



# Vermont Yankee Nuclear Decommissioning Citizens Advisory Panel

**BURNS**  **MCDONNELL**<sup>SM</sup>

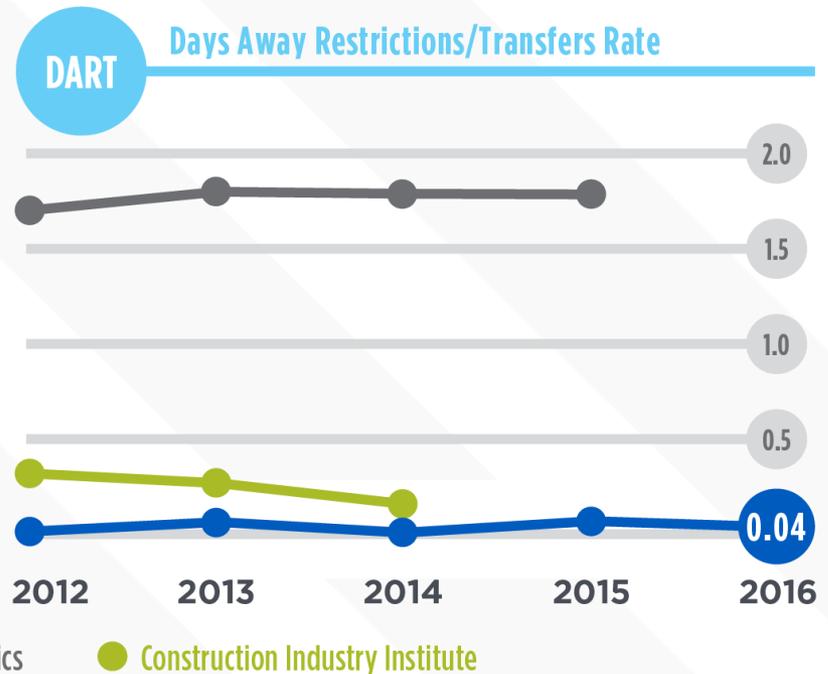
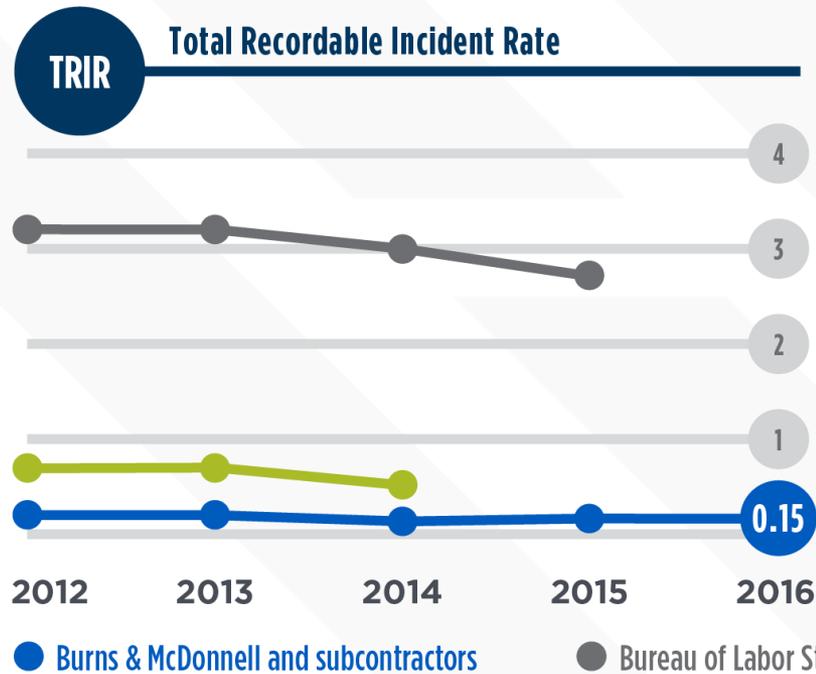
**June 22, 2017**

Glenn J. Neises  
Nuclear Director  
Burns & McDonnell



**SAFETY MOMENT**

# Safety Is First



Combined employee-owner and subcontractor data 

Rated in the top **1%** for safety *Engineering News-Record*

# NorthStar Decommissioning Team

## ▶ NorthStar

- Owner & Demolition

## ▶ Burns & McDonnell

- Engineering
- Licensing

## ▶ AREVA

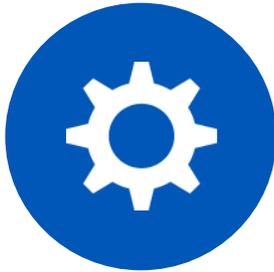
- Vessel & Internals Segmentation
- Spent Fuel Support

## ▶ WCS

- Waste Management
- Packaging
- Transportation
- Disposal



# Why Burns & McDonnell



## Engineering Focused

*Experienced, Efficient, Reduce total cost*



## Trusted Partner

*Employee-owned & committed to success  
90% repeat business*



## Breadth of Knowledge & Experience

*Completing demanding projects faster, safer, more efficiently  
and with higher quality*



# ABOUT BURNS & MCDONNELL

# More Than 119 Years of Service

Stanford graduates Clinton Burns & Robert McDonnell opened a consulting engineering firm to provide clean water and reliable power to the Midwest and expanded the firm to more than 5,700 professionals.



# Who We Are

**EXCELLENCE**

**TOP 1%**  
**SAFETY**  
**RANKING**

**STRENGTH**

**MORE THAN**  
**5,700**  
**PROFESSIONALS**

**STRENGTH**

**40+**  
**OFFICES**  
**WORLDWIDE**

**Established 1898**

**EXCELLENCE**

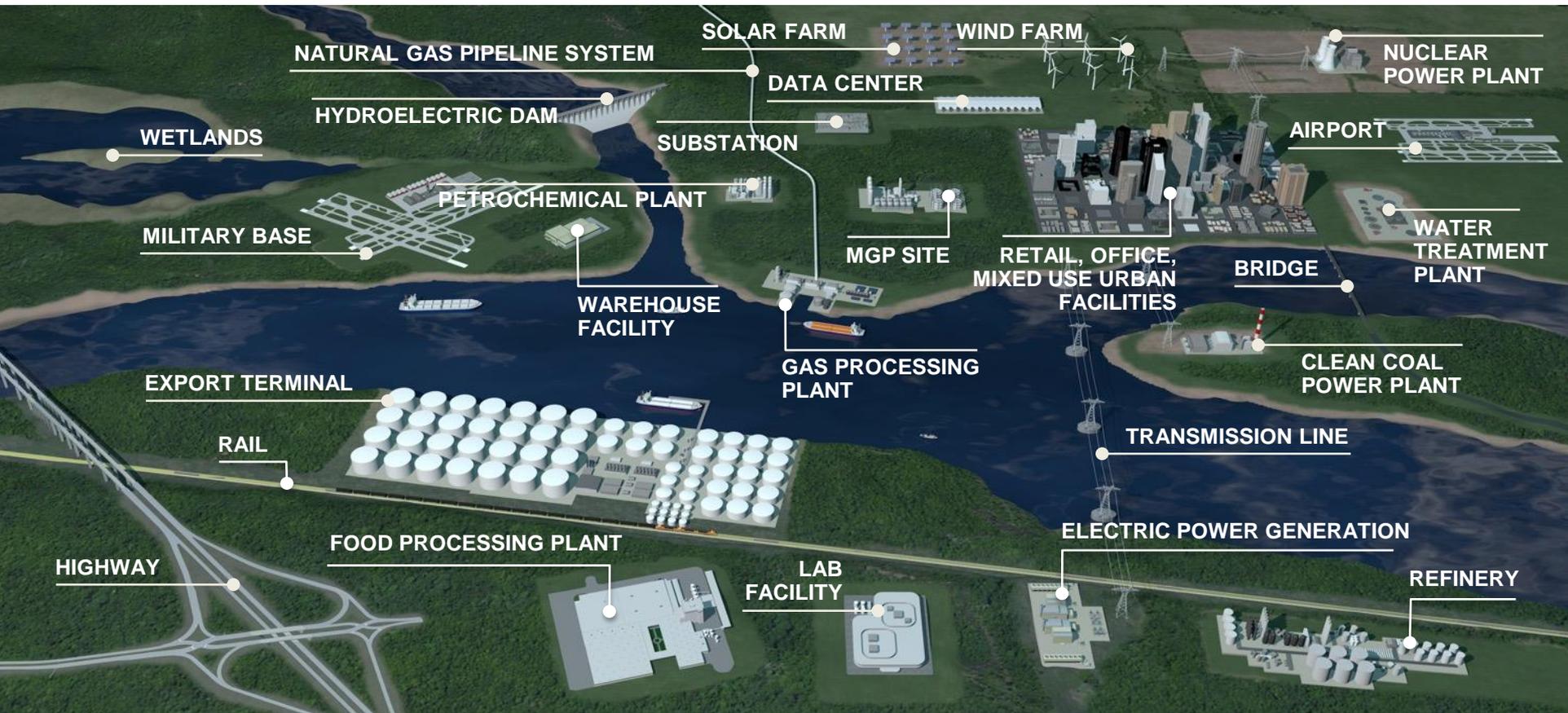
**#1**  
**POWER**

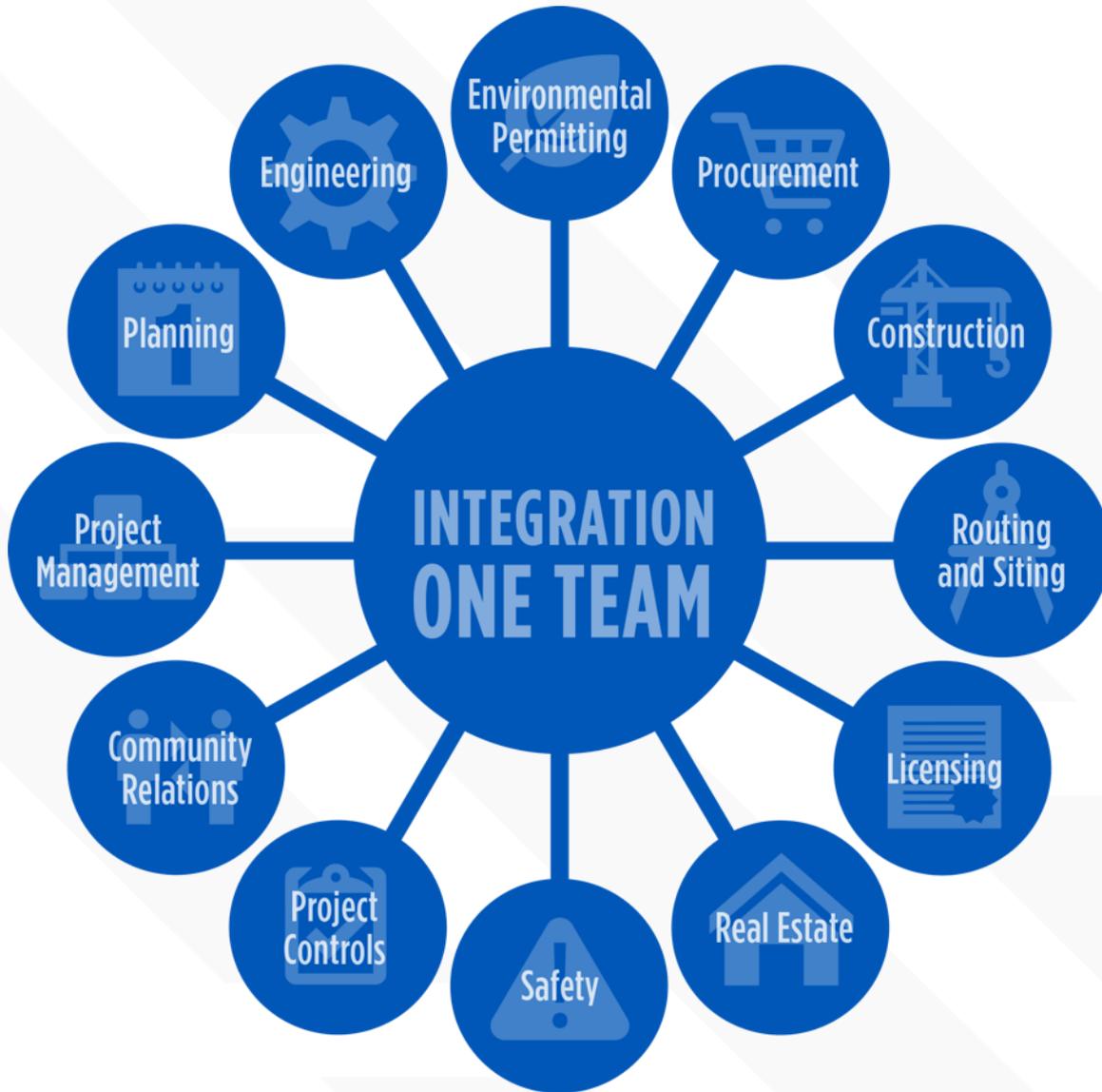
**SERVICE**

**100%**  
**EMPLOYEE-**  
**OWNED**

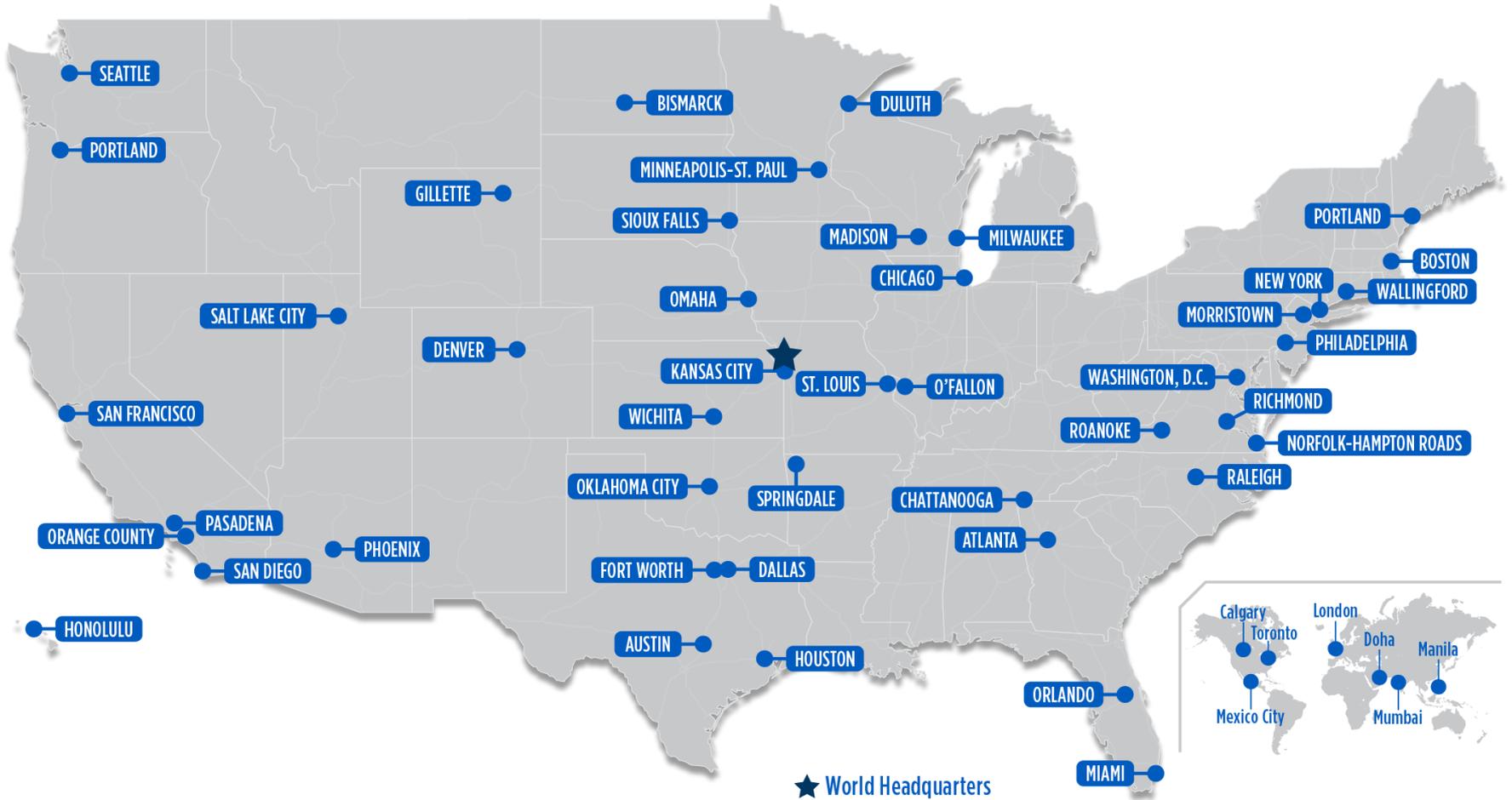
*Engineering, Architecture, Environmental, Construction & Consulting Solutions*

# Key Industries and Markets We Serve

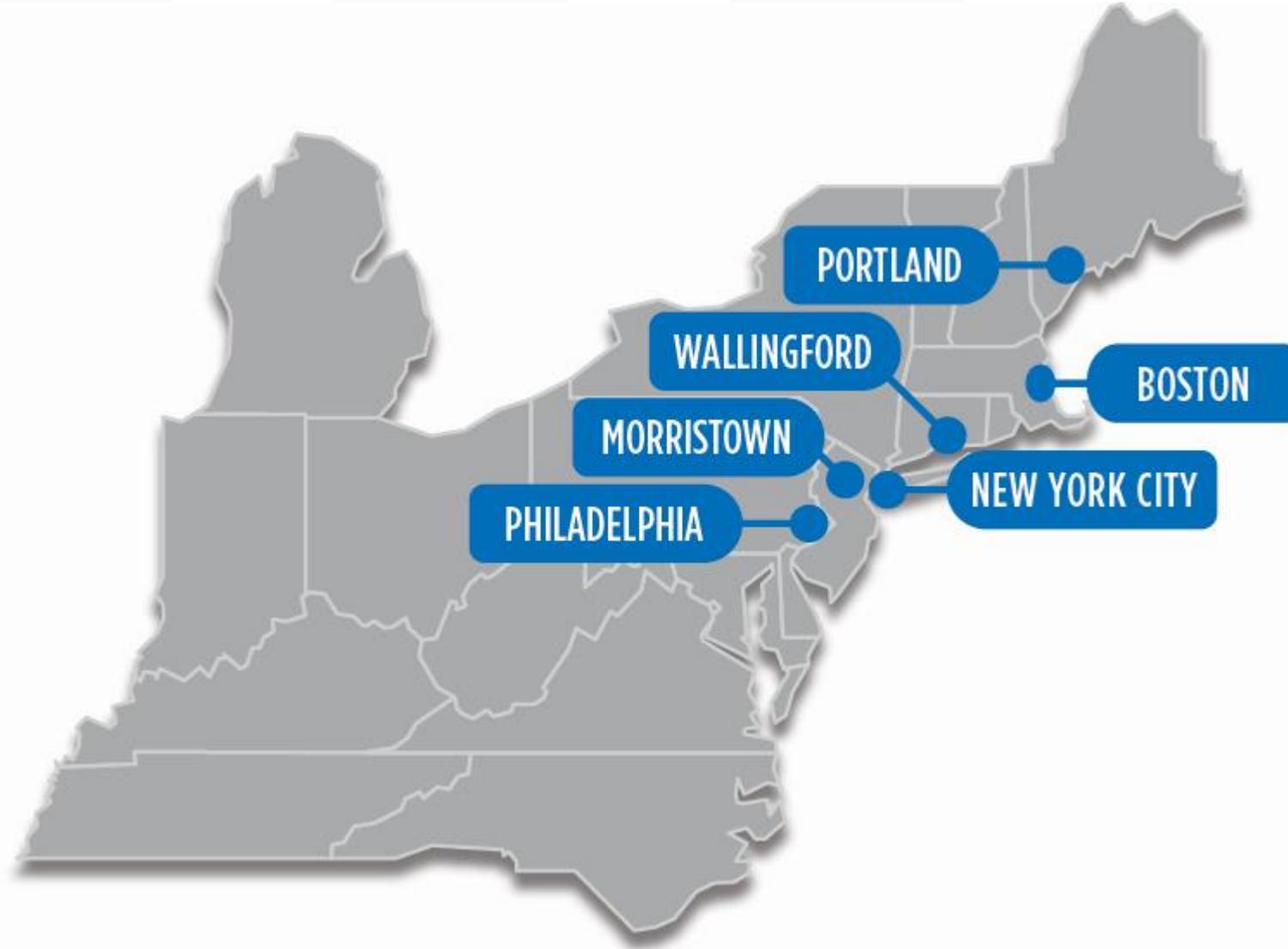




# Where We Are

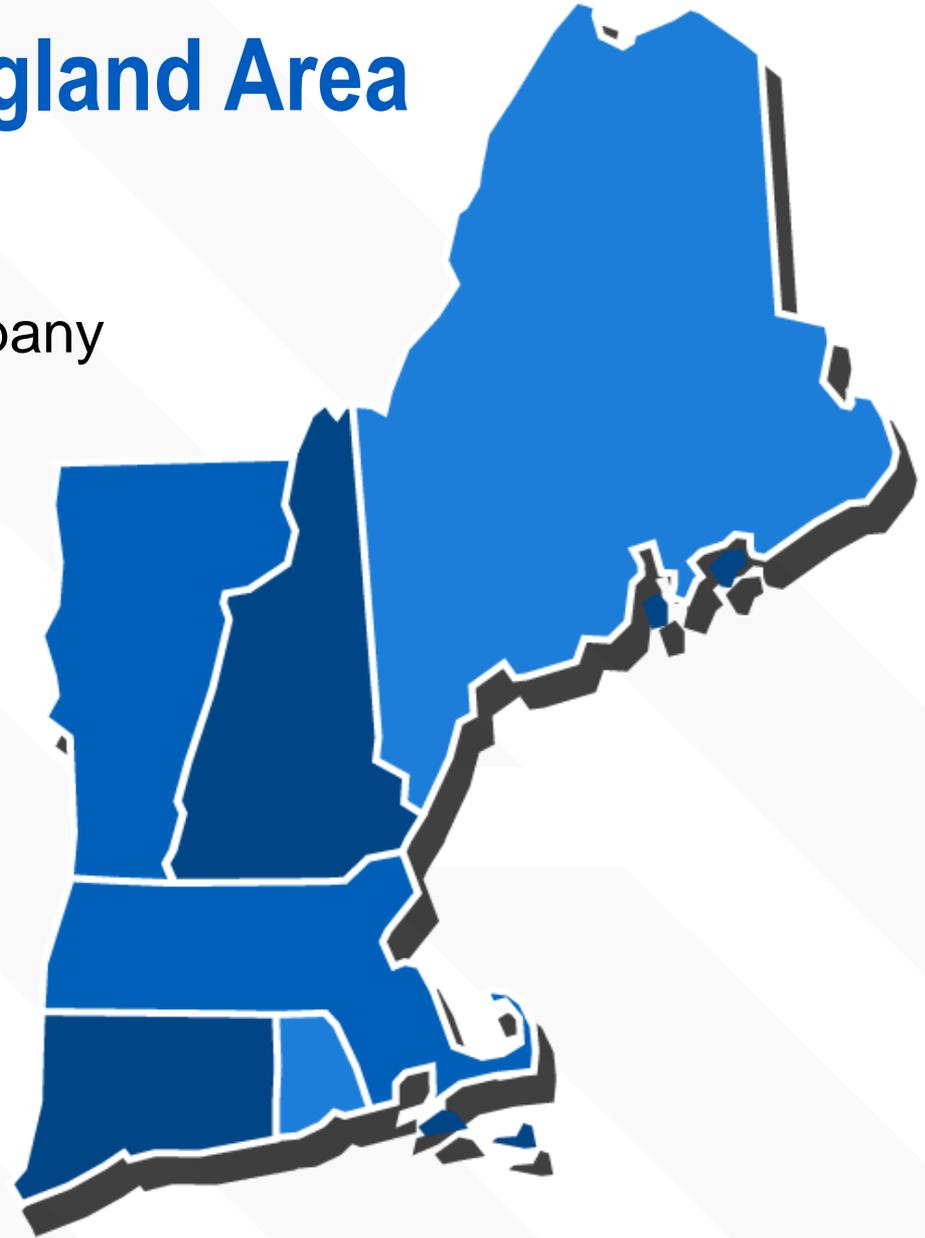


# Northeast Offices



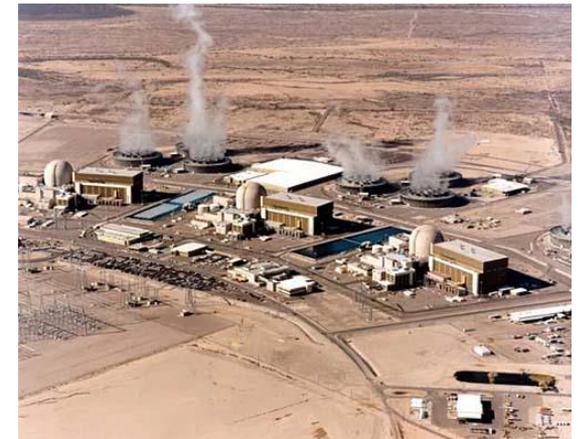
# Vermont and New England Area

- ▶ Vermont Electric Power Company
- ▶ Vermont Transco
- ▶ Ben & Jerry's
- ▶ Central Maine Power
- ▶ National Grid
- ▶ Eversource Energy /  
Northeast Utilities
- ▶ Connecticut Yankee  
Decommissioning

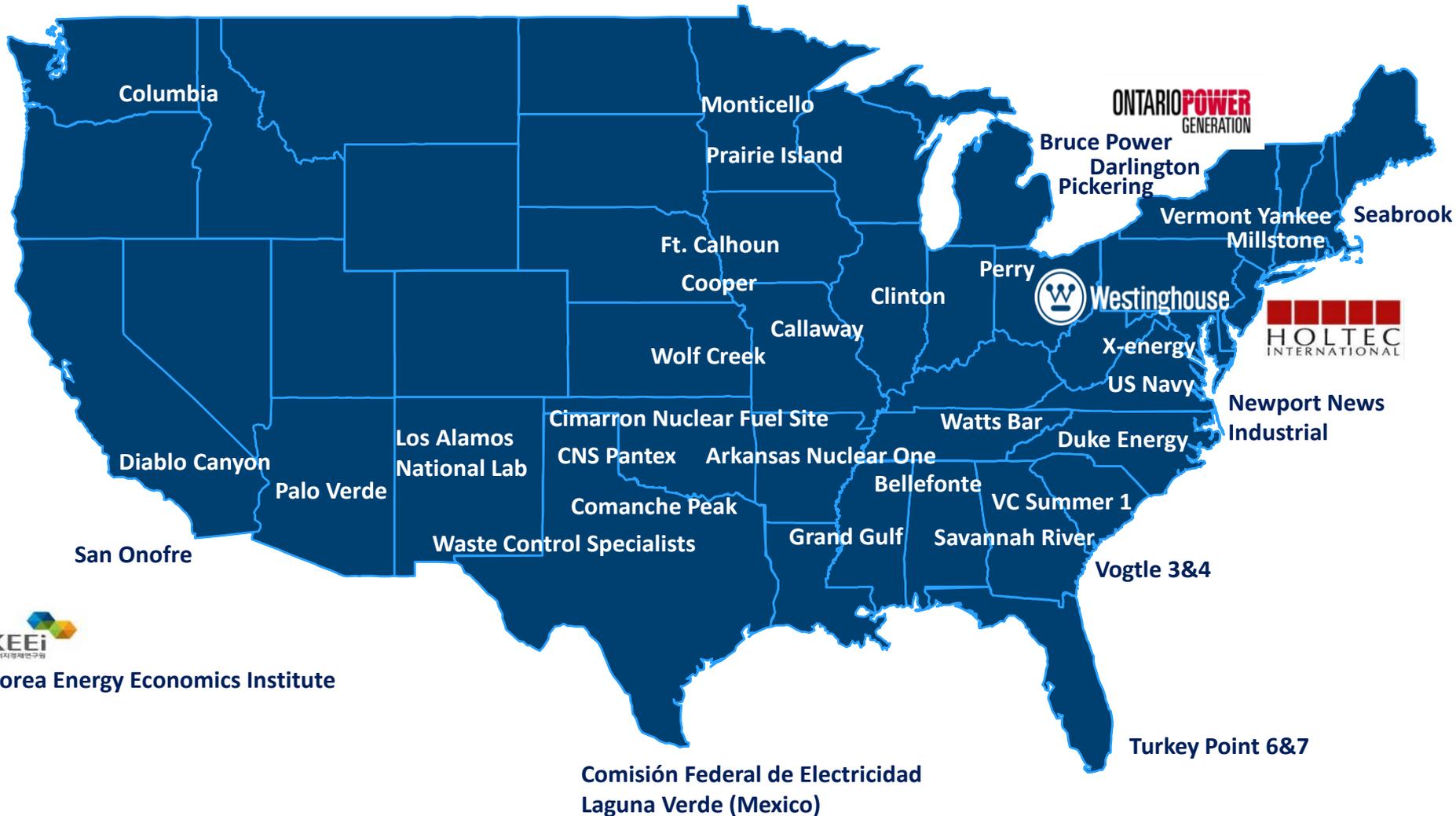


# Nuclear Offerings

- ▶ Nuclear Power Plant Engineering Services
  - Engineering Modifications, Licensing Support
- ▶ Decommissioning Services
- ▶ New Nuclear Power Plant Design
- ▶ Federal Services – Department of Energy



# Nuclear Projects & Clients



  
KEEi  
에너지경제연구원  
Korea Energy Economics Institute

# Nuclear Experience Summary

Nuclear Plant / Facility	Owner / Utility	Reactor Type	Project Development	Technical Assessment	Technical Studies	Detailed Engr Design	Program Management	Engr Field Services	Engr Startup/Testing	Owner's Engr/Oversight	Technical Advisor
Arkansas Nuclear One	Entergy	PWR						X	X		X
Bellefonte Nuclear Generating Station	Tennessee Valley Authority	PWR					X	X		X	X
Bruce Nuclear Generating Station	Bruce Power	CANDU		X							X
Callaway Energy Center	Ameren	PWR	X	X	X	X		X	X	X	X
Clinton Nuclear Generating Station	Exelon	BWR						X			
Columbia Generating Station	Energy Northwest	BWR		X							X
Comanche Peak Nuclear Power Plant	Luminant Generation	PWR		X							
Confidential	Duke Energy	PWR			X						
Cooper Nuclear Station	Nebraska Public Power District	BWR		X	X	X		X	X		X
Darlington Nuclear Generating Station	Ontario Power Generation	CANDU						X		X	
Diablo Canyon Power Plant	Pacific Gas & Electric	PWR			X						X
Fort Calhoun Nuclear Generating Station	Omaha Public Power District	PWR	X	X	X	X		X			X
Independent Spent Fuel Storage Installations	Holtec	ISFSI		X		X		X		X	X
Korea Energy Economics Institute	KEPCO	PWR/CANDU		X							
Laguna Verde Nuclear Power Station	Comision Federal de Electricidad	BWR						X			X
Los Alamos National Laboratory	Los Alamos National Security	General									X
Millstone Nuclear Power Station	Dominion	PWR					X	X			
Monticello Nuclear Generating Plant	Xcel	BWR		X	X						X
Newport News Industrial	Hunthington Ingalls Industries	General				X					
Palo Verde Nuclear Generating Station	Arizona Public Service	PWR	X	X	X	X		X		X	X
Pantex Plant	Consolidated Nuclear Security	General									X
Perry Nuclear Power Plant	FirstEnergy Nuclear Operating Company	BWR				X					
Pickering Nuclear Generating Station	Ontario Power Generation	CANDU		X							X
Prairie Island Nuclear Power Plant	Xcel	PWR		X	X						X
San Onofre Nuclear Generating Station	Southern California Edison	PWR			X			X		X	
Turkey Point Nuclear Generating Station Units 6 and 7	FPL / NextEra	PWR		X	X						X
VC Summer Nuclear Generating Station Unit 1	South Carolina Electric & Gas	PWR		X							X
Vogtle Electric Generating Plant Units 3 and 4	Southern Nuclear	PWR				X					
Waste Control Specialists	ShadowTech Labs	General			X						
Westinghouse Small Modular Reactor	Westinghouse	SMR	X	X	X	X					X
Wolf Creek Generating Station	WCNOC	PWR	X	X	X	X	X	X	X		X
Xe-100	X-energy	GEN IV	X	X							X

# Company Awards

FORTUNE  
**100  
BEST**  
COMPANIES  
TO WORK FOR®  
2016



**ENR New England**  
Best Energy/Industrial Project 2016  
Interstate Reliability Project



# REPRESENTATIVE PROJECTS

# Decommissioning & Demolition

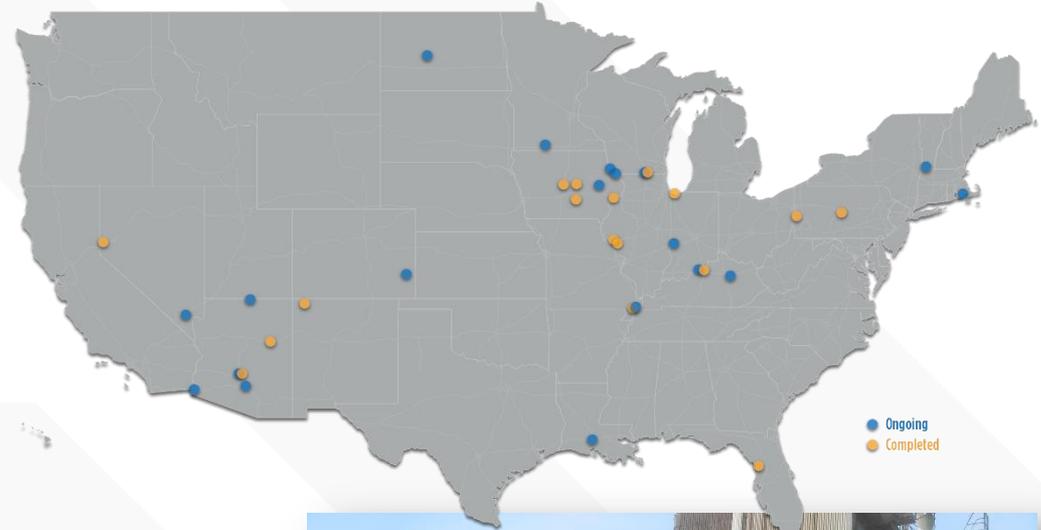
## ▶ 28 Different Clients

## ▶ 34 Sites

- 23 Full Demolition
- 8 Partial Demolition
- 3 Isolation

## ▶ Services

- Owner's Engineering
- Regulated Materials
- Utility Disconnection/Reroute
- Environmental Site Assessments
- Environmental Remediation
- Regulatory Interface
- Site end-use evaluation
- Site Restoration and Re-Use Design
- Project Management
- Turnkey Demolition



# Decommissioning & Demolition Services

Two Coal Power Plants built in the 1940s



**Power Plant Facilities  
Demolition & Removal**

**Coal and Ash Handling Facilities  
Removal**

**Substation and Transmission  
Lines Retained**

**Regulated Material Assessment**

**Subsurface Assessment**

**Asbestos Abatement**

**Universal Waste Removal**

**Foundation and Concrete Removal**

**Underground Utility  
Capped/Removed**

**Scrap Recycling**

**PCB Remediation**

**Ash Pond and Coal Pile Closure**

# Decommissioning & Demolition Services

Cimarron Environmental Response Trust | Cimarron, Oklahoma



**Program Management**  
**Engineering and Licensing**  
**Cost Estimating**  
**Financial Reporting**

**Radiological Characterization**

**Radiological Decommissioning**

**Licensee & Trustee**

700+ Acre Uranium Fuel Production Facility  
Special Nuclear Material License Holder

**Environmental Cleanup**  
**Groundwater Remediation**

**Site Restoration &  
Repurposing**

# Decommissioning & Demolition Services

Tronox (Kerr-McGee) Uranium Fuel Production Facility | Cushing, Oklahoma



1960 – View to South East



2003 – View to South East

**Radiological Characterization & Decommissioning**

**Operation, Maintenance & Construction Management**

**440 Acre Uranium Fuel & Thorium Production Site**

**Decontamination & Demolition Treatment of Mixed Waste Excavation of Piping, Waste, Soil**

**On-Site Laboratory Analyzed 150,000 Waste, Soil & Water Samples**

**1,200,000 Cubic Feet of Low Level Radioactive Waste Shipped via 3,000 Intermodal Containers to Disposal Facility**



**WATER – ENVIRONMENT – ENERGY  
VIDEO**

**BURNS  MCDONNELL <sup>SM</sup>**