May 19, 1997

Mr. Joseph J. Holonich, Branch Chief  
High Level Waste and Uranium Recovery Projects Branch  
Division of Waste Management  
Office of Nuclear Materials Safety and Safeguards  
U.S. Nuclear Regulatory Commission  
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11545 Rockville Pike  
Rockville, MD 20852  

Re: Source Material License SUA-1358  
Docket No. 40-8681  
Supplemental Data for Amendment Request Submitted April 3, 1997

Dear Mr. Holonich:

In response to a request by NRC staff, International Uranium (USA) Corporation ("IUSA") hereby transmits the enclosed transportation and equipment summary for the shipment of uranium material to White Mesa Mill, as discussed in our amendment request dated April 3, 1997.

IUSA does not request that any portion of this text be held confidential. This text, in its entirety, is meant to be used for the Public Document Room. I can be reached at (303) 389-4131.

Sincerely,

Michelle R. Rehmann  
Environmental Manager

MRR/pl  
Enclosures

cc: Ronald E. Berg  
William N. Deal  
Earl E. Hoellen  
James Park (NRC)  
Harold R. Roberts
International Uranium (USA) Corporation
Denver, CO

Transportation Summary
and
Equipment Information

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Transportation Plan Summary:

The bulk solid ore-residue material will be shipped from the origin to the White Mesa mill in Blanding, UT., via a combination of truck and rail transport.

The rail and truck transportation providers are experienced with safely handling and transporting materials such as this ore-residue. Additionally, the transporters are experienced with, and routinely handle radioactive and other hazardous material shipments. The safety records of the selected transporters are exemplary, reaffirming the level of responsible care that is applied to all phases of the transportation cycle.

The transporters involved in this project maintain the highest DOT rating obtainable. The insurance coverages and driver/employee training programs utilized by the transporters exceed industry requirements and standards. This higher level of training, experience and responsibility combines to create a safe, dependable transport system. This system utilizes state of the art equipment, sophisticated shipment tracking/expediting programs and safe, efficient transportation services.

The transportation system is designed to ensure that every shipment will be performed in a manner that protects the public, the environment and is in full compliance with all applicable regulations.

The intermodal containers that will transport the bulk ore-residue are designed to transport soils, filter cake, and other similar solid materials that have the same moisture content and consistency as the ore residue. The containers (see attachment) are constructed of heavy gauge steel. All openings have water tight gaskets and closure mechanisms that provide leak proof packaging. The top of the container opens to allow the material to be deposited into it. Once loaded, the top is secured and the water tight gasket closure system is engaged.

The prescribed intermodal container has been in use for approximately twelve years and has an excellent record of safely and securely transporting materials domestically, from coast to coast and internationally on container ships.

Shipment protocol will include pre-trip inspections of the containers and transport vehicles prior to loading at the origin site, or release from the destination. All required radiological vehicle and container survey’s will be completed and documented.

The Uranium material will be shipped as LSA (low specific activity) Radioactive Hazard Class 7 Hazardous material as defined by DOT regulations. Each container shipment will be properly
labeled, placarded and manifested for each segment of the transport cycle.

Each container shipment will be dedicated for the “exclusive use” of this ore residue material. Upon completion of the project all containers and other transport equipment utilized will be cleaned and surveyed for unlimited use and release.

**Transportation Cycle and Routing**

The transportation program entails a round trip shipping system including loaded bulk intermodal containers from Origin to Blanding, UT, and empty containers returned to Origin for reloading until the shipping campaign is completed.

An empty container will be transported to the origin via truck and intermodal chassis trailer. The container will be radiologically surveyed and inspected prior to entry at the loading station. The container will be loaded and secured for transport. Shipment weights will be obtained to verify proper loading quantities.

Approximately 15 containers will be loaded and transported per day. This volume will have no impact on safety, the environment, or interstate commerce at either the origin, destination or en route via truck or rail.

After loading and securement, a radiological survey will be completed for each container and transport vehicle before shipping release is obtained. If required, the container will be cleaned to obtain this release. The appropriate documentation, labeling and placarding will be completed for each shipment per pertinent regulations.

The loaded container will be transported to an intermodal rail terminal near the origin. Upon arrival the twenty foot long container will be lifted onto a railroad flatcar. The container will then be secured to the car by using the locking mechanisms on the railcars that couple with the containers.

Due to lack of direct rail access into the White Mesa Mill location the final transport leg must be completed into the Blanding facility via truck and transport trailer.

In order to complete this final transport leg, the railroad will deliver the flat cars to a rail served location where the loaded, sealed container will be lifted from the railcar and placed onto the truck and transport trailer chassis. Currently two locations are being explored for this rail to truck transfer location. The first is located in Grand Junction, CO. This location would necessitate a highway truck haul in Utah of 150 miles from point of origin in the state to Blanding, UT.

The second rail transfer location is in Green River, UT. This location is slightly closer, requiring a highway truck haul of 130 miles in the state to arrive at the White Mesa mill. Either location is suitable.
The container lift is completed by a purpose built rail side lifter that is utilized in the large railroad terminals or port operations to move and load containers of various sizes. This equipment is very reliable and safe and is normally used in operations lifting hundreds of containers per day this equipment will easily accommodate the low quantity of lifts that will be required on this project.

Before the container is lifted from the railcar and transferred onto the truck chassis it will be inspected to verify that the condition is the same as when released for shipment from the origin.

Once the container is secured onto the truck chassis the container will be transported to the mill for off-loading. Before the container is released for the return trip and re-loading it will be properly closed, cleaned (if required) surveyed and documented. The truck chassis will transport the container back to the rail transfer point and the empty container will be transferred onto the rail flatcar for the return trip.

The rail flatcars will each carry four empty containers on a reverse route from the destination point back to the point of origin.

Once back at the origin rail terminal the containers will be transferred onto trucks to repeat the process.

Upon completion of the project the intermodal containers will be cleaned until they are able to be radiologically released for unrestricted use.

**Shipment Tracking, Expediting and Security**

During the entire shipping process each container will be tracked and expedited between the origin and destination.

This is accomplished by using state of the art computer software and tracing services that interface with all railroads in the supply chain.

The railcars and containers are monitored daily to identify their location and estimated arrival time at the next juncture point or destination. This guarantees that each shipment is accounted for at all times and arrives timely at the destination. If a shipment requires individual attention to expedite its travel, the appropriate contact is made and the condition is corrected.

**US DOT Hazardous Materials Transportation Incident Report Information Comparison**

The most recent US Department of Transportation Biennial Report on hazardous materials transportation covering 1995 verifies the low number of incidents via rail transport.

In 1995 there was a total of 12,700 incidents involving hazardous material incidents via truck. In this same period there were only 1,154 incidents during transport of a hazardous material via rail.
Most of the rail incidents involve bulk liquid shipments as a large percentage of the nation’s virgin chemicals move by rail tank car. Statistically, this demonstrates the low risk of transporting this material the distances contemplated.

**Impacts on Human Resources and Interstate Transportation Infrastructure**

Due to the low volume of weekly shipments no impact is anticipated at either the origin, in route or at the destination. Each of the transport corridors are utilized in regular interstate commerce and this will not be impacted by the projected shipping volume of fifteen containers per day.

**Intermodal Container Equipment Specifications**

The enclosed drawing and specifications detail the intermodal container that will be utilized for transporting the ore-residue. It is twenty foot long, eight foot wide, six and one half foot tall and has a capacity for twenty five cubic yards.

The containers are designed and built to international standards that are more stringent that the railroad only requirements in the US.

Each container is water tight and tested to verify after manufacture. It is constructed of steel and uses gasket material and secure closure mechanisms to close the unit after loading.

As described above this type of container has been in use for over a decade and has a proven track record of reliability.

**Incident & Contingency Planning**

During all phases of the transportation cycle emergency response and incident awareness will be of the highest priority. Each of the service vendors has and maintains the required personnel to immediately address any incident or emergency that would occur. Incidents are responded to as prescribed in each carrier’s emergency contingency plan. A project specific contingency plan will supplement and enhance the carrier and contractors plans directing information to the owner and other key firms and individuals.
MODEL IRO-25/OT
- INTERMODAL CONTAINER WITH ROLL-OFF RAILS
- 25.4 CUBIC YARD CAPACITY. 19'-10¾" L x 8'-0" W x 6'-6" H
- OPEN TOP
- DOOR CLOSURE - BOTTOM FLAPPER SYSTEM

SECTION I

1.1 GENERAL REQUIREMENTS: The following specifications describe a 20 foot long, 25.4 cubic yard, watertight container to be used for rail or roll-off transport of soil and/or sewage sludge. 78" overall height is required so that containers may be double stacked in most railroad applications.

The container must have a Certified Test Report from an independent agency that it meets all the applicable requirements of the American Association of Railroads, (AARM930-90), for containers. The container systems shall be of the type as manufactured by Accurate Industries, Inc., Williamstown, New Jersey, or equal.

1.1.1 QUALITY ASSURANCE: The solid waste container manufacturer shall have a minimum of twenty-five (25) successful customer installations using similar size containers for the transportation of sludge. The installations to be considered shall have been in successful operation, meeting transportation requirements and function. Evidence to support such experience shall be submitted with a complete list of installations prior to the bid. The container manufacturer must have ten (10) years of experience building containers of a similar size and design. No prototypes will be accepted.

1.1.2 The design is based upon solid waste container systems as manufactured by Accurate Industries, and the terminology used herein may include reference to that manufacturer's proprietary product. Such reference shall be construed as establishing the quality of materials and workmanship to be used under this section.

1.1.3 To ensure system compatibility and equipment warranty responsibility, all components of the solid waste container system shall be furnished by the container manufacturer unless otherwise approved in writing in advance by the owner.
1.1.4 The solid waste container systems shall be a 1995 Accurate Industries standard production unit, or equal. No prototype units will be accepted. The manufacturer must have at least 4,000 Intermodal containers in railroad use similar to the containers described herein. Certification of this requirement is to be submitted with bid.

1.1.5 The manufacturer must have demonstrated proven performance in building the required number of similar type containers in the short time required.

1.1.6 Drawings: A complete set of engineering drawings and specifications with supporting engineering data that meets AAR requirements must be submitted to the owner and approved by the owner prior to bidding this job.

1.1.7 The manufacturer must have the capabilities of performing the AAR Tests at his manufacturing facility. All tests must be supervised and certified by the American Bureau of Shipping (ABS).

**SECTION II**

2.1 DETAIL SPECIFICATIONS:

2.1.1 AAR: Containers shall meet the current applicable requirements of the American Association of Railroads, AAR M930-90, and be certified by an independent agency such as the American Bureau of Shipping.

2.1.2 Dimensions: The container shall be 25.4 cubic yard net inside capacity. The outside dimensions shall meet the AAR tolerances on length, width, and diagonal measurements for a nominal 20' long x 8' wide AAR container. Height shall be 78" maximum so that containers may be double stacked in most railroad applications.

2.1.3 Corners: The containers shall be fitted with eight (8) ISO corner castings and shall be located to meet AAR standards. There shall be no protrusion of any kind, including hardware, doors, lids, etc., past the outer envelope of the corner castings.

2.1.4 Mounting plates for one (1) placard each side, 4 total. Placards not included.
IRO-25/OT/CB
WITH OVER-UNDER LIDS

LIDS CLOSED & LOCKED

REAR SECTION OPEN

FRONT SECTION OPEN
2.2 FLOOR:

2.2.1 Floor shall be 7 Ga. steel plate, and shall have 5" formed 10 Ga. channel crossmembers on approximately 16" spacing. Side sills shall be 6" formed 10 Ga. channel. All floor joints shall be located over a crossmember and spaced so a full penetration weld can be applied to joint and crossmember and full seam welded to assure structural integrity and watertight capabilities.

2.2.2 Fork pockets shall be installed in floor to meet AAR design requirements; 81" centers, 14" wide minimum, 4½" high minimum.

2.2.3 Roll-Off capability shall include: 6" x 2" x ¼" structural tube rails, 36¼" ID, solid steel bull noses, inserted into rail, 4" x 4" rollers with grease fittings and roller brackets, hook and hook plate with life time guarantee on cable hook. Four (4) wheels with grease fittings and swing-up/retractable locking mechanism.

2.3 SIDES:

2.3.1 Sides shall be of 10 Ga. steel plate. Structural side supports shall be 10 Ga. steel, 3" deep x 10" wide. All side supports shall be full welded to side sheets. Bottom of side plate and bottom of formed tubes are fully welded to floor plate on outside and inside. Top horizontal structural welded tubing shall be 4" x 4" x ¼" minimum, full length prime material - no splits or joints. (Formed top tube not acceptable) Tubing shall be A500, grade B, 50,000# minimum yield. Twenty-eight (28), three inch (3") "J" hooks shall be installed on inside of container sides for plastic liners.

2.3.2 All four (4) corners shall have vertical structural welded tubing, between and supporting, the top and bottom corner castings. These tubes shall be designed structurally to meet the AAR requirements for stacking loaded containers with a gross weight of 52,910 pounds, during rail haul operations.

2.4 DOOR:

2.4.1 Door shall have two (2) horizontal and two (2) vertical 1/4" plate formed channel frames, plus two (2) 7 Ga. vertical members. Door plate shall be 10 Ga. steel. Three (3) hinges shall be installed on top of door so door opens at bottom. Hinges shall be adjustable. Hinge pins shall be stainless steel.

2.4.2 A neoprene gasket shall be provided on the door and door-jamb mating face to guarantee a watertight seal. Gasket must be made of durable material and easily replaceable. Manufacturer shall provide design details, sample, and evidence of successful field usage prior to bid. No prototype designs are acceptable. Gasket must be approved by owner prior to bid. Gasket shall be of knife edge design; compression gasket not acceptable.
2.4.3 Door is to be locked into place by four ratchet binders for water-tight security; one on each side with a "V" chain to the door, and one on each side at the floor to operate a full width flapper system. This system must have proven durability in previous container operations. Design must be approved by owner prior to bid.

2.5 BULKHEAD:

2.5.1 Bulkhead shall be 10 Ga. sheet steel and shall have two (2) vertical 2" x 4" x ½" structural tubes, welded to bulkhead sheet. Top horizontal tube shall be 4" x 4" x 7 Ga. minimum, A500, grade B, welded structural tube. Dog box for cable hook shall be 10 GA, full welded.

2.6 WATERTIGHT:

2.6.1 The container shall be watertight welded and tested under strict quality control procedures. A water test certificate shall be provided for each container stating the water test procedure and signed by the quality control manager and plant manager.

2.6.2 Every container must be fully welded on all joints and seams on the inside.

2.6.3 Every container must be filled to the top with water and let stand for a minimum of thirty (30) minutes and inspected for watertight integrity. This process, if necessary, must be repeated until the container is inspected had has no leaks. The door gasket must be inspected thoroughly during this procedure.

2.7 VERTICAL LIFTING FROM THE TOP:

2.7.1 Each and every container must be tested and certified by the manufacturer that it has been tested to the following requirements to test top casting structural capacity:

Each corner post assembly - top and bottom castings and corner post assembly shall be hydraulically stress tested to simulate lifting three (3) times the rated capacity. Gross weight of 52,910 x 3 = 158,730 - 4 = 39,683# per corner post. This tension must be held for five (5) minutes, to simulate lifting the containers. Every container must be tested; random testing or statistical testing is not acceptable.

2.8 PAINT:

2.8.1 Container to be completely scraped and ground, with sharp edges to be ground smooth, all exterior and interior surfaces thoroughly cleaned and primed with one (1) coat of Sherwin Williams Kem Flash High Solids, 3.5 VOC, rust inhibitive primer, followed with one (1) coat of Sherwin Williams Ultra Kem High Solids, 3.5 VOC, enamel on exterior sides and top. Champion coatings may be used as an alternate.