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**To:** <lap@nrc.gov>, <chatrton@erols.com>  
**Date:** 8/4/04 3:37PM  
**Subject:** Possession Amendment Clarifications

Laurie, I have attached two documents to this email: the first is a clarification of the conditions from the Envirocare FRN that were discussed by you, Margaret, and me on Monday. The second is a copy of the waste profile we submitted to Envirocare for the material for which the exemption is needed.

Let me know if you need any further information, and thanks for your assistance with this.

Rob

(See attached file: FRN Conditions.doc)(See attached file: Soil Sludge Waste Profile.pdf)

**CC:** <pcollopy@mactec.com>, <john.conant@us.abb.com>,  
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## Possession License Amendment Conditions

1. The waste material consists primarily of soil and sludge associated with the Hot Waste and Industrial Waste discharge piping for the facility. This material has been analyzed and consists of Uranium 235 at enrichments less than 10%. The measurement process is done primarily through High Purity germanium spectroscopy system using Canberra's Genie analysis software. This system will be operated to ensure no analysis is accepted unless the measurement uncertainty for each sample is less than 285 pCi/g of U-235.
2. There are no bulk quantities of "pure forms" of chemicals containing carbon, fluorine, magnesium or bismuth (bulk quantity defined as a pallet of drums, or a B-25 box) that will be included in the waste. Furthermore, there are no such quantities of these chemicals on the site, and none will be used for processing the waste. Historical process knowledge as per the Historical Review Report (HRR), and the Historical Site Assessment (HAS) shows no evidence these chemicals were used during any waste processing at the site.
3. Nothing further required.
4. Process knowledge of the fuel manufacturing activities at the site confirms that only uranium oxide, an insoluble form of uranium, is present. No chemical processing of this uranium oxide occurred during manufacturing that would change the material to a soluble form.
5. Any mixed waste encountered during the project D&D will only be treated by stabilization, micro-encapsulation, or macro-encapsulation using low-density polyethylene.
6. A profile of the waste stream containing the U-235 has been generated and is currently being processed by the waste disposal facility. This profile contains:
  - The waste origin
  - physical and chemical form
  - a summary of how the characterization analysis was performed and the results
  - the range of SNM concentrations and associated error values
  - a description of why the waste is uniformly distributed
  - the methods used to determine concentrations on the shipping manifestA copy of the profile is attached to this submittal.



## RADIOACTIVE WASTE PROFILE RECORD

EC-0230, Revision 4

### A. GENERATOR AND WASTE STREAM INFORMATION

**GENERAL:** Complete this form for one waste stream. Contact Envirocare at (801) 532-1330 if you have any questions while completing this form. Please indicate "N/A" if a category does not apply.

#### 1. GENERATOR INFORMATION

Generator Name: COMBUSTION ENGINEERING, INC. EPA ID #: CTD 001159557  
Generator Contact: John Conant Title: Senior Project Manager  
Mailing Address: 2000 Dav Hill Road  
Windsor, CT Utah Site Access Permit #: 0111001161  
Phone: 860-285-5002 Fax: 860-285-5832 Email: \_\_\_\_\_  
Contractor Name: MACTEC Location of Material (City, State): Windsor, CT  
Name & Title of Person Completing Form: Donell Jackson Phone: 860-285-9628

#### 2. WASTE STREAM INFORMATION

Waste Stream ID: 0923-02 Waste Stream Name: Soil and Sludge  
Revision: 0 Date: July 4, 2004 Volume (ft<sup>3</sup>): 4,000 CF Delivery Date: Aug-Dec, 2004

**CHECK APPROPRIATE BOXES BELOW.** Please verify the required forms requested below are completed and submitted with the Radioactive Waste Profile Record.

**HAZARDOUS MATERIAL:** Is the waste classified as hazardous waste as defined by 40 CFR 261?

Y ☐ N ☒ If No, complete and attach the "Low-Level Radioactive Waste Analysis Certification Attachment".  
If Yes, complete and attach the "Hazardous Waste Analysis Certification Attachment" and check applicable box below.  
Has the waste been treated to meet applicable treatment standards per 40 CFR 268? Y ☐ N ☐  
Is the waste to be treated by Envirocare? Y ☐ N ☐

**LOW-LEVEL RADIOACTIVE MATERIAL:** Is the radioactivity contained in the waste material Low-Level Radioactive Waste as defined in the Low-Level Radioactive Waste Policy Amendments Act of 1985 or in DOE Order 435.1?

Y ☒ N ☐ If Yes, a current copy of a LLRW Compact Export letter authorizing export must be submitted if applicable. This authorization is applicable for non-DOE LLRW (i.e., Mixed Waste, NORM/NARM, 11e.(2) material, and waste from DOE do not require a Compact Export Letter).  
If No, check appropriate box: NORM/NARM ☐ 11e.(2) Byproduct Material ☐ Other: \_\_\_\_\_

**SPECIAL NUCLEAR MATERIAL:** Does the waste stream contain material with uranium enriched in U-235 or any of the following radionuclides: U-233, Pu-236, Pu-238, Pu-239, Pu-240, Pu-241, Pu-242, Pu-243, or Pu-244?

Y ☒ N ☐ If Yes, complete and attach the "SNM Exemption Certification" form (EC-0230-SNM). Supporting statements, analytical results, and documentation must be included with the submittal.

**PCB MATERIAL:** Does the waste contain Polychlorinated Biphenyls (PCB's) that are regulated for disposal per 40 CFR 761?

Y ☐ N ☒ If Yes, complete and attach the "PCB Waste Certification" form (EC-98279).

**ASBESTOS:** Does the waste contain Asbestos Containing Material?

Y ☐ N ☒ If Yes, Asbestos Containing Material must be managed in accordance with 40 CFR 61. Provide a detailed description of the waste containing asbestos in Section B.5 of the waste profile.



## RADIOACTIVE WASTE PROFILE RECORD

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### B. WASTE PHYSICAL PROPERTIES & PACKAGE INFORMATION

#### 1. GENERAL CHARACTERISTICS

Does the waste contain free liquids? Y ☒ N ☐ If Yes, what is the percent of free liquid by waste volume? 0-25 %

Does the waste contain absorbent? Y ☒ N ☐ Density range of the waste: 1 - 50 S.G. ☐ lb/ft<sup>3</sup> ☒

List percentage of waste type by volume: Soil 45% Concrete & Metal        % DAW        % Resins        % Sludge 45%

Other constituents and percentage by volume? 10 Misc. PPE, Absorbent Material

#### 2. MATERIAL SIZE

Gradation of Material: Indicate the percentage of waste material that would pass through the following grid sizes. For example, 95% of the material would pass through a 12" square, 90% passes through a 4" square, 80% passes through a 1" square, etc.

12" 100 % 4" 75 % 1" 60 % 1/4" 30 % 1/40" 25 % 1/200" 10 %

Does the waste stream contain oversize debris (i.e., no dimension < 10 inches and any dimension > 12 feet)? Y ☐ N ☒

If Yes, include a detailed description (i.e., weight, size, drawings, etc.) of the oversize debris in the narrative of Section B.5.

#### 3. MOISTURE CONTENT

For soil or soil-like materials, please use Std. Proctor Method ASTM D-698 to determine the optimum moisture content. The waste material must not exceed 3 percentage points above optimum moisture upon arrival at Envirocare's disposal facility unless approved by Envirocare.

Optimum Moisture Content: See Att % at Maximum Dry Density (lb/ft<sup>3</sup>):       

Average Moisture Content:        % Moisture Content Range:        % -        %

#### 4. WASTE SHIPPING & PACKAGING

Transportation Mode: ☒ Highway ☒ Rail

Shipping & Container Packages: ☒ Drums (≤ 55 gallons) ☒ Boxes (≤ 100 ft<sup>3</sup>) ☐ Soft-Sided Bags (≤ 10 yd<sup>3</sup>)  
(Check all that apply)

☒ Intermodal ☒ Sealand ☐ Gondola\* ☐ Box Car

Other:       

\*Dimensions of gondola railcars must be between 48 to 56.5 feet in length and 8.5 to 12.5 feet in height as measured from the top of the rail to the top of the railcar unless approved by Envirocare.

#### 5. NARRATIVE DESCRIPTION AND HISTORY OF WASTE

Please submit a narrative description and history of the waste as an attachment to the Radioactive Waste Profile Record. This attachment should include the following:

- Process that generated the waste
- Waste material physical composition and characteristics
- Radiological and chemical characterization method
- Basis for determining manifested radionuclide concentrations
- Description and amounts of absorbents, if applicable
- Basis of non-hazardous or hazardous waste determinations
- Treatment processes, if applicable
- Product information or Material Safety Data Sheets associated with the waste as applicable
- Information requested in other sections of this form



## EC-0230, Revision 4

Obtain sufficient samples to adequately determine a range and weighted average of activity in the waste. Attach the gamma spectroscopy or radiochemistry data supporting the radionuclide information listed below.

1. Does the waste material contain accessible surfaces with contact dose rates greater than 500 mR/hr? Y ☐ N ☒
2. Does the waste material contain any of the following isotopes: Aluminum-26, Berkelium-247, Calcium-41, Californium-249, Californium-250, Chlorine-36, Rhenium-187, Terbium-157, or Terbium-158? Y ☐ N ☒
3. Please list the following information for each isotope associated with the waste. The manifested concentration on the Uniform LLRW Manifest Form 541 must not exceed the upper concentration range listed below for each isotope. Provide an explanation in the narrative description of Section B.5 if the waste contains localized "hot spots" or elevated concentrations that significantly exceed the upper concentration range. Envirocare's license assumes that short-lived decay products of specified isotopes are present in concentrations equal to the parent. Consequently, these short-lived isotopes do not need to be listed below. If additional space is needed, provide an Attachment C.3 to this profile record formatted as below.

Page 3



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This form is required only if the checkbox for Hazardous Material on page one has been checked YES. Envirocare may waive the chemical laboratory analyses if the material is not amenable to chemical sampling and analysis (e.g., debris items including metal pieces, concrete, plastic, etc.). Justification for waiving the chemical analyses must be provided in Section B.5.

The following parameters must be analyzed by a Utah or NELAC certified laboratory. Typical SW-846 analytical methods have been listed. Other approved methods are acceptable. Attach the most recent or applicable chemical analytical results representing the waste.

## SW-846 Analytical Methods

**Method 9045** Please provide the range of the pH analyses performed.

**Method 9095** Not applicable for liquid radioactive waste streams.

### Method 9034

**Method 9014** If the Reactive Cyanide is > 50 mg/kg, total and amenable cyanide are required.

Method 9010	Total cyanide:	mg/kg	Amenable cyanide:	mg/kg

**Method 9020 TOX or Method 8260 & 8270 analyses (totals).** If TOX > 200 mg/kg, Method 8260 & 8270 analyses (totals) are required.

Has the waste been analyzed for volatile or semi-volatile constituents (Method 8260 or 8270)? Y ☐ N ☐

Any distinguishing color or odor? Y ☐ N ☐ If Yes, color: \_\_\_\_\_; odor: \_\_\_\_\_

List all hazardous waste codes and treatment standards. Include hazardous waste codes that have been removed through treatment and indicate "Former" in the second column. Worst-case concentrations only need to be provided for concentration based treatment standards. If additional space is needed, provide an Attachment D.2 to this profile record formatted as below. Include a description of hazardous waste determinations and any variances, exclusions, etc. in the narrative requested in Section B.5.

[illegible]





## RADIOACTIVE WASTE PROFILE RECORD

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### D. 4. OTHER CHEMICAL CONSTITUENTS

List any other chemical constituents of concern (e.g., PCBs, chelating agents, etc.) and worst-case concentrations. If additional space is needed, provide an Attachment D.4 to this profile record formatted as below.

Other Chemical Constituents	Worst Case Concentration (mg/kg unless noted as mg/L TCLP)	Other Hazardous Constituents	Worst-Case Concentration (mg/kg unless noted as mg/L TCLP)

### 5. LABORATORY CERTIFICATION INFORMATION

☐ **UTAH or NELAC CERTIFIED**

The Utah or NELAC certified laboratory holds a current certification for the applicable chemical test methods insofar as such official certifications are given. Please provide a copy of the laboratory's current certification letter for each parameter analyzed and each method used for chemical analyses required by this form.

☐ **OTHER LABORATORY CERTIFICATION** (Describe below)

### 6. CERTIFICATION

I certify that sample results representative of the waste described in this profile were or shall be obtained using state- and EPA-approved analytical methods. I also certify that where necessary representative samples were or shall be provided to Envirocare and to qualified laboratories for the analytical results reported herein. I further certify that the waste described in this record is not prohibited from land disposal in 40 CFR 268 (unless prior arrangements are made for treatment at Envirocare) and that all applicable treatment standards are clearly indicated on this form. I also certify that the information provided on this form is complete, true, and correct and is accurately supported and documented by any laboratory testing as required by Envirocare. I certify that the results of any said testing have been submitted to Envirocare. I certify that the waste does not contain any prohibited items listed in Envirocare's Radioactive Material License or RCRA Permit.

Generator's Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

Hazardous Waste Analysis Certification Attachment





## RADIOACTIVE WASTE PROFILE RECORD

EC-0230, Revision 4

### LOW-LEVEL RADIOACTIVE WASTE CERTIFICATION ATTACHMENT

This form is required only if the checkbox for Hazardous Material on page one has been checked No. Envirocare may waive the chemical laboratory analyses if the material is not amenable to chemical sampling and analysis (e.g., debris items including metal pieces, concrete, plastic, etc.). Justification for waiving the chemical analyses must be provided in Section B.5.

#### D. MINIMUM REQUIRED CHEMICAL ANALYSIS

The following parameters must be analyzed by a Utah or NELAC certified laboratory. Typical SW-846 analytical methods have been listed. Other approved methods are acceptable. Attach the most recent or applicable chemical analytical results representing the waste.

Soil pH: NA Method 9045 Please provide the range of the pH analyses performed.  
PFLT: Fail Pass / Fail Method 9095 Not applicable for liquid radioactive waste streams.  
Reactive Sulfide: 800 mg/kg Method 9034  
Reactive Cyanide: 1 mg/kg Method 9014

#### 2. 40 CFR 261.24 Table 1 – Contaminants of Toxicity Characteristic

Metals plus Zinc: Methods 6010 & \*7470 (Envirocare's GWQDP requires zinc analysis) ☒ TCLP (mg/L) or ☐ Total (mg/kg)

Arsenic	<u>1</u>	Chromium	<u>1</u>	Selenium	<u>0.8</u>
Barium	<u>5</u>	Lead	<u>4.9</u>	Silver	<u>1</u>
Cadmium	<u>0.8</u>	*Mercury	<u>0.1</u>	Zinc	<u>20</u>

Organics, Pesticides/Herbicides: Methods 8081/8151 ☒ TCLP (mg/L) or ☐ Total (mg/kg)

Endrin	<u>ND</u>	Toxaphene	<u>ND</u>	Chlordane	<u>ND</u>
Lindane	<u>ND</u>	*2,4-D	<u>ND</u>	Heptachlor	<u>ND</u>
Methoxychlor	<u>ND</u>	*2,4,5-TP Silvex	<u>ND</u>		

Organics, Semi-Volatile: Method 8270 ☒ TCLP (mg/L) or ☐ Total (mg/kg)

o-Cresol	<u>ND</u>	Hexachlorobenzene	<u>ND</u>	Pentachlorophenol	<u>ND</u>
m-Cresol	<u>ND</u>	Hexachlorobutadiene	<u>ND</u>	Pyridine	<u>ND</u>
p-Cresol	<u>ND</u>	Hexachloroethane	<u>ND</u>	2,4,5-Trichlorophenol	<u>ND</u>
Total Cresol	<u>ND</u>	Nitrobenzene	<u>ND</u>	2,4,6-Trichlorophenol	<u>ND</u>
2,4-Dinitrotoluene	<u>ND</u>				

Organics, Volatile: Method 8260 ☒ TCLP (mg/L) or ☐ Total (mg/kg)

Benzene	<u>ND</u>	1,4-Dichlorobenzene	<u>0.06</u>	Methyl ethyl ketone	<u>ND</u>
Carbon Tetrachloride	<u>ND</u>	1,2-Dichloroethane	<u>ND</u>	Tetrachloroethylene	<u>ND</u>
Chlorobenzene	<u>ND</u>	1,1-Dichloroethylene	<u>ND</u>	Trichloroethylene	<u>ND</u>
Chloroform	<u>ND</u>				

3. Was the waste at the point of generation a RCRA hazardous waste per 40 CFR 261? Y ☐ N ☒

If Yes, list former hazardous waste codes and former underlying hazardous constituents. List worst-case concentrations for each hazardous constituent. If additional space is needed, provide an Attachment D.3 to this profile record formatted as below. Attach the most recent chemical analytical results demonstrating compliance with applicable treatment standards.

If No, indicate "N/A" in Section D.3 below.

Low-Level Radioactive Waste Certification Attachment



## RADIOACTIVE WASTE PROFILE RECORD

EC-0230, Revision 4

D. 3.	Former EPA HW Codes or Underlying Hazardous Constituents	Treatment Standard (mg/kg unless noted as mg/L TCLP or Technology Code)	Worst Case Concentration (mg/kg unless noted as mg/L TCLP)
	NA		

### 4. OTHER CHEMICAL CONSTITUENTS

List any other chemical constituents of concern (e.g., PCBs, chelating agents, etc.) and worst-case concentrations. If additional space is needed, provide an Attachment D.4 to this profile record formatted as below.

Other Chemical Constituents	Worst-Case Concentration (mg/kg unless noted as mg/L TCLP)	Other Hazardous Constituents	Worst-Case Concentration (mg/kg unless noted as mg/L TCLP)
NA			

### 5. LABORATORY CERTIFICATION

☒ **UTAH or NELAC CERTIFIED**

The Utah or NELAC certified laboratory holds a current certification for the applicable chemical test methods insofar as such official certifications are given. Please provide a copy of the laboratory's current certification letter for each parameter analyzed and each method used for chemical analyses required by this form.

☐ **OTHER LABORATORY CERTIFICATION (Describe below)**

### 6. CERTIFICATION

I certify that sample results representative of the waste described in this profile were or shall be obtained using state- and EPA-approved analytical methods. I also certify that where necessary representative samples were or shall be provided to Envirocare and to qualified laboratories for the analytical results reported herein. I further certify that the waste described in this record is not prohibited from land disposal in 40 CFR 268 (unless prior arrangements are made for treatment at Envirocare) and that all applicable treatment standards are clearly indicated on this form. I also certify that the information provided on this form is complete, true, and correct and is accurately supported and documented by any laboratory testing as required by Envirocare. I certify that the results of any said testing have been submitted to Envirocare. I certify that the waste does not contain any prohibited items listed in Envirocare's Radioactive Material License.

Generator's Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

## ATTACHMENT B.5 PHYSICAL PROPERTIES

Generator Name: \_\_\_\_\_

COMBUSTION ENGINEERING, INC.

Generator # / Waste Stream #: 0923-02

Revision #: 0

Revision Date: July 4, 2004

### MACTEC Waste Profile – Soil & Sludge (SS)

The following narrative is submitted in accordance with Section B.5. of the Envirocare Radioactive Waste Profile Record, EC-230, Revision 4 (profile record) under the Contractor Name, MACTEC Constructors, Inc.; Generator Name, Combustion Engineering (CE Windsor); Waste Stream # 0923-02. The SS waste is generated from removal of contaminated soil and soil-like material surrounding and contained inside of underground structures such as municipal openings (manholes), pipes, and beneath the affected buildings undergoing decontamination and demolition activities at the Combustion Engineering Inc. (CE Windsor) site.

#### Soil & Sludge Waste

The hazardous/ non-hazardous chemical waste determination is based on the analysis of collected samples from the SS waste stream by a certified laboratory.

The waste material physical composition for the SS waste stream is composed of soil, sludge, and absorbant material.

The soil will originate primarily from areas of potential radiological contamination, e.g. material surrounding contaminated pipes that have broken or are leaking, sludge/debris inside radiological waste discharge piping and soil underneath the Building 17 floor slab. The sludge will be collected from manholes that have been plugged and removed from service. Through years of non-use, the manholes have filled with water. Therefore the sludge material inside of the manholes is saturated.

The Radioactive Waste Profile Record, Question B.3. asks for the moisture content for soil or soil-like materials. The sludge material was too saturated to run the Standard Proctor Method analysis to determine optimum moisture content. Also, we can not collect a soil sample from the material underneath B-17 until the floor slab is removed. Therefore, this question can not be answered at this time. Absorbents will be added to the raw wastes to control the amount of water present and allow passage of the Paint Filter test. Types of absorbents that will be used in the SS waste stream are Speedi-dri and SP-400 (waterworks) in amounts large enough to absorb all saturated material and control any freestanding liquid that may be in the container.

The General Chemical Parameters of the LLRW Certification Attachment Question 1 asks for PPLT analysis. We determined that the SS waste stream would fail this analysis based on the current water content and saturation of the sludge material.

We intend to dewater the sludge material using absorbents as well as combining the soil material with the sludge to further reduce its moisture content. Per a conversation with Jeff Havlicak of Envriocare, MACTEC shall provide five pre-shipment samples of 16-ounce jars of the material as it will be found in the shipping container.

#### Radiological characterization

The radionuclides of concern for the CE Windsor site are: U-234, U-238, U-235, Co-60, and Cs-137. Radionuclide concentrations were determined from on-site sample gamma spectroscopy analysis with selected samples sent for confirmation by a certified laboratory. The certifying laboratory conducted alpha and gamma spectroscopy analysis. Suspect material biased toward the collection for suspected higher activity materials was sampled and sent for off-site analysis.



## Special Nuclear Material Exemption Certification

EC-0230-SNM, Revision 2

The Special Nuclear Material Exemption Certification form must be completed and signed by each generator certifying to the following conditions. Please attach this form and all required information to the Radioactive Waste Profile Record (EC-0230). A completed and signed copy of this form must also accompany each waste manifest.

Waste Stream ID: SS-1 Manifest No. \_\_\_\_\_

**1. Check applicable category below for the waste stream:**

✓	Uranium Enrichment Percent	Weight Percent of Chemicals in Condition 2c	Weight Percent of Materials in Condition 2d	U-235 Concentration (pCi/g)	Measurement Uncertainty* (pCi/g)
<input checked="" type="checkbox"/>	< 10 %	≤ 20 %	≤ 1 %	≤ 1,900	≤ 285
<input type="checkbox"/>	Unlimited	≤ 20 %	≤ 1 %	≤ 1,190	≤ 179
<input type="checkbox"/>	Unlimited	Sum of both ≤ 45 % of waste by weight		≤ 680	≤ 102
<input type="checkbox"/>	Unlimited	Unlimited	Unlimited	≤ 26	≤ 10
<input type="checkbox"/>	Not Applicable - Enriched U-235 is not present in the waste.				

\* A concentration value is used for the maximum measurement uncertainty limit rather than a percentage value to allow greater flexibility for generators with waste having very low SNM concentrations.

**2. Certify to the following requirements by checking each box:**

- ☒ a. Concentrations of SNM in individual waste containers do not exceed the applicable values listed in the above table and SNM isotope concentrations listed in Table 1.
- ☒ b. The SNM is homogeneously distributed throughout the waste or the SNM concentrations in any contiguous mass of 600 kilograms (1,323 lbs) do not exceed on average the specified limits. (Based on process knowledge or testing).
- ☒ c. Except as allowed by Condition 1, the waste does not contain "pure forms" of chemicals containing carbon, fluorine, magnesium, or bismuth in bulk quantities (e.g., a pallet of drums, a B-25 box). By "pure forms," it is meant that mixtures of the above elements such as magnesium oxide, magnesium carbonate, magnesium fluoride, bismuth oxide, etc. do not contain other elements. (Based on process knowledge or testing).
- ☒ d. Except as allowed by Condition 1, the waste does not contain total quantities of beryllium, hydrogenous material enriched in deuterium, or graphite above one percent of the total weight of the waste. (Based on process knowledge, physical observations, or testing).
- ☒ e. Waste packages do not contain highly soluble forms of uranium greater than 350 grams of uranium-235 or 200 grams of uranium-233. If the waste contains mixtures of U-233 and U-235, the waste meets the sum of the fractions rule. Highly soluble forms of uranium include, but are not limited to: uranium sulfate, uranyl acetate, uranyl chloride, uranyl formate, uranyl fluoride, uranyl nitrate, uranyl potassium carbonate, and uranyl sulfate. (Based on process knowledge or testing).
- ☒ f. For containers of liquid waste with more than 600 kilograms of waste, the total activity (pCi) of SNM in the manifested container does not exceed the SNM concentration in the above table or Table 1 times 600 kilograms of waste (based on process knowledge or testing). For example, the maximum activity of Pu-239 in any manifested container of liquid waste is 6.0 mCi (6.0E+09 pCi) as shown below:

$$10,000 \frac{\text{pCi}}{\text{g}} \times 600,000 \text{ g} = 6.0 \times 10^9 \text{ pCi} = 6.0 \text{ mCi Pu-239}$$