

To Be Added Steve T -

United States Government

Department of Energy

memorandum

Carlsbad Area Office
Carlsbad, New Mexico 88221

DATE: DEC 13 1995
REPLY TO
ATTN OF: CAO:NTP: 95-3131
SUBJECT: Monthly Highlights for November 1995
TO: Those on Attached List

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DEC 18 1995

NEW ENVIRONMENT DEPARTMENT
OFFICE OF THE SECRETARY

Attached is the Carlsbad Area Office's (CAO) National Transuranic (TRU) Waste Program (NTP) Monthly Highlights report for November 1995. This month's feature article focuses on waste characterization systems. This month's issue also reports on the following:

- The proceedings of the TRU Waste Steering Committee meeting and the NTP Annual Update meeting held in San Antonio, Texas, November 28 through 30.
- Status of the Packaging Model 72-B RH TRU Waste Package Safety Analysis Report.
- Various activities and accomplishments at the Oak Ridge National Laboratory and Savannah River Site.

Please be advised that this will be the last issue of the NTP Monthly Highlights. The CAO has initiated a new publication entitled *TRU Progress* which will be published on a quarterly basis and report on the activities and accomplishments of the CAO, NTP and the Waste Isolation Pilot Plant (WIPP). CAO will add the addressees of the NTP Monthly Highlights to the distribution list for *Tru Progress*. We encourage everyone to read *Tru Progress* because it gives a better picture of all of CAO's efforts.

Based on the number of favorable responses to last month's survey regarding the option of receiving NTP-related news via e-mail or the World Wide Web (WWW), I will recommend to the CAO Office of Public Affairs that *TRU Progress* be made available electronically. At this time, the CAO is also considering establishing a home page on the WWW which will also allow for the timely dissemination of news items relating to the NTP.

As of November 20, 1995, as part of a CAO Manager-directed personnel realignment, I assumed the duties of manager of the National TRU Program. If you have any comments or questions regarding this report or the NTP in general, please call me at 505-234-7478 or send me a fax at 505-887-0707.

From all of us at the NTP to all of you, have a happy and safe holiday season!



Don Watkins
Manager
National TRU Program

Attachment



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951235



Addressees:

Executive Committee Members

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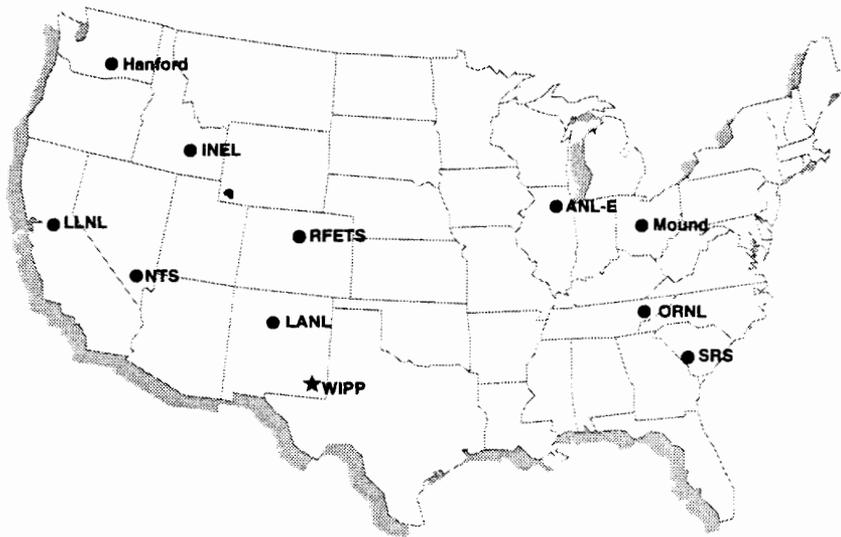
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National TRU Program (NTP)

Monthly Highlights

November 1995



Department of Energy
Carlsbad Area Office
Carlsbad, NM

NTP Monthly Highlights

November 1995

Feature Article

Waste Characterization Systems

Waste characterization is one element of the total TRU Waste Management System process. A subcomponent of the waste characterization process presently under DOE's review is the phased deployment of mobile waste characterization systems to address CH waste. Considerable cost savings could be realized via the deployment of mobile waste characterization systems. These systems will offer the option of providing supplemental support to large-quantity sites having limited fixed system capability and/or total support in the case of small-quantity sites having no waste characterization capability.

A mobile system configuration would consist of a set of trailers. Each trailer would contain a subsystem to address one or more waste characterization methodologies or support functions assembled to address specific TRU waste characterization needs of the generator/storage sites. Selection of these methodologies is critical in identifying the physical, chemical, and radiological properties of retrievably-stored TRU waste as required for transportation and disposal certification at WIPP. Currently, the waste characterization methodologies under consideration are nondestructive examination (NDE), nondestructive assay (NDA), headspace gas analysis, visual examination, and solid waste analysis.

Central to the design of a mobile system configuration is process knowledge. Process knowledge is to be viewed as the nucleus of a mobile system configuration. The requirements of the mobile system are impacted depending on the amount of process knowledge and whether it is acceptable knowledge. With minimum acceptable knowledge, the mobile system configuration will contain the maximum number of waste characterization methodologies required for the specific function to be performed. Conversely, with maximum acceptable knowledge, the minimum number of waste characterization methodologies will be required. The fact that a mobile system configuration can be tailored to fit the degree of acceptable knowledge used at a site and dispatched to anywhere within the DOE complex is the enduring strength of this approach.

In the DOE's "Mobile Waste Characterization Systems Analysis Report," preliminary indications are that mobile systems could be fielded much sooner than stationary systems. (Note: Completion of the report has been delayed to February 1996 due to budgetary problems.) Costs of mobile systems are expected to be modest in comparison with stationary systems. A comparison of realistic processing rates for mobile and fixed systems is still under development. When making comparisons with fixed facilities, the reduced time to field mobile systems suggests there is still opportunity for filling the pipeline to the WIPP with characterized waste prior to its planned opening in 1998.

Waste characterization capabilities at the major generator sites are being evaluated as part of the report as well. Only the Oak Ridge National Laboratory (ORNL) has the capability to characterize contact-handled (CH) TRU waste stored in boxes. Although the capability to characterize CH TRU waste stored in drums is more wide spread, only the Idaho National Engineering Laboratory (INEL) and Los Alamos National Laboratory presently have sufficient capability to characterize waste to meet disposal requirements. These deficiencies indicate that supplemental capabilities are required if all of the TRU waste is to be worked off within the 35-year life of the project. Based on these deficiencies, mobile waste characterization systems have immediate application in regard to assisting the large-quantity sites fill the pipeline to the WIPP. In the long term, as more fixed waste characterization facilities come on-line, services provided to the large-quantity sites by the

mobile systems will be changed to the small-quantity sites in order to assist in the consolidation of TRU waste across the DOE complex. Currently, no site has the capability of characterizing their remote-handled (RH) TRU waste to meet proposed transportation and disposal requirements. This need is being addressed outside of the scope of the mobile systems report.

The forward path provided by mobile waste characterization systems facilitates the implementation of a broader waste characterization strategy--one which yields the optimum system configuration (fixed and mobile) for the effective and efficient management of TRU waste throughout the DOE complex.

Systems Integration and Coordination

The TRU Waste Steering Committee held its quarterly meeting on November 28 and 29, 1995, in San Antonio, Texas. Major topics discussed at the meeting included specific site orders and issues resulting from the Federal Facilities Compliance Act, the definition of RH TRU waste versus high-level waste, progress in the area of mobile waste characterization, INEL's strategy for filling the WIPP pipeline, the National TRU Waste System Model baseline, the proposed allocation plan for TRU waste at small quantity sites, the relationship between Waste Acceptance Criteria and Performance Acceptance, and a review of the CH Package Optimization Study.

The NTP Annual Update Meeting was held November 30, 1995, in San Antonio, Texas. Representatives from the CAO presented updates on the WIPP program and regulatory compliance followed by the NTP's presentation of the National TRU Waste Management System Process. Stakeholder groups reporting at the meeting included the Carlsbad Department of Development and the Environmental Evaluation Group. Specific topics were explored with stakeholders in the afternoon including expanding the Transuranic Package Transporter (TRUPACT-II) envelope, the concept of mobile waste characterization, and the RH System Assessment.

Packaging and Transportation

The first round of questions regarding the Safety Analysis Report for Packaging Model 72-B RH TRU Waste Packaging have been received. An assessment is in progress to develop a plan for resolution of this first round. The WIPP Disposal Decision Plan milestone is for the Nuclear Regulatory Commission to issue a certificate of compliance of the RH-72B waste packaging in September 1996.

Site Activities and Accomplishments

ORNL's Radioactive Materials Analysis Laboratory (RMAL) is providing ongoing analysis of CH TRU sludge wastes sampled at Argonne National Laboratory-West (ANL-W). The backlog of samples has been worked off and the RMAL is ready to receive additional samples from ANL-W. Data packages have been prepared and submitted to INEL and the NTP. In addition, activities are being conducted at ORNL on the quality of existing waste characterization data, specifically the assay of waste generated at the Radiochemical Engineering Development Center (REDC). Samples removed from the hot cell facility at the REDC have been taken and are currently being analyzed. Meanwhile, an alternatives study to assess the development of existing facilities to provide processing and treatment of RH TRU wastes at ORNL has been completed. The final report describes suitable approaches for processing TRU waste from ORNL. Finally, the systems requirements document for the Transuranium Processing Facility is being developed and is scheduled for review during the month of December 1995. This activity discusses requirements for tank sludge mobilization, removal, storage, and treatment.

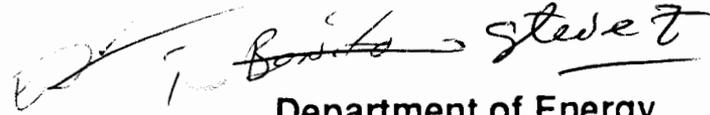
Savannah River Site (SRS) is in the process of acquiring the necessary equipment for the retrieval of TRU waste drums stored in segregated containers on waste pads mounded with soil. The

retrieval operation will be conducted within contamination control huts contained inside a weather cover that encompasses an entire waste pad. The huts are of sufficient size to support forklift and drum handling/venting operations. Due to structural integrity concerns, all drums will be overpacked with a filter vent installed. A new drum venting system has been developed for SRS to ensure worker safety and reduce the risk of environmental contamination during retrieval operations. The system final acceptance testing is scheduled for December 1995.

NTP Activity Calendar

Date	Place	Event
12/4/95 - 12/5/96	Carlsbad, NM	National Governors Association meeting
12/12/95	Salt Lake City, UT	TRU Waste Executive Committee meeting
01/10/96	---	TRU Waste Steering Committee teleconference

United States Government



Department of Energy

memorandum

 Carlsbad Area Office
 Carlsbad, New Mexico 88221

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REPLY TO
ATTN OF: CAO:NTP:MLM 95-3106

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 NM ENVIRONMENT DEPARTMENT
 OFFICE OF THE SECRETARY

Attached is the Carlsbad Area Office's National Transuranic (TRU) Waste Program (NTP) Monthly Highlights report for October 1995. This month's feature article provides an update on efforts associated with the National TRU Waste System Model. This month's issue also reports on the following:

- The proceedings of the National Governors' Association/DOE Federal Facilities Compliance Act Task Force meeting held on October 18 and 19 in Las Vegas, Nevada.
- Completion of the *Radioactive Waste Processing and Volume Reduction Technology Study* which was transmitted to Congress on October 31, 1995, in accordance with the WIPP Land Withdrawal Act.
- Completion of Revision 1 of the Test Standard Operating Procedure for the TRUPACT-II Gas Generation Test Program.
- A successful study conducted by Argonne National Laboratory regarding methods for rapid determination of volatile organic compounds expected to be present in TRU Type IV organic waste sludge.

In addition, the NTP is considering the option of distributing this report and possibly other documents via e-mail or the World Wide Web as a way to reduce cost and expedite distribution. Attached is a questionnaire to determine the electronic capabilities and preferences of those who currently receive the NTP Monthly Highlights by mail. Your cooperation in completing and returning the questionnaire is very much appreciated. If you have any comments or questions regarding this report or the NTP in general, please call me at 505-234-7467 or send me a fax at 505-887-0707.



FOR Mark L. Matthews, P.E.
 Manager
 National TRU Program

Attachment



National TRU Program Monthly Highlights Electronic Distribution Questionnaire

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fax: (505) 234-0041

phone: (505) 234-0074

e-mail: sljones@nwer.sandia.gov

from: STEVE ZAPPE

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Please indicate your electronic capabilities and preferences and return by fax to the above number by November 22.

Are you interested in receiving the NTP Monthly Highlights and/or other authorized documents electronically?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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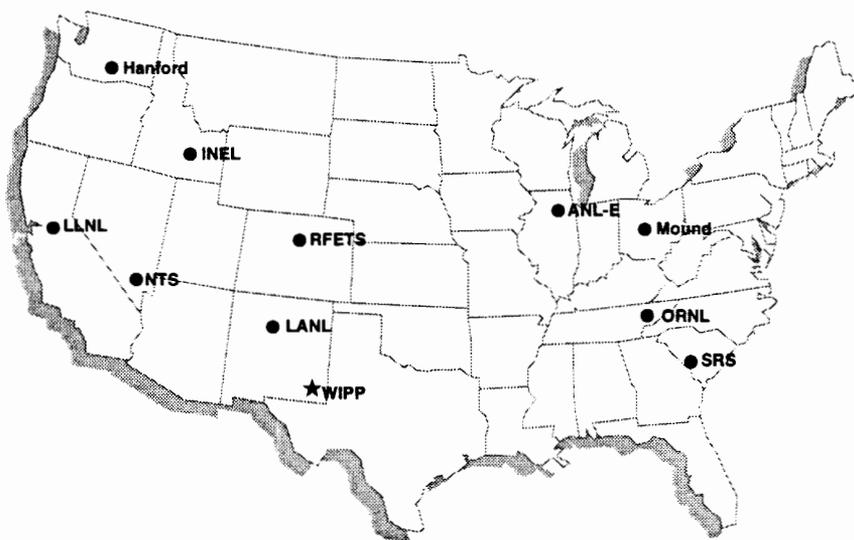
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National TRU Program (NTP)

Monthly Highlights

October 1995



Department of Energy
Carlsbad Area Office
Carlsbad, NM

NTP Monthly Highlights

October 1995

Feature Article

National TRU Waste System Model Update

As reported in the July issue of the Monthly Highlights, the National Transuranic (TRU) Program (NTP) is in the process of developing a National TRU Waste Management Plan (NTWMP). The plan will provide a comprehensive waste management strategy that satisfies the requirements of the Federal Facilities Compliance Act (FFCA) and the Land Withdrawal Act. The NTWMP will develop long-term guidance for the coordination and integration of the DOE TRU waste activities throughout the complex in order to effectively and systematically manage all DOE TRU waste from generation to disposal. The plan will identify specific TRU waste management programs and provide a systematic prioritization of the corresponding enabling projects needed to meet the principal waste management objective--the permanent disposal of all TRU waste.

The principal method of integration for the development of the plan is the National TRU Waste System Model (NTWSM), a computer simulation model designed to evaluate the preparation and flow of TRU waste from generation and storage locations in the DOE complex to final disposal at the Waste Isolation Pilot Plant (WIPP). The model simulates site-specific waste management activities for contact-handled (CH) and remote-handled (RH) TRU waste at the major and smaller DOE sites. Model simulations utilize a quantitative and qualitative description of the waste management system, referred to as a scenario, and evaluate the performance of that scenario as it progresses through time.

The NTP is just completing the initial simulations of the baseline scenario which describes the currently existing TRU waste system configuration. The next scenario to be modeled will be derived from the FFCA Site Treatment Plans (STP). Once the STP modeling is complete, other alternative scenarios and elements will be used to explore optimizations of the waste management system configuration. Many of these alternative scenarios and elements are derived from the various projects of the NTP such as the CH Package Optimization Study and the Mobile Waste Characterization Study. The NTWSM is analogous to the "what-if" capability of electronic spreadsheets. The model provides the NTP with a tool to rapidly evaluate the potential of a proposed scenario to enhance waste treatment and disposal schedules, cost-avoidance, etc. The primary objective of modeling alternative scenarios is to optimize resources needed to reach compliance with applicable consent orders and to identify options which result in cost avoidance or accelerated schedules.

The NTWSM was designed as a waste operations model which determines basic waste management process data such as operational rates and schedules. To augment the waste management profile, NTWSM scenarios are paired with relevant cost and schedule data which is then used to calculate life-cycle cost profiles using the Systems Cost Model previously developed for the Baseline Environmental Management Report. Thus each scenario results in a waste management profile providing fundamental cost, schedule and waste throughput data.

Post-modeling activities will include evaluations of risk, feasibility, cost-avoidance, schedule accelerations, and resource utility. Only those scenarios which first demonstrate a cost/disposal benefit are subjected to post-modeling evaluations. The results of the modeling effort will assist the process of program prioritization by providing quantitative evaluations for determining the best allocation of resources.

Once optimized configurations are identified, they will be further developed, analyzed and documented as part of the NTWMP which is due September 1996. The NTP is working closely with representatives of the DOE sites and the state regulatory agencies throughout the modeling effort to ensure stakeholder acceptance of the modeling process and results and to assure the quality of the NTWMP.

Systems Integration and Coordination

The National Governors' Association (NGA)/DOE Federal Facilities Compliance Act (FFCA) Task Force met October 18 and 19 in Las Vegas, Nevada. The NGA is a policy and coordination group of representatives from the governors of the 50 states. The NGA/DOE FFCA Task Force was established to coordinate and facilitate activities between states and the DOE related to the implementation of the FFCA and mixed waste management. Attendees included representatives from the DOE headquarters, field and site offices; national laboratories; the Department of the Navy; state regulators and officials; and tribal government officials. The National TRU Waste Management Plan and Waste System Model were major topics of discussion at the meeting. Responses to the plan and model were very positive. The NGA's technical contractor, Ross & Associates Environmental Consulting, LTD., is scheduled to provide a technical review of the model in November. The NGA will meet in Carlsbad, New Mexico, in December to discuss the policy implications and implementation of the model's output.

Technology Development

The *Radioactive Waste Processing and Volume Reduction Technology Study* was transmitted to Congress on October 31, 1995. The study, which was written in response to the WIPP Land Withdrawal Act, summarizes 35 categories of

technologies that may be applicable to the thermal and non-thermal treatment of TRU or mixed TRU waste and reviews 219 individual processes which are at various stages of development. The report provides a description, process objective, process type, applicable waste type, process maturity, and final waste form for each process.

Packaging and Transportation

Revision 1 of the Test Standard Operating Procedure (TSOP) for the Transuranic (TRU) Packaging Transporter-II (TRUPACT-II) Gas Generation Test Program is complete. The purpose of the TSOP is to provide guidance for the implementation of the test plan at those sites performing TRUPACT-II gas generation tests.

As described in the TRUPACT-II Safety Analysis Report for Packaging (SARP), contact-handled TRU waste may be segregated as either analytical category waste or test category waste based on hydrogen gas generation potential. Implementation of this TSOP will ensure compliance with the gas generation limits of the TRUPACT-II SARP for those drums shipped as test category waste. The TSOP will also ensure consistency of test methods and equivalency of data obtained at the various sites.

The primary purpose of the tests is to determine the actual amount of gas generated by particular drums of TRU waste and to determine whether the drums may be shipped in a TRUPACT-II in compliance with the TRUPACT-II SARP requirements. The secondary purpose is to gather data to support potential future TRUPACT-II SARP applications for revised wattage limits.

The TSOP includes two separate test methods: (1) the Idaho National Engineering Laboratory heated-drum test, and (2) the Rocky Flats Environmental Technology Site bell-jar test. Both test methods provide comparable data that may be used to support an application to the Nuclear Regulatory Commission for increased wattage limits, as listed in the TRUPACT-II Content Codes. Each site in the TRUPACT-II Gas Generation Test Program will choose one of the methods for implementation based on site-specific conditions.

Program Assessment and Certification

The NTP is currently preparing the draft WIPP Waste Acceptance Criteria (WAC), Revision 5 document. This revision will advise the generator sites that the WIPP WAC contains all the requirements for certification of waste for WIPP disposal without referral to other federal or state regulations. The document is scheduled to be issued in early 1996.

The Generator Site Assessment and Certification (GSAC) Guide is in the final stages of review. The GSAC program was established to ensure DOE generator/storage sites have programs that can safely and effectively ship TRU waste to WIPP. The guide describes the requirements for successful implementation of the program. The GSAC Guide is scheduled for release next month.

Site Activities and Accomplishments

Argonne National Laboratories-East has investigated three "screening" methods to be used for rapid determination of Freon 113, carbon tetrachloride, and trichloroethane. Of the volatile organic compounds (VOCs) expected to be present in TRU Type IV organic waste sludge, these three are expected to be present with high frequency and in relatively high concentration due to their widespread use in processing operations. In the static headspace method, a sludge sample is heated in a sealed ampule and a volume of gaseous sample is drawn from the atmosphere above the sludge. In both the methanol extraction and ethylene glycol extraction methods, the VOCs are separated from the sludge by dissolution in the liquid extractant. Results of extensive testing show both static headspace and methanol extraction to be viable methods for the rapid examination of the sludge samples. The methods have been selected because they are applicable to the analysis of highly concentrated samples, create minimal amounts of waste, and require minimum sample manipulation. The methods were shown to meet WIPP quality assurance objectives for method detection limits, accuracy, and precision. Use of either of the two selected techniques will expedite the examination of organic base sludge samples for the expected high level VOCs.

NTP Activity Calendar

Date	Place	Event
11/28/95 - 11/29/95	San Antonio, TX	TRU Waste Steering Committee Meeting
11/30/95	San Antonio, TX	National TRU Program Annual Update Meeting
12/12/95	Salt Lake City, UT	TRU Waste Executive Committee Meeting

United States Government

Department of Energy

memorandum

Carlsbad Area Office
Carlsbad, New Mexico 88221

OCT 12 1995

DATE: OCT 10 1995
REPLY TO
ATTN OF: CAO:NTP:MLM 95-2444

NM ENVIRONMENT DEPARTMENT
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SUBJECT: National Transuranic (TRU) Program Monthly Highlights for September 1995

TO: Those on Attached List

Attached is the Carlsbad Area Office's National Transuranic (TRU) Waste Program (NTP) Monthly Highlights report for September 1995. This month's feature article focuses on Fourier Transform Infrared Spectroscopy, a promising alternative method for analyzing headspace gas from TRU waste containers. This month's issue also reports on the following:

- The Contact-Handled TRU Packaging Optimization Study and Report and conclusions drawn from the study.
- A successful study conducted by Argonne National Laboratory concluding that the holding time for headspace gas samples can be extended without introducing any error from changes in sample composition.
- The status of the Mobile Waste Characterization Systems Analysis Report.

If you have any comments or questions regarding this report or the NTP in general, please call me at 505-234-7467 or send me a fax at 505-887-0707.



Mark L. Matthews, P.E.
Manager
National TRU Program

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National TRU Program (NTP)

Monthly Highlights

September 1995



Department of Energy
Carlsbad Area Office
Carlsbad, NM

NTP Monthly Highlights

September 1995

Feature Article

Fourier Transform Infrared Spectroscopy

The U.S. Environmental Protection Agency (EPA) requires the U.S. Department of Energy (DOE) to sample and analyze headspace gas from transuranic (TRU) waste containers. This analysis includes identification and quantification of a target list of analytes including 29 volatile organic compounds (VOCs), methane, and hydrogen. Performance-based requirements for TRU waste characterization are specified in the TRU Waste Characterization Quality Assurance Program Plan (QAPP) while acceptable methods for achieving these requirements are delineated in the TRU Waste Characterization Sampling and Analysis Methods Manual.

Conventional analysis of TRU waste container headspace is performed with SUMMA™ canister sampling followed by gas chromatography (GC) with either thermal conductivity, flame ionization, or mass spectrometric detection. Analysis is conducted off-line in a laboratory environment and typically takes several hours to days to provide a result. Chromatograms take 15 to 45 minutes to develop. For these reasons, GC methods are not the most efficient.

Fourier Transform Infrared Spectroscopy (FTIRS) has been identified as a potential alternative to GC analyses for waste drum headspace. FTIRS provides a simple, rapid analysis which is performed at the point of sampling (at-line), thus costing less than GC analyses. A study evaluating the suitability and performance of FTIRS for the DOE at-line headspace analysis applications has been performed at the Idaho National Engineering Laboratory (INEL). The evaluations consisted of repeated analysis of quality control standards, analysis of samples from the TRU Waste Characterization Headspace Gas Performance Demonstration Program (PDP), and a direct comparison of the FTIRS at-line analysis to the conventional GC analysis of actual TRU waste drum headspace samples.

As part of this study, a "turn-key" FTIRS system was specified, acquired, and installed at the Waste Characterization Area and the Drum Vent Facility at INEL. The system was successfully operated for several months by the facility technicians who collected headspace samples during their routine waste characterization activities. Samples were first collected into SUMMA™ canisters which were later analyzed using the conventional GC methods; when volume permitted, the samples would then be placed into the FTIRS system for at-line analysis. Using the FTIRS system, all 29 target VOCs, methane, ethane, and propane can be determined in a

headspace sample within three to four minutes, and if a dilution is required, within six minutes.

The FTIRS and GC analysis results compare favorably. The FTIRS was determined to have a false identification rate of less than 10 percent when compared to the GC analysis. Repeated analysis of the quality control standards and the PDP samples indicate that the FTIRS methodology is fully capable of meeting the TRU waste characterization requirements.

Results of this work were presented to the EPA Office of Solid Waste Resource Conservation and Recovery Act Organics Methods Program in September. The EPA subsequently gave verbal approval to use FTIRS. It is expected that the EPA will incorporate the procedure into its description of acceptable standards for the analysis of headspace gas from TRU waste containers. The National TRU Program (NTP) is in the process of revising the QAPP and the Methods Manual to reflect this approval.

The NTP has funded the procurement of a mobile FTIRS system that will be available in January 1996 for use at other TRU waste generator and storage sites. Currently, this mobile system is planned to be provided to Lawrence Livermore National Laboratory, Oak Ridge National Laboratory, and the Savannah River Site in 1996 for headspace gas sampling and analysis. Use of the FTIRS will result in substantial cost savings and schedule improvements in the area of headspace gas sampling and analysis for TRU waste across the DOE complex.

Packaging and Transportation

The Contact-Handled (CH) TRU Packaging Optimization Study and Report is being finalized and will be issued in October 1995. Starting with site-supplied CH TRU waste inventory data and cost estimates based on experience and engineering judgment, the optimization study examined the life-cycle cost and fleet size for multiple packaging options. The report makes recommendations for a fleet of CH TRU waste packagings that would result in the most cost-effective method of moving TRU waste from the generator/storage sites to the Waste Isolation Pilot Plant (WIPP). The report also includes a working CH TRU waste packaging fleet optimization model on diskette with user instructions which will allow the model to be applied as a decision-making tool when revised inventory data and/or improved cost estimates become available.

Based on current data and estimates, approximately 69 percent of the CH TRU waste can be shipped in the Transuranic Package Transporter, Model 2 (TRUPACT-II), assuming this waste can be characterized to the WIPP Waste Acceptance Criteria. Approximately 23 percent of CH waste is currently packaged in oversized

payload containers that will not fit in the TRUPACT-II. A comparison of the total system cost of certifying these oversized payload containers without repackaging to the cost of repackaging and certification will have to be made in order to make a final determination regarding the cost-effectiveness of developing new packaging for oversized payload containers. For approximately eight percent of the CH waste, there is insufficient information regarding the condition of the containers and their contents to make any packaging recommendations.

Waste Characterization

In order to ensure the accuracy of certain waste characterization procedures, it must be known whether a change of gas composition occurs between the time the sample is collected and the time of analysis. A study has been conducted in which two large samples of headspace gas drawn from waste at INEL were shipped to Argonne National Laboratory-East (ANL-E) and observed over a period of time to detect any composition changes. The analytes observed were VOCs which have been previously found to occur most often in TRU waste headspace gas. Measurements taken after three, 12, and 24 months for each compound were fitted by a straight-line statistical model representing concentration versus time. The study concluded that the holding time for samples of headspace gas can be extended beyond the previously imposed 28-day limit without introducing an error due to a change of sample composition. The results of this experimental work were presented at the Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy and have been prepared for submission to the *Journal of Air and Waste Management*.

Mobile Waste Characterization

The Mobile Waste Characterization Systems Analysis Report is being finalized and will be issued in October 1995. The report includes a determination of the feasibility of using mobile waste characterization systems to address CH and/or remote-handled (RH) TRU waste, retrievably stored and/or newly generated waste, and waste contained in drums and/or boxes. The information contained in the report will be used in the development of the National TRU Waste Management Plan.

Site Activities and Accomplishments

Lawrence Livermore National Laboratory (LLNL) has initiated the sampling of 18 TRU waste drums under a procedure meeting the requirements of the TRU Waste Characterization QAPP and Methods Manual. The 20 samples, including one duplicate and one field blank, were sent to INEL's Environmental Chemistry Laboratory for analysis. INEL provided LLNL with the SUMMA™ canisters for sample collection and a pump to take samples pressurized to 20 pounds per square inch.

NTP Activity Calendar

Date	Place	Event
10/11/95	---	TRU Waste Steering Committee Teleconference
10/19/95 - 10/20/95	Las Vegas, NV	National Governors Association Meeting
11/1/95	---	TRU Waste Steering Committee Teleconference
11/1/95 - 11/2/95	Carlsbad, NM	Remote-Handled Issues Working Meeting
11/28/95 - 11/29/95	San Antonio, TX	TRU Waste Steering Committee Meeting
11/30/95	San Antonio, TX	National TRU Program Annual Update Meeting
12/12/95	Salt Lake City, UT	TRU Waste Executive Committee Meeting

Robert Glavin

United States Government

Department of Energy

memorandum

Carlsbad Area Office
Carlsbad, New Mexico 88221

DATE: AUG 09 1995

REPLY TO
ATTN OF: CAO:NTP: 95-1780

SUBJECT: July 1995 National Transuranic (TRU) Program Highlights

TO: Those on Attached List

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AUG 14 1995

NM ENVIRONMENT DEPARTMENT
OFFICE OF THE SECRETARY

Attached is the Carlsbad Area Office's National TRU Program (NTP) Monthly Highlights report for July 1995. This month's feature article focuses on the development of the National TRU Waste Management Plan. This month's issue also reports on the following:

- The Matrix Depletion Program Quality Assurance Program Plan and test plans being developed by the Idaho National Engineering Laboratory
- Performance Demonstration Program activities at Argonne National Laboratory-East
- Analysis of TRU waste sludges and data compilation at Oak Ridge National Laboratory

If you have any comments or suggestions regarding this report or the National TRU Program in general, please contact me at 505-234-7467 (phone) or 505-887-0707 (FAX).

Mark L. Matthews
FDR Mark L. Matthews, P.E.
Manager
National TRU Program

Attachments



Addressees:

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LAAO	Joseph Vozella
MB	Oba Vincent
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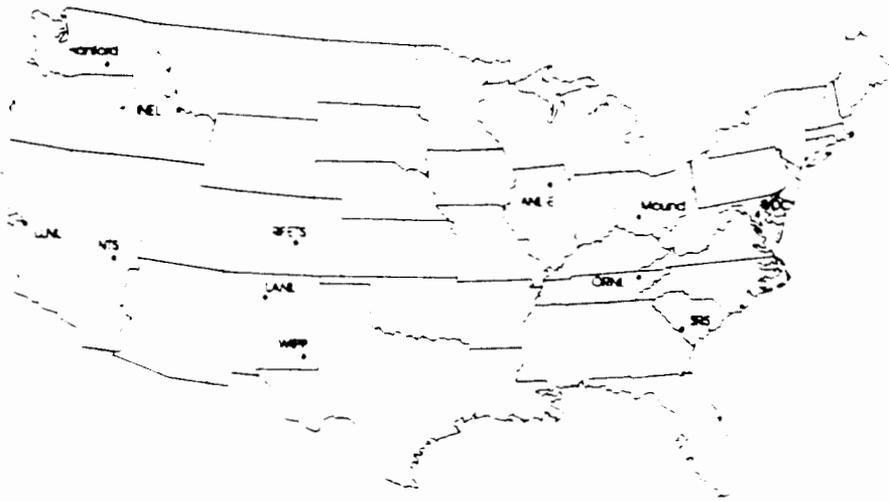
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National TRU Program (NTP)

Monthly Highlights

July 1995



Department of Energy
Carlsbad Area Office
Carlsbad, New Mexico

NTP Monthly Highlights

July 1995

Feature Article

The National Transuranic Waste Management Plan and System Model

The National Transuranic (TRU) Program (NTP) is in the process of developing a National TRU Waste Management Plan (NTWMP). The plan will provide a comprehensive waste management strategy that satisfies the requirements of the Federal Facilities Compliance Act (FFCA) and the Land Withdrawal Act (LWA). In conjunction with the Waste Isolation Pilot Plant (WIPP) Disposal Decision Plan, the plan will focus on all TRU waste management programs across the DOE system supporting the maximum use of the WIPP disposal operations as well as management programs for TRU waste not destined for the WIPP. Because the management of alpha low-level waste (alpha-LLW) is similar to that of TRU waste, the DOE is considering incorporating management planning for alpha-LLW into the planning process established for TRU waste to result in a comprehensive and integrated waste management plan.

The NTWMP will develop long-term guidance for the coordination and integration of the DOE TRU waste activities throughout the complex in order to effectively and systematically manage all DOE TRU waste from generation to disposal. The plan will also identify specific TRU waste management programs and provide a systematic prioritization of the corresponding enabling projects needed to meet the principle waste management objective--the permanent disposal of all TRU waste. If effectively implemented, the benefits of such a plan include a reduction in duplication of costs and efforts, consistency in meeting regulatory requirements, expanded utilization of developed technologies, and acceleration of site cleanup and permanent disposal schedules.

The principal method of integration for the development of the plan is the National TRU Waste System Model (NTWSM), a computer simulation model designed to evaluate the preparation and flow of TRU waste from storage locations in the DOE complex to final disposal at the WIPP. The model will simulate waste management for contact-handled (CH) and remote-handled (RH) TRU waste at the Idaho National Engineering Laboratory (INEL), Los Alamos National Laboratory (LANL), Rocky Flats Environmental Technology Site (RFETS), Hanford Reservation, Oak Ridge National Laboratory (ORNL), Savannah River Site, Lawrence Livermore National Laboratory, and the Nevada Test Site as well as other small quantity sites in the DOE complex. The NTWSM is designed to evaluate optional system configurations. The results of the modeling effort will assist the process of program

prioritization by providing quantitative criteria for determining the best allocation of resources.

The first product of the NTWSM will be the evaluation, documentation, and acceptance of a baseline system configuration scenario. The baseline scenario will describe the current TRU waste system configuration and will be used to compare the effectiveness of all other alternative system configuration scenarios. After establishing the baseline scenario, multiple alternative scenarios will be evaluated to determine their effectiveness in terms of cost and schedule improvements relative to the baseline. Typical results will include estimates of cumulative cost, cost per year, waste disposal throughput, transportation throughput, and waste characterization throughput. By consistently applying measures of effectiveness to the baseline and alternative scenarios, an equitable basis for comparison will be established. The measure of effectiveness will be used to compare the alternative scenarios against the baseline scenario and the most feasible system configurations identified. Post-modeling evaluations will include assessment of feasibility, risk, facility planning, etc. The only scenarios subject to further evaluation are those which first demonstrate a cost/disposal benefit. Once the optimal configurations are identified, they will be further developed, evaluated and documented as part of the NTWMP which will be used to provide complex-wide programmatic configuration recommendations for future fiscal years.

The acceptance and implementation of a national waste management plan will involve the coordination of many organizations including the DOE, the Environmental Protection Agency (EPA), state regulatory authorities, and the National Governors Association (NGA). Involvement of the sites, the FFCAct Policy Coordination Group (PCG), and the NGA in the process is also critical to the success of this effort. The sites have a responsibility to provide and accept data input parameters for use in the evaluation of the baseline and alternative configurations. Review and acceptance of the process to be used and the results of the management plan by DOE Headquarters and the FFCAct PCG is essential for the development and implementation of the plan. By representing the states, the NGA plays a vital role in the acceptance and approval of the approach and results of the plan which will determine the long-range efforts in the management of radioactive waste.

Given current and future resource constraints, it is imperative that the diverse TRU and alpha-LLW programs across the system be focused toward a consistent and integrated long-term national management program. The current NTP initiatives combined with alpha-LLW planning efforts will support the development of a comprehensive and integrated waste management plan which is consistent with the objectives of the LWA and the FFCAct. The draft NTWMP is scheduled to be distributed for review in March 1996 and finalized by September 1996 for implementation.

Site Accomplishments & Activities

The INEL has completed draft documents of the Matrix Depletion Program (MDP) Quality Assurance Program Plan (QAPP) and test plan. The MDP QAPP specifies the quality of data required to meet the objectives of the program in a form consistent with the standards and guidance specified in DOE Order 5700.6C, "Quality Assurance" and EPA document QA/R-5 "EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations." The waste parameters that must be characterized prior to testing, analytical methods and calibrations, and administrative quality control measures are all described in detail in the QAPP which also includes the performance-based quality assurance/quality control requirements that must be met by each facility participating in the MDP. The MDP test plan establishes the scope of the MDP, defines the different components of the MDP and the relationship between those components, describes the selection of the test matrices and experimental design, and documents the data management and analysis of the results components to arrive at revised and more realistic gas generation values for use in the Transuranic Package Transporter, Model 2 (TRUPACT-II) Safety Analysis Report for Packaging. The INEL also completed gas chromatography (GC) and GC/mass spectrometry analysis and reporting for 38 samples resulting in a total of 494 samples, including five Performance Demonstration Program (PDP) samples.

Argonne National Laboratory-East (ANL-E) completed the preparation and shipment of samples for Cycle 1 of the Performance Demonstration Program (PDP) for characterization of TRU waste sludge. This program provides a means to evaluate participating laboratories and helps meet the objectives of the WIPP QAPP. The matrix prepared for Cycle 1 of the PDP was Type 1 waste water sludge. Target analytes of four types were added to the synthetic sludge including toxic metals, hazardous volatile organic compounds, and semivolatile organic compounds. To ensure accuracy and integrity of the sample material, background levels of analytes were measured, the intended concentrations were verified, and the homogeneity of the batches of prepared samples was tested as was the stability of the samples' compositions. Participating laboratories (i.e., ORNL, LANL, and RFETS) will perform analyses of the sludges as a demonstration of analytical capability, accuracy, and consistency.

The ORNL conducted analysis of CH TRU waste sludge sampled at Argonne National Laboratory-West and prepared and submitted data packages to INEL and the NTP. Approximately 10 metal and 20 organic PDP samples prepared by ANL-E were also analyzed and submitted to INEL. In addition, existing data used in the Mixed Waste Inventory Report and various site-specific data systems was compiled. The information is being used to create a TRU waste data base to be used for

reporting information requested for the Integrated Data Base and the WIPP TRU Waste Baseline Inventory Report.

Packaging and Transportation

The NTP presented three papers at the 36th annual meeting of the Institute of Nuclear Materials Management on July 9-12, in Palm Desert, CA. The topics presented were "The Emergency Response Program for Transporting Transuranic Materials," "TRUPACT-II, A Regulatory Perspective," and "Application of Lessons Learned in the Transuranic Nondestructive Radioassay Performance Demonstration Program to the Characterization of Low Specific Activity Radioactive Waste."

A new, lightweight tractor that will support the NTP's TRU material carrier has been delivered to the WIPP. All communication equipment has been transferred to the vehicle and it passed the necessary inspection by the Commercial Vehicle Safety Alliance. This event marked the final step in the transition to the new carrier.

NATIONAL TRANSURANIC PROGRAM (NTP) Activities Calendar

Date	Place	Event
8/23/95- 8/24/95	Santa Fe, NM	TRU Waste Steering Committee Meeting
9/13/95	---	TRU Waste Steering Committee teleconference

United States Government

Department of Energy

memorandumCarlsbad Area Office
Carlsbad, New Mexico 88221

DATE: APR 14 1995

**REPLY TO
ATTN OF:** CAO:NTP:MLM 95-1216

SUBJECT: March 1995 National TRU Program Monthly Highlights

TO: Those on Attached List

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NM ENVIRONMENT DEPARTMENT
OFFICE OF THE SECRETARY

Attached is the Carlsbad Area Office's National Transuranic (TRU) Program (NTP) Monthly Highlights report for March 1995.

This month's feature article focuses on the DOE's recent publication of the Proposed Site Treatment Plans (PSTPs) in accordance with the requirements contained in the Federal Facility Compliance Act (FFCA) of 1992.

This month's issue also reports on a number of recent activities and accomplishments including:

- The completion of a major Disposal Decision Plan (DDP) milestone with the issuance of the "Remote Handled Transuranic Waste Disposal Strategy" document.
- Developments in the area of TRU waste sludge analysis at Argonne National Laboratory and Los Alamos National Laboratory.
- The completion of the WIPP TRU Waste Baseline Inventory Report (WTWBIR), Revision 1 and future plans regarding Revision 2.

If you have any comments or suggestions regarding this report or the National TRU Program in general, please call me at (505)234-7467 or send me a fax via (505)887-0707.



Mark L. Matthews, P.E.
Manager
National TRU Program

Attachment



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BCL	Kathy Lawson
INEL	Tom Clements
INEL	Mike Connolly
LANL	Micheline Devaurs
LLNL	Kem Hainebach
Mound	Ron Henderson
NTS	Carlos Gonzales
ORNL	Paul Arakawa

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EPA	Jim Benetti
EPA	E. Ramona Travato
NMED	Mark Weidler



NATIONAL TRU PROGRAM (NTP) MONTHLY HIGHLIGHTS

March 1995



**Department of Energy
Carlsbad Area Office
Carlsbad, New Mexico**

NTP Monthly Highlights

March 1995

Feature Article

Proposed Site Treatment Plans for the Federal Facility Compliance Act

The Federal Facility Compliance Act of 1992 (FFCA) requires the Secretary of Energy to develop and submit plans for mixed waste treatment capacity and technologies at sites where the Department of Energy (DOE) stores or generates such waste. These plans include the schedules for developing and upgrading waste facilities for mixed transuranic (TRU) waste and the WIPP policy for beginning disposal operations. On March 30, 1995, DOE completed the final phase of the site treatment planning process by publishing the Proposed Site Treatment Plans (PSTPs). In agreement with the site regulators, the schedules in the PSTPs are constrained by the current Waste Management Program funding targets.

Negotiations will now begin on the acceptability of the sites' PSTPs with the states and the Environmental Protection Agency (EPA). After consultation with other affected states and consideration of public comment, it is expected that the regulatory agencies will release orders establishing the resolution of outstanding issues in the PSTPs by October 6, 1995. As negotiations with stakeholders continue, modifications and improvements will be made to the treatment configuration described in the plans. Given the significant budget limitations, DOE intends to seek a process for implementing the PSTPs that provides accountability, focuses resources on high priority activities, and recognizes fiscal and technical realities. As part of its efforts to develop budget request for FY 1997, DOE has asked regulatory agencies to work with the Department and other interested parties at the site and national level to assist DOE in prioritizing its mixed waste activities.

The Carlsbad Area Office (CAO) is working with DOE Headquarters and the sites to ensure that the schedules for the disposition of TRU will be consistent with the operations for WIPP. The National TRU Program (NTP) will continue to inform the TRU waste community as negotiations between the regulators and DOE continue.

Remote-Handled (RH) Waste

A Disposal Decision Plan (DDP) milestone was met with the issuance of the "Remote Handled Transuranic Waste Disposal Strategy" document. This document identifies the process for ensuring that cost-effective initial disposal of RH-TRU waste will begin in Fiscal Year 2002. The strategy also provides a long-term approach for ensuring the efficient and sustained disposal of RH-TRU waste during the operating life of the WIPP.

With 85% of the stored RH-TRU waste, Oak Ridge National Laboratory (ORNL) has been designated by the CAO as the lead site for the development of the remote-handled transuranic waste characterization requirements. Suggestions were received regarding the approach to be used in developing the requirements.

Waste Characterization

A number of developments have recently taken place regarding the analysis of TRU waste sludges:

- Argonne National Laboratory - East (ANL-E) is supporting the Idaho National Engineering Laboratory (INEL) in the development of a performance demonstration program for sludge analysis. A meeting of principles involved in preparing, verifying, and supplying performance demonstration samples for the RCRA Sludge Performance Demonstration Program (PDP) was held at ANL-E on March 30, 1995. Some of the issues addressed during the meeting were procedures for preparing spiked samples for metals, Volatile Organic Compounds (VOCs) and Semi-Volatile Organic Compounds (SVOCs); stability study of the prepared samples; and procedures for demonstrating homogeneity of the prepared samples. The sludge PDP samples for metal analysis have been prepared and will be shipped in April.
- Los Alamos National Laboratory (LANL) has also established and demonstrated the capability to sample TRU waste sludges and analyze the samples for radiochemistry, VOCs, SVOCs, and metals. LANL has recently taken ten samples from actual TRU waste drums containing sludges, most of which were solidified with Envirostone, although one sample was drilled from a waste drum containing Portland cement. The samples were analyzed and a data package will be completed in April.

LANL successfully fielded its mobile Segmented/Tomographic Gamma Scanner (S/TGS) at Rocky Flats where a number of drums containing residue material were assayed. In some cases, the transmission tomograph of the drum contents was adequate for identifying its contents. For those drums where information regarding the actual contents was available, there was substantial agreement with the S/TGS assay results.

A presentation outlining the current status of the TRU waste characterization was developed and given to Richard Guimond, Principal Deputy Assistant Secretary, EM-2. This presentation outlined the scope, purpose, drivers and status of the TRU Waste Characterization Program. Mr. Guimond also toured the WIPP facility during his visit to Carlsbad.

The NTP has initiated the development of a mobile waste characterization strategic plan and an overall waste characterization strategic plan which will be issued in September.

Quality Assurance

The NTP provided a technical and Quality Assurance review of the "Los Alamos National Laboratory RCRA Waste Analysis Plan for TRU Wastes." The document structure follows the EPA Guidance Manual, "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Wastes."

Hanford has completed its final draft QAPjP for transuranic waste characterization in support of the WIPP compliance process. The supporting documents for the implementation of the QAPjP are at various stages of development.

ORNL has developed its first draft of a QAPjP for the TRU Waste Characterization Program. The QAPjP was developed for the characterization of newly generated contact-handled TRU waste at ORNL.

Systems Integration

The WIPP TRU Waste Baseline Inventory Report (WTWBIR), Revision 1, was completed and is being distributed. Revision 1 of the document supports the Performance Assessment and System Prioritization Methodology calculations.

A "kickoff meeting" for Revision 2 of the WTWBIR was held in Denver, Colorado, on March 14-15, 1995. The objectives of this meeting were to review the WTWBIR, Revision 1, describe and discuss Revision 2 data requirements and schedule, provide the methodology used to develop the waste stream descriptions, demonstrate the WTWBIR database, and provide training on the Mixed Waste Inventory Report and the WTWBIR Data System. The DDP requires that the next version be submitted by December 1995.

A computer program is being developed by ORNL to provide all the DOE TRU waste generator/storage sites with a consistent method for categorizing and assigning waste treatability codes to the various waste streams. The computer program will be based on the "DOE Waste Treatability Group Guidance" manual.

Packaging & Transportation

After evaluating "best and final" proposals from three transportation contractors, the TRU waste carrier contract has been awarded to Colorado All State Transportation (CAST), Inc. of Denver, Colorado. CAST will also support state emergency response training exercises, and the transportation of transuranic radioactive waste shipping containers, including the Transportation Package Transporter, Model 2 (TRUPACT-II), for required maintenance. Additionally, support is required for a variety of educational activities and public outreach programs throughout the country. The contract is for one year and takes effect on April 1, 1995. It includes four one-year renewable options. The current contractor, Dawn Enterprises, Inc., will help facilitate an orderly transition.

The transfer of the mixed TRU waste inventory at the Nevada Test Site (NTS) into the fabric-covered building was completed in March. The TRU Cover Building was constructed on the TRU Waste Storage Pad, an asphalt-surface unit constructed to meet RCRA material storage requirements. The mixed TRU waste inventory is managed in accordance with requirements of 40 CFR Part 265, Subpart I, as mandated by a 1992 Settlement Agreement between DOE and the State of Nevada. Current storage capacity on the TRU Waste Storage Pad, outside of the Cover Building, is being used to store onsite-generated mixed low-level wastes. The State of Nevada will soon conduct a compliance evaluation, including an appraisal of NTS conformity to inspection and fire aisle spacing.

**NATIONAL TRANSURANIC PROGRAM (NTP)
Activities Calendar**

Date	Place	Event
4/5/95	---	TRU Waste Steering Committee Teleconference
4/27/95	Savannah River Site	QAPjP Status/Review Meeting
5/3/95	---	TRU Waste Steering Committee Teleconference
5/10-12/95	LLNL, Livermore, CA	Nondestructive Assay/ Nondestructive Examination Interface Working Group Meeting
5/24-25/95	Denver, CO	TRU Waste Steering Committee Meeting

United States Government

To Be Site *Stad 7*
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memorandum

Carlsbad Area Office
 Carlsbad, New Mexico 88221

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JUL 18 1995

NM ENVIRONMENT DEPARTMENT
 OFFICE OF THE SECRETARY

DATE: JUL 14 1995
 REPLY TO
 ATTN OF: CAO:NTP: 95-1746

SUBJECT: June 1995 National Transuranic Program Monthly Highlights

TO: Those on Attached List

Attached is the Carlsbad Area Office's National Transuranic (TRU) Waste Program (NTP) Monthly Highlights report for June 1995. This month's feature article focuses on the feasibility of private-sector treatment of stored waste at the Idaho National Engineering Laboratory. This month's issue also reports on the following:

- The proceedings of the TRU Waste Executive Committee meeting held on June 22, 1995 in Dallas, Texas.
- The status of the Analysis of Simulated Headspace Gases and the Resource Conservation and Recovery Act Constituent Analysis of Solidified Wastes Performance Demonstration Program Plans.
- Various accomplishments and activities at the Idaho National Engineering Laboratory and Argonne National Laboratory-West, Argonne National Laboratory-East, the Nevada Test Site, and Lawrence Livermore National Laboratory.

As I mentioned last month, you are encouraged to make further distribution of this report to your DOE, contractor, and regulatory associates now that distribution out of this office has been reduced. If you have any comments or suggestions regarding this report or the National TRU Program in general, please call me at (505)234-7467 or send me a fax via (505)887-0707.

Mark L. Matthews

Mark L. Matthews, P.E.
 Manager
 National TRU Program

Attachments



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- 2 -

JUL 14 1995

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National TRU Program (NTP)

Monthly Highlights

June 1995



Department of Energy
Carlsbad Area Office
Carlsbad, New Mexico

NTP Monthly Highlights

June 1995

Feature Article

Private-Sector Treatment of Mixed Wastes

There are approximately 27,000 cubic meters of alpha-contaminated low-level mixed waste (ALLMW) and 38,000 cubic meters of transuranic (TRU) waste currently stored at the Idaho National Engineering Laboratory (INEL). Virtually all of this waste is contaminated with hazardous materials and is therefore classified as mixed waste in accordance with the Resource Conservation and Recovery Act (RCRA). Until recently, the INEL baseline plan was to treat ALLMW to meet RCRA Land Disposal Restrictions (LDR) standards and to repackage and/or treat the TRU waste to meet the Waste Isolation Pilot Plant (WIPP) Waste Acceptance Criteria (WAC). This treatment and repackaging would be conducted at a planned Line-Item Construction Project facility that would start operations no earlier than 2010. The estimated life-cycle treatment cost of the project would be approximately \$620 million (in FY94 dollars). Using this treatment facility, the total life-cycle cost of the waste currently stored at INEL from retrieval through transportation to a disposal site would be approximately \$1.6 billion (in FY94 dollars).

Previous work at INEL indicated that the private-sector had the interest and capacity to treat such waste. It was anticipated that the private-sector approach to treatment could be more cost- and schedule-effective than the INEL baseline plan. Therefore, DOE-ID provided funding for three private-sector teams to prepare feasibility studies on this subject. The teams were headed by Lockheed Environmental Systems and Technologies Company, Rust Federal Services, Inc., and the Scientific Ecology Group. Each team developed separate technical, regulatory and business plans for potential private-sector treatment of the waste currently stored at INEL. A DOE-ID team evaluated the feasibility studies and determined that all three private-sector solutions were technologically feasible. Furthermore, cost projections show private-sector treatment could save the DOE \$215 million (in FY94 dollars) in treatment costs and \$820 million (in FY94 dollars) in overall life-cycle costs while completing disposal eight years ahead of the current baseline plan.

The evaluation team concluded that private-sector treatment of both ALLMW and mixed TRU waste to RCRA LDR standards is the most effective option and a DOE-regulated treatment facility located on INEL-leased land was preferable to an off-site location. The team recommended that a competitive procurement for private-sector treatment be pursued, current plans for a line-item treatment facility be

terminated, and the benefits of regional treatment opportunities with other western DOE operations offices be examined. A contract could be awarded in FY97 allowing a private facility to begin operations in FY03. Copies of the full report, entitled "Evaluation of Feasibility Studies for Private-Sector Treatment of Alpha and TRU Mixed Wastes," can be obtained by calling Joel Case, DOE-ID at (208)526-0160. *Amber*

Systems Planning and Integration

The TRU Waste Executive Committee (EC) met on June 22, 1995, in Dallas, Texas. Major topics discussed at the meeting included the WIPP and NTP programs in general, the INEL treatment privatization feasibility study, the status of the Skeen Amendment to the Land Withdrawal Act, the National TRU Waste Management Plan (NTWMP), the definition of defense TRU waste, and the Small Quantity Sites (SQS) Demonstration Project. During the proceedings, the EC endorsed the process for and recommended proceeding with the development of the NTWMP, accepted the definition of defense TRU waste and endorsed the policy statement recommended by the TRU Waste Steering Committee as presented in last month's feature article of the NTP Monthly Highlights, and endorsed the concept of SQS inventory allocations. The EC also generated a number of action items regarding each of the subjects above. *John F. Holman*

Waste Characterization

Performance Demonstration Program (PDP) Plans have been completed and approved for the Analysis of Simulated Headspace Gases and for RCRA Constituent Analysis of Solidified Wastes. These program plans outline the regular distribution and analysis of test standards to evaluate the capability for analyzing volatile organic compounds, hydrogen, and methane in the headspace of transuranic waste and for RCRA-related constituents in the solidified portions (e.g., sludges) of transuranic waste respectively. The PDP plans will be distributed throughout the DOE complex in late July 1995.

Site Accomplishments & Activities

The Idaho National Engineering Laboratory's (INEL) Radioactive Waste Management Complex performed verification testing of the Stored Waste Examination Pilot Plant (SWEPP) assay system using several of the matrix calibration drums and has gas-sampled another 17 drums bringing the total number of drums gas sampled this fiscal year to 226. Meanwhile, INEL's Environmental Chemistry Laboratory completed gas chromatography (GC) and GC/mass spectrometry analysis and reports for 22 samples resulting in a total of 456 samples this fiscal year.

To date, Argonne National Laboratory-West (ANL-W) has sampled 24 sludge drums which are being analyzed by the Oak Ridge National Laboratory. ANL-W is now transitioning to characterization of debris drums for SWEPP certification and the Gas Generation Experiment Program. Drums previously certified at the SWEPP will be visually examined to assure that the real-time radiography (RTR) process is correctly certifying drums for both transport and emplacement at WIPP. The Gas Generation Experiment is part of the WIPP Enhanced Laboratory Program. Experiments will be conducted with real waste and data will be collected in support of the gas generation model verification effort lead by Sandia National Laboratories.

Argonne National Laboratory-East (ANL-E) has completed a study on appropriate analytical methods for the determination of Polychlorinated Biphenols (PCBs) in TRU sludge. The current study extends previous ANL-E work on the application of a simplified method for extracting and measuring PCBs in the TRU sludge to additional commercial blends of PCBs. Faster processing of samples, lower analysis cost, and comparable reliability of analytical data are all achieved with this method relative to the standard Environmental Protection Agency method. A report on this study will be available in August 1995.

The evaluation of RTR video data of mixed transuranic waste (MTRU) inventory continues at the Nevada Test Site (NTS). Data acquired from this evaluation will assist in the development of a characterization strategy towards certification of the NTS's MTRU for acceptance at WIPP. A final report is expected in August 1995. Meanwhile, inside the vinyl-fabric cover structure used to store MTRU inventory at NTS, deteriorating wood pallets were replaced with steel pallets and two air samplers were installed to collect potential airborne radio-particulates.

Lawrence Livermore National Laboratories (LLNL) received approval from the NTP of its Transuranic Package Transporter, Model 2 (TRUPACT-II) Authorized Methods for Payload Control (TRAMPAC), the plan by which LLNL will meet the requirements for using the TRUPACT-II. Approval of the plan will allow LLNL to ship its TRU waste in the TRUPACT-II to WIPP once it opens. LLNL also plans to use the TRUPACT-II to ship type B quantities of tritiated waste to NTS's low-level waste disposal facility. TRUPACT-II is the Department of Transportation's approved type B shipping container for radioactive materials.

Packaging and Transportation

Responsibility for the transportation of TRU materials was transferred from Dawn Enterprises, Inc. to CAST Transportation, Inc. (formerly Colorado All-State Transportation) on June 30, 1995, one month ahead of schedule. The early transition resulted in a \$50,000 cost avoidance stemming from a financial

responsibility policy which would have been required of Dawn by the Department of Transportation had their contract continued.

Program Assessment and Certification

A Sites Assessment and Certification (SAC) program is currently being developed to help define generator site oversight and certification programmatic elements. This program will replace the Waste Acceptance Criteria Certification Committee Management Program. The first draft document is due at the end of August 1995.

Emergency Response

The NTP supported the WIPP Transportation Exercise (WIPPTREX) held in Rawlins, Wyoming on June 7, 1995. WIPPTREX is based on an incident that occurred at Rock Springs, Wyoming in March 1995 when an oil field truck transporting radioactive materials overturned and leaked its contents on snow-covered Interstate-80. The WIPPTREX exercise validated the emergency response training DOE provided to local area emergency responders during the past six months.

New Staff at CAO/NTP

Michael R. Brown joined the CAO/NTP on June 26, 1995, as the manager of the Remote-Handled Waste Program and will assist with quality assurance in the Office of Regulatory Compliance. Mike has been involved with the WIPP Project for over 11 years. In his career, he has been a senior reactor operator and refueling engineer, a manager of security and emergency preparedness, a start-up manager, and an engineering manager. Mike has an undergraduate degree in civil engineering from the U.S. Military Academy and is a member of the American Nuclear Society. His hobbies include woodworking and antique cars.

NATIONAL TRANSURANIC PROGRAM (NTP) Activities Calendar

Date	Place	Event
8/23/95- 8/24/95	Santa Fe, NM	TRU Waste Steering Committee Meeting

To Beards *Steve Z*
WIPP file

United States Government

Department of Energy

memorandum

Carlsbad Area Office
Carlsbad, New Mexico 88221

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MAY 12 1995 MW

NM ENVIRONMENT DEPARTMENT
OFFICE OF THE SECRETARY

DATE: MAY 12 1995
REPLY TO: CAO:NTP:MLM 95-1276
ATTN OF:
SUBJECT: April 1995 Highlights for National TRU Program
TO: Those on Attached List

Attached is the Carlsbad Area Office's National Transuranic (TRU) Program (NTP) Monthly Highlights report for April 1995.

This month's feature article focuses on the status of the Radioactive Waste Processing and Volume Reduction Technology Study required by the WIPP Land Withdrawal Act. The final report is due to Congress October 30, 1995.

This month's issue also reports on the following:

- Waste characterization activities and developments at Los Alamos National Laboratory, Argonne National Laboratory, Oak Ridge National Laboratory, Rocky Flats Environmental Technologies Site, and the Nevada Test Site.
- Significant changes to the TRUPACT-II Certificate of Compliance issued by the Nuclear Regulatory Commission.
- The addition of two new staff members to the NTP.

If you have any comments or suggestions regarding this report or the National TRU Program in general, please call me at (505)234-7467 or send me a fax via (505)887-0707.

FOR 
Mark L. Matthews, P.E.
Manager
National TRU Program

Attachments



Addressees

- 2 -

MAY 12 1995

George Dials, CAO
Vernon Daub, CAO
Mike Daugherty, CAO
Kent Hunter, CAO
Mike McFadden, CAO
Robert Wise, CAO
Dennis Hurtt, CAO
Bob Spooner, CAO
John Suermann, CAO
Tim Sweeney, CAO
Don Watkins, CAO
Russ Bisping, CAO
Amber Clay, CAO
Cliff Holman, CAO
Denny Brown, CAO

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BCLDP	Tom Baillieul
CHO	Ray Lang
EM-332	Andrew Griffith
EM-443	Rod Cummings
ID	Jerry Wells
ID	Kevin Price
LAAO	Bruce LeBrun
MB	Debbie White
NV	Joseph Ginanni
OAK	Roy Kearns
OR	Gary Riner
OR	Mac Roddye
RL	Rudy Guercia
RFFO	Melody Bell
SR	Stephen Mackmull

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CH	Joel Haugen
ID	Joel Case
LAAO	Joseph Vozella
MB	Oba Vincent
NV	Carl Gertz
OAK	Phil Hill
OR	Larry Radcliffe
RFFO	Jeff Kerridge
RL	Thomas Teynor
SR	William Noll

Sites

ANL-E	Dave Green
ANL-W	Carla Dwight
BCL	Kathy Lawson
INEL	Tom Clements
INEL	Mike Connolly
LANL	Thomas Hiron
LLNL	Kem Hainebach
Mound	Ron Henderson
NTS	Carlos Gonzales
ORNL	Paul Arakawa

RFETS	Gerry O'Leary
Hanford	Dick Lipinski
SRS	Steve Mentrup

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WTAC	Jack Tillman
WTAC	Leif Erikson
WTAC	Jim Maupin

DOE Area Offices

LAAO	Larry Kirkman
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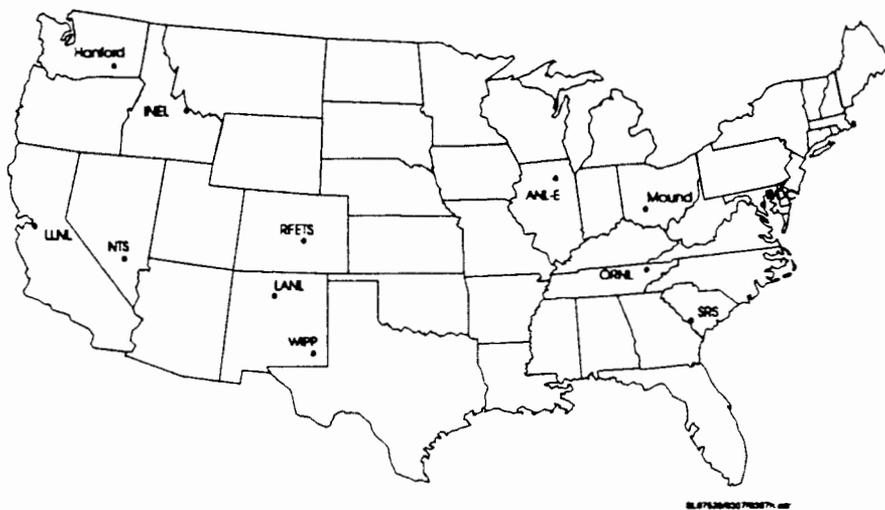
Other Stakeholders

EEG	Robert Neill
EPA	Jim Benetti
EPA	E. Ramona Travato
NMED	Mark Weidler
SSEB	Beth Fulmer
WGA	Ron Ross



NATIONAL TRU PROGRAM (NTP) MONTHLY HIGHLIGHTS

April 1995



**Department of Energy
Carlsbad Area Office
Carlsbad, New Mexico**

NTP Monthly Highlights

April 1995

Feature Article

WIPP Land Withdrawal Act Radioactive Waste Processing and Volume Reduction Technology Study

A recent effort of the National Transuranic (TRU) Program (NTP) is the drafting of a study reviewing treatment processes that are, or could be, applicable to TRU and mixed TRU waste. The requirement for the study came from the Waste Isolation Pilot Plant (WIPP) Land Withdrawal Act, which states:

“Within three years after the date of this Act, the Secretary shall submit to Congress a study reviewing the technologies that are available and that are being developed for the processing or reduction of volumes of radioactive wastes. The study shall include an identification of technologies involving the use of chemical, physical, and thermal (including plasma) processing techniques.”

The draft report was completed in April and will be forwarded for Secretary approval and submission soon. The report consists of background information, technology summaries, and trends, along with appendices containing detailed descriptions of specific processing technologies. Information found on the technologies includes: the process objective (e.g., volume reduction, hazardous properties mitigation); the process type (e.g., thermal, chemical); the waste type that is treated (e.g., TRU, mixed TRU); the process maturity (e.g., conceptual, pilot); end waste form (e.g., ash, sludge); and general descriptions about each process.

References were collected from a variety of sources. Extensive literature searches for published technology descriptions were conducted. Existing databases maintained by the DOE, the Environmental Protection Agency (EPA), and other agencies and organizations contributed to the report. Postings were made to relevant Internet Usenet news groups soliciting identification of processes for further review. Other Internet information resources, such as the World Wide Web and Gopher servers, provided

additional waste processing references. A solicitation for information was placed in the Commerce Business Daily requesting input to the report. Information was also collected at the Waste Management Conference '95 and the EPA-sponsored Rocky Mountain Remediation Marketplace Conference.

The draft report reviews 232 separate processes. Of the 135 processes that are applicable to TRU waste, 79 are at the conceptual stage, 43 are at the pilot or innovative stage, and 13 are at the commercial or proven stage. Of the 214 processes that are applicable to mixed TRU waste, 155 are at the conceptual stage, 47 are at the pilot or innovative stage, and 12 are at the commercial or proven stage. The majority of processes apply to hazardous waste or to the hazardous component of mixed waste. Few technologies for processing radioactive wastes are at the commercial level. There are many processes at the conceptual or pilot stage, but their development is dependent upon research funding, potential cost effectiveness relative to other technologies, and their ability to comply with current and future environmental regulations. Because the selection of a technology is case specific, the report does not endorse any technology or supplier. It is also acknowledged that, because the field of waste management is rapidly evolving, many of the processes described in the report will either improve or be replaced.

The NTP will use the report in evaluating processes for further technology development support. Also, conclusions drawn from the report will be incorporated into the WIPP engineered alternatives study. Following extensive review, the report will be finalized and transmitted to Congress on October 30, 1995.

Waste Characterization

The Phase I milestone of the Mobile Waste Characterization System Strategic Plan was completed on April 18, 1995. The milestone contained the responses received from numerous suppliers of mobile waste characterization systems who were solicited for input. A kick-off meeting was held on April 24, 1995, regarding Phase II to coordinate the activities of all the participants to insure the completion of milestones due in July and August.

As reported last month, Los Alamos National Laboratory (LANL) took 10 samples from actual TRU waste drums containing sludges in accordance with the WIPP Quality Assurance Program Plan (QAPP). In April, these 10 samples were analyzed for radiochemistry, Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), and metals in

accordance with EPA methods and the WIPP QAPP. The data package was submitted to the NTP.

Argonne National Laboratory - East (ANL-E), in a collaborative effort with Oak Ridge National Laboratory (ORNL), has evaluated a method for determination of mercury in sludges, soils, sediments and oils. ANL-E utilized microwave-assisted acid digestion for sample preparation and cold vapor atomic absorption for measurement of mercury. The method reportedly demonstrated that it could yield excellent recoveries (97% or greater) of mercury over a range of concentrations (0.16 to 100 mg/kg) in the four standard reference materials used in this study. In addition, this method is reported to be more efficient, allowing for analysis of more samples per day, and is also more readily applicable to glovebox operations than traditional methods. This alternative method will be utilized for analysis of TRU waste sludge samples to satisfy WIPP waste characterization requirements.

Progress continues at the Rocky Flats Environmental Technologies Site (RFETS) toward meeting goals to vent and aspirate 400 TRU waste drums and perform headspace gas sampling and analysis on 200 TRU waste drums. Numerous challenges regarding the safety of the drum venting operations have been addressed and operations have continued while addressing those challenges in a cost-effective manner. In April, a remote-operated drum punch apparatus to be used for venting and aspirating operations was received, assembled, tested and demonstrated in a "cold" (i.e., non-radioactive) environment and is expected to be put into operation in May. In addition, RFETS Solid Residue and TRU Waste Management personnel jointly addressed an issue raised by the Defense Nuclear Facilities Safety Board (DNFSB) regarding the safety of drum venting operations. The DNFSB was satisfied with the evaluations provided by internal and independent technical safety reviews.

RFETS has also been developing and constructing a system which comprises a coring unit, operating procedures, and quality control procedures necessary to produce quality data to meet the objectives associated with the WIPP TRU Waste Characterization Program and support regulatory compliance programs for preparation of permit applications and the No-Migration Variance Petition. The experimental test plan for TRU waste application of the compactor coring device has been finalized and production system design for the unit is 85% complete. A demonstration of the coring device is planned as part of the TRU Waste Steering Committee tour of Rocky Flats on May 23, 1995.

The ORNL Radioactive Materials Analytical Laboratory (RMAL) has received the first Contact-Handled (CH) TRU waste sludge samples from Argonne National Laboratory - West. During the month of April, the ORNL RMAL received two shipments with a total of nine sludge samples. The samples are undergoing analysis in accordance with the INEL-approved interim RMAL Quality Assurance Project Plan (QAPjP).

The ORNL Waste Management and Remedial Action Division's Waste Examination and Assay Facility (WEAF) is currently developing a process flow diagram that will outline the examination and assay process followed at WEAF for CH TRU waste drums. WEAF staff have been interfacing with the Idaho National Engineering Laboratory (INEL) counterparts associated with the Stored Waste Examination Pilot Plant to discuss the application of neural networks to waste assay systems and WIPP program requirements for waste assay and certification of CH TRU waste.

Real-Time Radiography (RTR) video tapes of the Nevada Test Site's stored mixed TRU waste inventory are undergoing an independent evaluation to assess the usability of the RTR tapes and available data recorded between 1985 and 1987. Nondestructive testing personnel from Raytheon Services Nevada will review the RTR data to provide additional inventory descriptions, potential processing needs, and an accounting of packages requiring RTR. Information gathered from this evaluation will assist in the development of processing and characterization needs required to certify mixed TRU waste for shipment to WIPP.

Packaging and Transportation

Based on Revision 14 of the Transuranic Package Transporter, Model 2 (TRUPACT-II) Safety Analysis Report for Packaging (SARP), the Nuclear Regulatory Commission (NRC) issued Revision 6 of the TRUPACT-II Certificate of Compliance. Significant changes include (1) addition of new content codes to expand the payload envelope as requested by generator sites, (2) deletion of test-phase content codes that will not be used; the seven bins that are currently loaded were not deleted, (3) addition of tritium-contaminated waste as authorized contents, (4) replacement of the gas generation test procedure with a more generic test plan, and (5) clarification of the quality assurance program(s) affecting the TRUPACT-II.

The SARP for the Remote-Handled (RH) package has been submitted to the DOE Transportation and Packaging Safety Division, EH-33.3, for the first of two certifications. It has been requested by the Carlsbad Area Office (CAO) that the DOE and the NRC certifications for the RH package be completed by

January 1996 to comply with the Disposal Decision Plan schedule and milestone. These certifications normally require two to two-and-one-half years to obtain.

Systems Integration

Representatives from the CAO and the NTP visited the Savannah River Site (SRS) on April 27-28. The purpose of the visit was to discuss the status of the site's TRU waste program and, in particular, the development of its Quality Assurance Project Plan (QAPjP). During the meeting, several technical points were clarified and direction was provided. Issues regarding schedules and milestones are being negotiated. As part of the visit, SRS gave an impressive demonstration of their mobile digital RTR unit.

New Staff at CAO/NTP

Amber Clay joined the NTP on April 16, 1995 as the Technology Development and Treatment Manager. Amber has four years of experience working in Radioactive Waste Management within the DOE system. Her career path includes a position as staff engineer for a management engineering firm in Oak Ridge, Tennessee and a position as the Federal Facility Agreement Program Project Manager for Martin Marietta Waste Management Division at ORNL. While working at ORNL, Amber interfaced with local regulators from the State of Tennessee and Region IV of the Environmental Protection Agency. She also participated on the Oak Ridge Site Technology Coordination Group which interfaced with the EM-50 High Level Waste Tank Focus Group and assisted DOE/Oak Ridge in preparing for visits from the Nuclear Facility Safety Board. Amber has an undergraduate degree in Industrial Engineering from the University of Tennessee.

Cliff Holman joined the NTP on May 1, 1995 as the Waste Program Interface Manager. Cliff graduated from New Mexico State University with an emphasis in Architectural and Mechanical design. After graduation, he joined the staff at LANL and later was employed by SCIENTEC, Inc., where he supported the environmental management staff at the DOE Operations Office in Albuquerque. Upon the development of the WIPP Project Integration Office (WPIO), the environmental management staff was transferred to help with the WIPP project. Cliff left the WPIO effort and began working for MACTEC where he supported the NTP directed from DOE-HQ. Looking to broaden his knowledge of implementing the requirements of the Federal Facility Compliance Act, Cliff became the point of contact for the development of the Site Treatment Plan for the DOE Nevada Operations Office. Cliff was also the contractor point of contact for the Mixed Waste Chapter of DOE Order 5820.2B, Waste Management.

NATIONAL TRANSURANIC PROGRAM (NTP) Activities Calendar

Date	Place	Event
5/10/95- 5/12/95	LLNL, Livermore, CA	Nondestructive Assay/ Nondestructive Examination Interface Working Group meeting
5/24/95	Albuquerque, NM	Waste Characterization Interface Working Group meeting
5/24/95- 5/25/95	Denver, CO	TRU Waste Steering Committee meeting
6/7/95	---	TRU Waste Steering Committee teleconference

United States Government

Steve 2
WIPP file '95
 Department of Energy

memorandum

Carlsbad Area Office
 Carlsbad, New Mexico 88221

DATE: MAR 17 1995
 REPLY TO
 ATTN OF: CAO:NTP:MLM 95-0771
 SUBJECT: February 1995 NTPO Highlights
 TO: Those on Attached List

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Attached is the Carlsbad Area Office's National Transuranic (TRU) Program Office (NTPO) Highlights report for February 1995.

This month's feature article discusses the recently approved Memorandum of Agreement (MOA) between the NTPO and the Office of Technology Development (EM-50).

The discussion regarding ways to expand the TRUPACT-II payload envelope continues in this issue. The focus of this discussion is on matrix depletion as an alternative to gas generation testing and increasing the fissile material payload. The article can be found in the Packaging & Transportation section of this month's issue.

As always, a number of program activities are also reported. Major activities and accomplishments in February include the following:

- The Remote-Handled (RH) TRU Waste Disposal Strategy document was drafted and presented to the TRU Waste Steering Committee for review and comment. The strategy document will be issued by the end of March.
- The programmatic details concerning revising the WIPP Waste Acceptance Criteria (WAC) from Revision 4 to Revision 5 has been reviewed and discussed. This activity is scheduled to begin in March.

Please feel free to call me at (505) 234-7467 with any comments and suggestions you might have regarding this publication or anything relating to the NTPO.

Mark L. Matthews

Mark L. Matthews, P.E.
 Manager
 National TRU Program



Addressees

MAR 17 1995

George Dials, CAO
Vernon Daub, CAO
Mike Daugherty, CAO
Kent Hunter, CAO
Mike McFadden, CAO
Robert Wise, CAO
Dennis Hurtt, CAO
Bob Spooner, CAO
John Suermann, CAO
Jimmy Dyke, CAO
Don Watkins, CAO
Russ Bisping, CAO

Steering Committee Members

ALO-WMD	Richard Nevarez
BCLDP	Tom Baillieul
CHO	Ray Lang
EM-332,HQ	Andrew Griffith
LAAO	John Mack
MAO	Rob Rothman
NVO-WMD	Joseph Ginanni
OAK	Roy Kearns
ORO	Mac Roddye
REECo, NV	Carlos Gonzales
RFO	Melody Bell
RFO	Timothy Melberg
SRO	Stephen Mackmull

Executive Committee Members

CH	Joel Haugen
ID	Joel Case
LAAO	Joseph Vozella
MB	Oba Vincent
NV	Carl Gertz
OAK	Ray Corey
OR	Larry Radcliffe
RFFO	Jeff Kerridge
RL	Rudy Guercia
SRO	William Noll

Sites

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ANL-W	Dave Duncan
ANL-W	Carla Dwight
BCL	Kathy Lawson
LANL	Johnny Harper
LITCO	Tom Clements
LITCO	Mike Connolly
LLNL	Kem Hainebach
ORNL, MMES	Paul Arakawa
EG&G, RFP	Gerry O'Leary
WHC	Dick Lipinski
WSRC	Steve Mentrup

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LATA	Dan Osetek
SNL/EM-332	Bill O'Neal
SNL	Andrew Orrell
WID	Steve Kouba
WTAC	Sheila Lott

DOE Area Offices

LAAO	Larry Kirkman
------	---------------

Other Stakeholders

EEG	Robert Neill
EPA	Jim Benetti
EPA	E. Ramona Travato
NMED	Mark Weidler



NATIONAL TRU PROGRAM OFFICE (NTPO)

HIGHLIGHTS, FEBRUARY 1995



Department of Energy
Carlsbad Area Office
Carlsbad, New Mexico

NTPO Highlights

February 1995

Feature Article

Memorandum of Agreement (MOA) Between the NTPO and EM-50

The National TRU Program Office (NTPO) of the CAO is responsible for promoting the development of new and innovative technologies that can directly improve the performance of the national TRU waste management system while the Office of Technology Development (EM-50) at Headquarters is responsible for carrying out a national program of applied research, development, demonstration, testing, and evaluation for innovative solutions that are safer and more time- and cost-effective than those currently available. In order to coordinate the technology development efforts of each, an MOA between the two was established and recently approved by CAO Manager George Dials, NTPO Manager Mark Matthews, and Clyde Frank, Deputy Assistant Secretary, Office of Technology Development (EM-50). The NTPO will benefit from this agreement in increased involvement and coordination with DOE sites and Headquarters, as well as increased efficiencies through consistency and standardization in the solicitation and evaluation of proposals.

The technology development process developed by EM-50 is outlined in its document entitled *A New Approach to Environmental Research and Technology Development at the US Department of Energy*. This new approach uses an integrated team structure that provides greater involvement in the technology development process for DOE management, the national science and engineering communities, stakeholders, and regulators.

There are currently five primary focus areas: 1) Mixed Waste Characterization, Treatment, and Disposal, 2) High-Level Waste Tank Remediation, 3) Landfill Stabilization, 4) Contaminant Plume Containment and Remediation, and 5) Facility Transitioning, Decommissioning, and Final Disposition. In addition, there are cross-cutting programs in the areas of robotics, characterization, and separations which serve the five focus areas. Because the National TRU Program's (NTP) foremost technology development needs are in the area of waste characterization, the NTPO will participate in the process by working within the characterization crosscutting program area, the Landfill Stabilization focus area, and the Mixed Waste Characterization, Treatment, and Disposal focus areas. The designated point-of-contact at EM-50 is Al Tardiff (EM-532) who will work with the NTPO to ensure that the technology development needs of the program will be included in calls for proposals under the appropriate focus areas. Site Technology Coordination Groups at DOE operations offices

will also compile, prioritize, and validate the specific needs and problems at individual sites, facilitate local stakeholder/regulator interactions, foster technology transfer and applications at the sites, and coordinate with EM-50 throughout the technology development process.

Each focus area has a Management Team, an Implementation Team, and a Focus Area Review Group. Management Teams address customer needs, propose strategic plans, recommend Implementation Teams, review and evaluate technical problems, and consist of representatives from EM-30, EM-40, EM-50, and EM-60, as well as users, DOE Field Representatives, stakeholders, and regulators. Implementation Teams provide technical leadership and manage projects and are typically led by DOE Field Offices who interface with industry, national and federal laboratories, and user groups. Focus Area Review Groups recommend specific technical priorities and approaches to Management Teams and Implementation Teams and provide peer review of the process. Amber Clay of the NTPO will serve on the Mixed Waste Characterization, Treatment, and Disposal Management Team, interface with the leaders of the Landfill Stabilization Focus Area, and help coordinate the technical review and evaluation of TRU-related technology development proposals. NTPO will also provide appropriate guidance and assistance to the DOE generator sites when they prepare their technology proposals.

It is the responsibility of EM-50 to issue calls for proposals. Management Teams play an oversight role throughout all of EM to coordinate the research in each of the EM offices to ensure that the technology development efforts are addressing the most urgent needs of the end user and eliminate any unnecessary duplication. It is also the responsibility of the Management Teams, in connection with the Implementation Team, to review each proposal for their specific focus area, coordinate the development of site needs, and integrate the technology development efforts with any feasibility studies being performed by other offices within EM. Proposals are initially screened by Management Teams based on technical needs, cost, schedule, and technical merit and funded in accordance with the annual federal budget cycle. A second review is coordinated by Implementation Teams and performed by at least three technical experts comprising a review group who evaluate and rank the proposals against an established set of criteria developed by the Management and Implementation Teams. Programmatic needs and funding limitations effect the final selection of proposals as determined by the Management Teams.

The NTPO will maintain copies of all TRU-related technology development proposals in order to keep members of the TRU Waste Steering Committee, the EPA, and other stakeholders in the TRU waste management system well informed of TRU-related technology development interests and capabilities throughout the DOE complex.

Packaging & Transportation

Last month's feature article discussed the TRUPACT-II payload limits and methods that are currently being explored to expand the payload envelope. This month, the subjects are matrix depletion as an alternative to gas generation testing and increasing the allowable quantity of fissile material.

MATRIX DEPLETION: INEL issued a report entitled "The Investigation of Matrix Depletion as a Solution for the TRUPACT-II Wattage Limit Problem." The report presents an alternate approach for increasing the current TRUPACT-II wattage limits without having to conduct extensive gas generation tests. The report is currently being reviewed by the TRUPACT-II Gas Generation Test Interface Working Group (IWG). If matrix depletion can be quantified and verified, an application could be submitted to the Nuclear Regulatory Commission (NRC). If the application is approved, the amount of TRU waste that could be shipped in TRUPACT-II, without gas generation testing, would be significantly increased.

INCREASING THE FISSILE GRAM LIMIT: After the TRUPACT-II hypothetical accident tests in 1988, it was observed that some of the simulated payload container (55-gallon drum) lids had opened during the 30-foot free fall drop onto the unyielding surface, causing a release of the drum's contents into the TRUPACT-II inner containment vessel (ICV). Based on this observation, the criticality analysis presented in the TRUPACT-II Safety Analysis Report for Packaging (SARP) assumed fissile material could be released from the individual payload container during the hypothetical accident. The very conservative criticality analysis proved that up to 325 grams Pu-239 fissile gram equivalent (FGE) material would remain subcritical even in the most reactive geometry when flooded with water. One method of increasing the 325 FGE limit is to provide the NRC with a new criticality analysis that assumes the fissile material is not released from the individual payload containers. To validate this assumption, it was proposed that simulated fissile material be placed inside a closed steel pipe, the pipe placed inside a 55-gallon drum, and the pipe overpack be drop tested. If the pipe's integrity is maintained, then a new criticality analysis could be run for the most reactive array of 14 pipes, each containing 200 grams of fissile material. During the week of February 20, 1995, twenty pipe overpack drums were tested. Ten six-inch and ten twelve-inch diameter pipes were fabricated for Rocky Flats and successfully drop tested 30-feet onto an unyielding surface at the Sandia National Laboratories cable site near Albuquerque. The tests included three vertical drops (two drums stacked) and one horizontal drop (14 drums in a non-certified TRUPACT-II ICV). When the test data report is complete, the Westinghouse/Waste Isolation Division will submit an application to the NRC for an increased FGE limit. If the NRC approves an application for the pipe overpack as an authorized payload container, the FGE limit could increase from 325 grams to 2,800 grams fissile material per TRUPACT-II.

Systems Integration

The TRU Waste Steering Committee held its quarterly meeting on February 22-23, 1995, in Augusta, Georgia. Several attendees toured the Savannah River Site on February 21, 1995. During the meeting, updates and status reports were given on numerous topics including the Baseline Inventory Report, Small Quantity Sites, defense versus non-defense waste, Programmatic Environmental Impact Statements (PEIS), RH planning, logic diagramming & waste stream modeling, Federal Facilities Compliance Act activities, and Quality Assurance Program Plans. Each site reported on their budget allocations for FY95 and FY96 TRU activities and presented their individual site treatment plans. A technical discussion was held regarding mobile waste characterization and TRUPACT handling while official members of the committee participated in a team building and strategic planning session.

The TRU Waste Steering Committee has reviewed and commented on the Transuranic Waste Characterization Program Plan and has chartered a new Waste Characterization IWG to assist the NTPO in implementing a DOE complex-wide TRU Waste Characterization Program in support of the WIPP Disposal Decision Plan. To insure that data requirements of regulatory and site operating programs are satisfied, the group will develop a coordinated approach to promote the generation of comparable and complimentary data among the sites.

The NTPO visited Mound Applied Technologies to discuss TRU issues and status at that facility. Specifically, the usefulness of having Mound develop a Quality Assurance Project Plan (QAPjP) was assessed, given the site's current capabilities and economic development mission. Some of the action items resulting from this visit were addressed at the February TRU Waste Steering Committee Meeting

Data to refine the TRU Waste Steam Model has been gathered from LANL. During the process, the steps necessary for getting LANL's TRU waste ready for WIPP was outlined and an internal TRU waste strategic plan document is being developed.

Remote-Handled (RH) Waste

An RH-TRU Waste Disposal Strategy document was drafted in February and presented to the TRU Waste Steering Committee for review and comment. The RH strategy consists of 1) plans for initial waste disposal and 2) plans for sustained and efficient disposal. The strategy for initial waste disposal focuses on packaging waste currently stored at ORNL for disposal by the year 2002. The strategy for sustained and efficient disposal consists of evaluating various alternatives to the existing baseline; developing a waste work-off plan for waste delivery to WIPP; determining whether the generator/storage sites, transportation system, and WIPP disposal system can accommodate the work-off plan; and evaluating each of these systems for any efficiencies that might improve waste disposal. This strategy document is scheduled for completion by March 31, 1995.

Since much of the RH-TRU waste will require some form of treatment or processing to comply with the Waste Acceptance Criteria (WAC), alternatives for the location of treatment facilities and alternative combinations of RH-TRU support facilities will be evaluated. The Programmatic Environmental Impact Statement (PEIS) alternatives of two and five treatment locations are being evaluated in combination with packaging and transportation alternatives. Different RH-TRU waste throughput rates at WIPP are also being used in the analysis for those emplacement alternatives that prove viable. The evaluation of alternatives will be developed over the next few months.

At ORNL, an all-day forum was held with representatives from engineering, chemical technology, operations, and outside consultants to develop minimum requirements for an RH-TRU processing facility. The information developed at this forum will be used to develop feasibility and cost estimate for performing work in existing facilities.

Program Assessment & Certification

The NTPO reviewed and discussed the scope, schedules, assumptions, and other programmatic details concerning revising the WAC from Revision 4 to Revision 5. The scope of Revision 5 will include modifying requirements in accordance with the latest draft RCRA Part B application, the TRUPACT-II Safety Analysis Report for Packaging (SARP) revisions since December 1991, and the latest revision of the Quality Assurance Program Plan. The scope of Revision 5 will also include modifying criteria per the latest Draft Compliance Package developed for WIPP compliance to 40 CFR 194, No Migration Variance Petition and the System Prioritization Methods II. The project is scheduled to start in March 1995.

The NTPO visited Rocky Flats for a Program Assistance review to help the site in its TRU waste management activities. Other sites were invited to attend. Among those attending were ORNL and LANL.

The EPA intends to visit DOE sites to ascertain what information and data are supporting the WIPP TRU Waste Baseline Inventory Report submittals. The EPA plans several site visits in 1995.

Waste Characterization

The NTPO briefed Dr. Peter Brennecke of Germany's federal radiation protection agency regarding the Waste Characterization Program at WIPP and the WIPP Waste Acceptance Criteria (WAC). Due to the many similarities between WIPP and the geologic radioactive waste repositories in Germany, a meaningful technical exchange followed the presentation.

A number of waste characterization activities have recently taken place at various sites:

- TRU waste and residue characterization activities have resumed at Rocky Flats. In accordance with the WIPP Detailed Drum Characterization (DDC) Program, 6 TRU-Mixed waste drums have been sampled; in accordance with the WIPP Operational Drum Characterization (ODC) Program, 63 drums have been sampled; and a total of 134 waste drums have been vented and aspirated. In addition, the RFFO Waste Disposal Team has concluded that Rocky Flats has adequate documentation to address EPA concerns about acceptable knowledge and how it is being applied to waste characterization.
- LANL has received the major components of a portable drum venting system and two characterization glovebox systems for assembly and testing.
- Hanford's QAPjP is in the final stages of revision and should be released in March.

Small Quantity Sites (SQS)

The NTPO made presentations on the SQS Demonstration Project to the Western Governor's Association in San Diego, California, on February 8-10, 1995, and to the Southern States Energy Board on February 24, 1995, in Atlanta, Georgia. The purpose of the presentations was to provide background information, deliver current status reports, and inform the respective organizations of DOE's actions and plans regarding the consolidation of TRU waste.

The issue regarding possible shipment of the Teledyne drum back to Rocky Flats is being worked. Effective communications with Teledyne have been established, several administrative items have been clarified, and action has been taken to formalize the process for transferring the drum. In addition, steps are being taken to address stakeholder concerns. The NTPO will assist RFFO in working with the State of Colorado to resolve remaining issues relating to the transportation of the drum.

**NATIONAL TRANSURANIC PROGRAM OFFICE (NTPO)
Activities Calendar**

Date	Place	Event
3/14-15/95	Denver, CO	WIPP TRU Waste Baseline Inventory Report Update Meeting
3/16/95	Carlsbad	Visit by Dr. Donald W. Pearman, Associate Deputy Secretary, Office of the Associate Deputy Secretary for Field Management, DOE
4/5/95		TRU Waste Steering Committee Teleconference
4/5/95	INEL	NTPO visit to INEL for Project Review
