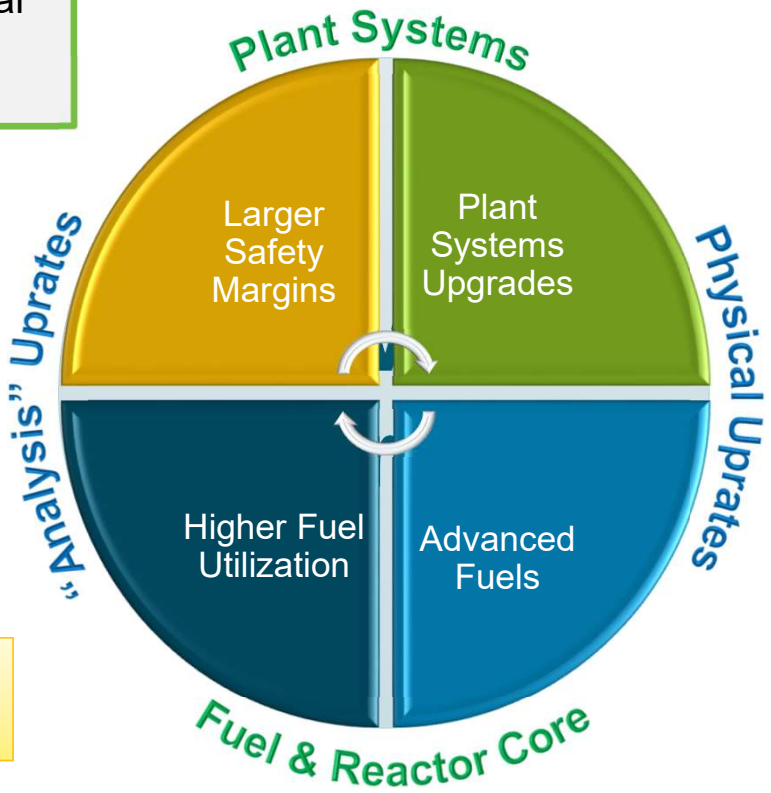
DOE Launches UPRISE-
Utility Power Reactor Incremental Scaling

✓ UPRISE strives to significantly expand the United States' nuclear energy capacity by increasing the power output of existing reactors and bringing dormant facilities back online.

UPRISE coordinates efforts to accelerate the growth of U.S. nuclear energy production.

- DOE offices - Nuclear Energy, Energy Dominance Financing
- federal partners
- utilities, nuclear plants
- data centers, industry end-users
- investors

UPRISE will convene matchmaking meetings to help form strategic partnerships



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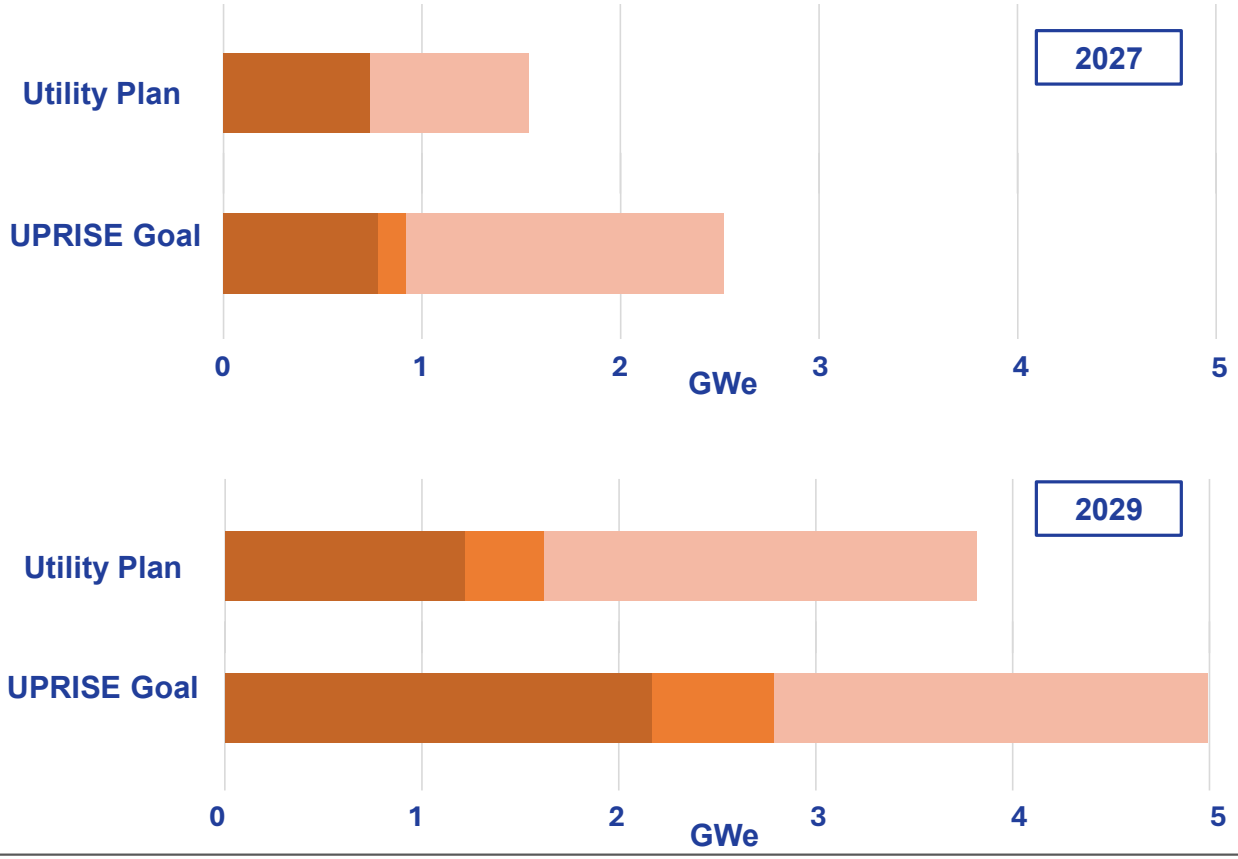
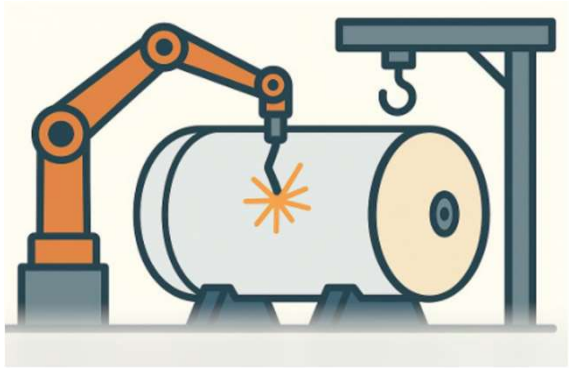
Vision for Expanding Nuclear Energy (E.O.14302)



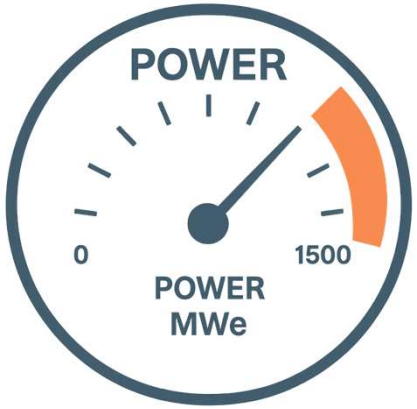
Challenge: What can be done to accelerate nuclear capacity expansion?

DOE UPRISE activities underway



Ensure readiness of a domestic supply chain for uprate equipment

Foster relationships and approaches to identify key systems and components to establishing nuclear manufacturing scale up.



Implement risk-informed tools

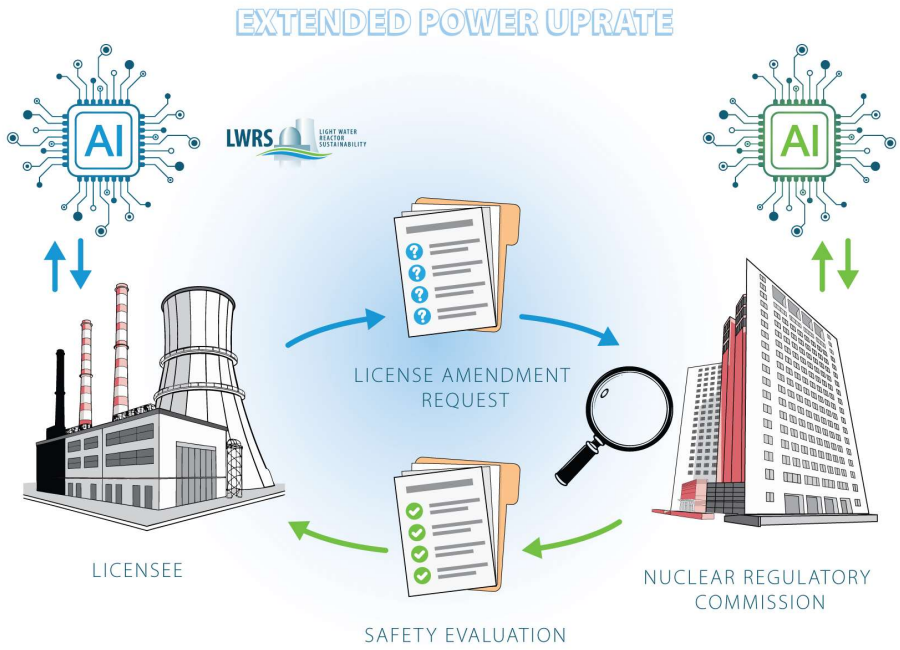
Support risk-informed safety analysis methods expected to create significant power uprate margin.

Business cases mobilize plant uprate projects

Complete investor grade technical and economic analysis to support business case decisions.

Extended Power Uprate (EPU) Reviews Using AI

- Increase the energy output of a nuclear plant by modifying plant systems, equipment, or operational parameters.
- Challenges include the volume and complexity of an EPU application, which requires review of thousands of pages.
  - 13 review areas which rely on precedent, the Standard Review Plan (SRP), Regulatory Guides (RGs), Branch Technical Positions (BTPs), and institutional knowledge.
- AI can serve as a decision-support tool to assist licensees in pre-submittal reviews of license amendment applications, reducing review cycles and streamlining the approval process for utilities.
- The LWRS program is collaborating with the NRC to map the review process and identify opportunities for AI integration.



LWRS LIGHT WATER REACTOR SUSTAINABILITY

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Limerick Digital Control System

- NRC has approved the License Amendment Request for the Limerick Clean Energy Center Digital Modernization Project
- First-of-its-kind upgrade across major control and protection systems that will enhance reliability, diagnostic capability and cyber resilience
- Collaborative efforts between industry, NRC, and DOE's Light Water Reactor Sustainability (LWRS) program

Key:

1 – Upgraded Distributed Control System Annunciator Panels

2 – New Distributed Control System Group View Display Visual Display Units (also referred to as Head-Up Displays)

3 – Reactor Operator '5-Pack' Workstation, including four divisionalized Safety Visual Display Units and one Distributed Control System Visual Display Unit

4 – Plant Reactor Operator '5-Pack' Workstation

Demonstrating what we can do when working together