

**Nuclear Regulatory Commission**

**Docket No. 70-7005**

**[NRC-2009-0283]**

**Issuance of Environmental Assessment and Draft Finding of No Significant Impact for Modification of Exemption from Certain NRC Licensing Requirements for Special Nuclear Material for Waste Control Specialists, LLC., Andrews County, Texas**

**AGENCY:** Nuclear Regulatory Commission

**ACTION:** Environmental Assessment and Draft Finding of No Significant Impact

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) has prepared an Environmental Assessment for the issuance of an Order under Section 274f of the Atomic Energy Act that would modify an Order issued to Waste Control Specialists, LLC (WCS) on November 5, 2004. In accordance with 10 CFR 51.33, the NRC has also prepared a draft Finding of No Significant Impact (FONSI) for public review and comment. The current action is in response to a request by WCS dated December 10, 2007. The November 5, 2004 Order was published in the *Federal Register* on November 12, 2004 (69 FR 65468). The November 5, 2004 Order, which modified an initial Order issued to WCS on November 21, 2001, exempted WCS from certain NRC regulations and permitted WCS, under specified conditions, to possess waste containing special nuclear material (SNM), in greater quantities than specified in 10 CFR Part 150, at WCS's facility located in Andrews County, Texas, without obtaining an NRC license pursuant to 10 CFR Part 70.

**DATES:** The public comment period on the draft FONSI closes on **[INSERT DATE: 30 days after the date of publication]**. Written comments should be submitted as described in the “ADDRESSES” section of this notice. Comments submitted by mail should be postmarked by **[INSERT DATE: 30 days after the date of publication]** to ensure consideration. Comments received or postmarked after this date will be considered if it is practical to do so, but the Commission is able to assure consideration only for comments received on or before **[INSERT DATE: 30 days after the date of publication]**.

**ADDRESSES:** Members of the public are invited and encouraged to submit comments to the Chief, Rulemaking and Directives Branch, Mail Stop TWB-05 B01M, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Please note Docket No. 70-7005 when submitting comments. Comments will also be accepted by e-mail at [NRCREP@nrc.gov](mailto:NRCREP@nrc.gov) or by facsimile to (301) 415-5369, Attention: David D. Brown.

**FOR FURTHER INFORMATION CONTACT:** David D. Brown, Sr. Project Manager, Environmental 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. Telephone: (301) 415-6116; Fax number: (301) 415-5369; Email: [david.brown@nrc.gov](mailto:david.brown@nrc.gov). **NRC's Agencywide Documents Access and Management System (ADAMS):** Publicly available documents created or received at the NRC are available electronically at the NRC's Electronic Reading Room at <http://www.nrc.gov/reading-rm/adams.html>. From this page, the public can gain entry into ADAMS, which provides text and image files of NRC's public documents. If you do not have access to ADAMS or if there are problems in accessing the documents located in

ADAMS, contact the NRC's PDR reference staff at 1-899-397-4209, 301-415-4737, or by e-mail to [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov).

## **SUPPLEMENTARY INFORMATION:**

### **I. Environmental Assessment**

#### Background

As stated above, the 2004 Order exempted 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 facility located in Andrews County, Texas, without obtaining a NRC license pursuant to 10 CFR Part 70. The 2004 Order permits WCS to possess SNM without regard for mass. Rather than relying on mass to ensure criticality safety, concentration-based limits were applied, such that accumulations of SNM at or below these concentration limits would not pose a criticality safety concern. The methodology used to establish these limits is discussed in two Safety Evaluation Reports (SERs) prepared by NRC in support of the initial Order issued in November 2001 and an amended Order issued in November 2004.

In its December 2007 request, WCS seeks NRC approval to modify the conditions of the 2004 Order to: discontinue confirmation sampling upon receipt of waste that WCS verifies is adequately characterized by a waste generator to be uniform and which contains less than one-thousandth of the SNM concentration limits presented in Condition 1; and to meet the confirmatory sampling requirements of Condition 7 of the Order for sealed sources using surface smear surveys. By letter dated January 22, 2008, the NRC informed WCS that it would also clarify Condition 2, which states that waste must not contain "pure forms" of chemicals

containing carbon, fluorine, magnesium, or bismuth in bulk quantities. As a result of its review of WCS' December 10, 2007, request, the NRC, upon its own initiative, is clarifying the requirements for spatial uniformity of SNM concentrations in the waste, as described in Conditions 1, 6, and 7 of the Order. In addition, NRC is revising Condition 4 of the Order, which limits the amount of highly water soluble SNM WCS may possess.

#### Site and Facility Description

WCS operates a 5.4 km<sup>2</sup> (1,338-acre) hazardous waste disposal facility and a hazardous waste, low-level radioactive waste (LLW), and mixed waste (MW) processing and storage facility in western Andrews County, TX and eastern Lea County, NM. The WCS facility is located near the southwestern edge of the Southern High Plains where surface elevations range from about 1,040 to 1,070 meters (3,415 to 3,500 ft) above mean sea level. The site lies on a broad topographic ridge that forms a surface water drainage divide between the Pecos and Colorado Rivers. The region receives approximately 23 cm (9 inches) of rain annually and is atop a solid base of Triassic red bed clay (Hydraulic Conductivity: 10<sup>-8</sup> cm/s, [3 x 10<sup>-5</sup> ft/day]) with the first groundwater, which is not potable and too salty for irrigation use, found 240-300 m (800-1000 ft) below the surface.

The primary land use within an eight-kilometer (five-mile) radius of the WCS facility is grazing and ranching. Future water uses in the area will include industrial, domestic, livestock, and agricultural purposes. Oil and gas exploration and production activities have also been conducted in the vicinity of the WCS facility. Other businesses in proximity to the site include the Wallach Quarry (crushed stone, sand and gravel) and Sundance, Inc. (oil recovery and solids disposal), both located about 1.6 kilometers (one mile) west of the facility. The Lea County Landfill is located approximately 1.6 kilometers (one mile) southwest of the facility. In addition, construction of the Louisiana Enrichment Services (LES) uranium enrichment facility is

currently underway in Lea County, NM and is located approximately 1.6 kilometers (one mile) west of the WCS facility. Major structures at the WCS facility include:

- On-site rail spur and rail-unloading facility for hazardous waste only;
- Maintenance building;
- Administration building with analytical and radiological laboratories;
- Container Storage Building;
- Stabilization and Mixed Waste Treatment (Combined) Building;
- Bulk/Bin Storage Units;
- RCRA subtitle C landfill;
- Ten-acre storage area for low-specific-activity (LSA) waste;
- 11e (2) byproduct material landfill Facility (*Authorized May 2008 – under construction*);
- Federal LLW/MW landfill Facility (license issuance pending);
- Texas Compact LLW landfill Facility (license issuance pending); and
- Chemical oxidation (*Proposed*).

#### Licenses and Permits Issued under Various Federal and State Laws

On January 14, 2009, WCS received a licensing order that denied hearing requests, and allowed a license for disposal of LLW to be issued once ownership in fee can be demonstrated by the applicant. The LLW disposal license may not be issued, signed, or granted until surface and mineral ownership can be demonstrated. WCS has proposed two separate LLW disposal facilities:

1. The compact waste disposal facility (CWF) would be allowed to accept LLW as defined in Section 401.004 of the Texas Health and Safety Code for commercial disposal of compact waste; and

2. The Federal Waste Facility (FWF) would be allowed to accept LLW that is the responsibility of the federal government under the Low-Level Radioactive Waste Policy Act, as amended by the Low-Level Radioactive Waste Policy Amendments Act of 1985.

The LLW land disposal facilities have the following limits in the pending license:

- 736,238 m<sup>3</sup> (962,963 yd<sup>3</sup>) of LLW and MW generated/owned by the federal government of which approximately 229,366 m<sup>3</sup> (300,000 yd<sup>3</sup>) is expected to be canister disposal and 506,872 m<sup>3</sup> (662,963 yd<sup>3</sup>) is expected to be non-canister (bulk) disposal; and
- 65,412 m<sup>3</sup> (85,556 yd<sup>3</sup>) of LLW generated within the Texas Compact.

Other WCS permits and authorizations are summarized below:

#### *Byproduct Material Disposal Facility License*

- Issued: May 29, 2008, by the Texas Commission on Environmental Quality (TCEQ).
- Authorization: Receipt and disposal of byproduct material as defined in Title 25 of the Texas Administrative Code, Section 289.260(c)(4).
- Authorization covers dry, discrete solid objects and containerized bulk (i.e., soil or soil-like) byproduct material received by road only (no rail).
- Containers shall be flexible or rigid drums, pails, boxes, sacks, or similar containers that are sealed and do not tear, split, or rupture upon handling, placement, and compaction in the disposal unit, or lose their structural strength and integrity when contacting water. Acceptable containers include (but are not limited to) U.S. Department of Transportation (U.S. DOT) containers. Containers shall not contain free liquids or more than 15% void space.

*Low Level Radioactive Waste Treatment, Processing & Storage License (License R04971)*

- Issued: February 1997.
- Amended: April 29, 2009, by the TCEQ.
- Authorization: Treatment, processing, and storage of low-level radioactive wastes shipped by road only (including Greater Than Class C (GTCC), sealed sources, solids, and liquids).
- November 5, 2004 - Exemption from Part 70 (Special Nuclear Material (SNM) concentration-based limitations).

*Industrial Solid Waste and Hazardous Waste Storage, Processing, and Disposal Resource Conservation and Recovery Act Wastes (RCRA) Permit*

- Issued: August 5, 1994 by the Texas National Resource Conservation Commission (TNRCC).
- Renewed: October 5, 2005, by the TCEQ.
- Authorization: Treatment, storage, and land disposal of over 2,000 RCRA waste codes.
- WCS holds a RCRA part B equivalent permit to receive ignitable, corrosive, toxic, and select reactive hazardous waste.

*Texas Pollutant Discharge Elimination System Permit*

- Issued: December 2, 1999 by TCEQ.
- Renewed: May 31, 2005.
- Authorization: Treatment and discharge of liquid wastes.

### *Toxic Substances Control Act Land Disposal Authorization*

- Issued: November 22, 1999 by the United States Environmental Protection Agency (EPA).
- Renewed: September 19, 2005, by the EPA.
- Authorization: Treatment, storage, and land disposal of Toxic Substances Control Act (TSCA) wastes, including polychlorinated biphenyl (PCB) and PCB contaminated materials such as debris, spill solids, transformers (drained and flushed), and transformer carcasses.
- PCB liquids are acceptable for bulking and off-site treatment.

### *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*

- March 21, 1997 letter from EPA, Region 6.
- Authorization: EPA determination under 40 CFR 300.440 that the WCS facility is acceptable for receipt of hazardous substances, pollutants or contaminants from CERCLA response actions.

Under the State and Federal permits and authorizations described above, WCS is authorized to use the following waste treatment technologies:

- Chemical oxidation
- Chemical reduction
- Deactivation
- Micro- and macro-encapsulation (debris only)
- Neutralization
- Stabilization

- Controlled reaction

Waste shipments are received in a variety of sealed packages such as standard 208-liter (55-gallon) steel drums, rectangular steel boxes, intermodal, roll-offs, waste generator-designed canisters, or from a list of 400 radioactive material packages certified by the DOE for transport by road only. The facility is accessible by rail or nearby interstate highway. It can accommodate over 110 rail cars within its secured and guarded fence perimeter. It has a ten-kilometer (approximately six-mile) private rail spur leading to the site and on-site rail and truck off-loading capabilities. Although rail facilities are available on-site, radioactive waste is currently not authorized to be received at the site by rail.

### Review Scope

The purpose of this EA is to assess the environmental impacts of WCS's December 10, 2007, request to modify its 2004 Order and additional actions taken by NRC staff to:

- (1) Clarify Condition 2 of the November 2004 Order;
- (2) Clarify the requirements for spatial uniformity of the waste; and
- (3) Revise Condition 4 of the 2004 Order, which limits the amount of highly water soluble SNM WCS may possess.

This EA does not approve nor deny the requested action. A separate Safety Evaluation Report (SER) has been prepared in support of approval of the requested action. The 2004 Order is only applicable to activities authorized by TCEQ License R04971 for processing and storage of LLW.

### Proposed Action

The proposed action is to grant WCS's December 10, 2007, request to modify the conditions of the 2004 Order, with certain additional modifications. As modified by NRC staff, the proposed action is to discontinue confirmation sampling upon receipt of waste that WCS verifies is adequately characterized by a waste generator to be uniform and which contains less than one-tenth of the SNM concentration limits presented in Condition 1, and to discontinue the confirmatory sampling requirements of Condition 7 of the 2004 Order for sealed sources. By letter dated January 22, 2008, the NRC informed WCS that it would also clarify Condition 2, which states that waste must not contain "pure forms" of chemicals containing carbon, fluorine, magnesium, or bismuth in bulk quantities. The NRC is also clarifying the requirements for spatial uniformity of SNM concentrations in the waste, as described in Conditions 1, 6, and 7 of the 2004 Order, and revising Condition 4 of the 2004 Order, that limits the amount of highly water soluble SNM WCS may possess pursuant to TCEQ License R04971 for processing and storage of LLW.

#### Purpose and Need for Proposed Action

WCS is making this request as a result of two issues it has identified with the implementation of the 2004 Order. The first issue pertains to the potential for WCS workers to receive radiation dose without commensurate benefit to overall public and worker safety. This issue arises when certain high dose rate and debris waste is received by WCS and WCS workers, in accordance with the requirements of the 2004 Order, are in close proximity to, or in contact with, the waste for the purpose of taking confirmatory samples to measure SNM concentrations in the waste, even when the SNM concentration in these wastes are known by other means to be very low.

The second issue identified by WCS also pertains to how the confirmatory sampling requirements of the Order should be applied to sealed sources. WCS states that direct

confirmatory sampling is not practical, and recommends that it perform surface smear surveys in lieu of destructive direct sampling.

In its December 10, 2007, request, WCS also informed the NRC that it plans to accept bulk quantities of waste containing very low concentrations of SNM that have been homogeneously commingled by the generator with inert compounds so that the final waste no longer contains just SNM or “pure forms” of carbon, fluorine, magnesium, and bismuth. Condition 2 of the November 2004 Order prohibits receipt of “pure forms” of these chemicals. In its review of this information, the NRC determined that Condition 2 of the November 2004 Order should be more clearly stated. As noted in a letter to WCS dated January 22, 2008, the NRC stated that it finds no criticality safety concerns with the waste that WCS plans to accept, provided the waste is less than 40% magnesium fluoride by volume and less than 50% magnesium fluoride by weight. In its January 22, 2008, letter, the NRC also stated that it plans to clarify the meaning of Condition 2 in this modification to the 2004 Order.

During review of the proposed changes requested by WCS, the NRC staff also decided to clarify the requirements for spatial uniformity of SNM concentrations in waste received by WCS contained within Conditions 1, 6, and 7 of the 2004 Order. The spatial uniformity requirement in Condition 1 states that, “The SNM must be homogeneously distributed throughout the waste. If the SNM is not homogeneously distributed, then the limiting concentrations must not be exceeded on average in any contiguous mass of 600 kilograms.” This requirement is based on an NRC nuclear criticality safety evaluation described in the SER for the November 2001 Order. However, there is a second requirement in Conditions 6 and 7 of the 2004 Order, that prescribe a statistical test for spatial uniformity that would be performed on sample results. The statistical test states that waste is non-homogeneous when the maximum sample result, that cannot exceed the limits in Condition 1, and minimum testing values performed by the generator, is greater than five times the average value. The definition of

spatial uniformity in Condition 1 has a technical basis founded on principles of nuclear criticality safety. The requirement in Condition 6 and 7 does not. Therefore, the NRC is removing the second requirement contained in Conditions 6 and 7 and making conforming changes to the remainder of the Order.

The NRC is also revising Condition 4 of the 2004 Order, as described in a separate Safety Evaluation Report, to:

- (1) Eliminate the individual package mass limits for highly water soluble SNM, because 10 CFR Part 71 and 49 CFR provide sufficient regulation of packaging and transportation of fissile materials, from which this Order does not exempt WCS; and
- (2) Impose a limit on the total mass of highly water soluble SNM that may be possessed pursuant to this Order to amounts less than those of SNM of low strategic significance, as defined in 10 CFR 73.2.

Therefore, the purpose and need for the proposed action is four-fold:

- (1) To revise and clarify certain requirements of the November 2004 Order to address potential worker safety concerns associated with the implementation of waste generator and WCS confirmatory sampling requirements;
- (2) To clarify the prohibition on the presence of certain chemicals contained in the waste, as stated in Condition 2 of the 2004 Order;
- (3) To clarify the requirements in the 2004 Order for spatial uniformity of SNM concentrations in waste; and
- (4) To revise Condition 4, which pertains to limits on highly water soluble forms of SNM.

## Alternatives

In addition to the proposed action, the NRC considered one alternative. The alternative action was to deny WCS' request and thus not revise the Order (i.e., the no-action alternative).

### *Environmental Impacts of No Action Alternative:*

For the no-action alternative, the environmental impacts would be the same as those evaluated in the EA that supports the 2004 Order. The 2004 EA concluded that the 2004 Order would have no significant radiological or non-radiological environmental impacts. However, as noted above, the current confirmatory sampling requirement for high dose and debris waste may result in doses to workers without a commensurate benefit to overall nuclear safety.

### Environmental Impacts of Proposed Action

With regard to the confirmatory sampling requirements of the November 2004 Order, and as described further in the SER for the current modification to the Order, the NRC believes that when SNM concentrations in waste are expected to be below 10% of the limits in Condition 1, as determined by a waste generator in support of the written certification required by Condition 6, the radiation hazard to workers involved in both generator sampling and WCS confirmatory waste sampling activities will, in many cases, outweigh the benefit to criticality safety. As a result, the NRC, in consultation with WCS and the TCEQ, will remove the graded-approach to sampling requirements from the Order, in favor of a simpler threshold for sampling requirements, which applies to both the generator and WCS, at 10% of the Condition 1 limits.

No detrimental environmental impacts are expected as a result of modifying the waste generator and confirmatory sampling requirements of the Order. Sampling requirements do not alter in any way the types, amounts, or characteristics of wastes received at the facility. As a result, there would be no substantive changes in the handling, storage, or treatment of wastes

at the facility. The change in sampling requirements is not expected to significantly alter the need for labor resources at WCS. However, as further described in the SER for this modified Order, there is a benefit to overall worker radiological safety as a result of reducing generator and WCS confirmatory sampling requirements for high dose rate and debris waste containing low concentrations of SNM, and not requiring destructive direct sampling of sealed sources.

No detrimental environmental impacts are expected as a result of clarifying Condition 2 of the Order. As described further in the SER, Condition 2 is modified such that specific mass limits for carbon, fluorine and bismuth in the waste are provided in lieu of a vague general prohibition on “pure forms” of magnesium, carbon, fluorine and bismuth. This clarification is not expected to significantly alter the types, amounts, or characteristics of wastes received at the facility. In addition, worker radiation doses are not expected to change as a result of a change in specific mass limits for carbon, fluorine and bismuth. As a result, there would be little or no substantive changes in the handling, storage, or treatment of wastes at the facility.

No detrimental environmental impacts are expected as a result of clarifying the requirements for spatial uniformity of SNM concentrations in wastes received at WCS. No changes are made to either the Condition 1 SNM concentration limits, or the maximum contiguous mass of waste over which the limiting concentrations of Condition 1 must be met (i.e., 600 kilograms). Therefore, these modifications to the 2004 Order do not alter in any way the types, amounts, or characteristics of wastes received at the facility, and worker doses would remain unchanged. As a result, there would be no substantive changes in the handling, storage, or treatment of wastes at the facility.

No detrimental environmental impacts are expected as a result of revising the requirements for highly water soluble forms of SNM in wastes received at WCS. There is a reduction of the risk of container leaks involving highly water soluble forms of SNM, given that the Order now limits the total possession of highly water soluble forms of SNM to amounts of

SNM less than SNM of low strategic significance, as defined by 10 CFR 73.2. As a result, there would be no substantive changes in the handling, storage, or treatment of wastes at the facility, and no significant changes in radiation hazards to workers.

Other conditions of the Order would remain unchanged. As before, WCS is permitted to possess SNM without regard for mass, except that possession of highly water soluble forms of SNM is limited to amounts of SNM less than SNM of low strategic significance, as defined by 10 CFR 73.2. To ensure criticality safety, an SNM concentration limit is applied to wastes containing both soluble and insoluble forms, such that accumulations of SNM at or below this concentration limit would not pose a criticality safety concern.

Effluent releases and potential doses to the public are regulated by the State of Texas and are not anticipated to change as a result of this action. WCS will continue to conduct its radiation protection program with an emphasis on maintaining doses as low as reasonably achievable. Occupational exposure is expected to remain within regulatory limits, and may decrease as a result of eliminating sampling intervals for high dose rate and debris waste.

The proposed action would not result in any changes in the transportation impacts identified in the 2001 EA. All other environmental impacts would be the same as evaluated in the EAs that support the 2001 and 2004 Orders.

#### Agencies and Persons Consulted

A draft copy of this EA was provided to officials from the Texas Commission on Environmental Quality (TCEQ). By e-mails dated March 11 and April 14, 2009, the TCEQ recommended certain changes to clarify the descriptions of certain WCS facilities, to identify the correct State agencies having authority in certain areas, and to clarify the status of the pending LLW disposal facility license. The NRC staff has modified the EA to address the TCEQ comments.

The proposed action does not involve the development of additional land. Hence, the NRC has determined that the proposed action will not affect listed species or critical habitat. Therefore, no further consultation is required under Section 7 of the Endangered Species Act. Likewise, the NRC staff has determined that the proposed action does not have the potential to adversely affect cultural resources. Therefore, no consultation is required under Section 106 of the National Historic Preservation Act.

## **II. Draft Finding of No Significant Impact**

The NRC has concluded that the proposed action to grant a modification to WCS' exemption from the requirements of 10 CFR Part 70 is, pursuant to 10 CFR 70.17, authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest.

The NRC has prepared this EA in support of the proposed action to modify WCS' November 2004 Order which grants an exemption from the requirements of 10 CFR Part 70. On the basis of this EA, NRC has concluded that there are no significant environmental impacts and the issuance of a modified Order does not warrant the preparation of an Environmental Impact Statement. Accordingly, it has been determined that a Finding of No Significant Impact is appropriate.

Pursuant to 10 CFR 51.33(e), a final determination to prepare an environmental impact statement or a final FONSI for the proposed action will not be made until the last day of the public comment period has expired on **[INSERT DATE: 30 days after the date of publication]**.

## **III. Further Information**

Documents related to this action, including the application for amendment and supporting documentation, are available electronically at the NRC's Electronic Reading Room at

<http://www.nrc.gov/reading-rm/adams.html>. From this site, you can access the NRC's Agencywide Document Access and Management System (ADAMS), which provides text and image files of NRC's public documents. The ADAMS accession numbers for the documents related to this notice are:

<b><u>Document Description</u></b>	<b><u>Accession Number</u></b>
January 2009 Safety Evaluation Report	ML081550674
January 22, 2008, NRC acknowledgement of WCS request	ML080150622
December 10, 2007, WCS request for modification to Order	ML073550638
November 2004 Letter to WCS re: SNM exemption request	ML043020621
November 2001 Letter to WCS re: SNM exemption request	ML030130085

If you do not have access to ADAMS or if there are problems in accessing the documents located in ADAMS, contact the NRC's Public Document Room (PDR) Reference staff at 1-800-397-4209, 301-415-4737, or by email to [pdr@nrc.gov](mailto:pdr@nrc.gov).

These documents may also be viewed electronically on the public computers located at the NRC's PDR, O 1 F21, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852. The PDR reproduction contractor will copy documents for a fee.

Dated at Rockville, Maryland this 30 day of June, 2009.

FOR THE NUCLEAR REGULATORY COMMISSION

***/RA/***

Patrice M. Bubar, Deputy Director  
Environmental Protection  
and Performance Assessment Directorate  
Division of Waste Management  
and Environmental Protection  
Office of Federal and State Materials  
and environmental Management Programs