



WASTE CONTROL SPECIALISTS LLC

1710 W. Broadway • Andrews, Texas 79714 • (915) 523-4444 • Fax (915) 523-6411

September 25, 2000

Mr. Thomas H. Essig
Chief, Environmental and Performance Assessment Branch
Division of Waste Management
Office of Nuclear Material Safety and Safeguards
Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Mr. Essig:

In response to your letter of July 27, 2000 you will find (Attachment A) a description of the activities that we plan to carry out under the requested exemption from 10 CFR Part 70 for possessing special nuclear material in quantities greater than those specified in 10 CFR Part 150. Attachment B is proposed amendments to our existing license, similar to those required by the Envirocare order, that would be required for the implementation of this exemption.

We have contacted the Texas Health Department Bureau of Radiation Control and they are prepared to discuss any conditions that may be necessary to address the implementation of this exemption. We have provided them with a copy of this letter, including all attachments, to facilitate that discussion.

You may contact me at 717-540-5220 if you have questions or require additional information to process this request.

Sincerely,

William P. Dornsife

Vice President-Nuclear Affairs

cc:

Richard Ratliff, Chief, Bureau of Radiation Control, Texas Health Dept.

Add: Thomas Essig
NMSS20

Appendix A – Description of Activities to be Conducted Under the Exemption

1.0 Introduction

WCS is a Texas-based waste management firm that offers innovative and cost effective solutions for the safe management of radioactive and hazardous materials. WCS operates a state of the art facility in Andrews County, Texas, that has received permits for the treatment, storage, and disposal of radioactive, hazardous and toxic materials.

The WCS Andrews facility may well be the best in the country from a waste isolation standpoint. The facility sits on a thick (about 800 to 1,000 foot) layer of very impermeable red-bed clay that comes to within about 20 feet of the surface. All waste that is currently authorized for disposal is placed in a RCRA cell with double plastic and clay liners and includes a double leachate collection system. The bottom of this cell extends well into the natural clay formation. The first usable groundwater below the clay layer is non-potable, and there is no evidence that any infiltration near the site has ever reached this groundwater. There is no surface or potable ground water anywhere near the WCS facility. The climate is arid with the evapotranspiration greatly exceeding the infiltration rate.

The facility has strong support from the local citizens in Andrews County and neighboring New Mexico. In fact, there has been an unprecedented level of acceptance of hazardous and low level waste management at the WCS facility. This is evidenced by the fact that there have been no contested hearings for the three permits and licenses that have been granted to the facility. Since the industry base of the region is oil and gas production, the citizens are very comfortable with and accepting of the risks of technology and understand the good geological characteristics of the site.

WCS has a RCRA permit from the Texas Natural Resource Conservation Commission and a TSCA authorization from the USEPA, which authorizes treatment, storage, and land disposal of hazardous waste. The current treatment capabilities include consolidation, repackaging, and stabilization for a wide variety of RCRA and TSCA wastes. The WCS facility is the only RCRA disposal facility in the country that has been permitted after the "Land Disposal Restrictions" regulations were adopted, providing additional liability protection.

WCS currently possesses a Class III radioactive waste storage and treatment license (License # L04971) issued by the Texas Health Department in November 1997 (Included as Attachment C). The license currently allows for possession of hundreds of thousands of curies of various radionuclides for the term of the license, which is currently seven years and renewable. The current limits for activity and volume can be increased by license amendment, since Texas regulations do not set an ultimate limit for Class III treatment and storage facilities. Storage capability includes pre-packaged and treated low level waste and mixed waste, including greater than Class C waste, TRU, and sealed sources. The current storage capabilities consist of a drum storage facility that can accommodate 5,000 drums (36,750 cubic feet) and a bin storage area that can accommodate about 262,000 cubic feet of waste.

The treatment facility includes a state of the art treatment/stabilization building, half of which is for stabilization of a variety of RCRA/TSCA wastes, with the remaining half dedicated to the treatment of radioactive and mixed waste. Current low-level radioactive waste (LLRW) treatment capabilities include consolidation, repackaging, stabilization of mixed waste, capabilities for in-drum compaction, and a variety of other waste management services, including treatment and disposal of KO61 (baghouse dust) contaminated with Cs-137. WCS has just recently begun a million dollar renovation to its treatment facility in order to accommodate bulk (up to 40 cubic yard batches) stabilization/solidification.

There is rail access directly to the site, with a railcar unloading facility for bulk shipments, as well as easy transportation access to the site from nearby major interstate highways.

The facility includes an onsite analytical laboratory that is capable of performing various testing required for verifying the characteristics of hazardous and TSCA waste and also determining that the waste meets the TCLP requirements after treatment. There is also a radiation counting laboratory that is capable of performing gamma spec and scintillation counting.

WCS will support changes to Texas law in the next legislative session (Jan 2001) that will allow private companies to be licensed for disposal of LLRW. If the law is changed, WCS will immediately submit a license application for disposal of all mixed and LLRW. If WCS obtains a LLRW disposal license from the TNRCC, SNM could be disposed at the WCS Andrews facility.

WCS is committed to providing safe, cost effective services. In the nearly three years that the WCS facility has been in operation there have been no notices of violations issued for any regulated activities.

2.0 Activities to be Conducted Under the Exemption

The only activities that will be conducted at the WCS facility under this exemption in the near term are storage awaiting treatment, interim storage (long term storage in a form acceptable for disposal under Part 61), and treatment. If WCS receives a license for disposal of LLRW, SNM would also be disposed at the WCS Andrews facility.

2.1 Storage Activities to be Conducted Under the Exemption

Under the existing TDH license (Attachment C) WCS is authorized to temporarily store waste awaiting treatment for a period not to exceed one year. The RCRA permit also allows storage of RCRA waste for a one year period. LLRW can be accepted for storage for a longer term, which is called interim storage, but only in a form that meets all disposal requirements for 10 CFR Part 61. After treatment, waste can be stored for longer than one year only if it meets the Part 61 requirements and also is no longer regulated under RCRA.

Also under the existing license, WCS is authorized to possess 200 curies of plutonium, 20,000 curies of U-235, and 2000 curies of U-233. These possession limits would apply to exempt SNM unless WCS specifically requests an amendment to raise these possession limits.

License condition 23 A. limits storage at the WCS facility as follows:

Bin Storage Area: 262,440 cubic feet – must be in a high integrity container or be classified as Low Specific Activity or Surface Contaminated Object as defined in 10 CFR Part 71.
Container Storage Building: 36,750 cubic feet
Stabilization Building: 3675 cubic feet

License Condition 23 D. requires financial assurance for waste in storage that is calculated to be sufficient to allow cleanup, offsite disposal, and decommissioning of any non-federal waste that is in storage at the WCS facility, if the license cannot properly cleanup and decommission the facility or fails to comply with a TDH order.

All of these existing license conditions would apply to the storage of exempt SNM.

2.1.1 Description of the Container Storage Building (CSB)

The CSB has a storage capacity of 5000, 55-gallon drums and is divided into ten storage compartments. The drums are stacked a maximum of two high and the minimum aisle width between each row of drums is two feet. The CSB is not limited to storing 55 gallon drums. Any DOT-approved container such as “B-25” boxes or 85-gallon overpack drums, or other small containers may be stored in the CSB. Pressurized gas cylinders are not stored in the CSB.

Staging areas located on either side of an elevated loading dock are used for temporary storage while loading, unloading, segregating, and inspecting containers. The maximum volume of waste held in each staging area will not exceed 400 55-gallon containers

The CSB is enclosed and is constructed of commercial grade sheetmetal and support beams. The building is designed to be 190 ft by 165.5 ft with a minimum interior height of 20 ft. The CSB is designed with deflagration venting and an automatic fire suppression system that may be operated manually. A nine inch curb surrounds the entire perimeter of the storage areas for containment purposes and is designed to contain a 20 minute release of water from the entire fire sprinkler system. Stand pipes are located strategically around the facility for emergency water.

The eight entrances into the CSB are equipped with standard roll-down doors that remain closed when the entrance is not in use. Each entrance is posted with signs prohibiting unauthorized personnel and signs warning of radioactive materials.

The secondary containment systems for the CSB are designed to provide the required containment capacity under 40 CFR 264. The container staging areas located at the CSB include provision to handle 10% of the design storm event since they are open on one side and covered by a large overhanging roof. The staging areas have sealed concrete floors that slope to a sump and are surrounded by a six inch containment curb. These features provide for containment and easy cleanup of potential spills.

The ten storage compartments are located within the commercial grade metal building and have a sealed concrete floor. The building is weatherproof and located above the 100 year floodplain. The concrete slab is partitioned into ten storage compartments (CSA-1 through CSA-10) with six inch high interior concrete curbs. The curbs are constructed as part of the concrete floor. A six

inch high rollover berm is constructed within each containment curb to allow entry into each storage area. The contiguous perimeter of the ten storage compartments is surrounded by a nine-inch containment curb. There is adequate secondary containment capacity in the event that 10% of the containers leak their entire volume.

The design and location of the CSB precludes the entry of storm water from a 25-year storm event. In addition, the secondary containment rollover berms located at each entrance provide further assurance that storm-water run-on does not occur.

All containers used for waste storage are stored on pallets (4-4.5 inches high). If a container storage area is full with containers holding liquid wastes, and 10 percent of the containers leak their entire contents, the maximum depth of accumulated liquid within any storage area is less than 0.1 feet (calculated using the container storage area with the smallest surface area). Thus, the pallets prevent the design spill from contacting the bottoms of the containers. It is anticipated that the largest majority of waste stored in the CSB will be solid waste.

Four wall mounted ventilation fans and 4 outside air louvers will provide ventilation for CSB. Three of the ventilation fans are located on the west side of the building with the remaining ventilation fan and the 4 air louvers located on the east side of the CSB. The ventilation fans will provide the CSB with flow-through air cooling and 7 unit heaters have been included in the design to provide heating and control over the environment. The industrial-grade HVAC system has been designed under standard engineering practices and regulations.

The plumbing system has been designed utilizing standard engineering practices and codes to provide the CSB with non-potable water for routine operations and emergency situations. The CSB plumbing system contains no drains and potential spills will be contained within each CSB area.

The CSB is equipped with an automatic sprinkler system, a non-water (foam) automatic fire suppression system, fire extinguishers, and fire water hoses. The sprinkler system provides coverage for the ten CSB storage areas and is designed following NFPA guidelines. The sprinkler system is capable of producing a flow density of 0.20 gallons per minute per square foot of floor space. Sprinkler heads are placed at 10 foot spacings each covering a 100 square foot area. Portable fire extinguishers are placed outside of each entrance and fire water hoses 100 feet long are placed at the center point of each wall. A fire hose is also located on the loading dock. The fire hoses have a flow rate of 500 gallons per minute at a pressure exceeding 60 psi but not greater than 100 psi. An approved distribution system is utilized for fire protection in the partially enclosed loading dock and staging areas. No water-reactive materials will be stored with radioactive materials in the CSB storage areas.

Each CSB storage area is completely surrounded by a nine-inch curb to contain the water generated by the automatic sprinkler system. The curb height is sufficient to contain the water discharged from all sprinkler heads operating for 20 minutes. All entrances into the building are constructed with nine-inch high rollover berms. If spills are considered, the secondary containment volume required equals 133,900 gallons (106,400 gallons of sprinkler water and 10% of the stored waste volume leaks $[0.10 \times 55 \text{ gallons/drum} \times 5000 \text{ drums} = 27,500 \text{ gallons}]$).

The nine inch curb provides containment for approximately 149,000 gallons.

2.1.2 Description of the Bin Storage Area (BSA)

Bulk wastes contained in bins are stored on three concrete slabs in the BSA. Each concrete slab is partitioned into three storage areas. Each partitioned area has one of the following designations; BSA-1, BSA-2, BSA-3, BSA-4, BSA-5, BSA-6, BSA-7, BSA-8, or BSA-9. Only Section BSA-1 is partially enclosed for protected storage of reactive, TSCA, radioactive materials and materials containing free liquids. BSA-1 is designed with commercial grade sheetmetal with an enclosed area of 140 ft by 160 ft and a minimum interior height of 30 ft. All other sections are open. All sections have a sealed concrete floor. All sections, except BSA-1, are surrounded by a six inch high concrete containment curb that is an integral part of the floor. Section BSA- 1 is surrounded with a 9 inch curb in order to contain liquids that may be present during emergency situations.

Each of the nine BSA's has a capacity of 36 bins with a maximum capacity of 30 cubic yards per bin. Roll-off bins are on large metal wheels which typically provide 6 inches of height, minimizing the possibility of contact between the bottom of the bin and liquids on the floor.

The secondary containment systems for BSA- I are designed to provide the required containment capacity under 40 CFR 264. The 25 year 24 hour storm event (4.7 inches) was not used in sizing the containment capacities for BSA- 1, since this is a partially enclosed commercial grade metal building. The 25 year 24 hour storm event was used in sizing the containment capacities for Sections BSA-2 through BSA-9. BSA-2 through BSA-9 will operate on a first flush system. The first one-half inch of water generated by a rainstorm will be collected and pumped to the storm-water tank. Afterwards, the collected rainwater from the BSA's will either be continuously collected depending on the water needs of the facility or be distributed within the facility.

The design and location of the BSA's precludes the entry of storm water from a 25 year storm event. The facility is not in a 100 year floodplain. In addition, the secondary containment rollover berms located at each entrance provide further assurance that storm-water run-on does not occur. Liquid spills are normally managed by the use of absorbents. Spills involving solid materials are cleaned using shovels, scoops, and vacuum cleaners. All spilled solid material is deposited into a clean bin for storage and processing.

BSA-2 through BSA-9 are completely open to the environment. Only material properly contained in accordance with DOT regulations will be stored in these open areas. BSA- I will be partially enclosed by a roof and walls. The walls have large openings to the environment to provide ventilation. Two exhaust fans have been installed to assist in the circulation of air.

The plumbing for BSA has been engineered according to building codes and standards. The plumbing system will provide the BSA with nonpotable water for routine operations and emergency situations. The BSA plumbing system takes advantage of the slope of the facility to incorporate collection drains. The drains that will collect run-off water will be pumped to the storm water storage tanks and then monitored.

2.2 Treatment Activities to be Conducted under the Exemption

Condition 22 of the existing TDH license describes the treatment activities that are currently authorized. The following specific treatment activities involving exempt concentrations of SNM will be conducted under the exemption:

2.2.1 Solidification/Stabilization

WCS is presently authorized to perform in-drum solidification/stabilization of mixed wastes containing RCRA metals. The treatment formulation developed during treatability study testing is utilized for full-scale processing of the waste. The approved work instruction is included as Attachment D. The first step in full-scale stabilization/solidification is to stage each drum with a suitable amount of waste, as determined in treatability study testing. Soils and other solids are then slurried and homogenized using the in-drum stabilization/solidification system. Chemical fixation or stabilization agents, followed by solidification media, are then thoroughly mixed into the slurried soils and solids, or liquids, producing a homogenous mass. These agents and media are ferrous sulfate, lime, attapulgite or bentonite clay, and Portland cement. A sample from each treated drum is placed into a separate container and composited for both in-house and off-site analysis. Analytical data from these samples will verify that the waste meets LDRs and will be used to profile the treated waste into a suitable disposal facility. If required, samples that have been composited during treatment can be packaged and used as pre-shipment samples. After mixing, each treated drum is set aside and allowed to cure for between 24 and 72 hours, depending on the type of solidification media that was used. Each drum is then inspected to ensure the absence of free-standing liquid. Prior to final closure of the containers, a layer of absorbent is applied to the top of the treated waste in order to absorb possible condensation.

A license amendment has been submitted to authorize bulk stabilization/solidification activities and to extensively enlarge and modify the existing treatment building for this activity. The work instruction for this activity is included as Attachment E. Trucks containing waste will enter into an air-locked area and the containers of waste will be off-loaded to a staging area where they will be opened and emptied into a 40 cubic yard mixing pan. Admixtures will be pneumatically transferred into suitable containers and allowed to cure. Inspection and final closure activities will be the same as for in-drum stabilization/solidification.

2.2.2 Shredding

As part of the modification of the radwaste treatment building, WCS will be installing a shredder (SSI Series 45/Model 3200 H). The shredder will be used to pre-process debris, drums, and other large pieces of metal to facilitate encapsulation and volume reduction. Selected materials will be shredded into strips/pieces less than 60 mm wide. No other chemical and/or physical processing other than sorting will be performed as part of the shredding operation.

2.2.3 Deactivation

For reactive and ignitable waste streams deactivation of the waste must be performed prior to stabilization/solidification. Due to the danger associated with the treatment of reactive waste streams, deactivation activities are conducted using numerous engineering controls and personal protective equipment.

Water reactive waste streams are treated in a glove box that is properly ventilated and monitored for off-gas production. Of major concern is the evolution of hydrogen gas that is explosive at extremely low concentrations. To control the deactivation of water reactives, small amounts of the reactive waste are placed into a steel cage and submersed into a drum of water. Personnel, wearing flash suits and air-line respirators, observe the container until the reaction subsides. The cage is removed and the process repeated. After the deactivation process has been completed, the drum of now-caustic waste is solidified using portland cement.

Oxidizers, such as nitrates, are dissolved in water and then treated using reducing agents, typically ferrous sulfate. The amount and type of reducing agent that is used is determined stoichiometrically. Once this redox reaction is completed, the waste can be safely solidified.

Reactive wastes containing cyanides are uniquely difficult to treat. If the cyanide is complexed with a heavy metal, the metal will always exceed TCLP limits due to the high solubility of these cyanide complexes. However, destruction of the cyanide/heavy metal complex can be accomplished by the addition of an oxidizing agent (lime and/or sodium hypochlorite) that will usually precipitate the heavy metal as an oxide and convert the cyanide to cyanate which will further oxidize to carbon monoxide and nitrogen. After the waste has been oxidized, it can be stabilized/solidified to complete treatment.

2.2.4 Neutralization

Corrosive wastes, principally acidic wastes, often require neutralization prior to stabilization/solidification. If the concentration of the acid is low enough, neutralization and stabilization/solidification of the waste can be accomplished in one step using portland cement. Admixtures, if required, are most effective if they are added to the waste at relatively neutral pHs. Concentrated acids must be neutralized in a suitable container that can be jacketed for cooling and properly vented because of the steam that is generated from the heat of neutralization. For the neutralization of polyprotic acids, it is of crucial importance to calculate the principal species that will form during neutralization. Over addition of the neutralization agent to elevated pHs may result in a sludge or non-pumpable mass which is difficult, if not impossible, to remove from the neutralization vessel. Addition of acid may be necessary to re-liquify the waste so that it can be pumped from the neutralization vessel. Not only does this increase processing time, it may also increase the weight and volume of the final product. Once the acidic waste has been neutralized to a suitable pH, stabilization/solidification of the waste can be completed. Neutralization chemicals typically used are sodium hydroxide, lime, sulfuric acid, and nitric acid.

2.2.5 Treatability Studies

For problematic waste streams, a treatability study may be required. Treatability studies are conducted at WCS' on-site laboratory. A treatability study is to determine a suitable treatment formulation that will produce a treated waste form which meets Land Disposal Restrictions (LDRs) and meets the Waste Acceptance Criteria (WAC) of the facility receiving the waste for final disposition. A properly conducted treatability study is guided by a Treatability Test Plan or Process Control Program. Either of these documents will clearly state the objectives of the treatability study and identify the criteria that the treated waste must meet. Typically, the person conducting the treatability study will develop a matrix of reagents that are deemed suitable for treatment of the waste. The most likely formulation, based on experience and testing, is used to treat a sample of the waste. Depending on the success of this initial sample in meeting TCLP requirements or weight and volume increase parameters, other recipes from the reagent matrix are used on subsequent samples. This is continued until all objectives of the treatability study are met.

Attachment B – Proposed license conditions

1. Concentrations of SNM in individual waste containers must not exceed the following values at time of receipt:

Radionuclide	Maximum Concentration (pCi/g)	Measurement Uncertainty (pCi/g)
U-235 ^a	1900	285
U-235 ^b	1190	179
U-235 ^c	160	24
U-235 ^d	680	102
U-233	75,000	11,250
Pu-236	500	75
Pu-238	10,000	1,500
Pu-239	10,000	1,500
Pu-240	10,000	1,500
Pu-241	350,000	50,000
Pu-242	10,000	1,500
Pu-243	500	75
Pu-244	500	75

a - for uranium below 10 percent enrichment and a maximum of 20 percent MgO of the weight of the waste

b - for uranium at or above 10 percent enrichment and a maximum of 20 percent MgO of the weight of the waste

c - for uranium at any enrichment with unlimited MgO or beryllium

d - for uranium at any enrichment with sum of MgO and beryllium not exceeding 49 percent of the weight of the waste

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 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 145 kilograms.

2. Except as allowed by notes a, b, c, and d in Condition 1, waste must not contain "pure forms" of chemicals containing carbon, fluorine, magnesium, or bismuth in bulk quantities (e.g., a pallet of drums, a B-25 box). By "pure forms," it is meant that mixtures of the above elements such as magnesium oxide, magnesium carbonate, magnesium fluoride, bismuth oxide, etc. do not contain other elements. These chemicals would be added to the waste stream during processing, such as at fuel facilities or treatment such as at mixed waste treatment facilities. The presence of the above materials will be determined by the generator, based on process knowledge or testing.

3. Except as allowed by notes c and d in Condition 1, waste accepted must not contain total quantities of beryllium, hydrogenous material enriched in deuterium, or graphite above one percent of the total weight of the waste. The presence of the above materials will be determined by the generator, based on process knowledge, physical observations, or testing.
4. Waste packages must not contain highly water soluble forms of uranium greater than 350 grams of uranium-235 or 200 grams of uranium-233. The sum of the fractions rule will apply for mixtures of U-233 and U-235. Highly soluble forms of uranium include, but are not limited to: uranium sulfate, uranyl acetate, uranyl chloride, uranyl formate, uranyl fluoride, uranyl nitrate, uranyl potassium carbonate, and uranyl sulfate. The presence of the above materials will be determined by the generator, based on process knowledge or testing.
5. Mixed waste processing of waste containing SNM will be limited to stabilization (mixing waste with reagents), micro-encapsulation, and macro-encapsulation.
6. WCS shall require generators to provide the following information for each waste stream:

Pre-shipment

- I. Waste Description. The description must detail how the waste was generated, list the physical forms in the waste, and identify uranium chemical composition.
2. 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.
3. Uniformity Description. A description of the process by which the waste was generated showing that the spatial distribution of SNM must be uniform, or other information supporting spatial distribution
4. 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 receipt

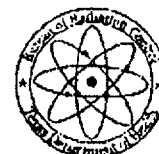
WCS shall require generators of SNM waste to provide a written certification with each waste manifest that states that the SNM concentrations reported on the manifest do not exceed the limits in Condition 1, that the measurement uncertainty does not exceed the uncertainty value in Condition 1, and that the waste meets conditions 2 through 4.

7. 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.
8. WCS shall obtain NRC approval prior to changing any activities associated with the above conditions

Attachment C – WCS Current TDH License (License # L04971)

TRC Form 12-1
(7/90)

**Texas Department of Health
Bureau of Radiation Control**



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RADIOACTIVE MATERIAL LICENSE

Pursuant to the Texas Radiation Control Act and Texas Health Department regulations on radiation, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess and transfer radioactive material listed below; and to use such radioactive material for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the Texas Department of Health (Agency) now or hereafter in effect and to any conditions specified below.

LICENSEE

1. Name **WASTE CONTROL SPECIALISTS LLC**
 ATTN: DAVID KANIA
 2. Address **1710 W BROADWAY**
ANDREWS TX 79714

This license amendment is issued in response to letter

Dated: February 21, 2000

Signed by: David Lee Kania

3. License Number

L04971

Amendment Number

11

PREVIOUS AMENDMENTS ARE VOID

4. Expiration Date

November 30, 2004

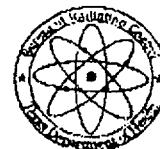
RADIOACTIVE MATERIAL AUTHORIZED

5. Radioisotope	6. Form of Material	7. Maximum Activity*	8. Authorized Use
A. Any radioactive material (includes radioactive waste, byproduct material as defined at Texas Health and Safety Code §401.003(3) (B), uranium ore received as waste, NORM waste, and/or oil and gas NORM waste)	A. Solid or Liquid	A. Activities of groups as specified under 25 Texas Administrative Code (TAC) §289.254(d)(1) not to exceed the following: Group I: 200 Ci Group II: 2000 Ci Group III: 20,000 Ci Group IV: 200,000 Ci	A. Receipt and processing of radioactive material received as waste
B. Any radioactive material	B. Sealed Sources	B. Total activity not to exceed 1000 Ci	B. Interim storage of radioactive material received as waste

* Ci-Curies mCi-Millicuries µCi-Microcuries

TRC Form 12-1
(7/90)

**Texas Department of Health
Bureau of Radiation Control**



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RADIOACTIVE MATERIAL LICENSE

LICENSE NUMBER	AMENDMENT NUMBER
L04971	11

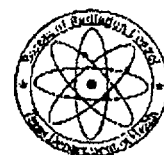
5. Radioisotope (continued)	6. Form of Material (continued)	7. Maximum Activity* (continued)	8. Authorized Use (continued)
C. Sr-90	C. Sealed Sources	C. No single source to exceed 1 μ Ci. Total: 5 μ Ci	C. Calibration reference sources
D. Any radioactive material	D. solid or liquid	D. No single isotope to exceed 100 μ Ci, no combination of isotopes to exceed 500 μ Ci. Total: 2 mCi	D. Calibration reference sources
E. Any radioactive material	E. plated or sealed sources	E. No single isotope to exceed 15 μ Ci, no combination of isotopes to exceed 50 μ Ci. Total: 1 mCi	E. Calibration reference sources

* Ci-Curies, mCi-millicuries, μ Ci-microcuries

9. Radioactive material shall be used only at:

<u>Site Number</u>	<u>Location</u>
000	Andrews - One mile North of State Highway 176, 250 feet East of TX/NM State Line (30 miles West of Andrews, TX)

10. Copies of all documents and records required by this license shall be maintained for Agency review at Site 000.
11. The licensee shall comply with the provisions of Title 25 Texas Administrative Code (TAC), Chapter 289, Sections 201, 202, 203, 204, 205, 252, 254, and 257.
12. The individual designated to perform the functions of Radiation Safety Officer (RSO) for activities covered by this license is David Kania.
13. Radioactive material shall be used by individuals designated by the RSO only after each worker has successfully completed the training specified in the Radiological Training Program. Documentation verifying the successful completion of the training for each user shall be maintained by the licensee for inspection by the Agency. All training shall be supervised by David Kania.

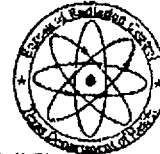
TRC Form 12-1
(7/90)Texas Department of Health
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14. The licensee shall submit a current resume listing all pertinent education, training and experience for any individual who replaces the following positions: Management Oversight representative, Radiation Safety Supervisor, Facility Manager, Operations Manager, Laboratory Manager, and/or Environmental Health & Safety Manager.
15. For the purposes of this license, the following definitions apply:
- A. Appropriately authorized: the activity has been formally authorized by the State or Federal agency which has jurisdiction over the issue.
 - B. Authorized federal agency: the United States Department of Energy (DOE) or the United States Department of Defense (DOD) upon written, executed agreement with the licensee that specifies that the authorized federal agency will take back and assume responsibility for all of its waste currently maintained at the licensee's facility within 30 days of written notification by the Agency that the waste is ready for removal, and that all associated expenses for such will be borne by the authorized federal agency to the extent that they are not covered by the licensee's financial assurance. These provisions will only apply if the licensee has failed to properly decontaminate and decommission the facility or otherwise failed to comply with an Agency order.
 - C. Interim storage: Stabilized waste packaged in accordance with 49 CFR (as amended), and that meets current or stated acceptance requirements for an authorized disposal facility or an authorized federal agency.
 - D. Waste: Radioactive waste, byproduct material as defined in Section 401.003(3)(B) of the Health and Safety Code (as amended), uranium ore, NORM waste, and/or oil and gas NORM waste.
16. Copies of authorized federal agency agreements specified in License Conditions 15.B and 19.B shall be mailed within seven (7) days of execution and prior to receipt of waste to:
- ATTN: Licensing
Bureau of Radiation Control
Texas Department of Health
1100 W. 49th Street
Austin TX 78756-3189
17. The licensee is hereby authorized to perform in-house pocket dosimeter calibration. The calibrations shall be performed under the supervision of the RSO.
18. The licensee is hereby authorized to perform in-house leak test analysis. The analysis shall be performed under the supervision of the RSO.
19. A. The licensee is authorized to possess special nuclear material only in quantities not to exceed that specified in 25 TAC §289.201(b). The total amount of special nuclear material possessed under all licenses issued by this Agency at the licensee's facility described in Condition No. 9 shall not exceed the 25 TAC §289.201(b) limits.

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19. (continued)

B. Notwithstanding the licensee's procedures, the licensee is authorized to possess transuranics (nuclides with an atomic number greater than 92) in concentrations greater than 100 nanocuries per gram (nCi/g). Prior to receipt of transuranics with concentrations exceeding 100 nCi/g, the licensee shall obtain an executed, written agreement from an authorized federal agency. The agreement shall meet the terms of the agreement specified in Condition 15.B of this license. Furthermore, in no respect shall this authorization be construed as to allow the limitations specified in Part A of this condition to be exceeded or violated.

20. In accordance with procedures submitted in the application dated January 24, 1997, the licensee is authorized to perform in-house decontamination of surface contaminated objects utilizing the PlasBlast Model 5050, or equivalent. This use is restricted to the Stabilization Building. This authorization is restricted to objects contaminated through the course of the licensee's authorized activities.

21. Radioactive material described in Parts A and B of Conditions 5, 6, 7 and 8 shall only be transferred to the initial generator, to an appropriately authorized waste disposal facility, or to an appropriately authorized waste processor. Documentation of recipient's authorization shall be maintained for inspection for a minimum of five (5) years.

22. The licensee is authorized to process waste. Such processing shall be performed in accordance with the procedures and commitments submitted in the application dated January 24, 1997, or new or modified procedures specified in Condition 34 of this license, and is limited to the following:

A. Receipt and survey;

B. Repackaging;

C. Compaction and consolidation utilizing a Model 55R RAMFLAT, or equivalent, compactor. This use is restricted to the Stabilization Building;

D. Processing and/or treatment of waste in the following methods:

(1) Solidification/stabilization of liquid or solid radioactive waste using media acceptable to low-level waste disposal sites utilizing a 55 gallon Enrico Barrel Mixer, or equivalent. This use is restricted to the Stabilization Building.

(2) Treatment of cesium-137-contaminated electric arc furnace dust (United States Environmental Protection Agency designation KO61) and incident related material utilizing the procedure described in module OP-1.4.7, issue date of 9/18/98, revision 1, titled "KO61 And Incident Related Material Stabilization Process." In addition to the procedures described in OP-1.4.7, all doors to the stabilization building shall be closed and remain closed during the processing of the waste.

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22. D. (continued)

- (3) Solvated Electron Technology (SET) of mixed-waste using the Commodore D/2 unit for pilot testing in accordance with the commitments made in the letters dated September 9, 1999 (with attachments), October 6, 1999 (with attachments, including the procedures identified as wCs Work Instruction for the Commodore D/2 Unit, WI99-1.16), and October 7, 1999 (with attachments). This treatment method is restricted to the following waste matrices and radionuclides:

Waste Matrix

Radionuclides

Soil (degreaser sludge)

U-234, U-235, U-238, Cs-137, K-40

Moist solids, water on top

U-234, U-235, U-238, Cs-137

Oil/Freon

U-234, U-235, U-238, K-40, Co-57, Co-60, Cs-134, Cs-137, Ce-144, Eu-152, Eu-156, Rb-106, Sb-125, Zn-65, Pb-212

Freon soaked soil

U-234, U-235, U-238, Cs-137, K-40

Sodium contaminated metals

Co-60

Floor removal wastes

Ag-116, Co-58, Co-60, Cs-137

Thinners and solvents

Co-60, Cs-137, Ce-144, H-3, C-14, Tc-99, I-129

Spill Cleanup Material

Co-60, Sb-125, Cs-134, Cs-137

Sludge

K-40, Co-60, Sb-125, Cs-134, Ra-226, Cs-137

Waste grease

Co-60, Cs-134, Cs-137

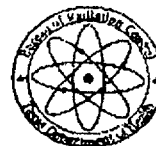
Compactor Sludge

Ag-110, C-14, Co-58, Cs-134, Cs-137, Fe-55, Sb-125, H-3, Mn-54, Ni-63, Sr-90, Tc-99, U-234, U-238, Zn-65

Admac Sludge

Co-60, Cs-134, Cs-137, Eu-154, Eu-155, Mn-54, Sb-125, Zn-65

- E. Storage of radioactive waste in the Bin Storage Area, Container Storage Building and the Stabilization Building.

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22. (continued)

F. Research and development in the treatment of radioactive waste using the Commodore Mobile Demonstration Unit as described in and in accordance with the limitations and specifications contained in the letters dated February 3, 1999 and April 23, 1999, and attachments and enclosures, including wCs Work Instructions for CMDU2, dated April 9, 1999, WI99-1.2 and Attachment A to WI99-1.2.

23. In addition to the limits specified by Conditions 5, 6, 7 and 8, the licensee shall restrict possession of waste to the following conditions.

A. The total volume physically present shall not exceed 302,865 cubic feet and shall be further limited to the following building limitations:

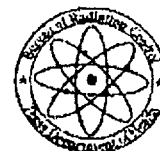
1. Bin Storage Area: 262,440 cubic feet
2. Container Storage Building: 36,750 cubic feet
3. Stabilization Building: 3,675 cubic feet

B. Any waste container shall be counted as a full container in the volume inventory unless it can be readily verified as empty.

C. Waste stored in the Bin Storage Area that is not contained within a High Integrity Container will be restricted to Low Specific Activity or Surface Contaminated Object, as defined by Title 10 of the Code of Federal Regulations (CFR) Part 71 (as amended), or depleted uranium.

D. The volume authorized in License Condition No. 23.A shall be further limited in accordance with the amount of Financial Assurance in place with the Agency:

1. Financial Assurance = \$7,084,973. No more than 3,822 cubic feet of waste that has a current commercial disposal option, 58,320 cubic feet of cesium-137-contaminated electric arc furnace dust (U. S. Environmental Protection Agency designation KO61), and 240,723 cubic feet of waste from authorized federal agencies;
2. Financial Assurance = \$18,467,478. No more than 18,172 cubic feet of waste that has a current commercial disposal option, 58,320 cubic feet of cesium-137-contaminated electric arc furnace dust (U. S. Environmental Protection Agency designation KO61), and 226,373 cubic feet of waste from authorized federal agencies; or
3. Financial Assurance = \$32,881,617. No more than 36,344 cubic feet of waste that has a current commercial disposal option, 58,320 cubic feet of cesium-137-contaminated electric arc furnace dust (U. S. Environmental Protection Agency designation KO61), and 208,201 cubic feet of waste from authorized federal agencies.
4. The volume of waste that has a current commercial disposal option authorized in License Condition Nos. 23.D.1 through 23.D.3 may include up to 2,700 cubic feet of commercial mixed waste that can not be processed into a form that has a current disposal option.

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24. All waste not in storage shall be physically restricted in the following ways:
- A. (1) waste meeting the requirements of low specific activity group I radioactive material, as specified in Title 49 of the CFR (as amended), shall be processed within the confines of the Stabilization Building; and
 - (2) all other waste shall be processed within the confines of a PERMACON, or equivalent, structure; or
 - B. waste shall be packaged in accordance with Title 49 of the CFR (as amended) requirements while in transit between the Bin Storage Area, Container Storage Building, Stabilization Building, or offsite.
25. All waste holding times shall be limited to the following:
- A. All waste shall be initially processed within 10 days of placement within the Stabilization Building. All waste shall be transferred out of the Stabilization Building within 30 days of placement within the Stabilization Building;
 - B. All waste shall be placed into interim storage or transferred to an authorized recipient within 365 days of the initial date of receipt; and
 - C. All waste authorized under License Condition No. 23.D.4 shall be returned to the generator or an appropriately authorized waste processor within 60 days of the initial date of receipt.
26. A. No waste shall be commingled with material requiring a separate disposal methodology.
- B. In spite of the licensee's procedures, no waste from an authorized Federal agency shall be commingled with waste from another generator.
27. The licensee shall maintain for inspection by the Agency an inventory of all waste possessed under this license. The inventory shall show the radionuclide, date received, from whom received, amount of activity, physical form, date processed, original and reassigned drum or container number, and the date transferred for disposal. In addition, the licensee shall at least monthly generate a cumulative inventory which demonstrates compliance with License Condition Nos. 19, 23, and 25 (including waste form requirements for interim storage), and the appropriate processing group limits of 25 TAC §289.254(d). The licensee shall maintain a copy of the inventories, for a minimum of five (5) years from the date of generation, for inspection by the Agency.
28. A summary of all waste processing activities for the preceding calendar year shall be generated no later than March 1 of each year and maintained for inspection until disposition is authorized by the Agency. This report shall include total throughput for each individual process; all material received; all material transferred; all spills outside of primary containment; and a current inventory at the end of the report. Material transferred and received shall also be listed by licensee. All categories shall include activity by isotope and total volume.

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29. A. Waste containers containing radioactive waste meeting the requirements of low specific activity material, group I (LSA-I), as specified in Title 49 of the Code of Federal Regulations, Section 173.403, may be opened for sampling of the contents or container maintenance or repair in a Permacon, the Container Storage Building, or Stabilization Building.
- B. All other waste containers shall only be opened in PERMACON or equivalent structures.
30. If air sample results indicate that an airborne release in excess of ten times the limits of 25 TAC §289.202(ggg)(2), Table I, Column 3 occurred to the restricted area or to any portion of the restricted area, the licensee shall, within 72 hours of the exposure, perform bioassays on all individuals who were present.
31. A. The licensee shall notify the Agency in writing or via facsimile at least three (3) working days in advance of shipping its low-level radioactive waste to a commercial treatment, storage, or disposal site.
- B. The licensee shall notify the Agency in writing or via facsimile at least three (3) working days in advance of initial receipt of waste pursuant to this license.
- C. Notification required by this Condition shall be made to:
- LLRW Notification
ATTN: Division of Compliance and Inspection
Bureau of Radiation Control
Texas Department of Health
1100 W. 49th Street
Austin, Texas 78756-3189 or
by facsimile to: (512) 834-6654.
32. A. In accordance with the application dated January 24, 1997, the licensee may only modify the following procedures: Operations Procedures; Occupational Health and Safety Procedures; Quality Assurance Procedures; Emergency Procedures; Laboratory Procedures and/or Radiation Safety Procedures. All modifications shall provide at least equivalent levels of radiation safety and administrative control. Documentation of all modifications, and the corresponding internal review, shall be maintained for inspection for a minimum of five (5) years.
- B. In the radiation safety procedure RS-3.3.62, wherever Form RS 3.3.61-1 is referenced, it shall be understood that Form RS 3.3.62-1 is meant.
33. Modification of the facility or the processes described in the documents listed in License Condition No. 34 is prohibited except as authorized pursuant to amendment of this license.
- A. The licensee may modify the facility as described in the licensee's letter dated October 6, 1998 regarding the Permacon structures.
- B. The licensee may modify the bin storage area as described in the letters dated January 14, 1998 and May 3, 1999.

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33. (continued)

C. The licensee may modify the Stabilization Building as described in the letter dated January 14, 1998 and May 3, 1999.

34. The licensee must secure all applicable licenses, permits, and/or authorizations from the appropriate regulatory authorities before engaging in the authorizations granted by this license.

35. Except as specifically provided otherwise by this license, the licensee shall possess and use the radioactive material authorized by this license in accordance with statements, representations, and procedures contained in the following:

application dated January 24, 1997 and amendment dated May 2, 1997, including Appendices Volume I-V, Site and Facility Drawings, and Drawing Specification;

letters dated January 14, 1998 (signed by Allen Messenger); March 5, 1998 (with Andrews Site Organizational Chart and vice president operations/facility manager, radiation safety officer, and operations manager position descriptions attachments) and October 6, 1998 (with attachments); February 3, 1999; and April 23, 1999 (with attachments and enclosures, including wCs Work Instructions for CMDU2, dated April 9, 1999, WI99-1.2 and Attachment A to WI99-1.2); May 3, 1999 (signed by Allen Messenger); September 9, 1999 (with attachments), October 6, 1999 (with attachments, including wCs Work Instruction for the Commodore D/2 Unit, WI99-1.16) and October 7, 1999 (with attachments); and

procedure titled "Processing Mixed Waste," Issue Date: 9/18/98, Rev. 1 (replaces Rev. 0);

procedure titled "Receipt and Storage of Radioactive and Mixed Waste," Issue Date: 9/18/98, Rev. 1 (replaces Rev. 0);

procedure titled "KO61 and Incident Related Material Stabilization Process," reference no.: OP-1.4.7, Issue Date: 9/18/98, Rev. 1 (replaces Rev. 0); and

procedure titled "Survey Sample Analysis and Activity Calculation," reference no.: RS-3.3.62, Issue Date: 6/23/98, Rev. 0.

Title 25 of the TAC Chapter 289 shall prevail over statements contained in the above documents, unless such statements are more restrictive than the regulations.

PS:tc

FOR THE TEXAS DEPARTMENT OF HEALTH

Date March 14, 2000

Ruth E. McBurney
Ruth E. McBurney, C.H.P., Director
Division of Licensing, Registration,
and Standards

Attachment D – Drum Mixer Work Instruction (OP-1.4.9)

WCS <i>WASTE CONTROL SPECIALISTS LLC</i>	Operations	Issue Date 07/07/99	OP-1.4.9
		Revision 1	Page 1 of 3
DRUM MIXER OPERATIONS			

1.0 PURPOSE AND SCOPE

This procedure provides instructions for the sequence necessary to achieve stabilization/solidification of radioactive and hazardous materials. This procedure applies to all in-drum solidification/stabilization.

2.0 EQUIPMENT AND MATERIALS

Drum Mixer
 Admixture Materials defined in applicable recipe
 Any other materials specified in the applicable Radiation Work Permit (RWP)

3.0 RESPONSIBILITIES

Radiation Operations Supervisor, Laboratory Manager, or the Operations Manager will determine amount of solidification media or stabilization agents required for successful treatment.

4.0 PROCEDURE

4.1 PREREQUISITES

- 4.1.1 Individuals who operate and use the drum mixer must be qualified to do so through documented on the job training.
- 4.1.2 Individuals working with radioactive and hazardous waste must have up-to-date Radiation Worker II and HAZWOPER training.
- 4.1.3 Obtain any project specific Work Instructions as appropriate.

4.2 PRECAUTIONS AND LIMITATIONS

- 4.2.1 Do not add solidification media or stabilization agents to the waste that is being treated without proper agitation. If agitation is lost during the course of operations, discontinue addition of solidification media or stabilization agents.
- 4.2.2 Wear appropriate safety clothing when handling solidification media, stabilization agents, and waste, as specified in the applicable safety sheet or Radiation Work Permit (RWP).

Approval:

Signature On File 7/8/99
 Radiation Safety Officer Date

Signature On File 7/8/99
 Radiation Operations Supervisor Date

Signature On File 7/8/99
 Operations Manager Date

WCS WASTE CONTROL SPECIALISTS LLC	Operations Drum Mixer Operations	Issue Date 07/07/99	OP-1.4.9
		Revision 1	Page 2 of 3

4.3 INSTRUCTIONS

4.3.1 PREPARATIONS FOR DRUM MIXING OPERATIONS:

1. Ensure that the Radiation Safety Department has written or established a suitable RWP for stabilization/solidification activities in the Permacon.
2. Check, or request that the Radiation Safety Department check, the ventilation system to ensure that the Permacon is maintained under negative pressure.
3. Place the waste and necessary solidification media and/or stabilization agents into the Permacon near the mixing system.
4. Ensure that all system interfaces (both electrical and hydraulic) are correctly connected and operational. The electrical requirements are 480 VAC, 60 Hz, 50 amp.

4.3.2 WASTE TRANSFER

1. If the original waste container is not suitable for drum mixing operations, select a new and/or clean drum in which to stabilize/solidify the waste.
2. Weigh and record the weight of the empty new and/or clean drum, if applicable.
3. Open the original drum of waste and determine the safest and most effective means of transferring the contents to the new and/or clean drum, if applicable.
4. Transfer the waste from the original drum to the new and/or clean drum.
5. If the original drum is suitable for stabilization/solidification, open the drum and determine whether the volume of waste will accommodate the addition of the solidification media, stabilization agents, or other admixtures as per the approved stabilization/solidification recipe. If it will not, stage the drum with the necessary amount prior to stabilization/solidification.
6. Weigh and record the weight of the staged drum that is to be stabilized/solidified.

4.3.3 STABILIZATION/SOLIDIFICATION

1. Place the staged drum into the In-Drum Solidification System and secure.
2. Start the mixer.
3. While turning, lower the mixing mechanism into the waste.
4. Adjust the speed of the mixer as appropriate.
5. Weigh and record the weights of the solidification media, stabilization agents, or other admixtures that are added to the waste, as per the approved stabilization/solidification recipe, remembering to add them to the waste in the specified order.

WCS WASTE CONTROL SPECIALISTS LLC	Operations Drum Mixer Operations	Issue Date 07/07/99	OP-1.4.9
		Revision 1	Page 3 of 3

6. Mix thoroughly.
7. Slow the rotation of the mixer and carefully remove the mixing mechanism from the waste. Take necessary precautions to ensure that none of the treated waste falls out of the drum.
8. If required, take a sample of the treated waste for in-house analysis and/or off-site analysis.
9. Remove the drum of waste and place in an appropriate area. Label the drum and place the drum lid on the drum but do not secure until such time that it can be verified that the treated waste has properly cured and there is no free-standing liquid visible. This verification will be guided by the Radiation Operations Supervisor.
10. Once it has been verified that the waste has properly cured and there is no free-standing liquid visible, apply a layer of absorbant to the top of the treated waste and securely fasten the drum lid in accordance with the requirements of the applicable disposal facility.
11. Coordinate with the Radiation Safety Department so that the treated drums can be surveyed out of the Permacon and transferred to the Container Storage Area (CSA) where they will be stored until they are shipped for final disposition.

5.0 RECORDS

- 5.1 Recorded information will be transferred to the appropriate Batch Tracking Form.
- 5.2 Records generated as a result of this procedure are quality assurance records and will be turned over to the Records Administrator upon completion of the task.

6.0 REFERENCES

WCS Quality Assurance Plan

Attachment E – Bulk Treatment Work Instruction (OP-1.4.10-1)

WCS WASTE CONTROL SPECIALISTS LLC	Operations	Issue Date 8/18/00	OP-1.4.10
		Revision 0	Page 1 of 3
BULK SOLIDIFICATION/STABILIZATION OPERATIONS			

1.0 PURPOSE AND SCOPE

This procedure provides instructions for the sequence necessary to achieve stabilization/solidification of radioactive and hazardous materials. This procedure applies to all bulk stabilization/solidification activities.

2.0 BUILDINGS, EQUIPMENT AND MATERIALS

Air Lock Building
 Permacon Building
 Mixing Pit
 Prentice Arm
 SSI Shear Shredder
 Fork Lift Mounted Drum Dumper
 Admixture Materials defined in applicable recipe
 Any other materials specified in the applicable Radiation Work Permit (RWP)

3.0 RESPONSIBILITIES

Radiation Operations Supervisor, Laboratory Manager, or the Operations Manager will determine amount of solidification media or stabilization agents required for successful treatment.

4.0 PROCEDURE

4.1 PREREQUISITES

- 4.1.1 Individuals who operate and use the SSI shear shredder, the fork lift mounted drum dumper and the Prentice arm must be qualified to do so through documented on-the-job training.
- 4.1.2 Individuals working with radioactive and hazardous waste must have up-to-date Radiation Worker II and HAZWOPER training.
- 4.1.3 Obtain any project specific Work Instructions as appropriate.

4.2 PRECAUTIONS AND LIMITATIONS

- 4.2.1 Do not add solidification media or stabilization agents to the waste that is being treated without proper agitation. If agitation is lost during the course of operations, discontinue addition of solidification media or stabilization agents.
- 4.2.2 Wear appropriate safety clothing when handling solidification media, stabilization agents, and waste, as specified in the applicable safety sheet or RWP.

4.3 INSTRUCTIONS

Approval:			
Radiation Safety Officer		Date	
Radiation Operations Supervisor		Date	
Operations Manager		Date	

WCS WASTE CONTROL SPECIALISTS LLC	Operations Bulk Solidification/Stabilization Operations	Issue Date 08/18/00	OP-1.4.10
		Revision 0	Page 2 of 3

4.3.1 PREPARATIONS FOR BULK SOLIDIFICATION/STABILIZATION OPERATIONS:

1. Ensure that the Radiation Safety Department has written or established a suitable RWP for stabilization/solidification activities in the Permacon.
2. Check, or request that the Radiation Safety Department check the ventilation system to ensure that the Permacon is maintained under negative pressure.
3. Open the east airlock rollup door and allow a truck to enter the airlock with an empty container into which the solidified/stabilized waste will be placed. Close the airlock door after the truck is inside the airlock. Open the Permacon rollup door and allow the truck to unload the empty container on the cover of MT-004. Move the truck out of the Permacon area and close the Permacon rollup door. Open the airlock door and allow the truck to exit the airlock. Close the airlock door.
4. Open the west airlock rollup door and allow a truck to enter the airlock with a container of waste material. Close the airlock door after the truck is inside the airlock. Open the Permacon rollup door and allow the truck to unload the waste into the mixing pit (MT-003). Move the truck out of the Permacon area and close the Permacon rollup door. Inspect the truck to ensure that the waste does not adhere to the truck, the tires or to the exterior of the waste container. Open the airlock door and allow the truck to exit the airlock. Close the airlock door.

4.3.2 STABILIZATION/SOLIDIFICATION

1. Transfer the predetermined amount of each stabilization/solidification agent into the weigh hopper from the appropriate bulk reagent silo. Once the proper weight of material is in the weigh hopper, start the screw conveyor and transfer the material into the mixing pit. Record the weights of the solidification media, stabilization agents, or other admixtures that are added to the waste, as per the approved stabilization/solidification recipe, remembering to add them to the waste in the specified order.
2. After all reagents have been transferred into the mixing pit begin the mixing operation utilizing the Prentice arm and the mixing grapple. Continue the mixing of the materials until a uniform and homogenous material is achieved. Water and/or leachate may be added to the material as directed to achieve the proper consistency and to promote the final reaction to achieve successful solidification/stabilization.
3. If required, take a sample of the treated waste for in-house analysis and/or off-site analysis.
4. Transfer the waste material from the pit into the appropriate container (rolloff, drum or B-25 box) with the Prentice arm and clam. Do not secure the top of the container until such time that it can be verified that the treated waste has properly cured and there is no free-standing liquid visible. This verification will be guided by the Radiation Operations Supervisor.

WCS WASTE CONTROL SPECIALISTS LLC	Operations	Issue Date 08/18/00	OP-1.4.10
	Bulk Solidification/Stabilization Operations	Revision 0	Page 3 of 3

5. Once it has been verified that the waste has properly cured and there is no free-standing liquid visible, apply a layer of absorbant to the top of the treated waste and securely fasten the container top in accordance with the requirements of the applicable disposal facility.
6. Coordinate with the Radiation Safety Department so that the treated waste containers can be surveyed out of the Permacon and transferred to the Container Storage Area (CSA) where they will be stored until they are shipped for final disposition.

5.0 RECORDS

- 5.1 Recorded information will be transferred to the appropriate Batch Tracking Form.
- 5.2 Records generated as a result of this procedure are quality assurance records and will be turned over to the Records Administrator upon completion of the task.

6.0 REFERENCES

WCS Quality Assurance Plan