

# Advanced Nuclear Directory

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Developers, Suppliers and National Laboratories



**GAIN**

Gateway for Accelerated  
Innovation in Nuclear



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# **INTRODUCTION**

The Advanced Nuclear Directory offers a sample of companies engaged in the development of advanced nuclear technologies and should not be considered a comprehensive list of this industry. All companies featured have participated on a voluntary basis and are responsible for the information provided. Inclusion of a company does not indicate endorsement by any of the directory's sponsors.

## **ACKNOWLEDGMENT**

The Advanced Nuclear Directory was created in partnership between Gateway for Accelerated Innovation in Nuclear (GAIN), Third Way, and the United States Nuclear Infrastructure Council (USNIC).

\*GAIN reserves the right to edit content for publishing purposes.

# GATEWAY FOR ACCELERATED INNOVATION IN NUCLEAR



## INTRODUCTION

The mission of the GAIN initiative is to provide the nuclear energy industry with access to the technical, regulatory, and financial support necessary to move advanced nuclear technologies toward commercialization, while ensuring the continued reliable and economic operation of the existing nuclear reactor fleet. GAIN offers a single point of access to the broad range of capabilities across the Department of Energy (DOE) national laboratory complex. DOE has invested billions of dollars to build and maintain its nuclear research expertise and infrastructure. This vast capability is being leveraged via GAIN to support commercialization of new advanced nuclear technologies.



**Location:** Idaho Falls, ID

**Founded:** 2015

**Director:** Christine King

**Federal Engagement:** DOE-NE, NRC, NSUF, NEUP, LWRS, NEAMS, ART

**Preferred Point of Contact:** Christine King | [christine.king@inl.gov](mailto:christine.king@inl.gov) | 650-283-4235

***[gain.inl.gov](http://gain.inl.gov)***

# FAST REACTORS INFO SHEET

DOE-NE has established the Gateway for Accelerated Innovation in Nuclear (GAIN) to provide the nuclear community with access to the technical regulatory and financial support necessary to move innovative nuclear energy technologies toward commercialization while ensuring the continued safe reliable, and economic operation of the existing nuclear fleet.

Developing safe, reliable sources of carbon-free energy will be the next decade's greatest challenge for US power producers. Several US-based companies are developing Fast Reactors (FRs), a type of advanced nuclear reactor to help meet that energy challenge.

Without a moderator nuclear reactions occur at high energies, producing more efficient fission reactions. Developers of this reactor type offer increased safety, reduced proliferation risk, improved management of nuclear waste, and industrial applications, all at a lower cost than traditional reactors. In some designs the reactor can recycle waste from other reactors, or produce additional fuel.

Four types of FRs are being developed by US companies: the Sodium-Cooled Fast Reactor (SFR), Lead-Cooled Fast Reactor (LFR), Gas-Cooled Fast Reactor (GFR), and Molten Salt Fast Reactors (MSFR).

## Fast Reactors

### COST EFFICIENCY

As utilities evolve to meet the challenges of a modernizing grid, advanced nuclear reactor technologies seek to provide economically viable solutions through simplified designs and reduced operational costs.

### INTEGRATION & RELIABILITY

Flagging load growth and the rise of distributed generation sources are driving advanced nuclear developers to provide flexible, always on power to end users.

### SAFETY & WASTE

The possibility of Fukushima-like events is eliminated by the inherent physics of the reactor through a failsafe design; fuel waste concerns are substantially reduced.

Designs are intended for factory assembly and fixed modular construction, assuring on-budget projects while reducing overall costs.

Some FRs have a long-lived core, making the need for refueling infrequent; in some concepts, a reactor can operate for 30-60 years before it needs refueling.

When compared with current reactor designs, passive safety features cut operational and maintenance costs.

Reactors can achieve higher temperatures than fossil fuels, producing a high-quality steam cycle to meet commercial, industrial, and residential needs.

Reactors are designed for a modern grid, capable of load following and integrating with variable renewable energy sources.

FRs have demonstrated the ability to consume existing spent nuclear fuel from current generation reactors; most designs allow for the recycling of used fuel, limiting or reducing waste.

Operation in the fast spectrum allows for more efficient fuel use than current generation reactors, reducing waste and fuel costs.

FRs have demonstrated inherent safety under severe accident conditions.

		Thermal Output (per unit)	Electrical Output (per unit)	Total Plant Footprint	Primary System Water Requirements	Industrial Heat & Steam	Load Following
< 10 MWe	Micro Systems	< 30 MWt	< 10 MWe	Fast Food Restaurant	None	✓	✓
10 - 300 MWe	Small Systems	30 - 1000 MWt	10 - < 300 MWe	Parking Garage	None	✓	✓
> 700 MWe	Large Systems	> 1000 MWt	> 700 MWe	Industrial Factory	None	✓	✓

May 24, 2021



## Inherently Safe by Design

By operating in the fast spectrum with a liquid metal coolant, FRs are able to provide both high power density and passively safe operation. FRs rely on "fast neutrons" to cause fission, and can be designed without a moderator (e.g., water) in the reactor core. A liquid metal coolant allows for efficient heat transfer at low pressure, promoting natural circulation and passive decay heat removal. In the event of a rise in temperature, the physics of the reactor provides reactivity feedback that inherently reduces the reactor's power. This inherent safety behavior prevents severe accidents, as demonstrated by Experimental Breeder Reactor-II (Image 1). FRs using gas and salts can achieve similar inherent safety performance by passively removing heat, and incorporating self-stabilizing reactivity feedbacks.

## Fuel Cycle Features

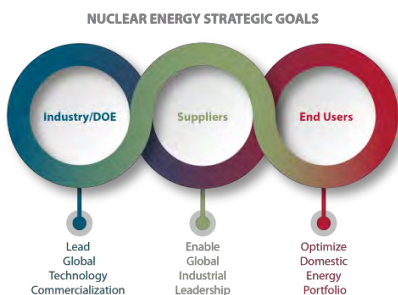
The unique properties of FRs enable efficient fuel utilization and waste minimization. FRs can operate with a favorable neutron balance; fission reactions in FRs are capable of creating more neutrons than consumed. By converting these excess neutrons into usable fuel materials, some FRs are designed to produce more fuel. FRs are also flexible to accept a wide range of fuel materials, with many designs capable of recycling existing nuclear waste in a closed fuel cycle. The efficient fuel utilization of FRs can also enable some designs to operate for decades without refueling. FRs offer fuel cycle flexibility, providing a robust fuel supply and improved nuclear waste management.



*Experimental Breeder Reactor-II (EBR II) at the National Reactor Testing Station in Idaho*

## Load Following and Integration

By deploying FRs in an energy mix, power producers are able to provide reliable electricity to customers while integrating with other generation technologies, such as variable renewable energy resources. Flexible load following capabilities allow a reactor to adjust to demand and intermittent supply. In times when less power is needed, fast reactors have a ramp-down rate of less than 15 minutes. When the demand for energy increases, it can be ramped up to full power within minutes.



## Additional Fast Reactor Resources:

[bit.ly/IAEA-FastReactor-Reference](https://bit.ly/IAEA-FastReactor-Reference)

[bit.ly/GAIN-FastReactor](https://bit.ly/GAIN-FastReactor)

[bit.ly/ANL-EBR2-History](https://bit.ly/ANL-EBR2-History)

# HIGH TEMPERATURE REACTORS INFO SHEET

## INTRODUCTION

DOE-NE has established the Gateway for Accelerated Innovation in Nuclear (GAIN) to provide the nuclear community with access to the technical, regulatory, and financial support necessary to move innovative nuclear energy technologies toward commercialization while ensuring the continued safe, reliable, and economic operation of the existing nuclear fleet.

Developing safe, reliable sources of carbon-free energy will be the next decade's greatest challenge for US power producers. Several US-based companies are developing High Temperature Reactors (HTRs), a type of advanced nuclear reactor, to help meet that energy challenge.

HTRs are a type of graphite-moderated thermal reactor employing TRISO fuels (see below), differentiating them from other advanced reactor concepts. HTRs use either inert gas or molten salt as a heat transfer medium. Developers of this reactor type offer increased safety, remote power, and industrial applications.

HTRs typically use low enriched uranium fuel to produce higher reactor outlet temperatures than other reactors. For this reason, developers of HTRs offer it as a viable replacement to industrial fossil fuel processes.

## High Temperature Reactors

### COST EFFICIENCY

As utilities evolve to meet the challenges of a modernizing grid, advanced nuclear reactor technologies seek to provide economically viable solutions through simplified designs and reduced operational costs.

### INTEGRATION & RELIABILITY

Flagging load growth and the rise of distributed generation sources are driving advanced nuclear developers to provide flexible, always on power to end users.

### SAFETY & WASTE

The possibility of Fukushima-like events is eliminated by the inherent physics of the reactor through a failsafe design; fuel waste concerns are substantially reduced.

Designs are intended for factory assembly and fixed modular construction, assuring on-budget projects while reducing overall costs.

Many designs support online refueling, avoiding disruption in customers' energy demands.

When compared with current reactor designs, passive safety features cut operational and maintenance costs.

Reactors can achieve higher temperatures than fossil fuels, producing a high-quality steam cycle to meet commercial, industrial, and residential needs.

Reactors are designed for a modern grid, capable of load following and integrating with variable renewable energy sources.

HTR designs either utilize non-reactive helium gas or molten salts as a heat transfer medium, providing an added measure of safety.

More efficient fuel usage than current generation reactors reduces waste and fuel costs for operators.

Ceramic TRISO fuel, coupled with a large graphite and salt heat capacity, allows for a slow fuel temperature response in the event of cooling loss.

		Thermal Output (per unit)	Electrical Output (per unit)	Total Plant Footprint	Primary System Water Requirements	Industrial Heat & Steam	Load Following
< 10 MWe	Micro Systems	< 30 MWt	< 10 MWe	Fast Food Restaurant	None	✓	✓
10 - 300 MWe	Small Systems	30 - 1000 MWt	10 - < 300 MWe	Parking Garage	None	✓	✓
> 700 MWe	Large Systems	> 1000 MWt	> 700 MWe	Industrial Factory	None	✓	✓

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## Quality Process Heat for Industrial Applications

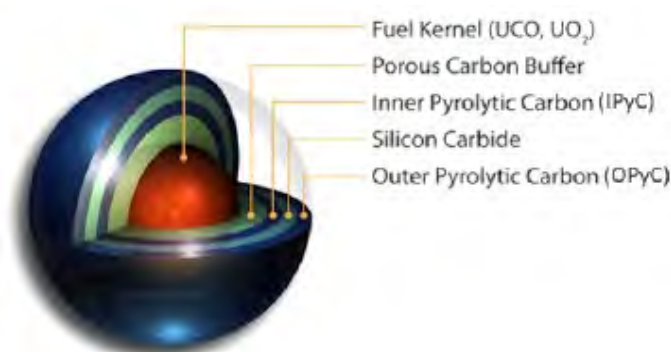
All HTR systems have the ability to reach higher and more precise temperatures than those that use fossil fuels. HTRs' ability to consistently produce clean, quality heat is especially important in industrial chemical processes, where a plant must maintain a set range of temperatures for successful production. HTRs, therefore, can reduce the margin of error for operators, resulting in greater cost efficiencies.

## Inherent Safety that Starts at the Fuel Source

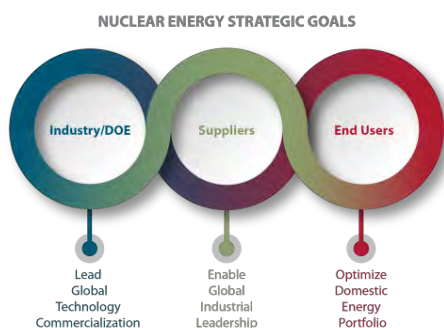
HTRs are built around safety, beginning with advances in nuclear fuel technology. All HTRs use “tri-structural isotropic” fuels, commonly referred to as TRISO fuels (Image 1). TRISO fuel comes in different shapes and sizes; no matter the form, this advanced fuel source contains a small amount of low-enriched uranium fuel within three layers of protective graphite and silicon carbide. These TRISO particles are incorporated into a graphite matrix within spheres (“pebbles”) the size of a golf ball or a tennis ball, or into blocks (“compacts”). The coatings around the TRISO particles fully contain fission products resulting from the nuclear reaction, eliminating the need for costly, concrete containment structures.

## Load Following and Integration

By deploying HTRs in an energy mix, power producers are able to provide reliable electricity to customers while integrating with other generation technologies, such as variable renewable energy resources. Flexible, load following capabilities of HTRs enable integration with intermittent renewable energy sources; moreover, the high-grade heat produced by HTRs make thermal energy storage or integration with industrial processes possible and attractive during low electricity demand intervals.



A tri-structural isotropic or “TRISO” fuel particle



## Additional High Temperature Reactor Resources:

[bit.ly/INL-ART-GCR](https://bit.ly/INL-ART-GCR)

[bit.ly/NRC-Training-Course-HTR](https://bit.ly/NRC-Training-Course-HTR)

[bit.ly/IAEA-ARIS-Database](https://bit.ly/IAEA-ARIS-Database)



# MOLTEN SALT REACTORS INFO SHEET

DOE-NE has established the Gateway for Accelerated Innovation in Nuclear (GAIN) to provide the nuclear community with access to the technical, regulatory, and financial support necessary to move innovative nuclear energy technologies toward commercialization while ensuring the continued safe, reliable, and economic operation of the existing nuclear fleet.

Developing safe, reliable sources of carbon-free energy will be the next decade's greatest challenge for power producers in the US. Several US-based companies are developing Molten Salt Reactors (MSRs), a type of advanced nuclear reactor, to help meet that energy challenge.

MSRs utilize low pressure, high temperature fluoride or chloride salts as liquid fuels and coolants. MSRs are different from most other advanced reactor concepts because of their ability to operate in a low pressure environment, as well as at higher temperatures and for longer durations than other reactor types. Developers of this reactor offer increased safety, reduced proliferation risk, passive safety system features, and short-lived waste.

MSRs could play a significant role in closing the nuclear fuel cycle, increasing fuel utilization, and reducing long-lived waste products.

## Molten Salt Reactors

### COST EFFICIENCY

As utilities evolve to meet the challenges of a modernizing grid, advanced nuclear reactor technologies seek to provide economically viable solutions through simplified designs and reduced operational costs.

### INTEGRATION & RELIABILITY

Flagging load growth and the rise of distributed generation sources are driving advanced nuclear developers to provide flexible, always on power to end users.

### SAFETY & WASTE

The possibility of Fukushima-like events is eliminated by the inherent physics of the reactor through a failsafe design; fuel waste concerns are substantially reduced.

Some designs are intended for factory assembly and fixed modular construction, assuring on-budget projects while reducing overall costs.

Able to operate at full power while being refueled, avoiding a disruption in customers' energy demands.

When compared with current reactor designs, passive safety features cut capital, operations, and maintenance costs.

Reactors can achieve higher temperatures, producing electricity more efficiently or high-quality heat for industrial processes.

MSRs are designed for a modern grid, capable of load following and integrating with variable renewable energy sources.

Flexible designs allow for the use of various fuel types; some designs are capable of consuming used fuel from other reactors.

Fuel compositions are flexible compared to current generation reactors, allowing for various fuel cycle approaches to increase resource utilization and reduce waste.

Passive safety features can allow for "walk away" safety, even during severe events.

		Thermal Output (per unit)	Electrical Output (per unit)	Total Plant Footprint	Primary System Water Requirements	Industrial Heat & Steam	Load Following
< 10 MWe	Micro Systems	< 30 MWt	< 10 MWe	Fast Food Restaurant	None	✓	✓
10 - 300 MWe	Small Systems	30 - 1000 MWt	10 - < 300 MWe	Parking Garage	None	✓	✓
> 700 MWe	Large Systems	> 1000 MWt	> 700 MWe	Industrial Factory	None	✓	✓

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## Readily Apparent Safety

Due to the inherent characteristics of low pressure, chemically-inert coolants and liquid fuel systems, MSR's are easily coupled to passive safety systems that eliminate the need for many of the safety systems needed for other reactor types. MSR's can be designed to be "walk away" safe and operate with low pressure components and systems, which improve the economic performance and enhance the safety of the reactor.

## High-Quality Energy

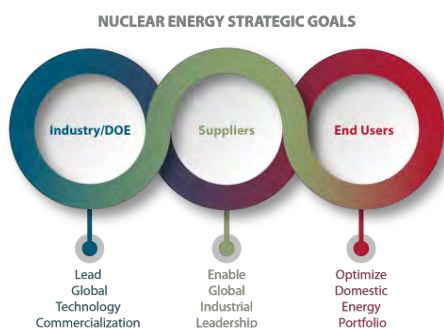
MSR's produce high temperature heat for efficient electricity production and for application in high temperature industrial applications, including the production of hydrogen. MSR's are attractive because of their potential to operate at higher, more efficient temperatures for extended operational cycles.

## Load Following and Integration

By employing MSR's in an energy mix, a power producer is able to provide reliable energy to its customers while integrating with variable resources. Flexible load following capabilities of MSR's enable integration with intermittent renewable energy sources; moreover, the high-grade heat produced by MSR's make thermal energy storage or integration with industrial processes possible and attractive during low electricity demand intervals.



A TOP VIEW OF THE Molten Salt Reactor Experiment (MSRE) at Oak Ridge National Laboratory



## Additional Molten Salt Reactor Resources:

[bit.ly/GAIN-MSR](https://bit.ly/GAIN-MSR)

[bit.ly/YouTube-MSR](https://bit.ly/YouTube-MSR)

[bit.ly/ORNL-MSR](https://bit.ly/ORNL-MSR)

[bit.ly/FluidFuelReactors](https://bit.ly/FluidFuelReactors)





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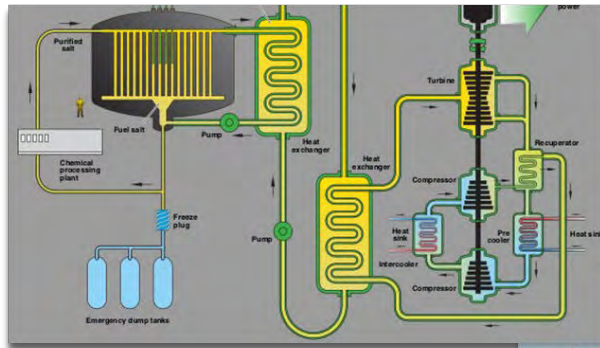
# **DEVELOPERS**

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# ALPHA TECH RESEARCH CORP



Alpha Tech Research Corp is developing thorium fueled Molten Salt Reactor (MSR) technology to enable a new phase in clean, safe power production.



**Location:** Salt Lake City, UT

**Founded:** 2016

**Principal/CEO:** Nick Baguley

**Major Investors:** Non-disclosed

**Technology Class:** MSR

**Reactor Type:** MSTIR

**Power Output (MWe/MWT):** 30MWt

**Federal Engagement:** DOE, NRC

**Preferred Point of Contact:** Staci Wheeler | [staci@alphatechresearchcorp.com](mailto:staci@alphatechresearchcorp.com) | 801-477-0715

<https://alphatechresearchcorp.com/>

# ARC CLEAN TECHNOLOGY, INC.



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ARC is a clean energy technology company developing the ARC-100, an advanced small modular reactor (aSMR) offering inherently safe, reliable, and economical carbon free power. Leveraging proven technology from the 30-year performance of its prototype, the ARC-100's simple, modular design provides 100 megawatts of electricity and industrial heat that is cost competitive with fossil fuels. Important applications include the decarbonization of heavy industry, the fueling of low-carbon hydrogen projects, and the creation of valuable medical isotopes. The ARC-100 is the recipient of an ARDP (ARC-20) award from the U.S. DOE. It has also been selected by New Brunswick Power for implementation on their Point Lepreau site, with completion targeted for the late 2020s. ARC has offices in Washington, DC, and Saint John, New Brunswick.



**Location:** Washington, DC

**Founded:** 2006

**Principal/CEO:** Donald Wolf

**Major Investors:** Non-disclosed

**Technology Class:** Advanced small modular reactor

**Reactor Type:** Sodium cooled fast reactor

**Power Output (MWe/MWt):** 100 MWe / 286 MWt

**Federal Engagement:** DOE, NRC

**Preferred Point of Contact:** Irfan Ali | [iali@arc-cleantech.com](mailto:iali@arc-cleantech.com)

<https://arc-cleantech.com/>

# BRILLOUIN ENERGY CORP.



Brillouin Energy Corp. is a clean-technology company located in Berkeley California, which is developing ultra-clean, low-cost, energy technology capable of producing industrially useful thermal energy. Brillouin's technology is based on Low Energy Nuclear Reactions (LENR), which it generates on a controlled basis in its reactors through Controlled Electron Capture Reaction (CECR) concept. Third party verified by SRI in 2016, 2017 and 2018. Some of the basic physics of CECR, verified in a TAP with PNNL Feb-2013. Extremely scalable technology designed to drop into shell and tube heat exchangers where the tube is a new type of fire and DTC friendly. No radioactive waste, no penetrating radiation in operation. Four test systems already work with interchangeable parts.



**Location:** Berkeley, CA

**Founded:** 2009

**Principal/CEO:** Robert W. George

**Major Investors:** 46 Angel Investors

**Technology Class:** Adaptable gas, liquid, supercritical CO<sub>2</sub> Water / steam 80 -700C

**Reactor Type:** CECR, low energy nuclear reactions

**Power Output (MWe/MWT):** 10<sup>-6</sup> - 3000+ MWe / 10<sup>-5</sup> - 8000 MWt

**Federal Engagement:** NA

**Preferred Point of Contact:** David Firshein | dnf@brillouinenergy.com | 415-419-6429

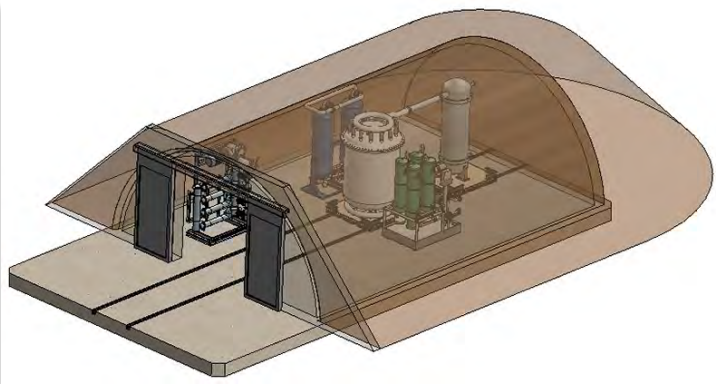
**<https://brillouinenergy.com/>**

# BWX TECHNOLOGIES, INC.



ADVANCED NUCLEAR | DEVELOPER

BWX Technologies, Inc. (BWXT) provides safe and effective nuclear solutions for national security, clean energy, environmental remediation, nuclear medicine and space exploration. With approximately 6,700 employees, BWXT has 12 major operating sites in the U.S. and Canada. We are the sole manufacturer of naval nuclear reactors for U.S. submarines and aircraft carriers. Our company supplies precision manufactured components, services and fuel for the commercial nuclear power industry across four continents. Our joint ventures provide environmental remediation and nuclear operations management at more than a dozen U.S. Department of Energy and NASA facilities. BWXT's technology is also driving advances in medical radioisotope



production in North America and microreactors for various defense and space applications.

Through its entities, BWXT is developing BANR (BWXT Advanced Nuclear

Reactor). BANR is a transportable microreactor designed to utilize advanced TRISO particle fuel to achieve higher uranium loading and improved fuel

**Location:** Lynchburg, VA

**Founded:** 1857

**Principal/CEO:** Rex D. Geveden

**Major Investors:** BWX Technologies, Inc. is publicly traded on the New York Stock Exchange

**Technology Class:** High Temperature Gas Reactor

**Reactor Type:** High Temperature Gas Microreactor

**Power Output (MWe/MWt):** 17 MWe / 50 MWt

**Federal Engagement:** DOE, NRC,

**Preferred Point of Contact:** Joshua L. Parker | jlparker2@bwxt.com | 434-316-7652

***[https:// www.bwxt.com/](https://www.bwxt.com/)***



# COLUMBIA BASIN CONSULTING GROUP



CBCG is a business management and technical consulting firm which provides services relating to advanced reactor engineering and development.



**CBCG PbBi Nuclear Plant Development - Power When You Need it to BE-THERE**

**Location:** Kennewick, WA

**Founded:** 1998

**Principal/CEO:** William J. Stokes

**Major Investors:** Self-funded

**Technology Class:** Liquid metal cooled

**Reactor Type:** Lead-bismuth and sodium

**Power Output (MWe/MWt):** 260 MWe / 600 MWt; 100 MWe / 250 MWt

**Federal Engagement:** DOE, GAIN, Other

**Preferred Point of Contact:** William J. Stokes | [wjstokes@cbcgllc.com](mailto:wjstokes@cbcgllc.com) | [aporter@cbcgllc.com](mailto:aporter@cbcgllc.com)

<http://www.cbcgllc.com/>



# EXODYS ENERGY, INC.



EXODYS ENERGY believes that nuclear energy innovation will propel humanity past energy poverty and pollution. With over 400,000 tons of nuclear fuel waste, the world has centuries of clean energy security. To unlock this potential, the company is developing two technologies:

- UP-CYCLE: Nuclear waste-to-fuel conversion process
- KLOSOS: Advanced Molten Salt Modular Reactor

The concepts are based on the product of a diverse team of U.S. Navy advanced reactor designers and leaders in both civil and military (naval & space) nuclear power programs. UPCYCLE & KLOSOS are being engineered to quickly scale up nuclear energy by improving safety & security margins, with the lowest environmental footprint.

ADVANCED NUCLEAR | DEVELOPER

**Location:** New York, NY

**Founded:** 2022

**Principal/CEO:** Carl Perez

**Major Investors:** Non-Disclosed

**Technology Class:** Advanced Modular Reactor

**Reactor Type:** Molten Salt Reactor: Fast-spectrum, Chloride Salt

**Power Output (MWe/MWt):** 500-3000 MWt / 200-1200 MWe

**Federal Engagement:** DOE, GAIN

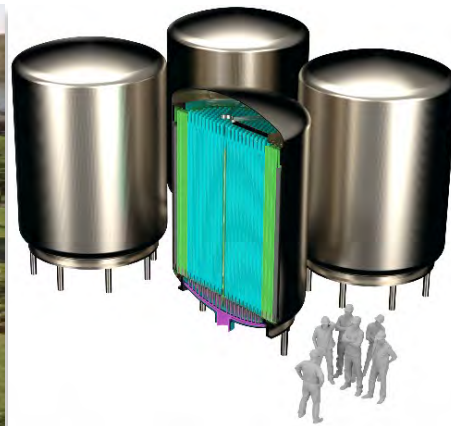
**Preferred Point of Contact:** Carl Perez | [cperez@exodysenergy.com](mailto:cperez@exodysenergy.com) | 646-706-3698

<https://www.exodysenergy.com/>

# FLIBE ENERGY, INC.



Founded in 2011 in Huntsville, Alabama, Flibe Energy, Inc. (FEI) was the world's first molten-salt reactor company. FEI is developing the Lithium Fluoride Thorium Reactor (LFTR) and associated technologies, building on the Molten Salt Reactor Program that operated at Oak Ridge National Laboratory from 1957-1976. Through use of on-site chemical processing, LFTR consumes all of its thorium fuel, keeps long-lived isotopes out of the waste stream, and only requires management of a small quantity of short-lived waste in low-cost near-surface regional repositories. Furthermore, utilization of a supercritical CO<sub>2</sub> power conversion system reduces turbomachinery size and complexity, enables tritium capture, and makes dry cooling possible. LFTR has a low-risk supply chain due to a lack of mining, enrichment, solid fuel fabrication, long-lived waste, as well as through use of domestic suppliers for major materials and components. With growing populations and increasing electrification, LFTR provides a path to sustainable energy.



**Location:** Huntsville, AL and Richland, WA

**Founded:** 2011

**Principal/CEO:** Kirk Sorensen

**Major Investors:** Private

**Technology Class:** Molten salt reactor

**Reactor Type:** Liquid fuel/coolant, fluoride salts, thermal spectrum, graphite moderator, thorium/U-233 fuel cycle

**Power Output (MWe/MWt):** 250 MWe / 600 MWt

**Federal Engagement:** DOE, GAIN, NRC

**Preferred Point of Contact:** Kurt Harris | [kurt.harris@flibe-energy.com](mailto:kurt.harris@flibe-energy.com)

<https://flibe-energy.com/>

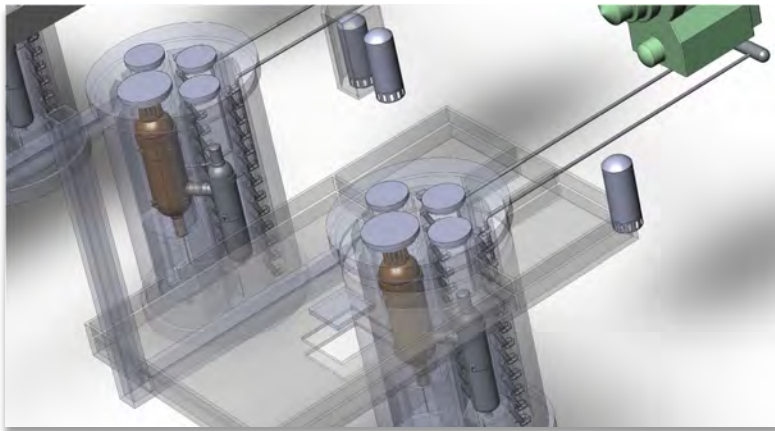
# FRAMATOME, INC.



ADVANCED NUCLEAR | DEVELOPER

Framatome is a major international player in the nuclear energy market recognized for its innovative solutions and value-added technologies for designing, building, maintaining, and advancing the global nuclear fleet. The company designs, manufactures, and installs components, fuel and instrumentation and control systems for nuclear power plants and offers a full range of reactor services.

Framatome is developing the Steam Cycle HTGR Generation IV advanced reactor concept. Its scalable design provides options for a variety of customer needs for high-temperature steam and electricity. Its unparalleled safety profile allows co-location with customer facilities. True walk-away safety and restart capability following a design-basis



accident make the SC-HTGR a low investment risk for plant owners and operators.

**Location:** Lynchburg, VA

**Founded:** 1989

**Principal/CEO:** Gary Mignogna

**Major Investors:** Non-disclosed

**Technology Class:** High temperature gas cooled

**Reactor Type:** Steam cycle high temperature gas cooled reactor

**Power Output (MWe/MWt):** 22-272 MWe / 50-625 MWt

**Federal Engagement:** DOE, GAIN, ARPA-E, NRC

**Preferred Point of Contact:** Darryl Gordon | [Darryl.gordon@framatome.com](mailto:Darryl.gordon@framatome.com) | 434-832-5199

[www.framatome.com](http://www.framatome.com)

# GE HITACHI NUCLEAR ENERGY



## HITACHI

**BWRX-300 Small Modular Reactor (SMR)** - GE Hitachi Nuclear Energy (GEH) is a world leader in new plant technology, fuel and services. GEH's BWRX-300 is a 300 MWe water-cooled, natural circulation small modular reactor with passive safety systems that leverages the design and licensing basis of the company's U.S. NRC-certified ESBWR. Through dramatic and innovative design simplification, GEH projects the BWRX-300 will require significantly less capital cost per MW when compared to other SMR designs. By leveraging the ESBWR design certification, utilizing the licensed and proven GNF2 fuel design, and incorporating proven components and supply chain expertise the BWRX-300 can, GEH believes, become the lowest-risk, most cost-competitive and quickest to market SMR.



**Natrium Integrated Energy System** - GEH is working with TerraPower to develop the Natrium™ technology, a sodium fast reactor with integrated energy storage (IES). Together the team reinvented what nuclear can be: flexible and cost competitive. Natrium's architecture has been specifically designed to lower operational costs, simplify construction and reduce schedule compared to previous reactor types. On a per MWe basis, it uses 80% less nuclear-grade concrete compared to today's large reactors. Its energy storage system can provide customizable GWhe scale energy storage to capture greater revenue thereby eliminating the economic penalty for load following while supporting grids with high renewables penetration.

**Versatile Test Reactor** - GEH and TerraPower are on the team led by Bechtel National Inc. to support the design and build phase of the Versatile Test Reactor, a one-of-a-kind facility that would support research and development of innovative, clean nuclear energy technologies.

**Location:** Wilmington, NC

**Founded:** 1955

**Principal/CEO:** Jay Wileman

**Major Investors:** Confidential

**Technology Class:** BWRX-300 - GEN III+ SMR; Natrium - GEN IV Advanced Reactor

**Reactor Type:** BWRX-300 - Boiling water reactor; Natrium - Sodium fast reactor

**Power Output (MWe/MWt):** BWRX-300 - 300 MWe / 910 MWt; Natrium - 345 MWe /840 MWt (The IES system can boost output to 500MWe for more than 5 1/2 hours to serve peak demand)

**Federal Engagement:** DOE, NRC

**Preferred Point of Contact:** Bob Dunn | robert.dunn@ge.com

<https://nuclear.gepower.com/>



# GENERAL ATOMICS ELECTROMAGNETIC SYSTEMS



ADVANCED NUCLEAR | DEVELOPER

General Atomics Electromagnetic Systems (GA-EMS) Group has been at the forefront of innovation in nuclear energy since the 1950s. We continue to push the boundaries of what is possible in advanced nuclear reactors while helping to sustain our current reactor fleet and spinning off advanced material technologies that have the potential to enhance public safety and well-being. GA's TRIGA® research reactors are some of the most successful reactor designs in history.

GA-EMS is building on its experience with TRIGA® in developing the next generation of advanced fission reactors, such as the 50 MWe Fast Modular Reactor (FMR) for distributed power generation in the mid-2030s to be followed by the 265 MWe 4-unit (1 GWe) Energy Multiplier Module (EM2) for grid-scale power generation. These two load-following advanced high temperature helium-cooled fast reactors have a net efficiency as high as 53%. Both reactors employ cutting-edge advances in materials science to address the four core challenges facing nuclear energy – safety, waste, cost, and non-proliferation. EM2 and

FMR can be powered by fresh or spent nuclear fuel and operated without refueling for up to 30 for EM2 and 9 years for the FMR.

GA is developing silicon carbide composites, SiGA®, for Accident Tolerant Fuel cladding and reactor components, such as those in the EM2 and FMR. Innovative technology solutions are underway for specialty nuclear fuels, radioactive waste remediation, advanced materials for extreme environment applications, space reactors for both propulsion and power.



The FMR Power Plant Layout



The FMR Reactor System



Two EM2 modules on seismically isolated platform

**Location:** San Diego, CA

**Founded:** 1955

**Principal/CEO:** Neal Blue

**Major Investors:** Non-disclosed

**Technology Class:** Advanced nuclear reactors, fuels and materials

**Reactor Type:** High temperature gas cooled fast reactors

**Power Output (MWe/MWt):** 50MWe / 112 MWt (FMR); 4 x 265 MWE / 4 x 500 MWt (EM2)

**Federal Engagement:** DOE, GAIN, NRC, DARPA, DoD, NASA, Other

**Preferred Point of Contact:** Ron Faibish | [ron.faibish@ga.com](mailto:ron.faibish@ga.com) | 202-713-8333

<https://www.ga.com/ems>

# GENERAL FUSION

The logo for General Fusion, featuring the word "generalfusion" in white lowercase letters on a red rectangular background.

General Fusion is the world's most advanced private fusion technology venture, pursuing a faster and more practical path to commercially viable fusion energy.



**Location:** Burnaby, Canada

**Founded:** 2002

**Principal/CEO:** Christofer Mowry

**Major Investors:** Government of Canada Strategic Innovation Fund, Bezos Expeditions, Khazanah Nasional, Chrysalix Energy VC, Braemar Energy Ventures, SET Ventures, Cenovus Energy, BDC Canada, GrowthWorks, Entrepreneurs Fund, Sustainable Development Technology Canada

**Technology Class:** Fusion

**Reactor Type:** Magnetized target fusion

**Power Output (MWe/MWT):** 200 MWe

**Federal Engagement:** Other

**Preferred Point of Contact:** Grace Sullivan | [grace.sullivan@generalfusion.com](mailto:grace.sullivan@generalfusion.com)

<https://generalfusion.com/>



# HOLOSGEN LLC

# HolosGen™

HolosGen develops mobile scalable integral nuclear generators with simplified and innovative designs that are optimized to produce economical, distributable, pollutant-free, and most importantly, safe electricity.



ADVANCED NUCLEAR | DEVELOPER

**Location:** Manassas Park, VA

**Founded:** 2017

**Principal/CEO:** Claudio Filippone

**Major Investors:** Non-disclosed

**Technology Class:** Gas cooled

**Reactor Type:** High temperature gas reactor

**Power Output (MWe/MWt):** 3-81 MWe / 5-135 MWt

**Federal Engagement:** N/A

**Preferred Point of Contact:** Claudio Filippone | <http://www.holosgen.com/contact-us/>

***<http://www.holosgen.com/>***

# HOLTEC INTERNATIONAL



Holtec's SMR-160 is a robust small modular reactor that delivers 160 MW net electric in a small footprint. SMR-160 is based on pressurized water reactor technology and uses low enriched uranium fuel to provide reliable, affordable and carbon-free energy. The SMR-160 is "walk-away safe," requiring no operator actions during natural disasters, man-made threats, or any of the conditions required to be considered by U.S. regulations. It is the ideal solution for sustaining economic growth worldwide. Since SMR-160 can integrate readily to both established electrical grids or as an independent distributed power source, it is well adapted for both undeveloped and developed countries. SMR160 is truly modular. The majority of the plant's equipment and structures are factory-fabricated and can be delivered to each site in segments. An SMR-160-based site can easily be expanded with additional units to meet current and future demand. Please visit [www.smrllc.com](http://www.smrllc.com) for more information.



**Location:** Camden, NJ <https://holtecinternational.com/products-and-services/smr/>  
**Founded:** 1986  
**Principal/CEO:** Dr. Krishna P. Singh  
**Major Investors:** Non-disclosed  
**Technology Class:** Advanced Small Modular Reactor  
**Reactor Type:** Light Water PWR  
**Power Output (MWe/MWT):** 160 MWe  
**Federal Engagement:** DOE, NRC  
**Preferred Point of Contact:** Myron Kaczmarzsky | [m.kaczmarzsky@holtec.com](mailto:m.kaczmarzsky@holtec.com) | 856-797-0900 x 3657

# HYBRID POWER TECHNOLOGIES LLC



ADVANCED NUCLEAR | DEVELOPER

- ☐ READILY SUPPORTS GRID
- ☐ USES ALL RESOURCES

- ✓ Nuclear
- ✓ Natural Gas
- ✓ Coal
- ✓ Solar & Wind

- ☐ MASSIVE REDUCTIONS

- ✓ Nuclear Fuel
  - New
  - Spent

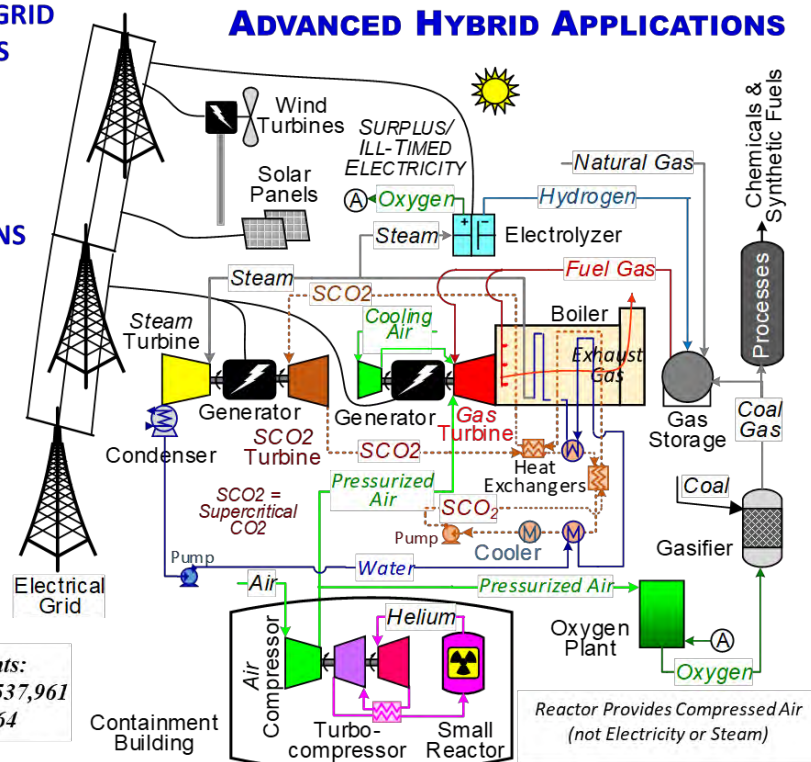
- ✓ Fossil Fuels
- ✓ CO2 Emissions

- ☐ NUMEROUS USES

- ✓ Power
- ✓ Chemicals
- ✓ Synthetic Fuels
- ✓ Co-Generation



U.S. Patents:  
7,961,835, 8,537,961  
11,492,964



**Location:** Overland Park, KS

**Founded:** 2011

**Principal/CEO:** Michael F. Keller

**Major Investors:** Privately funded

**Technology Class:** Gas cooled

**Reactor Type:** Graphite moderated, helium cooled

**Power Output (MWe/MWt):** +1100 MWe/+630 MWt (Reactor)

**Federal Engagement:** N/A

**Preferred Point of Contact:** Michael F. Keller | m.keller@hybridpwr.com | 913-375-6983 (cell)

<https://www.hybridpwr.com/>

**KAIROS POWER LLC**

# Kairos Power

Kairos Power is a mission-driven company singularly focused on its effort to commercialize the fluoride salt-cooled high-temperature reactor (FHR) in time to play a significant role in the fight against climate change. Kairos Power is disrupting the industry with rapid iterative development and vertical integration strategies to deliver a clean energy solution with robust safety at an affordable cost.



**Location:** Alameda, CA

**Founded:** 2016

**Principal/CEO:** Michael Laufer

**Major Investors:** Non-disclosed

**Technology Class:** Solid-fueled/Molten salt cooled

**Reactor Type:** Graphite-moderated, fluoride salt-cooled, high temperature reactor

**Power Output (MWe/MWT):** N/A

**Federal Engagement:** GAIN

**Preferred Point of Contact:** [info@kairospower.com](mailto:info@kairospower.com) | 510-508-5265

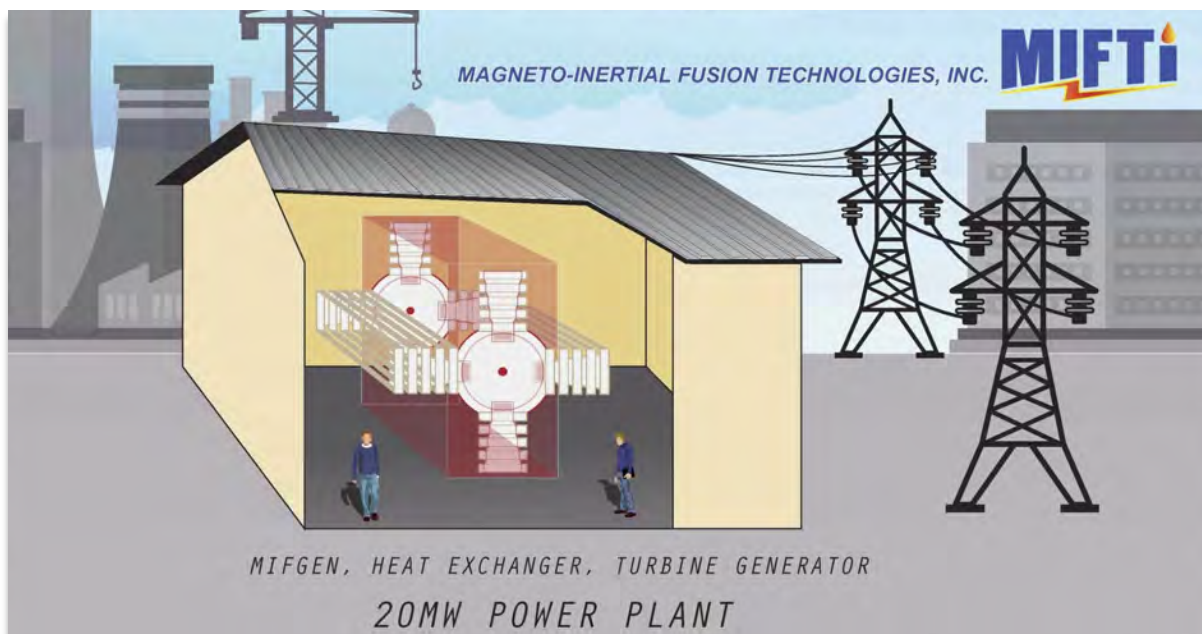
<https://kairospower.com>



# MAGNETO-INERTIAL FUSION TECHNOLOGIES, INC.



MIFTI specializes in fusion energy and medical isotope technology.



ADVANCED NUCLEAR | DEVELOPER

**Location:** Tustin, CA

**Founded:** 2009

**Principal/CEO:** Jerry Simmons, CEO / Dr. Hafiz Rahman, President, Chief Scientist

**Major Investors:** DOE, ARPA-E, Strong Atomics Fund 1, U.S. Nuclear Corp. (UCLE)

**Technology Class:** Thermonuclear fusion/Staged Z-Pinch

**Reactor Type:** Nuclear fusion reactor

**Power Output (MWe/MWT):** 20 MWe

**Federal Engagement:** DOE, ARPA-E, INFUSE, LLNL, ORNL, University of Rochester, UNR/NTF, UCSD

**Preferred Point of Contact:** Jerry Simmons | [jerry@miftec.com](mailto:jerry@miftec.com) | 714-329-3990

<https://miftec.com/>

# MICRONUCLEAR LLC



MicroNuclear LLC is focused on developing energy solutions. Current efforts include development of the Molten Salt Nuclear Battery (MsNB) as well as instrumentation and components for severe environment applications.



**Location:** Brentwood, TN

**Founded:** 2017

**Principal/CEO:** Paul Marotta

**Major Investors:** Proprietary private investors

**Technology Class:** Advanced Microreactor

**Reactor Type:** Molten Salt Dissolved Fuel

**Power Output (MWe/MWT):** 5-10MWe / 10-20MWt

**Federal Engagement:** DOE, GAIN, NRC

**Preferred Point of Contact:** Paul Marotta | paul@micronucleartech.com | 615-417-3649

<https://micronucleartech.com/>

# MUONS, INC.

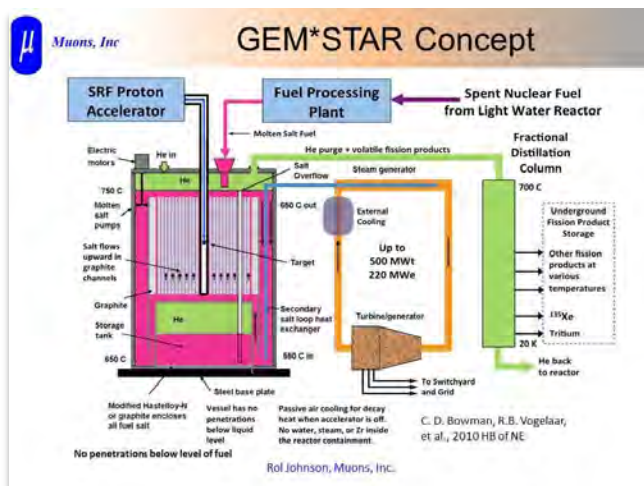


*Muons, Inc.*  
*Innovation in Research*

ADVANCED NUCLEAR | DEVELOPER

Partnering with national labs and universities with their extraordinary people and facilities, Muons has leveraged its creative talents to provide solutions to many problems of global and national interest. Muons has received over \$30M in competitive DOE contracts and Small Business Innovation and Technology Transfer Research grants, which have generated intellectual property as well as appreciation for our work in the accelerator and reactor communities. Examples of our inventions are included in discovery science (Muon Collider, the next atom smasher); medicine (Energy-Recovery Linacs for commercial production of new radioisotopes for therapy and diagnostics); national security (photon and neutron sources for cargo scanning); energy

and environment (Mu\*STAR subcritical system for carbon-free energy production); and industry (magnetron power sources for RF cavities). As a supporter of science and technology, Muons supports students and post-docs and provides computer programs for accelerator and reactor communities.



**Location:** Batavia, IL

**Founded:** 2002

**Principal/CEO:** Rolland Johnson, President

**Major Investors:** Rolland Johnson

**Technology Class:** Advanced reactor developer

**Reactor Type:** SRF linac driven subcritical molten salt thermal spectrum SMR

**Power Output (MWe/MWt):** 220 MWe/500 MWt

**Federal Engagement:** DOE, ARPA-E, GAIN, DOE SBIR-STTR Programs

**Preferred Point of Contact:** Rolland Johnson | [rol@muonsinc.com](mailto:rol@muonsinc.com) | 757-870-6943

<https://muonsinc.com/>



# NANO NUCLEAR ENERGY INC.



Nano Nuclear Energy Inc. is a nuclear reactor company focusing on developing deployable mobile reactors, capable of servicing remote industrial and manufacturing projects, previously uneconomic mining sites, oil, and gas projects, military bases, remote towns, islands, and disaster affected areas quickly requiring power. Nano has already engaged with several major institutional lenders and secured investment commitments. The Nano managerial and Executive team brings extensive capital and public markets experience to the Company, and intends to deploy that experience to Nano's benefit through IPOs and capital market raises. Nano strongly supports of the DOS and IAEA's objectives for the peaceful use of nuclear energy, and we intend our technology to form part of the U.S. foreign policy to advance the peaceful use of nuclear energy, science, and technology, and drive new resources to projects and activities in developing countries with the greatest need. Nano will seek to become a nuclear technology organization that can grow U.S. global energy market engagement and support global market opportunities.



**Location:** New York, NY

**Founded:** 2018

**Principal/CEO:** James Walker

**Major Investors:** UPS

**Technology Class:** Solid Core

**Reactor Type:** Microreactor

**Power Output (MWe/MWT):** 1MWe / 2.5 MWt

**Federal Engagement:** DOE, ARPA-E, GAIN

**Preferred Point of Contact:** James Walker, CEO | [info@nanonuclearenergy.com](mailto:info@nanonuclearenergy.com)

<https://nanonuclearenergy.com/>

# NIOWAVE, INC.



ADVANCED NUCLEAR | DEVELOPER

Niowave is utilizing transformative science and technology for advancing nuclear power to meet the nation's energy and security needs. Niowave's Radioisotope Program established both the facilities and the NRC license to operate a subcritical assembly and perform nuclear fuel reprocessing. The team is developing a hybrid fast/thermal spectrum subcritical testbed, coupled to a superconducting electron linac, to provide peak fast-spectrum neutron fluxes greater than  $1E15$  n/cm<sup>2</sup>s in heavy liquid-metal environment. The facility will be used to test novel fuels, materials, instruments and components, reactor safety designs, provide data for reactor code development, and support the regulatory process for licensing novel technology.



**Location:** Lansing, MI

**Founded:** 2005

**Principal/CEO:** Terry L. Grimm, President

**Major Investors:** Privately funded

**Technology Class:** Liquid metal cooled (lead-bismuth eutectic)

**Reactor Type:** Hybrid fast/thermal spectrum subcritical testbed

**Power Output (MWe/MWT):** 0.1-10 MWt

**Federal Engagement:** DOE, NRC, DoD, NIH

**Preferred Point of Contact:** Robert Wahlen | [wahlen@niowaveinc.com](mailto:wahlen@niowaveinc.com) | 517-999-3475

<https://www.niowaveinc.com/>

# NUGEN, LLC



NuGen is developing a revolutionary direct-cycle microreactor for terrestrial, maritime and space uses. Due to its robust compact configuration and its versatility, it is called the NuGen Engine™. Its unique innovative design includes a patented spiral fuel core, with a streamlined energy conversion mechanism, in a fully integrated direct-cycle system contained in a single module. This means a simpler and more compact efficient system, with higher manufacturability and transportability and less maintenance. It would be deployable in a broad range of sectors and offer off-grid electricity, high-quality process heat and cogeneration. Uses include at remote locations, mining sites, desalination plants, domestic military installations and data banks, and for mini- and macro-grids, shipping, and space power and propulsion. The US Patent Office has issued NuGen six patents, with other patents pending. For a listing of the issued patents, see <https://www.nucdev.com/about-us.html>.



**Location:** Charlotte, NC

**Founded:** 2006

**Principal/CEO:** Steve Rhyne

**Major Investors:** Founder

**Technology Class:** Advanced HTGR

**Reactor Type:** Fast spectrum

**Power Output (MWe/MWT):** 1-3 MWe

**Federal Engagement:** DOE, GAIN, NRC

**Preferred Point of Contact:** Steve Rhyne | [steve@nucdev.com](mailto:steve@nucdev.com) | 704-307-7280

<https://www.nucdev.com/>

# NUSCALE POWER



NuScale Power has developed a new modular light water reactor nuclear power plant to supply energy for electrical generation, district heating, desalination, and other process heat applications. This groundbreaking small modular reactor (SMR) design features a fully factory-fabricated NuScale Power Module™ capable of generating 77 MW of electricity using a safer, smaller, and scalable version of pressurized water reactor technology. NuScale's scalable design—power plants that can house up to four, six, or 12 individual power modules—offers the benefits of carbon-free energy and reduces the financial commitments associated with gigawatt-sized nuclear facilities. The majority investor in NuScale is Fluor Corporation, a global engineering, procurement, and construction company with a 60-year history in commercial nuclear power.

NuScale is headquartered in Portland, OR and has offices in Corvallis, OR; Rockville, MD; Charlotte, NC; Richland, WA; and London, UK. Follow us on Twitter: [@NuScale\\_Power](#), Facebook: [NuScale Power, LLC](#), LinkedIn: [NuScale-Power](#), and Instagram: [nuscale\\_power](#). Visit NuScale Power's [website](#).



**Location:** Portland, OR

**Founded:** 2007

**Principal/CEO:** John Hopkins

**Major Investors:** Fluor Corporation

**Technology Class:** Water cooled

**Reactor Type:** Integral pressurized water reactor

**Power Output (MWe/MWT):** 50 MWe

**Federal Engagement:** DOE, NRC

**Preferred Point of Contact:** Ryan Dean, Sr. Public Affairs Specialist | [rdean@nuscalepower.com](mailto:rdean@nuscalepower.com)

<https://www.nuscalepower.com/>

ADVANCED NUCLEAR | DEVELOPER



# RADIANT



Radiant is making nuclear power portable. Radiant's mission is to develop an economical, reliable reactor that will transform the nuclear industry through autonomous operation. Portable microreactors can be used for disaster relief scenarios, resilient backup power, or as a microgrid power source. Our design uses only proven, qualified materials and technology and will achieve full scale demonstration in 5 years.



**Location:** El Segundo, CA

**Founded:** 2019

**Principal/CEO:** Douglas Bernauer

**Major Investors:** Boost VC

**Technology Class:** micro-HTGR

**Reactor Type:** HTGR

**Power Output (MWe/MWt):** 1.2 MWe /3.5 MWt

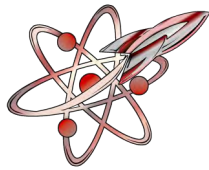
**Federal Engagement:** DOE, ARPA-E, GAIN, NRC, NASA

**Preferred Point of Contact:** Douglas Bernauer | [doug@radiantnuclear.com](mailto:doug@radiantnuclear.com) | 216-965-3509

<https://www.radiantnuclear.com/>



# SPACE NUCLEAR POWER CORPORATION



## SPACENUKES

ADVANCED NUCLEAR | DEVELOPER

Design and production of reactors for space applications including planetary surfaces and deep space NEP. Designs are based on work done by founders while at Los Alamos National Lab on KiloPower and KRUSTY experiment, a 1 kWe HEU reactor built and tested at Nevada Test Site in 2018.



KiloPower on Mars (Courtesy of NASA)



KRUSTY (Courtesy of LANL and NCERC)

**Location:** Los Alamos, NM

**Founded:** 2018

**Principal/CEO:** Andrew Phelps

**Major Investors:** Founders

**Technology Class:** Space Reactors

**Reactor Type:** Metal, fast reactor with sodium heat pipes to power conversion

**Power Output (MWe/MWT):** 1 KWe to 1 MWe

**Federal Engagement:** NASA, USAF, US Space Force

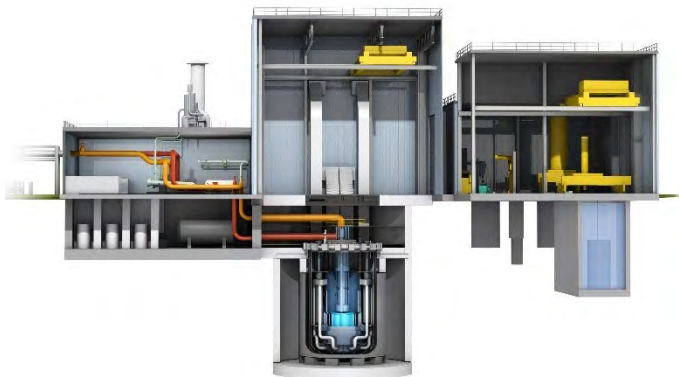
**Preferred Point of Contact:** Patrick McClure, COO | [mcclure@spacenukes.com](mailto:mcclure@spacenukes.com)

<https://www.spacenukes.com/>

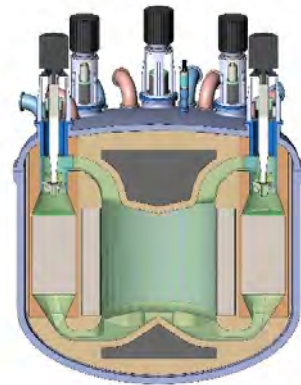
# TERRAPOWER, LLC



TerraPower is a nuclear innovation company that originated with Bill Gates and a group of like-minded visionaries who evaluated the fundamental challenges to raising living standards around the world. TerraPower's mission is to solve the world's toughest problems in energy, climate and human health through innovative nuclear technology. The Natrium™ reactor and integrated energy storage system is redefining what nuclear energy can be and is being demonstrated at a retiring coal facility. The Molten Chloride Fast Reactor technology is expanding the ability of nuclear technology to decarbonize industry beyond electricity, and TerraPower Isotopes develops processes to extract radioisotopes as raw materials for use by cancer drug developers.



*Natrium™ Reactor*



*Molten Chloride Fast Reactor*

**Location:** Bellevue, WA

**Founded:** 2008

**Principal/CEO:** Bill Gates (Chairman), Chris Levesque (President and CEO)

**Major Investors:** Non-disclosed

**Technology Class:** Liquid metal and salt cooled

**Reactor Type:** Natrium™ reactor—sodium-cooled fast reactor; Molten chloride fast reactor—molten salt/liquid fuel fast reactor

**Power Output (MWe/MWT):** Natrium reactor—345 MWe for demonstration project, flexible sizing up to gigawatt scale; Molten chloride fast reactor—flexible size range up to 800 MWe

**Federal Engagement:** DOE, NRC

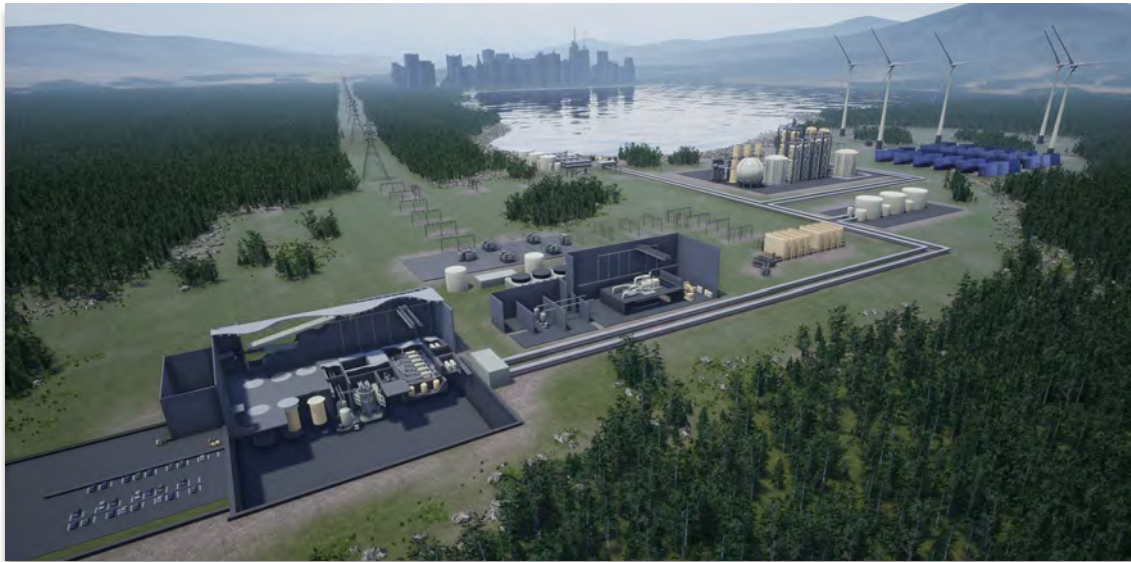
**Preferred Point of Contact:** [press@terrapower.com](mailto:press@terrapower.com)

<https://www.terrapower.com/>

# TERRESTRIAL ENERGY USA, INC.



Terrestrial Energy USA is developing an advanced Small Modular Reactor (aSMR) design using Integral Molten Salt Reactor (IMSR®) technology to provide cost-competitive electricity and process heat to U.S. industry, and plans for first commercial deployment in the 2020s. The IMSR® design is a graphite moderated, LEU once-through fueled, fluoride molten salt reactor (MSR) that uses a replaceable reactor core architecture.



ADVANCED NUCLEAR | DEVELOPER

**Location:** Charlotte, NC

**Founded:** 2014

**Principal/CEO:** Simon Irish

**Major Investors:** Private investors

**Technology Class:** Advanced small modular reactor

**Reactor Type:** Molten salt reactor

**Power Output (MWe/MWt):** 390 MWe / 884 MWth

**Federal Engagement:** DOE, GAIN, NRC

**Preferred Point of Contact:** Robin Rickman | [rrickman@terrestrialusa.com](mailto:rrickman@terrestrialusa.com) | 646-687-8212 ext. 531

***[HTTPS://terrestrialusa.com/](https://terrestrialusa.com/)***

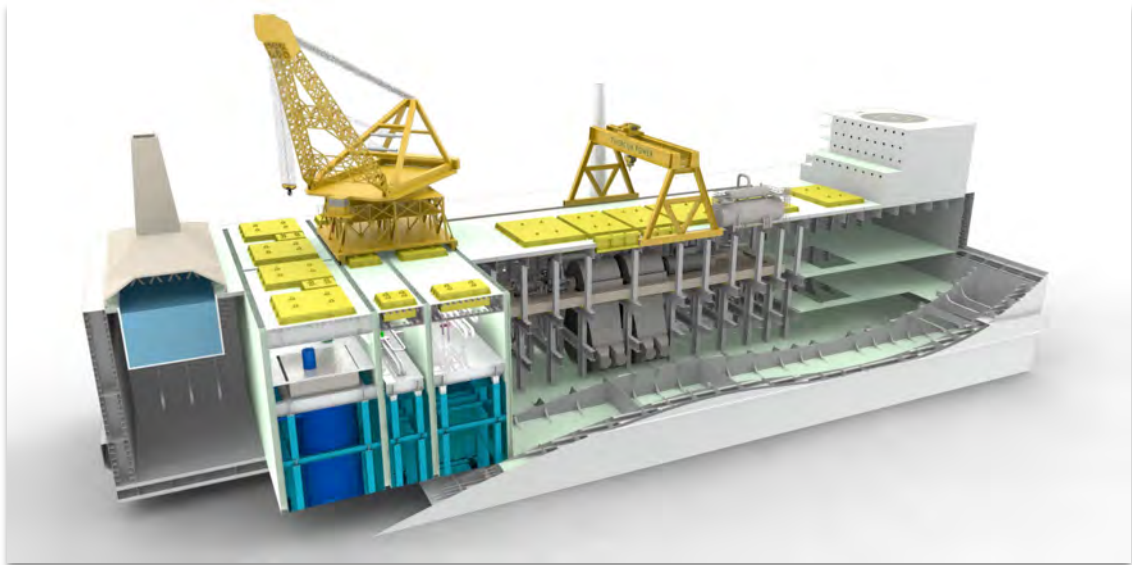
# THORCON INTERNATIONAL

## THORCON



POWERING UP OUR WORLD

ThorCon is developing a hybrid thorium/uranium liquid fission power plant that generates clean, full-time electric power at a cost cheaper than coal.



**Location:** Stevenson, WA; Singapore

**Founded:** 2016

**Principal/CEO:** Lars Jorgensen, CEO

**Major Investors:** Non-disclosed

**Technology Class:** Salt cooled

**Reactor Type:** Thermal molten salt reactor

**Power Output (MWe/MWt):** 250 MWe / 557 MWt

**Federal Engagement:** N/A

**Preferred Point of Contact:** [info@thorconpower.com](mailto:info@thorconpower.com)

<https://thorconpower.com/>



# ULTRA SAFE NUCLEAR CORPORATION



ADVANCED NUCLEAR | DEVELOPER

Ultra Safe Nuclear is a 100+ employee technology company, well balanced between design, licensing, manufacture and project development, with a mix of young and senior engineers, material scientists and businesspeople, and a well-established network of suppliers and high-quality partnerships. We have a “best in business” workforce that is highly motivated, well tested and demonstrably capable of meeting tough development and commercial milestones. We are able to recruit competitively in all areas of operations in multiple countries.

USNC's mission provide hardware and services for reliable energy anywhere – on Earth and in Space. Developed since 2015, MMR is now becoming reality – the first in a family of hardware and service products for reliable energy anywhere. We are further utilizing our design, licensing, and technology capabilities, such as ceramic additive manufacturing and proprietary sintering techniques, to develop nuclear power systems for advanced applications on earth and in space. These include Transportable Power Units, Nuclear Thermal Propulsion and Lunar Surface Power systems.

Ultra Safe Nuclear operates through three divisions – POWER, CORE, and TECH.



#### Ready to Build.

USNC Power is developing commercial-grade, zero-carbon, zero-risk Energy Systems for power and heat utilization - on or off-grid.

#### Safety Matters.

USNC Core develops materials and fuels designed and manufactured at scale.

#### No Limits.

USNC Tech develops advanced systems and technology targeting space applications for commercial and government customers.

**Location:** Seattle, WA

**Founded:** 2011

**Principal/CEO:** Francesco Venneri

**Major Investors:** Non-disclosed

**Technology Class:** High temperature gas reactor

**Reactor Type:** Gas cooled high temperature reactor with FCM fuel pellets in graphite blocks

**Power Output (MWe/MWt):** 5 MWe / 15 MWth

**Federal Engagement:** DOE, ARPA-E, GAIN, NRC

**Preferred Point of Contact:** Cristian Rabiti | [c.rabiti@usnc.com](mailto:c.rabiti@usnc.com) | 208-680-4518 (USNC)

Brandon Seifert | [b.seifert@usnc-tech.com](mailto:b.seifert@usnc-tech.com) | 612-723-1664 (USNC-Tech)

<https://usnc.com/>

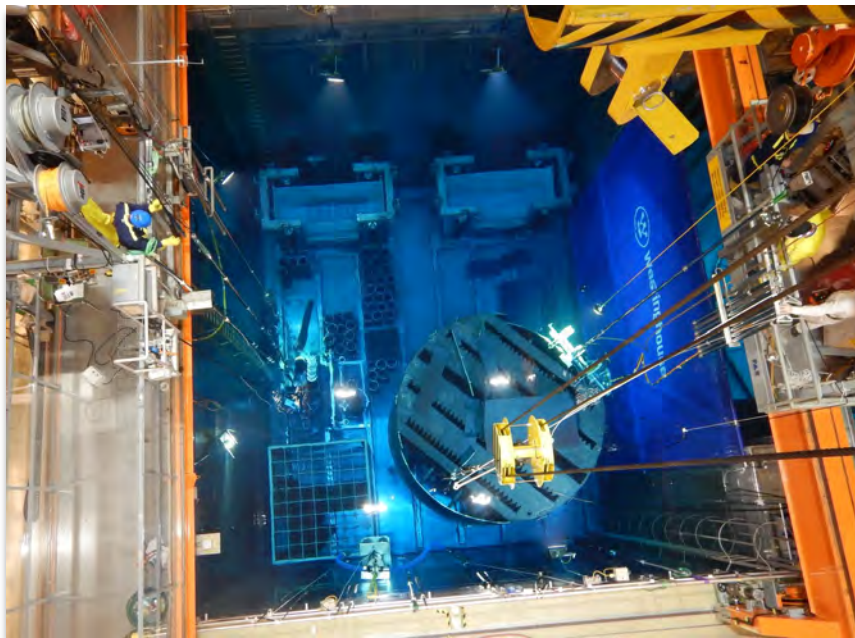


# WESTINGHOUSE ELECTRIC COMPANY LLC

ADVANCED NUCLEAR | DEVELOPER



Westinghouse Electric Company is the world's pioneering nuclear energy company and is a leading supplier of nuclear plant products and technologies to utilities throughout the world. Westinghouse supplied the world's first commercial pressurized water reactor in 1957 in Shippingport, PA, United States. Today, Westinghouse technology is the basis for approximately one-half of the world's operating nuclear plants. For more information, please visit [www.westinghousenuclear.com](http://www.westinghousenuclear.com).



**Location:** Cranberry Township, PA

**<https://www.westinghousenuclear.com/>**

**Founded:** 1886

**Principal/CEO:** Patrick Fragman, President and CEO

**Major Investors:** Brookfield Business Partners L.P.

**Technology Class:** Advanced modular reactor

**Reactor Type:** Lead cooled fast reactor; heat pipe cooled reactor

**Power Output (MWe/MWt):** Lead cooled fast reactor- 400-500 MWe / 950 MWt; Heat pipe cooled reactor- 0.5-6 MWe / 2-20 MWt

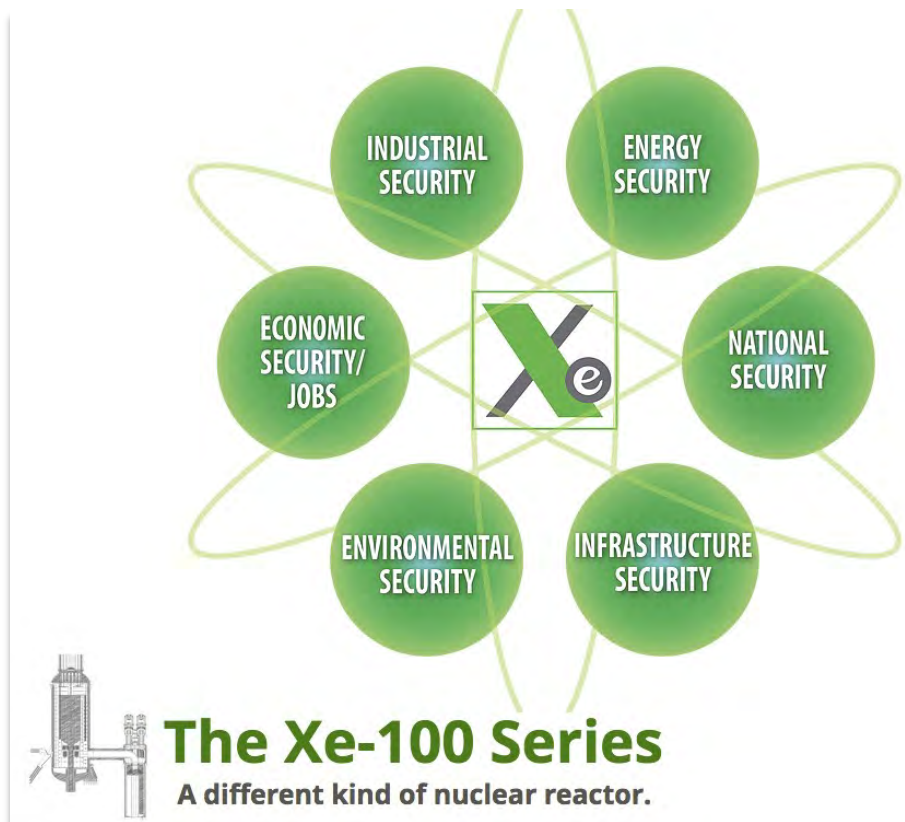
**Federal Engagement:** DOE, ARPA-E, GAIN, NRC

**Preferred Point of Contact:** Michael Valore | [valorema@westinghouse.com](mailto:valorema@westinghouse.com)

# X-ENERGY, LLC



X-energy is a nuclear reactor and fuel design engineering services company developing Generation IV, high-temperature gas-cooled nuclear reactor designs that are smaller, simpler and meltdown-proof when compared to conventional nuclear designs.



ADVANCED NUCLEAR | DEVELOPER

**Location:** Greenbelt, MD

**Founded:** 2009

**Principal/CEO:** Sam Ghaffarian

**Major Investors:** Non-disclosed

**Technology Class:** Gas cooled

**Reactor Type:** High temperature gas cooled pebble bed reactor

**Power Output (MWe/MWt):** 76 MWe / 200 MWt

**Federal Engagement:** DOE, GAIN, ARPA-E, NRC

**Preferred Point of Contact:** Jeff Harper | [jharper@x-energy.com](mailto:jharper@x-energy.com)

<https://www.x-energy.com/>



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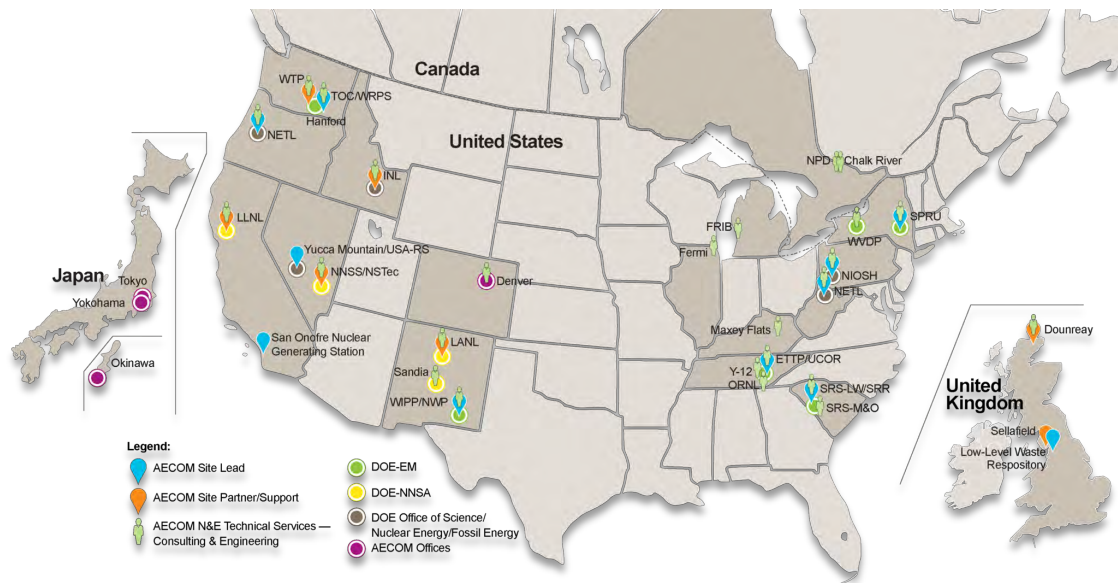
# **SUPPLIERS**

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AECOM

AECOM

AECOM is a global network of experts working with clients, communities and colleagues to develop and implement innovative solutions to the world's most complex challenges, from delivering clean water and energy to helping governments maintain stability and security. AECOM connects expertise across services, markets, and geographies to deliver transformative outcomes.



**Location:** Aiken, SC

**Founded:** 1990

**Principal/CEO:** Mike Burke

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE, Other

**Preferred Point of Contact:** Eric Knox | [eric.knox@aecom.com](mailto:eric.knox@aecom.com)

<https://aecom.com/>



# ALPHASOURCE, INC.



ADVANCED NUCLEAR | SUPPLIER

At Alphasource®, we are driven by a simple and well-documented fact – the most efficient and cost-effective power plants are those that are the most safely maintained and operated. For the past 30 years, our mission has been to provide our Power Industry partners with cost-effective innovative and end user centric Foreign Material Exclusion (FME) & Drop Prevention product lines and services that increase plant efficiency, and reduce the number of accidents and damaged equipment & tools. With over 125 years of Power Industry experience, our team ensures we provide only the products and services appropriate for your organizational and cultural needs. As a 4th generation, Woman-Owned & HUBZone certified business, Alphasource® is proud to be a team member of Refueling teams, Turbine gangs, Maintenance teams, Operations crews, Tool Rooms, and Safety Councils at power stations around the world.

## **Custom-Manufactured FME Solutions of All Types and Sizes**

Foreign material costs the International Power Industry billions of dollars each year in lost electrical generation, rework, equipment replacement/repair and manpower. As a response, Alphasource has been a provider of high quality engineered Foreign Material Exclusion (FME) control devices for the power industry for three decades. Over the years our products have become the industry standard and have been used extensively in power plants in the US & over 30 countries around the world, saving time, money, and other resources. All of our covers are certified to meet NFPA 701 Test Method 2 and NFPA 805 requirements, can be reused for years, and can be installed and removed in minutes without the use of tape, further reducing waste. Alphasource custom-manufactured covers can also be quickly designed for any project needs. For cost-effective methods to increase plant efficiency and maximize capacity factors, contact us today.

## **Python Safety™ by Toolsaver® Custom-Designed Drop Prevention Kits & Cabinets**

Dropped objects can pose multiple risks in the workplace, such as injuring an employee or damaging expensive equipment. Our ToolSaver line of Drop Prevention tools was created to help significantly reduce the occurrence of these costly events. By striving to find solutions and listening to customer feedback, our product lines are innovative, high quality, and field proven. Importantly, our Drop Prevention tools are ISEA/ANSI 121-2018 certified. With a comprehensive product line of over 40 tool series, we are able to provide custom Drop Prevention product solutions in sizes ranging from large mobile cabinets to small, portable, self-contained kits stocked with items needed for your specific application. Let our expert team design a solution for you!

**Location:** Philadelphia, PA

**Founded:** 1908

**Principal/CEO:** Andrea Bookbinder

**Major Customers:** Constellation, Duke, Southern Company, USA independent plants, OPG, Engie, Vattenfall, GE, Westinghouse

**Federal Engagement:** DOE

**Preferred Point of Contact:** Lee Lukas | [lee@alphasourceintl.com](mailto:lee@alphasourceintl.com) | 410-610-6738

<https://www.alphasourceintl.com>

# ANALYSIS AND MEASUREMENT SERVICES CORPORATION



INNOVATING **NUCLEAR** TECHNOLOGY  
ANALYSIS AND MEASUREMENT SERVICES CORPORATION

AMS has decades of I&C testing experience within the operating fleet of light water reactors. As experts in I&C technologies, AMS offers next-generation reactor developers key insight and support in a variety of areas including I&C design specification support, pre-qualification testing of I&C sensors and cabling, development of I&C maintenance strategies and implementation procedures, implementation of online monitoring technologies, and a variety of other maintenance and diagnostic testing services.



**Location:** Knoxville, TN

**Founded:** 1977

**Principal/CEO:** H.M. Hashemian

**Major Customers:** Nuclear Power Plants and Facilities

**Federal Engagement:** DOE, NRIC, GAIN

**Preferred Point of Contact:** Adam Deatherage / [adam@ams-corp.com](mailto:adam@ams-corp.com) / 865-691-1756 ext.223

<https://www.ams-corp.com/>

# ANSYS



ADVANCED NUCLEAR | SUPPLIER

When visionary companies need to know how their world-changing ideas will perform, they close the gap between design and reality with Ansys simulation. For more than 50 years, Ansys software has enabled innovators across industries to push boundaries by using the predictive power of simulation. From sustainable transportation to advanced semiconductors, from satellite systems to life-saving medical devices, the next great leaps in human advancement will be powered by Ansys.



Founded in the Pittsburgh region and now headquartered in Canonsburg, PA, Ansys is dedicated to advancing simulation. Our nearly 6,000 employees are singularly focused, our spirit of innovation is reflected in 580+ active patents, and we are proud members of S&P and NASDAQ-100.

Nuclear reactors house extreme environments that are among the most difficult in the world for operating sensors. Yet these are exactly the environments where you need exquisite sensing capabilities - for detailed system monitoring, control, and predictive maintenance - to prevent catastrophe. Simulation is an essential part of the solution to this problem.

Physics-based simulation tools from Ansys are used in the nuclear industry to build, calibrate, validate, and deploy hybrid digital twins that provide real-time insights about a reactor through the power of virtual sensors. This is just one example of how digital twin technology is becoming increasingly important to nuclear power safety, by filling gaps in data and insight related to de-risking nuclear reactor design, licensing, and construction.

**Location:** Global

**Founded:** 1970

**Principal/CEO:** Ajei Gopal

**Major Customers:** Non-disclosed

**Federal Engagement:** Non-Disclosed








**Preferred Point of Contact:** Mike Hancock | [mike.hancock@ansys.com](mailto:mike.hancock@ansys.com) | 512-422-3093

<https://www.ansys.com/>

# ATS AUTOMATION



ATS Automation manufactures tooling and design automation for new reactor builds, refurbishment, operations and maintenance, and decommissioning across both large-scale and small modular reactors (SMRs). Automation yields reliable and repeatable processes that teams can plan and execute across locations and shifts.

ATS Industrial Automation – Nuclear Group						
NEW BUILD	NPP OPS & Maintenance		NUC FACILITIES OPS & MAINTANANCE		LIFE EXTENSION	DECOMMISSIONING
<b>Innovation /Advanced Reactor Technology</b>	<b>NPP Outage Maintenance /Inspection</b>	<b>NPP Forced Outage Emergency Tools</b>	<b>Nuclear Fuel Fabrication, Assembly and Test</b>	<b>Hot Cell Automation and Isotopes</b>	<b>CANDU Refurbishment Programs</b>	<b>Decommissioning and Waste Handling</b>
						
Design and build of reactor sub-systems	Fully Automated Reactor Inspection & Maintenance Systems	Emergency Automated Tooling	Fully Automated Fuel Fabrication Lines, including Machine Vision Inspection of Uranium Pellets,	Design & Fabrication of Hot Cells	Design and Build of Fully Automated Systems for the Removal, Inspection and Installation of Reactor Components	Reactor & Internals Segmentation Systems
Fuel Fabrication Automation Lines	Steam Generator Robotics	NDE Delivery Systems	Vision Guided Robots, Laser Marking & NDE Testing	Medical Isotope Production Equipment	Volume Reduction Systems	Volume Reduction
Fuel Handling	Fuel Handling Replacement Systems	Hot Particle Removal Robotics		Manipulators	Automated Packaging and AGV's	Automated Waste Packing and Material Handling Systems
Reactor Inspection & Maintenance Systems		Contingency Tooling		Packaging and Material Handling Automation within Hot Cells and Gloveboxes		Inspection & Characterization
		Tools and Robotic Systems for High Radiation Environments				Haptic Controlled Robotics & Digital Twin

**Location:** Columbus, OH

**Founded:** 1978

**Principal/CEO:** Andrew Hider

**<https://atsindustrialautomation.com/>**

**Major Customers:** Nuscale, GE Power, Bruce Power, Ontario Power Generation, Holtec, Energy Solutions, Cameco, Aecon, Global Nuclear Fuel, General Motors

**Federal Engagement:** NRC

**Preferred Point of Contact:** Jason Sulzener | Jsulzener@atsautomation.com | 614-671-4607



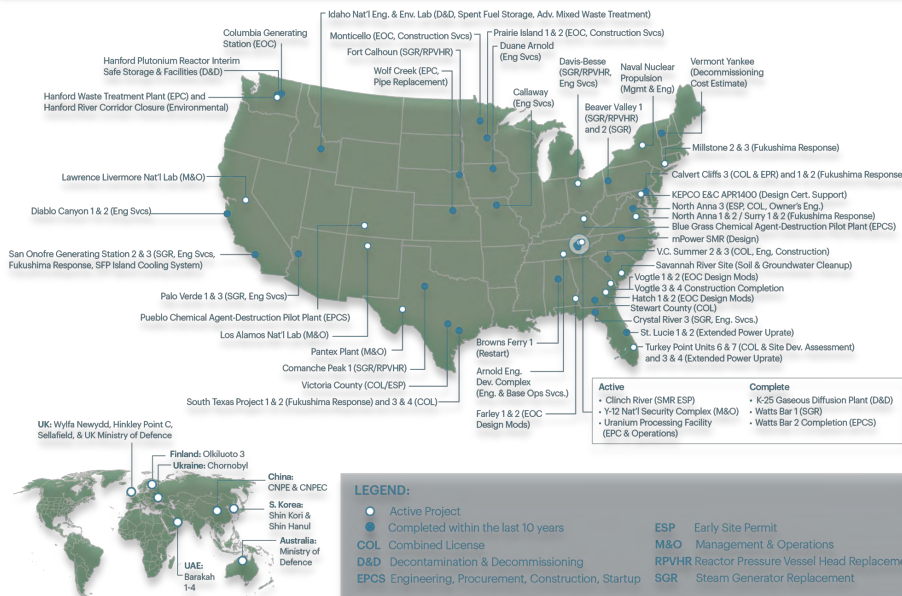
# BECHTEL NUCLEAR, SECURITY & ENVIRONMENTAL



ADVANCED NUCLEAR | SUPPLIER

Bechtel's Nuclear, Security & Environmental global business unit leverages Bechtel's six decades in the nuclear industry to execute both commercial and government projects across the nuclear lifecycle. Bechtel's commercial nuclear power division is a global leader in the licensing, design, procurement, and construction of nuclear power plants, whether it is new build, plant completion or recovery, modifications to existing facilities, or advanced reactor technology development.

Bechtel Nuclear, Security & Environmental has more than 50 active and recently completed projects since 2007



**Location:** Reston, VA

**Founded:** 1898

**Principal/CEO:** Barbara Rusinko

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE, NRC, ARPA-E, DOD

**Preferred Point of Contact:** Muhammad Fahmy | mgfahmy@bechtel.com | 703-429-6859

[www.bechtel.com](http://www.bechtel.com)



## BNL INDUSTRIES INC.



BNL Industries, Inc. is a leading designer and manufacturer of high quality ball and check valves for use in the defense/marine, power energy, aerospace, process, and commercial industries. Since 1987, BNL has earned a reputation for dependability and excellence. Our product range includes two-way and three-way ball valves (manual, pneumatic, and electric actuated), In-Line check valves, and Twinline check valves. Working with our customers, we provide solutions to your non-standard requirements. Our innovation, quality, and service will exceed your expectations.

At BNL, the customer comes FIRST 100% of the time.

### DESTROY MEDIOCRITY



**B**e Self-Defining

**N**ever-Ending Stewardship

**L**ong-Lasting Sustainability

**Location:** Vernon, CT

**Founded:** 1987

**Principal/CEO:** Christopher Bain

**Major Customers:** All US Nuclear Power Plants

**Federal Engagement:** NRC

**Preferred Point of Contact:** Savannah Trubisz | Savannah.trubisz@bnl.com | 860-870-6222

[https:// www.bnl.com.com](https://www.bnl.com.com)

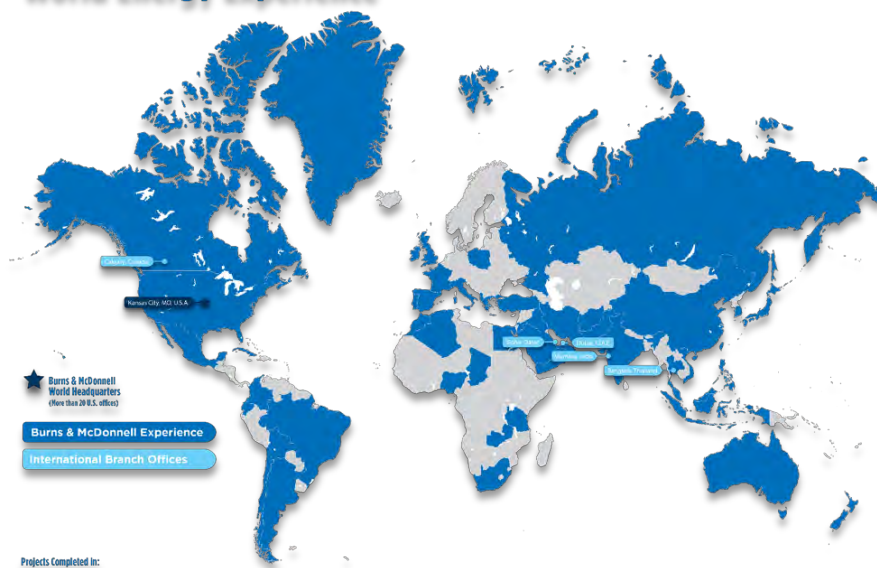
# BURNS & MCDONNELL



ADVANCED NUCLEAR | SUPPLIER

Burns & McDonnell is a worldwide leader in engineering and construction with over 10,000 employee-owners in over 60 offices across the U.S. and throughout the world. At Burns & McDonnell, our engineers, architects, scientists and construction professionals do more than plan, design and implement. With a mission that remains unchanged since our founding in 1898 - Make Our Clients Successful - our team partners with you on the toughest challenges, constantly working to make the world an amazing place.

## World Energy Experience



**Location:** Kansas City, MO; Other worldwide offices

**Founded:** 1898

**Principal/CEO:** Ray Kowalik

**Major Customers:** X-energy, UAMPS/CFPP, Ameren-Callaway, Evergy-Wolf Creek, APS-Palo Verde

**Federal Engagement:** DOE, INL, DOD, NRC, Other

**Preferred Point of Contact:** Glenn Neises | [gneises@burnsmcd.com](mailto:gneises@burnsmcd.com)

***[https:// www.burnsmcd.com](https://www.burnsmcd.com)***

# BWX TECHNOLOGIES, INC.



BWXT has been involved in the nuclear industry since its beginning. As a federal contractor, BWXT provides nuclear components and fuel for the U.S. Navy's submarine and aircraft carrier fleet. Commercially, BWXT manufactures heavy components for CANDU reactors, provides services for the U.S. and Canadian nuclear markets, and provides engineering and design capabilities for advanced reactor technologies and fuel.



**Location:** Lynchburg, VA

**Founded:** 1857

**Principal/CEO:** Rex D. Geveden

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE, NRC, Other

**Preferred Point of Contact:** Joshua L. Parker | jlparker2@bwxt.com | 434-316-7652

<https://www.bwxt.com/>

# CAROLINA FABRICATORS, INC.



ADVANCED NUCLEAR | SUPPLIER

Carolina Fabricators is a small business located in West Columbia, SC that specializes in the fabrication, welding, and machining of products and systems for DOE and the Commercial Nuclear industry while following our strict quality assurance program that is fully compliant with ASME NQA-1, 2008 Edition, Part I, as amended by ASME NQA-1a-2009, including applicable more stringent requirements of previous editions; 10CFR71 Subpart H; 10CFR50 Appendix B; and 10CFR Part 21, along with ASME Section VIII Boiler and Pressure Vessel Code.

We have an extensive history of manufacturing components, weldments, and assemblies for our commercial nuclear utilities, advanced reactors, and our DOE sites. We manufacture a variety of products including (but not limited to) tanks, liners, containers, pressure vessels, piping, pipe spools, telescoping piping assemblies, precision machined components, process skids, fissile carts, source vials, pipe supports, assemblies, rigging/lifting equipment, frames, AISC structural



steel items (stairs, platforms, embeds, handrails, etc.), and many other custom fabricated metal products along with supporting commercial and safety related material supply.

**Location:** West Columbia, SC

**Founded:** 1992

**Principal/CEO:** Brad Hughes

**Major Customers:** SRNS, SRMC, Bechtel/Hanford, Framatome, Orano, Energy Solutions, BEA/INL, CNS Pantex, Y-12, UPF, Westinghouse, WMG, Atkins

**Federal Engagement:** DOE, GAIN, NRC, NASA

**Preferred Point of Contact:** Patrick Halligan | phalligan@carolinafab.com | 803-383-2033

<https://carolinafab.com>



# CENTRUS TECHNICAL SOLUTIONS



Centrus Technical Solutions provides a one-stop shop for meeting the advanced nuclear industry's manufacturing and fuel design needs. Based on our experience with nuclear fuel, multi-physics modeling, engineering, design, advanced manufacturing, and project management, we can assist with the design and manufacture of critical components as well as the business planning, design, and licensing of facilities to produce new fuels. From design and engineering to NQA-1 compliant manufacturing, Centrus Technical Solutions is your trusted, full-service partner.



**Location:** Oak Ridge, TN

**Founded:** 1998

**Principal/CEO:** Larry Cutlip (Vice President Field Operations)

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE, GAIN, NRC, Oak Ridge National Laboratory

**Preferred Point of Contact:** Mark McClure | [mclureml@centrusenergy.com](mailto:mclureml@centrusenergy.com) | 865-241-7095

<https://www.centrusenergy.com/>



# CERAMIC TUBULAR PRODUCTS



Ceramic Tubular Products develops and supplies very high temperature ceramic tubes and materials for existing and future nuclear and solar thermal applications.



**ADVANCED NUCLEAR | SUPPLIER**

**Location:** Lynchburg, VA

**Founded:** 2006

**Principal/CEO:** Jeffrey Halfinger

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE, GAIN

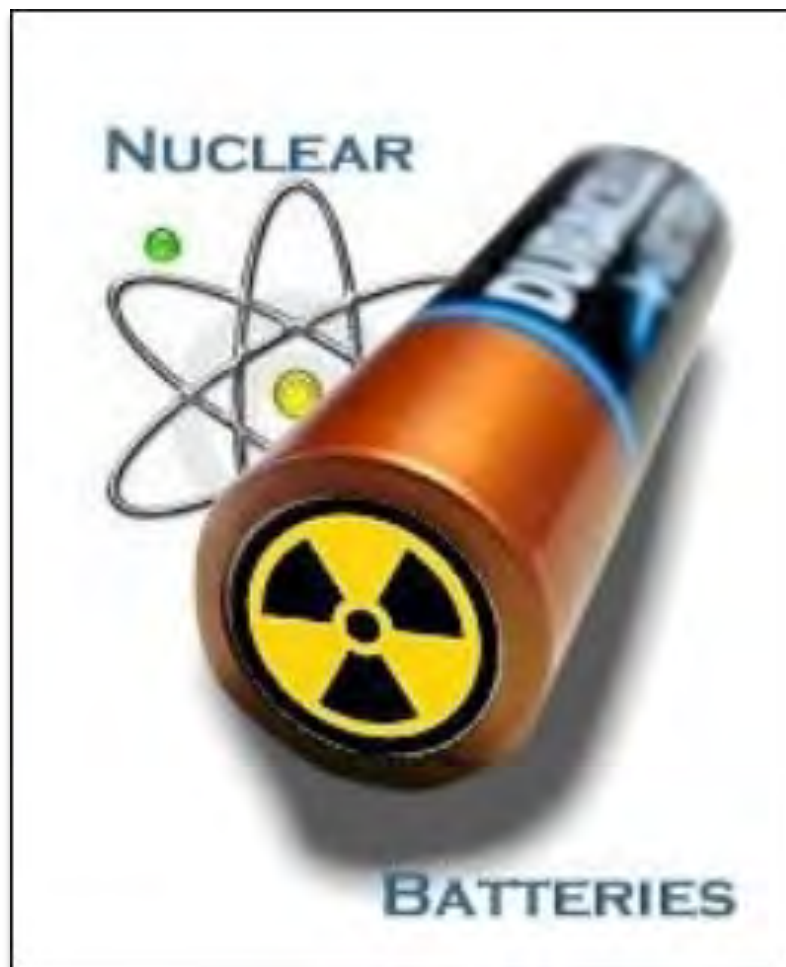
**Preferred Point of Contact:** Jeffrey Halfinger | 424-239-1979

<https://www.ctp-usa.com/>

# COMPETITIVE ACCESS SYSTEMS, INC.



Competitive Access Systems (CAS), Inc. develops self-recharging nuclear battery technologies.



**Location:** Wylie, TX

**Founded:** 1996

**Principal/CEO:** Eric Delangis

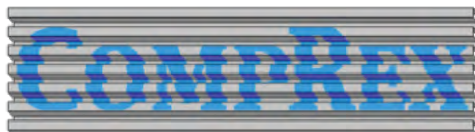
**Major Customers:** Non-disclosed

**Federal Engagement:** Non-disclosed

**Preferred Point of Contact:** Linda Delangis | [ldelangis@neukenergy.com](mailto:ldelangis@neukenergy.com)

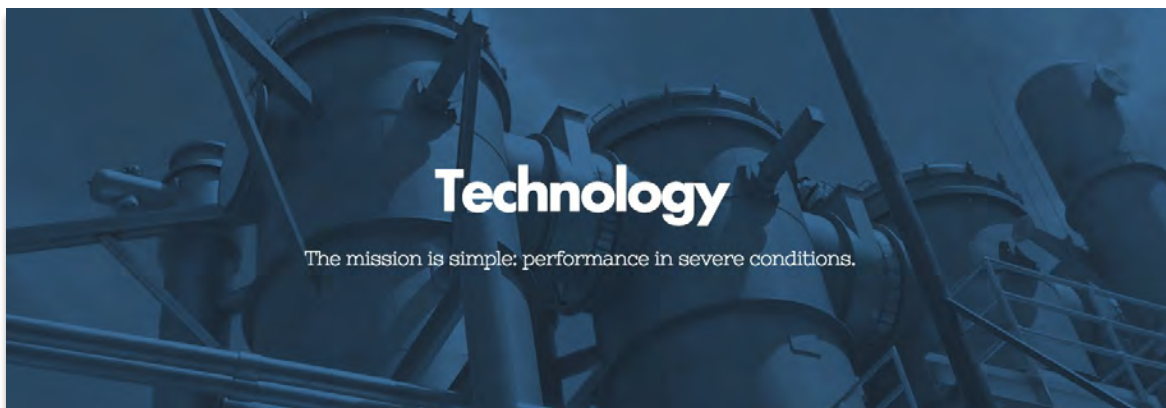
<https://www.competitiveaccesssystems.com>

# COMPREX, LLC



FinRex® and ShimRex® Technologies

CompRex, LLC designs custom compact heat exchangers and compact heat exchange reactors for a wide range of chemical process applications where efficient heat transfer is critical.



ADVANCED NUCLEAR | SUPPLIER

**Location:** De Pere, WI

**Founded:** 2014

**Principal/CEO:** Zhijun Jia

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE, GAIN

**Preferred Point of Contact:** Zhijun Jia | [Zhijun.jia@comprex-llc.com](mailto:Zhijun.jia@comprex-llc.com)

***<https://www.comprex-llc.com>***



# CONCURRENT TECHNOLOGIES CORPORATION



Concurrent Technologies Corporation (CTC) is recognized as one of the world's premier nonprofit applied scientific research and development organizations for the creation and implementation of advanced manufacturing technologies. The skills and processes developed at CTC are leveraged by the Center for Advanced Nuclear Manufacturing (CANM) to benefit both the emerging SMR/AR industry and the legacy reactor fleet.



**Location:** Johnstown, PA

**Founded:** 1987

**Principal/CEO:** Edward J. Sheehan, Jr.

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE, GAIN

**Preferred Point of Contact:** Robert Akans | [canm@ctc.com](mailto:canm@ctc.com)

<http://www.ctc.com/>

# CURTISS-WRIGHT

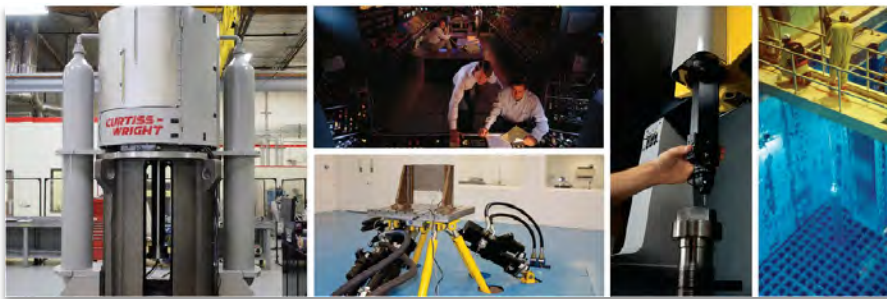
## ***CURTISS - WRIGHT***

**ADVANCED NUCLEAR | SUPPLIER**

Curtiss-Wright has supported the commercial nuclear power industry since its inception. We continue to make plants safer, more efficient, and more reliable across the globe. With more than 60 years of experience in power generation, we have significantly broadened our product offerings in the commercial nuclear power market over time - through acquisition, innovation, and organic growth. Our offerings include everything from commercial off-the-shelf seals to custom engineered control rod drive mechanisms, from analog instruments to FPGA-based Digital Control Systems.

Our Quality Assurance programs are maintained at the highest standards of excellence in support of rigorous industry requirements. We meet 10CFR50, Appendix B; ASME NQA-1; and ASME Sections III and XI. We possess ASME N, NPT, NR, NS, UV, and VR Certificates, including Material Organization (QSC-614) capabilities. Our quality programs meet the requirements of countries such as Canada, France, China, and Russia, and are NUPIC and NIAC audited.

Today, Curtiss-Wright has installations at hundreds of nuclear plants in over 25 countries worldwide.



**Location:** Global

**Founded:** 1929

**Principal/CEO:** Lynn Bamford, CEO

**Major Customers:** Exelon, Entergy, TVA, KHNP, OPG, Bruce Power, Bechtel

**Federal Engagement:** DOE, DOD, NRC

**Preferred Point of Contact:** Gary Wolski / gwolski@curtisswright.com

***<https://www.cwnuclear.com/>***



## DC FABRICATORS, INC.



DC Fabricators manufactures heat exchange equipment for the power generation and defense industries. DCF specializes in small to medium size cylindrical and rectangular condensers and heat exchangers for industrial and cogeneration applications, geothermal power plants, large main station condensers (to over 500,000 sq.ft.), process heat exchangers with pressures over 2,000 psi, and nuclear power systems. DCF's backs up its manufacturing capabilities with complete engineering analysis and design capabilities that conform to ASME Code, TEMA Standards, HEI Standards for Steam Condensers, and International Codes and Standards.



**Location:** Florence, NJ

**Founded:** 1993

**Principal/CEO:** Gary Butler

**Major Customers:** US Navy, General Dynamics, Bechtel, Huntington Ingalls, Talen Energy, NPPD, Southern Illinois Power, Eastman Chemical

**Federal Engagement:** DOE, DOD

**Preferred Point of Contact:** Derrick Phillips / [dphillips@dcfab.com](mailto:dphillips@dcfab.com) / 609-499-3000 ext. 225

<https://www.dcfab.com/>

# DUBOSE NATIONAL ENERGY SERVICES



ADVANCED NUCLEAR | SUPPLIER

DuBose National Energy Services, Inc (DNES), an ASME certificate holder since 1977, proudly offers quality products with exceptional (24/7/365) service. DNES carries one of the largest, most diversified inventories of nuclear qualified material in North America. DNES stocks sheet, plate, bar, pipe, fittings, flanges, structural shapes, tubing, fasteners, weld filler metal and Unistrut® metal framing products. DNES supports common carbon and alloy steel to highly corrosive-resistant stainless; nickel alloys to aluminum, copper and bronze. In addition, DNES offers many value-added services from machining, fabricating, sawing, burning, cleaning, blasting, painting, heat treating, in-house testing (including NDE), and reverse engineering. DNES products and services are offered under a comprehensive quality program based on ASME Section III, NCA/ WA-3800 and 4000 and accreditation through our approved 'N-type' certificates (NA, NPT and NS); 10CFR50 Appendix B; ASME NQA-1; ANSI N45.2; CSA N299.2/3; & MIL-I-45208A. DNES is also accredited under AISC and AWS, as well as ASME Section VIII (Pressure Vessels, Division 1 – U & R Stamps). DNES is NUPIC and NIAC Audited.



**Location:** Clinton, NC

**Founded:** 1990

**Principal/CEO:** Richard Rogers, President | Beau Laslo, General Manager  
Jashua Grimm, Director of Quality

**Major Customers:** **USA:** All nuclear utilities, DOE, DOD, National Labs and ~300 OEM's/Fabricators/EPC's who support USA nuclear programs. **Canada:** All nuclear utilities, National Labs and ~75 Canadian OEM's/Fabricators/EPC's who support Canada's nuclear programs. **Worldwide:** Several Utilities and OEM's/Fabricators/EPC's nuclear programs.

**Federal Engagement:** DOE, DOD

**Preferred Point of Contact:** Beau Laslo | beau.laslo@dubosenes.com | 910-590-2151

<https://www.dubosenes.com/>

## ED FAGAN INC.



Distributor and manufacturer of Controlled Expansion, Magnetic and Refractory Metals and Alloys. Ed Fagan Inc. has facilities in Franklin Lakes, NJ and Los Alamitos, Ca.

If you need specialty metals or special purpose alloys for Aerospace/Aviation, Defense, Electronics, Ceramic, Heat Treating, Magnetic, Medical, Lighting, Optical, Telecommunications, or other high-technology, industrial application, call Ed Fagan Inc.

EFI has supplied specialty metals, alloys, and hard-to-locate materials to these markets since 1965. We have a large comprehensive inventory of Controlled Expansion Alloys, Electrical/Electronic Grade Nickel; as well as Soft Magnetic Alloys, and Refractory Metals and Alloys. We stock the highest quality materials available in forms such as: Bar, Rod, Sheet, Plate, Strip, and Wire... from the highest quality mills such as VDM Metals GmbH and Carpenter Technology Corp. And, we stock these materials in many gauges, widths/lengths, and conditions for immediate delivery.



**Location:** Franklin Lakes, NJ

**Founded:** 1965

**Principal/CEO:** Ed Fagan, President

**Major Customers:** Argonne National Laboratories, Sandia National Laboratories, Lawrence Livermore National Laboratories, General Electric

**Federal Engagement:** DOE, ARPA-E, NRC

**Preferred Point of Contact:** Richard Manberg | richard@edfagan.com | 201-891-4003

Shant Simonian | shant@edfagan.com | 562-431-2568

***<https://www.edfagan.com/>***

# EMPYREAN



ADVANCED NUCLEAR | SUPPLIER

Premiere Customized Staffing Solutions for the Nuclear Energy Industry. Founded in 2000, Empyrean takes tremendous pride in consistently delivering top talent in the nuclear industry. We specialize in working closely with our clients to understand the exact need, and strive to have the right individual placed in the shortest time possible. Empyrean is a member of the Consulting Solutions family of companies.



**Location:** Jacksonville, FL

**Founded:** 2000

**Principal/CEO:** Michael Werblun, President and CEO, Consulting Solutions

**Major Customers:** Southern Nuclear, NuScale, GE Hitachi, Duke Energy, Westinghouse, Songs Decommissioning Solutions, SIMCO

**Federal Engagement:** DOE

**Preferred Point of Contact:** Darrell Williams | [dwilliams@empyreanonline.com](mailto:dwilliams@empyreanonline.com) | 412-926-5952

<https://empyreanonline.com/>



# ENERCON



# ENERCON

*Excellence—Every project. Every day.*

ENERCON is a multi-discipline engineering and environmental firm focused on empowering our people and partnering with our clients to support the safe and efficient production, delivery and use of energy. As the world moves towards more sustainable, energy-efficient infrastructure, ENERCON actively works to advance the nuclear industry through engineering support for advanced and small modular reactors (SMR). Since ENERCON was formed in 1983, ENERCON has been one of the largest engineering firms supporting the U.S. commercial and federal nuclear marketplace. ENERCON is an industry leader in providing engineering, licensing, and environmental services to numerous advanced nuclear projects.

ENERCON has performed site and nuclear technology selection studies, developed design certification applications, license applications, and environmental reports for advanced nuclear. ENERCON also has substantial engineering experience supporting advance nuclear clients with plant integration engineering, system and component engineering, codes and standards, PRA, and safety analysis. Our long list of satisfied clients has been built on our solid reputation as a premier provider of high quality,



**Location:** Kennesaw, GA

**Founded:** 1983

**Principal/CEO:** Robert Bryan

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE, GAIN, NRC

**Preferred Point of Contact:** Jay Basken, P.E. | [jbasken@enercon.com](mailto:jbasken@enercon.com) | 770-880-9351

Nathan Jackson, P.E. | [njackson@enercon.com](mailto:njackson@enercon.com) | 985-778-6301

<https://www.enercon.com/>



# ENGINEERING MECHANICS CORPORATION OF COLUMBUS



ADVANCED NUCLEAR | SUPPLIER

Engineering Mechanics Corporation of Columbus (Emc<sup>2</sup>) is an employee-owned engineering research and development consulting company focused on materials, structural integrity and reliability of complex systems. We provide high quality engineering services and products that are innovative and responsive to our clients' schedule and budgetary requirements. Emc<sup>2</sup> nurtures creativity, continually invests in staff development and new technologies, and collaborates with our clients to assemble the best combination of experts to solve critical problems for the commercial and governmental communities we serve. We have extensive experience in high temperature computational damage and fracture modeling along with extensive test facilities. We helped develop the NRC's xLPR probabilistic leak before break code.

Since our founding in the last century, Emc<sup>2</sup> has always taken pride in our leadership role on various Codes and Standards setting committees. We remain committed to our mission to provide experimental, computational, reliability and analytical solutions to client needs while also supporting societal goals of insuring safe operations of systems of all sizes and complexity.



*Engineering Mechanics Corporation of Columbus  
Laboratory Facilities*



*Engineering Mechanics Corporation of Columbus  
At Sunset*

**Location:** Columbus, OH

**Founded:** 1998

**Principal/CEO:** Gery Wilkowski , CEO, F.W. Brust, Principal

**Major Customers:** Energy Industry (US NRC, Department of Energy, US Navy Nuclear, National Aeronautics and Space Administration, Department of Transportation, Heavy Industry, Medical Industry, International Nuclear Regulators.

**Federal Engagement:** DOD, Navy, NASA

**Preferred Point of Contact:** Frederick (Bud) Brust | [bbrust@emc-sq.com](mailto:bbrust@emc-sq.com) | 614-459-3200

<https://www.emc-sq.com/>

# ENGINEERING PLANNING and MANAGEMENT

## ADVANCED NUCLEAR | SUPPLIER



EPM is a multi-discipline, ASME NQA-1:2015 and ISO 9001:2015 compliant, engineering company specializing in fire protection and fire modeling, probabilistic risk assessment (PRA), safe shutdown / electrical separation analysis, chemical process safety, and software development. Our cross-functional teams allow EPM to provide integrated specialty engineering and software solutions to assist our U.S. and international customers with regulatory compliance, design certification, risk management, and process efficiency at their facilities. We have built a reputation as a well-respected engineering services and software provider to U.S. and international customers for over 35 years.

**EPM**  
Engineering Planning and Management, Inc. **ONET GROUP** [www.epm-inc.com](http://www.epm-inc.com)

*Providing cost-effective solutions for safe and reliable operation of nuclear power plants for over 35 years.*

**EXPERTS IN FIRE SAFETY, RISK ANALYSIS, AND RISK MANAGEMENT**

- Fire Safe Shutdown Analysis
- PRA/PSA, Internal Event, External Event, Fire PRA, and Seismic PRA
- Fire Protection System Design
- Fire Modeling (FDT, FDS, CFAST)
- Safety Classification (Q-List/10CFR 50.69)
- 4b, Risk Informed Technical Specification Completion Time
- 5b, Risk Informed Surveillance Frequency Control Program
- PRA F&O Closeout Reviews
- Design Certification Support
- Environmental Qualification (EQ, 10CFR 50.49)
- Analysis & Design Calculations

**SOFTWARE SOLUTION TOOLS**

- EDISON - Cable, Wire, and Raceway Management System
- SAFE - Post Fire Safe Shutdown Analysis
- Milieu - Environmental Qualification
- CAMP - Cable Aging Management
- VIPER - Tablet Based Pre-Fire Plans
- PILOT - Permit Implementation, Logic, Oversight and Tracking

**Location:** Framingham, MA

**Founded:** March, 1980

**Principal/CEO:** Robert Kalantari

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE, NRC

**Preferred Point of Contact:** Alan Jelalian | [ahj@epm-inc.com](mailto:ahj@epm-inc.com) | 508-532-7131

<https://www.epm-inc.com/>

# EXCEL SERVICES CORPORATION



ADVANCED NUCLEAR | SUPPLIER

EXCEL Services Corporation (EXCEL) has vast domestic and international technical, licensing, and regulatory experience, working with regulatory bodies including the U.S. NRC, IAEA, STUK, Canadian Nuclear Safety Commission, and many others. EXCEL has worked with numerous nuclear plant designers and operators to develop and implement technical, licensing, and regulatory strategies for all phases of the nuclear plant life cycle, from design certification, initial licensing, license renewal, to decommissioning. EXCEL combines a broad and deep knowledge of the industry with world-class technical expertise, problem-solving consultants, and cost saving mechanisms to create high impact solutions to solve difficult challenges faced by energy production and other critical infrastructure clients.



EXCEL Services Corporation  
A New Dawn in Energy Innovation

**Location:** Rockville, MD

**Founded:** 1985

**Principal/CEO:** Donald R. Hoffman

**Major Customers:** EXCEL has supported all the US nuclear utilities and over 27 countries worldwide.

**Federal Engagement:** DOE, NRC

**Preferred Point of Contact:** Jim Andersen | [jim.andersen@excelservices.com](mailto:jim.andersen@excelservices.com) | 301-984-4400

<https://www.excelservices.com/>

# EXYN TECHNOLOGIES



Exyn Technologies is pioneering autonomous aerial robot systems for complex, GPS-denied environments. The company's full-stack solution enables flexible deployment of single or multi-robots that can intelligently navigate and dynamically adapt to complex environments in real-time. Exyn's autonomous robotic solution can integrate specialized sensors (temperature, radiological, IR, visual camera) to record data in dangerous or conventionally inaccessible locations. That data will be placed / visualized / georeferenced in 3D space onto of the survey grade point cloud for easy consumption and analytics.



**Location:** Philadelphia, PA

**Founded:** 2014

**Principal/CEO:** Nader Elm

**Major Customers:** Mining Space: Dundee Precious Metals, Vale, etc.

Nuclear: Demonstration of Technology with EPRI

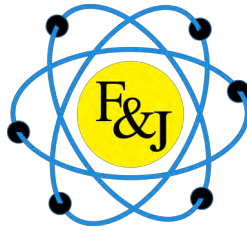
**Federal Engagement:** Other

**Preferred Point of Contact:** Harry Erhardt | [herhardt@exyntechnologies.com](mailto:herhardt@exyntechnologies.com)

<https://www.exyn.com/>



# F&J SPECIALTY PRODUCTS, INC.



ADVANCED NUCLEAR | SUPPLIER

ISO9001:2015 certified manufacturer of traditional and microprocessor controlled air sampling and airflow calibration instruments, air sampling accessories and consumables. Products include portable and fixed-station low volume and high volume air samplers, PAS, tritium and C-14 systems. Consumables include charcoal and silver zeolite radioiodine collection cartridges and particulate filter media.



**Location:** Ocala, FL

**Founded:** 1979

**Principal/CEO:** Frank M. Gavila

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE, EPA, Other

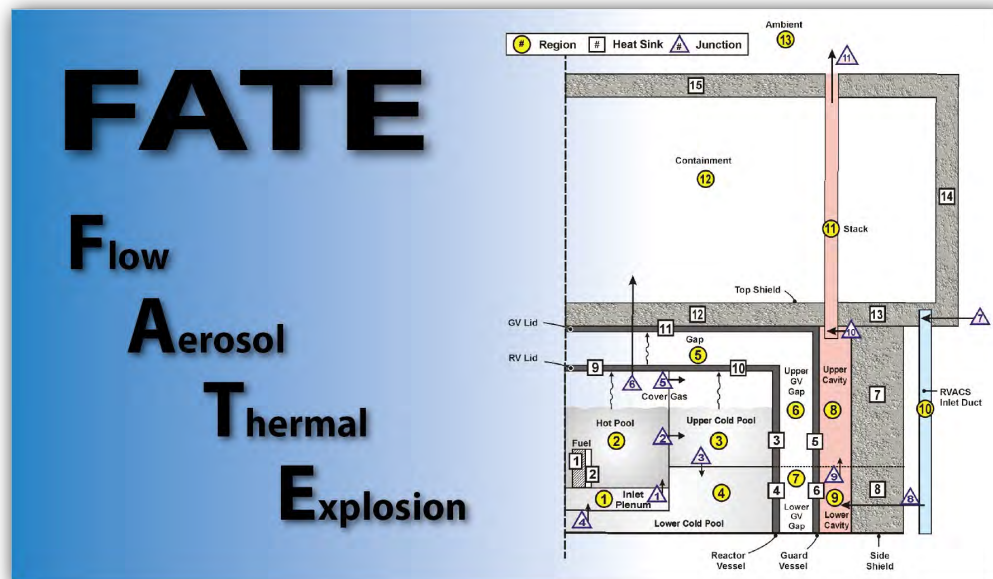
**Preferred Point of Contact:** [fandj@fjspecialty.com](mailto:fandj@fjspecialty.com) | 352-680-1177

<http://www.fjspecialty.com/>

# FAUSKE & ASSOCIATES, LLC



FAI specializes in modeling and analyzing both power and non-power nuclear facilities, including light water and liquid metal cooled reactors (LMRs), spent fuel, legacy waste processing, and storage facilities. FAI developed FATE, a facility and process modeling code originally created to support design and safety analyses of spent fuel, tank waste, vitrification, and special materials at DOE's Hanford site. Recently, under a GAIN voucher, FATE was coupled with a LMR accident analysis code to provide mechanistic source term analysis capability for licensing purposes.



**Location:** Burr Ridge, IL

**Founded:** 1980

**Principal/CEO:** John Fasnacht

**Major Customers:** Westinghouse, Kairos, Sellafeld, Hanford, Korea Atomic Research Institute (KAERI)

**Federal Engagement:** DOE, GAIN, NRC

**Preferred Point of Contact:** Jim Burelbach | burelbach@fauske.com

<https://www.fauske.com/>

# FISHER CONTROLS



Fisher valve and instrument technologies are born from Emerson's passion to increase your process safety and efficiency, by defining the industry with more than 140 years of trusted innovations and forging the future of flow control solutions. We know the consequences of process failure are great, that's why we have an unwavering commitment to standards and processes that ensure innovative and reliable product designs. Many years from now, as the Fisher™ brand is put onto products, users will continue to know it stands for integrity.



ADVANCED NUCLEAR | SUPPLIER

**Location:** Marshalltown, IA

**Founded:** 1880

**Principal/CEO:** Kevin G. Meyer, Principal | Lal Karsanbhai, CEO

**Major Customers:** All sanctioned nuclear utilities across the globe

**Federal Engagement:** NRC

**Preferred Point of Contact:** Michael Hagen | Michael.hagen@emerson.com | 641-754-3355

<https://www.fisher.com>



# FISONIC ENERGY SOLUTIONS - POWER SYSTEMS DIVISION



Fisonic Energy Solutions designs pumping systems for power plants that require only heat to operate (no electricity), and use waste heat as a power source where possible.



**Location:** Waltham, MA

**Founded:** 2016

**Principal/CEO:** Ed Pheil (CTO)

**Major Customers:** Non-disclosed

**Federal Engagement:** Other

**Preferred Point of Contact:** Ed Pheil | [ed.pheil@fisonic.us](mailto:ed.pheil@fisonic.us) | 212-732-3777

<http://www.fisonicus.com>



# FLUID COMPONENTS INTERNATIONAL, LLC



ADVANCED NUCLEAR | SUPPLIER

Since 1978, FCI has designed and produced level, flow and temperature instruments that improve plant performance, protect equipment and maintain vital processes. Our unique expertise in the nuclear power industry delivers valuable time and cost savings during both construction and operational phases.



FCI delivers products that meet nuclear industry requirements from HVAC and balance of plant equipment, to radwaste systems, to inside containment harsh environment flow and level applications. Products stand ready for harsh environment and severe accident conditions and are fully qualified per IEEE323, IEEE344, IEC60780, and RCC-E.

FCI has analog and digital level and flow instrumentation that match the performance, reliability, complexity, and cost that the applications require. FCI Quality Assurance meets 10CFRAppendix B and complies with 10CFRPart21.

**Location:** San Marcos, CA

**Founded:** 1964

**Principal/CEO:** Randy Brown

**Major Customers:** Westinghouse, Bechtel, Black and Veatch, Fluor, Framatome, Korea Hydro Electric Power Company, all major US Nuclear Power Operators

**Federal Engagement:** Other

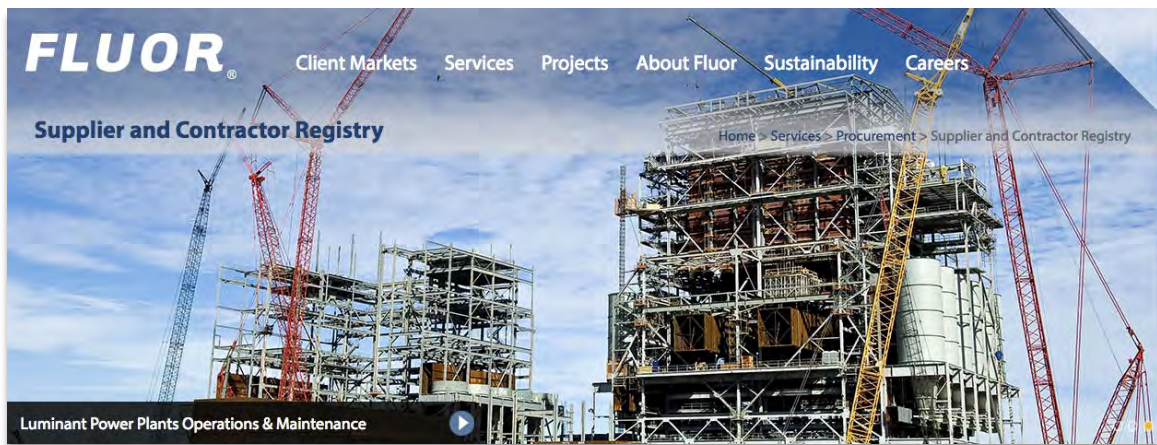
**Preferred Point of Contact:** Nathan Obermiller | [nuclear@fluidcomponents.com](mailto:nuclear@fluidcomponents.com) | 760-736-6233

<https://www.fluidcomponents.com/>

# FLUOR

The Fluor logo, consisting of the word "FLUOR" in white, bold, sans-serif capital letters, followed by a registered trademark symbol (®), all contained within a blue rectangular box.

Fluor is one of the world's largest publicly-traded engineering, procurement, fabrication, construction (EPFC) and maintenance companies, offering integrated solutions for clients' projects. For the past 70 years, Fluor has executed some of the most complex and challenging projects in the nuclear industry.



**Location:** Global

**Founded:** 2012

**Principal/CEO:** David Seaton

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE, NRC, Other

**Preferred Point of Contact:** Brad Porlier | [brad.porlier@fluor.com](mailto:brad.porlier@fluor.com)

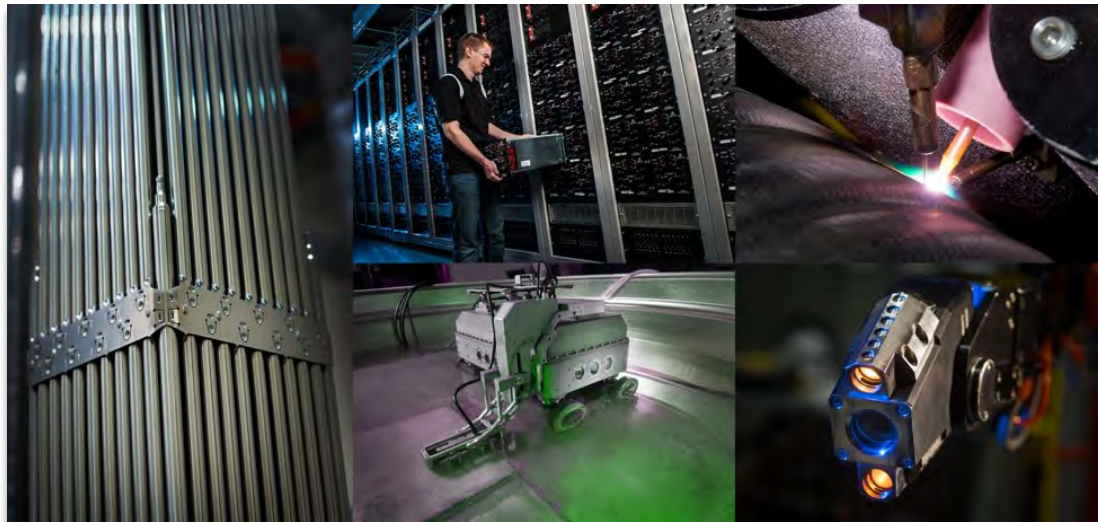
<https://www.fluor.com/>

# FRAMATOME



ADVANCED NUCLEAR | SUPPLIER

Framatome is a major international player in the nuclear energy market recognized for its innovative solutions and value-added technologies for designing, building, maintaining, and advancing the global nuclear fleet. The company designs, manufactures, and installs components, fuel and instrumentation and control systems for nuclear power plants and offers a full range of reactor services. Framatome is innovating to design the reactors of tomorrow. Our activities include reactor design, systems engineering, SMR fuel development, and industry counsel to help progress licensing and commercialization of advanced reactors in the United States.



**Location:** Nationwide

**Founded:** 1989

**Principal/CEO:** Gary Mignogna

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE, GAIN, ARPA-E, NRC, Other

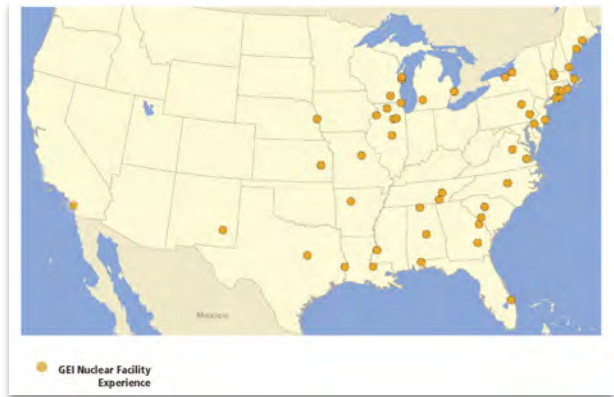
**Preferred Point of Contact:** Darryl Gordon | [darryl.gordon@framatome.com](mailto:darryl.gordon@framatome.com) | 434-832-5199

<https://www.framatome.com/>

# GEI CONSULTANTS, INC.



Our multi-disciplined team of engineers and scientists deliver integrated geotechnical, environmental, water resources, and ecological engineering solutions to diverse clientele nationwide. GEI recognizes the need to provide safe, clean, secure, base load electric power to influence our environment and has made a commitment to provide resources to support this need. GEI provides services with a focus on client success by integrating experienced project managers into our clients' team. Our services for nuclear facilities include: Site Characterization/Selection; Seismic Stability and Liquefaction Analysis; Foundation Investigation; Design for Static and Seismic Loading; Vibration Analysis; Excavation Support; Geohydrologic and Hydrologic; Licensing Support; Embankment Design and Rehabilitation; Preparation of Plans and Specifications; Field Instrumentation Installation and Monitoring; Construction Observation and Consultation; Environmental and Ecological Services; and Decommissioning. GEI has had a Nuclear Quality Assurance Manual since 1972 and we provide all our services under a client-audited Quality Assurance Program (QAP) that meets the requirements of 10 CFR Part 50 Appendix B, ASME NQA-1-1994 and ANSI N45.2- 1977. We have firmly established a reputation amongst the industry for achieving excellent results, inspired problem-solving, and outstanding client satisfaction.



**Location:** Woburn, MA

**Founded:** 1970

**Principal/CEO:** Ron Palmieri

**Major Customers:** Holtec International, TVA, Entergy, Exelon, Bechtel, and Orano

**Federal Engagement:** DOE, NRC, USACE, EPA, DOJ, TVA

**Preferred Point of Contact:** Chad R. Conti | [cconti@geiconsultants.com](mailto:cconti@geiconsultants.com)

Leslie A. Lombardo | [llombardo@geiconsultants.com](mailto:llombardo@geiconsultants.com)

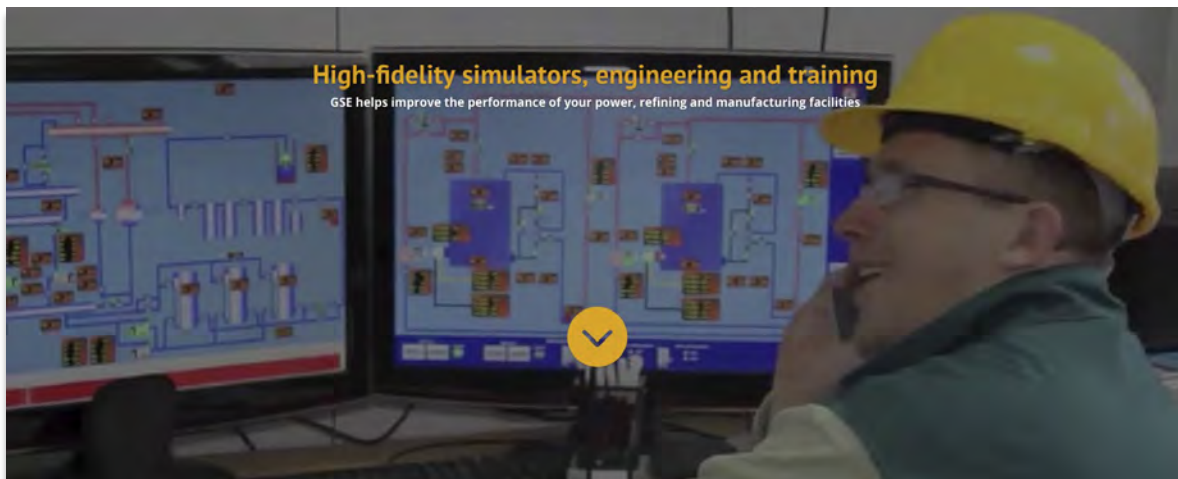
<https://www.geiconsultants.com/>



# GSE PERFORMANCE SOLUTIONS, INC.



GSE is the world leader in simulation systems and solutions for the nuclear power industry. GSE's technology allows the end user to conduct engineering and design studies, conduct "what if" analyses and train personnel to exacting standards. GSE's technology is critical for customers to improve load factors, reduce operational risk and lower operating costs.



ADVANCED NUCLEAR | SUPPLIER

**Location:** Sykesville, MD

**Founded:** 1994

**Principal/CEO:** Kyle Loudermilk

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE, GAIN, ARPA-E, NRC

**Preferred Point of Contact:** Jay Umholtz | [jay.umholtz@gses.com](mailto:jay.umholtz@gses.com)

<https://www.gses.com/>

# GUTOR ELECTRONIC LLC

# GUTOR

by **Schneider** Electric

Gutor Electronic LLC is the low-cost, high-quality supplier of Environmentally Qualified, Safety-Related emergency and back-up electrical power; to include Battery Chargers, Inverters, and UPS systems.



**Location:** Houston, TX

**Founded:** 1946

**Principal/CEO:** Finn Joergensen

**Major Customers:** Los Alamos National Laboratory, Entergy, Constellation, Idaho National Laboratory Hanford, Duke Energy, Sothern Nuclear, Dominion

**Federal Engagement:** DOE, GAIN, NRC

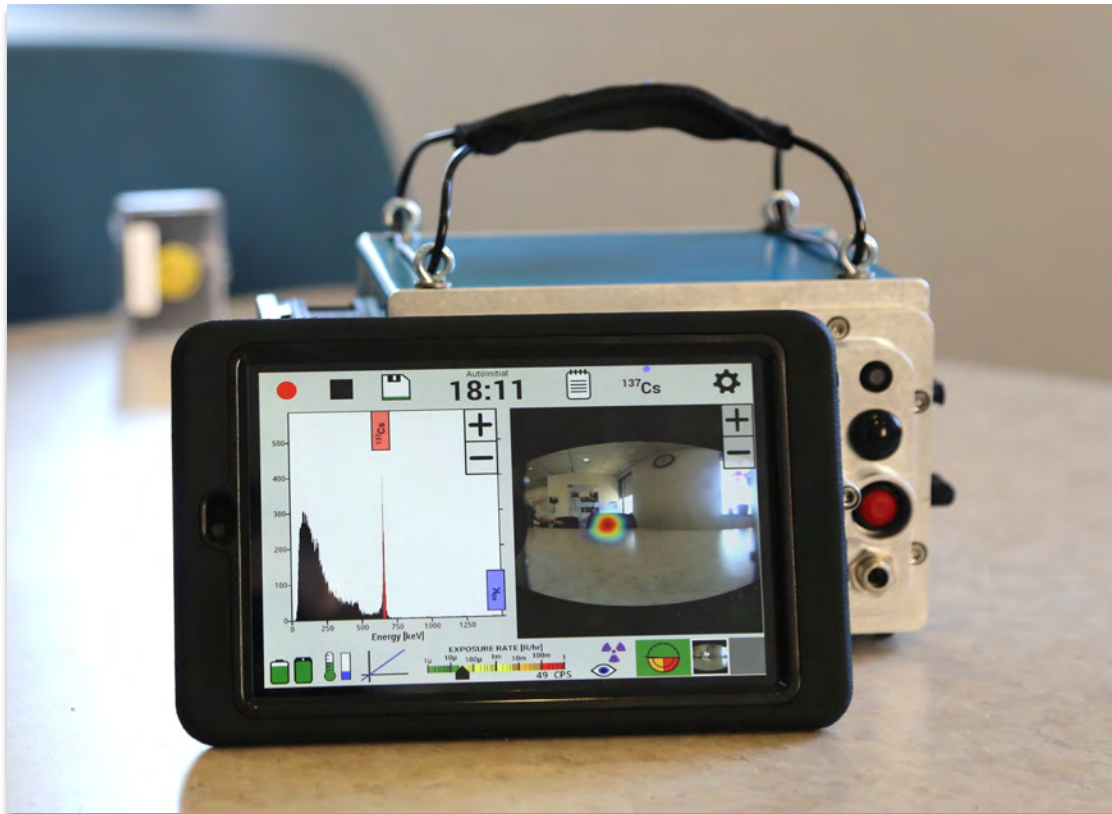
**Preferred Point of Contact:** Mike May | michael.may@se.com | 865-230-3582

<https://www.gutor.com>

# H3D, INC.



H3D offers the world's highest-performance imaging spectrometers. Quickly identifying and localizing gamma-ray sources with a single measurement, H3D is revolutionizing how measurements are performed. H3D detectors are used in over half of U.S. nuclear power plants.



ADVANCED NUCLEAR | SUPPLIER

**Location:** Ann Arbor, MI

**Founded:** Non-disclosed

**Principal/CEO:** Willy Kaye

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE

**Preferred Point of Contact:** Andy Boucher | [andy@h3dgamma.com](mailto:andy@h3dgamma.com) | 734-661-6416

<https://www.h3dgamma.com/>

# HANSELL TIERNEY, INC.

## HansellTierney

Hansell Tierney, Inc. (certified women-owned business) is a full-service recruiting & staffing firm with a specialty in staffing both contractors/consultants & direct-hire staff for key players in the nuclear industry. We are currently supporting the growth and development of reactor projects that are part of the Advanced Reactor Demonstration Program (ARDP) as well as Network for Fusion Energy (INFUSE) program.

Hansell Tierney has developed a national candidate pipeline of specialized engineering and project talent specifically in the nuclear field. We understand the complex and novel nature of reactor design and development, and can successfully source, attract, and place the nation's top talent.



Examples of roles that we have placed are the following:

- Document Control Specialist
- Maintenance & Technical Training Instructor
- Training Coordinator
- Nuclear Operations Procedure Writer
- Buyer
- Design Control Process Engineer
- Accounts Payable Specialist
- Requirements Management Engineer
- Physical Security Systems Architect
- Instrumentation and Control System Design Engineer
- Cyber Security Systems Architect
- Plant Integration Engineer - Plant Layout
- Principal Seismic Probabilistic Risk Assessment (PSPR) Engineer
- Software Quality Assurance Engineer
- Process Integration Engineer
- Mechanical System Design Engineer
- System Transients Analysis Engineer
- Project Coordinator
- Verification and Validation (V&V) Engineer
- Training Building and Simulator Project Manager
- Senior Fuel Handling System Design Engineer
- Senior Fuel Handling Mechatronics Engineer
- DevOps Engineer
- Core Mechanical Analysis and Methods Engineer
- Procurement Project Coordinator
- Nuclear Licensing Engineer
- Senior Administrative Assistant
- Project Configuration Manager
- Administrative Assistant
- Helpdesk Technician
- Reactor Core and Component System Design Engineer
- Structural Analysis Engineer, Reactor
- System Design Engineer, Fluid Systems
- System Design Engineer, Sodium Processing System
- Instrumentation and Controls Engineer
- System Transients Methodology Engineer
- Nuclear Methods Software Engineer
- Plant Analysis Integration Engineer - Safety Analysis, PRA
- Senior Fuel Handling Test Design Engineer
- Operations Training Instructor
- Sr. Project Scheduler
- Plant Integration Systems Engineer
- Structural Analysis Engineer, Reactor
- Stress Analysis Engineer, Fuel Handling
- Engineering Coordinator
- Mechanical Codes and Methods Engineer
- Senior Fuel Handling Design Engineer- Dry Storage
- Senior Integrated Plant and Structures Engineer – Seismic Integration
- Sr. Mechanical Design Engineer
- Electrical Engineer
- Sr. Integrated Plant & Structures Engineer, Seismic Integration
- Senior Core Mechanical Structural Analyst
- Plant Integration Radiological Engineer
- Corporate Facilities Assistant
- Business Intelligence Analyst
- Recruiting Coordinator
- Recruiter
- Electrical System Design Engineer
- Financial Analyst
- Engineering Project Coordinator
- Contract Specialist
- System Integration Engineer
- Network Engineer
- Senior Software Engineer

**Location:** Seattle, WA

**Founded:** 2001

**Principal/CEO:** Jill Hansell McCune | Carolyn Tierney

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE

**Preferred Point of Contact:** David Yount | [dyount@hanselltierney.com](mailto:dyount@hanselltierney.com) | 206-377-9840

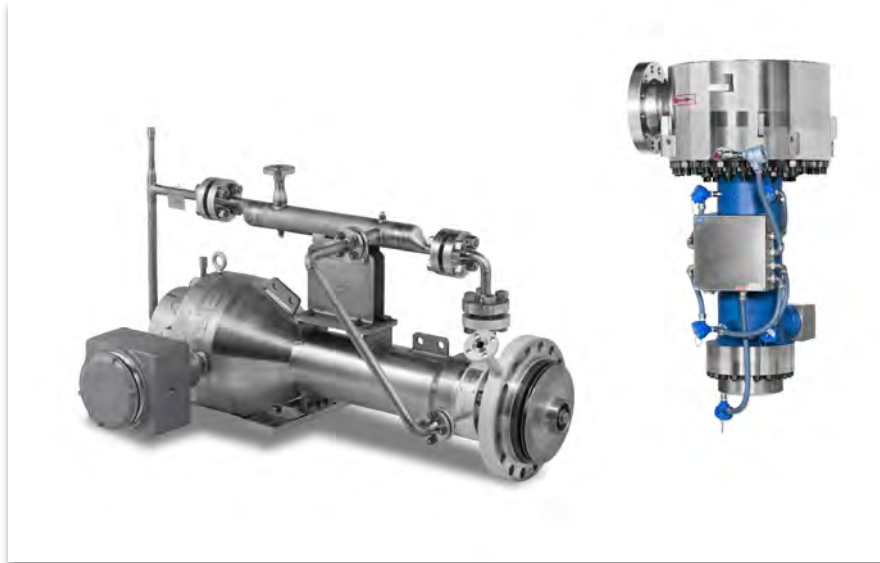
**<https://hanselltierney.com/>**



# HAYWARD TYLER, INC.



Design, engineer and manufacture of pumps, motors, vessels, and other process equipment in accordance with ASME Codes and Standards. This includes Section III, Div. 1 and Div. 5. Hayward Tyler combines decades of nuclear pump and vessel operating experience with trained engineers using state-of-the-art computer aided design tools. These tools — including Computational Fluid Dynamics (CFD), rotor dynamics, and Finite Element Analysis (FEA) — enable us to engineer safe and reliable pump, motor, and vessel solutions for advancing nuclear energy technology. Whether your project requires limited scope engineering efforts, or clean sheet design and build of novel pump, motor, and vessel technology, Hayward Tyler has the in-house engineering, manufacturing, and test capabilities to deliver on your unique challenges.



ADVANCED NUCLEAR | SUPPLIER

**Location:** Colchester, VT

**Founded:** 1970

**Principal/CEO:** Drew Van Norman

**Major Customers:** Southern Company, Dominion energy, Constellation Energy, Korea Hydro & Nuclear Power, TerraPower, Idaho National Labor, Bechtel Marine Propulsion, ITER, Duke Energy

**Federal Engagement:** DOE, GAIN, ARPA-E, NRC

**Preferred Point of Contact:** Jeffrey Belotti, Sales Director | [jeffrey.belotti@haywardtyler.com](mailto:jeffrey.belotti@haywardtyler.com)

Office: 802-655-4444 (x)141 | Mobile 201-446-9757

<https://www.haywardtyler.com/>

# HIGH TEMPERATURE SYSTEM DESIGNS, LLC

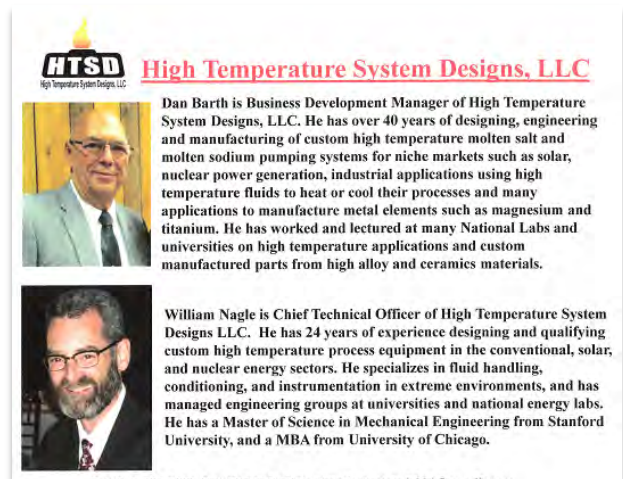
ADVANCED NUCLEAR | SUPPLIER



High Temperature Systems Designs (HTSD) are an Engineering and Design company with over Seventy years of combined experience. Our team is made up of Daniel Barth, Business Development Manager/Owner, William Nagle, Chief Technical Officer and Danielle Barth, Research Analyst.

HTSD developed and manufactured specialized pumping systems for high temperature and hazardous material applications. Our understanding of designing and manufacturing of such critical equipment comes from working for and with such companies as Rheinhutte Pumps, Nagle Pumps, Friatec Valves, Ensival-Moret Pumps, Sandia National Labs, Rocketdyne, Nexant Bechtel, Oakridge National Labs and many other research facilities and Universities.

HTSD designed, constructed and commissioned systems at Sandia National Labs, Shell Global Solutions research Facility in Houston, TX, Plataforma Solar de Almera in Spain, ENEA in Italy and many labs scales systems at our universities.



**Location:** St. John, IN

**Founded:** 2015

**Principal/CEO:** Daniel Barth

**Major Customers:** Sandia National Labs, Oak Ridge National Labs, National Renewable Energy Lab, Argonne National Labs, Shell Oil, TerraPower, ThorCon, Flibe Energy, Hayward Tyler Inc., Powdermet, Nagle Pumps Inc., Rheinhutte Pumps

**Federal Engagement:** DOE, ARPA-E

**Preferred Point of Contact:** Daniel Barth | danbarth001@gmail.com |

Direct 219-365-7669, Cell 727-776--7952

<http://www.hightemperaturesystemdesigns.com/>

# HOLTEC INTERNATIONAL



ADVANCED NUCLEAR | SUPPLIER

Holtec's SMR-160 is a robust small modular reactor that delivers 160 MW net electric in a small footprint. SMR-160 is based on pressurized water reactor technology and uses low enriched uranium fuel to provide reliable, affordable and carbon-free energy. The SMR-160 is "walk-away safe," requiring no operator actions during natural disasters, man-made threats, or any of the conditions required to be considered by U.S. regulations. It is the ideal solution for sustaining economic growth worldwide. Since SMR-160 can integrate readily to both established electrical grids or as an independent distributed power source, it is well adapted for both undeveloped and developed countries. SMR160 is truly



modular. The majority of the plant's equipment and structures are factory-fabricated and can be delivered to each site in segments. An SMR-160-based site can easily be expanded with additional units to meet current and future demand. Please visit [www.smrllc.com](http://www.smrllc.com) for more information.

**Location:** Camden, NJ    <https://holtecinternational.com/products-and-services/smr/>

**Founded:** 1986

**Principal/CEO:** Dr. Krishna P. Singh

**Major Customers:** Worldwide

**Federal Engagement:** DOE, NRC

**Preferred Point of Contact:** Myron Kaczmarzsky / [m.kaczmarzsky@holtec.com](mailto:m.kaczmarzsky@holtec.com) / 856-797-0900 x 3657

# INFORMATION SYSTEMS LABORATORIES

## ADVANCED NUCLEAR | SUPPLIER

INFORMATION  
SYSTEMS  
LABORATORIES, INC.



Information Systems Laboratories, Inc. (ISL) specializes in the areas of energy independence, advanced nuclear applications, space exploration, undersea technologies, surveillance and tracking, cybersecurity, and advanced radar systems. In the Energy Sector, ISL provides comprehensive areas of support to the U.S. government ranging from safety analysis and assessment of complex engineering systems to the development of regulatory structures and evaluation procedures.

ISL specializes in nuclear analysis, code development, and regulatory assistance. Typical nuclear analysis performed by ISL focuses on the following areas: thermal-hydraulics, fuel-mechanical, point and 3D neutron kinetics, nuclear plant performance and accident analysis, operational transient analysis, training simulator benchmarking, spent nuclear fuel cooling analysis, containment analysis, hydrodynamic force calculations, control system studies, and safety analysis.

ISL staff are experts in the development and use of system codes, including neutronic and control system models, with hundreds of years of combined experience. ISL currently supports the maintenance and development of computer software and analysis systems for the U.S. Nuclear Regulatory Commission (NRC) and U.S. Department of Energy (DOE)-Naval Reactors, including RELAP5, RADTRAD, TRACE, and PARCS.

ISL develops software applications and database systems for all phases of nuclear waste processing, disposal, and storage. ISL's expertise in cradle-to-grave management of nuclear waste data processing includes retrieval, characterization, certification, shipment, and disposal operations.

ISL staff are experts in risk management and system safety, including programmatic risk management, enterprise risk management (ERM), risk-informed decision making (RIDM), continuous risk management (CRM), accident precursor analysis (APA), and probabilistic risk assessment (PRA).

**Location:** San Diego, CA

**Founded:** 1982

**Principal/CEO:** Dr. Joseph Guerci, Ph.D.

**Major Customers:** U.S. NRC, U.S. DOE

**Federal Engagement:** DOE, NRC, NASDA, DARPA, U.S. DOT, Other

**Preferred Point of Contact:** Colleen Armuruso | [camoruso@islinc.com](mailto:camoruso@islinc.com) | 703-448-1116

***<https://www.islinc.com>***



# JOSEPH OAT CORPORATION



ADVANCED NUCLEAR | SUPPLIER

Joseph Oat is a world renowned OEM designer and manufacturer of fabricated ASME Section VIII and ASME Section III / NQA-1 nuclear safety-related heat exchangers, pressure vessels, tanks, canisters/casks, and other products for the Nuclear Power and Radioactive Waste Processing Industries.

Joseph Oat's range of products is quite extensive and our successful nuclear experience is unmatched in the industry. Joseph Oat excels in the supply critical heat exchangers such as regenerative & non-regenerative, residual heat removal (RHR), spent fuel pool coolers, emergency diesel generator (EDG) coolers, lube oil coolers, containment spray, letdown, SG blowdown, and large component cooling water (CCW) heat exchangers. Other product offerings include condensate tanks, air receiver tanks, accumulator vessels, liquid control tanks, surge tanks, containment air coolers, pulsation dampeners, suction stabilizers, oil tanks, fuel tanks,



strainers, flow elements - orifice plate & venturi type, flow meters, structural weldments, spent fuel/rad-waste canisters/casks, and other specialty items to nuclear power utilities/plants, NSSS designers, nuclear A&E/EPC firms, the DOE national laboratories/repositories, and DOD weapons plants.

**Location:** Camden, NJ

**Founded:** January 1788

**Principal/CEO:** Ron Kaplan

**Major Customers:** DOE (National Laboratories, Repositories, Universities, etc.), GE-Hitachi, Orano, US Nuclear Power Utilities, Westinghouse

**Federal Engagement:** DOE, GAIN, NRC, Other, DOD

**Preferred Point of Contact:** John McDonald | [j.mcdonald@josephoat.com](mailto:j.mcdonald@josephoat.com) | 856-371-0009

<https://www.josephoat.com/>

# KINECTRICS



Kinectrics is the category leader in providing life cycle management services for the electricity industry. From initial design and type testing to operational deployment and maintenance services, Kinectrics collaborates closely with customers to ensure that utility assets perform safely, reliably throughout their entire life cycle.

## SERVICES SUPPORTING ALL STAGES OF THE NUCLEAR POWER PLANT LIFE CYCLE

**Design Engineering and Sites**—Kinectrics is a Tier 1 supplier of engineering and on-site services providing consistent, cost-effective, and innovative complete solutions to clients globally.

**Nuclear Safety and Licensing**—Kinectrics is a market leader in North America in providing safety and licensing support to nuclear utilities.

**Nuclear Equipment Solutions**—Kinectrics is one of the most diverse suppliers in North America of Safety-Related parts, and can provide the following services to assist utilities with their unique parts, obsolescence and refurbishment challenges.

**Materials and Major Components**—Offering industry-renowned capabilities in life cycle management of major components.

**Radioactive Material and Chemistry Services**—A combination of CNSC licensed facilities and an ISO 17025 accredited laboratory that provides expert Analytical Chemistry, Nuclear Waste Management and Environmental services.

**Inspection and Maintenance Systems**—Kinectrics provides the full suite of services for the design, prototyping, development, testing, deployment and maintenance of inspection and non-destructive evaluation (NDE) systems and tooling.



**Location:** Etobicoke, Ontario, Canada

**Founded:** 2000

**Principal/CEO:** David Harris

**Major Customers:** Westinghouse, Emerson, Duke Energy, Bruce Power, Ontario Power Generation, Entergy, Wolf Creek, Callaway, TVA

**Federal Engagement:** DOE, GAIN, NRC

**Preferred Point of Contact:** Nisa Halsey | [nisa.halsey@kinectrics.com](mailto:nisa.halsey@kinectrics.com) |

Office phone: 416-207-6000 (x) 6315 | Mobile: 443-350-1556

David Marttila | [david.marttila@kinectrics.com](mailto:david.marttila@kinectrics.com)

Office phone: 416-207-6000 (x) 5891 | Mobile: 416-400-6894

<https://www.kinectrics.com/>

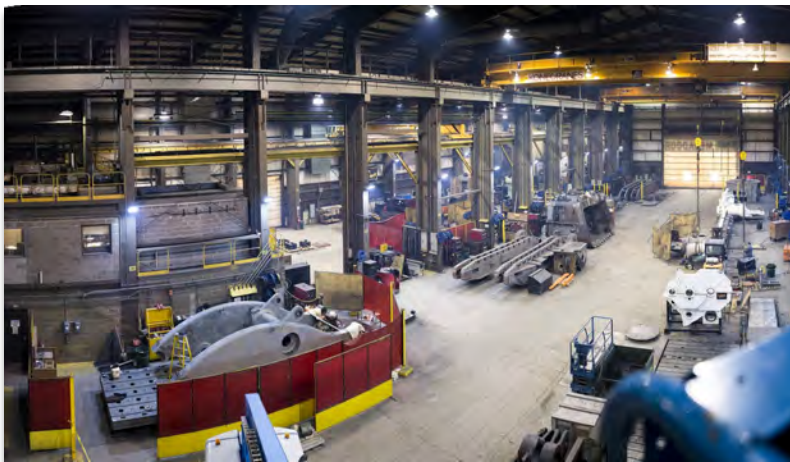
# L&H INDUSTRIAL



ADVANCED NUCLEAR | SUPPLIER

Founded in 1964 and headquartered in Gillette, Wyoming, USA, L&H Industrial is a leader in technology innovations, custom manufacturing, and comprehensive services for heavy industrial machinery used in mining, oil and gas, railways, wind, hydro, nuclear and other industries. Today, in our third generation as a family business, we have offices and distribution partners around the world and hundreds of employees dedicated to delivering outstanding service and innovations for the biggest and hardest-working machines on the planet.

We can custom-engineer and build, from the ground up, any heavy equipment assembly or machine that you need for your operation. Our worldwide 24/7 Field Services network is on the job whenever you need heavy equipment troubleshooting, repairs, rebuilds, relocations, or replacements. And thanks to our specialized Design & Engineering and



state-of-the-art Manufacturing & Repair services, we are a go-to international supplier for improved components and custom assemblies for heavy industrial machinery.

**Location:** Gillette, WY

**Founded:** 1964

**Principal/CEO:** Mike Wandler

**Major Customers:** Canadian Natural, Kirkland Lake Gold, Navajo Transitional Energy, Imperial Oil, Grupo Mexico, Ellefson Off Highway, Holcim, Mainetec Pty Ltd., Capstone, Asarco LLC

**Federal Engagement:** DOE

**Preferred Point of Contact:** Gage Wandler | [gwandler@lnh.net](mailto:gwandler@lnh.net) | 480-889-2830

Mike Wandler | [mwandler@lnh.net](mailto:mwandler@lnh.net) | 307-682-7238

<https://www.lnh.net/>

# LIGHTBRIDGE CORPORATION



Lightbridge develops next generation fuel technology.

At Lightbridge we are developing a way to  
impact the world's climate and energy  
problems soon enough to make a difference.



**Location:** Reston, VA

**Founded:** 2006

**Principal/CEO:** Seth Grae

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE, NRC

**Preferred Point of Contact:** Seth Grae | 571-730-1200

<https://www.ltbridge.com/>



# MAIDANA RESEARCH



ADVANCED NUCLEAR | SUPPLIER

MAIDANA RESEARCH is a small business dedicated to engineering design and scientific research. Its main set of activities rely on computer aided design, engineering and manufacturing (CAD/CAE/CAM), basic and applied research in



the engineering and physical sciences, and consulting in topics related to industries and advanced technologies deemed critical to national security and to long term economic development including, but not limited to, aerospace, satellites, nuclear technologies, defense-related industries, and advanced energy systems.

We provide specialized services in the research, design and development of liquid metal and molten salt electromagnetic pumps for nuclear, space and industrial applications including software development, rapid prototyping, advanced and hybrid manufacturing, test loops, instrumentation and control, and digital monitoring systems for active flow control and machine protection.

- Computer Aided Design (CAD)
- Computer Aided Engineering (CAE)
- Computer Aided Manufacturing (CAM)
- Rapid Prototyping
- Reverse Engineering
- Instrumentation and Control
- Modeling and Simulations
- Multi-Physics Analysis
- Computational Physics
- Software Engineering
- Digital Prototyping



**Location:** USA (ID) and Thailand

**Founded:** 2015

**Principal/CEO:** Dr. Carlos O. Maidana

**Major Customers:** Non-disclosed

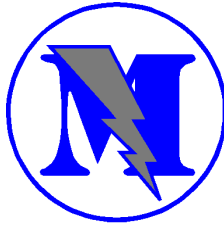
**Federal Engagement:** DOE, GAIN, NASA, DoD, Other

**Preferred Point of Contact:** management@maidana-research.com

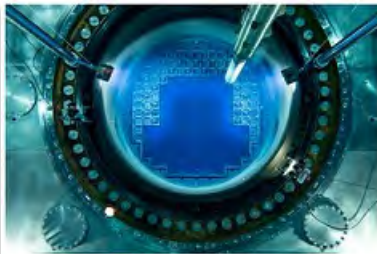
***<https://www.maidana-research.com/>***

# MASTER-LEE ENGINEERED PRODUCTS, INC.

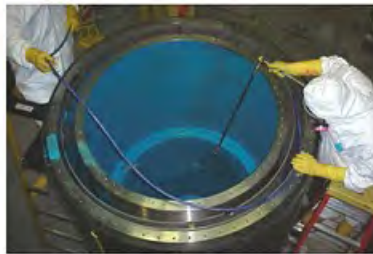
ADVANCED NUCLEAR | SUPPLIER



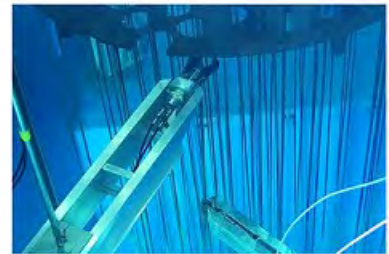
Master-Lee Engineered Products Incorporated (MLEP) serves the nuclear power industry with innovative, quality tooling and products designed with reliability, longevity, and personnel safety in mind. Our Engineering Team's experience in creating simple solutions for complex problems has been finely tuned over decades of operation and honed through thousands of specialized projects. We strongly emphasize teamwork throughout our organization and consistently welcome our customers onto our Team to work through challenges together, and to mold a long lasting customer-vendor relationship.



Energy Services



Decon Services



Engineered Products

Having provided tooling and services to the commercial nuclear power industry for over 35 years, we have attained a strong working knowledge and depth of experience in: reactor maintenance/assembly/disassembly, fuel handling tooling, underwater and/or radiological area lighting, remote tool operation, special lifting devices, and personnel work platforms. We have also created specialized tooling and equipment for the decommissioning of various commercial nuclear power plants as well as test reactor sites of the DOE. Whatever challenges your project brings you, Master-Lee Engineered Products, Inc. is well equipped to deliver you a timely and effective solution.

**Location:** Latrobe, PA

**Founded:** 1987

**Principal/CEO:** Thomas Tallarico

**Major Customers:** Duke Energy, Constellation, PG&E, Talen Energy, Energy Harbor, NPPD, Energy Northwest, TVA, Southern Nuclear, Entergy, Dominion Energy, Luminant, NextEra Energy, Framatome, Westinghouse

**Federal Engagement:** DOE

**Preferred Point of Contact:** Matt Batsa, VP of Engineering | batsa-ma@masterlee.com | 724-8054964

<https://www.masterlee.com>

# MATERION



ADVANCED NUCLEAR | SUPPLIER

## Materion at a Glance:

A global high-tech solutions provider of performance alloys, precision coatings and advanced materials.

- Founded in 1931
- Publicly traded on NYSE since 1972 (MTRN)
- In excess of \$1 billion in sales

Materion services customers in the aerospace, architectural glass, automotive, defense, energy, nuclear, precision optics, and semiconductor electronics markets.



**Location:** Mayfield Heights, OH

**Founded:** 1931

**Principal/CEO:** Jugal K. Vijayvargiya

**Major Customers:** Aerospace, Architectural Glass, Automotive Defense, Energy, Nuclear, Precision Optics, and Semiconductor Electronics Markets

**Federal Engagement:** DOE, ARPA-E, GAIN, NRC

**Preferred Point of Contact:** Chris Helwig | christopher.helwig@materion.com

Office: 414-212-0239 | Mobile: 414-708-8738

<https://www.materion.com/>

# MERIDIAN SERVICES GROUP



For over 20 years, Meridian (formerly High Bridge Associates and Work Management) has served various industries spanning power generation (nuclear, fossil, and renewables), federal government, T&D, petro-chemical, and Environmental Management. Meridian is an industry leader in SMR, AR, and LLWR planning, analysis, and advisement with expertise encompassing all phases of the project life cycle and beyond to operations and decommissioning, in the US and abroad.

For new nuclear power (NNP) plant facilities, Meridian has been part of owner/licensee/project teams to assist with **screening technology options & life cycle economics** for LLWR, SMR, & Advanced Reactor designs. It utilizes a comprehensive database of cost/schedule/risk historical information and financial modeling tools to assist customers with evaluating the 80-year life-cycle economic performance for licensing, EPC, operations/maintenance, and decommissioning. Meridian has performed strategic advisement and third-party independent reviews of cost, schedules, and risk assessment for various SMRs, ARs, and LWRs.

Meridian is committed to helping owners and contractors to learn from the past and apply these lessons and best practices for success in the future. The Nuclear Energy Institute (NEI) selected Meridian in 2019 to prepare NEI Report 20-08 published in April 2020 documenting strategic project management lessons learned and best practices for first-of-a-kind new nuclear plant construction. Our Meridian website provides links to PDF copies of each of the 32 public domain reference documents and case studies for 10 successful large FOAK projects cited in the NEI Report. In 2022/2023, NEI engaged Meridian to develop several implementation guides based on the 2019 NEI report to support the nuclear industry's needs for formal guidance.



**Location:** Greensboro, GA

**Founded:** 2021

**Principal/CEO:** Jim O'Connor, President | Ken Aupperle, SVP

**Major Customers:** TVA, Dominion, NuScale, Entergy, Southern, OPG, NEI

**Federal Engagement:** DOE, DOD, National Labs

**Preferred Point of Contact:** Elizabeth Snow | [elizabeth.snow@meridian-sg.com](mailto:elizabeth.snow@meridian-sg.com) | 423-468-4317

<https://meridian-sg.com/>

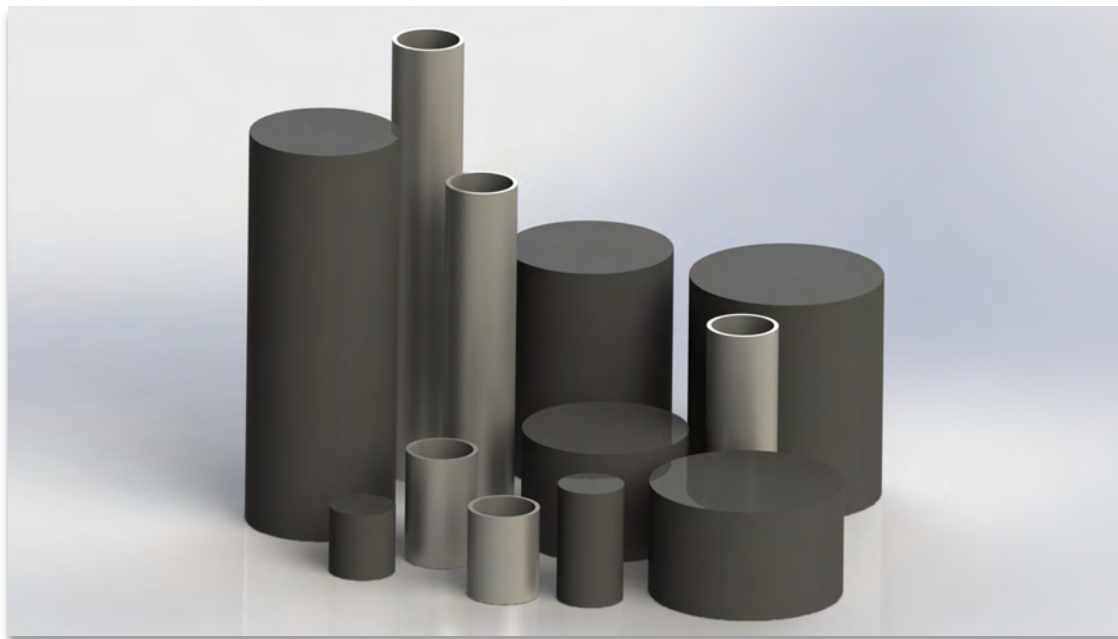


# MILLENNITEK LLC



ADVANCED NUCLEAR | SUPPLIER

Millennitek manufactures neutron absorbers from high-temperature materials under our NQA-1 quality program. We also develop materials and have advanced manufacturing methods to accelerate time to market.



**Location:** Knoxville, TN

**Founded:** 2010

**Principal/CEO:** Steve Getley

**Major Customers:** Westinghouse, PNNL

**Federal Engagement:** NASA

**Preferred Point of Contact:** Steve Getley | [steve.getley@millennitek.com](mailto:steve.getley@millennitek.com) | 865-771-2553

***<http://millennitek.com/>***

# MS TECHNOLOGY, INC.

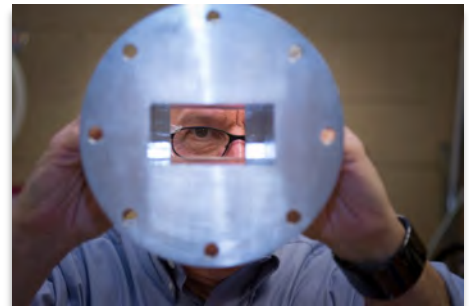


## MSTechnology

MS Technology, Inc. is an engineering and technology development small business headquartered in Oak Ridge, Tennessee that services the U.S. Department of Energy, U.S. Department of Defense, and private industry. We specialize in providing engineering and project support, Q-cleared engineers and technical professionals, and multiple Professional Engineers. We strive to solve our customers' most challenging problems by being a leader in design, development, and deployment of critical innovative technologies.

Our founders started MS Technology in 1994 by pursuing innovative metal melting technologies using microwave energy. We are now a world leader in design and delivery of microwave-driven metal melters and casting technology.

We leveraged our innovative development experience to evolve into experts in equipment and process design. Our portfolio includes design of uranium fuel fabrication processes, glovebox design and structural analyses, design documents for complex infrastructure projects, and air emission control systems. Our customers value our ASME NQA-1 quality program that has withstood audits by NNSA prime contractors. We used our experience to evolve into full facility design, including architectural, civil, structural, mechanical, electrical, chemical, nuclear, fire protection, and instrumentation and controls disciplines.



We didn't stop there. Good engineering in a digitally transformed world means Total Lifecycle Systems Engineering. This includes cradle-to-grave requirements identification, capture, establishment of requirement bases, verification, validation, and management for the life of the asset. We are experienced in lifecycle analysis processes to maintain the health of mission critical assets. We are adept at evaluating alternatives and failure modes and effects analyses (FMEA). We can help you tailor a requirements management plan, including DOORS implementation, to meet your needs.

We are ready to help you tackle your most challenging problems.

**Location:** Oak Ridge, TN

**Founded:** 1994

**Principal/CEO:** Peter Newby, President

**Major Customers:** NNSA, DOE, Centrus, TRISO-X

**Federal Engagement:** DOE, GAIN, NRC, NNSA

**Preferred Point of Contact:** Peter Newby | peter.newby@mstechnology.com | 865-483-0895

<https://www.mstechnology.com/>

# NUCLEAR ENERGY CONSULTANTS, INC.



ADVANCED NUCLEAR | SUPPLIER

We are a consulting, engineering, regulatory, & technical support services firm helping clients like you lead the way in advanced & SMR design & development.

Our contributions have been instrumental in clients achieving their goals, including the first successful SMR design certification by the NRC & the first commercial contract to build a grid-scale SMR in North America.



NEC is conveniently located in Rockville, Maryland near utility and nuclear regulatory agencies, industry corporate offices and Washington, D.C.

We have an optimal mix of historical industry know-how, leading innovative services, & the flexibility to meet current challenges for today's FOAK, scalable, streamlined designs. NEC's goal is providing the highest quality products & services to the nuclear industry while achieving total client & employee satisfaction through a philosophy of corporate & employee dedication to excellence.

Thank you for considering NEC. We look forward to working with you.

**Location:** Rockville, MD

**Founded:** 1983

**Principal/CEO:** William R. Mills

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE, NRC

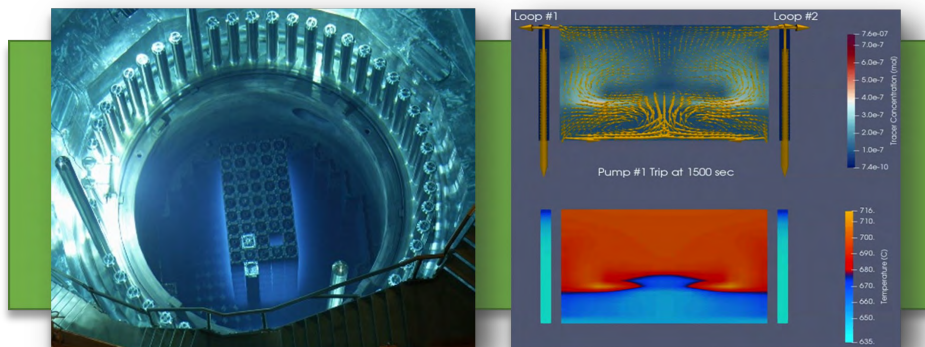
**Preferred Point of Contact:** Marlisa Willie, Proj. Resource Mgr. | [mwillie@necenergy.com](mailto:mwillie@necenergy.com) | 301-840-2964

<https://www.necenergy.com/>

# NUMERICAL ADVISORY SOLUTIONS



Numerical Advisory Solutions, LLC (NAS) provides trusted, best-in-class software tools, analysis, engineering, and design services. We are internationally recognized for our expertise in thermal-hydraulic analysis, radiological analysis, safety analysis, licensing methods, quality assurance requirements and engineering software development. Our experience is rooted in design and support of operating nuclear power facilities; however, we support a wide variety of advanced reactor designs, including SMRs, non-LWRs, microreactors, research reactors and medical isotope facilities. NAS is also engaged in hydrogen production, carbon capture and chemical process projects supporting sustainability goals. With a focus on developing innovative, practical and cost-effective solutions to our customer's toughest problems, NAS collaborates with our clients to ensure the safe design and efficient operation of nuclear facilities worldwide. We also leverage advanced modeling and simulation software with cutting-edge technologies, such as AI/ML, to develop and apply tools like Digital Twins and other dynamic decision-making tools to improve efficiency in design, construction, and operations & maintenance. NAS, and predecessors, Zachry Nuclear Engineering, Inc., Proto-Power Corporation, Numerical Applications, Inc., and Computer Simulation & Analysis, Inc., have an established record of providing engineering services and software products to the nuclear industry worldwide for nearly 40 years.



**Location:** Cary, NC

**Founded:** 1984

**Principal/CEO:** James R. Harrell, President

**Major Customers:** Electric Utilities, advanced reactor designers, research organizations, regulators, architect/engineers, fuel vendors, and government energy agencies

**Federal Engagement:** DOE, ARPA-E, NRC

**Preferred Point of Contact:** James R. Harrell | harrelljr@numerical.com | 919-653-7651

<https://www.numerical.com/>



# NUTHERM INTERNATIONAL, INC.



ADVANCED NUCLEAR | SUPPLIER

Nutherm is a small business concern serving the DOE and commercial nuclear power industry since 1979. We specialize in the design, manufacture, qualification, and commercial-grade dedication of systems and components for electrical power, control, and instrumentation. Nutherm's in-house lab features electrical performance, accelerated thermal aging, HELB, LOCA, and seismic testing along with numerous specialized testing devices. Nutherm maintains a Quality Assurance Program to support its products and services for safety-class and safety-significant applications. The Nutherm audited Quality Assurance

Program meets the requirement of ASME NQA-1, 10 CFR 50 Appendix B, 10 CFR Part 21, ANSI/ASME Standard N45.2, and DOE Order 414.1D.



**Location:** Mt. Vernon, IL

**Founded:** 1976

**Principal/CEO:** Wade Bowlin

**Major Customers:** Los Alamos National Laboratory, Oak Ridge National Laboratory, Savannah River Site, Hanford Site

**Federal Engagement:** DOE, NRC

**Preferred Point of Contact:** sales@nutherm.com

<https://www.nutherm.com/>

# NUVISION ENGINEERING



NuVision Engineering is an engineering and technology services company specializing in nuclear applications. We provide technically advanced engineering solutions and services for governments and businesses worldwide. We also design and deploy rad-hardened robotic manipulators for use in radioactive environments, and advanced process systems to manage radioactive waste. Our customers include the U.S. and international governments, utility companies, and medical research facilities. Our experienced staff and portfolio enable us to provide solutions to complex problems safely, quickly, and cost effectively. NuVision was founded in 1971 and is headquartered in Pittsburgh, Pennsylvania, with major operational facilities near Charlotte, North Carolina.



**Location:** Pittsburgh, PA

**Founded:** 1971

**Principal/CEO:** Erich Keszler | [ekeszler@nuvisioneng.com](mailto:ekeszler@nuvisioneng.com)

**Major Customers:** U.S. and international governments, utility companies, and medical research facilities

**Federal Engagement:** DOE, GAIN, ARPA-E, NRC, U.S. and International Governments

**Preferred Point of Contact:** Martin Williams | [williams@nuvisioneng.com](mailto:williams@nuvisioneng.com)

Michael Frankle | [mfrankle@nuvisioneng.com](mailto:mfrankle@nuvisioneng.com)

***<http://nuvisioneng.com/>***

# PARAGON ENERGY SOLUTION



*The nuclear industry's most trusted supplier*

ADVANCED NUCLEAR | SUPPLIER

For over 30 years, Paragon has been supporting the nuclear industry with quality, innovation and an intense focus on customer service. With our ever expanding product and service offerings, Paragon is positioned to serve the rapidly expanding SMR and Advanced Reactor designs with our certified HIPS FPGA based platform digital control systems, neutron flux monitoring systems and all critical equipment needs. This is in addition to our unwavering continued support for the existing commercial nuclear fleet and DOE facilities with our traditional product lines of nuclear industry qualified custom and COTS electrical, mechanical, HVAC and I&C equipment.

Paragon controls the complete project lifecycle, from design and qualification to manufacturing, testing and supply. Our in-house testing and equipment qualification capabilities include Seismic Testing on any of our four (4) seismic tables, Thermal Aging, Cyclic Aging & Testing, EMI / RFI Testing, Loss of Coolant Accident (LOCA) & High Energy Line Break (HELB) Testing, Software Verification & Validation, Cybersecurity, and much more.

Paragon's commitment to our Nuclear Safety Culture allows us to be in lock step with the values of the customers we serve while maintaining the highest levels of



quality. Our Quality Assurance Program includes 10CFR50 Appendix B, 10CFR21, ASME NQA-1, CSA Z299.1-16, ASME Section III, N, NS, NPT and NR Certificates of Authorization, and our programs are audited by NUPIC and NIAC.

**Location:** Fort Worth, TX

**Founded:** 1990

**Principal/CEO:** Doug VanTassell

**Major Customers:** TVA, Constellation, Southern Co, Entergy, KHNP, OPG, Bruce Power, Bechtel

**Federal Engagement:** DOE, NRC, DOD

**Preferred Point of Contact:** John Portillo | [jportillo@paragones.com](mailto:jportillo@paragones.com)

**<https://www.paragones.com>**



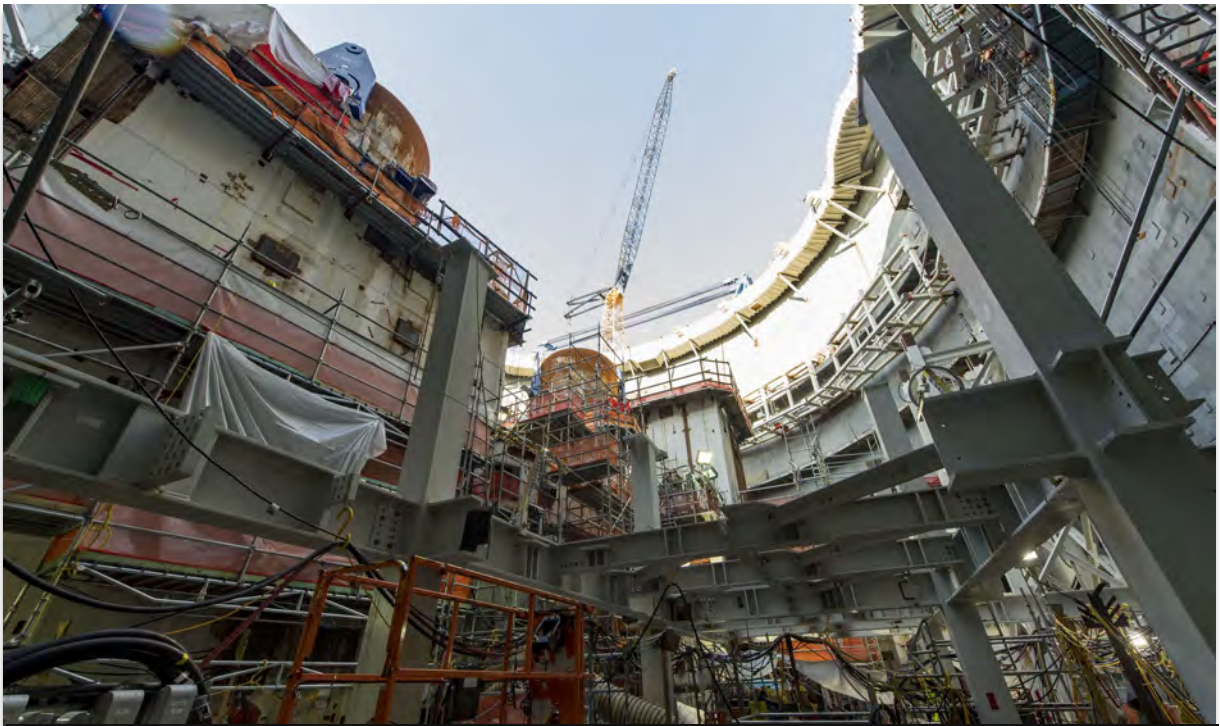
# PAXTON & VIERLING STEEL (NQA-1)



A DIVISION OF



We are an NQA-1 structural steel fabrication firm that has successfully completed fabrication of structural steel on commercial nuclear projects as well as DOE nuclear projects.



Maintenance deck inside Vogtle Unit 3 containment vessel. March 2018 ©2018 Georgia Power Company All rights reserved.

**Location:** Carter Lake, IA

**Founded:** 1885

**Principal/CEO:** Tyler Owen

**Nuclear Customers:**

**DOE Nuclear:** Hanford WTP/Oak Ridge Y-12 UPF/INL IWTF

**Commercial Nuclear:** Project Vogtle/Summer/Bechtel/Westinghouse/Fluor/Parsons/CB&I

**Commercial Medical:** SHINE/Baker

**Federal Engagement:** DOE, NRC

**Preferred Point of Contact:** Joe Wishard | [jwishard@pvsteel.com](mailto:jwishard@pvsteel.com) | 402-770-8709

<https://owenmetalsgroup.com/industrial-fabrication/>



# PMT NUCLEAR



ADVANCED NUCLEAR | SUPPLIER

PMT Nuclear (PMT) specializes in designing, manufacturing, qualifying and testing specialty equipment for use at commercial nuclear power plants and DOE facilities. Founded in 1994, PMT has been supplying purpose built equipment such as chillers, air handling units, filtration units, heat exchangers, dampers, ductwork, actuators, fans, piping, cooling coils, flexible connections, and other specialty critical components to the nuclear industry for decades. We design equipment specifically for the intended application based upon your specification requirements. All design work and manufacturing occur at our 140,000 sq. ft. combination office / fabrication facility located in Woodridge, Illinois. Additionally, PMT has a robust commercial grade dedication (CGD) program and routinely dedicates all types of commodities, products, and equipment.



PMT has a comprehensive Quality Assurance Program that meets the requirements of NQA-1 2008 Edition / 2009 Addenda and 10 CFR 50 Appendix B / 10 CFR Part 21. Our products and services can be provided as Safety Related / Safety Significant or as commercial grade.

**Location:** Woodridge, IL

**Founded:** 1994

**Principal/CEO:** Ben Campbell, President | Charles Wojcik, Vice President

Adam Toepper, Quality Assurance Manager | Mike Marcuccilli, Director of Nuclear Sales

**Major Customers:** Domestic / International Commercial Nuclear Power Plants, Department of Energy (DOE) Sites, Department of Defense (DOD) Contractors, and US National Laboratories

**Federal Engagement:** DOE

**Preferred Point of Contact:** Mike Marcuccilli | [mmarcuccilli@ams-pmt.com](mailto:mmarcuccilli@ams-pmt.com) | 630-470-7960

<https://www.pmtnuclear.com/>

# POWER SYSTEM SENTINEL TECHNOLOGIES, LLC

## PSStech

*Guarding the Grid*

Born out of a need to protect the nuclear industry, PSStech was founded to provide nuclear generating stations with open phase protection. PSStech provides design, manufacturing, and engineering services to the electric power industry and large industrial and commercial customers.



**Location:** Warrior, AL

**Founded:** 2014

**Principal/CEO:** Greg Franklin

**Major Customers:** U.S. Nuclear Power Plants, Electric Power Utilities, Large Industrial & Commercial Facilities

**Federal Engagement:** DOE, GAIN, NRC

**Preferred Point of Contact:** Chris Melhorn | [cmelhorn@psstech.com](mailto:cmelhorn@psstech.com) | 865-456-0602

<https://www.psstech.com/>

# PRECISION CUSTOM COMPONENTS, LLC



ADVANCED NUCLEAR | SUPPLIER

PCC has been manufacturing large hydro, fossil, and nuclear power generation equipment in our York, PA location for over 140 years. We have fabricated NSSS vessels and other equipment for the nuclear and process industries including Westinghouse, GE, Framatome, ExxonMobil, Dow DuPont, U.S. Navy, DOE, National Labs, electric utilities, and others. Our nuclear manufacturing history dates back to the industry's origins with Shippingport-1 and continues to this day with SMR, Gen III+ and Gen IV reactor hardware and design support.



**Location:** York, PA

**Founded:** 1876

**Principal/CEO:** Gary Butler

**Major Customers:** Westinghouse, Framatome, NuScale, BWXT, US Navy, Bechtel, General Dynamics, Northrop Grumman, Dow DuPont, ExxonMobil, US DOE, and National Laboratories

**Federal Engagement:** DOE, NRC, DOD, NASA

**Preferred Point of Contact:** Blair Woodring | [bwoodring@pcc-york.com](mailto:bwoodring@pcc-york.com) | 717-434-1804

<https://www.pcc-york.com/>



# PREMIER TECHNOLOGY



Located in Blackfoot, Idaho, just 30 minutes from the Idaho National Laboratory, Premier Technology, Inc. (Premier) is a recognized leader in nuclear fabrication. Premier has supported the nuclear industry for more than two decades, completing over 1,000 projects under nuclear quality assurance programs such as ASME NQA-1 and ASME Section III.

Premier has successfully performed over \$250 million in work under nuclear quality assurance programs in the last decade with single projects as large as \$80M. This includes prototype fabrication, first-of-a-kind builds, and full production runs.

Premier is committed to supporting the development and deployment of advanced reactors. Contact us to discuss your needs for manufacturability reviews and prototyping efforts or to discuss long-term partnerships for manufacturing of reactors.



**Location:** Blackfoot, ID

**Founded:** 1996

**Principal/CEO:** Shelly Sayer

**Major Customers:** Westinghouse, Areva, Bechtel, NuScale, INL, PNNL, ORNL, SRNL, Others

**Federal Engagement:** DOE, GAIN, NRC, Other

**Preferred Point of Contact:** Derek Moss | [dmoss@ptius.net](mailto:dmoss@ptius.net) | 208-851-0744

<https://www.ptius.net/>



# RADQUAL, LLC



ADVANCED NUCLEAR | SUPPLIER

RadQual, LLC is a wholly owned subsidiary of International Isotopes Inc. and is one of only two United States based source manufacturing companies. RadQual and International Isotopes Inc. have over 150 years of combined experience in



manufacturing radionuclide and sealed sources for nuclear and nuclear medicine communities. We focus our efforts on producing high quality products with superior customer service. All our products are manufactured under the highest quality standards of ISO 9001 and 13485 and have “CE” Mark registration. All our products carry a full lifetime warranty against manufacturing defects and a 100% customer satisfaction guarantee.

RadQual is also the only distributor for LEA Premium Calibration Standards in the United States and Canada. LEA produces a wide range of radioactive sources for control and calibration of equipment in the fields of radiation protection and metrology. LEA’s calibration and reference sources are measured according to ISO 17025:2017 under COFRAC accreditation, which provides the same traceability as the National Institute of Standards and Technology (NIST).

**Location:** Idaho Falls, ID

**Founded:** 2001

**Principal/CEO:** Steve Laflin

**Major Customers:** US and Canada National Laboratories and Nuclear Facilities

**Federal Engagement:** DOE, GAIN, NRC, Other

**Preferred Point of Contact:** Kevin Coltellaro | [kcoltellaro@intisoid.com](mailto:kcoltellaro@intisoid.com) \ 202-420-9716

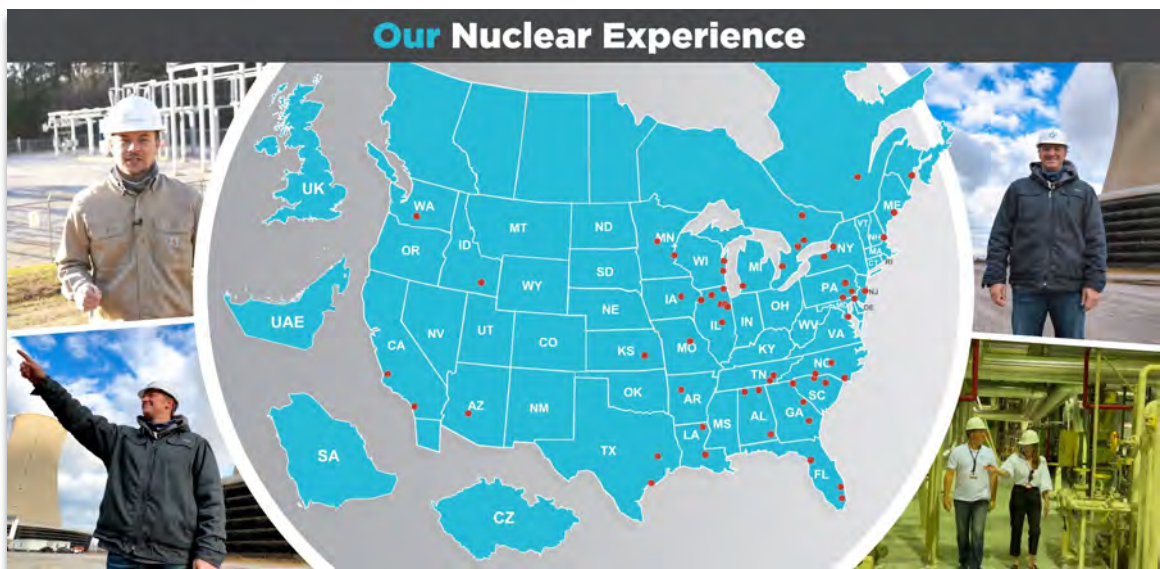
***<https://www.radqual.com>***

# SCOTTMADDEN



ScottMadden is a Management Consulting firm helping clients in every aspect of energy, including nuclear generation. We help our clients build tailored solutions to improve cost and operational performance. Our deep, practical nuclear experience helps maintain safe, reliable operations and support transformation for a net zero future.

Learn more: <https://bit.ly/3GjKoU3>



**Location:** Atlanta, GA

**Founded:** 1983

**Principal/CEO:** Brad Kitchens

**Major Customers:** Utilities & Nuclear Power Plants, Research Institutes, Vendors supporting the nuclear community

**Federal Engagement:** DOE, Idaho National Laboratory, National Labs

**Preferred Point of Contact:** Ed Baker | [EBaker@scottmadden.com](mailto:EBaker@scottmadden.com) | 678-702-8302

<https://www.scottmadden.com/>

# SIMPSON GUMPERTZ & HEGER INC.



ADVANCED NUCLEAR | SUPPLIER

Simpson Gumpertz & Heger (SGH) is a national engineering firm committed to delivering holistic advice for our clients' most complex challenges. We leverage our collective and diverse experience, technical expertise, and industry knowledge of structures and building enclosures, advanced analysis, performance & code consulting, and applied science & research to deliver unrivaled, comprehensive solutions that drive superior performance. With 700 employees in eight office locations throughout the United States, SGH's industry-leading teams constantly seek to advance the meaning of what's possible.



**Location:** Waltham, MA

**Founded:** 1956

**Principal/CEO:** James Parker

**Major Customers:** Nuclear plants domestic & international, DOE & DOD facilities, A&E firms, architects, owners, advanced nuclear technology developers (confidential)

**Federal Engagement:** DOE, NRC, DOD, GSA

**Preferred Point of Contact:** Derrick Watkins | [dawatkins@sgh.com](mailto:dawatkins@sgh.com) | 858-997-8985

<https://www.sgh.com/>

# SOCOTEC Engineering



SOCOTEC optimizes the integrity and the sustainability of critical assets within the TIC (Testing, Inspection, Certification) industry in the construction and infrastructure sectors through consulting services, by assembling and coordinating holistic teams of technical experts and advisors to solve our clients' most complex problems, from conception to project execution, throughout the lifecycle of assets, around the globe.

### SERVICES FOR THE ASSET LIFECYCLE

**AGING / END OF LIFE**

- Life Cycle Management
- Strategic Asset Planning
- Life Extension / Repowerment
- End-of-Life Planning
- Decommissioning / Performance
- Regulation Specification

**DESIGN**

- Requirements Definition
- Design Specifications
- Conceptual Design
- Design Review
- Detailed Design
- Materials Selection
- Risk Mitigation Design
- Cost Optimization
- Design Document Development

**CONSTRUCTION**

- Procurement Assistance
- Vendor / Contractor Selection
- Construction Support
- Permitting Assistance
- Commissioning
- Special Inspections
- Detailed Design
- Acceptance Testing
- Documentation
- Training

**OPERATION**

- Maintenance Support
- Structural / Mechanical Monitoring
- Process / Product Improvement
- Financial Modeling
- Inspections / Walkdowns
- Aging Management
- Risk Assessment
- Failure Analysis
- NDE / NDT
- Efficient Use Service

### Materials Laboratory and Large-Scale Testing Facility

SOCOTEC's fully accredited Materials Laboratory and Large-Scale Testing Facility, located in Brooklyn provides value-added services to our efforts. The original laboratory was founded in the late 1800's as a materials consultant to the growing industrial base in the New York City area. Over a century later, the materials science and engineering expertise remains the foundation upon which all of our services are built.

We offer round-the-clock support during emergencies, with a staff of technicians, engineers and scientists backed by SOCOTEC's worldwide industry experience. We work closely with our clients to provide timely answers to complex problems.

### Digital Inspection Toolkit

SOCOTEC has developed the Wise-Back digital inspection toolkit to increase speed, safety and accuracy of work performed in the field in a variety of industries.

Wise-Back offers a unique approach to data inspection organization that's cloud-based, automated and mobile-friendly. The toolkit promotes fast, safe, more focused fieldwork inspections and walkdowns. It enables users to cover more ground with each excursion by offering a total hands-free experience, from data gathering to final report generation.

Hardware Platform Built for the Field

SOCOTEC's Wise-Back toolkit offers a suite of tools for engineering testing, inspection and certification (ETIC). Wise-Back offers a streamlined, customized approach to field data collection that runs across multiple devices. Among the wide variety of integrated tools are a headset computer, tablet, cameras and video, sensors and measuring devices.

### 130 Years of Service to Industry

In 1885, Dr. Lucius Pritikin established an independent testing laboratory in New York City to meet the needs of America's rapidly growing industrial base. The epitomous firm that he founded performed chemical assays for a variety of industries. By the 1950s, the group added a metallurgical laboratory and failure analysis to its offerings. This has grown further to include stress analysis, fracture mechanics, and engineering programs, creating a full-service engineering firm with an outstanding global reputation for engineering excellence and cost-effective problem solving.

Well into its second century of service, the Specialty Engineering Group—now a part of SOCOTEC USA—has expanded from its New York base to offices in Boston, Richmond, and Sydney, Australia. The original materials testing laboratory in Manhattan was relocated to Brooklyn, augmented by a large-scale testing facility. In addition, a laboratory annex is maintained at our Amesbury, Massachusetts office with the capabilities to evaluate low-level radioactive materials. The group serves industries whose very existence could scarcely be imagined by its founder. We—Dr. Pritikin's successors—remain in the forefront of development of new analytical techniques, tools and instrumentation for our motto, "Building trust for a safer, sustainable world" remains true to his original vision.

**SOCOTEC US Headquarters**  
 151 West 42nd Street, New York, NY 10036  
 Tel: +1(212) 689-5389

**Location:** New York, NY

**Founded:** 1885

**Principal/CEO:** Robert Vecchio, CEO

**Major Customers:** INL, ANL, Entergy, EPRI, Duke, Holtec, Con Edison, PASNY, Vicinity, PANYNJ

**Federal Engagement:** DOE

**Preferred Point of Contact:** Mr. Sontra Yim | sontra.yim@socotec.us | 603-686-9676

<https://www.socotec.us/>



# SOUTHERN NUCLEAR DEVELOPMENT, LLC



ADVANCED NUCLEAR | SUPPLIER

Southern Nuclear Development, a subsidiary of Southern Nuclear Operating Company, pursues partnerships across the industry to drive the success of advanced nuclear technologies to be deployed as we move toward low- to no- carbon operations by 2050 — benefiting Southern Company customers for years to come. Southern Nuclear Development leverages decades of experience and research in nuclear operations, engineering, licensing and development to help advanced nuclear developers execute each phase of their strategy, from concept to commercial operation.



**Location:** Birmingham, AL

**Founded:** Non-disclosed

**Principal/CEO:** Stephen E. Kuczynski

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE, NRC, EPA, FEMA

**Preferred Point of Contact:** Ben Carmichael / [bmcarmic@southernco.com](mailto:bmcarmic@southernco.com) / 205-992-5944

<https://www.southernnuclear.com/>

# SOUTHWEST RESEARCH INSTITUTE



SwRI is an independent, nonprofit, and multidisciplinary applied research and development organization. We are R&D problem solvers providing independent, premier services to government and industry clients. We work in the public's best interest and toward the betterment of humanity.

SwRI supports the commercial nuclear industry, and federal, state, and regional research and regulatory efforts across a broad spectrum of engineering and science areas.

- Performs multi-level material assessments for the nuclear industry, ranging from quick turn-around metallurgical and electronic failure analyses and mechanical testing programs to comprehensive studies which couple mechanical and material testing with computational modeling and risk assessments.
- High pressure and high temperature testing facilities are available to simulate the environmental conditions found in nuclear power plant. This includes a recirculating flow loop that replicates BWR and PWR primary water systems.
- Fire testing and modeling facilities support in-plant fire hazards, as well as performance of radioactive material storage and transportation packages.
- Provides technical evaluations in support of the licensing, inspection, and maintenance of facilities used across the nuclear fuel cycle. These evaluations are conducted by staff in the Center for Nuclear Waste Regulatory Analyses, a federally funded research and development center established in 1987 by the U.S. Nuclear Regulatory Commission (NRC), with augmentation across SwRI.
- Conducts multi-hazard risk assessments using deterministic and probabilistic methodologies to evaluate earthquake, flooding, tornado, tsunami, volcano, and other natural hazards. SwRI staff also have extensive experience in the Senior Seismic Hazard Analysis Committee (SSHAC) process (NRC NUREG-2213).
- Offers a team of mechanical engineering experts who focus on nondestructive evaluation of nuclear reactors in compliance with federal and international regulations, as well as engineers and scientists who specialize in failure analysis of electrical, hydraulic, and mechanical components.
- Extensive laboratories for environmental chemistry and radiochemistry investigations, including a wide range of chemical and radioactive contaminants.
- On-campus hot laboratory is available to evaluate radiologically contaminated parts and irradiate parts and components to assess their performance, all under an Institute Quality Plan that is 10 CFR Part 50 Appendix B compliant. This facility supports our extensive work for the U.S. Department of Energy (DOE) under the Off-site Source Recovery Program.
- Prepares and reviews environmental reports, environmental impact statements and other documents in support of National Environmental Policy Act (NEPA) evaluations for nuclear site. This work includes extensive public outreach and engagement.

**Location:** San Antonio, TX

**Founded:** 1947

**Principal/CEO:** Adam L. Hamilton, P.E., President and CEO

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE, ARPA-E, NRC, DOD, DHS, DOI, DOT, NASA, EPA, Other

**Preferred Point of Contact:** Business Inquires Office | [ask@swri.org](mailto:ask@swri.org) | 210-522-2122

**<https://www.swri.org>**

# STRUCTURAL INTEGRITY ASSOCIATES, INC.



ADVANCED NUCLEAR | SUPPLIER

Structural Integrity Associates is a specialty engineering company serving the nuclear industry since 1989. Our talent and technology encompass monitoring & inspection capabilities, advanced analytical methods, and material assessment strategies to provide clients with expert asset integrity solutions and effective regulatory programs. Unique to our structural integrity capabilities are nuclear fuel engineer and structural analysis experts, and the most advanced fuel performance code in the nuclear industry.

Some of the services we provide include:

## Engineering Analysis

- Perform stress, fracture mechanics, residual stress, dynamic/non-linear, computational fluid dynamics, and other advanced analyses using proprietary FEA tools and methods (ex. applied probabilistic fracture mechanics).
- Development of industry codes and standards including ASME, ASTM, ASNT, API, and others.
- Perform work under the auspices of documented and routinely audited Quality Assurance programs including NQA-1.

## Materials Evaluations & Testing

- The latest field and laboratory testing technologies to identify causes of material degradation and damage.



## Inspection & Monitoring

- Conduct Non-Destructive Examination (NDE) using state-of-the-art linear and annular phased array UT, TOFD,

## Guided Wave, and Many Other Advanced NDE Technologies

- Develop and implement tooling customized to applications when needed.

- Apply technicians certified in accordance with ASNT and other standards' requirements.

SI maintains offices throughout the U.S.

**Location:** Charlotte, NC

**Founded:** 1989

**Principal/CEO:** Mark Marano, CEO | Tony Robinson, CNO

**Major Customers:** All major power generating utilities throughout North America. SI supports asset management programs for Nuclear, Fossil, and Renewable energy-producing power plants.

**Federal Engagement:** DOE

**Preferred Point of Contact:** Sean M. Fuller | [sfuller@structint.com](mailto:sfuller@structint.com) | 704-280-2564

<https://www.structint.com/>

# STUDSVIK SCANDPOWER

## Studsvik

Studsvik Scandpower provides nuclear simulation software and services which manage fuel from arrival on site to departure in casks. Key software products include CASMO/SIMULATE, GARDEL, S3K, S3R, MARLA, SNF, and CASKLOAD.



**Location:** Global

**Founded:** 1947

**Principal/CEO:** Art Wharton

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE, GAIN, ARPA-E, NRC, Other

**Preferred Point of Contact:** Melanie Joseph | [melanie.joseph@studsvik.com](mailto:melanie.joseph@studsvik.com)

<https://www.studsvik.com/>



# SYSTEM ONE HOLDINGS, LLC



ADVANCED NUCLEAR | SUPPLIER

System One is a leading provider of specialized, highly technical outsourced services and workforce solutions to critical infrastructure, technology, life sciences, and government sectors. We are a trusted and essential partner to large private and public organizations—mobilizing specialized, highly technical resources and expertise to execute their most complex, mission-critical programs and accelerate results. Founded more than 40 years ago as a staffing partner to the engineering industry, today System One is a diversified organization operating in over 50 locations and putting more than 9,000 people to work in the United States, Canada, and the United Kingdom.

System One supports the nuclear power industry to execute their complex, mission-critical initiatives through our outsourced services and workforce solutions. Our customers include domestic utilities, government laboratories supporting the US Departments of Defense and Energy, NSSS OEMs, EPCs, and other industry specialty manufacturers and service providers. For more information, visit [systemone.com](https://systemone.com/).

**Location:** Pittsburgh, PA

**Founded:** 2008

**Principal/CEO:** Troy Gregory

**Major Customers:** Savannah River Nuclear Services, Entergy, TVA, Constellation, Duke Energy, Framatome

**Federal Engagement:** DOE

**Preferred Point of Contact:** Bonnie Zodda-Schmidt | Director, Business Development  
[bonnie.zodda@systemone.com](mailto:bonnie.zodda@systemone.com) | 609-213-1929

<https://systemone.com/>

# TAURUS teleSYS INC.



Taurus teleSYS, an Original Equipment Manufacturing (OEM) has implemented a Test Apparatus (TA) for hardware in the loop integrated testing and in emulation of a microgrid electrical transmission distribution and industrial data acquisition and control application.



**Location:** Newport News, VA

**Founded:** 1980

**Principal/CEO:** Arvind Patel

**Major Customers:** Newport News Shipbuilding, a HII subsidiary, Naval Nuclear Laboratory

**Federal Engagement:** DOE, Other

**Preferred Point of Contact:** Arvind Patel | [apatel@tgate.com](mailto:apatel@tgate.com) | 757-873-2700

# TETRA TECH



ADVANCED NUCLEAR | SUPPLIER

Tetra Tech is a science, engineering, and construction firm that offers integrated services from front-end environmental science and planning through design, engineering, construction management, operations, and maintenance, of nuclear power plant systems. We currently employ SMEs from a variety of disciplines with full breadth knowledge of: reactor, safety, and balance of plant systems; nuclear quality assurance; operations (SRO); environmental assessment and permitting; and radioactive waste management.



**Location:** Pasadena, CA

**Founded:** 1966

**Principal/CEO:** Dan Batrack

**Major Customers:** Federal Aviation Admin., Nat'l Oceanic & Atmospheric Admin., US Agency for Int'l Development, US DOD (Air Force, Army, Navy, Army Corps of Engineers, coast Guard), Dept. of Energy, Dept. of State, EPA, US Forest Service TerraPower, Exelon, Dominion, Southern Nuclear Co., Progress Energy, DTE Energy

**Federal Engagement:** DOE, ARPA-E, NRC, Other

**Preferred Point of Contact:** John Gonsky, Vice President, DOE and Nuclear Programs

John.gonsky@tetrattech.com | 509-372-5814

<https://www.tetrattech.com>

# THERMAL ENGINEERING INTERNATIONAL (USA) INC. (TEi)



Thermal Engineering International — (TEi - a Babcock Power Inc. company) — has installations across the globe and more than 65 years of experience in the design and manufacture of high quality heat transfer equipment for the nuclear industry. TEi is the industry-leader in moisture-separator reheaters, feedwater heaters and condensers, providing domestic fabrication and services from our Joplin, MO fabrication facility and a team of highly-experienced heat exchanger subject matter experts at our Cerritos, CA headquarters. TEi holds ISO-9001, ASME I, VIII, and B31.1 qualifications and maintains a 10CFR50 App. B Quality Program. TEi is unique in its experience with molten salt heat exchangers that can be brought to bear for advanced reactor and/or energy storage projects.



**Location:** Cerritos, CA

**Founded:** 1956

**Principal/CEO:** Ken Murakoshi

**Major Customers:** US Nuclear Utilities, EPC Firms, US Navy Fleet, and Developers of Advanced Reactors

**Federal Engagement:** DOE, GAIN

**Preferred Point of Contact:** Joseph Green, PhD, PE, Chief Nuclear Officer

josephgreen@babcockpower.com | 508-562-0894 | +44 07780447880

<https://www.babcockpower.com/tei/>



# THORIUM ENERGY ALLIANCE



ADVANCED NUCLEAR | SUPPLIER

Thorium Energy Alliance has been an international leader in promoting and advising on the use of Thorium in Fuels and Advanced Materials. TEA has helped set USA policy and has assisted public, private and university research efforts for over 15 years. TEA is a 501(c)3 Educational Advocacy organization.



**Location:** Harvard, IL

**Founded:** 2006

**Principal/CEO:** John Kutsch

**Major Customers:** Clients and membership are confidential. If a company or organization wishes to engage us, we can sign an NDA and discuss your needs.

**Federal Engagement:** DOE

**Preferred Point of Contact:** John Kutsch | [director@thoriumenergyalliance.com](mailto:director@thoriumenergyalliance.com) | 312-303-5019

<https://thoriumenergyalliance.com/>

# TIOGA



Tioga Nuclear® knows what it takes to supply critical components to the nuclear power industry. Founded on hard work and customer focus, Tioga has been delivering on expectations for more than 75 years

Tioga has continuously maintained our ASME Nuclear Certificate and QSC Material Organization status since 1982. Together, our personnel have more than 150 years of cumulative nuclear experience ranging from quality assurance to production.

Whether you need to procure unusual or difficult to find materials, meet special packaging and shipping standards or implement unique quality assurance requirements, Tioga Nuclear® has the experience and know-how to supply your needs. Whether you require pipe or plate, forgings or structural shapes, Tioga is the source for nuclear supply.

Combined with our unparalleled inventory of special metals, dedicated project management and global sourcing network, you can count on us to deliver the materials you need on-spec and on-schedule, with proper documentation.

We have been audited by NUPIC and NIAC and meet the requirements of ASME Section III, 10CFR50 Appendix B, N45.2, NQA-1, CAN3-N299 SERIES, & MIL-I-45208A.

Founded in 1964 and headquartered in Gillette, Wyoming, USA, L&H Industrial is a leader in technology innovations, custom manufacturing, and comprehensive services for heavy industrial machinery used in mining, oil and gas, railways, and other industries. Today, in our third generation as a family business, we have offices and distribution partners around the world and hundreds of employees dedicated to delivering outstanding service and innovations for the biggest and hardest-working machines on the planet.

We can custom-engineer and build, from the ground up, any heavy equipment assembly or machine that you need for your operation. Our worldwide 24/7 Field Services network is on the job whenever you need heavy equipment troubleshooting, repairs, rebuilds, relocations, or replacements. And thanks to our specialized Design & Engineering and state-of-the-art Manufacturing & Repair services, we are a go-to international supplier for improved components and custom assemblies for heavy industrial machinery.



**Location:** Philadelphia, PA

**Founded:** 1946

**Principal/CEO:** Bill Kotcher, President

**Major Customers:** Nuclear Utilities, DOE, National Labs, US Navy, Fabricators & OEMs

**Federal Engagement:** DOE

**Preferred Point of Contact:** Tim Bollinger, Bus. Development | [tbollinger@tiogapipe.com](mailto:tbollinger@tiogapipe.com) | 803-792-5765

**<https://www.tiogapipe.com/>**

# TRANSCO PRODUCTS INC.



Transco Products Inc. has been providing engineered Solutions to the Nuclear Industry for over 50 years. We offer cutting-edge robotic solutions, training and services for radiation identification and mitigation

solutions, as well as Metal Reflective and Thermal Insulation Systems, Fire Protection Barriers, Penetration Seals and GSI-191 solutions.



ADVANCED NUCLEAR | SUPPLIER

**Location:** Streator, IL

**Founded:** 1980

**Principal/CEO:** Nathan Miller

**Major Customers:** Constellation Energy, Energy Solutions, Westinghouse, Framatome, Duke, Florida Power and Light, TVA, Talen Energy, USNC, X-Energy

**Federal Engagement:** DOE, GAIN, NRC

**Preferred Point of Contact:** Sean Hawks | [seanh@transcoproducts.com](mailto:seanh@transcoproducts.com) | 312-896-8464

<https://www.transcoproducts.com/>

# ULTRA ENERGY

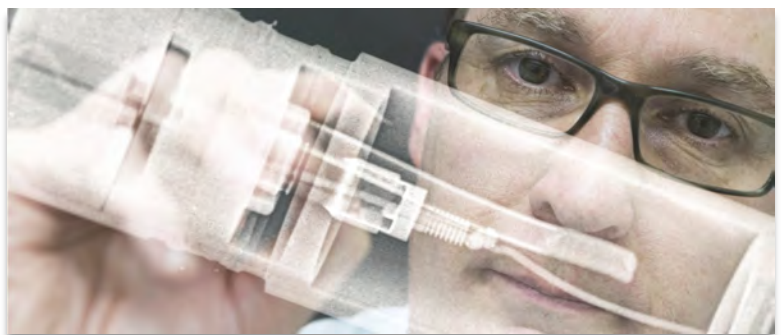


Ultra Energy provides customers with solutions that give complete, long-term protection and control of reactor protection systems, while assisting them to increase the value derived from their investments over the lifetime of their asset. Ultra Energy offers a defense-in-depth approach to the nuclear industry focusing on systems requiring formal safety justification or qualification.

Our customers are developing small modular reactors, advanced reactors, constructing new reactors, extending the life of existing reactors and managing the lifecycle of radioactive material.

Ultra Energy has worked with nuclear and industrial customers for over 60 years. We are embedded in the national infrastructure, supporting long-term continuous operation of facilities with protection and control solutions that monitor and control temperature, pressure, radiation, and neutrons. In North America Ultra Energy has a role in maintaining the safety of ~80% of all US nuclear power plants as well as commercial and military nuclear facilities in operation across the globe.

Ultra Energy collaborates with partners in aviation, space, and industrial manufacturing.



**Location:** Worldwide

**Founded:** 1993

**Principal/CEO:** Ognjen Starovic, President

**Major Customers:** Non-disclosed

**Federal Engagement:** DOE, DOD, DHS, NRC

**Preferred Point of Contact:** Mark McCray | [mark.mccray@ultra-nspi.com](mailto:mark.mccray@ultra-nspi.com)

***<https://www.ultra.group/>***







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# **NATIONAL LABORATORIES**

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# ARGONNE NATIONAL LABORATORY



Argonne is a multidisciplinary science and engineering research center, where talented scientists and engineers work together to answer the biggest questions facing humanity, from how to obtain affordable clean energy to protecting ourselves and our environment. Ever since we were born out of the University of Chicago's work on the Manhattan Project in the 1940s, our goal has been to make an impact — from the atomic to the human to the global scale.

The laboratory works in concert with universities, industry, and other national laboratories on questions and experiments too large for any one institution to do by itself. Through collaborations here and around the world, we strive to discover new ways to develop energy innovations through science, create novel materials molecule-by-molecule, and gain a deeper understanding of our planet, our climate, and the cosmos.

Surrounded by the highest concentration of top-tier research organizations in the world, Argonne leverages its Chicago-area location to lead discovery and to power innovation in a wide range of core scientific capabilities, from high-energy physics and materials science to biology and advanced computer science.



**Location:** Lemont, IL

**Founded:** 1946

**Principal/CEO:** Paul K. Kearns, Laboratory Director

**Federal Engagement:** DOE-SC, DOE-NE, NNSA, DOE-EERE, NRC, ARPA-E, DOD, DHS

**Preferred Point of Contact:** Hussein S. Khalil | [hkhalil@anl.gov](mailto:hkhalil@anl.gov) | 630-252-7266

<https://www.anl.gov>



# BROOKHAVEN NATIONAL LABORATORY



ADVANCED NUCLEAR | NATIONAL LABORATORY

Brookhaven National Laboratory applies its expertise and world-class facilities to pressing scientific questions about everything from the fundamental forces of nature to the complex interactions of ecosystems and the environment. Our cutting-edge explorations reveal processes that unfold across the smallest and largest scales of time and space imaginable—from the building blocks of matter to the edges of the universe itself.

With our extensive core research capabilities and rich history of scientific breakthroughs, we advance the mission of the U.S Department of Energy's Office of Science through the study of nuclear and particle physics to gain a deeper understanding of matter, energy, space, and time; energy and climate sciences to lead the United States towards a net-zero carbon economy; quantum information science and artificial intelligence research to transform communications and technology; and cross-disciplinary research to secure the Nation.



**Location:** Upton, NY

**Founded:** 1947

**Principal/CEO:** JoAnne Hewett

**Federal Engagement:** DOE, GAIN, ARPA-E, NRC, Other

**Preferred Point of Contact:** Simerjeet K Gill | [gills@bnl.gov](mailto:gills@bnl.gov)

***<https://www.bnl.gov>***

# IDAHO NATIONAL LABORATORY



Idaho National Laboratory (INL) is the nation's lead laboratory for nuclear energy research, development, demonstration, and deployment. INL's nuclear energy researchers work in a broad range of technical areas including:

- Unparalleled irradiation and post-irradiation examination
- Fuel fabrication and materials testing facilities
- High-performance computing
- Integrated energy systems
- The nuclear fuel cycle

INL also leads many of the DOE's Office of Nuclear Energy initiatives and programs that connect its unique nuclear energy R&D capabilities with stakeholders. This includes the Gateway for Accelerated Innovation in Nuclear (GAIN), the National Reactor Innovation Center (NRIC), the Light Water Reactor Sustainability (LWRS) program and the Nuclear Science User Facilities (NSUF).



**Location:** Idaho Falls, ID

**Founded:** 1949

**Principal/CEO:** John Wagner, Laboratory Director

**Federal Engagement:** DOE, GAIN, ARPA-E, NSUF, NEUP, NRC

**Preferred Point of Contact:** Jess Gehin | [jess.gehin@inl.gov](mailto:jess.gehin@inl.gov) | 208-526-3486

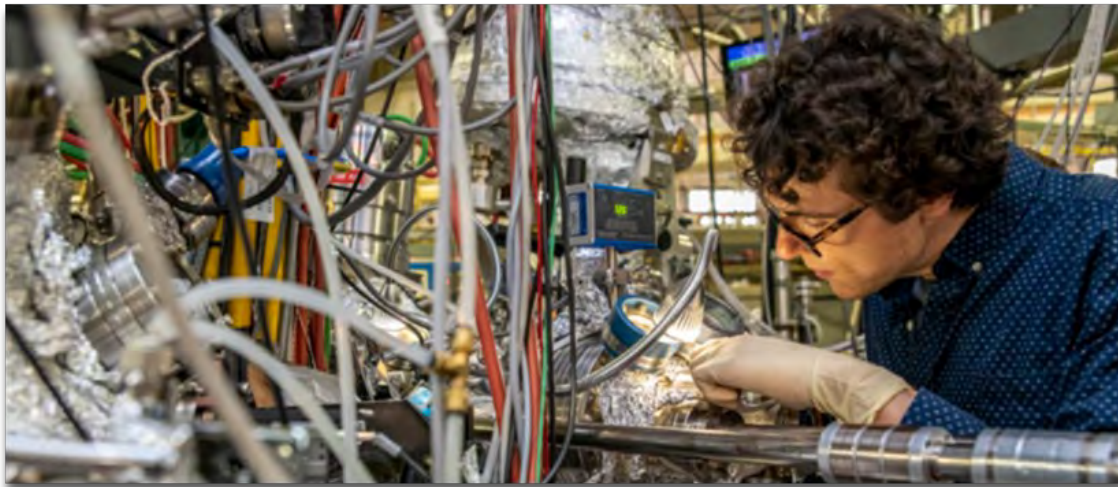
***<https://www.inl.gov>***

# LAWRENCE BERKELEY NATIONAL LABORATORY



BERKELEY LAB

Lawrence Berkeley National Laboratory specialized in science and technology development for energy applications.



ADVANCED NUCLEAR | NATIONAL LABORATORY

**Location:** Berkeley, CA

**Founded:** 1931

**Principal/CEO:** Michael Witherell, Laboratory Directory

**Federal Engagement:** DOE, GAIN, ARPA-E, NRC, Other

**Preferred Point of Contact:** Peter Hosemann | [peterh@berkeley.edu](mailto:peterh@berkeley.edu) | 510-717-5752

<https://www.lbl.gov>

# LAWRENCE LIVERMORE NATIONAL LABORATORY



For more than 60 years, the Lawrence Livermore National Laboratory (LLNL) has applied science and technology to make the world a safer place.

Livermore's defining responsibility is ensuring the safety, security and reliability of the nation's nuclear deterrent. Yet LLNL's mission is broader than stockpile stewardship, as dangers ranging from nuclear proliferation and terrorism to energy shortages and climate change threaten national security and global stability. The Laboratory's science and engineering are being applied to achieve breakthroughs for counterterrorism and nonproliferation, defense and intelligence, energy and environmental security.



**Location:** Livermore, CA

**Founded:** 1952

**Principal/CEO:** Kim Budil, Laboratory Director

**Federal Engagement:** DOE, NRC, ARPA-E, GAIN, NNSA, DHS, Other

**Preferred Point of Contact:** Kiel Holliday | [holliday7@llnl.gov](mailto:holliday7@llnl.gov) | 925-422-4074

***<https://www.llnl.gov>***



# LOS ALAMOS NATIONAL LABORATORY



Los Alamos National Laboratory's mission is to solve national security challenges through scientific excellence. The Laboratory conducts fundamental nuclear materials research for future nuclear reactor designs and fuel cycle options, develops detection technologies needed for global nuclear materials management and supports nuclear energy initiatives through advanced modeling and simulation.

This work includes:

- Fundamental advances in nuclear fuels and cladding materials
- Nonproliferation safeguards
- Reactor concepts
- Reactor waste disposition



**ADVANCED NUCLEAR** | NATIONAL LABORATORY

**Location:** Los Alamos, NM

**Founded:** 1943

**Principal/CEO:** Thom Mason, Laboratory Director

**Federal Engagement:** DOE, GAIN, NRC, ARPA-E

**Preferred Point of Contact:** DV Rao | [dvrao@lanl.gov](mailto:dvrao@lanl.gov) | 505-667-5098

<https://www.lanl.gov>

# OAK RIDGE NATIONAL LABORATORY



Oak Ridge National Laboratory (ORNL) is the U.S. Department of Energy's largest science and energy laboratory with signature strengths in computing, materials, neutron science, and nuclear science and technology. ORNL provides science and technology capabilities and services to extend the life of our existing light water reactor fleet, create and develop concepts for advanced reactor technologies, develop advanced nuclear fuels and fuel cycles, and support modernization of the U.S. nuclear regulatory infrastructure.



**Location:** Oak Ridge, TN

**Founded:** 1943

**Principal/CEO:** Stephen Streiffer, Laboratory Director

**Federal Engagement:** DOE, GAIN, ARPA-E, NRC, Other

**Preferred Point of Contact:** Kenneth Tobin | [tobinkwjr@ornl.gov](mailto:tobinkwjr@ornl.gov) | 865-574-5267

Andrew Worrall | [worralla@ornl.gov](mailto:worralla@ornl.gov) | 865-576-9369

***<https://www.ornl.gov>***

# PACIFIC NORTHWEST NATIONAL LABORATORY



Pacific Northwest National Laboratory (PNNL) conducts research and development across the nuclear fuel cycle to support DOE and industry in development of advanced materials, advanced fuels and Gen IV reactors for the next generation of nuclear energy. Drawing on decades of expertise in nuclear science, engineering and regulation, along with its Category 2 Nuclear Facility assets, PNNL supports technology development across the TRL spectrum.



**ADVANCED NUCLEAR | NATIONAL LABORATORY**

**Location:** Richland, WA

**Founded:** 1965

**Principal/CEO:** Steven Ashby, Laboratory Director

**Federal Engagement:** DOE, GAIN, NRC, ARPA-E, NNSA, DHS

**Preferred Point of Contact:** Mark Nutt | [mark.nutt@pnnl.gov](mailto:mark.nutt@pnnl.gov) | 509-375-2984

***<https://www.pnnl.gov/nuclear-energy>***



# SANDIA NATIONAL LABORATORIES



## Sandia National Laboratories

A Federally Funded Research and Development Center for the National Nuclear Security administration with a strong science, technology and engineering foundation enables Sandia's mission to develop advanced technologies to ensure global peace through a capable research staff working at the forefront of innovation, collaborative research with universities and companies and discretionary research projects with significant potential impact. Sandia National Laboratories' unique mission responsibilities in the nuclear weapons program create a foundation from which they leverage capabilities, enabling them to solve complex national security problems.



**Location:** Albuquerque, NM

**Founded:** 1949

**Principal/CEO:** James S. Peery, Laboratories Director

**Federal Engagement:** DOE, GAIN, ARPA-E, NRC, Other

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# SAVANNAH RIVER NATIONAL LABORATORY



Savannah River National Laboratory (SRNL) has core competencies in nuclear materials management and advanced materials design, manufacture, characterization and testing. SRNL has many unique laboratory facilities enabling the safe study and handling of nuclear materials and nuclear fuel as well as ultra-sensitive measurement and analysis of radioactive materials.



ADVANCED NUCLEAR | NATIONAL LABORATORY

**Location:** Aiken, SC

**Founded:** 1951

**Principal/CEO:** Vahid Majidi, Laboratory Director

**Federal Engagement:** DOE, GAIN, ARPA-E, NRC

**Preferred Point of Contact:** Thad Adams / [thad.adams@srnl.doe.gov](mailto:thad.adams@srnl.doe.gov) / 803-725-5510

<https://srnl.doe.gov>



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# **RESOURCES**

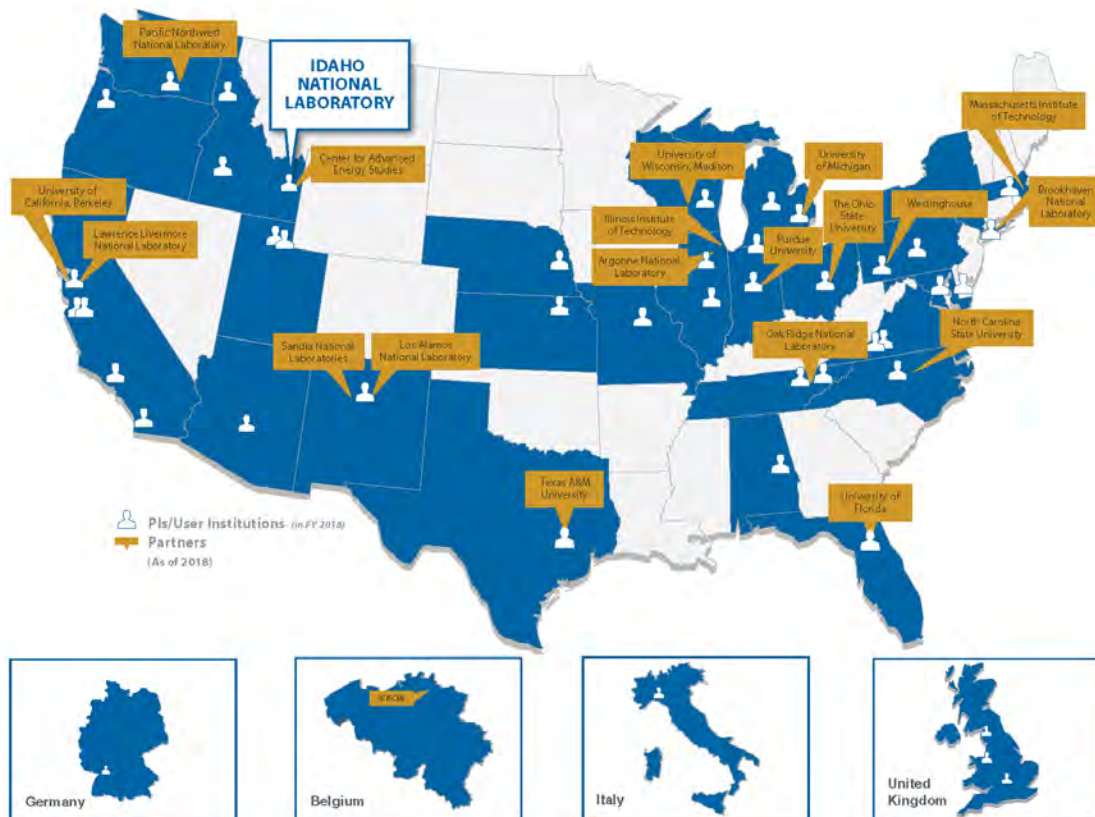
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# NUCLEAR SCIENCE USER FACILITIES



The Nuclear Science User Facilities (NSUF) offers unparalleled research opportunities for nuclear energy researchers. Users are provided access (at no cost to the researcher) to world-class nuclear research facilities, technical expertise from experienced scientists and engineers, and assistance with experiment design, assembly, safety analysis and examination.

Access to NSUF's 49 facilities at 21 partners institutions is awarded through two competitive peer-reviewed processes, Consolidated Innovative Nuclear Research (CINR) and the Rapid Turnaround Experiment (RTE). NSUF staff is available to help any researcher who desires to submit a proposal. Submitted proposals should be consistent with the DOE-NE mission and its programmatic interests. These include light water reactor sustainability, fuel cycle research and development, advanced modeling and simulation, and advanced reactor technology programs. All NSUF research must be non-proprietary and results are expected to be published.



<https://nsuf.inl.gov/>



# U.S. DEPARTMENT OF ENERGY LOAN PROGRAMS OFFICE



## RESOURCES

While significant capital is available for decarbonization technologies, these projects can still lack access to adequate debt capital. LPO fills this gap in commercial deployment by serving as a bridge to bankability for innovative and high-impact energy technologies, providing them with access to needed loans and loan guarantees when private lenders cannot or will not until a given technology has reached full market acceptance.

LPO provides a bridge to bankability for those technologies to cross the final milestones to commercialization:

- The first commercial-scale deployment, to address the engineering scale-up challenges and demonstrate technology effectiveness at scale;
- The next few commercial-scale deployments, to demonstrate the ability to mitigate construction risks and address engineering optimization;
- Commercial scale-up, to progress along the learning curve, lower costs, and establish customer demand;
- Commercial debt market education, to overcome private debt market misunderstanding and gain commercial debt access.

The starting point of LPO's committed partnership with its borrowers is through the office's Outreach and Business Development Division, which brings together an internal team of energy experts with deep experience across the financial, technical, legal, risk, and environmental fields to help borrowers move through pre-application consultations and the application process, and through the due diligence and underwriting process led by LPO's Origination Division. After loan closing, LPO's Portfolio Management Division maintains this borrower partnership through construction, project operation and maintenance, and eventual final loan repayment. This approach is essential to achieving project milestones and overall project success while protecting taxpayer interests. By engaging early and often with applicants, the LPO team maximizes transparency and manages risk

with a combination of proactive monitoring, discussions of emergent issues, and action to maximize project success, which can include approving distributions or equity ownership sales.



**Location:** Washington, DC

**<https://www.energy.gov/lpo/loan-programs-office>**

**Preferred Point of Contact:** lpo@hq.doe.gov / 202-287-5900

## ACRONYM LIST

A&E	Architecture & Engineering
AISC	American Institute of Steel Construction
ANL	Argonne National Laboratory
ANSI	American National Standards Institute
APA	Accident Precursor Analysis
API	American Petroleum Institute
AR	Advanced Reactor
ARDP	Advanced Reactor Demonstration Program
ARIS	Advanced Reactor Information System
ARPA-E	Advanced Research Projects Agency – Energy
ART	Advanced Reactor Technology
ASME	American Society of Mechanical Engineers
ASMR	Advanced Small Modular Reactor
ASNT	American Society of Nondestructive Testing
ASTM	American Society for Testing and Materials
AWS	American Welding Society
BANR	BWXT Advanced Nuclear Reactor
BNL	Brookhaven National Laboratory
BWR	Boiling Water Reactor
CAD	Computer-Aided Design
CAE	Computer-Aided Engineering
CAM	Computer-Aided Manufacturing
CANDU	Canada Deuterium Uranium
CANM	Center for Advanced Nuclear Manufacturing
CCW	Component Cooling Water
CECR	Controlled Electron Capture Reaction
CFD	Computational Fluid Dynamics
CFR	Code of Federal Regulations
CFG	Commercial Grade Dedication
CINR	Consolidated Innovative Nuclear Research
COFRAC	French Accreditation Committee
COLA	Construction and Operating License Application
COTS	Commercial-Off-The-Shelf
CRM	Continuous Risk Management
CTD	Composite Test Device

## ACRONYM LIST (Cont.)

DARPA	Defense Advanced Research Projects Agency
DHS	Department of Homeland Security
DOD	Department of Defense
DOE	Department of Energy
DOE-EERE	Department of Energy-Office of Energy Efficiency and Renewable Energy
DOE-NE	Department of Energy-Nuclear Energy
DOE-SC	Department of Energy-Office of Science
DOJ	Department of Justice
DOT	Department of Transportation
DTC	Direct to Consumer
EBR-II	Experimental Breeder Reactor II
EDG	Emergency Diesel Generator
EM <sup>2</sup>	Energy Multiplier Module
EMI	Electromagnetic Interference
EPA	Environmental Protection Agency
EPC	Engineering, Procurement, and Construction
EPFC	Engineering, Procurement, Fabrication, Construction
EPRI	Electric Power Research Institute
ERM	Enterprise Risk Management
ESBWR	Economic Simplified Boiling Water Reactor
FATE	Flow, Aerosol, Thermal, and Explosion
FEA	Finite Element Analysis
FEMA	Federal Energy Management Agency
FHR	Fluoride Salt-Cooled High-Temperature Reactor
FME	Foreign Material Exclusion
FMEA	Failure Modes and Effects Analyses
FMR	Fast Modular Reactor
FOAK	First of a Kind
FPGA	Field-Programmable Gate Array
FRs	Fast Reactors
GAIN	Gateway for Accelerated Innovation in Nuclear
GCR	Gas Cooled Reactor
GEN III	Generation III
GEN IV	Generation IV

## ACRONYM LIST (Cont.)

GFR	Gas-Cooled Fast Reactor
GWe	Gigawatt Electric
GNF	Global Nuclear Fuel
GSA	General Services Administration
GSI	Generic Safety Issue
GWhe	Gigawatt Hour Electric
HEI	Heat Exchange Institute
HELB	High Energy Line Break
HTGR	High-Temperature Gas Reactor
HTRs	High Temperature Reactors
I&C	Instrumentation and Control
IAEA	International Atomic Energy Agency
IES	Integrated Energy Storage
IMSR	Integral Molten Salt Reactor
INL	Idaho National Laboratory
INFUSE	Innovation Network for Fusion Energy
IPyC	Inner Pyrolytic Carbon
IR	Infrared
ISEA	International Safety Equipment Association
ISO	International Organization for Standardization
kW	Kilowatt
LANL	Los Alamos National Laboratory
LBNL	Lawrence Berkeley National Laboratory
LENR	Low Energy Nuclear Reaction
LFR	Lead-Cooled Fast Reactor
LFTR	Liquid-Fluoride Thorium Reactor
LLNL	Lawrence Livermore National Laboratory
LLWR	Low Level Waste Repository
LMR	Liquid Metal-Cooled Reactor
LOCA	Loss of Coolant Accident
LPO	Loan Programs Office
LWRS	Light Water Reactor Sustainability
MSFR	Molten-Salt Fast Reactor
MSNB	Molten Salt Nuclear Battery
MSRE	Molten Salt Reactor Experiment



## ACRONYM LIST (Cont.)

MSRs	Molten Salt Reactors
MWe	Megawatts Electric
MWt	Megawatts Thermal
MWth	Megawatts Thermal
NA / NPT / NA	ASME Nuclear Component Certificates
NASA	National Aeronautics and Space Administration
NASDA	NASA and National Space Development Agency
NDA	Non-Disclosure Agreement
NDE	Non-Destructive Examination
NEAMS	Nuclear Energy Advanced Modeling and Simulation
NEI	Nuclear Energy Institute
NEPA	National Environmental Policy Act
NEUP	Nuclear Energy University Program
NIAC	Nuclear Industry Assessment Corporation
NIST	National Institute of Standards and Technology
NIH	National Institute of Health
NNL	Navel Nuclear Laboratory
NNSA	National Nuclear Security Administration
Non-LWR	Non-Light Water Reactor
NQA	Nuclear Quality Assurance
NRC	Nuclear Regulatory Commission
NSSS	Nuclear Steam Supply System
NSUF	Nuclear Science User Facility
NUPIC	Nuclear Procurement Issues Committee
OEM	Original Equipment Manufacturer
OPyC	Outer Pyrolytic Carbon
ORNL	Oak Ridge National Laboratory
PARCS	Purdue Advanced Reactor Core Simulator
PAS	Portable Air Sampler
PNNL	Pacific Northwest National Laboratory
PRA	Probabilistic Risk Assessment
PRISM	Power Reactor Innovative Small Module
PSPR	Principal Seismic Probabilistic Risk
PWR	Pressurized Water Reactor
QAP	Quality Assurance Program

## ACRONYM LIST (Cont.)

QSC	Quality System Certificate
RADTRAD	RADionuclide Transport, Removal, and Dose
RELAP-5	Reactor Excursion and Leak Analysis Program
RFI	Radio Frequency Interference
RHR	Residual Heat Removal
RIDM	Risk-Informed Decision Making
RTE	Rapid Turnaround Experiment
SBIR-STTR	Small Business Innovation Research-Small Business Technology Transfer
SC-HTGR	Steam Cycle High-Temperature Gas Reactor
SFR	Sodium-Cooled Fast Reactor
SiC	Silicon Carbide
SMR	Small Modular Reactor
SNL	Sandia National Laboratories
SRNL	Savannah River National Laboratory
SRO	Senior Reactor Operator
SSHAC	Senior Seismic Hazard Analysis Committee
STUK	Säteilyturvakeskus (Finland Radiation and Nuclear Safety Authority)
TA	Test Apparatus
TEMA	Tubular Exchanger Manufactures Association
TIC	Testing, Inspection, Certification
TOFD	Time of Flight Diffraction
TRACE	TRAC/RELAP Advanced Computational Engine
TRIGA	Training, Research, Isotopes, General Atomics
TRISO	TRi-structural ISOtropic
TVA	Tennessee Valley Authority
UCLE	U.S. Nuclear Corp.
UNR/NTF	University of Nevada –Nevada Terawatt Facility
US	United States
USA	United States of America
USACE	United States Army Corps of Engineers
USNIC	United States Nuclear Infrastructure Council
UT	Ultrasonic Testing
V&V	Verification and Validation
WBENC	Women’s Business Enterprise National Council
xLPR	Extremely Low Probability of Rupture





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