



*VNS Federal Services
LLW Forum
April 2021*

NUCLEAR SOLUTIONS – FEDERAL SERVICES



Veolia Nuclear Solutions Federal Services

LLW Forum

Processors ensure compliant waste disposal

Paul Larsen – Panelist

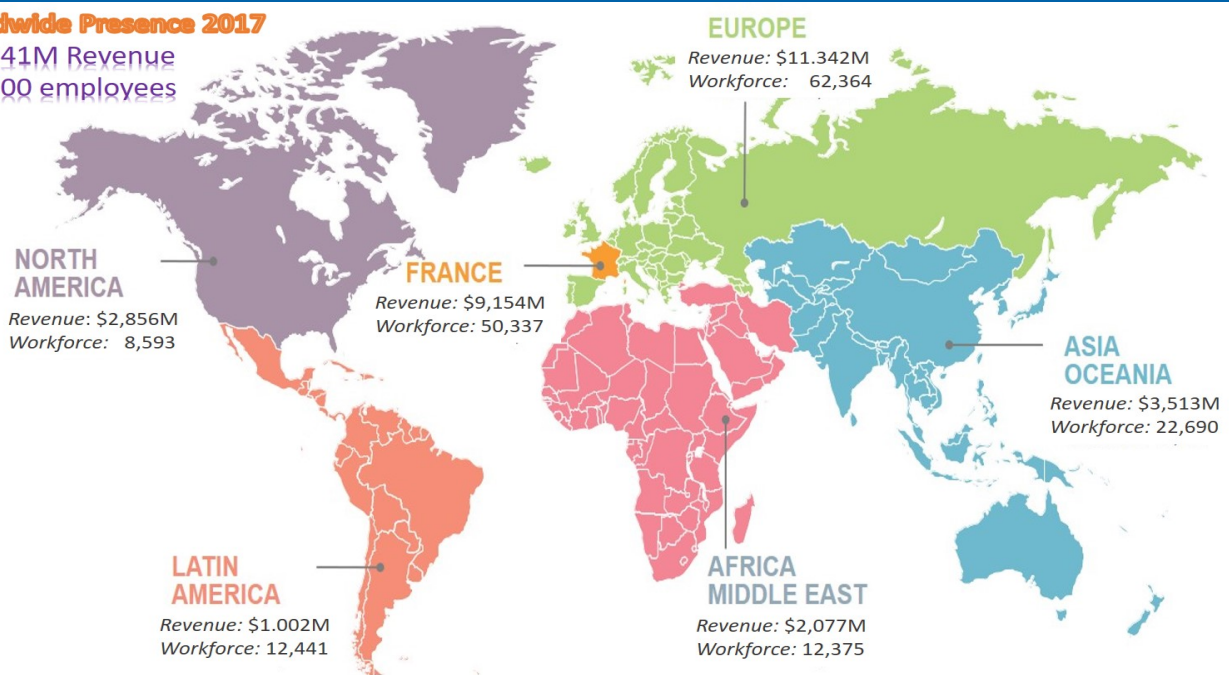
April 8, 2021

NUCLEAR SOLUTIONS – FEDERAL SERVICES

Veolia – Global Reach

Worldwide Presence 2017

\$29,941M Revenue
168,800 employees

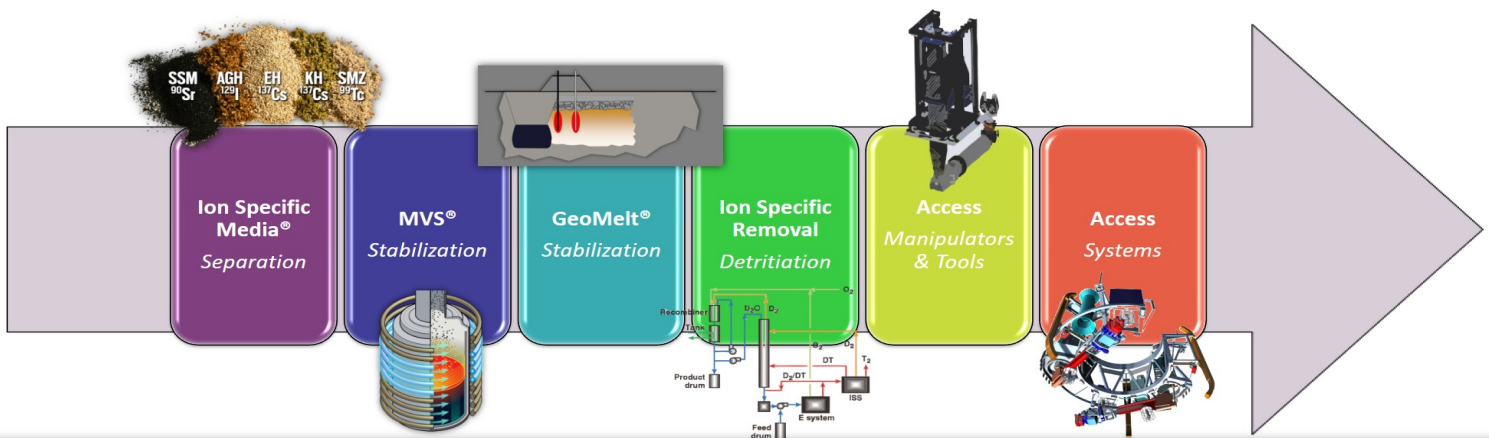


- ✓ 160 year old company, HQ in Paris
- ✓ 163,000 Employees with ~\$27B in Revenue
- ✓ 9,000 Employees across N. America
- ✓ Extensive U.S. Federal Experience
- ✓ Global nuclear operations managed by Veolia Nuclear Solutions (VNS)
- ✓ VNS Federal Services LLC is the operating company for all US nuclear, and secure operations and infrastructure work



Veolia Nuclear Solutions (VNS)

- ✓ Veolia's activity dedicated to nuclear clean-up is concentrated in Veolia Nuclear Solutions (VNS)
- ✓ VNS delivers an integrated value chain that includes a comprehensive range of innovative technologies, engineering, analytical services and expertise that support nuclear facility operations and infrastructure, restoration, decommissioning, and the treatment radioactive waste around the world
- ✓ VNS's delivery platform in North America is VNS Federal Services (VNSFS)



Expanding Set of Discriminating Technologies For Waste Management & Facility Operations



Waste Management Technology and Processing

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Geomelt® Innovative Vitrification

- Highly flexible technology for treating hazardous and nuclear wastes
- Uses Joule Heating (electricity flow through molten glass) to melt waste materials to either destroy or immobilize contaminants
- Final product is identical to natural obsidian - very durable and resistant to weathering
- Robust – Treats contaminated Sodium, soils, sludges, metals, organics, bulky D&D debris, etc. simultaneously, with little or no pre-treatment steps (e.g., size reduction, sorting)
- Used in Japan, US, Europe, Australia

Brief GeoMelt® History

1980 - GeoMelt® ISV invented at Pacific Northwest National Laboratory (PNNL)

1988 - Battelle Development Corporation (BDC) obtained exclusive rights from the DOE and spins off Geosafe as a commercial provider

1988 - 1993 – Technology Advancement Period

1993 - First commercial GeoMelt® on-site remediation

1998 - Subsurface Planar™ Melting invented

2000 - In Container Vitrification (ICV™) invented

2012 - Kurion acquires exclusive worldwide rights to GeoMelt® from Battelle

2016 – Kurion partners with the NNL to install and commission a radioactive GeoMelt® facility on the Sellafield site

Waste Materials



GeoMelt® ICV™ Melter



GeoMelt® Glass



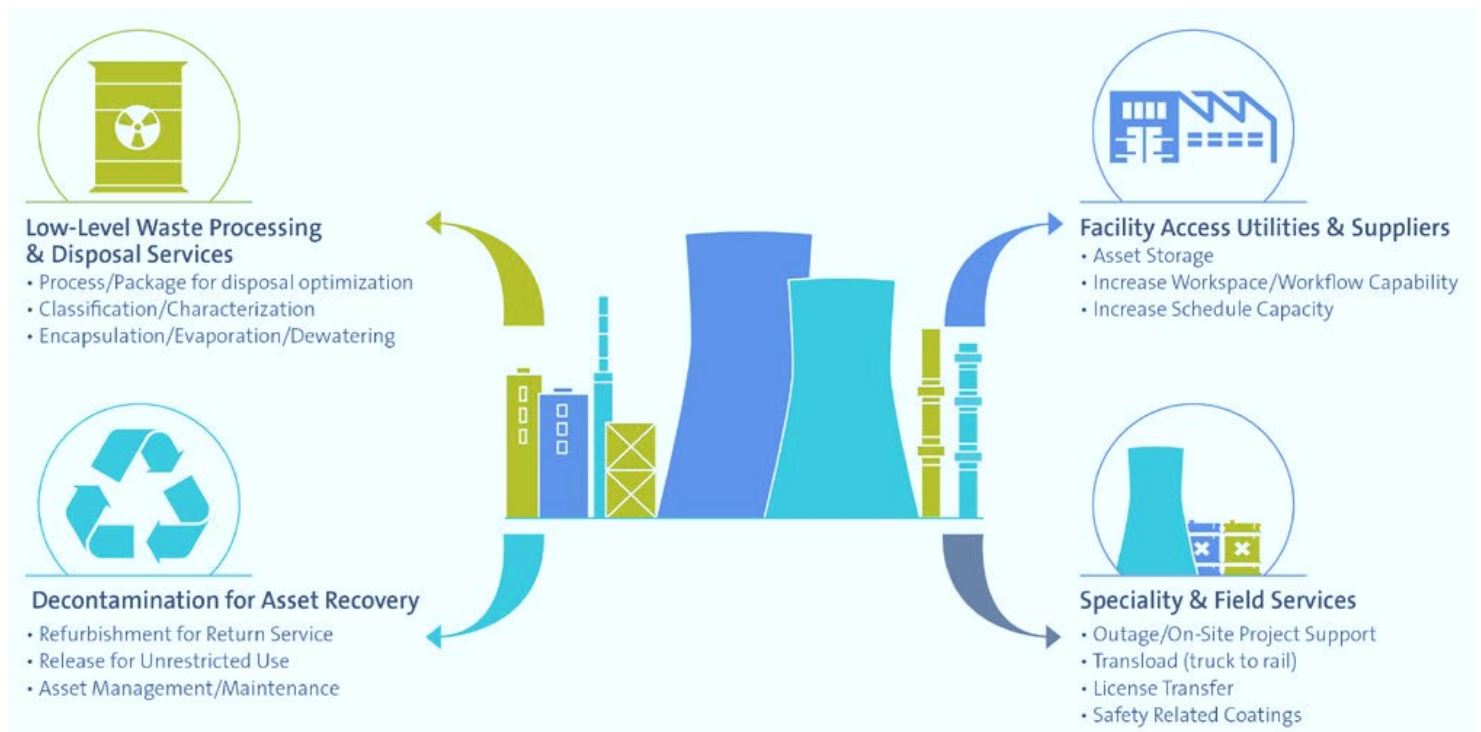
GeoMelt® Technology is Mature, Safe, and Flexible

LLW/D&D Facility Operations – Wampum PA

- ✓ Veolia's Alaron Facility has been in operation for over 30 years
- ✓ Owner-Operator of Cat III NRC licensed nuclear facility
 - >150,000 sq-ft of facility space on a 26 acre site
 - Rad-Material License for LLW remediation & disposition
 - Services include major component decontamination, LLW volume reduction, electric motor refurbishment & repair, specialty coatings, etc.
 - Site O&M includes an integrated rail spur with a private switch engine for off-site transport



Aaron Nuclear Services





Questions?

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Backup Slides

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Veolia Nuclear Solutions – Value Proposition

✓ Value Added Execution and Proposal Partner

- Fresh, stable, global infrastructure and nuclear experience
- Strong balance sheet, investing in nuclear, commercial flexibility in partnering
- Relevant past performance, great CPARS, no performance issues

✓ Proven Technology & Innovation

- Almost 3000 patents, technologies and systems covering waste and water treatment, utilities, robotics and facility operations
- Proven modular technology for radionuclide separations, vitrification, remote access and waste retrieval systems in US, UK and Japan
- Added innovation in US for privatizing commercial utility, water, and energy projects

✓ DOE and Nuclear Mission Oriented Experience

- Ongoing SOW performance across waste, operations, environmental and infrastructure missions at multiple DOE sites, as well as UK, Canada, France, and Japan
- NQA-1 with twenty years providing engineering across all Hanford mission areas (infrastructure, remediation, tanks)
- Designed, manufactured and delivered water treatment system in 9 weeks that processed and removed over 10 million Curies of Cesium at Fukushima



VNS Federal Services, LLC

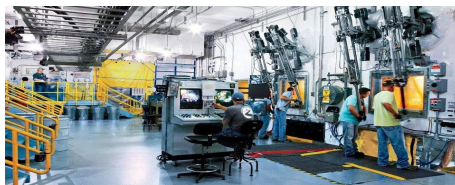
VNS Federal Services (VNSFS) – a company formed to deliver all of Veolia's Capabilities for the U.S. Government

- Facility-cleared company, structured to perform work on DOE and DoD sites
- Current projects and operations at five DOE sites, with 600+ employees
- Reach-back capability to all Veolia capabilities and resources
- Starting in 2019, the execution platform for Canada projects



Hanford:

- ERDF Operations
- Management of 222-S Laboratory
- 20 Years of Engineering Support



Idaho National Laboratory:

- Environmental Monitoring & Surveillance
- Spent Fuel Management at NRC Licensed Facilities
- Processing of INL Sodium Wastes



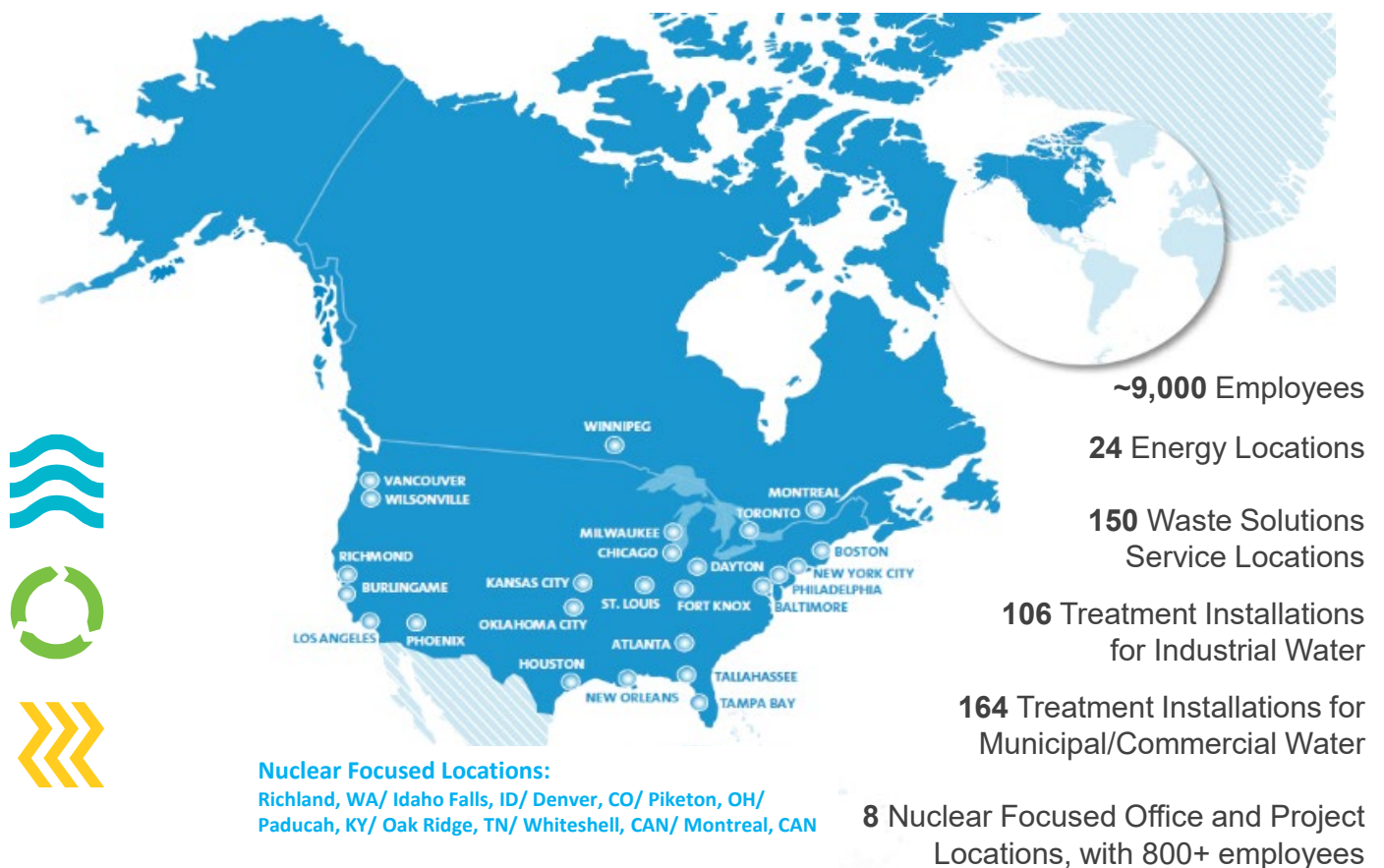
Oak Ridge:

- Transuranic Waste Processing Center Operations

Portsmouth & Paducah:

- Decontamination & Decommissioning
- Facility and Infrastructure Services
- Environmental, Safety & Health

Veolia Locations Across North America



VNS – Relevant Experience, Applicable Today

- ✓ Over 20 years operational experience across the DOE complex, with contracts, waste operations, engineering and over 650 person at five US Department of Energy facilities, including Hanford, Oak Ridge, Portsmouth, Paducah and Idaho
- ✓ Prime Contract to TEPCO on Fukushima Cleanup since March 2011:
 - Removed 10MCi of Cs & Sr and treated over 100M Gal of High-Rad Liquids
 - Three different Ion Exchange Systems in place supporting response and tank farms
 - Successfully Deployed Reactor Inspection and Repair Manipulators
- ✓ Delivering Technology to the UK NDA (Sellafield, Dounreay, Magnox) and Canadian Nuclear Laboratories
 - GeoMelt® System Constructed & Commissioned at NNL for Solid Waste
 - Modular Active Effluent Treatment Plant (MAETP) for Liquid Waste (4 systems)
 - Dounreay Shaft & Silo Waste Remediation System for Solids & Liquids
 - Design and Fabrication of Waste Retrieval System for Whiteshell Standpipes
- ✓ Commercial Nuclear Operations for CEA, EDF, and ANDRA in France and in the US at multiple nuclear sites:
 - Radioactive Liquid Waste Treatment & Cementation Plant O&M (Saclay)
 - Radioactive Solid Waste Disposal Facility O&M (Morvilliers)
 - Alaron LLW Owner/Operated Commercial Decontamination Facility in Pennsylvania



Added Veolia Infrastructure Discriminators

✓ Experience

- Tested Federal Utility Contractor – 30-plus years operating Army and Federal Agency Utilities
- Employee Knowledge and Know-How – 44-years past experience providing water/wastewater treatment services to US Military and other Agencies
- Active projects – at 4 major DOE sites (nuclear operations, waste management, infrastructure services)

✓ Best Practices

- Unrivaled O&M Experience – Increase utility resilience and reliability by applying lessons learned as largest utility owner of thermal district energy plans in US
- Cost Savings and Safety – Achieved hundreds of millions of savings over 10 years while recording > 125M labor hours w/ ZERO OSHA recordable accidents on Federal projects

✓ Stability

- Financial Support – Veolia Group earned \$26B in revenues last year; we're here for the lifetime of your project.
- History – With 153 years experience in the utility business, we're committed to this sector



Existing Projects – Past Performance

Operations & Maintenance (Facility, Decommissioning & Analytical)

- Hanford 222-S Laboratory – DOE Hanford
- Environmental Restoration Disposal Facility – DOE Hanford
- Portsmouth Facility Support Services – DOE Portsmouth
- Paradox Valley Unit – Bureau of Reclamation Colorado
- NRC Spent Fuel Management – DOE Idaho/Colorado
- Alaron Low Level Waste Facility – VNSFS Pennsylvania
- Milwaukee Water District – Veolia N. America

Waste Management (Technology & Processing)

- TRU Waste Processing Center – DOE Oak Ridge
- Paducah Decontamination & Decommissioning – DOE Paducah
- GeoMelt Idaho Sodium Processing – DOE Idaho

Specialty Services (Engineering, Environmental, Consulting)

- DOE Engineering
- ESER – DOE Idaho
- Regulatory Documents – DOE Portsmouth

Remote Systems (Handling and Robotics)

- Idaho Liners – DOE Idaho





Operations & Maintenance

Facility, Decommissioning and Analytical

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Lab Operations – Hanford 222-S, Richland WA

✓ Prime contractor for DOE's 222-S Laboratory Operations

✓ \$50M Contract from 2015-2020

- Operate, manage and maintain the Analytical Services functions of the Hanford 222-S Laboratory, a 70,000 sqft HazCat III nuclear facility with 11 hot cells
- Receive, handle and store up to 10,000 tank waste radioactive samples annually, perform up to 25,000 analyses on these samples
- Maintain accreditations from the Washington Department of Ecology and the American Industrial Hygiene Association
- Support all the primary missions at Hanford: infrastructure, remediation, tank operations, and processing
- Received the DOE-VPP Legacy of Stars Award



Waste Management – ERDF, Richland WA



- ✓ VNSFS operates and manages the DOE Hanford Environmental Restoration Disposal Facility (ERDF)
- ✓ \$117M contract from 2013 – 2019 that includes all operations and labor
 - Spanning approximately 107 acres with a disposal capacity of 18 million tons, the ERDF is the largest DOE landfill
 - ERDF is a multi-celled RCRA landfill that is also CERCLA authorized
 - Manage all waste operations include receipt, WAC, disposal and regulatory discussions for in-cell treatment
 - Implemented GIS and Smart Compaction technology

DOE Site Infrastructure -- Portsmouth, OH

- ✓ Prime contractor (through WAI) for Portsmouth Facility Support Services Contract
- ✓ \$165M contract from 2010-2016 (still performing as subcontractor)

Facility Infrastructure

- Roads & Grounds
- Safeguards & Security
- Facility Management
- Fleet Services

Site Services

- Waste Management
- Groundwater Management
- Records Management
- Worker Training
- Computer / IT Services



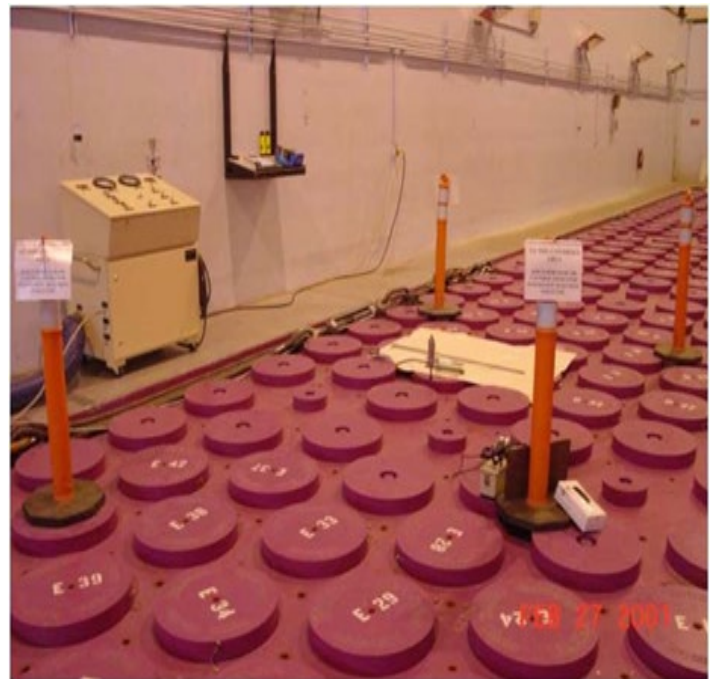
Water Management -- Paradox Valley CO



- ✓ Operation, Maintenance and Repair of Paradox Valley Unit for the US Bureau of Reclamation
- ✓ Salinity Control of Colorado River
- ✓ \$12M contract from 2014-2019
- ✓ OM&R activities cover:
 - Operational - To safely inject as much brine as possible based on current Operating Criteria
 - Maintenance - To safely provide preventative/unscheduled maintenance for all facility features
 - Management and Administration - To provide support necessary to efficiently and safely operate and maintain the facility

NRC Spent Fuel Management – Idaho & Colorado

- ✓ Manage Spent Nuclear Fuel storage facilities and licenses under for the DOE Idaho Cleanup Project, under Nuclear Regulatory Commission (NRC) regulations.
- ✓ Total contract value is \$3.1 million, for contract period of performance from 10/2015 to 03/2020.
- ✓ Scope includes the management and operation of the Fort Saint Vrain (FSV) Independent Spent Fuel Storage Installation (ISFSI) facility in Platteville, Colorado, and Three Mile Island-2 (TMI-2) ISFSI in Idaho Falls, Idaho, including security.
- ✓ VNSFS manages the license for the NRC at both sites (DOE-owned, NRC-regulated), located about 600 miles apart.



Utilities Infrastructure - Milwaukee Metropolitan Sewerage District (MMSD), Milwaukee, Wisconsin

- ✓ At \$50M annually, the MMSD wastewater and biosolids operation is the largest ongoing municipal wastewater O&M partnership in the U.S.
 - ✓ Initially awarded in 2008, Veolia was awarded an 8 year extension in 2016, bringing total contract value to >\$800M.
- Veolia provides Operations, Maintenance & Management (O&M), Capital Program Management and Underground Asset Management
 - Collection and conveyance system, includes 374 miles of sewer lines, 28.5 miles of storm water lines, a 500-million gallon deep tunnel system and 18 pump stations
 - MMSD system serves over 1.1 million customers over 400 square miles in 28 participating municipalities





Waste Management Technology and Processing

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Nuclear Waste Operations – TRU Facility, Oak Ridge TN

- ✓ Prime contractor for the TRU Waste Processing Center (TWPC)
- ✓ \$330M Contract from 2009-2015 (still performing as a sub)
 - Regional center for receipt, management, treatment, packaging, and shipment of TRU waste legacy inventory
 - Perform all waste management operations, and facility and infrastructure O&M (TWPC is a Category 2 nuclear facility)
 - Lead negotiator with State for waste disposal; manage RH- and CH-Tru, LLW, MLLW, and >Class C
 - Shipped 1500, 55-gallon drums of TRU waste to WIPP since re-start of operations
 - Performed TRU facility startup and time critical CERCLA action



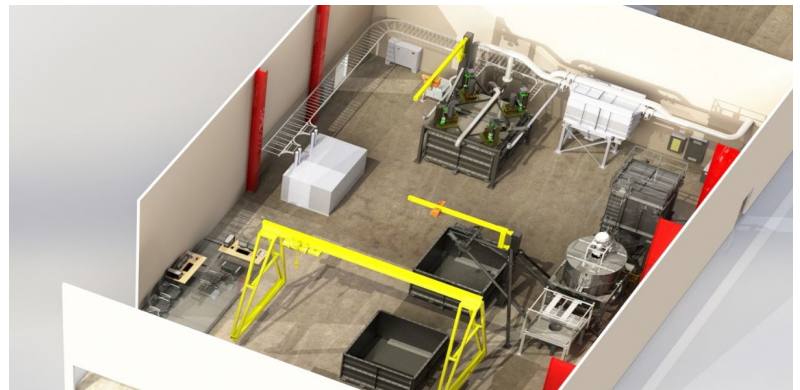
Paducah Gaseous Diffusion Plant Deactivation and Remediation – Four Rivers Nuclear Partnership



- ✓ VNSFS is an integrated subcontractor under Four Rivers Nuclear Partnership (FRNP) Deactivation and Remediation (D&R) project at PGDP
- ✓ Contract is valued at over \$118 million
 - Provide a staff of 70 personnel in total, including: Fifty-three United Steelworkers [USW] to perform D&R Activities
 - Scope includes waste operations and surveillance and maintenance of more than 400 facilities, including multiple current and former Haz Cat II facilities and RCRA Part B areas
 - VNSFS personnel also perform landfill management, scrapped metals handling, and environmental remediation.

GeoMelt® Sodium Waste – DOE Idaho

- ✓ Project to receive, treat, and dispose of approximately 900 radiologically contaminated sodium metal “Fermi” drums
- ✓ Waste received from INL, process waste at the GeoMelt® PermaFix NW facility, and ship to Nevada National Security Site for disposal.
- ✓ Waste received by 08/20/18, and fully processed and disposed by May 2019.
- ✓ Firm Fixed price project of \$4.6M, with payment received upon receipt of waste.





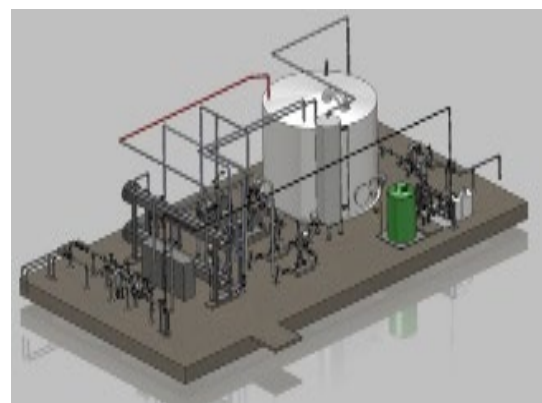
Specialty Services

Engineering, Environmental and Consulting

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Engineering – Local & Worldwide

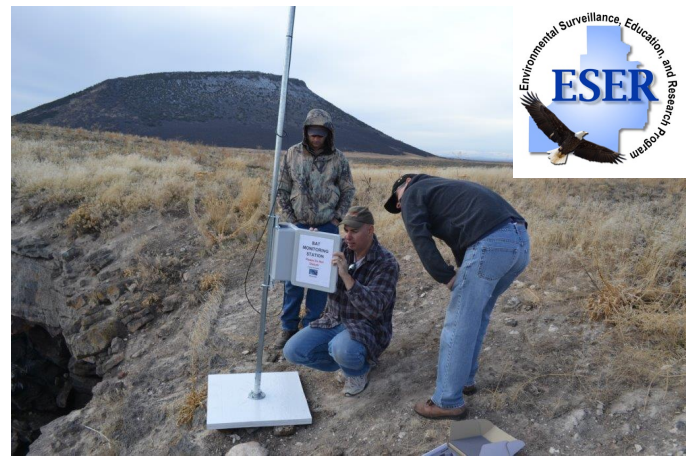
- ✓ Twenty-year DOE engineering experience
- ✓ Task Order based contracts supporting >\$4.0M/year in work
- ✓ NQA-1 Certified with all relevant disciplines
- ✓ Project delivery experience for all Hanford missions (nuclear, environmental, infrastructure, waste), plus robotics & process
- ✓ **Services include:**
 - NQA-1 and LEED Certification Process Support
 - Mechanical, Electrical, Civil, Process, Environmental, Nuclear, Industrial and System Disciplines
 - DOE and Regulatory Compliance Support
 - Design, engineering support during construction and provide as-built drawings
 - Roofing Inspections, Facility Maintenance, HVAC
 - Mobile Office Installations and Alarm Engineering
 - Hazardous Characterization and Project Controls Analysis



AY/AZ Tank Farm Infrastructure Upgrades: Engineering / construction support for the installation of the diluent flush system, including: re-design, construction support for raw water and electrical tie-ins, pad foundation, transformer install.

Environmental Surveillance, Education and Research (ESER) – DOE Idaho

- ✓ ESER is a prime contractor to DOE Office of Nuclear Energy at the Idaho National Laboratory (INL)
- ✓ \$3M, five-year firm fixed price subcontractor to Prime
- ✓ Period of Performance from 2016 - 2021
- ✓ Scope is to conduct, manage and coordinate ecological and environmental research, offsite environmental surveillance, and environmental education for the INL



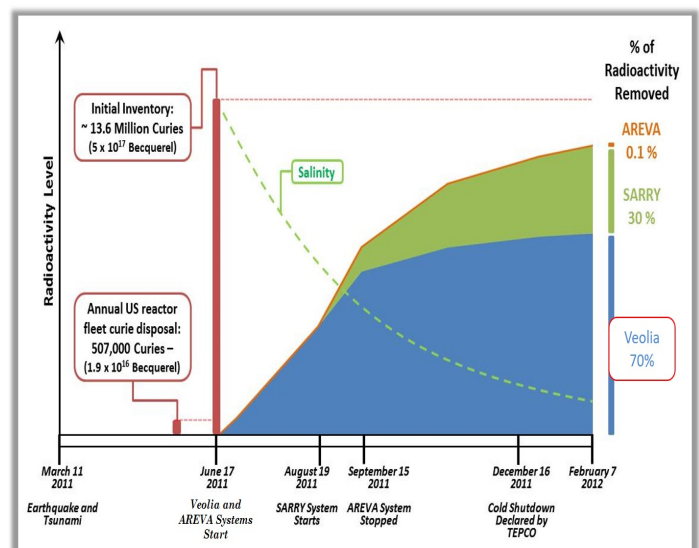
Regulatory Documents – Portsmouth, OH

- ✓ Develop regulatory decision-making documents for the DOE Portsmouth D&D Project through acceptance by DOE and concurrence by the Ohio Environmental Protection Agency (Ohio EPA).
- ✓ Performing since 2013, current contract value is \$9.26M, for period 09/2016 to 03/2021
- ✓ Major achievements during this contract, which began in 2013:
 - Five milestones for Regulatory Planning and Stakeholder Affairs were met through our contract deliverables
 - Property transfer documents required by the client's Performance Based Incentives were prepared under this contract
 - This contract produced documents that authorized more than \$1B in D&D work at PORTS.



Technology Delivery – Fukushima Disaster Recovery

- ✓ Master Supply and Services – only Western prime contractor to TEPCO for D&D initiatives at Fukushima
- ✓ Processed 70% of the radioactivity following the event, allowing for site stabilization
- ✓ Delivered multiple technologies to support both the emergency effort and long-term treatment options:
 - Three Ion Exchange Systems for Water Remediation
 - Safe Repair Technologies – remote access technologies and systems including boom arms and retrieval systems.
 - Engineering, Construction and Operations Support





Remote Access Handling and Robotics

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ACCESS – Robotics and Remote Systems

- ✓ Practical engineered robotic/remote handling **SOLUTIONS** for high hazardous environments
- ✓ Risk reduction or elimination of human exposure through customized remote/automated systems
- ✓ Over 30 years of proprietary and exclusive robotics/remote handling know-how delivering over 200+ systems worldwide
- ✓ Current nuclear projects in US, UK, Canada and Japan

