



ENVIRONMENTAL EVALUATION GROUP

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June 20, 2000

Mr. Steve Zappe, WIPP Project Leader
New Mexico Environment Department
P. O. Box 26110
Santa Fe, NM 87502

Dear Mr. Zappe:

The EEG has recently reviewed three INEEL upper-tier waste characterization documents, and has generated several comments that relate to compliance with the WIPP Hazardous Facility Permit. These comments are attached.

Sincerely,

Matthew Silva
Director

MS:BAW:js
Enclosure



PLN-182, INEEL TRU Waste Characterization , Certification, and Transportation Quality Program Plan (Revision 4, Effective 03/13/00)

Overall, PLN-182 is a well-written document that provides a sense of how the INEEL component of the WIPP QA program is to be conducted. Where requirements are not specifically addressed clear references to where the information likely resides are provided.

EEG did not find any aspects of the document which are currently out of compliance with upper tier requirements or expectations for WIPP activity. Items that could become a problem at INEEL in the future, and items that EEG believes would improve the document, are listed below. Note that the first item could have effects at sites other than INEEL.

1. Section 6.2, Design Control, states (p. 21):

The design control requirements of the DOE-CAO QAPD, Section 2.2, apply only to the WIPP. Therefore, these QAO [sic] QAPD requirements are not applicable to the INEEL TWCP

The CAO QAPD does not contain this limitation. The CAO QAPD Introduction clearly states (p. I-1):

The provisions of the QAPD apply to all programs and projects managed by the CAO which require a QA program, including activities related to waste isolation, waste characterization, regulatory compliance, and nuclear safety.

There are no statements in Section 2.2 of the QAPD which further limit its application. INEEL, and other generator sites, may in the future perform design activities that would fall under the QAPD. For example, INEEL personnel have been in the forefront of radioassay development for the WIPP, and it is not inconceivable that INEEL could develop new equipment that should meet the QAPD's design requirements.

A similar concern may be raised about the LANL headspace gas measurement system currently under development. There is evidence that the LANL system design may later be utilized at INEEL and/or other generating sites, and design QA meeting the QAPD requirements would seem to need to be established before that system, or any other newly designed waste characterization equipment, is put into operation.

2. Section 7.3 is titled "Audits," but only addresses CAO audits. INEEL internal auditing is described in Section 7.2, Independent Assessments. While the EEG finds no faults in the descriptions provided, the title of Section 7.3 could mislead casual readers or researchers as to the extent and number of audits that are to be performed.

3. Section 9, Scientific Investigation Requirements, consists solely of the following statement (p. 27):

Because the INEEL TWCP does not conduct scientific investigations as defined by the DOE-CAO QAPD, Section 5, this section is not applicable.

A more appropriate statement might be to the effect that if WIPP-related scientific investigations are pursued at INEEL, then the CAO QAPD Section 5 requirements will be addressed in project-specific documents. Such a statement would cover the possibilities that exist for INEEL. For example, the CAO QAPD explicitly includes in its definition investigations that support design of waste packaging (p. A-8). Since the INEEL is currently constructing a major facility for waste treatment, it is not inconceivable that scientific investigation related to a new packaging for the treated waste might be conducted under INEEL control.

4. Typographical errors:

- 1) "QAO" instead of "CAO" on page 21 (see quotation in item 1 above);
- 2) the "f" was left off the word "of" (second bullet, bottom of p. 23)

Prior to shipment of a transport cask, conditions o [sic] the NRC's certificate of compliance...

- 3) In Section 7.5, third sentence, the substitution of "FQAOs" for "FQAO [comma]" would better convey what seems to be the intended sense (p. 25):

FQAO, report on the status of QA developments at their facility to the SQAQ.

PLN-190, Idaho National Engineering and Environmental Laboratory Quality Assurance Project Plan for the Transuranic Waste Characterization Program (Revision 4, Effective 03/13/00)

PLN-190 is an adaptation of the WIPP Hazardous Waste Facility Permit (HWFP) Waste Analysis Plan (WAP) to the INEEL program. Three of the comments below (4, 9, and 12) address perceived problems common to PLN-190 and the HWFP WAP, and obviously INEEL does not have the primary responsibility for addressing them. Comment 17 addresses CAO QAPD requirements not met by this QAPjP, and the comment may also apply to other generator site QAPjPs. Several of the issues (comments 6, 8, 10, 11, 13, 15, and 16) could result in a failure to meet the requirements of the WIPP Hazardous Waste Facility Permit, though at this time there is no evidence of lack of compliance.

1. Section A-6e and Section A-6f, responsibilities of the Site Project Manager (SPM) and Site Quality Assurance Officer (SQAQO), do not include, or modify, some of the Site Project Manager responsibilities from the analogous Sections 2.2.2.5 and 2.2.2.6 of PLN-182. Among these are:
 - 1) PLN-182 Section 2.2.2.5 states a SPM responsibility for "Developing, implementing, and maintaining plans, policies, and procedures"; PLN-190 Section A-6e narrows this to "Concurring with Standard Operating Procedures...." Similarly, PLN-182 Section 2.2.2.6 establishes a SQAQO responsibility of "Ensuring preparation, review, and issuance of ...procedures that implement customer and INEEL QA requirements," while PLN-190 Section A-6f requires only concurrence. Responsibility to concur with procedures is not the same as ensuring that procedures are developed, prepared, implemented, and reviewed properly.
 - 2) PLN-182 Section 2.2.2.5 establishes a SQAQO responsibility for "Review and Approval of TWCP subcontractor plans" not found in PLN 190.
2. Section A-6j, Facility Quality Assurance Officers (FQAO), cites a responsibility that SQAQOs should "Provide a periodic assessment report to the SQAQO using the QAPD, Appendix E for QA/QC activities". The CAO QAPD Appendix E contains no requirements for FQAO reporting. This is more a poor choice of wording than a substantive flaw; the responsibility should simply be to provide the SQAQO with a summary of QA data from the FQAO's facility to facilitate development of the semiannual reports required by the QAPD.
3. Section B, Waste Analysis Plan, states that "The RH-TRU wastes...will not be shipped to WIPP for disposal" (p. 10). The EEG believes that INEEL's retrievably stored RH-TRU waste will eventually be shipped to WIPP for disposal. The statement was apparently put into the QAPjP because the current WIPP Hazardous Waste Facility Permit (HWFP) prohibits receipt of RH-TRU at WIPP, and the QAPjP was written to be in conformance

with the HWFP. The statement is, however, both misleading and unnecessary, and should be changed or deleted. An easy solution would be to simply state that the scope of this QAPjP concerns only retrievably stored CH-TRU wastes.

4. Section B states (p. 10):

Characterization requirements for individual containers of TRU waste are specified on a waste stream basis.

This statement is identical to a statement in the HWFP Appendix B, page B2; however, the HWFP's WAP in several other places states or implies that characterization requirements will be based on Summary Category Groups (SCGs) rather than individual waste streams. For example HWFP Table B-6, Summary of Parameters, Characterization Methods, and Rationale for CH Transuranic Mixed Waste, only specifies characterization methods related to SCGs. INEEL documents do not indicate that the statement has been met, or even addressed, by the INEEL TWCP--later statements in the same section of PLN-190 indicate that SCGs are the basis for waste characterization requirements. The statement is an anomaly in the HWFP and PLN-190, and is both misleading and unnecessary in this INEEL document. It should be deleted.

The EEG transmitted to both the NMED and the CAO a letter pointing out this anomaly (among others) in the HWFP on February 9, 2000, and even earlier notifications were also provided to both organizations through emails. However, as yet neither an explanation as to why the EEG's interpretation of the statement is wrong, nor a permit modification submittal that addresses this particular item, has been made. The same misstatement could appear in other generator site documents developed from the WAP, and other sites developing documents for certification will also have the opportunity for misinformation until the HWFP is changed.

5. Section B-1e, Waste Generating Processes at WIPP, begins by stating that "Waste characterization data shall confirm the absence of prohibited items" (p. 15). The statement is not relevant to the other contents of the section.

Section B, Waste Analysis Plan (WAP), follows closely with the WIPP HWFP WAP--hence, the inclusion of this section, which obviously has no relevance at INEEL. The questionable sentence apparently was inadvertently transferred from the end of the previous section (Section B-1d in the HWFP) into the beginning of the next section (in PLN-190).

6. Section B-3, Characterization Methods, states (p. 16):

EPA methods, cited in Table B-1, may be modified, as appropriate.

Table B-1 cites both EPA's TO-14 and various applicable procedures from the EPA's SW-846, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*. The statement may refer only to the "Modified SW-846 8260" listed in Table B-1 (p.32); however, the statement quoted above seems more generic.

The NMED has informed the EEG that SW-846 methods can be modified using the process specified in SW-846 Chapter 2, Section 1 (also cited in Clarification Number CAO-00-042, Rev. 0). The modifications are constrained as follows (SW-846, Chapter 2 Section 1):

Glassware, reagents, supplies, equipment and settings other than those listed in this manual may be employed, provided that method performance appropriate for the intended RCRA application has been documented. Such performance includes consideration of precision, accuracy (or bias), recovery, representativeness, comparability, and sensitivity (detection, quantitation, or reporting limits) relative to the data quality objectives for the intended use of the analytical results. In response to this inherent flexibility, if an alternative analytical procedure is employed, then EPA expects the laboratory to demonstrate and document that the procedure is capable of providing appropriate performance for its intended application. This demonstration must not be performed after the fact, but as part of the laboratory's initial demonstration of proficiency with the method. The documentation should be in writing, maintained in the laboratory, and available for inspection upon request by authorized representatives of the appropriate regulatory authorities. The documentation should include the performance data as well as a detailed description of the procedural steps as performed (i.e., a written standard operating procedure).

NMED has indicated that more substantive changes to SW-846 methods would require using processes listed in SW-846 that involve EPA approval--after which modification of the HWFP via Class 1 changes could be instituted.

These limitations, or a reference to them, should be included in PLN-190. TO-14 is more of a guidance, and there are fewer restrictions on modifications than for SW-846 methods; However, INEEL would still need to be able to demonstrate that QAOs and DQOs are met with the alterations.

7. Section B-3d states (p. 19):

No newly generated TRU waste will be shipped to WIPP.

This statement seems very likely to be proven erroneous at some time in the future. Recommend that the words "under this QAPjP" be added to the sentence.

8. Section B1-4, Custody of Samples, states (p. 66):

The COC [change of custody] on field samples (including field QC samples) will be initiated immediately after sample collection or preparation. Sample custody will be maintained by ensuring samples are custody sealed during shipment to the laboratory. After samples are accepted by the analytical laboratory, custody is maintained by ensuring the samples are in the possession of an authorized individual, or in a secure controlled access location. Sample custody will be maintained until the associated analyses are completed...

This seems to be somewhat less than the sample control required by the WIPP HWFP, Section B1-4 (p. B1-25):

Chain-of-Custody on field samples (including field QC samples) will be initiated immediately after sample collection or preparation. Sample custody will be maintained by ensuring that custody sealed samples are in the possession of an authorized individual, in that individual's view, in [a] sealed or locked container controlled by that individual, or in a secure controlled access location. Sample custody will be maintained until the associated analyses are completed...

PLN-190's statement does not establish sample control until the time of shipment to the analytical laboratory. The 1999 CAO audit at INEEL found flaws in sample control between time of sampling and shipment to analytical facilities. Though the subsequent sub-sections seem to provide for adequate sample control, this section of the QAPjP should be written to eliminate any confusion about whether the HWFP requirements are correctly passed on to lower tier documents.

9. Section B3-1b contains an equation used to determine precision by calculating the percent difference between multiple measurements, for comparison with established QAOs . The equation and explanation of terms is as follows (p. 83):

$$\%D = \frac{|C_1 - C_2|}{C_1} \times 100$$

where C_1 is the initial measurement and C_2 is the second or other additional measurement.

The denominator in the equation should be the larger (or smaller) of C_1 and C_2 , rather than based on whichever was the first measurement. For example, if the QAO established an allowable %D of 30%, and one measurement was 40 ppm and the other 30 ppm, then the order in which they were measured would determine whether the precision QAO had been met (25%) or not (33%).

This problem is not only INEEL's. The equation and explanation are an accurate copy of Equation B3-4 in the HWFP, Section B3-1b (p. B3-2), and was also found in CAO's now-canceled Quality Assurance Program Plan, Revision 0, (the QAPP) Section 3.2.1, equation 3-4, p. 3-7. The EEG transmitted a letter to both the NMED and the CAO pointing out this anomaly (among others) in the HWFP on February 9, 2000. However, as yet the perceived fault in the specified use of the equation has neither been explained, nor has it been subject to a HWFP modification submittal. The same equation and explanation could appear in other generator site documents developed from the WAP, and other sites developing documents for certification will likely also misapply the equation until the HWFP is changed.

10. Section B3-1e, Comparability, contains the following statement (p. 86):

The comparability of waste characterization data shall be ensured through the use of DOE-CAO data usability criteria.

A reference to the document which establishes the CAO data usability criteria should be listed. The EEG is unaware of any current CAO document that establishes usability requirements. The language in the HWFP, the document currently utilized by the CAO to cover the areas in the scope of PLN-190, is as follows (Section B3-1 p. B3-4, lines 8-9):

The comparability of waste characterization data shall be ensured through the use of generator/storage site data usability criteria.

As a generator/storage site the INEEL should develop its own criteria, utilizing the HWFP requirements for data usability listed in Section B3-1, page B3-4, lines 11-23.

11. Section B3-1g, Nonconformance to DQOs, states (p. 86):

For analytical data, if a DQO is not met due to matrix effects, the data are not considered nonconforming. Such data are flagged appropriately and discussed in the narrative of the associated data package.

There is no indication in the HWFP that such a process is justified. Section B3-1, page B3-5, lines 7-16 of the HWFP indicate that any failure to meet a DQO is a serious matter that must be reported to CAO/WID within 5 days, and a nonconformance report must be sent to CAO/WID within 30 days.

The PLN-190 statements quoted above seem to be derived from requirements for QAOs rather than DQOs; footnote "a" in HWFP Tables B3-5, B3-7 and B3-9 eliminates the responsibility to generate nonconformances when matrix effects cause QAOs for precision and accuracy in these tables to be missed. However, these tables only apply to control sample analytical data from solid sampling; headspace gas analytical data or RTR/VE data should meet their respective DQOs even in the presence of matrix interferences. The quoted statement should either be modified to reflect the HWFP or be eliminated.

12. Section B3-2, HSGS, refers several times to "drums" when "waste containers" should be the term used. PLN-190 does not exclude the possibility that retrievably stored standard waste boxes or ten-drum overpacks might be characterized for WIPP shipment. As with items cited above, the fault is not specifically INEEL's as the same terminology is used in the HWFP, and the poor choice of terminology was reported by the EEG to the NMED and the CAO in the February 7, 2000 letter.

A similar terminology is used in Section B3-4c, which covers RTR accuracy. A global search to ensure that the term "drums" was not used where "waste containers" were meant should be performed.

13. Section B3-5d and Section B3-5h indicate the INEEL FTIRS procedures "EPA SW-846 Draft Method 8450" for FTIRS. The WIPP HWFP specifies SW-846 methods are to be used, but does not indicate that use of draft methods is acceptable.

A March 21, 1996 letter from Michael Shapiro of the EPA's Office of Solid Waste to George Dials, then manager of CAO, does state that Method 8450 has been accepted as a Draft Method by the EPA, would be included in the next proposed update to SW-846, and was acceptable for analysis of drum headspace VOCs. However, on February 8, 2000, Method 8450 was not listed as a part of the upcoming Update IVA to SW-846 on the EPA's SW-846 internet site. A February 10, 2000 phone call from the EEG to the EPA's SW-846 project elicited the information that Draft Method 8450 would not be a part of the next update (Update IVA), would require extensive rewriting to meet SW-846 standards, and would probably not be accepted as an official SW-846 method for another two years.

PLN-190 Section B3-5h notes that Draft Method 8450 will be a part of Update IVB to SW-846. While the EPA has stated that techniques in the method are acceptable its use does not clearly comply with the requirements of WIPP HWFP. Analysis of headspace gases based on Draft Method 8450 could be problematic for shipments to the WIPP until the process is added to SW-846.

14. Section B3-11a covers reconciliation of data with DQOs at the project level. The section contains a list of items for which the Site Project Manager (SPM) must determine if sufficient data have been gathered, but does not specify or reference criteria by which the SPM makes this decision. It is worth noting that the WIPP HWFP contains an identical list

but also does not identify any criteria by which the decision is to be made--nor did the CAO QAPP Section 3.3.1, which contained a similar list (the QAPP provided CAO's waste characterization requirements before the HWFP was issued).

It is not immediately apparent what basis can be used for determining whether or not sufficient data is represented in a data package. Determination of sufficient data should not be left totally to the subjective judgment of the SPM, nor should the SPM be expected to remember the varying factors that should go into judgment of sufficient data for each of the 13 items on the list. The EEG suggests that guidelines or criteria be developed that can be used by all generator site SPMs, and referenced in site QAPjPs.

15. Section B4-2a, describing required acceptable knowledge (AK), makes it seem as if only INEEL maps, facility mission, waste generation operations, waste identification schemes, and waste quantities are included in the AK documentation (p. 144). Since the majority of the waste to be characterized and shipped under PLN-190 was generated and packaged at the Rocky Flats facility, the Rocky Flats data for these same items should also be indicated as well as data from other generating sites (Mound, ANL-E, Battelle Columbus) of TRU waste in storage at the RWMC. The intent of the requirement is to aid in establishing characterization of the waste. While information about the INEEL complex may be useful for the INEEL-generated wastes, the information from Rocky Flats and other waste generating sites is the required data for establishing acceptable knowledge on wastes from these sites.

The EEG is aware that at least the appropriate Rocky Flats data is a part of the INEEL's documentation of AK. The point, in part, is that this QAPjP is misleading, and it is the QAPjP that is placed in EPA and NMED public dockets, not the actual AK documentation.

16. Section B4-3a (p. 148) states that AK personnel at INEEL meet training and qualification requirements for, among other bulleted items:

WIPP-WAP and WIPP-WAC requirements

This is different from the analogous requirement in the WIPP HWFP Section B4-3a, which states that AK personnel are to be qualified and trained in (p. B4-6):

WIPP WAP in Permit Attachment B and the Treatment Storage and Disposal Facility Waste Acceptance Criteria (TSDF-WAC) specified in this permit

The WIPP-WAC is WIPP/DOE 069, Waste Acceptance Criteria for the Waste Isolation Pilot Plant (PLN-190, p. 176). The TSDF-WAC is Section II.C.3 of the WIPP HWFP, a brief compilation of WIPP-prohibited items and processes that must be completed before shipment to the WIPP. While many of the TSDF-WAC items can be found in the WIPP-WAC, they are all described in various portions of the WAP. The TSDF-WAC provides a

single succinct list and is likely required training by the HWFP because of that succinctness. The TSDF-WAC should also be listed among the required training in PLN-190.

17. The CAO QAPD Revision 3, Appendix E, Organizational and Individual Responsibilities, Item 6 lists the following requirements for QAPjPs from TRU Waste Sites (p.E-2):

Each participating site shall develop and implement a QAPjP that demonstrates compliance with and implementation of WIPP TRU waste characterization requirements and the applicable requirements of the WIPP Hazardous Waste Facility Permit and its associated Waste Analysis Plan. These QAPjPs shall include or reference the appropriate management and technical criteria of the [QA] Program, as well as qualitative or quantitative criteria for determining that Program activities are being satisfactorily performed...The QAPjPs shall also reference site-specific documentation that details how each of the required elements of the Program will be performed.

PLN-190, self-described as the INEEL QAPjP for WIPP, addresses only the WIPP HWFP and WAP waste characterization requirements. Other waste characterization requirements--perhaps most significantly, those related to the radioactive components of the waste--are not considered in the document. The associated CAO QA program elements are not addressed. Many of the CAO QA program elements are not directly addressed in the QAPjP--purchasing, control of items, and software, for instance, are not even mentioned in the INEEL QAPjP.

The same comment likely can be made about other generator site QAPjPs. It appears worth noting that the CAO QAPD is the only document requiring the information to be included in site QAPjPs, and it may be more efficient to change the QAPD requirement than the various site documents. At INEEL, PLN-182 was obviously meant to cover CAO's QAPD requirements, not the PLN-190 QAPjP.

18. Typographical and formatting errors:

- 1) Section B-4b (p. 27), first paragraph, implies that if waste characterization does not meet WAP requirements a WSPF is nevertheless submitted to the WIPP. The 2nd and 3rd sentences of the paragraph should be rewritten for clarity.
- 2) Section B1-3b(2) contains a sentence with an unnecessary reduced font for a portion of it (p. 62):

A single drum may incorporate several Waste Matrix Codes

A similar reduced font for the term "Waste Matrix Code" is found in Section B2-1 (p. 76); in B3-4c, (p. 95); in B4-1 (p. 143); B4-3e(2) (p. 156);

- 3) A double period ends the last sentence in Section B3-3b (p. 93).
- 4) Section B3-10 contains an incomplete sentence, in a sub-bullet citing what a Data Summary Report requested by CAO is to include. The sentence currently reads as follows (p. 113):

-- Site Project QA Officer Summary; this includes an *

The HWFP contains no additional requirements over the normal SPQAO summary; the subtended thought beginning with the semicolon can likely be deleted without affecting compliance with higher-tier documents.

- 5) Section B3-10b(2) ends with a bullet that specifies "CAOs" when "QAOs" seems to be the correct acronym (p. 119).
- 6) Section B4-2, 1st sentence has an unmatched, unnecessary left parenthesis (p. 143).

PLN 579, Program Plan for Certification of INEEL Contact-Handled Stored Transuranic Waste (Revision 0 Effective 03/13/00)

Comments 3, 5, 6 and 7 below may be of interest to WIPP regulatory agencies.

1. Figure 1 (p. 2) has two footnotes indicated in the diagram which neither appear on the figure nor are explained in the text.
2. Section 1.2 contains the following statement (p. 3):

Appendix C is ²³⁹Pu Equivalent Activity.

Recommend that this sentence be expanded to indicate that Appendix C describes the concept and calculation of ²³⁹Pu Equivalent Activity.

3. Section 7.2.1, Payload Container Description, states under "Compliance" that (p. 27):

Specification UN1A2 55-gal drums are considered adequate to meet Type A requirements if the requirements of the TRUPACT-II SARP Appendix 1.3.3 are also met.

The allowance of UN1A2 drums is contrary both to the WIPP-WAC Revision 7 Acceptance Criteria for waste containers (Section 3.2.1, p. 3-9) and the WIPP HWFP, Section M1-1b (cited in the WIPP-WAC on p. 3-8).

The HWFP requirement reflects the WIPP-WAC requirement in force prior to December 1996, when Change 1 to Revision 5 of the WIPP-WAC initiated allowance of UN1A2 drums as waste containers (Revision 7 restored the original requirements so as to be in compliance with the HWFP). The INEEL PLN-579 statement quoted above is not in compliance with upper tier requirements documents, and should be deleted.

4. Section 7.2.1 also states (p. 28):

The Real-Time Radioscopic (RTR) examination is performed to ensure the container contains a 90-mil rigid liner and that no liquid between the liner and the drum exists. Drums not meeting this criteria are overpacked in SWBs or, based on the liquid, set aside for treatment.

There are no upper-tier requirements for a 90-mil rigid liner in drums to be shipped to the WIPP. The INEEL may be creating unnecessary complications by introducing a requirement for liners. If the INEEL believes the requirement for overpacking is important, then an 85-gallon drum overpack would seem to be more efficient than using a SWB.

5. Section 7.5.1, Pyrophoric Materials, in the "Compliance" portion, states that (p. 38)

Pyrophoric materials were not permitted in the Rocky Flats Environmental Technology Site (RFETS) TRU process areas. Processes that require the use of pyrophoric materials require a safety analysis that was limited and controlled.

RFETS (Rocky Flats Plant at the time of waste generation) may not be the only source of wastes. Section 2.2 also lists Mound, Battelle-Columbus, Bettis, and ANL-E as sources of waste, as well as small volumes generated at INEEL itself. INEEL should also ensure that pyrophoric materials from all source sites are controlled and documented.

6. Appendix B, INEEL Radioassay Requirements for Contact-handled Transuranic Waste, Section B.1, Introduction, ends with the statement (p. B1):

The INEEL will assure that any NDA measurements taken prior to the current requirements to be used for characterization of waste containers for disposal at WIPP are traceable and meet current quality requirements.

This is apparently meant to fulfill a similarly-stated requirement in Appendix A of the WIPP-WAC, Section A.1 (p. A-4). Neither the INEEL nor the WIPP-WAC specify how the process is to be performed. The INEEL WAC should either describe the process or reference the procedure that will be used to perform it.

The CAO QAPD (Revision 3) Section 5.4, Qualification of Existing Data, specifies use of one or a combination of four specific techniques for establishing the quality of data that will be used "...to support the WIPP compliance application". These are taken from 40 CFR 194.22(b), and relate to the EPA's continued oversight of waste characterization activities and assumptions from 194.22(a)(2)(i), in turn addressed in Condition 2 of Appendix A to Part 194, the Certification of WIPP Compliance by the EPA. NDA measurements seem to be considered by the EPA to be an important part of the WIPP compliance application certification.

If NDA measurements taken prior to certification of the INEEL QA program are to be used the QAPD Section 5.4 requirements should be incorporated into the process. Given the extra time and effort that would seem to be necessary to meet these requirements it may be more efficient to re-measure the waste containers under current requirements.

7. Appendix B, Section B2, Quality Assurance Objectives, under "Minimum Detectable Concentration" (MDC), states in reference to the Passive-Active Neutron (PAN) system (p. B2):

The MDC is not applicable to the passive mode measurements because the passive mode is used only for measurements above approximately 5 g weapons grade plutonium (WGPu).

The WIPP-WAC Appendix A would seem to require calculation of MDC for the passive mode. Section A.2 states (p. A-6):

The minimum detectable concentration (MDC) for each assay method must be determined. In addition to being a function of the particular instrument and assay method, the MDC is also dependent on the radiation background, characteristics of the waste type being measured, and other factors.

While the passive mode MDC will likely always be far below the levels at which passive mode measurements will be taken, it should still be documented. The WIPP-WAC specifically states that alternate methods (rather than the 15 replicate measurement process described) can be used for determining the MDC; the INEEL may be able to create a simpler methodology that will still meet the MDC definition.

8. Typographical and formatting errors:

- 1) The following bulleted item appears in Appendix B Section B6, Software Requirements:

Program application Programming language (including version numbers of all compilers, linkers, etc.)

This statement was obviously originally intended to be two separate bullets.

- 2) PE-Ci is rendered as "PE-CO" in a bulleted item in Section B-8 (p. B11).