



AGENDA

PRE APPLICATION MEETING WITH NMED TO DISCUSS CLASS 2 PERMIT MODIFICAITONS

DATE 7/3/01
START TIME 10:30
LOCATION NMED BUILDING ON RODEO ROAD, SANTA FE
PARTICIPANTS NMED, WTS, CBFO, RFETS

TOPICS

1. Characterizing Repackaged Homogeneous Solids
2. Use of Visual Examination Technique
3. Modification submittal date
4. Operational Efficiencies Pre-application meetings

Modification summary attached

010707



7/3/01

Attendance

Name

Affiliation

Steve Holmes

NMED / HWB - WIPP Project

Dale Bignelli

WTS (Westinghouse TRU Solutions)

~~Earl Potts~~

Westinghouse

~~Tom Leonard~~

Westinghouse TRU Solutions

~~Mark Thompson~~

WTS, Consultant

Steve Zeppe

NMED

Dave French

RFETS

William Potts

NMED - HWB

Rick Jacobi

WTS - Consultant

Connie Walker

Tech-Law (by teleconf)

Characterizing Repackaged Homogeneous Solids

Statement of the Issue: RFETS (and possibly other sites) have retrievably stored homogeneous solids in small cans. These are being retrieved and repackaged into configurations that allow their shipment to WIPP (i.e., into pipe overpacks). Because they are homogeneous solids and they are being repackaged, the permit requires that they be subjected to control charting and process monitoring. Control charting and process monitoring are activities that are appropriate for waste that are being newly generated by an ongoing process and not for waste that are already in their final waste form. The permit language that allows the generator/storage site to default to using the retrievably stored waste approach for these waste streams is ambiguous.

Goal of Permit: Confirm that the hazardous waste code assignment for the waste stream is correct.

B-3a (2) Homogeneous Waste Sampling and Analysis

Sampling of homogeneous and soil/gravel wastes shall result in the collection of a sample that is used to confirm hazardous waste code assignment by acceptable knowledge. Sampling is accomplished through core or other EPA approved sampling, which is described in Permit Attachment B1. For those waste streams defined as Summary Category Groups S3000 or S4000 on page B-3, debris that may also be present within these wastes need not be sampled. The waste containers for sampling and analysis are to be selected randomly from the population of containers for the waste stream. The random selection methodology is specified in Permit Attachment B2.

Also MSD II

Totals or TCLP analyses for PCBs, VOCs, SVOCs, and RCRA-regulated metals are used to determine waste parameters in soils/gravels and solids that may be important to the performance within the disposal system (Tables B-4 and B-5). To determine if a waste exhibits a toxicity characteristic for compounds specified in 20 NMAC 4.1.200 (incorporating 40 CFR §261, Subpart C), TCLP may be used instead of total analyses. The generator will use the results from these analyses to determine if a waste exhibits a toxicity characteristic. The mean concentration of toxicity characteristic contaminants are calculated for each waste stream such that it can be reported with an upper 90 percent confidence limit (UCL₉₀). The UCL₉₀ values for the mean measured contaminant concentrations in a waste stream will be compared to the specified regulatory levels in 20 NMAC 4.1.300 (incorporating 40 CFR §262), expressed as total/TCLP values, to determine if the waste stream exhibits a toxicity characteristic. A comparison of total analyses and TCLP analyses is presented in Appendix C3 of the WIPP RCRA Part B Permit Application (DOE, 1997), and a discussion of the UCL₉₀ is included in Permit Attachment B2. **If toxicity characteristic (TC) wastes are identified, these will be compared to those determined by acceptable knowledge and TC waste codes will be revised, as warranted.** Refer to Permit Attachment B4 for additional clarification regarding hazardous waste code assignment and homogenous solid and soil/gravel analytical results.

Requirements in the Permit: 1. The permit requires that repackaged waste be characterized as newly generated waste.

B-3d Characterization Techniques and Frequency for Newly Generated and Retrievably Stored Waste

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WIPP may accept TRU mixed waste that has been repackaged or treated. **Repackaged waste shall undergo characterization required of newly generated waste.** Repackaged waste shall also undergo headspace gas analysis, and payload container headspace shall be sampled after repackaging, as long as the criteria specified in Permit Attachment B1-1 are met. Treated waste shall be considered newly generated waste, and shall retain the original waste stream's listed hazardous waste code designation.

2. The permit requires the use of control charts for newly generated homogeneous solids waste streams.

B-3d(1)(a) Sampling of Newly Generated Homogenous Solids

Newly generated mixed waste streams of homogeneous solids will be randomly sampled a minimum of once per year for total PCBs, VOCs, SVOCs and metals. **An initial ten-sample set, however, will be collected to develop the baseline control chart.** Sampling frequency of once per year is only allowed if a process has operated within procedurally established bounds without any process changes or fluctuations which would result in either a new waste stream or the identification of a new hazardous waste constituent in that waste stream. Otherwise, the waste shall be considered as process batches and each batch will undergo sampling and analysis. Process changes and process fluctuations will be determined using statistical process control charting techniques; these techniques require the ten-sample baseline and historical data for determining limits for indicator species and subsequent periodic sampling to assess process behavior relative to historical limits. If the limits are exceeded, the waste stream shall be recharacterized, and the characterization shall be performed according to procedures required for retrievably stored waste (i.e., waste sampling frequency will be increased). The process behind this control charting technique is described in Permit Attachment B2.

Also, as another control of waste generated from a particular process, the bounds for a waste generating process will be established by specific written procedures for that process. Examples of parameter bounds that could affect a waste generated by a process are volumes of input material, change in the input material, and any other changes that would change the output of that process.

To ensure that the generator/storage site procedures for waste generating processes include controls of the waste stream, these procedures will consist of sections containing the following information:

- Responsible organizations for implementing the requirements of the procedure
- Material inputs
- Waste streams generated
- Process controls and range of operation (bounds) that affect final hazardous waste determinations
- Rate and quantity of hazardous waste generated
- List of applicable operating procedures relevant to the hazardous waste determination

Events where procedurally established bounds are exceeded or any condition of normal operation is not being met could trigger an increased sampling frequency of a waste stream. As long as a process does not change outside of established bounds within a year, the waste

generated by that process will have the same characteristics, and therefore, a minimum of one sample will be collected annually to verify the lack of variability of that waste stream. Compliance with process procedures and the maintenance of the parameters specified by those procedures will be verified by the Permittees during the Permittees' Audit and Surveillance Program (Permit Attachment B6).

The records generated by the process procedures will be examined weekly for indications of process changes or limits being exceeded that would change the hazardous constituents identified in the waste stream or add relevant prohibited materials. If these changes are discovered, the Permittees will notify NMED and will not manage, store or dispose the waste stream until a follow-up sample of process waste is collected and analyzed to assess whether the container contents are within those identified on the Waste Stream Profile Form. If the second analysis is not consistent with the Waste Stream Profile Form information, all waste containers in question will be segregated and a new Waste Stream Profile Form and waste generation procedures/bounds will be established. Records of that analysis will be available for examination by the auditors and will be provided to NMED upon request. If records of the analysis are not available, the Permittees will not accept the waste stream at the WIPP facility for disposal. If a generator/storage site changes a process but determines that increased sampling is not required because the change will not affect waste generated by that process, the Permittees and NMED shall be notified in the form of a memorandum to the DOE's Carlsbad Field Office (CBFO) Waste Characterization Manager. The Permittees shall concur with the decision to not increase the sampling frequency before any additional waste from that process is shipped, and NMED will be notified of the Permittees' decision.

The toxicity characteristics of newly generated homogeneous solids and soils/gravel waste streams will be determined using total analysis of toxicity characteristic contaminants or TCLP. To determine if a waste exhibits a toxicity characteristic for compounds specified in 20 NMAC 4.1.200 (incorporating 40 CFR §261, Subpart C), TCLP may be used instead of total analyses. The sampling methods for homogeneous solids and soil/gravel wastes are provided in Permit Attachment B1.

3. Therefore, the permit requires that repackaged retrievably stored homogeneous solids be control charted.

- Representativeness of a retrievably stored waste stream is achieved by random sampling. Representativeness of a newly generated waste stream is achieved by control charting and non-random sampling.
- Process control charts would have to be established after the waste is generated. The permit requires that they be created prior to generation and be consulted during generation at a minimum of one sample per year.
- The establishment of process bounds and the procedural control of the generation process is impossible for a waste that is already generated. It is impossible to do the weekly examination of procedure compliance required by the permit to assure that waste generation process is still in control.

4. The permit attempted to provide relief for this situation.

B-3d(1)(a) Sampling of Newly Generated Homogenous Solids

Newly generated mixed waste streams of homogeneous solids will be randomly sampled a minimum of once per year for total PCBs, VOCs, SVOCs and metals. An initial ten-sample set, however, will be collected to develop the baseline control chart. Sampling

frequency of once per year is only allowed if a process has operated within procedurally established bounds without any process changes or fluctuations which would result in either a new waste stream or the identification of a new hazardous waste constituent in that waste stream. Otherwise, the waste shall be considered as process batches and each batch will undergo sampling and analysis. Process changes and process fluctuations will be determined using statistical process control charting techniques; these techniques require the ten-sample baseline and historical data for determining limits for indicator species and subsequent periodic sampling to assess process behavior relative to historical limits. **If the limits are exceeded, the waste stream shall be recharacterized, and the characterization shall be performed according to procedures required for retrievably stored waste (i.e., waste sampling frequency will be increased).** The process behind this control charting technique is described in Permit Attachment B2.

B-3d(2) Retrievably Stored Waste

All retrievably stored waste containers will first be delineated into waste streams using acceptable knowledge. All retrievably stored waste containers will be examined using radiography to confirm the physical waste form (Summary Category Group), to verify the absence of prohibited items, and to determine the waste characterization techniques to be used based on the Summary Category Groups (i.e., S3000, S4000, S5000). **Repackaged retrievably stored waste, or any retrievably stored waste with inadequate acceptable knowledge, will be characterized using either the retrievably stored or newly generated waste characterization process, whichever results in greater sampling requirements.** Radiographic results will be compared to acceptable knowledge results to ensure correct Waste Matrix Code assignment and identification of prohibited items. If radiographic analysis do not confirm the physical waste form, waste will be reassigned as specified in Section B-3c. Generator/storage sites may elect to substitute visual examination for radiographic analysis.

5. This first condition above only provides relief if the generator site first shows that the waste stream is uncontrolled. This involves the development of the 10-sample baseline and an attempt to determine if process control documentation is available within the AK record, or the development of repackaging related process controls

6. The second condition only provides relief if the approach for retrievably stored waste results in more samples than the approach for newly generated waste. This will seldom be the case since the minimum number of samples for a retrievably stored waste stream is 5 samples and the minimum for a newly generated waste stream is 10 samples.

The Goal of the Modification: The modification does two things

- Allows the generator to go directly to using retrievably stored waste statistics for repackaged waste
- Removes the "greatest number of samples criterion" since it could lead to significant over sampling of a retrievably stored waste stream (i.e., the maximum number of samples should be what is determined by Attachment B2-2).

Use of Visual Examination Technique

Statement of the Issue: The Permit requires that generator sites use the Visual Examination Technique to confirm aspects of acceptable knowledge at the time a waste is generated and packaged. Some sites have reported that this may be infeasible due to logistic or economic considerations. In this case, the sites desire the option to use radiography for the confirmation activities associated with newly generated waste.

Goal of Permit: To characterize newly generated waste as it is generated.

Introduction and Attachment Highlights

...[Text not shown]

Some TRU mixed waste is retrievably stored at the DOE generator/storage sites. Additional TRU mixed waste will be generated and packaged into containers at these generator/storage sites in the future. TRU mixed waste will be retrieved from storage areas at a DOE generator/storage site. Retrievably stored waste is defined as TRU mixed waste generated after 1970 and before NMED notifies the Permittees, by approval of the final audit report, that the characterization requirements of the WAP at a generator/storage site have been implemented. Newly generated waste is defined as TRU mixed waste generated after NMED approves the final audit report for a generator/storage site. Retrievably stored TRU mixed waste will be characterized on an ongoing basis, as the waste is retrieved. **Newly generated TRU mixed waste shall be characterized as it is generated.** Waste characterization requirements for retrievably stored and newly generated TRU mixed wastes differ, as discussed in Sections B-3d(1) and B-3d(2).

Requirements of the Permit: 1. The permit uses the terms “will” and “is” in describing the use of the VE Technique. The relevant text is as follows:

B-3d(1) Newly Generated Waste

The RCRA-regulated constituents in newly generated wastes **will be documented and verified at the time of generation based on acceptable knowledge for the waste stream.** Newly generated TRU mixed waste characterization will begin with verification that processes generating the waste have operated within established written procedures. Waste containers are delineated into waste streams using acceptable knowledge. **Verification that the physical form of the waste (Summary Category Group) corresponds to the physical form of the assigned waste stream is accomplished during packaging (using the VE technique).** This process is different than the process described in Attachment B1-3b(3) and consists of the operator confirming that the waste is assigned to a waste stream that has the correct Summary Category Group for the waste being packaged. If a confirmation cannot be made, corrective actions¹ will be taken as specified in Permit Attachment B3. Instead of using a video/audio tape as required with VE in support of radiography in Attachment B1-3b(3), the VE technique for newly generated waste (or repackaged retrievably stored waste) uses a second operator, who is equally trained to the requirements stipulated in Permit Attachment B1, to provide additional verification by reviewing the contents of the waste container to ensure correct reporting. If the second operator cannot provide concurrence, corrective actions will be taken as specified in Permit Attachment B3. The subsequent waste characterization activities depend on the assigned Summary Category Group, since waste within the Homogeneous Solids and Soils/Gravel Summary Category Groups

will be characterized using different techniques than the waste in the Debris Waste Summary Category Group

2. The permit also requires that VE Operators be trained as follows:

B1-3b(3) Visual Examination

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Standardized training for visual inspection shall be developed to include both formal classroom training and OJT. Visual inspectors shall be instructed in the specific waste generating processes, typical packaging configurations, and expected waste material parameters expected to be found in each Waste Matrix Code at the site. The OJT and apprenticeship shall be conducted by an operator experienced and qualified in visual examination prior to qualification of the candidate. The training shall be site specific to include the various waste configurations generated/stored at the site. For example, the particular physical forms and packaging configurations at each site will vary so operators shall be trained on types of waste that are generated, stored, and/or characterized at that particular site. Visual examination personnel shall be requalified once every two years.

Although site-specific training programs will vary to some degree, the Permittees shall require each site's program to contain the following required elements:

B1-3b(4) Formal Training

- Project Requirements
- State and Federal Regulations
- Application Techniques
- Site-Specific Instruction

B1-3b(5) On-the-Job Training

- Identification of Packaging Configurations
- Identification of Waste Material Parameters
 - **Weight and Volume Estimation**
- **Identification of Prohibited Items**

Each visual examination facility shall designate a visual examination expert. The visual examination expert shall be familiar with the waste generating processes that have taken place at that site and also be familiar with all of the types of waste being characterized at that site. The visual examination expert shall be responsible for the overall direction and implementation of the visual examination at that facility. The Permittees shall require site QAPJPs to specify the selection, qualification, and training requirements of the visual examination expert.

3. In the response to Comment FF-1.5 made by Bill Lawless of the Savannah River Citizens Advisory Board, the NMED reiterated its intent that newly generated waste be subjected to Visual Examination as follows:

Comment: Delete the statement, "Repackaged retrievably stored waste will be considered newly generated waste." It adds unnecessary work without increasing safety or protection.

NMED Response: NMED has received numerous comments regarding the distinction between newly generated and retrievably stored waste with regard to repackaged waste and waste with poor acceptable knowledge. **NMED concludes that waste with poor acceptable knowledge as specified in Permit Attachment B and repackaged waste must undergo visual examination**, 100% headspace gas, and acceptable knowledge characterization consistent with that for newly generated waste. ...

4. In response to Comment E.1-186 by the DOE regarding the removal of the distinction between retrievably stored waste and newly generated waste, the NMED made the following points.

Comment: The distinctions made between newly generated and retrievably stored mixed waste should be deleted throughout the Permit. Because all TRU mixed waste must undergo either 100% radiography confirmed by visual exam, or 100% visual exam, making the distinction between the two serves no useful purpose.

NMED Response: The Permit Application is based upon distinct differences between the characterization processes for newly generated and retrievably stored waste proposed by the Permittees in their Permit Application. The Permittees committed to very different characterization requirements in terms of the homogenous solids sample process for retrievably stored and newly generated waste. **The distinction is very important in terms of when visual examination in lieu of radiography is performed, and is also important because it mandates that any waste with poor acceptable knowledge will be visually examined (i.e., considered a newly generated waste).** See responses to comment FF.1-5. Also refer to Steve Zappe's direct testimony regarding revision of the Permit to incorporate major changes. The commentator has indicated, through redline/strikeout revisions of the Permit, that many of the distinctions between newly generated and retrievably stored waste should be retained, although the category "name" would be revised (i.e. newly generated waste would be considered "waste characterized prior to or during packaging" and retrievably stored waste considered "previously packaged waste".) However, the commentator removed requirements regarding "when" a waste would be considered a "previously packaged waste", making it impossible to determine "when" the characterization requirements would be initiated. While the two groupings carry some similar waste characterization requirements, the distinction is made because thousands of containers of waste are currently in storage which would be characterized differently than wastes which are being generated. Refer to Response to comment FF.1-5 regarding repackaged waste. Because the suggested revisions only modify the waste grouping designation and remove other important elements such as requirements with respect to repackaged waste, NMED does not believe that the modifications are appropriate. However, NMED does recognize that the terms "newly generated" and "retrievably stored" could be a source of confusion because DOE sites have used these terms under other programs. The Applicants could submit a Permit modification request to revise this language accordingly once the Permit is issued. TR, Zappe at pp. 2365 to 2465.

Goal of the Modification: The permit and the responses underscore the importance of obtaining sufficient knowledge about the waste using visual examination when there is a lack of adequate acceptable knowledge. The proposed modification does not negate the use of visual examination when it is required by the permit for improving AK. It only allows the AK confirmation process to proceed using an alternative process, i.e., radiography, instead of using two operators trained to the requirements of the permit to perform the VE Technique.