NSTS Nuclear Safety & Technology Services

Delivering Safe, Responsible and Sustainable Solutions

Nuclear Safety and Technology Services (NSTS) is a next-generation technical services company that supports existing nuclear infrastructure as well as the development and deployment of new nuclear technologies essential to future energy needs in a safe, environmentally responsible and sustainable manner.

We find solutions and innovations to address the challenges presented by decommissioning legacy nuclear facilities effectively, efficiently and in a safe and socially responsible framework. We have a significant track record in these areas and are committed to providing exceptional service and quality to our clients.

Ethos: Innovation and Diligence

NSTS is a next-generation, solutions-oriented technical services company that supports the nuclear industry.

Delivering outstanding results in demanding and challenging circumstances is part of our company DNA. It's been essential to the company's success since inception.

No matter how big or small the task, our approach is innovative, diligent and solution-oriented. Through new technology and ideas or improved efficiencies, our innovation is rooted in maximizing value for our clients. Diligence underpins all the work we do. It's the driving force that allows us to identify and bring solutions to the table so problems are solved as they arise. This "can-do" attitude has been vital to our success.

Clients recognize the value of these principles and rely on us to deliver no-compromise, exceptional service and quality.

Our Capabilities

In conjunction with a demonstrated track record, we provide a comprehensive, cycle-wide experience base that identifies us as "go-to" for nuclear design and safety analysis projects.

NSTS is engaged in start-of-the-art nuclear technology projects in two business lines:

- The development and deployment of new nuclear technologies, and
- The continued safe and efficient operation of existing nuclear facilities.

Our new technology projects include the design and licensing of next-generation, small modular reactor nuclear power plants, as well as advanced mixed-oxide fuel fabrication facilities. We support operational facilities in addition to legacy nuclear facilities through first-of-a-kind decommissioning and remediation projects.

Packaging & Transportation Analysis

We have extensive experience supporting the design and safety analysis of transportation packages for commercial fresh LWR fuel, spent LWR fuel and advanced nuclear fuels for experimental and test reactors. Our experience extends to domestic transportation package design and licensing, as well as design and licensing for foreign companies under their specific regulations.

Germane to our packaging and transportation analysis experience are the shielding and criticality evaluations that must be performed and documented as part of the Safety Analysis Report. We have developed and applied methodology that satisfies the many specific regulatory requirements.

Front-End Nuclear Fuel Cycle Services

Our front-end nuclear cycle services include safety analyses associated with fuel manufacturing operations. We have performed extensive criticality safety calculations and evaluations for operations at most fuel fabrication facilities in the United States and the United Kingdom. We've also supported the design and analysis of advanced nuclear fuel designs.

Reactor Core Design and Safety Analysis

Compared with previous designs, today's next-generation nuclear power plants use advanced designs and safety features that afford high levels of safety and improved economics.

Our experience supporting licensing activities for the first new generation power plants abroad means NSTS is well positioned to support the development and deployment of next-generation reactors.

We offer:

- Reactor core design
- Reactor safety analysis
- Radiation protection and shielding
- Risk and consequence analysis
- Severe accident analysis

More recently, NSTS supported the design and licensing of small modular reactors, which represent an exciting new dimension for the commercial nuclear power industry thanks to their unparalleled levels of safety and sound economics. NSTS is currently providing key support to a private company seeking the first-of-its-kind license for a small, modular nuclear power plant in the United States.

Dry Storage Analysis

One of the challenges for the existing fleet today is spent fuel storage.

Recent events in the industry highlight the benefits of dry storage, which represents a more robust interim spent fuel storage solution than spent fuel pools. NSTS has evaluated and analyzed many of the commercially available spent fuel dry storage casks currently in use.

Back-End Fuel Cycle Services

NSTS has experience in the design and safety analysis of back-end fuel cycle technologies, including PUREX reprocessing and intermediate and low-level waste processing, interim storage and disposal. We also offer technical capabilities for and experience with the permanent disposal of spent nuclear fuel and highly active waste in a deep geologic repository.

Decontamination, Decommissioning & Site Remediation

Facility decommissioning, decontamination, demolition and site remediation often present unique challenges. NSTS has developed successful site decommissioning and remediation plans and associated nuclear safety programs to facilitate the safe, environmentally sound and efficient restoration of decommissioned nuclear sites.

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