

Welcome Shawn St. Germain as the Deputy Pathway Lead for the Physical Security Pathway

Shawn St. Germain is the newly appointed Physical Security Deputy Pathway Lead for the Light Water Reactor Sustainability (LWRS) Program. He manages the Reliability, Risk, and Resilience Sciences Department at Idaho National Laboratory (INL). He is also the principal investigator of research aimed at enhancing the physical security at commercial nuclear power plants using innovative technologies and risk methods. With an 18-year tenure at INL, Shawn has amassed significant expertise in reactor operations,



Shawn St. Germain

process engineering, and probabilistic risk assessment.

He possesses an M.S. in nuclear engineering, an M.S. in engineering management, an MBA, and a B.S. in mechanical engineering. Before INL, he served as a Senior Reactor Operator Certified Shift Technical Advisor at Columbia Generating Station and was a nuclear trained surface warfare officer in the United States Navy.

Recent LWRS Program Reports

Materials Research

- [Produce first phase consensus roadmap for development of condition-based cable reliability assurance, PNNL-36630](#)
- [Complete the Second Weld Campaign on Ni Alloy 182 Using Optimized Welding Parameters and Complete the Initial Weld Quality Evaluation, ORNL/SPR-2024/3575](#)
- [High Neutron and Gamma dose effects on Calcium Silicate Deuterate, ORNL/SPR-2024/3454](#)
- [Assessment of Neutron-Induced Crack Volume on Aggregates of Varied Mineralogy and Estimation of Irradiation Damage Depth in the Concrete Biological Shield, ORNL/SPR-2024/3581](#)
- [SSTD and FDR Detection of Un-Energized and Energized Cable Anomalies Including Thermal Degradation Using Machine Learning, PNNL-36573](#)
- [Evaluation of Clamshell Current Coupler for Online Frequency Domain and Spread Spectrum Time Domain Reflectometry to Detect Anomalies in Energized Cables, PNNL-36530](#)

Plant Modernization

- [Demonstration and Evaluation of Explainable and Trustworthy Predictive Technology for Condition-based Maintenance, INL/RPT-24-80727](#)
- [Scalable Methods to Automate Manual Work Management Activities Using Artificial Intelligence, INL/RPT-24-80159](#)
- [Mapping Data to Support Optimum Work Automation: The Socio-Technical-Organizational Modeling Process, INL/RPT-24-80094](#)
- [ION Work Reduction Opportunity Realization Demonstration, INL/RPT-24-80282](#)

Risk-Informed Systems Analysis

- [Development of New Reactor Core Configuration for Power Uprate – Fuel Reload & Heat Processing Analyses, Core Design, System Safety Assessments, and Fuel Performance Analyses, INL/RPT-24-80710](#)
- [An Integrated Framework for Risk Assessment of Safety-related Digital Instrumentation and Control Systems in Nuclear Power Plants: Methodology Refinement and Exploration, INL/RPT-23-74412](#)
- [A Full-scale Demonstration of Pressurized Water Reactor Core Design Optimization using Multi-Cycle Optimization Methodology, INL/RPT-24-80449](#)
- [Human Unimodel for Nuclear Technology to Enhance Reliability \(HUNTER 3.0\) User Guide, INL/RPT-24-80110](#)
- [Automated Knowledge Extraction from Plant Records to Support Predictive Maintenance, INL/RPT-24-78817](#)

Flexible Plant Operations & Generation

- [Flexible Plant Operation and Generation: Hazards and Probabilistic Risk Assessments of a Light-Water Reactor Coupled with Industrial Facilities, INL/RPT-24-80742](#)
- [Nuclear Energy Prospector for Identifying U.S. LWR Non-Grid Opportunities, INL/RPT-24-80742](#)
- [Hydrogen Generation and Industrial Heat Opportunities for Nuclear Plants in the Gulf Coast, INL/RPT-24-80189](#)
- [Value of Nuclear Energy to the Reliability of the North American Power System: Results for Western and Eastern Interconnections, INL/RPT-24-79840](#)

Physical Security

- [An Evaluation of The Dynamic Physical Security Risk Assessment Methodology for Fleet-Wide Applications; INL/RPT-24-80303](#)

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