



U.S. DEPARTMENT OF
ENERGY

Idaho
Operations Office

Nuclear Energy Tribal Working Group

Carbon Free Power Project Status

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Overview

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 - Idaho State Legislation
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Background

In 2012 DOE-NE initiated the Small Modular Reactor (SMR) Licensing Technical Support program (SMR-LTS) to promote the accelerated deployment of near-term SMRs with improved and advanced safety and security features by supporting certification, licensing, and siting requirements. The program included three major funding activities:

1. NuScale Power Design Certification (FY2014) – DOE selected NuScale Power through a competitive funding opportunity to commercialize their SMR with innovative and effective solutions for enhanced safety, operations and performance beyond designs currently certified by the Nuclear Regulatory Commission (NRC).
 - Complete the preliminary design
 - Execute testing programs in support of design development and NRC review requirements
 - Submit Design Certification application
 - Complete reactor module final design

Background - continued

2. Site Permitting and Licensing

- a. NuScale/UAMPS (FY2015) – NuScale Power teamed up with Utah Associated Municipal Power Systems (UAMPS) to develop its Carbon Free Power Project (CFPP).
 - Site Selection
 - Business and Economic analysis
 - Site Characterization
 - Develop Combined Operating License Application (COLA) documentation for NRC
- b. Tennessee Valley Authority (FY2015): Interagency Agreement to complete site characterization activities, develop an Early Site Permit (ESP) application for a generic SMR and to develop a COLA for NRC review.
 - Complete Clinch River Site Environmental Report
 - Submit Early Site Permit application to NRC and support its review
 - Develop a COLA for the selected SMR technology

Background - continued

3. Generic Studies and Analyses – Activities to help solve generically-applicable licensing, economic, and commercialization challenges
 - Analysis of Small Modular Reactors Suitability for Air Force Space Command Installations (2016)
 - Source Term Evaluation (2014, 2016)
 - EPIC Small Modular Reactors-Key to Future Nuclear Power Generation in the U.S.
 - Supply Chain Optimization Study: Georgia Tech
 - Workshop "Pathway to Small Modular Reactor Commercialization" June 2016
 - Business Case for Small Modular Reactors, Report on Findings

DOE-NE SMR LTS program: <https://www.energy.gov/ne/smr-licensing-technical-support-lts-program>

CFPP Progress to Date

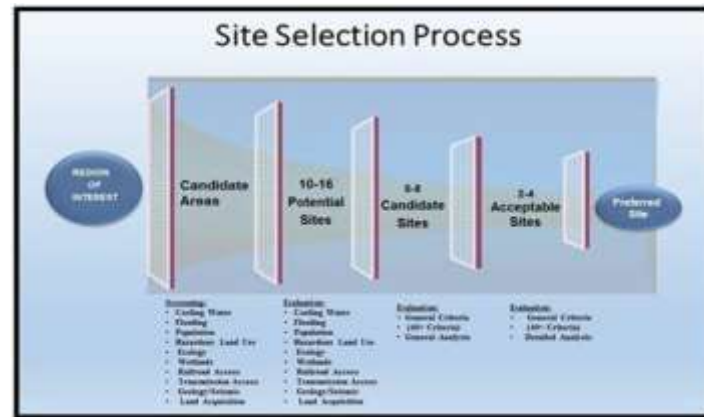
■ Site Selection

- Site Use Permit (2/2016): DOE grants UAMPS the ability to evaluate the use of the Idaho National Laboratory site as a potential location for an SMR. DOE retains ownership and stewardship responsibilities, UAMPS would obtain and operate an SMR under a NRC license
- Preferred and Alternate Sites Selected by UAMPS (7/2016):
 - UAMPS selected 4 acceptable locations on the INL site from a region of interest that included Delta Utah and the INL.
 - Shoshone-Bannock Tribal cultural representatives toured the 4 sites and provided feedback including cultural resource sensitivities for the sites.
 - SMR site will be subject to a full National Environmental Policy Act (NEPA) evaluation led by the NRC. DOE is planning on acting as cooperating agency on EIS.

CFPP Progress to Date - continued

- Site Selection was completed based a proven model developed by the Electric Power Research Institute (EPRI) for commercial nuclear power plants.

- Cultural Resources
- Volcanic Hazards
- Transportation
- Transmission
- Synergies with INL
- Flooding
- Cooling Water Supply



- Ecology/Environmental
- Site Layout Flexibility
- Seismic
- Logistics of Construction and Operation

CFPP Progress to Date – continued

- Business and Economic analysis
 - Internal business evaluation of the project by UAMPS is ongoing (Independent of DOE)
 - Based on UAMPS's decision, COLA preparation and Environmental Impact Statement (EIS) will begin
- Site Characterization
 - Will begin once a Decision to Proceed is reached by UAMPS
 - Site characterization will support the development of the COLA
 - Will uphold DOE's commitments and provisions as detailed in our Agreement in Principle (AIP) with the Shoshone-Bannock Tribes.
- Develop COLA documentation for NRC

Future

CFPP Working Group & Fort Hall Business Council Interactions

- Agreement in Principle (AIP)
 - Outlines the understanding of the Government to Government consultations
- Working Group for Proposed Carbon Free Power Project at INL site
 - Facilitate the exchange of information between members
 - The WG does not have decision-making authority
 - Members: NRC, Shoshone-Bannock Tribes, UAMPS, NuScale, DOE-ID
 - Currently meet on an “as-needed” basis
 - Intended to last through regulatory process, construction, and possibly through operation phases
- Fort Hall Business Council (FHBC)
 - Briefings with FHBC occur on a more formal level typically with DOE-ID Director

Recent Legislative Support

1. Federal Production Tax Credit (PTC) extended (1.8 cents per Kilowatt-hour over 8 years)
 - Allows for new nuclear reactors placed in service after Dec. 31, 2020 to qualify for the nuclear PTC
 - Permits the Secretary of energy to allocate credits up to a 6,000 megawatt capacity for “new nuclear” placed in service after Dec. 31, 2020.
2. Idaho Legislature has modified existing tax code that would provide incentives for an SMR to be located in Idaho
 - HB 591 – modifies new capital investment exemptions (of at least \$1 billion) to apply to SMRs
 - HB 592 – Amends the sales tax exemption for research and development activities conducted at INL

JUMP Idea

Joint Use Modular Plant (JUMP) – DOE could use individual module(s) from the UAMPS 12-module NuScale SMR for potential research opportunities for a fee.

Advantages:

- **INL:** cost-effective demonstration platform utilizing independent modules and steam.
- **SMRs:** expands security capabilities and international markets for clean energy.
- **UAMPS:** temporarily utilizing unsubscribed modules benefits project finances and long-term operations.
- **NRC:** provides a platform for resolving hybrid energy systems (HES) regulatory uncertainties.

