[7590-01-P]

NUCLEAR REGULATORY COMMISSION

Docket No. 70-7005

NRC-2009-0283

In the Matter of Waste Control Specialists, LLC

Order Modifying Exemption from 10 CFR Part 70

AGENCY: U.S. Nuclear Regulatory Commission.

ACTION: Issuance of Order to Modify Waste Control Specialists, LLC's Exemption from Requirements of 10 CFR Part 70.

FOR FURTHER INFORMATION CONTACT: Nishka Devaser, Environmental Protection and Performance Assessment Directorate, Division of Waste Management and Environmental Protection, Office of Federal and State Materials and Environmental Management Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Telephone: (301) 415-5196, fax number: (301) 415-5397; e-mail: Nishka.Devaser@nrc.gov

SUPPLEMENTARY INFORMATION:

I. Introduction

Pursuant to 10 CFR 2.106, the Nuclear Regulatory Commission (NRC) is providing notice in the Matter of Waste Control Specialists, LLC (WCS) of the issuance of an order to modify WCS's exemption from the requirements of 10 CFR Part 70.

II. Further Information

I.

WCS operates a facility in Andrews County, Texas, that is currently licensed to process and store certain types of low-level waste (LLW) and mixed waste (MW), and dispose of hazardous and toxic waste. Texas is an Agreement State. On November 30, 1997, this facility was licensed by the State of Texas Department of Health (TDH) under a 10 CFR Part 30 equivalent radioactive materials license to possess, treat, and store LLW (R04971). License R04971 is currently under the jurisdiction of the Texas Commission on Environmental Quality (TCEQ). The facility is also licensed by the TCEQ to treat and dispose of hazardous waste. In 1997, WCS began accepting Resource Conservation and Recovery Act (RCRA) and Toxic Substance Control Act (TSCA) wastes for treatment, storage, and disposal. Later that year, WCS received a license from TDH for treatment and storage of MW and LLW. The MW and LLW streams may contain quantities of special nuclear material (SNM). On May 29, 2008, the TCEQ issued a license to WCS that authorizes WCS to receive and dispose of byproduct material as defined in Title 25 of the Texas Administrative Code, Section 289.260(c)(4). On January 14, 2009, the TCEQ denied hearing requests and issued an order which allows a license to be granted for disposal of LLW after the applicant demonstrates ownership of all mineral rights. The order provides that a license may not be issued, signed or granted until such demonstration is made.

Section 70.3 of 10 CFR Part 70 requires persons who own, acquire, deliver, receive, possess, use, or transfer SNM to obtain a license pursuant to the requirements of 10 CFR Part 70. The licensing requirements in 10 CFR Part 70 apply to persons in Agreement States possessing greater than critical mass quantities as defined in 10 CFR 150.11. However, pursuant to 10 CFR 70.17(a), “the Commission may....grant such exemptions from the

requirements of the regulations in this part as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest."

In September 2000, WCS requested an exemption from the licensing requirements in 10 CFR Part 70. On November 21, 2001, the NRC transmitted an Order to WCS granting an exemption to WCS from certain NRC regulations and permitted WCS, under specified conditions, to possess waste containing SNM in greater quantities than specified in 10 CFR Part 150, at WCS's storage and treatment facility in Andrews County, Texas, without obtaining an NRC license pursuant to 10 CFR Part 70. The NRC exemption applies only to activities authorized by TCEQ License R04971. The Order was published in the *Federal Register* on November 15, 2001 (66 FR 57489). The conditions specified in the Order are discussed in the November 2001 Safety Evaluation Report (SER) that supported the 2001 Order.

By letters dated August 6, 2003, and March 14, 2004, Waste Control Specialists LLC (WCS) requested an amendment to its exemption, which would allow it to use additional reagents for chemical stabilization of mixed waste containing SNM. The NRC transmitted the revised Order to WCS on November 4, 2004. The Order was published in the *Federal Register* on November 12, 2004 (69 FR 65468). The modified conditions specified in the Order are discussed in the August 2004 Safety Evaluation Report (SER) that supported the 2004 Order.

In a letter dated December 10, 2007, WCS requested additional modifications to its exemption from certain NRC regulations relative to the possession of SNM that is authorized by its TCEQ License R04971. By letter dated January 22, 2008, NRC acknowledged WCS' request.

WCS' letter dated December 10, 2007, and NRC's acknowledgement dated January 22, 2008, are available at NRC's Electronic Reading Room at http://www.nrc.gov/reading-

rm/adams.html. NRC's Agencywide Document Access and Management System (ADAMS) is available at this website. The ADAMS accession numbers for the December 10, 2007, and January 22, 2008, letters are:

Document Description	**Accession Number**
December 10, 2007, WCS request for modification of the Order	ML073550638
January 22, 2008, NRC acknowledgement of WCS request	ML080150622

II.

The NRC staff considers that the appropriate action is to grant WCS's exemption request, with additional modifications. Currently, WCS is exempted from the requirements of 10 CFR Part 70, including the requirements for an NRC license in 10 CFR 70.3, for activities authorized by TCEQ License R04971. This modification specifically would allow WCS to: Discontinue confirmation sampling upon receipt of waste that WCS verifies is adequately characterized by a generator to be uniform and which contains less than one-tenth of the SNM concentration limits presented in Condition 1; and to discontinue confirmatory sampling requirements of Condition 7 of the Order for sealed sources. By letter dated January 22, 2008, NRC informed WCS that it would clarify Condition 2, which states that waste must not contain "pure forms" of chemicals containing carbon, fluorine, magnesium, or bismuth in bulk quantities. NRC is also clarifying requirements for spatial uniformity of SNM concentrations in waste. The NRC is also revising Condition 4 of the Order, which currently limits the amount of highly water soluble SNM in each package, to address security concerns raised by the NRC staff during its review. Therefore, WCS's exemption is modified as follows:

1. Concentrations of SNM in individual waste containers and/or during processing shall not exceed the following values:

SNM Isotope	Operational Limit (gram SNM/gram waste)	Measurement Uncertainty (gram SNM/gram waste)
U-233	4.7E-04	7.1E-05
U-235 (10 percent enriched)	9.9E-04	1.5E-04
U-235 (100 percent enriched)	6.2E-04	9.3E-05
Pu-239	2.8E-04	4.2E-05
Pu-241	2.2E-04	3.2E-05

When mixtures of these SNM isotopes are present in the waste, the sum-of-the-fractions rule, as illustrated below, shall be used.

$$\frac{\text{U-233 conc}}{\text{U-233 limit}} + \frac{\text{100wt\%U-235 conc}}{\text{100wt\%U-235 limit}} + \frac{\text{10wt\%U-235 conc}}{\text{10wt\%U-235 limit}} + \frac{\text{Pu-239 conc}}{\text{Pu-239 limit}} + \frac{\text{Pu-241 conc}}{\text{Pu-241 limit}} \leq 1$$

The measurement uncertainty values in column 3 above represent the maximum one-sigma uncertainty associated with the measurement of the concentration of the particular radionuclide.

The SNM must be uniformly distributed throughout the waste, such that the limiting concentrations must not be exceeded on average in any contiguous mass of 600 kilograms.

2. The mass concentration of carbon, fluorine, and bismuth in the waste must be limited as follows:

SNM Isotope	Carbon	Fluorine	Bismuth
U-233	28 wt%	34 wt%	34 wt%
U-235(10)	25 wt%	35 wt%	31 wt%
U-235(100)	41 wt%	42 wt%	33 wt%
Pu-239	43 wt%	43 wt%	34 wt%
Pu-241	37 wt%	39 wt%	32 wt%

For waste containing mixtures of C, F, and Bi, the sum of the weight fractions of C, F, and Bi shall be compared to the most restrictive maximum allowable weight fractions for any one of those elements. Similarly, where mixtures of radionuclides are present in the waste, the limiting maximum allowable weight fraction of C, F, and Bi shall be applied.

The presence of the above materials will be determined and documented by the generator, based on process knowledge or testing.

3. Waste accepted shall not contain total quantities of beryllium, hydrogenous material enriched in deuterium, or graphite above one tenth of one percent of the total weight of the waste. The presence of the above materials will be determined and documented by the generator, based on process knowledge, or testing.

4. Possession of highly water soluble forms of SNM shall not exceed the amount of SNM of low strategic significance defined in 10 CFR 73.2. Highly soluble forms of SNM include, but are not limited to: uranium sulfate, uranyl acetate, uranyl chloride, uranyl formate,

uranyl fluoride, uranyl nitrate, uranyl potassium carbonate, uranyl sulfate, plutonium chloride, plutonium fluoride, and plutonium nitrate. The presence of the above materials will be determined and documented by the generator, based on process knowledge or testing.

5. Processing of mixed waste containing SNM will be limited to chemical stabilization (i.e., mixing waste with reagents). For batches with more than 600 kilograms of waste, the total mass of SNM shall not exceed the concentration limits in Condition 1 times 600 kilograms of waste.

6. Prior to shipment of waste, WCS shall require generators to provide a written certification containing the following information for each waste stream:

   a. Waste Description. The description must detail how the waste was generated, list the physical forms in the waste, and identify uranium chemical composition.
   b. Waste Characterization Summary. The data must include a general description of how the waste was characterized (including the volumetric extent of the waste, and the number, location, type, and results of any analytical testing), the range of SNM concentrations, and the analytical results with error values used to develop the concentration ranges.
   c. Uniformity Description. A description of the process by which the waste was generated showing that the spatial distribution of SNM is homogeneous or other information supporting spatial homogeneity.

d. Manifest Concentration. The generator must describe the methods to be used to determine the concentrations on the manifests. These methods could include direct measurement and the use of scaling factors. The generator must describe the uncertainty associated with sampling and testing used to obtain the manifest concentrations.

WCS shall review the above information and, if adequate, approve in writing this pre-shipment waste characterization and assurance plan before permitting the shipment of a waste stream. This will include statements that WCS has a written copy of all the information required above, that the characterization information is adequate and consistent with the waste description, and that the information is sufficient to demonstrate compliance with Conditions 1 through 4. Where generator process knowledge is used to demonstrate compliance with Conditions 1, 2, 3, or 4, WCS shall review this information and determine when testing is required to provide additional information in assuring compliance with the Conditions. WCS shall retain this information as required by the State of Texas to permit independent review.

At the time waste is received, WCS shall require generators of SNM waste to provide a written certification with each waste manifest that states that the SNM concentrations reported on the manifest do not exceed the limits in Condition 1, and that the waste meets Conditions 2 through 4.

WCS shall require generators to sample and determine the SNM concentration for each waste stream, not to include sealed sources, at a frequency of once per 600 kg if the concentrations are above one tenth the SNM limits of Condition 1. The measurement uncertainty shall not exceed the uncertainty value in Condition 1 and shall be provided on the written certification.

7. WCS shall sample and determine the SNM concentration for each waste stream, not to include sealed sources, at a frequency of once per 600 kg if the concentrations are above one tenth the SNM limits of Condition 1. This confirmatory testing is not required for waste to be disposed of at DOE's WIPP facility.

8. WCS shall notify the NRC, Region IV office within 24 hours if any of the above Conditions are violated. A written notification of the event must be provided within 7 days.

9. WCS shall obtain NRC approval prior to changing any activities associated with the above Conditions.

III.

Based on the staff's evaluation, the Commission has determined, pursuant to 10 CFR 70.17(a), that the exemption as described above at the WCS facility is authorized by law, will not endanger life or property or the common defense and security and is otherwise in the public interest. Accordingly, by this Order, the Commission hereby grants this exemption subject to

the above conditions. The exemption will become effective after the State of Texas has incorporated the above conditions into WCS's RML.

Pursuant to the requirements in 10 CFR Part 51, the Commission has published an Environmental Assessment for the proposed action wherein it has determined that the granting of this exemption will have no significant impacts on the quality of the human environment. This finding was noticed in the *Federal Register* on October 15, 2009 (74 FR 52981-52985).

Dated at Rockville, Maryland this 20th day of October 2009.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

/RA/

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