables of Trace Elements in Pu 238 Feed Lots

Question: Table III-3 indicates high levels of Ca in the feedstock, what is the final physical state of this Ca after the feedstock is processed at TA-55? Is it calcium metal? Is it pyrophoric?

Form TWCP-1037 2/3/98
Submitted By: Pamela Rogers
Subject: Acceptable Knowledge for Pu 238 Waste Generation at TA-55

Questions:

Page 2, para. 1, middle - Please identify the "contamination" removed from the heat source. Is it radioactive, metals, etc. ? Have the rags ever been tested for metals?

Page 2, para. 2 - Is there any possibility of As, Hg and Se being introduced into the process at TA-55? Please explain and provide documentation.

Page 8, para. 2, end, - Indicates the precipitation step concentrates insoluble metals, what metals? Please explain.

Page 8, para. 3 - Please expand on the hydroxide cake, have there been any analyses performed? Is there any other waste associated with the R8 waste that would be found in the TA-55-43.01 waste?

Page 4

Form: TWCP-1044 2/3/98
Submitted By: Pamela Rogers
Subject: RCRA Characterization of Savannah River Site Produced
Plutonium Oxide

Question: Has SRS ever performed any RCRA metals ~~ap~~ ~~596~~ RCRA
on the feedstock? If not, why?

Nuclear Materials Technology Procedure 4/25/98
Subject: Waste Management Plan TA-55
Procedure: #406-Gen7, R03

Questions:

Sec. 7.4.7 - Indicates all TRU mixed waste is acceptable at WIPP. Is there a correction to this or is this premise what TA-55 has operated under.

Appendix A - Letter dated July 7, 1977 indicates liquids in the waste stream, please explain any processes which used liquids and provide any documentation if possible.

Appendix B - WODF refers to stripping salts which contain sodium metal, a pyrophoric. Please explain or provide documentation on the process that generated these stripping salt wastes.

Ta-55 Procedure 10/18/96
Procedure: #539-GEN-R02

Question: Section 10.3.3.9 - Grouping Items into Lots, is there any documentation that expands on this segregation of waste? Please explain.

Nuclear Materials Technology Procedure 11/8/91
Inspection and Packaging of Certifiable
Combustible and Noncombustible Transuranic Waste for Wipp
Procedure: #TRU-NMT7-DP-01, R04

Questions:

Sec. 2.1.6 - Identifies leaded gloves in non combustible TRU waste, please explain.

Sec. 7.3.4 - Please explain the "process knowledge" which covers this section on explosives and pyrophorics.

Page 5

Record: TRU Waste Storage Records
Document #s: 55695, 55938, 56053, 55605

Question: These containers hold HEPA filters which were identified as waste stream TA-55-47 in the AK summary report. Why is this waste stream included with TA-55-43.01? Please explain.

Any answers to the above questions and any documentation submitted should be focussed primarily on the specific waste stream which would apply.

Finally, it is requested that all processes which generate the wastes identified in the AK Summary Report for wastes generated in TA-55, be explained in detail. Please correlate this information with the container storage documentation. This will assist NMED in determining the acceptability of the AK claim.

- a. Sec. 1.0 - Describes wastes generated by "other groups", please identify and describe the wastes from other groups and their management.
- b. Sec. 2.1 - Please identify and provide information on the generation processes for the paper waste, rags and scrap metal.
- c. Sec. 2.1.1 - What is meant by the term "miscellaneous"?
- d. Sec. 2.1.2 - Please identify the "rags" and their generation process. Also, please explain what the term "similar materials" means.
- e. Sec. 2.1.3 - What is the composition of the graphite crucibles, is it just graphite or are there other compounds used to fabricate them? Please provide information.
- f. Sec. 2.2.1 - Please identify the composition of the metal valves, tools, cans, motors, and pumps. Also, please describe the "miscellaneous similar items".
- g. Sec. 2.2.2 - Please identify the composition of the heating mantles and explain why leaded gloves are included if this document is for the 43.01 non-mixed waste stream.
- h. Sec. 2.3 - Please identify the "unspecified wastes". What are the provision sections on the "major waste forms"?
- I. Sec. 3.8.6 - Explain how visual inspection can identify all pyrophorics?

Form: TWCP-351 10/16/96
 Subject: TA-55 Waste Management Procedure
 Document: #539-GEN-R02

Questions:

- a. Sec. 3.10 - Indicates that an individual will be assigned to establish and maintain an AK file for each activity. Where are these files, who are the individuals and are these records available? If so, please submit.
- b. Sec. 5.4 - Hazardous Chemicals, is there a list of all chemicals that were used and where they were used.

Document Title Effective Date

Form: TWCP-813 8/16/97
 Submitted By: Pamela Rogers
 Subject: Changes to EPA codes in TRU Waste Storage Database

Question: Please explain and provide documentation on why the AK determinations by Juan Corpion in 1992 are not acceptable.

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Form TWCP-1037 2/3/98
Submitted By: Pamela Rogers
Subject: Acceptable Knowledge for Pu 238 Waste Generation at
TA-55

Questions:

- a. Page 2, para. 1, middle - Please identify the "contamination" removed from the heat source. Is it radioactive, metals, etc. ? Have the rags ever been tested for metals?
- b. Page 2, para. 2 - Is there any possibility of As, Hg and Se being introduced into the process at TA-55? Please explain and provide documentation.
- c. Page 8, para. 2, end, - Indicates the precipitation step concentrates insoluble metals, what metals? Please explain.
- d. Page 8, para. 3 - Please expand on the hydroxide cake, have there been any analyses performed? Is there any other waste associated with the R8 waste that would be found in the TA-55-43.01 waste?

Form: TWCP-1044 2/3/98
Submitted By: Pamela Rogers
Subject: RCRA Characterization of Savannah River Site Produced Plutonium Oxide

Question: Has SRS ever performed any RCRA metals analysis on the feedstock? If not, why?

Document Title	Effective Date
Nuclear Materials Technology Procedure Subject: Waste Management Plan TA-55 Procedure: #406-Gen7, R03	4/25/98

Questions:

- a. Sec. 7.4.7 - Indicates all TRU mixed waste is acceptable at WIPP. Is there a correction to this or is this premise what TA-55 has operated under.
- b. Appendix A - Letter dated July 7, 1977 indicates liquids in the waste stream, please explain any processes which used liquids and provide any documentation if possible.
- c. Appendix B - WODF refers to stripping salts which contain sodium metal, a pyrophoric. Please explain or provide documentation on the process that generated these stripping salt wastes.

Ta-55 Procedure Procedure: #539-GEN-R02	10/18/96
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Question: Section 10.3.3.9 - Grouping Items into Lots, is there any documentation that expands on this segregation of waste? Please explain.

Nuclear Materials Technology Procedure 11/8/91
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Combustible and Noncombustible Transuranic Waste for Wipp
Procedure: #TRU-NMT7-DP-01, R04

Questions:

- a. Sec. 2.1.6 - Identifies leaded gloves in non combustible TRU waste, please explain.
- b. Sec. 7.3.4 - Please explain the "process knowledge" which covers this section on explosives and pyrophorics.

Record: TRU Waste Storage Records
Document #: 55695, 55938, 56053, 55605

Question: These containers hold HEPA filters which were identified as waste stream TA-55-47 in the AK summary report. Why is this waste stream included with TA-55-43.01? Please explain.

Document Title

Effective Date

Any answers to the above questions and any documentation submitted should be focussed primarily on the specific waste stream which would apply.

Finally, it is requested that all processes which generate the wastes identified in the AK Summary Report for wastes generated in TA-55, be explained **in detail**. Please correlate this information with the container storage documentation. This will assist NMED in determining the acceptability of the AK claim.

**Request for Supplemental Information and
Questions Regarding Acceptable Knowledge Documentation
Supporting the AK Summary Report for Waste Stream
TA-55-43.01**

by
Robert S. (Stu) Dinwiddie, Ph.D.
Program Manager
RCRA Permits Management Program
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department

General Comments:

1. Presence or non presence of "filter cake" waste in TA-55-43.01 is not clear because documents appear to contradict its presence or non presence.
 - a. A complete definitive filter cake description and waste stream identification and container identification numbers for containers that filter cake is contained in must be provided.
 - b. A complete description of the different types of filter cake and their origin, and disposition including container identification number must be provided.
2. Completion of this review is waiting on the submission of:
 - a. complete waste storage report forms for all thirty-six (36) containers.
 - b. complete process and waste generation description for wastes generated during the process that are not the end product waste.

Specific Document Comments:

1. The following Carlsbad Area Audit Checklists have information on the first page to indicate an audit of Los Alamos National Laboratory and subsequent pages indicate the information is from Idaho National Engineering and Environmental Laboratory. The Carlsbad Area Office Audit Number remains A-97-07 and the person completing the form is the same (A. L. Holland)
 - a. LANL Waste Characterization/Transport/Certification Program three copies submitted.
 - b. LANL TWCP/Transportation QA: Inspection, test, shipping, handling, and storage four copies submitted.
 - c. LANL Waste Characterization/Transport/Certification Program

nine copies submitted based on separate controlling documents. All checklists submitted had the same discrepancy.

An additional "INEEL" document was submitted without page 1 to identify facility or audit. Audit number on pages 2 and 3 are CAO A-97-07. Specific inspection information indicates that the subject may have been the "Porta-Leak Detector"

These forms raise two questions.

- a. If the subsequent pages are errors they need to be explained. If they are not errors that also needs to be explained.
- b. There has been no explanation of the Carlsbad Area Office Audit Numbering Procedure which brings up the following questions.
 1. Does CAO use different numbers for every facility?
 2. For example will each facility have a unique audit number?
 3. Are the numbers sequential by facility or by year?

2. The following Carlsbad Area Office Audits of Los Alamos National Laboratory indicated that the following audit checklists were completed based on deactivated or superseded Quality Plans or Detailed Technical Plans.

- a. Audit No.: A-97-07 Date: 8-18/22-97
Subject: Quality Improvement - Variances
- b. Audit No.: A-97-07 Date: 8-18/22-97
Subject: PDP Sample Management, Analysis, and Reporting
- c. Audit No.: A-97-07 Date: 8-18/22-97
Subject: Audits
- d. Audit No.: A-97-07 Date: 8-18/22-97
Subject: Waste Container Tracking
- e. Audit No.: A-97-07 Date: 8-18/22-97
Subject: Document Control
- f. Audit No.: A-97-07 Date: 8-18/22-97
Subject: Trend Analysis
- g. Audit No.: A-97-07 Date: 8-18/22-97
Subject: Personnel Qualification and Training
- h. Audit No.: A-97-07 Date: 8-18/22-97
Subject: Quality Improvement - Nonconformances
- i. Audit No.: A-97-07 Date: 8-18/22-97
Subject: Quality Improvement - Corrective Action
- j. Audit No.: A-97-01 Date: 5-12/16-97
Subject: Document Preparation and Control
- k. Audit No.: A-97-01 Date: 5-12/16-97
Subject: Personnel Qualifications and Training
- l. Audit No.: A-97-01 Date: 5-12/16-97
Subject: Records Management

- m. Audit No.: A-97-01 Date: 5-12/16-97
Subject: Quality Improvement - Nonconformances
- n. Audit No.: A-97-01 Date: 5-12/16-97
Subject: Quality Improvement - Corrective Action
- o. Audit No.: A-97-01 Date: 5-12/16-97
Subject: Data Generation Level
- p. Audit No.: A-97-01 Date: 5-12/16-97
Subject: Inspection and Test
- q. Audit No.: A-97-01 Date: 5-12/16-97
Subject: Quality Improvement - Variances
- r. Audit No.: A-97-01 Date: 5-12/16-97
Subject: PDP Sample Management, Analysis, and Reporting
- s. Audit No.: A-97-01 Date: 5-12/16-97
Subject: Waste Container Tracking
- t. Audit No.: A-97-01 Date: 5-12/16-97
Subject: Management Assessment

3. The Following Comments and Questions were generated from the Los Alamos National Laboratory TWCP-1042, LAUR-98-2016 Acceptable Knowledge Summary Report.

- a. Page 3, Paragraph 2, Line 5:
The Resource Conservation and Recovery Act does not regulate chemicals, it does regulate waste that may or may not be contaminated by chemicals which are Characteristic, or Listed. Chemicals, and notification of their presence an/or use, that are not waste may be covered under Title III of the Superfund Amendments and Reauthorization Act.
- b. Page 3, Paragraph 2, Line 7:
"Most of the waste generated from ²³⁸Pu fabrication activities is thus nonmixed waste, including waste streams TA-55-43, 45, and 47."

Use of the generalized term "Most" when speaking of specific waste streams leads the reader to believe that there is a portion of the waste streams mentioned that is mixed waste. Use of the word "most" must be explained in specific waste stream information.

- c. Page 4 Section No.2, Facility Mission Line 9:
"...and use of equipment and consumables"

Consumables is not a specific enough term to describe the waste generated during the process. NMED requests:

1. a list of "consumables" used in the process
2. the points at which they become waste, and
3. how they are identified in the waste inventory

d. Page 5 Waste Physical Form Section

Description waste physical form which addresses all waste streams in this report within one paragraph is inappropriate. Regulators and the public need a specific description of each waste stream's waste physical form in recognizable separate paragraphs to avoid confusion. Additional separation between the mixed and nonmixed waste streams is necessary. The way this paragraph is written leads the reader to believe that the only decision factor used by LANL to determine mixed/nonmixed status is presence or absence of lead.

e. Page 6, Paragraph 1, Line 2:

Specific description/definition for LANL use of "no free liquids" must be provided.

f. Page 6, Paragraph 2, Line 4:

"The WPRF is submitted to waste management reviewers, who assign the appropriate EPA hazardous waste codes and return the approved WPRF to the generator, who may then begin to generate the Waste."

Paragraph two does not identify the WPRF approval authority or process. This paragraph reads as if the unapproved WPRF is submitted to waste management reviewers and is approved during the return trip by an unknown process between the reviewers and the generator by unknown person or persons. LANL needs to describe the process more fully to include QA/QC at the approval level.

g. Page 6, Paragraph 5:

Paragraph five reference to "hydroxide cake" (Process R8) is written in such a manner that readers interpret this as two separate waste streams.

h. Page 6, Last Line and Page 7 First Line:

Sentence quoted is in reference Process R8 which is included in Waste Stream TA-55-43.01: "At this time analysis information is not sufficient to prove that the precipitate is below regulatory threshold limits for RCRA metals."

LANL needs to explain in detail how Process R8 filter cake waste presence in this waste stream still allows TA-55-43.01 to be declared a "TRU-Only" Waste Stream.

i. Page 7, Paragraph 1, Lines 6 through 8:

"Drums containing items from Process R8 will be handled in one of two ways. Either the item will be removed during the repackaging already required to bring the waste container into compliance with the shipping wattage limits, or the entire container will be assigned to a waste stream denoted as containing mixed waste."

This review has not found any documentation of the removal of Process R8 waste from the drums or the redesignation of the drums containing Process R8 waste as mixed waste. LANL must provide such documentation.

j. Page 7, Paragraph 4

Is this paragraph describing another portion of the Process R8 or a separate process that generates a different type of filter cake?

- k. Page 8, Paragraph 3, Line 1:

Use of the generic words "metallic waste" does not specify these metallic wastes do not contain RCRA metals. Specific language to describe the types of metal in the "metallic waste" and its specific generation method is needed.

- l. Page 8, Paragraph 3, Line 4:

"HEPA filters are generated from facility and equipment operations and maintenance."

Processes described in the documents provided indicated these HEPA filters may contain volatile RCRA regulated metals. LANL must provide documentary proof that these HEPA filters do not contain RCRA regulated metals.

- m. Page 9, Paragraph 3:

"According to process descriptions (TWCP-1037), the only chemicals present in the waste are PuO₂, yttrium, nitric acid and hydrofluoric acid residues, and UCAR C-34 cement residues."

Nitric and Hydrofluoric Acid residues are regulated by RCRA. Specific information on why the presence of these constituents are not regulated must be provided by LANL.

- n. Page 9, Paragraph 4, Lines 1 through 3:

"Other chemicals of concern for disposal at WIPP that are not included in the EPA listings are bromoform; cyclohexane; 1,1-dichloroethane; cis-1,2-dichloroethylene; formaldehyde; 1,1,2,2-tetrachloroethane; antimony; beryllium; vanadium; and zinc."

These constituents are not considered when completing the WPRF (see e above) nor is any analytical method conducted to prove the thresholds for RCRA metals is not exceeded. Beryllium, and vanadium are regulated substances yet not considered in waste stream characterization. LANL must provide waste stream characterization information for these constituents.

- o. Page 12, Section 6, Paragraph 1 and accompanying list.

Waste Parameters Assigned are not specific enough to preclude RCRA metals, for example Iron and aluminum-bases metals are included as well as another group of "other metals". Based on the stated exclusion of some RCRA metals from consideration by LANL the "other metals" must be described in detail to exclude the inference that those RCRA metals in comment m above are not present in the "other metals" category. There is no documentation provided to prove the absence of RCRA metals as one in this parameter.

- p. Page 13, Section 7, Paragraph 2 and Table 2:

Use of general term "impurities" in this section does not specify if those impurities are actinides or other possible RCRA metal constituents. A detailed explanation of the word "impurities" and how it relates to limiting the process steps to exclude RCRA metals must be provided to NMED.

q. Page 15, Table 3 and Paragraphs 1 through 4:

1. Use of vague terminology such as "very well" to describe the removal efficiency of a process is not acceptable. There is no explanation in text that can be related to a percentage or numerical value.

2. Paragraph 2 and the accompanying formula followed by the application of the twenty times rule is an inappropriate use of theoretical extrapolation and the twenty times rule to determine regulatory limits of nonspeciated RCRA metals. Based on information provided in this paragraph and paragraphs to section 8 on page 19 must

be explained in detail to address the application and correlation of total chrome calculations to the values of Cr⁶.

4. Processes described in documents presented indicates that HEPA filters are on waste Stream TA-55-47. Four Waste Storage Records for Waste Stream TA-55-43.01 contain HEPA filters. Where did these HEPA filters come from and do they contain any of the volatilized RCRA metals from the high temperature processing areas. For Example process temperatures are reported to exceed the boiling point for arsenic, mercury, and selenium by as much as 1,000 degrees C. Where do these volatilized metals end up? If these metals are trapped in HEPA filters why are the filters not a hazardous waste?