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ATKEARNEY

To Steve Zappe Date 11-27-95
 Company NMED Fax Number _____
 From Connie Walber Number of Pages (including this Page) 6
 Telephone Number _____ Charge Number _____

We should be in around 2:00 PM tomorrow.

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951121



MEMO

TO: Steve Zappe

FROM: Connie Walker

RE: Acceptable Knowledge; White Paper

DATE: November 27, 1995

cc: P. Hugo
H. Sellers
S. Chari

Attached is a rough working draft of our Acceptable Knowledge White Paper, which outlines general requirements that should be included in an acceptable knowledge characterization program. We have tried to provide general thoughts and guidance without being too specific, thus allowing DOE the opportunity to develop the program as it suits their waste characterization needs at generator sites. We will bring a disc copy of this deliverable with us (Work Perfect 5.1). Please let us know if you have any questions or require additional information.

ROUGH WORKING DRAFT**ACCEPTABLE KNOWLEDGE WHITE PAPER**

The DOE intends to use acceptable knowledge to characterize waste intended for disposal at WIPP. The permit application includes little information regarding how the acceptable knowledge methodologies will be implemented at each generator site, although a general "guidance document" and rough outline for a white paper addressing the topic have been provided.

A.T.Kearney believes that it would be inappropriate for the NMED to provide specific requirements for acceptable knowledge "processes". As an analogy, DOE did not ask NMED to provide specific sampling and analytical requirements relative to headspace gas, homogeneous waste sampling, etc. Instead, DOE provided this information within the WAP and QAPP, and NMED commented upon the proposed procedures. The same sort of process should hold true for acceptable knowledge, although NMED could help "point them in the right direction" without giving too much instruction. Provision of too many specific requirements could either hinder the DOE in their acceptable knowledge activities, or commit the NMED to processes that, after implementation or provision of additional information, are inappropriate or inadequate.

This being said, it is apparent that DOE must take a three step approach to developing an acceptable knowledge strategy: 1) assembly of information; 2) confirmation of information; 3) auditing of acceptable knowledge characterization approach.

1. Assembly of Information

- Detail, specifically, which information will be considered "allowable" acceptable knowledge, and provide guidance to the sites as to how this information should be assembled, evaluated, weighted, and prioritized
- Determine, specifically, how RCRA hazardous waste will be identified; include methods to screen out unacceptable waste
- Detail discrepancy resolution relative to acceptable knowledge information; i.e. if process knowledge, interviews, analytical data, etc. do not coincide
- Determine how information from sites will be "shared" to ensure consistency in interpretation from site to site, how much weight should be given to analogous information acquired from a different site, and how "overlapping" information will be managed relative to a given waste stream
- Specify the type of auditable documentation that each facility should have on-site, including (perhaps) a checklist or tabular format that identifies the type of acceptable knowledge available for a given waste stream, how this cross-references to waste summary categories, etc.
- Specify the data quality goals (analogous to DQOs and QAOs) that sites should meet
- Relative to newly generated waste, acceptable knowledge guidance should be developed that instructs generators how to document drum contents as drums/containers are being packaged, including correlation to waste streams, identification of RCRA hazardous waste, etc. Define the verification process discussed in the QAPP, as well as "established and documented administrative controls". Processes should be developed, and communicated to the sites, which allow for consistent identification of newly generated wastes
- DOE should develop a guidance document that offers more detail than the August, 1995 Predecisional Draft on Acceptable Knowledge, which was little more than a repetition of the EPA Guidance Document
- Ensure availability of information to generator personnel, WIPP personnel, and regulatory agencies

2.0 Confirmation of Information

- View all waste examination prior to shipment as confirmatory data acquisition relative to acceptable knowledge identification of the waste stream and waste process, with particular emphasis, as possible, on RCRA hazardous waste identification. This includes homogenous solids sampling/analyses results, RTR, visual examination, and headspace gas analyses
- Establish confirmatory process whereby comparison of above data with acceptable knowledge identification of waste stream and RCRA hazardous waste is performed
- Establish discrepancy resolution process to address differences between confirmatory data and acceptable knowledge identification of waste (WAP indicates that some discrepancy resolution occurs as part of the Phase 1/Phase 2 shipping/screening process)
- Also discuss data quality goals (analogous to DQOs and QAOs) relative to agreement of confirmatory data vs. acceptable knowledge - i.e. how much variability between acceptable knowledge and confirmatory information should be "acceptable", and how these discrepancies should be remedied
- Establish screening procedures for unacceptable waste identified as part of the confirmatory process
- Determine documentation procedures for confirmatory process
- Ensure availability of information to generator personnel, WIPP personnel, and regulatory agencies
- Include confirmatory process activities in the guidance document, which would offer more detail than the August, 1995 Predecisional Draft on Acceptable Knowledge

3.0 Auditing

- **Establish audit program to evaluate effectiveness of acceptable knowledge determination, confirmatory activities, discrepancy resolution, etc.; audit program should "cover" the entire acceptable knowledge characterization process**
- **Availability of audit results and/or participation of regulatory agencies in audit progress should be established**
- **Establish "corrective action" program to resolve problems discovered as a result of the audits**
- **Identify WIPP personnel position(s) in charge of auditing (e.g. responsibility, authority, accountability)**

OUTLINE FOR PAPER ON ACCEPTABLE KNOWLEDGE

1.0 Introduction:

Include a definition of acceptable knowledge and reference the EPA guidance manual as the source of the definition and the approach to using process knowledge.

2.0 Why use acceptable knowledge:

The EPA provides several reasons why acceptable knowledge can be used. These are as follows:

2.1 Processes are well documented:

Make the case that weapons manufacturing and R&D processes are well understood and well documented, particularly with regard to F-listed wastes. Point out that each site has "process notebooks" that provide the necessary documentation. Explain the situations where documentation is not as well understood and the efforts that will be used to augment acceptable knowledge (such as Hanford waste).

2.2 Health and safety risks to personnel do not justify sampling and analysis:

Explain that the DOE has developed techniques that allow limited sampling and analysis of most of the waste characteristics, however, the sampling of debris waste is fraught with potential exposure and the risks do not justify the information obtained since it can be determined by acceptable knowledge and, in cases where acceptable knowledge is poor, visual inspection and head space sampling. It is important to make the case that this is the best DOE can do -- anything else is technically infeasible, considering the great radiological risks.

2.3 Physical nature of the waste does not lend itself to taking a sample:

This builds on the above, however it focuses primarily on debris waste. Some waste, like pyrochemical salts, may be included in arguing that the thermal processes involved depleted any volatile organics.

3.0 Acceptable knowledge documentation:

Include an exhaustive description of the documentation that is available. Specifically, ensure you address the 10 major sites.

3.1 Stored Waste:

Describe the documentation that is available at the generator sites. Discuss where site specific streams are used and where similar streams at other facilities are used to document acceptable knowledge. Describe how the WIPP will verify the documentation through site audits and other visits. Point out that the waste characterization program is also aimed at verifying acceptable knowledge. Finally, address whether any of the acceptable knowledge descriptions use standardized (textbook) processes or published data. If so, the need to periodically verify these must be addressed.

3.2 Newly generated waste:

Discuss the standardized criteria that will be put in place for newly generated waste. Address how WIPP will verify the documentation.

4.0 Periodic re-evaluation of the use of acceptable knowledge:

Discuss how the WIPP will use the waste characterization program to evaluate the effectiveness of acceptable knowledge. Also point out that if technology evolves, the DOE will look for opportunities to sample problem wastes.

5.0 Summary:

Summarize the above and provide a flow chart, process diagram, or checklist that leads one through the determination of when acceptable knowledge is to be used and how it is verified.