Project Management

We have an excellent reputation in project management and extensive experience in the development and implementation of DOE management systems, management of large government and private industry projects, and extensive international project management experience. Most of our project managers are certified as Project Management Professionals by the Project Management Institute, widely recognized as the industry standard for project management certification.

The group is widely recognized within the DOE national laboratory system for providing and implementing state-of-the-art management systems and processes that support management of strategic client mission areas. PNNL takes a risk-based approach to project management, successfully leveraging modern technologies and best-in-class project management practices. PNNL has a reputation for providing expert delivery of research and operational products on time and within budget.

Markets

Our diverse and multi-disciplinary technical group leverages years of experience, state-of-the-art facilities and technology developed for government clients for application and customization in addressing government and commercial needs. Our markets include:

Key Industrial Markets

- Nuclear
- Chemical
- Petroleum
- Energy
- Aviation
- Aerospace
- Maritime
- Ground transportation.

Key Government Markets

- U.S. Department of Energy
- U.S. Department of Homeland Security
- U.S. Department of Defense
- U.S. Nuclear Regulatory Commission
- Defense Threat Reduction Agency
- U.S. Department of State
- State and local governments
- International agencies.

About Pacific Northwest National Laboratory

Pacific Northwest National Laboratory is a U.S. Department of Energy Office of Science research facility that delivers breakthroughs in the areas of environment, energy, health, fundamental sciences and national security. Battelle, based in Columbus, Ohio, has operated PNNL since 1965. A unique agreement with the DOE enables us to work with industrial clients and leverage DOE's vast resources. We have a strong history of working with industry over the past 40 years. PNNL is located in Richland, WA, and has an annual business volume of more than $700 million and 4,000 employees.

Since 1965, PNNL staff members have been involved in the protection of high-value assets utilizing an integrated systems approach for the U.S. Government and industry. Personnel have worked with the local, state, national and international level clients to:

- Identify assets that require protection
- Identify threats to the assets
- Evaluate risk to the assets
- Design, install and operate protection systems
- Integrate response personnel
- Control and account for assets
- Conduct performance test of critical systems elements to ensure adequate protection of assets
- Program management.

For more information, contact:

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Operated by Battelle for the U.S. Department of Energy

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Safeguards, Security Analysis and Operations

SCIENCE TO SOLUTIONS
for National Security

Safeguards, Security Analysis and Operations

In the post 9/11 environment, many critical infrastructure industries such as power plants, oil companies, and domestic and international shipping ports face the threat of nuclear, chemical and biological weapons and materials proliferation. The Pacific Northwest National Laboratory's Safeguards, Security Analysis and Operations group offers a wide range of capabilities to help private industry and government clients protect these vital assets.

A key feature to our approach is the development of integrated solutions that take into consideration the interdependencies among procedures, policies, workplace culture, expertise and best use of technology.

With experience in physical site surveys, process and program inspections, and systematic evaluations, our staff are proficient in:

- Threat, Vulnerability and Consequence-Based Risk Assessments
- Physical Protection Systems and Processes
- International Safeguards
- Protective Force Programs
- Nuclear Material Control and Accountability (MC&A).

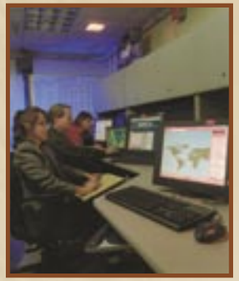
As an industry leader in these areas, we are able to tailor our approach to meet any size challenge, and provide the greatest cost benefit to our customer.

Methods and Tools

- Project and program management
- Performance testing, inspection and surveys
- Strategic planning
- Crisis negotiation
- Extensive knowledge of design, construction, operation and evaluation of safeguards and security systems
- Risk analysis, needs assessment and vulnerability assessment
- Regulatory analysis and design of regulatory program structure
- Information and resource support systems development
- Equipment specification, certification and performance
- Extensive knowledge of military and terrorist tactics
- Protective-force planning
- Tactical simulation analysis for evaluating safeguards and security plans
- State-of-the-art safeguard and security solutions
- Extensive MC&A knowledge of U.S. Department of Energy (DOE), U.S. Nuclear Regulatory Commission, U.S.-Russian Materials Protection, Control, and Accountability (MPC&A), and International Atomic Energy Agency (IAEA) regulations and programs
- Workshops and seminars on topical areas of interest
- MC&A system assessment methods
- Instructional System Design model for training program development and deployment
- Statistical modeling for determining significant inventory and shipper-receiver differences
- Computer database management
- IAEA safeguards experience
- Nuclear facilities operations experience
- Nuclear engineering
- Radiation detection technologies
- Environmental sample collection technologies and analysis
- Non-nuclear materials characterization, e.g., ultrasonic.

Threat, Vulnerability and Consequence-Based Risk Assessments

The group possesses unique analytical capability and assessment techniques for developing threat, risk and consequence characterizations. Our research capabilities, broad experience in developing threat statements and abilities to characterize threat potentials assist clients to determine cost-effective approaches to asset protection.



Areas of Emphasis

We provide clients with the following:

- Analytical experience and tools for assessing security system or protection strategy weaknesses
- Manual or tabletop analysis (vulnerability of integrated security analysis)
- Computer-aided tools (analytical system and software for evaluating safeguards and security analysis tools)
- Participation by client in a characterization of facility elements, protection strategy components and potential strategy weaknesses
- Validation of modeling inputs and development of performance tests onsite to stress the protection strategy
- Ensure that potential consequences to the economy, environment and mitigation/recovery are considered during the analysis process
- Consequence evaluation incorporating adversary event damage, casualty potential, costs for event remediation, loss of use or evacuation.

Physical Protection

PNNL's physical protection expertise is focused on its ability to provide in-depth protection of critical assets against theft, diversion or assault on nuclear facilities. The major subsystems are implemented in a graded approach to ensure that the development and implementation of protection and control programs—and the level of effort and magnitude of resources expended for the protection of a particular security interest—are commensurate with its importance or the impact of its loss, destruction or misuse.

Areas of Emphasis

PNNL staff provide clients with the following:

- Development and evaluation of the effectiveness of training programs; conduct training
- Rigorous testing, calibration and maintenance of an effective physical protection system to ensure performance and reliability
- Development and implementation of inspection and program evaluations for clients, including evaluation of protection program needs, processes, outcomes and operational efficiency
- Performance testing to ensure that physical protection systems and systems components are operable and effective in protecting assets
- Design, installation and monitoring of radio communication systems, internal and external telecommunications systems, computer networks and satellite communications
- Identification and deployment of emerging security technologies for enhanced security and risk reduction
- Onsite characterization of facility physical protection strategy and recommended enhancements.

International Safeguards

The International Safeguards program provides technologies and system studies to maintain and enhance international safeguards and the nonproliferation regime. Grave challenges exist to the nonproliferation regime created by nations establishing clandestine nuclear materials capabilities. New approaches and technologies are needed to counter potential proliferation.

Areas of Emphasis

PNNL staff have extensive expertise and experience in the following program areas:

- ***Advanced Safeguards Technologies*** – develops and tests methods to enhance the international safeguards and nonproliferation regime. PNNL has developed methods for nuclear material measurements, tamper-indicating seals, analysis of environmental samples, and analysis of safeguards information.
- ***Safeguards Approaches*** – performs systems studies to assist policy makers and international organizations in developing new approaches to enhance safeguards. PNNL has participated in studies of the Additional Protocol, black markets, uranium enrichment, and the IAEA special committee on safeguards and verification.
- ***Safeguards Implementation*** – provides methods, technologies and expertise to maintain the international safeguards regime. PNNL has assisted the U.S. government and the IAEA by developing training programs, implementing IAEA safeguards in the United States, collaborating with other nations and international organization to enhance their capabilities, analyzing information on nuclear facilities, analyzing environmental samples for the IAEA, and developing computer software for safeguards.
- ***Proliferation-Resistant Technologies*** – identifies and develops technologies for peaceful use of nuclear energy in a manner that reduces the risk of nuclear proliferation. PNNL has developed a proliferation-resistant reactor concept and is assisting in advanced concepts for uranium enrichment safeguards.

Protective Force

Protective forces are a critical element in the detection and assessment phase of an integrated physical protection program because they are responsible for resolution of the event. Protective force input is needed in the initial design phase and subsequent testing of the system.

Security interests must be protected from theft, diversion, sabotage, espionage, unauthorized access, loss or compromise of resources or information, and other hostile acts, which may cause unacceptable impacts on operations, the health and safety of employees, the public and the environment. The physical security systems must have a well-designed protective/response force system in place to deter or mitigate the effects from the aforementioned acts.

Areas of Emphasis

Protective forces may range from unarmed or armed onsite personnel and local law enforcement to paramilitary personnel or federal law enforcement. PNNL has extensive experience in all phases of protective force including the following:

- Basic officer training including mechanical and explosive breaching techniques for special response teams
- Advanced officer training including mechanical and explosive breaching techniques for special response teams
- Readiness assessment of physical protection capabilities
- Consultation on design and development of physical protection programs
- Analysis for streamlining and enhancing operational effectiveness through proceduralized response to security events.

Nuclear Material Control and Accountability

The MC&A program provides information and control measures necessary to establish and track nuclear material inventories, control access to materials, detect loss or diversion of nuclear materials, and ensure the integrity of those systems and measures.

Areas of Emphasis

PNNL staff have extensive expertise and experience in the following program areas:

- ***MC&A Program Management*** - defines and documents the requirements, roles and responsibilities for all individuals with MC&A functions; institutionalizes the MC&A program by developing written plans and procedures; allocates resources to manage and operate an MC&A program; ensures integration of MC&A elements with physical protection and protective forces; monitors the performance of MC&A activities to ensure adequate functionality.
- ***Nuclear Materials Inventory and Accounting*** - identifies the methods used to maintain inventory records of and account for nuclear materials at a facility. The records system provides for: retention of key material accounting data and original source data; tamper-indicating device records; physical inventory listings and reconciliations; records of inventory differences (ID), inventory adjustments and calculations of limit of error of the ID; and reports of investigations and resolution of alarms, excessive IDs and shipper-receiver differences on an individual and cumulative basis.
- ***Measurement and Measurement Control*** - provides the accounting values for nuclear material transactions and inventories. The measurement control programs ensure the effectiveness and quality of measurement values. Measurement control programs also provide data for estimating the precision and accuracy of measured values used to quantify the uncertainty of the nuclear material inventory and to evaluate the significance of ID and shipper-receiver differences.
- ***Containment and Surveillance*** - provides assurance that nuclear material is not removed from an authorized location without approval or timely detection. Containment measures consist of multiple layers of protection. Surveillance measures include automated or direct visual observation to ensure that the nuclear materials are properly controlled and used for their intended purposes.