



NSSI

SEALED SOURCES

NSSI accepts a wide range of sources including transuranic sources and sources contained in gauges and other devices.

NSSI can accept sources from both Texas and Non-Texas Compact generators.

NSSI services include storage, leak testing, transportation, and DOE/OSRP source consolidation.

LLRW/NORM SERVICES

NSSI provides on-site services, characterization, profile submittal, transportation, storage, and disposal for a broad range of LLRW and NORM materials including petrochemical and refining sludge, pipe scale, and refractory.

Occupies approximately 5 acres with a storage capacity of up to 4,000 drums.

NSSI currently holds two Texas Radioactive Material Licenses (LO-2991 and RO-1811).

RCRA

NSSI is a fully licensed Part B facility that accepts a full spectrum of hazardous waste materials including all D,F,P, U, and K hazardous waste codes.

The company has the capability to treat gases, liquid, sludges, solids and soils along with mercury contaminated substances and fluorescent tubes.

MIXED WASTE

NSSI services and supports the government, industrial, radiopharmaceutical, and education sectors.

NSSI is a fully licensed and permitted to accept, store, and treat all mixed wastes including special nuclear materials.

TRITIUM RECOVERY METHODS

NSSI conducts innovative research on tritium recovery methods that are robust, scalable and applicable to diverse sources including:

- **Carbon/Molecular sieve traps**
- **Light and Heavy Water Solvents**
- **Tritium ECD**
- **Tritium luminous devices**
- **Tritium targets and foils**
- **Uranium storage beds**

MIXED WASTE

Waste containing both radioactive and hazardous constituents has been generated since the beginning of the commercial nuclear industry. This waste has come to be known as mixed waste. When the first Federal regulations covering radioactivity were adopted, they were intended to apply to all radioactive materials, without consideration of other hazardous characteristics. During the early 1980s, State and Federal agencies began to question generators and site operators regarding mixed wastes and compliance with the requirements of RCRA. By 1985, as a result of public and congressional attention, radioactive/hazardous mixed wastes were addressed as a part of the Low-Level Radioactive Policy Amendments Act (LLRWPA) of 1985. In 1988, the EPA assumed regulatory control of mixed waste storage and treatment facility (TSDF) permitting. Mixed wastes are now subject to joint control by the NRC/Agreement States and EPA.

TREATMENT

NSSI accepts a full spectrum of hazardous and radioactive waste materials including all D, F, P, U and K hazardous waste codes and all radionuclides, including special nuclear materials. NSSI treats gases, liquids, solids, sludges, and soils. NSSI also accepts and treats recyclables, such as chlorofluorocarbons, solvents, mercury compounds, mercury contaminated substances and fluorescent tubes.

PERMITS

NSSI is unique in that the facility permits allow storage and treatment of RCRA hazardous, mixed hazardous/radioactive and radioactive waste materials.

NSSI operated as an interim status Waste Treatment and Storage facility from 1980 to 1990. NSSI subsequently submitted the required Part B application and received a final Part B permit in October, 1990. Permit modifications are requested on an ongoing basis as new treatment technologies are proven and commercialized and as additional facilities are needed.

MIXED WASTE GENERATION

Mixed waste generation studies have indicated that 3-10% of all Low Level Radioactive Waste is mixed waste containing both radioactive and chemical constituents. Mixed wastes are generated by many industrial, medical, and educational facilities.

INDUSTRIAL FACILITIES

TYPE OF MIXED LLW	Pharmaceutical manufacturing and research	Biotechnology manufacturing and research
LIQUID SCINTILLATION COCKTAILS OR FLUIDS	Laboratory counting procedures	Laboratory counting procedures
ORGANIC CHEMICALS	Residue from research and manufacturing; Cleaning of laboratory and process equipment	Spent reagents from experiments; Cleaning of laboratory equipment
TRASH WITH ORGANIC CHEMICALS	N/A	
LEAD	Contaminated during use	Contaminated during use
LEAD DECONTAMINATION SOLUTIONS	N/A	N/A
WASTE OIL	Oil from contaminated equipment	Oil from contaminated equipment
TRASH WITH OIL	Oil from contaminated equipment	Oil from contaminated equipment
CHLOROFLUOROCARBON (CFC) SOLVENT	Residue from research	Residue from research
CFC CONCENTRATES	N/A	N/A
AQUEOUS CORROSIVE LIQUIDS	Residue from research	Residue from research
CHROMATE WASTE	N/A	N/A
CADMIUM WASTE	N/A	N/A

Other manufacturing and research	Spent fuel storage	Waste processor
Laboratory counting procedures	N/A	Processing to separate fluid from vials
Residue from research and manufacturing; Cleaning of laboratory and process equipment; Expired product	N/A	Cleaning of process equipment
N/A	N/A	N/A
Residue from manufacturing	N/A	Separation from waste
N/A	N/A	Decontamination of lead shielding
Oil from radioactive systems/areas	N/A	Oil from radioactive systems
Oil from contaminated equipment	N/A	Oil from contaminated equipment
Residue from research	N/A	Contaminated trash
N/A	N/A	Clothes laundry; Tool decontamination
Residue from research	Cleaning of spent fuel casks; Black flush of resin filters	N/A
N/A	N/A	N/A
N/A	N/A	N/A

MEDICAL/ACADEMIC INSTITUTIONS

TYPE OF MIXED LLW	Medical / clinical and research	University non medical research
LIQUID SCINTILLATION COCKTAILS OR FLUIDS	Laboratory counting procedures	Laboratory counting procedures
ORGANIC CHEMICALS	Cleaning of process equipment	Cleaning of laboratory equipment
TRASH WITH ORGANIC CHEMICALS	Contaminated trash	Contaminated trash
LEAD	Contaminated during use	Contaminated during use
LEAD DECONTAMINATION SOLUTIONS	N/A	N/A
WASTE OIL	N/A	Oil from radioactive systems
TRASH WITH OIL	Oil from contaminated equipment	Oil from contaminated equipment
CHLOROFLUOROCARBON (CFC) SOLVENT	HPLC	HPLC
CFC CONCENTRATES	N/A	N/A
AQUEOUS CORROSIVE LIQUIDS	Residue from research	Residue from research
CHROMATE WASTE	N/A	N/A
CADMIUM WASTE	N/A	N/A

NUCLEAR INDUSTRY

TYPE OF MIXED LLW	Power plants
LIQUID SCINTILLATION COCKTAILS OR FLUIDS	Laboratory counting procedures
ORGANIC CHEMICALS	Cleaning of laboratory equipment; Cleaning of contaminated components
TRASH WITH ORGANIC CHEMICALS	Contaminated trash
LEAD	Contaminated during use
LEAD DECONTAMINATION SOLUTIONS	Decontamination of lead shielding
WASTE OIL	Oil from radioactive systems and hot shop
TRASH WITH OIL	Oil from radioactive systems and hot shop
CHLOROFLUOROCARBON (CFC) SOLVENT	Clothes laundry
CFC CONCENTRATES	Clothes laundry; Tool decontamination
AQUEOUS CORROSIVE LIQUIDS	N/A
CHROMATE WASTE	Resin change outs
CADMIUM WASTE	Spend welding rods, Weld cleaning; Equipment decontamination

ON-SITE SERVICES

NSSI's management, technical and operations experts are available to assist generators and service companies in the development of safe, secure and cost contained solutions to hazardous waste management problems.

The NSSI waste management facility is permitted to treat wastes in portable equipment in segregated container storage areas.

STORAGE

The NSSI facility is permitted for storage and processing in 20 tanks with a total combined capacity of 58,530 gallons. An additional capacity of 180,793 gallons of container storage is provided in 5 container storage areas.

NSSI provides temporary permitted storage services for generators of hazardous and radioactive waste.

PACKING & LABELING

NSSI provides customer site packing and labeling services and transport to the NSSI treatment facility. NSSI is available for emergency response for decontamination of chemical and nuclear material spills and for remediation services.

TRANSPORTATION

NSSI transports waste materials in its own vehicles in the immediate NSSI facility area. NSSI has arrangements with many other permitted waste transporters to transport waste to NSSI from generators outside the Houston area.

ACCEPTABLE WASTES

- Reactives
- Acutely hazardous wastes
- Benzene
- Isobutanol
- Toxics
- Consolidated hazardous solids
- Methanol
- Cyanides
- Cyclohexane
- Methyl Ethyl Ketone
- Wastewater containing organics, metals and oils
- Cyclohexanone
- Napthalene
- Organic liquids
- 1,4 Dioxane
- Pyridene
- Sludge from oxidation/reduction
- Ethyl acetate
- Toluene
- Solids from solvent still
- Formaldehyde
- Xylene
- Stabilized waste
- Cumene
- Empty containers
- Sludge from blending/separation/storage tanks
- Waste carbon adsorption media and solids
- Miscellaneous chemical contaminated materials
- Spent halogenated solvents
- Filter solids and media
- Lab packs and containers to be consolidated into lab packs
- Oil and solvents
- Hazardous liquids and solid material
- Paint sludge
- Acetone
- Ethyl ether
- Paint sludge containing chlorinated solvents
- n-Butyl alcohol
- Blended hazardous waste fuel
- Ignitable wastes
- Corrosives
- Compressed hazardous waste gas

SPECIAL PROVISION

Radioactive or nuclear waste materials (i.e., waste material which emits ionizing radiation spontaneously) which also fit the acceptable waste descriptions above.

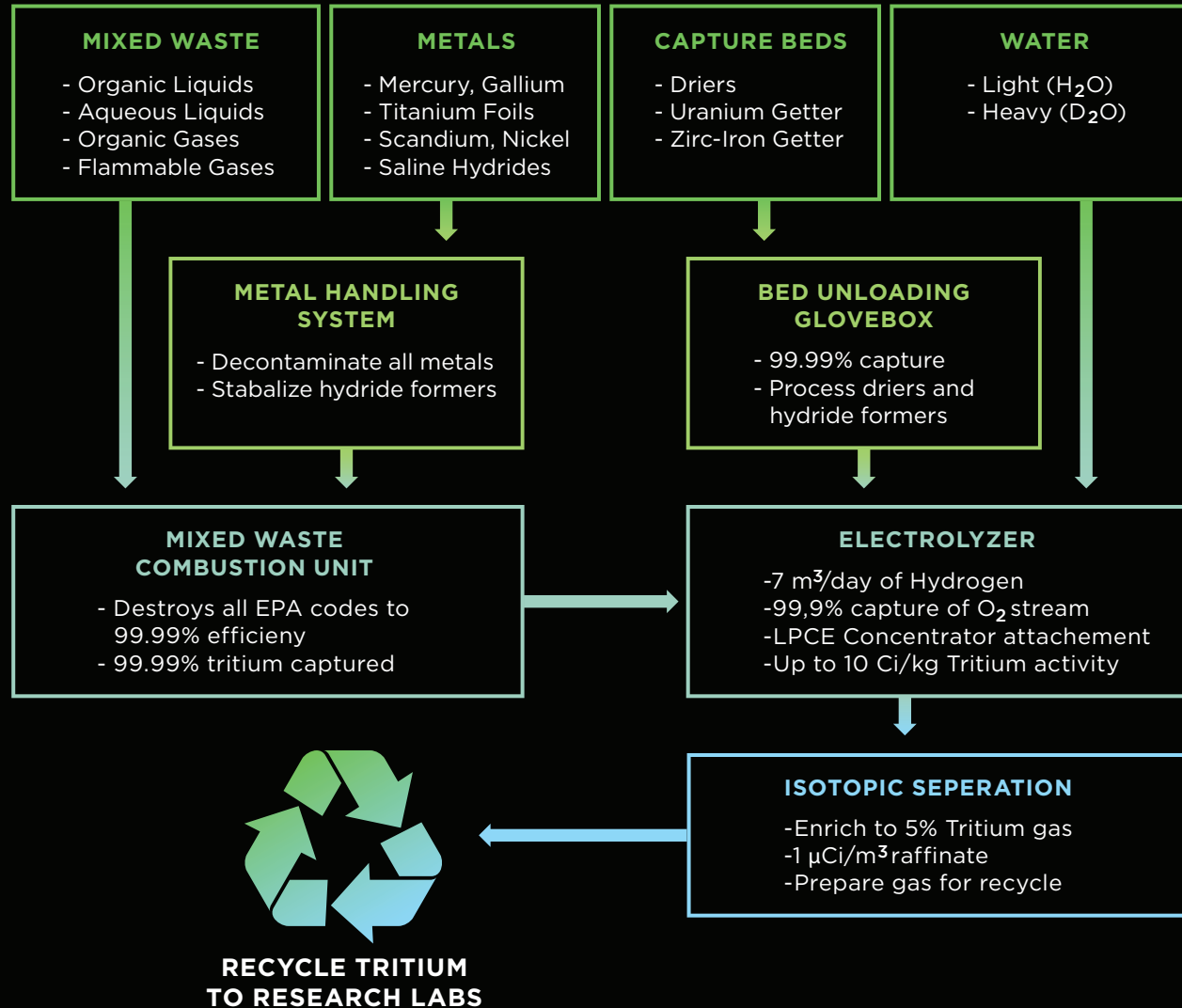
HAZARDOUS AND MIXED WASTE PERMITTED TREATMENTS

- Recovery of waste chemicals and other material for reuse or resale
- Blending of wastes to form a fuel for use off site
- Recycling of solvents
- Breaking down lab packs for reconsolidation for off-site disposal or on-site processing
- Consolidation of waste containers into labpacks
- Neutralization, oxidation, reduction, and other chemical reactions or physical processing (e.g. distillation) to render wastes less hazardous or more suitable for offsite disposal or on-site processing in an authorized tank or container storage unit
- Cleaning of cullet or particulate solids, empty drums, and equipment
- Shredding of containers for recovery of contents\
- Centrifugation, filtration, and ion exchange in portable equipment within an authorized storage area
- Solidification or stabilization (including amalgamation) in portable equipment in an authorized container storage area
- Consolidation of miscellaneous compatible hazardous waste
- Chemical and/or mechanical treatment to accomplish separation, settling, or clarification in portable equipment within an authorized container storage area
- Removal of hazardous constituents by absorption on solid media in portable equipment within an authorized container storage area
- Drying of solids to meet off-site disposal criteria for release of water only

TRITIUM RESEARCH & RECYCLING

NSSI is able to process all types of Tritiated Waste. All reclaimed Tritium is recycled and used in research laboratories. NSSI offers the best alternative to ground disposal.

TRITIATED WASTE TYPES



OTHER SERVICES

DECONTAMINATION SERVICES

NSSI has the specialized equipment and trained personnel to perform decontamination and facilities involving radioactive materials and NORM spills. Decontamination services are provided by an experienced health physics staff. In addition to the problems associated with actual cleanup, advice is available on possible legal implications and the handling of press releases and other public statements.

RADIATION SAFETY SURVEYS

NSSI conducts surveys to ensure compliance with federal and state regulations relating to the use of machine and radionuclide produced radiation.

Environmental monitoring as well as measurements of radiation levels in restricted areas ensures that regulatory limits are met.

A variety of techniques are available including TLD, instruments surveys, air samplers, smear surveys, and bioassays.

INSTRUMENTS AND ACCESSORIES

NSSI stocks a complete inventory of radiation instruments, detectors, and accessory items including lead shields and bricks for resale.

CONSULTING SERVICES

NSSI offers comprehensive consulting services to fit the needs of all users of radioactive material and radiation producing machines. Consulting services include, but are not limited to, registration and licensing assistance, radiation handling procedures, radiation safety training for employees and supervisory personnel, facility design, and license termination. These services are performed under the supervision of qualified in house engineers and health physics personnel.

SPECIALIZED WASTE PROCESSING

Specialized waste processing
NSSI fabricates custom equipment such as tritium processors and vitrifications equipment for materials processing.

TRACER APPLICATIONS

The application of radioactive tracers in industry are as diverse as industry itself. Radioisotopes allow the tracing of subsurface fluid flow, abrasion studies, corrosion evaluation, location of lines, line stoppage, as well as merriment of variation in density, and chemical content. NSSI provides a knowledgeable staff to plan, execute, and evaluate all phases to assure a successful tracer project.

