



Proton Power Upgrade: Twice the Power to Enable Unique Neutron Science

The Spallation Neutron Source (SNS) is doubling the power of its proton beam, from 1.4 to 2.8 megawatts, through the Proton Power Upgrade (PPU) project. The upgrade, planned for completion in 2025, will enable new types of scientific discoveries that are essential to sustaining US leadership in industrial, military, national security, consumer, and other sectors vital to our nation's economy.

Benefits of the Proton Power Upgrade

- Accelerate the pace of scientific discovery across a wide range of materials and technologies
- Enable novel neutron experiments in more extreme environments using smaller samples
- Leverage existing ORNL facilities and capabilities for maximum cost-effectiveness
- Power the Second Target Station to provide the world's brightest "cold" neutrons, enabling studies of more complex materials

Neutrons: An Essential Research Tool for Technology, Industry, and More

ORNL has pioneered neutron research since 1944. Today, the Laboratory operates the SNS (the most intense accelerator-based pulsed neutron source in the world) and the High Flux Isotope Reactor (a reactor-based neutron source that provides the brightest continuous neutron beams for research in the United States). With their unique properties, neutrons have helped improve many technologies, including computers, cell phones, transportation, batteries, medical devices, energy production, cancer treatments, and airport shipping and security.



Delivers more
Neutrons in shorter pulses to permit more and faster experiments

40%
More power to the existing First Target Station

2.8 MW
Doubles the power of the existing proton beam

Enables
Building the future Second Target Station

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