RH Waste Disposal Operations CBFO - DOE Operational Readiness Review Plan of Action

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U.S. Department of Energy
Carlsbad Field Office

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CBFO - DOE Operational Readiness Review
Plan of Action

U.S. Department of Energy
Carlsbad Field Office
Approval

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RH Waste Disposal Operations
Contractor Operational Readiness Review
Plan of Action

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1.0 INTRODUCTION

This Plan of Action (POA) provides a facility description and documents the breadth of the U.S. Department of Energy (DOE) operational readiness review (ORR) of the remote-handled transuranic (RH TRU) waste disposal operations at the Waste Isolation Pilot Plant (WIPP). The ORR will be conducted by the DOE in early fiscal year (FY) 2007. The DOE ORR team will consist of independent DOE and contractor personnel, as defined in DOE Order 425.1C. The RH waste disposal operations ORR will be conducted to the requirements of DOE Order 425.1C, *Startup and Restart of Nuclear Facilities*.

This POA was developed in accordance with DOE Order 425.1C, and follows the implementing guidance of DOE-STD-3006-2000, *Planning and Conduct of Operational Readiness Reviews*. Washington TRU Solutions (WTS) will conduct a contractor ORR prior to the DOE ORR, using the Environmental Management (EM)-approved contractor POA as the authorizing and controlling document.

1.1 WIPP Overview

The WIPP mission is the safe, deep geologic disposal of contact-handled (CH) and RH TRU waste and TRU mixed waste. WIPP is located in Eddy County in southeastern New Mexico, 26 miles southeast of Carlsbad, as shown in Figure 1. The facility is built on a 10,240-acre parcel of land set aside by Public Law 102-579. The sparsely populated area surrounding WIPP is used primarily for livestock grazing and the development of potash, oil, and natural gas resources.

2.0 NAME OF THE FACILITY/ACTIVITY BEING STARTED

This POA addresses the start-up of Carlsbad Field Office (CBFO) RH TRU waste disposal operations at WIPP.

3.0 DESCRIPTION OF THE FACILITY/ACTIVITY

3.1 RH Facility

WIPP is statutorily limited to receive and emplace for disposal a total TRU waste volume of 6.2 million cubic feet. The WIPP facility has sufficient capacity to handle 250,000 ft^3 (7,080 m^3) of RH TRU waste, the limit established in the 1981 Consultation and Coordination with the State of New Mexico and included in the 1981 DOE Record of Decision. In addition, the WIPP Land Withdrawal Act of 1992 (Public Law 102-579) limits the total RH TRU waste activity to 5.1 • •10^6 curies.

RH waste will be packaged in U. S. Department of Transportation (DOT)-certified Class A steel containers placed inside shielded road casks for transportation to the WIPP facility. The containers may be direct-loaded or may have other containers placed inside them. The RH waste remains in these containers throughout the RH disposal

cycle at WIPP, thus providing secure containment at all times to assure maximum protection for workers and the public. The container to be used for RH waste disposal is constructed with a locking removable top sealed with an O-ring. Approximately 30 canisters of an older design using a welded seal will also be received at the WIPP. These are almost identical in size and shape to the newer design, and therefore will be processed in the same way.

RH TRU waste will be disposed in the 100-acre disposal area on a horizon located 2,150 ft beneath the surface in a deep, bedded salt formation. Waste is transferred by hoist from the surface to the disposal horizon via a waste shaft.

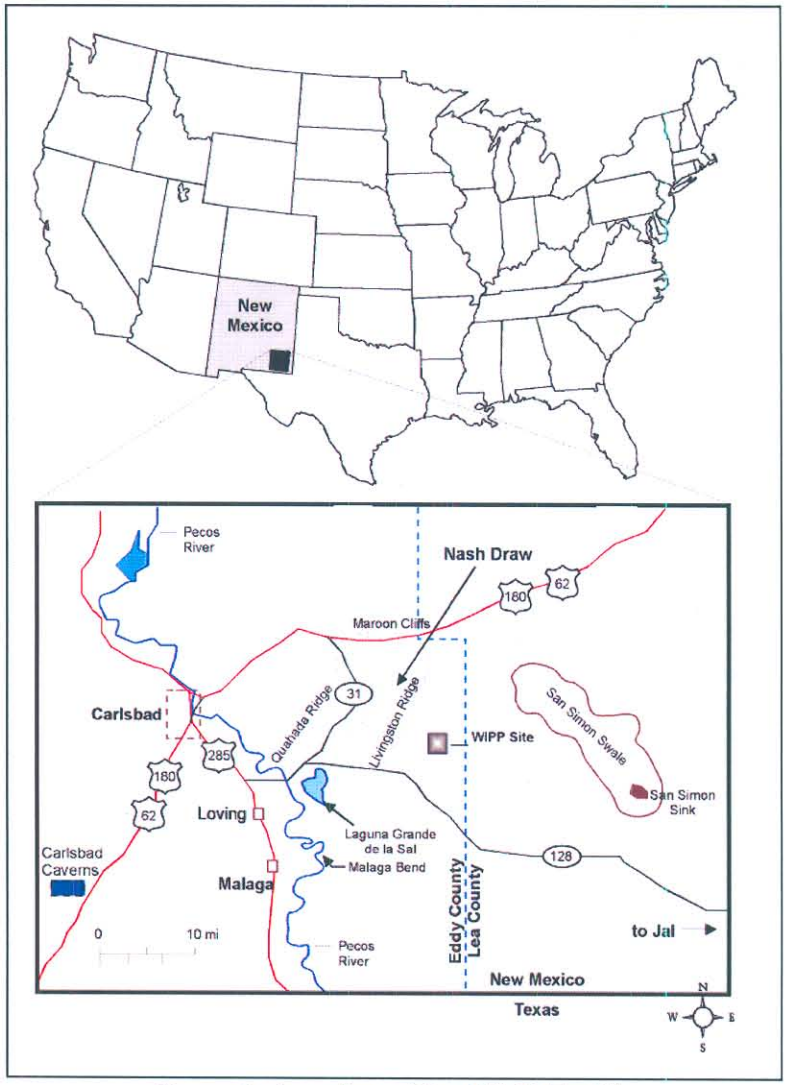

Figure 1. Location of the WIPP Facility

3.2 RH-72B Road Cask Disposal Process

This section describes the process and systems for handling RH TRU waste at WIPP using the RH-72B road cask (see Figure 2). The RH TRU surface facilities are shown in Figure 3.

The RH waste disposal process begins with the acceptance of a waste shipment in the WIPP Waste Information System (WWIS). RH TRU waste shipments arrive at WIPP by truck. Upon arrival at the WIPP security gate, each incoming road cask shipment is inspected. These inspections include verification of shipment documentation, a security check, and an initial exterior radiological survey of the shipment.

After turning over the shipping documentation to the transportation engineer, the driver moves the trailer to the parking area south of the RH Bay to await unloading, or moves the trailer into the RH Bay and disconnects the transporter.

After the trailer is parked in the RH Bay, the two impact limiters are removed from the road cask while still on the trailer. The 140/25-ton overhead crane is used to lift the impact limiters and place them on separate support stands. The cask-lifting yoke is then connected to the 140/25-ton overhead bridge crane. The lifting yoke engages the handling trunnions of the road cask. The road cask is lifted and rotated to the vertical position, and is placed on the road cask transfer car.

After the RH-72B road cask is placed in the cask preparation work station, the outer lid lift fixture is attached to the work platform 2.5-ton jib crane. After radiological surveys for surface contamination and radiation levels are performed, the space between the inner and outer lids is vented through a high efficiency particulate air (HEPA) filter via the outer lid vent port. The operators then remove the outer containment lid bolts using the outer containment lid bolt de-tensioning device. The outer lid lift fixture is attached to the outer containment lid. The outer containment lid is lifted by the jib crane from the road cask and placed on its storage stand. The inner lid is vented through a HEPA filter to equalize the pressure between the road cask cavity and atmosphere; then the inner lid lift fixture is attached to the inner lid.

The road cask is moved from the cask preparation station into the cask unloading room. A 25-ton crane with a road cask lift fixture is located in the cask unloading room. After the cask unloading room lift fixture has engaged two opposing lifting trunnions of the road cask, the crane lifts the road cask and positions the cask over the cask unloading room floor shield valve.

The road cask is lowered through the open cask unloading room floor shield valve into the transfer cell and then into the shuttle car road cask receiver. The configuration of the cask receiver and the sizing of the shuttle car prevent the road cask from moving once it is inside the receiver. The road cask lift fixture is disengaged from the lifting trunnions. Operators use closed-circuit television (CCTV) cameras and load cells on the lift fixture to verify that the lift fixture is disengaged. The 25-ton crane lift fixture is raised back into the cask unloading room and the floor shield valve is closed.

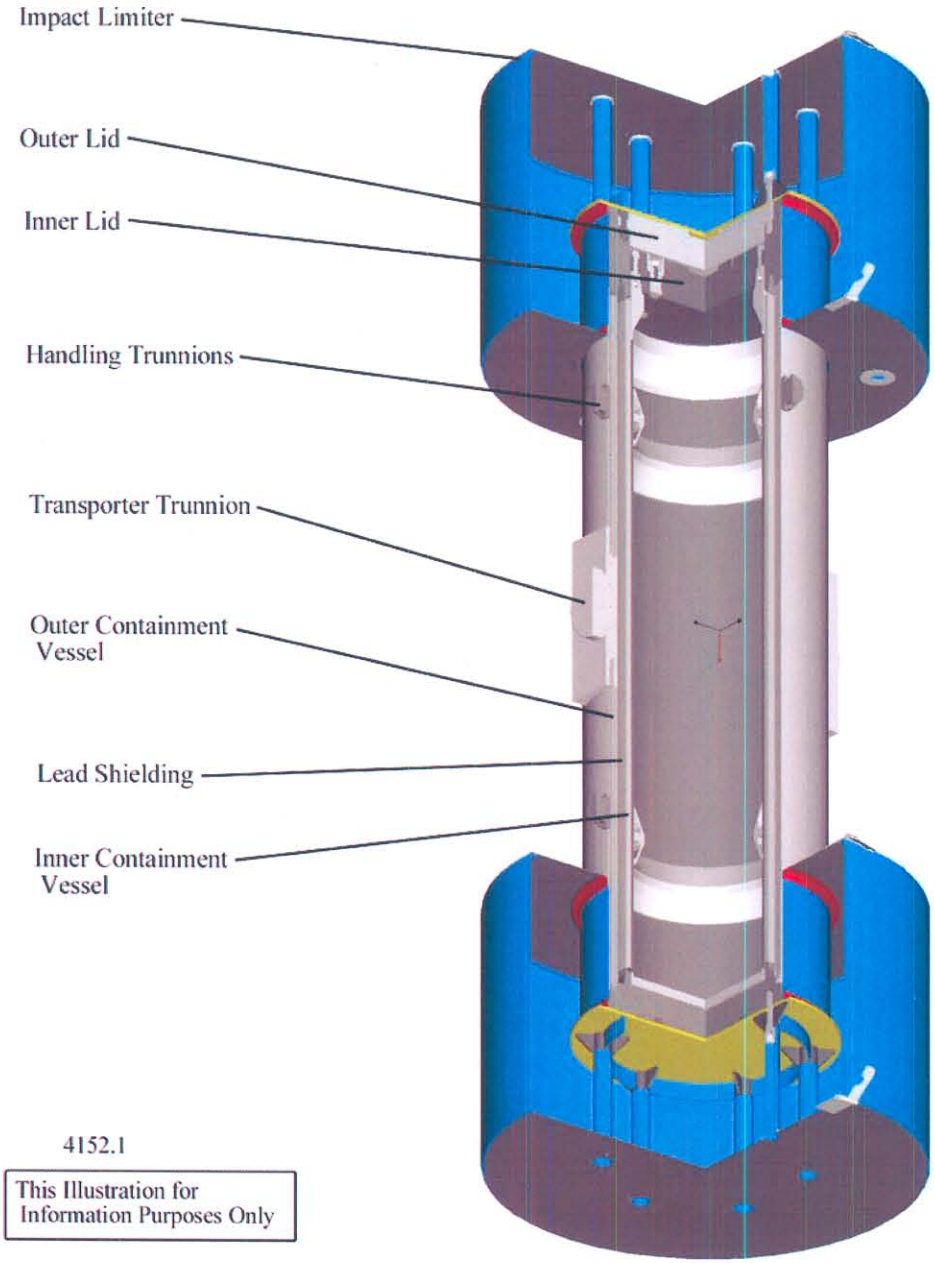

Figure 2. RH 72B Road Cask

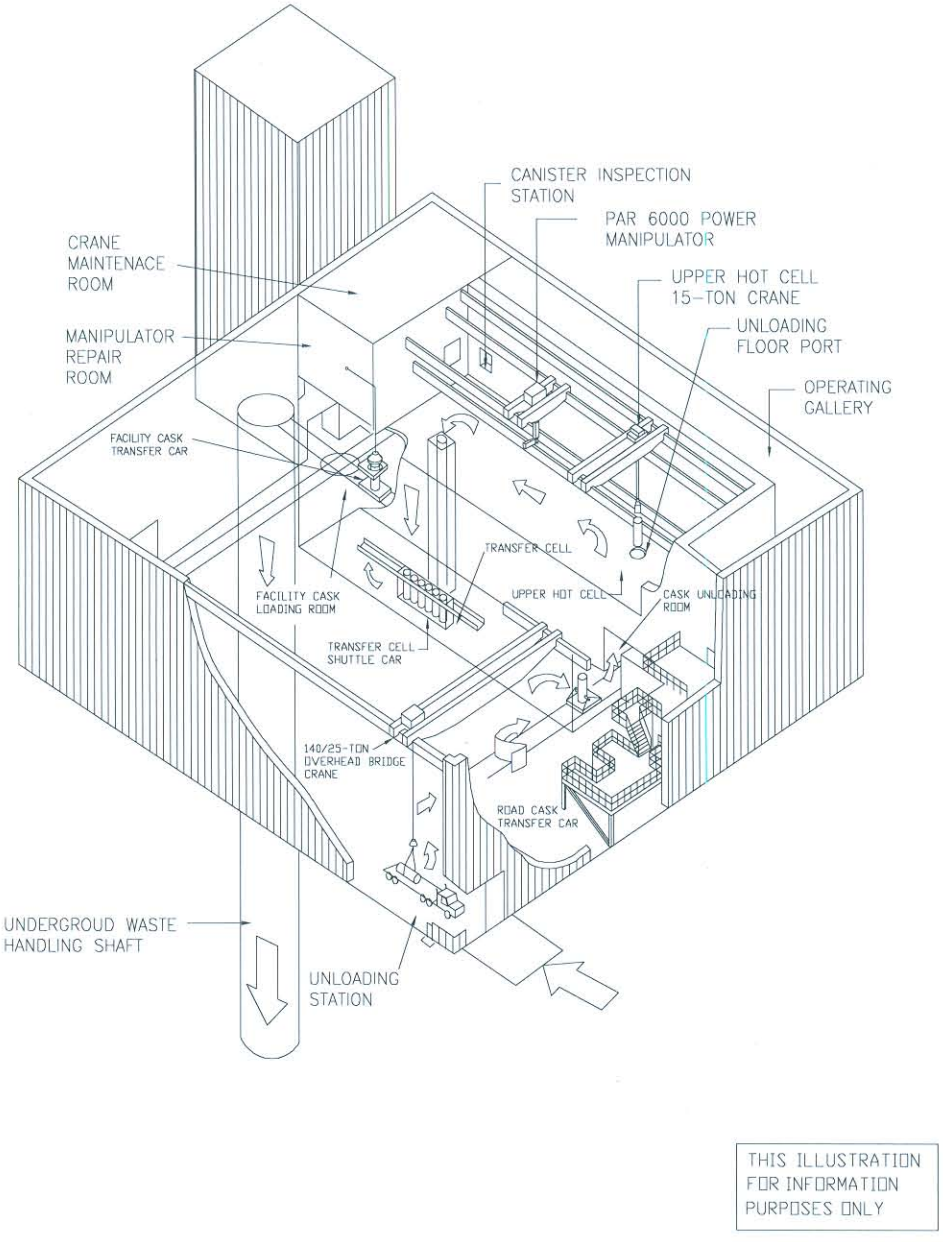

Figure 3. Pictorial View of RH TRU Surface Facilities

The transfer cell shuttle car is designed to transfer one road cask at a time from below the cask unloading room floor shield valve to the various robotic workstations in the transfer cell.

The shuttle car positions the road cask under the robotic inner lid de-tensioning device. The de-tensioning device loosens the lid retaining bolts, which are of a spring-loaded, "capture" design so that they remain in the inner lid. The de-tensioning device is retracted, and the shuttle car then positions the road cask directly below the transfer cell ceiling shield valve that opens to the facility cask loading room.

In the facility cask loading room, the facility cask, on the facility cask transfer car, is positioned so that when it is rotated to the vertical position by the facility cask rotating device, it is aligned with the opening of the transfer cell ceiling shield valve and the telescoping port shield. The facility cask loading room shield door is closed.

When the facility cask has been rotated to the vertical position, the telescoping port shield, mounted in the floor of the facility cask loading room, is raised to mate with the facility cask bottom shield valve body. The facility cask loading room 6.25-ton grapple hoist is lowered so that the shield bell is in contact with the facility cask top shield valve body. With the shield bell and the telescoping port shield in contact with the facility cask, the RH TRU waste canister is totally shielded and can be safely transferred from the road cask into the facility cask.

The RH canister is transferred from the road cask up into the facility cask in the transfer cell using the 6.25-ton grapple hoist. The CCTV cameras also provide a visual inspection to verify the mechanical integrity of the waste canister before the transfer to the facility cask is completed. The facility cask is rotated to the horizontal position. The facility cask loading room shield door is opened.

In the waste shaft entry room, the waste hoist conveyance is positioned, the shaft gates are opened, the pivot rails are lowered, and the facility cask transfer car transports the facility cask onto the waste hoist conveyance, which lowers it to the WIPP underground.

When the waste hoist conveyance reaches the disposal horizon in the WIPP underground, the hoist chairing device is activated, the shaft gates are opened, the pivot rails are lowered, and the facility cask transfer car moves from the conveyance into the transfer area (E-140 drift) under its own electrical power. The 41-ton forklift lifts the facility cask from the facility cask transfer car and transports it to the RH waste disposal location.

At the RH waste disposal location, the 41-ton forklift is used to place the facility cask on the waste transfer machine, which has been previously aligned with a horizontal borehole (see Figure 4). The facility cask is moved forward to mate with the shield collar and the transfer carriage is advanced to mate with the rear facility cask shield valve. Both facility cask shield valves are opened and the transfer mechanism extends to push

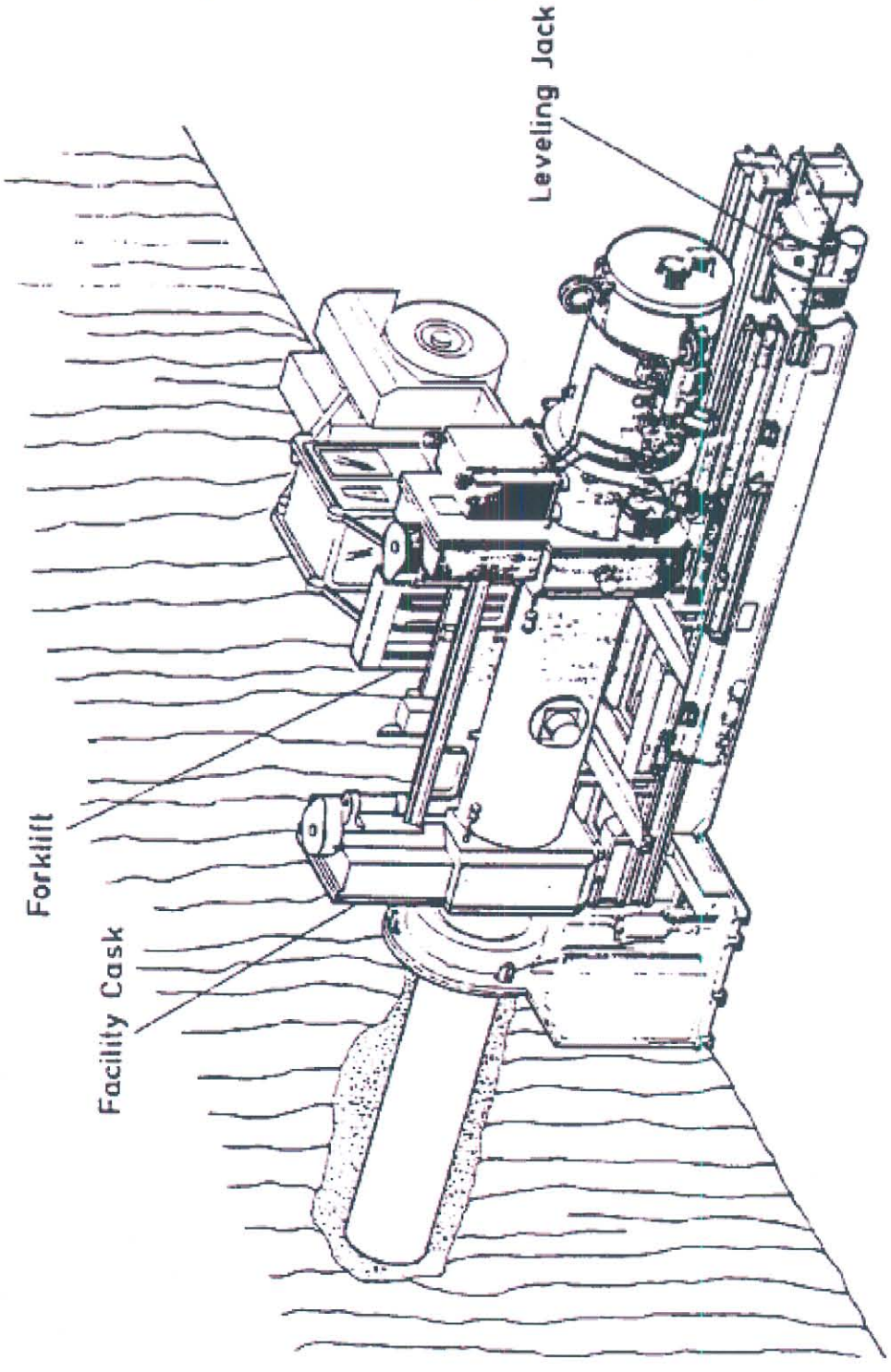

Figure 4. Facility Cask Installed on the Waste Transfer Machine Assembly

the canister into the borehole. After the transfer mechanism is retracted into the facility cask, the forward shield valve is closed, and the transfer mechanism is further retracted into its housing. A forklift, using a strong back, positions a shield plug on the shield plug carriage. The transfer carriage is moved to the rear about 6.5 ft (2 m) and a 6-ton forklift is used to place the shield plug carriage on the staging platform. The transfer carriage pushes the shield plug into the facility cask. The front shield valve is opened and the shield plug is pushed into the borehole. The disposal process ends with the administrative closeout of procedural paperwork and entry of waste emplacement data into the WWIS.

Radiological swipes of the casks and RH canisters are taken at various points in the process to ensure the absence of any surface contamination or to determine the nature of any contamination found.

3.3 CNS10-160B Unloading Operation Description

This section describes the process and systems for handling RH TRU waste at WIPP using the CNS10-160B road cask (see Figure 5).

The RH waste disposal process begins with the acceptance of a waste shipment in the WWIS. RH TRU waste shipments arrive at WIPP by truck. Upon arrival at the WIPP security gate, each incoming road cask shipment is inspected, including shipment documentation verification, a security check, and an initial exterior radiological survey of the shipment.

After turning over the shipping documentation to the transportation engineer, the driver moves the trailer to the parking area south of the RH Bay, or moves the trailer into the RH Bay and disconnects the transporter.

The CNS10-160B shipping container upper impact limiter is removed and the container (road cask) is lifted clear of the trailer, placed upon the transfer car, and moved to the preparation station.

The cask is vented through a HEPA filter via vent ports, and the primary lid bolts are removed. The road cask transfer car is then moved into the cask unloading room and the cask is centered beneath the hot cell shield port plug. The cask unloading room shield door is closed. The shield plug is removed and the cask lid is lifted into the hot cell. The hot cell crane then lifts the drum carriage assembly into the hot cell. The cask lid is returned to the road cask, as are any empty drum carriage assemblies.

The drums are then moved from the carriage assemblies to an empty RH canister one at a time using a robotic manipulator. Barrel numbers are recorded and verified against the WWIS and barrel condition is inspected. When a RH canister is full, the lid is installed using the robotic equipment in the hot cell. Disposal of the RH canister is done using the same process as the RH-72B cask transfer system previously described.

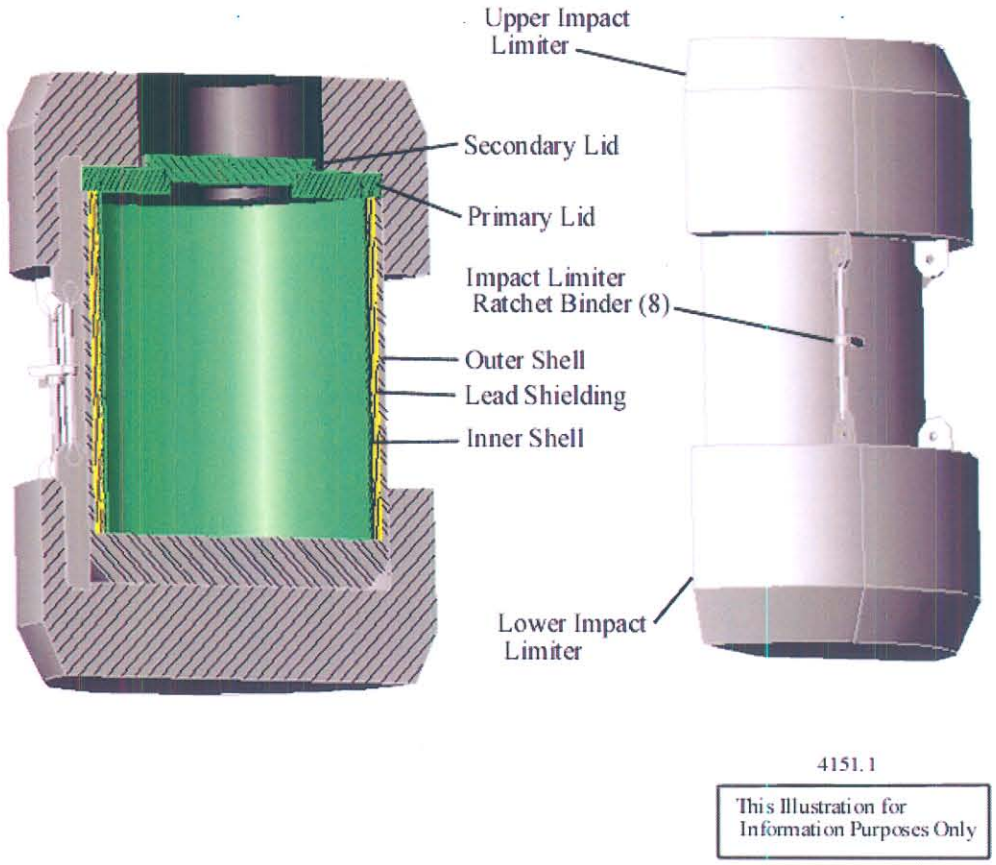

Figure 5. CNS10-160B Road Cask

Radiological swipes of the casks and RH canisters are taken at various points in the process to ensure the absence of any surface contamination or to determine the nature of any contamination found.

4.0 RESPONSIBLE CONTRACTOR

WTS is the WIPP management and operating contractor responsible for RH waste disposal operations.

5.0 DESIGNATION OF ACTION AS A NEW START

The ORR for RH waste disposal operations is designated as a "New Start" ORR for the start-up of RH waste operations in an existing Hazard Category 2 non-reactor nuclear facility. WIPP is classified as a segmented Hazard Category 2 facility, as documented in the RH TRU Documented Safety Analysis (DSA). This classification was based on the deterministic analysis of an unmitigated release of the material at risk from the facility to the environment.

The acquisition cost for the WIPP facility was approximately $558 million through FY 2000. This included $431.1 million in capital construction, $81.5 million in capital equipment, and $31.4 million in general plant projects. Construction of RH waste handling facilities was included in this acquisition. RH start-up costs were $2.8 million in FY 2005, and are projected to be $7.2 million in FY 2006, including required facility and equipment modifications, capital equipment acquisition, engineering support, and readiness certification.

6.0 BREADTH OF THE ORR

The DOE ORR will address each of the 18 minimum core requirements (CRs) identified in Section 4d of DOE Order 425.1C and Appendix 2 of DOE-STD-3006-2000. This section defines the breadth of the DOE ORR with respect to each of the core requirements identified in Section 4d of DOE Order 425.1C. The italicized quotations are taken from DOE O 425.1C and DOE-STD-3006-2000.

6.1 CR 1

> *Line Management has established programs to ensure safe accomplishment of work (the authorization authority should identify in the POA those specific infrastructure programs of interest for the start-up or restart). Personnel exhibit an awareness of public and worker safety, health, and environmental protection requirements and, through their actions, demonstrate a high-priority commitment to comply with these requirements.*

WIPP Safety Management Programs were thoroughly evaluated and found to be robust during the ORR for CH waste disposal operations completed in 1998. In addition, WIPP was recertified as a Voluntary Protection Program (VPP) Star site in September 2005. WIPP was the first site to achieve DOE program Star status in 1994.

WTS annually prepares a comprehensive Integrated Safety Management System (ISMS) report for WTS management review. The report determines the effectiveness of the ISMS and includes self-assessments and other evaluations performed by WTS. Areas for improvement are identified, reported, and tracked to closure via the WTS Commitment Tracking System. This mechanism helps the team review not only the effectiveness of individual components but also the effectiveness and integration of the entire ISMS.

The annual WTS review of the ISMS is followed by a CBFO review. In its most recent review, the CBFO reported, "WTS has integrated safety into all facets of its operations and has an effective feedback and improvement system in place."

The DOE ORR team will evaluate WIPP Safety Management Programs to the extent necessary to ascertain their readiness to support the safe and compliant accomplishment of RH waste disposal operations. To accomplish this, the team will observe simulated RH waste disposal operations, off-normal RH waste disposal

operations, and simulated emergency operations as necessary. In addition, the team will conduct document reviews and personnel interviews to verify that WIPP safety management programs have been modified where required and required training has been completed.

Specific safety management programs of interest for the start-up of RH waste disposal operations include Radiological Safety and Emergency Management, Industrial Safety and Hygiene, Environmental Protection, Nuclear Safety, Maintenance, Engineering Configuration Control, Fire Protection, Criticality Safety, Training, and Quality Assurance.

The DOE ORR team will evaluate RH waste disposal operations and support personnel during interviews, drills, and performance demonstrations to ensure that they are aware of public and worker safety, health, and environmental protection requirements and demonstrate a high-priority commitment to comply with these requirements.

6.2 CR 2

Functions, assignments, responsibilities and reporting relationships (including those between the line operating organization and ES&H support organizations) are clearly defined, understood, and effectively implemented with line management responsibility for control of safety.

The DOE ORR team will verify that RH waste handling operations has implemented a management system that assigns safety as priority one and details organizational responsibilities. The DOE ORR team will verify that functions, assignments, responsibilities, and reporting relationships are defined and understood. The DOE ORR team will observe the effectiveness of RH program interfaces and responsibilities demonstrated during interviews, drills, and demonstrations to verify line management control of safety.

6.3 CR 3

The selection, training, and qualification programs for operations and operations support personnel have been established, documented, and implemented. The selection process and applicable position-specific training for managers assures competence commensurate with responsibilities. (The training and qualification program encompasses the range of duties and activities required to be performed.)

Training and qualification program requirements for RH operations and RH operations support personnel have been documented in the Training Implementation Matrix (TIM). The DOE ORR team will verify adequate training for these personnel as documented in the CBFO-approved TIM. The DOE ORR team will verify the adequacy of the qualifications of WTS RH technical support personnel and management staff responsible for RH waste disposal operations with respect to their position descriptions, the Hazardous Waste Facility Permit (HWFP) training matrix, and the TIM, as appropriate.

6.4 CR 4

Level of knowledge of managers, operations, and operations support personnel is adequate based on reviews of examinations and examination results and selected interviews of managers, operating, and operations support personnel.

The DOE ORR team will verify the adequacy of RH waste operation process knowledge and material handling safety by observing RH waste unloading and handling activities performed by the operations staff and applicable support personnel. Interviews of applicable managers, operators, and operations support personnel, as well as reviews of examinations and examination results, will be used to determine effectiveness of the RH training programs in establishing an adequate level of knowledge.

6.5 CR 5

Modifications to the facility have been reviewed for potential impacts on training and qualification. Training has been performed to incorporate all aspects of these changes.

The DOE ORR team will review WTS Engineering Configuration Control documentation and records to verify that changes to training qualification programs are tracked to completion for facility modifications associated with RH waste operations. Adequacy of incorporating modification impacts into operator training and qualification will be verified by observation of RH waste operations, interviews, and review of RH training programs and qualification cards.

6.6 CR 6

Sufficient numbers of qualified personnel are available to conduct and support operations. Adequate facilities and equipment are available to ensure operational support services are adequate for operations. (Such support services include operations, training, maintenance, waste management, environmental protection, industrial safety and hygiene, radiological protection and health physics, emergency preparedness, fire protection, quality assurance, criticality safety, and engineering.)

The DOE ORR team will observe normal and emergency RH waste disposal operations to verify that sufficient qualified personnel are available to meet the defined WIPP RH DSA facility mode-specific staffing requirements. The ORR team will also verify that adequate facilities, equipment, and support personnel are available and qualified to conduct safe RH operations. For the purpose of this ORR, these requirements will be based upon the projected waste operation throughput.

6.7 CR 7

Facility safety documentation is in place and has been implemented that describes the "safety envelope" of the facility. The safety documentation should characterize the hazards/risks associated with the facility and should identify preventive and mitigating measures (systems, procedures, administrative controls, etc.) that protect workers and the public from those hazards/risks. Safety structures, systems, and components (SSCs) are defined and a system to maintain control over their design is established.

The DOE ORR team will verify that an appropriately approved DSA is available that addresses aspects of RH waste disposal operations. Interviews, observation of operations, and documentation reviews will be performed to ensure that conditions as stated in the RH DSA, RH Technical Safety Requirements (TSRs), and Specific Administrative Controls, are implemented to provide adequate protection for workers, the public, and the environment. The DOE ORR team will verify that RH Mode Compliance Equipment associated with RH waste disposal operations has been defined and that a system to maintain control of the design of RH Mode Compliance Equipment is defined and implemented.

6.8 CR 8

A program is in place to confirm and periodically reconfirm the condition and operability of safety SSCs. This includes examination of records of tests and calibrations of these systems. The material condition of all safety, process, and utility systems will support the safe conduct of work.

The DOE ORR team will review approved surveillance procedures, schedules, and results of completed surveillances to ensure that the requirements of the RH DSA have been implemented satisfactorily. The team will observe performance of selected surveillance procedures to evaluate the ability of RH operations and support personnel to complete the surveillances satisfactorily. The DOE ORR team will observe operations and conduct walk-downs of RH waste disposal equipment and systems identified as RH Mode Compliance Equipment in the RH DSA to verify adequacy of operational condition. The DOE ORR team will review maintenance records, including the appropriate instrument calibrations, to ensure that designated RH Mode Compliance Equipment will support the safe conduct of work.

6.9 CR 9

The facility systems and procedures, as affected by facility modifications, are consistent with the description of the facility, procedures, and accident analysis included in the safety basis.

The DOE ORR team will assess the processes that ensure system descriptions, operating procedures, and maintenance procedures are maintained current and

consistent for designated RH Mode Compliance Equipment affected by facility modifications. The ORR team will verify that a process is in place and implemented to review design changes for their impact to the WIPP RH DSA and its supporting analyses.

6.10 CR 10

Adequate and correct procedures and safety limits are in place for operating the process systems and utility systems that include revisions for modifications that have been made to the facility.

The DOE ORR team will evaluate RH waste handling operations and applicable utility system procedures to verify that they have been properly validated and determine their adequacy. The DOE ORR team will observe the use of these procedures during routine and simulated emergency operations and verify the ability of the WTS staff to operate and maintain the process equipment and utility systems as described in the WIPP RH DSA.

6.11 CR 11

A routine drill program and emergency operations drill program, including program records, have been established and implemented.

The DOE ORR team will observe the performance of off-normal and simulated emergency RH operations drills to evaluate the effectiveness of the ongoing emergency preparedness program. The DOE ORR team will review drill program records to ensure that drills are conducted on a routine basis.

6.12 CR 12

An adequate start-up or restart program has been developed that includes plans for graded operations and testing after start-up or resumption to simultaneously confirm operability of equipment, viability of procedures, and the performance and knowledge of the operators. The plans should indicate validation processes for equipment, procedures, and operators after start-up or resumption of operations including any required restrictions and additional oversight.

The DOE ORR team will review and assess the *WIPP RH Waste Disposal Operations Start-Up Plan* to assure it contains adequate validation processes for equipment, procedures, and operators, including any necessary restrictions and provisions for additional oversight after start-up.

6.13 CR 13

The formality and discipline of operations is adequate to conduct work safely and programs are in place to maintain this formality and discipline.

The DOE ORR team will observe the implementation of the applicable elements of DOE Order 5480.19, Change 2, *Conduct of Operations Requirements for DOE Facilities*, in RH waste disposal operations and support activities, through interviews, document reviews, drills, and demonstrations.

6.14 CR 14

Formal agreements between the operating contractor and the DOE have been established via the contract or other enforceable mechanism to govern the safe operations of the facility. A systematic review of the facility's conformance to these requirements has been performed. These requirements have been implemented in the facility, or compensatory measures are in place, and formally agreed to during the period of implementation. The compensatory measures and the implementation period are approved by the DOE.

The DOE ORR team will verify that a formal agreement (Authorization Agreement) is in place between the WTS and the DOE to contractually establish requirements for safe RH operation of WIPP. The DOE ORR team will verify that Standards/Requirements Identification Documents (S/RIDs) have been approved and implemented. The DOE ORR team will verify, if appropriate, that compensatory measures have been implemented and schedules to gain full compliance with applicable DOE Orders and directives have been formally approved by WTS and the DOE.

The DOE ORR team will evaluate compliance with the WIPP HWFP to ensure that the RH hazardous waste permit conditions have been properly implemented.

6.15 CR 15

A feedback and improvement process has been established to identify, evaluate, and resolve deficiencies and recommendations made by independent review groups, official review teams, audit organizations, and the operating contractor (e.g., DOE P 450.5, Line Environmental, Safety and Health Oversight).

The DOE ORR team will verify that processes exist and are implemented to identify, evaluate and respond to issues, deficiencies, or improvement suggestions communicated by internal or external auditors/reviewers. Where issues or deficiencies exist, the DOE ORR team will evaluate these issues for potential impact on the ability to safely start up RH waste disposal operations.

6.16 CR 16

The technical and managerial qualifications of those personnel at the DOE field organization and at DOE Headquarters who have been assigned responsibilities for providing direction and guidance to the contractor, including the Facility Representatives, are adequate.

The DOE ORR Team will review personnel technical and managerial qualifications to ensure adequacy for those individuals within CBFO who have been assigned oversight responsibilities for WTS operation of the RH facility and operations.

This includes qualifications for the CBFO Facility Representative, Safety Officer, and those individuals with RH Program responsibilities.

6.17 CR 17

The breadth, depth, and results of the responsible Contractor Readiness Review are adequate to verify the readiness of hardware, personnel, and management programs for operations.

The DOE ORR team will review and verify the WIPP contractor ORR results and corrective actions against criteria that will be included in an Implementation Plan and the core requirements established in DOE/WIPP 05-3328 Rev. 0, *RH Waste Disposal Operations Contractor Operational Readiness Review Plan of Action*.

6.18 CR 18

DOE operations office oversight programs, such as occurrence reporting, Facility Representative, corrective action, and quality assurance programs, are adequate.

The DOE ORR team will review CBFO's oversight programs, such as Facility Representative, occurrence reporting, quality assurance, and corrective actions, to ensure they are adequate. The following documents will be reviewed:

- *Facility Representative Program Plan*
- *Quality Assurance Program Document*
- *Safety Management Functions, Responsibilities, and Authorities Manual*
- *CBFO Contractor Oversight Plan*

7.0 ORR PREQUISITES

The conditions listed below are prerequisites, and must be verified as completed by CBFO and WTS prior to the start of the DOE ORR.

7.1 DOE CBFO

7.1.1 The CBFO Facility Representative for the RH facility is assigned and qualified in accordance with locally developed qualification standards.

7.1.2 A start-up plan defining steps to reach normal operation must be developed and approved. The plan must define the organization, process start-up controls, and compensatory measures that will be in effect during start-up phase and continue into steady-state operation.

7.1.3 The contractor ORR has been completed, and a final report issued in accordance to DOE Order 425.1C.

7.1.4 DOE CBFO line management has received a WTS Readiness to Proceed memorandum, which verifies that the RH facility is ready for start-up as confirmed by the Contractors Operational Readiness Review (CORR).

7.1.5 CBFO line management has verified through multiple assessments that the contractor's preparations for start-up have been completed, including a verification of closure of any line management assessment (LMA) and CORR pre-start findings, and the approval (if necessary) of a corrective action plan (CAP) that specifically addresses closure of any pre-start findings identified during the LMA or CORR.

7.1.6 CBFO line management has verified that it meets the applicable DOE specific core requirements (CRs 16, 17, and 18) in DOE Order 425.1C and this POA.

7.2 WTS

7.2.1 WTS line management has conducted their LMA and CORR.

7.2.2 WTS line management has closed any LMA and CORR pre-start findings (with the exception of a manageable list of open pre-start items that have a well-defined plan and schedule for closure) and has developed a CAP that addresses closure of all post-start findings.

7.2.3 The contractor's start-up plan for RH operations has been prepared and determined to be adequate, as verified by the LMA and CORR.

7.2.4 Documentation exists to demonstrate that WTS has established the following programs, in support of CR 1:

- Radiological Safety and Emergency Management
- Industrial Safety and Hygiene
- Environmental Protection
- Nuclear Safety
- Maintenance
- Engineering Configuration Control
- Fire Protection
- Criticality Safety
- Training
- Quality Assurance

8.0 ESTIMATED ORR START DATE AND DURATION

The WIPP DOE ORR is currently planned to start approximately 15 days after the issuance of the RH permit by the New Mexico Environment Department. It is currently estimated that the ORR could start as early as December 4, 2006, and be concluded approximately 10 days later, with the final authorization for start-up from DOE headquarters expected within 30 working days after that.

9.0 PROPOSED ORR TEAM LEADER

Edward J. Ziemianski, DOE NE-ID, will serve as the team leader for the ORR. A summary of his qualifications and experience is included in Section 12.

10.0 OFFICIAL TO APPROVE START OF WIPP DOE ORR

The official to approve the start of the RH waste disposal operations DOE ORR will be the Delegated DOE Authority at DOE EM. The WTS Manager for Operations is responsible for the activities required to achieve overall RH waste disposal operational readiness.

11.0 OFFICIAL TO APPROVE RH OPERATIONS

DOE O 425.1C provides the following designation of approval authority:

- For initial start-ups of new Hazard Category 1 and 2 nuclear facilities, the Secretary of Energy (or designee) shall approve the start-up.

- The Secretary of Energy delegated the start-up approval authority for WIPP to Dr. Ines Triay, Chief Operating Officer for EM-3. Delegation was conferred by DOE-EM memorandum from J. Rispoli to Ines Triay, dated January 26, 2006. Dr. Triay subsequently delegated start-up authority to Mr. Dae Y. Chung, Deputy Assistant Secretary for Safety Management and Operations, by memorandum dated June 16, 2006.

12.0 TEAM LEADER QUALIFICATION SUMMARY

Edward J. Ziemianski

Edward Ziemianski has 35 years of experience in engineering, operations, and management in the nuclear power industry. As the Assistant Manager, Waste Disposition Project, for the DOE Idaho Operations Office (DOE-ID), Mr. Ziemianski serves as the Federal Project Director and principal line manager responsible for proper execution of contracted services in two major areas: 1) treatment, storage, and disposal of radioactive waste streams, including contact- and remote-handled low-level radioactive waste, mixed low-level waste, and transuranic waste, and 2) the environmental remediation of Waste Area Group 7 under the Comprehensive Environmental Response, Compensation, and Liability Act.

Prior to 2001, Mr. Ziemianski served for four years at the Idaho Nuclear Technology and Engineering Center (INTEC) as the Deputy Director, INTEC Programs, and Federal Project Director, where he was responsible for all contracted activities associated with the calcining of liquid high-level waste and the receipt and storage of spent nuclear fuels. Prior to 1997, Mr. Ziemianski served for four years as the Federal Project Director at the Test Reactor Area and for two years as the Director of the Technical Support Division where he also led the Tiger Team Action Plan Project. He has led two operational readiness review teams for the Department, one for the start-up of the Argonne National Laboratory-West (ANL-W) Fuel Conditioning Facility (FCF) and one for the Nuclear Regulatory Commission (NRC) license transfer of the Fort St. Vrain Independent Spent Fuel Storage Installation (ISFSI).

Prior to joining DOE in 1991, Mr. Ziemianski worked for the ABB Combustion Engineering family of companies for three years as an engineering and management consultant to several commercial nuclear utility companies in the northeastern United States. Prior to that, Mr. Ziemianski held various engineering and management positions during 11 years with the Nuclear Operations Department of the Boston Edison Company where he had responsibility for regulatory compliance, industrial safety, fire protection, radioactive waste disposal, configuration management, licensee event reporting, training, and accreditation of nuclear training programs. He also served on the independent Nuclear Safety Review and Audit Committee for operations associated with the Pilgrim Nuclear Power Station.

Prior to joining Boston Edison in 1977, Mr. Ziemianski served for three years in the engineering department for the Yankee Atomic Electric Company where he supported the design and licensing of the Seabrook Nuclear Power Station and served on an extended assignment at the Vermont Yankee Nuclear Power Station. Prior to joining Yankee Atomic in 1974, Mr. Ziemianski served for three years as a Nuclear Shift Test Engineer for the Electric Boat Division of General Dynamics Corporation where he qualified on the S5W reactor plant and S5Wa steam and electric plant. He earned a Bachelor of Science degree in Mechanical Engineering from Clarkson College of Technology in 1971.