



# Delivering Technical Expertise and Innovative Solutions

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

## NUCLEAR ENERGY

*Leveraging its more than 25 years of experience as a trusted provider of nuclear professional services to the U.S. Department of Energy (DOE), Sigma Science supports the advancement of nuclear energy science and technology to meet U.S. energy, environmental, and economic needs. This includes support to continued operation of the existing U.S. commercial reactors, support to development of advanced reactors, support to advanced nuclear reactor fuel cycles [including High Assay, Low Enriched Uranium (HALEU)], and support to further development of nuclear energy technology.*

Sigma Science provides nuclear energy solutions through:

- ◆ Provision of nuclear technical advisory and assistance services
- ◆ Performance of discrete tasks, studies, and projects in support of the U.S. nuclear energy mission
- ◆ Through our Small Business Administration (SBA)-qualifying joint venture (Sigma-NAC Nuclear Solutions, LLC), provision of technologies for transportation and storage of advanced reactor feedstock, fuels, and spent fuel.

### Capabilities

Founded in 1996, Sigma is a small disadvantaged business with 80-plus full-time employees and access to more than 1,000 nuclear subject matter experts, engineers, scientists, and professional staff.

**Nuclear Technical and Advisory Services.** Sigma has the proven ability to rapidly deploy staff to support nuclear energy needs in providing high quality nuclear technical and advisory services.

**Nuclear Fuel Storage and Transportation.** Through our newly formed small business joint venture with NAC International we have the ability to offer nuclear fuel storage and transportation solutions, including solutions for various forms of HALEU.

**Nuclear Quality Assurance.** Sigma has nuclear quality assurance professionals on staff and access to additional resources to rapidly respond to requests to support nuclear quality program development, independent quality audits, assessments, and reviews.

**Nuclear Safety.** With experience performing nuclear safety, criticality safety, and fire protection engineering services at numerous DOE sites, Sigma's capabilities include development of Basis of Interim Operations, Documented Safety Analysis, Preliminary Safety Analysis Report, Final Safety Analysis Report, Fire Hazards Analysis, fire protection inspections and systems engineering and support to audits and assessments.



*Sigma Science is currently supporting National Environmental Policy Act reviews for the DOE Office of Nuclear Energy in support of the Civil Nuclear Credit Program, including one for Diablo Canyon Nuclear Power Plant.*

### Sigma Contract Vehicles

- DOE Office of Nuclear Energy, Nuclear Industry Advisory and Assistance Services Support, \$49M, IDIQ, May 2022 to April 2027.
- Honeywell Supply Chain Management Center (SCMC) Strategic Sourcing Agreement, WS190223, \$225M, October 2020 to September 2025

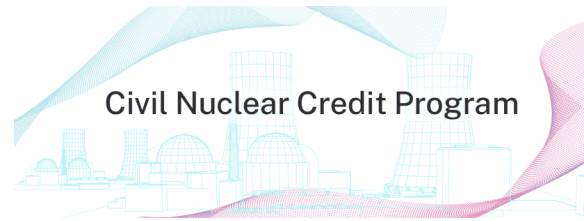
NUCLEAR ENERGY

## RELEVANT EXPERIENCE

### Office of Nuclear Energy

Sigma Science provides nuclear industry advisory and assistance services to the Office of Nuclear Energy at various locations under a 5-year \$49 million Indefinite Delivery/Indefinite Quantity (IDIQ) contract (May 2022-April 2027). Sigma is currently executing four tasks under this contract. A key task under this contract is the Civil Nuclear Credit (CNC) Program task. The scope is focused on commercial nuclear reactors applying for government credits through the CNC Program, this is estimated as potentially 15 reactors through 2025. The Sigma Team is providing a thorough review of all existing National Environmental Policy Act (NEPA) documentation necessary for the continued operation of the reactors being considered for credit and document any gaps in coverage, including continued storage of spent fuel. Under this task order, Sigma is currently providing technical leads and subject matter experts in licensing, environmental, and regulatory compliance. Additional tasks include:

- ◆ U.S. Generation IV International Forum Chair Support including provision of advice in the areas of Generation IV reactor technologies, multilateral international endeavors, industry engagement, and federal practices.
- ◆ Technical expert support for the Nuclear Fuel Cycle Knowledge Management Project.
- ◆ Independent Review of the Fortis Prototype Railcar Body Design – our five-person team completed the Individual Design Review, Team Design Review on schedule and submitted the Design Review Report on-time in November 2022.



### Sandia National Laboratory

Through its \$225M Supply Chain Management Center contract (SCMC), Sigma Science provides engineering support to National Technology and Engineering Solutions of Sandia, LLC (NTESS) at NNSA's Sandia National Laboratory (Period of Performance: 2021-2025). Scope includes support to research facilities that support new advanced reactor technology and analysis of modular reactor concepts. We provide engineering and nuclear safety support to the Combined Radiation Environments for Survivability Testing (CREST) facility, the Annular Core Research Reactor (ACRR) facility, and the Sandia Pulse Reactor Facility/Critical Experiment (SPR/CX). Our support of CREST includes nuclear operations, fuel, criticality safety, and nuclear design and engineering support for the Sandia Nuclear Operations and Applied Nuclear Technologies Group. Sigma provided senior nuclear reactor subject matter experts to support the Micro-Reactor Design and Accident and Consequence Modeling programs. Sigma provided nuclear fuel engineering to support the fuel stewardship activities at the ACRR and CREST. This involved conducting market research to identify appropriate fuel element component vendors with a quality assurance program to produce components for fuel elements; obtaining cost estimates and schedules for component fabrication; obtaining prototype niobium cups for CREST team inspection and approval to ensure quality; providing engineering expertise; ensuring design authority reviews were performed; coordinating fabricability reviews; and collaborating with the ACRR/CREST fuel stewardship team.



## Contact

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