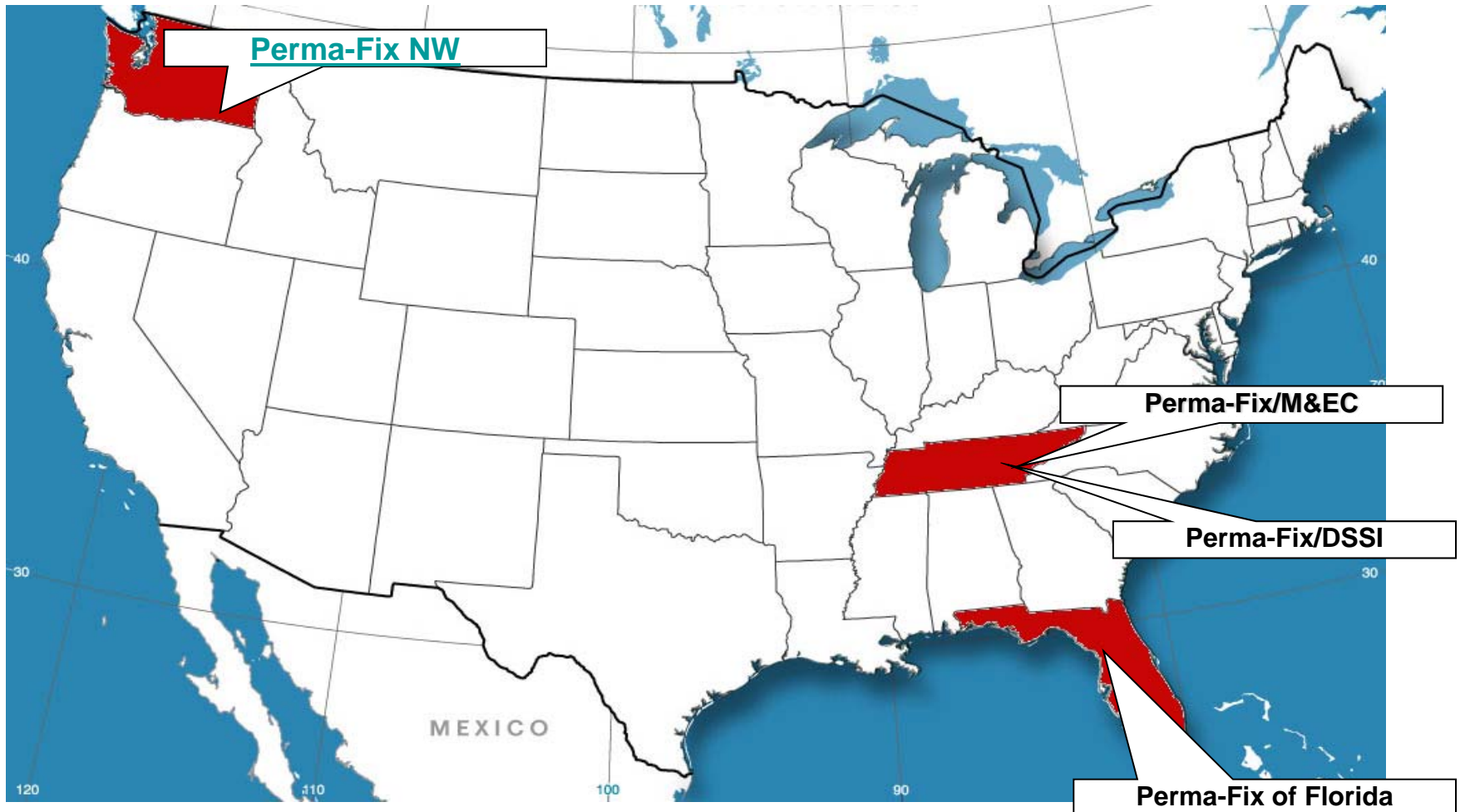


# Perma-Fix Environmental Services, Inc. Nuclear Services Division

John H. Hagan  
Sales Manager, Sales & Marketing

# Perma-Fix Facility Locations



# Perma-Fix Treatment Facilities



**M&EC Oak Ridge, TN**



**DSSI Kingston, TN**



**PFF Gainesville, FL**



**PFNW Richland, WA**

# Perma-Fix Environmental Services Waste Treatment Facilities



## M&EC Facility

- High SNM Waste Treatment
- Tritium Capture
- Classified Waste

## DSSI Facility

- PCBs
- Thermal Combustion
- Tank Farm



# Perma-Fix Environmental Services

## Perma-Fix Northwest

- TRU Waste, high dose treatment
- Thermal treatment for solid and liquid waste
- Adjacent to Hanford Site
- Rail Access



## Perma-Fix of Florida

Universal, Non-rad, Haz only waste  
Specialize in smaller waste streams  
Research and Development Group  
LSV Processing Capability  
MLLW & LLRW Blending - DSSI

# Perma-Fix Facilities Treatment Capabilities

Process		M&EC Facility	DSSI Facility	Perma-Fix of Florida	Perma-Fix of Northwest Richland
Neutralization and/or Stabilization of MLLW Liquids/Solids		✓	✓	✓	✓
Thermal Treatment of both TSCA and non-TSCA Regulated MLLW Liquids/Solids		✓	✓		
Thermal Treatment of high-special nuclear material (SNM) MLLW Liquids		✓	✓		
Macroencapsulation of MLLW Debris		✓		✓	✓
Deactivation of MLLW (D003 wastes)		✓	✓	✓	✓
Non-TSCA Regulated MLLW Labpacks		✓	✓	✓	✓
TSCA Regulated MLLW Labpacks		✓			
MLLW Aerosols		✓	✓		
High Activity/Dose waste streams		✓	✓		✓
TRU waste processing					✓
Treatment of radiologically contaminated Mercury (Hg)	Elemental Hg (Amalgamation)	✓		✓	
	Hg<260ppm	✓	✓	✓	✓
	Hg>260ppm	✓	✓		

# Major Treatment Processes



# Major Treatment Processes





# Finding New Treatment Methods – Research & Development



# Latest Innovations – PCB Treatment

Waste Form	Total Gallons Received = 29,588
Liquids	80%
Labpacks	12%
Solids	8%



EPA Issued Permit in April 2009

# High Dose Waste Treatment



# Rail Access - Large Components



# High Activity Waste Treatment



# On-Site Identification and Characterization

Perma-Fix Onsite Services can identify and characterize unknown waste collected during various facility operations. Techniques include:

- HAZCAT Kit Characterization
- Waste Bulking
- Sampling and Analysis
- NDA
- Labpacking
- Prepare for transport
- Brokerage & Trans.



# Disposal

- Disposed at every major disposal site:
  - NTS
  - Hanford
  - Clive
  - US Ecology
  - EMWMF
  - Barnwell
  - WCS (very soon)



# 2010 Perma-Fix Capacities

Processes	Throughput (Yr)	Units
Combustion	512,460	Gallons
Compaction	26,000	Drums
Stabilization	3,380,000	Pounds
Macroencapsulation	22,601	Drums
TRU Sort/Repack	5,650	Drums
Labpacks (Reactives)	26000	Pounds
Amalgamation	78,000	Pounds



# US Nuclear Power Plant Waste Management & Small Generator's MLLW & LLW Processing

- Current administrations' renewed commitment to Nuclear Power;
- License renewal applications at all-time high
- Need for large component waste management solutions (steam generators, condenser replacements, feed water heaters, etc.)
- Perma-Fix commitment to finding alternatives to direct disposal and;
- Protecting the environment.....