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Light Water Reactor Sustainability
Program Technical Integration Office

Technical Integration Office Summary

2024 LWRS Program Spring Review Meeting



The Technical Integration Office

- **The LWRS Program** is the primary programmatic activity that addresses the DOE-NE's priority to extend the life of the nation's existing fleet of nuclear power reactors.
- **Sustainability** – the ability to maintain safe and economic operation of the existing fleet of nuclear plants for as long as possible and practical.
- **Technical Integration Office (TIO)** manages the LWRS Program and serves as the primary interface with industry, Laboratories, universities, regulatory organizations, and other stakeholders to achieve DOE's goals and objectives for this program.
- **Accomplishments** are programmatic, organizational, and facilitate the mission of the program and DOE with respect to the goals of the LWRS Program.



LWRS Program Organization

The LWRS Program Organization includes Federal staff from DOE-NE, and from National Laboratories

- Idaho National Laboratory
- Oak Ridge National Laboratory
- Sandia National Laboratory

Federal Program Management



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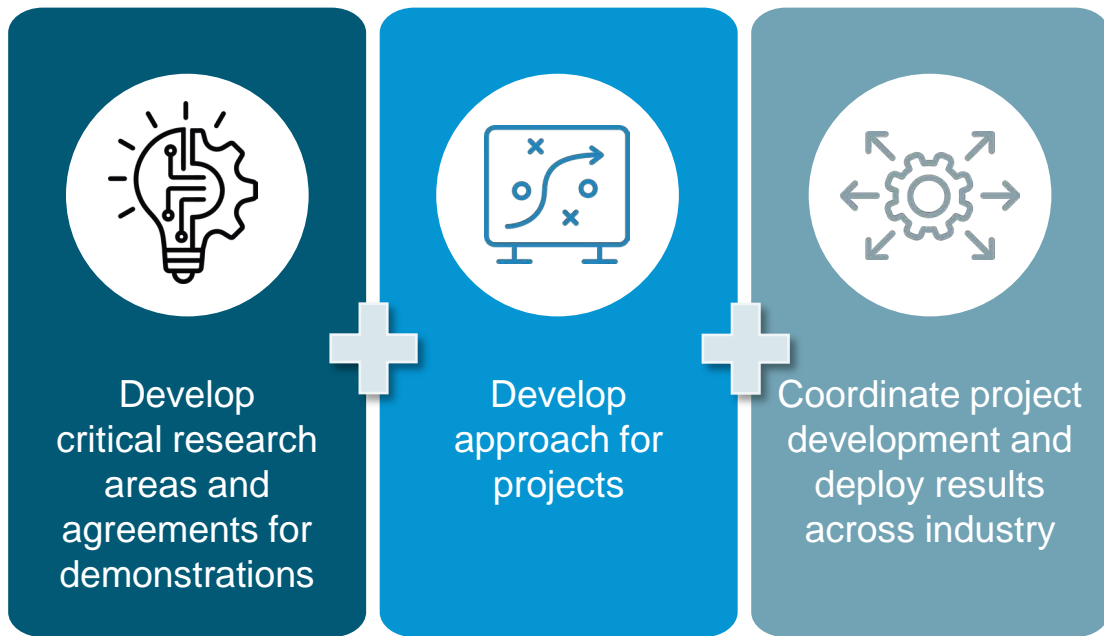


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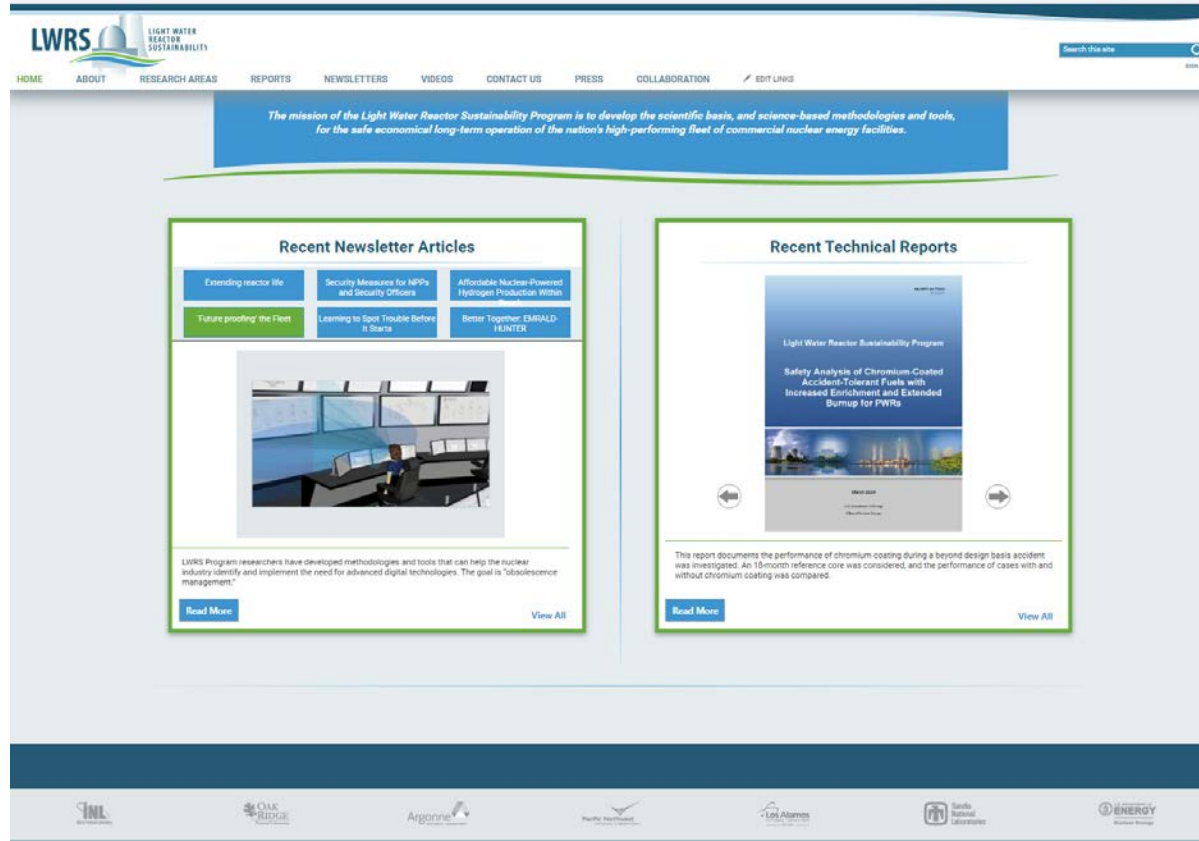
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Stakeholder Engagement



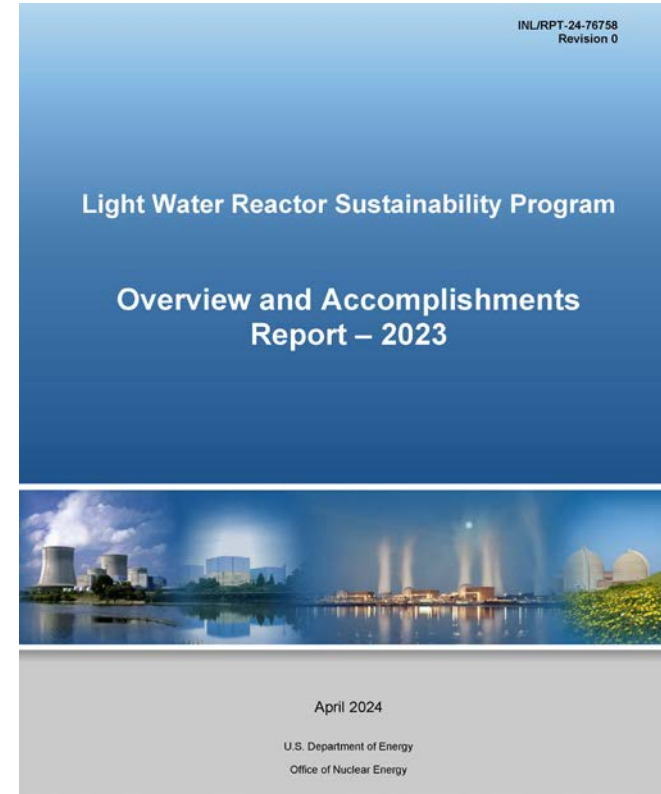
MOUs with NRC and EPRI





The screenshot shows the LWRS Program Webpage. At the top left is the LWRS logo. A navigation menu includes: HOME, ABOUT, RESEARCH AREAS, REPORTS, NEWSLETTERS, VIDEOS, CONTACT US, PRESS, COLLABORATION, and EDIT LINKS. A search bar is located at the top right. Below the navigation is a mission statement: "The mission of the Light Water Reactor Sustainability Program is to develop the scientific basis, and science-based methodologies and tools, for the safe economical long-term operation of the nation's high-performing fleet of commercial nuclear energy facilities." The main content area is divided into two columns. The left column is titled "Recent Newsletter Articles" and features a grid of article titles: "Extending reactor life", "Security Measures for NPPs and Security Offices", "Affordable Nuclear-Powered Hydrogen Production Within", "Future proofing the fleet", "Learning to Spot Trouble Before It Starts", and "Better Together: EMBALD-KUNTER". Below the grid is a large image of a control room and a "Read More" button. The right column is titled "Recent Technical Reports" and features a report cover titled "Safety Analysis of Chromium-Coated Accident-Tolerant Fuels with Increased Enrichment and Extended Burnup for PWRs". Below the cover is a "Read More" button. At the bottom of the webpage is a footer with logos for INEL, Oak Ridge, Argonne, Pacific Northwest, Los Alamos, Sandia National Laboratories, and U.S. Department of Energy.

[LWRS Program Webpage Link](#)



The cover of the report is blue with white text. In the top right corner, it reads "INL/RPT-24-76758" and "Revision 0". The main title is "Light Water Reactor Sustainability Program" followed by "Overview and Accomplishments Report – 2023". Below the title is a wide horizontal image of a nuclear power plant at night with its lights reflecting on the water. At the bottom, the date "April 2024" is centered, followed by "U.S. Department of Energy" and "Office of Nuclear Energy".

[Overview and Accomplishments Report - 2023 Link](#)

Summary

Collaborations and technical exchange with stakeholders facilitate progress in areas of vital common interest

- Materials, Modernization, Risk-Informed Research, Diversification of Products, Physical Security

Need for clean and reliable energy from nuclear power underscore the need to address existential challenges facing the existing fleet

- LWRS research addresses highest priority issues for long term operation and growth of nuclear energy

Projects follow timelines to impact economic competitiveness and long-term operation

- **Address** critical needs in aging and obsolescence
- **Enable** diversification of revenue and products beyond electricity
- **Demonstrate** the means to substantially reduce the costs of ownership
- **Lead** transformation from a labor-centric to technology-centric business model



Sustaining National Nuclear Assets

lwrs.inl.gov