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COPY #35



WORK INSTRUCTION

MANAGEMENT OF LIGHTWEIGHT WASTE PACKAGES

OPS-INSTR.003

Date Effective: 6/16/97

Revision 0

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Approved:

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1. PURPOSE

The purpose of this work instruction is to provide a method of waste classification for on-site management of lightweight packages.

2. SCOPE

This work instruction supersedes Safeguards Guidelines 5 and 6 as applicable to specific activity (nCi/g) calculations performed for LLW or TRU waste classification. Waste Operations will continue to manage lightweight packages as low-level or transuranic waste in accordance with WO-4034, "Radioactive Waste Packaging Requirements". Waste classification by this method is approved only for on-site storage.

3. RESPONSIBILITIES

RMRS NDA Operations or designated personnel as determined by Solid Materials Management are responsible for completing this work instruction.

4. BACKGROUND INFORMATION

Lightweight packages have a net weight less than 664 pound in a crate or less than 18.25 pounds (19 lbs) in a drum. Lightweight packages, packaged as LLW or TRU per WO-4034 and assayed as less than the lower level of detection currently have a indeterminate specific activity (nCi/g) assigned to the package as per Safeguards Guidelines 5 or 6. The current practice to manage lightweight packages as indeterminate creates an uncertainty in the waste classification.

The following are details which explain the current practice of calculating specific activity. If the active mass (g) is a negative number or less than the Lower Level of Detection

(LLD), the LLD is used for the reported gram value. Safeguards Guidelines use the LLD gram value (i.e. 0.4 g for crates and 11 mg for drums) and the net weight to calculate the specific activity (nCi/g). Total alpha activity per gram of weapons grade Pu is assumed to be $7.524 \text{ E}+7$ nCi/g. Waste packages which are categorized as lightweight and assayed as less than the Lower Level of Detection have a calculated specific activity above 100 nCi/g, which is the TRU cut-off. According to Safeguards Guidelines these packages are currently being stored with an indeterminate waste classification (i.e. not LLW or TRU).

Knowing the waste package contains less than the LLD gram value and has been packaged as Low Level (or TRU) is sufficient information to store these packages as Low Level Waste (or TRU waste).

5. INSTRUCTIONS

5.1 Use Table 1 or 2 to determine waste classification as Low-level or Transuranic for crates weighing less than 664 pounds and drums less than 18.25 (19) pounds.

5.2 Document the waste classification as Low-Level or Transuranic on a count sheet or on a WEMS accuracy report if a count sheet is not available.

5.3 Complete a Nonconformance Report (NCR) in accordance with 2-U76-WC-4030, "Control of Waste Nonconformances". Use Nonconformance Code "09" (other) and describe the nonconformance as "waste classification only approved for on-site storage as per OPS-INSTR.003".

TABLE 1, PLYWOOD CRATES, TRU PAC II STANDARD WASTE BOXES, ATMX BOXES

| CRITERIA | WASTE CLASSIFICATION |
|--|--|
| Net weight: less than 664 pounds Assay: less than 0.4 g Pu Packaged as LLW/LLM as per WO-4034 | Low-Level or Low-level Mixed Waste |
| Net weight: less than 664 pounds Assay: less than 0.4 g Pu Packaged as TRU/TRM as per WO-4034. | Transuranic or Transuranic Mixed Waste |

TABLE 2, DRUMS

| CRITERIA | CLASSIFICATION |
|---|--|
| Net weight: less than 18.25 pounds (19 lbs) Assay: less than 11 mg Pu Packaged as LLW/LLM as per WO-4034. | Low-Level or Low-level Mixed Waste |
| Net weight: less than 18.25 pounds (19 lbs) Assay: less than 11 mg Pu Packaged as TRU/TRM as per WO-4034. | Transuranic or Transuranic Mixed Waste |

6. REFERENCES

1. Safeguards Measurements Guideline # 5 "Calculation of PACC Pu Assay and Specific Curies Values"

2. Safeguards Measurements Guideline # 6 "Calculation of Specific Pu Alpha Curies from Drums Measured on the PADC"

7. RECORDS

There are no new records generated as part of this instruction.

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