



LWRS Plant Modernization Overview

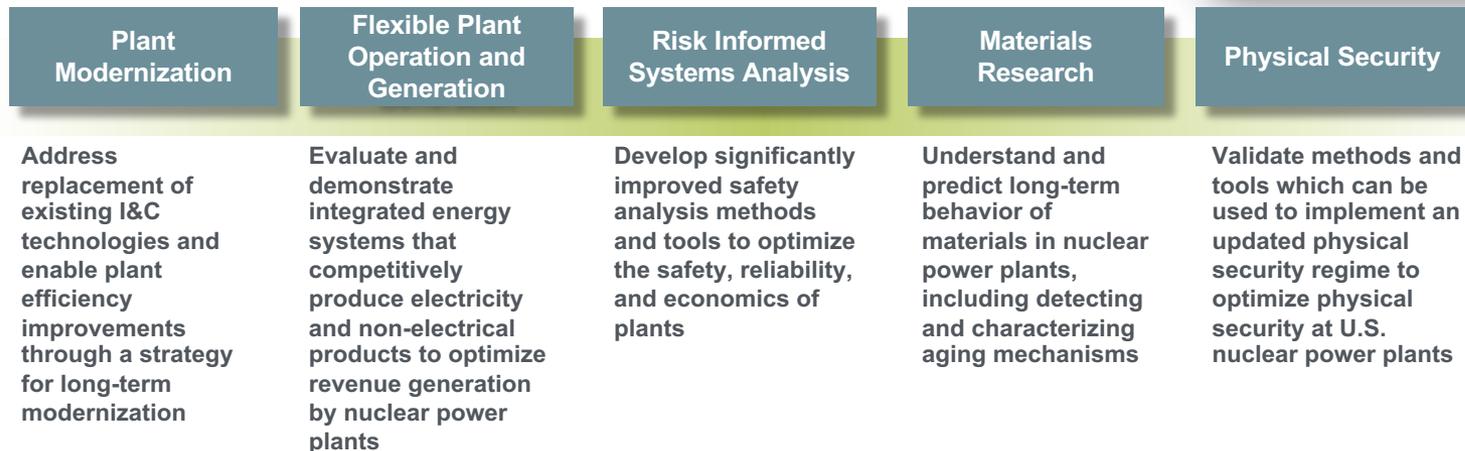
**Advanced Sensors and Instrumentation
Annual Webinar**

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Craig Primer
Pathway Lead

Light Water Reactor Sustainability Program

- **Goals**
 - Enhance the safe, efficient, and economical performance of our nation’s nuclear fleet and extend the operating lifetimes of this reliable source of electricity
- **Objectives**
 - Enable long-term operation of existing nuclear power plants
 - Deploy innovative approaches to improve economics and economic competitiveness of LWRs in the near term and in future energy markets
 - Sustain safety, improve reliability, enhance economics
- **Focus areas:**



Current Plant Modernization Pathway Activities

I&C Architecture

- Full Nuclear Plant Modernization
- Control Room Modernization
- I&C Infrastructure Modernization

Modernization - The plant I&C systems and control rooms have been fully modernized with advanced digital technologies resulting in safe, economic operations with minimal operations staffing.



- I&C Architecture
- Control System Hardware
 - IT Hardware Integration
 - Control Room Integration

Data Architecture

- Advanced Remote Monitoring for Operations Readiness (ARMOR)
- Technology-Enabled Risk-Informed Maintenance Strategy (TERMS)
- Digital Architecture for an Automated Plant

Automation - Automation has displaced a substantial number of labor-intensive plant support tasks using advanced sensor, monitoring, and analytical technologies.



- Data Architecture
- Common Data Model
 - Online Monitoring
 - Advanced Analytics

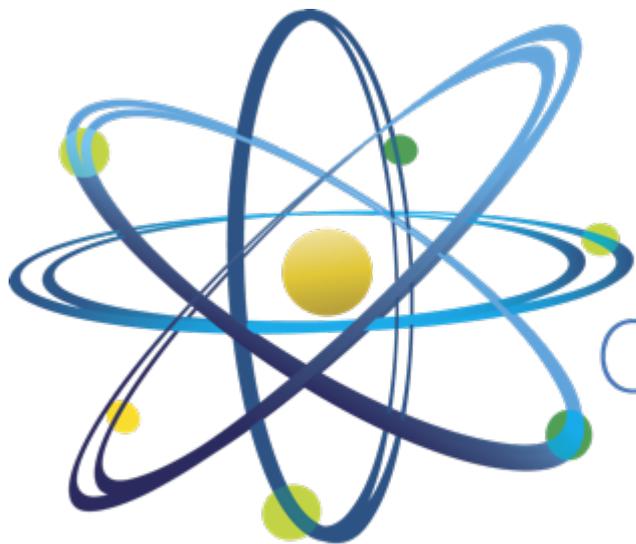
Advanced Applications

- Automation of the Work Process
- Advanced Concept of Operations

Innovation - For plant support functions that cannot be fully automated, advanced innovative technologies are deployed to maximize plant worker efficiency while eliminating human error.



- Adv. Applications
- Program & Process Integration
 - Information System Integration
 - Plant Worker Optimization



Clean. **Reliable. Nuclear.**