

Our workforce consists of subject matter experts who specialize in the safe management of radioactive, hazardous, and nonhazardous material. Headquartered in Salt Lake City, Utah, we have operations across the United States, Canada, and Japan.



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^ MHF manufactures a wide variety of durable containers, flexible packages, and railcar/container liners in its packaging facility in Tennessee.



^ EnergySolutions constructs DOT Type A, IP-II, and NRC Type B shipping casks



^ Track mobile positioning system lines gondola railcars into North Bergen, NJ transload facility.



^ Transportation of highly irradiated components

# Transport & Logistics

EnergySolutions addresses the full life cycle of transportation logistics from characterization and packaging to off-site shipment for further processing, volume reduction, and final disposition.

## Over-Road

EnergySolutions' subsidiary, Hittman Transport Services (HTS), is the premier transporter of low-level radioactive waste. HTS has accumulated more than 250 million safe miles and offers the following assets and services: (i) largest fleet of tractors and trailers dedicated to the nuclear industry; (ii) road, rail, and water options; and (iii) extensive fleet of reusable IP-I and IP-II ISO containers and tankers.

PHTS Logistics, an EnergySolutions' company, is a leader in truckload (TL) and less than truckload (LTL) services in Canada. PHTS is a qualified carrier of Class 1, 2, 3, 4, 5, 6, 8, and 9 dangerous goods and Class 7 radioactive materials. PHTS also offers rush service and secure warehousing capabilities to safely transport and store specialized cargos.

## Rail-Centric

MHF Services, an EnergySolutions' company, has 25 years of experience in asset-based, rail-centric logistics with an impeccable safety and regulatory compliance record. MHF employs direct rail transport and multimodal systems that combine intermodal, rail, truck, and marine conveyances. MHF enjoys long-term relationships in the railcar leasing market and existing agreements with reputable leasing

companies that allow MHF access to specialty railcars on a short- or long-term basis. MHF has the largest private fleet of railcars serving the HTRW industry in the U.S. with a national network of five permanent transload facilities with bulk and packaged transportation services (MA, NJ, AZ, NV, TN). Temporary facilities can be constructed on-site or at a rail junction.

## Shipping Casks

EnergySolutions offers the largest fleet of Industrial and Type A & B shipping casks to the industry, with more than 90 casks of different sizes, shielding, and certifications. It also provides shielded, disposable liners for the transport of radioactive materials.

## Durable & Flexible Packaging

MHF Services is a leading provider of durable and flexible packaging products for a wide range of industrial and environmental applications. MHF combines its knowledge of packaging and transportation to offer the most cost-effective, safe, and compliant solutions. MHF packaging systems are supplied under a stringent Quality Assurance Program and are compliant with applicable federal regulations.



^ Hittman Transport Services ships cargo across the U.S. and Canada.



^ Bear Creek Operations in Tennessee



^ EnergySolutions Canada offers nearly 300,000 square feet of customized licensed areas and containment

LICENSED FACILITIES



AMBASSADOR FOR



EXPERTS IN OPERATIONAL WASTE MANAGEMENT AND NUCLEAR DECOMMISSIONING

# Treatment & Processing

EnergySolutions provides specialized material treatment and processing services to a wide customer base including government agencies, commercial customers, and major engineering and construction companies.

## Bear Creek Operations

Volume reduction and repackaging for final disposition is the primary goal of the facility. Bear Creek houses radioactive materials processing capabilities including bulk waste assay, decontamination, recycle, compaction, incineration, metal melting for beneficial reuse, and a variety of specialty waste stream management options.

Bear Creek also processes high-activity filters. The recent addition of robotics allows the facility to remotely handle and process any filter—plastic or metal. The facility is able to perform sophisticated remote sorting, segregation, size reduction, and grout encapsulation. These capabilities extend to waste forms such as soil, sludge, and legacy “problem” liners as well as to filters.

## EnergySolutions Canada

EnergySolutions Canada, an ISO 9001 registered company in Brampton, Ontario, Canada, operates a radioactive waste and materials management facility specifically designed to meet CANDU reactor tooling refurbishment. This facility

also offers temperature-controlled, secure storage; sorting, processing, and certification; monitoring and free release; and packaging, brokerage, and transportation support for both domestic and international shipments.

## Memphis Logistics Center

The Memphis Logistics Center offers storage and workshop space for nuclear and non-nuclear industries. The center is ideally located on the Mississippi River and perfectly suited to provide cost-effective logistics services.

## Erwin ResinSolutions

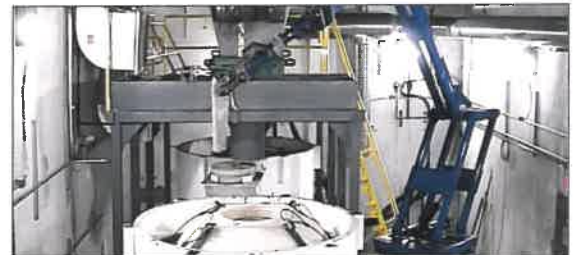
The ResinSolutions Facility in Tennessee safely dewater, chemically reforms, homogenizes, and reduces the volume of spent ion-exchange resins into a solid-phase, stable waste form that can be disposed of at EnergySolutions’ Clive Disposal Facility in Utah.

## Barnwell Processing Facility

This facility performs resin dewatering, waste solidification, and evaporation processes.



Erwin ResinSolutions Facility in Tennessee



High-activity filter processing



EnergySolutions’ Bulk Waste Assay Program assays and separates clean material from contaminated material, allowing for maximum disposal of clean material at an industrial landfill versus a LLRW disposal site.



^ Environmental monitoring station at Clive



^ Performing waste acceptance testing at Clive laboratory



^ Clive is only the tenth Utah facility to receive VPP Star status from the Utah Occupational Safety and Health Division of the Utah Labor Commission.



^ Disposal trench for containerized waste at Barnwell disposal facility.



^ Barnwell A trench for HICs, liners, and boxes

# Permanent Disposal

EnergySolutions provides its customers with the assurance that all treatment and disposal activities are performed in a safe manner and in full compliance with state, federal, and local regulations.

## Clive Disposal Facility

EnergySolutions is the owner-operator of the Clive Disposal Facility in Utah's West Desert, which has been in operation since 1988 and is licensed to dispose of only Class A low-level radioactive waste.

The facility receives radioactive waste in all forms, including but not limited to soil, sludges, resins, large reactor components, dry active waste, and other radioactively contaminated debris. The facility is readily accessible by rail and truck and is designed to receive both bulk (e.g., intermodals, gondolas, etc.) and non-bulk containers (e.g., drums, boxes, etc.).

## Barnwell Disposal Facility

EnergySolutions designed, licensed, and constructed this 235-acre site in South Carolina that accepts Class A, B, and C low-level radioactive waste, including high-activity

waste forms and large components like reactor vessels. In four decades of operation, there have been no regulatory interruptions, and the site has enjoyed unparalleled support from the local community.

## NNSS Site Certification

EnergySolutions' Bear Creek Operations facility in Tennessee was the first commercial facility in the U.S. to become certified to ship low-level radioactive waste to the Nevada National Security Site (NNSS), which disposes of low-level and mixed low-level radioactive waste from approved Department of Energy and Department of Defense sites.

This certification expands EnergySolutions' capabilities, giving its government customers the means to disposition many difficult waste streams not accepted at other commercial and government-operated disposal facilities.



^ Clive receives a reactor pressure vessel for disposal from the San Onofre Generating Station decommissioning project.

# Completed D&D Projects



^ The decommissioning of the Zion power plant advanced the restoration of the Lake Michigan property to its natural state by nearly thirty years. The project set world records for the largest and most successful spent fuel transfer campaign, as well as the most cost-effective reactor vessel internals segmentation project to date.



^ Located on the banks of the Mississippi River, the La Crosse Boiling Water Reactor has been successfully decommissioned, the land fully restored, and final approval to transfer the license back to Dairyland Power Cooperative is expected in 2022.



The SEFOR decommissioning project began in 2017, and was completed with the dismantlement of all above-grade structures; cleanout and removal of all systems, structures, and components from below grade; and the removal of the reactor and ancillary equipment.

# Nuclear Decommissioning

EnergySolutions understands the complexities, costs, and risks associated with all phases of decommissioning and can support its customers with services and options involving SAFSTOR, PROMPT DECON, or a combination/hybrid approach.

## Planning for the End in Mind

Upon plant shutdown, operational mentality and focus quickly shift into decommissioning mode. Early decisions and selected plant activities, if not planned properly during the early years of shutdown, can adversely impact the financial cost of decommissioning. EnergySolutions can help guide and shape the initial entry into decommissioning such that costs are optimized and the site is configured successfully for SAFSTOR and/or prompt decommissioning.

## Full-Spectrum D&D Services

EnergySolutions is the leading radioactive waste management and disposal company in the nation and has integrated those capabilities with other expertise across the decommissioning life cycle to present full spectrum D&D services to the nuclear industry. Its personnel; equipment; and waste transfer, processing, and disposal facilities enables EnergySolutions to provide the right level of services to its customers to resolve decommissioning challenges.

## Proven Experience

EnergySolutions has been offering the full range of services needed for any size decommissioning project for more than two decades, including support for early projects such as Fort St. Vrain, Trojan, and the "Three Yankees" (Connecticut Yankee, Maine Yankee, and Yankee Rowe). It is the most experienced company in the United States in the area of License Termination Plans (LTPs), leading the development and submittal of four LTPs. EnergySolutions has achieved performance confidence with the NRC and other federal, state, and local regulators and stakeholders.

## Subject Matter Experts

- Project Management
- Project Controls/Scheduling
- D&D Cost Estimation
- Spent Nuclear Fuel
- Waste Management
- QA/QC
- Radiation Protection
- Site Characterization
- Reactor Vessel Segmentation
- Regulatory Affairs
- Engineering



▲ In October 2019, the California Environmental Quality Act permit unanimously approved for the SONGS decommissioning project.



▲ In October 2019, EnergySolutions signed a contract with FirstEnergy Corp. to acquire all licenses and assets of Unit 2 at Three Mile Island.

# Recent D&D News



^ Wisconsin's Kewaunee Power Station (KPS) is the tenth facility over the past decade to announce it would enter rapid decommissioning and return the site to greenfield status ahead of schedule. In May 2021, EnergySolutions announced the stock transfer of KPS from Dominion Energy and is in the process of approval by the U.S. Nuclear Regulatory Commission (NRC) and Public Service Commission of Wisconsin.



^ Nuclear decommissioning is not limited to power plants on land. In the spring of 2020, Radiation Safety & Control Services, Inc. (RSCS), a New Hampshire corporation supporting the decommissioning of nuclear plants for more than 25 years, announced a partnership with EnergySolutions to decommission the world's first nuclear-powered merchant ship, the N.S. Savannah.

# On-Site Nuclear Plant Services



## Liquid Waste Processing

- Advanced Liquid Processing Systems (ALPS™)
- Pre- and post-treatment systems
- Thermex™ Reverse Osmosis Systems
- Ultra-Filtration (UF) systems
- On-site technical support
- Shielding packages
- Various commercial approaches



## Fuel Pool Services

- Volume reduction of irradiated hardware
- Consolidation and packaging
- Underwater transfer and loading
- Cask transport
- Fuel pool vacuuming
- Pool-to-pool transfers
- Waste characterization
- Shipment manifesting assistance and qualified brokering
- Container designs for remote handling



## Waste Containers

### Media Dewatering Containers

- High Integrity Containers (HICs)
- Steel media dewatering liners

### Steel Packages and Containers

- B-25 metal containers
- B-12 metal containers
- 20-foot cargo containers
- Customized containers

## Media Dewatering Systems

- Self-engaging dewatering systems
- Self-engaging rapid dewatering systems
- Standard dewatering systems



# Company Locations

## CALIFORNIA

**Spent Fuel Division**  
2105 South Bascom Avenue  
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Fax: (408) 558-3518

**San Onofre Nuclear  
Generating Station**  
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San Clemente, CA 92672  
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## NORTH CAROLINA

**D&D Headquarters**  
121 W. Trade Street  
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Phone: (704) 343-6333

## PENNSYLVANIA

**MHF Services**  
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## SOUTH CAROLINA

**Barnwell LLRW  
Disposal Facility**  
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Phone: (803) 259-1781  
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**Barnwell Processing Facility**  
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Barnwell, SC 29812  
Phone: (803) 259-1119  
Fax: (803) 541-7302

**Columbia Office**  
250 Berryhill Road, Suite 400  
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Phone: (803) 256-0450  
Fax: (803) 772-0626

**Cask Maintenance Facility**  
740 Osborn Road  
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Phone: (803) 541-5031

## TENNESSEE

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## UTAH

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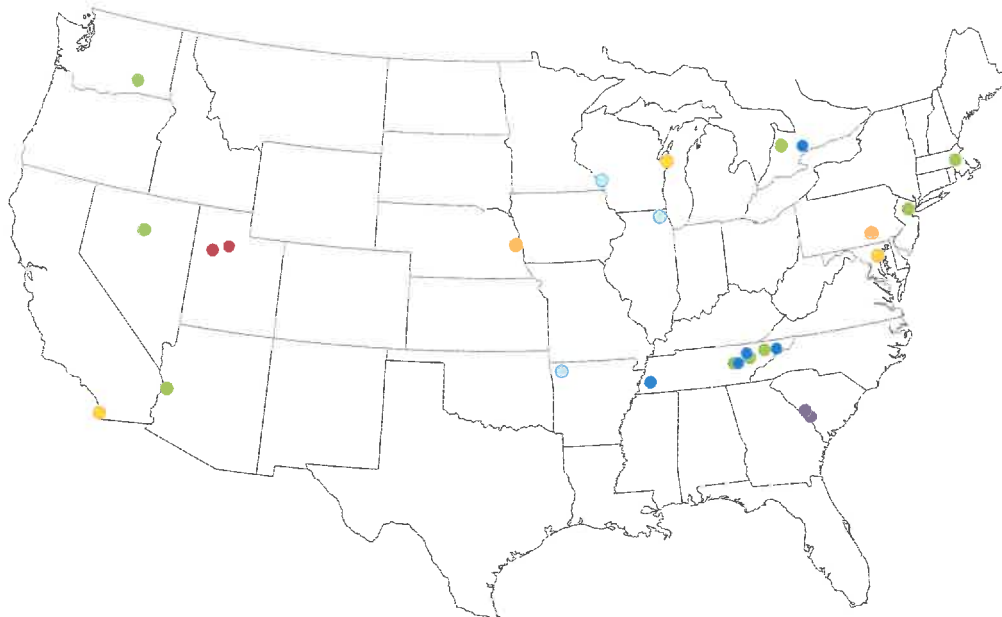
## WASHINGTON

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- Treatment & Processing Facilities
- Disposal Facilities
- Ongoing D&D Projects
- Completed D&D Projects
- Corporate HQ
- Logistics Facilities