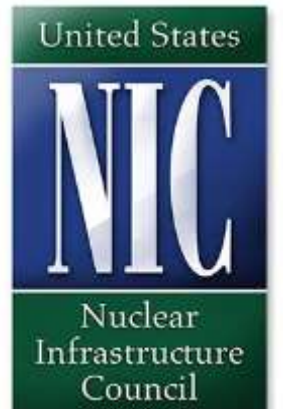


# Development of Nuclear Regional Supply Chain Cluster

US NIC/ETEC Nuclear Supplier Workshop  
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# Objectives

- Highlight the Regional Supply Chain Networks by the US Nuclear Infrastructure Council
- Identify Opportunity to Build Regional Nuclear Capabilities
- Identify components and attributes of a successful Nuclear Regional Supply Chain Network
- Highlight NIC contributions in developing of these networks to date
- Introduce Regional Experts to provide some details

U.S. nuclear electricity generation, 1980-2015

(thousand megawatt-hours (MWh))



Source: U.S. Energy Information Administration, *Electric Power Monthly*, Tables 1.1, February 2016, preliminary 2015 data

### Thirty states have at least one commercial nuclear reactor

Most of the commercial reactors in the United States are located east of the Mississippi River. Illinois has the largest number of commercial reactors (11) and, as of December 31, 2015, had the largest nuclear

[net summer electricity generation capacity](#)

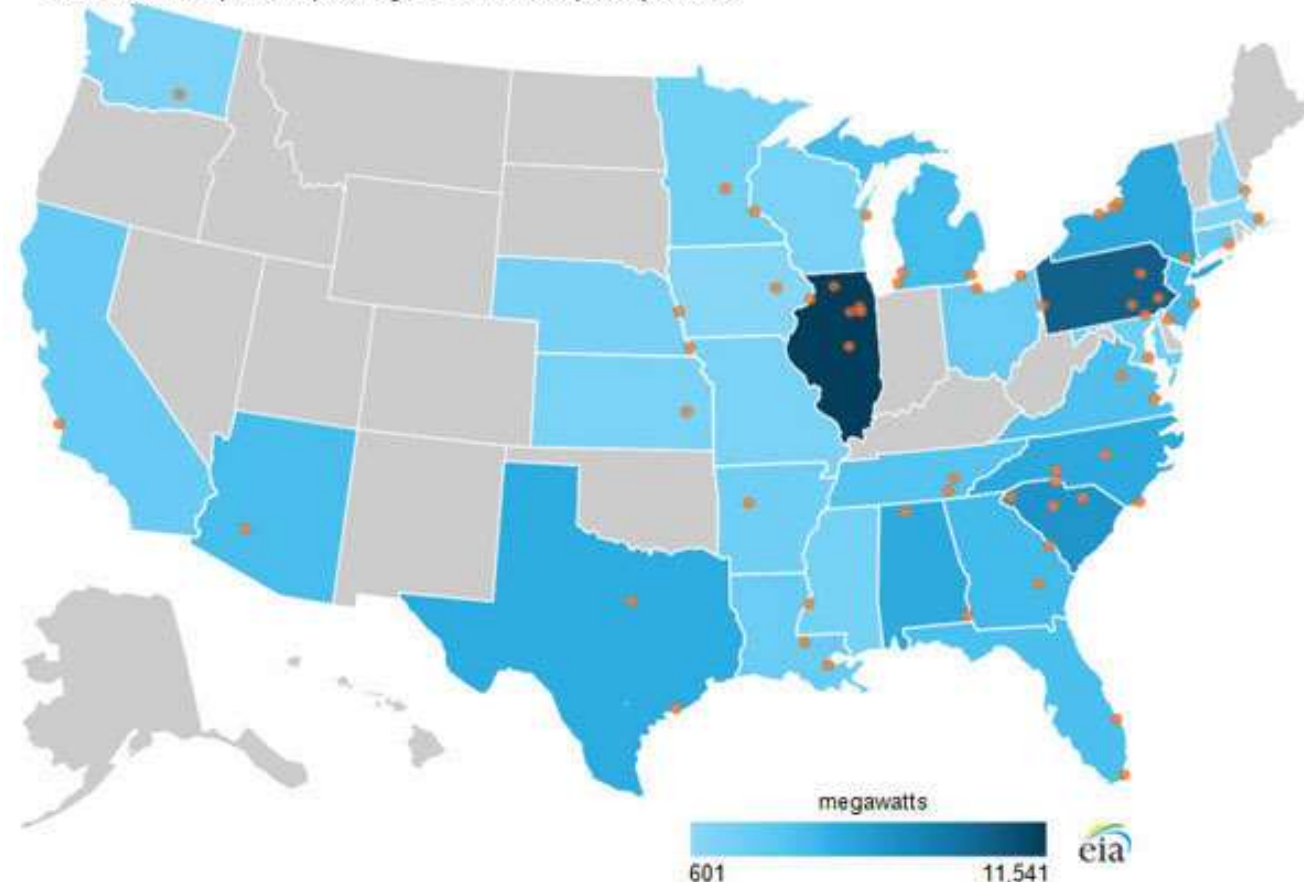
at about 11,590 megawatts (MW). The largest reactor in the United States, with a capacity of more than 1,350 MW, is the Grand Gulf Nuclear Station, located in Port Gibson, Mississippi. The smallest reactor, with a capacity of 478 MW, is at Fort Calhoun, Nebraska.

Four reactors were permanently shut down in 2013:

- Crystal River Unit 3 in Florida, Kewaunee Power Station in Wisconsin, San Onofre Nuclear Generating Station Units 2 and 3 in California, One reactor was removed from service in 2014:

- Vermont Yankee in Vermont

U.S. nuclear power plant generation capacity, 2015



Source: U.S. Energy Information Administration, *Electric Power Monthly*, February 2016

# Regional Energy Picture\*

| State          | N Gas | Renew | Nuc  | Coal | Oil | Hydro | Nuc Units |
|----------------|-------|-------|------|------|-----|-------|-----------|
| Alabama        | 40.4  | 2.3   | 27.9 | 24.0 | 0   | 5.4   | 5         |
| Georgia        | 39.7  | 4.2   | 25.9 | 28.5 | 0   | 1.6   | 4         |
| South Carolina | 16.7  | 2.5   | 57.6 | 21.7 | 0   | 1.5   | 7         |
| Tennessee      | 14.1  | 1.4   | 37.0 | 38.9 | 0   | 8.4   | 4         |

\* State Fact Sheets (Nuclear Energy Institute- 2017)

# Goal: Strategy of Creating the Political Will for SMRs – ARs

## IDENTIFY AND COMMUNICATE MARKET POTENTIAL FOR NUCLEAR MANUFACTURING AND SERVICES

### Scope

Collect nuclear market information for companies considering investments:

- Market size
- Buyers and sellers
- Gaps in the supply market
- Potential market scenarios;
- Sources for capital including listing of government agencies, private investment companies, and potential partnering opportunities
- **Establish Regional Supply Networks near future building sites.**

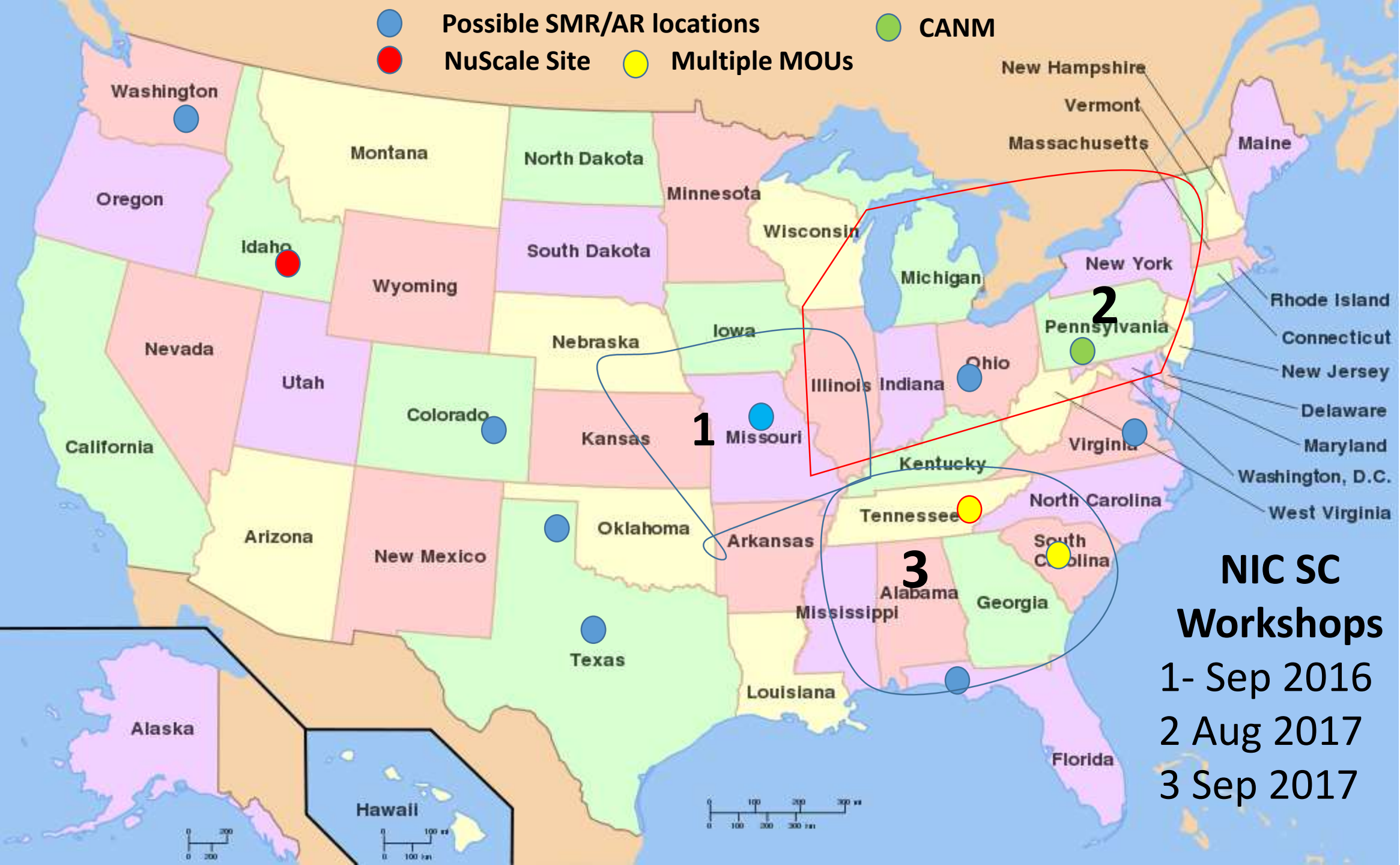
# Building Regional Nuclear Capabilities

- Desired Nuclear Profile
  - Operating nuclear plants
  - National Lab
  - Government facilities
  - Potential nuclear build sites
  - Advanced Manufacturing Capabilities
  - Option to join the Center for Advanced Nuclear Manufacturing network

# Desired Regional Supply Chain Network Members and Attributes

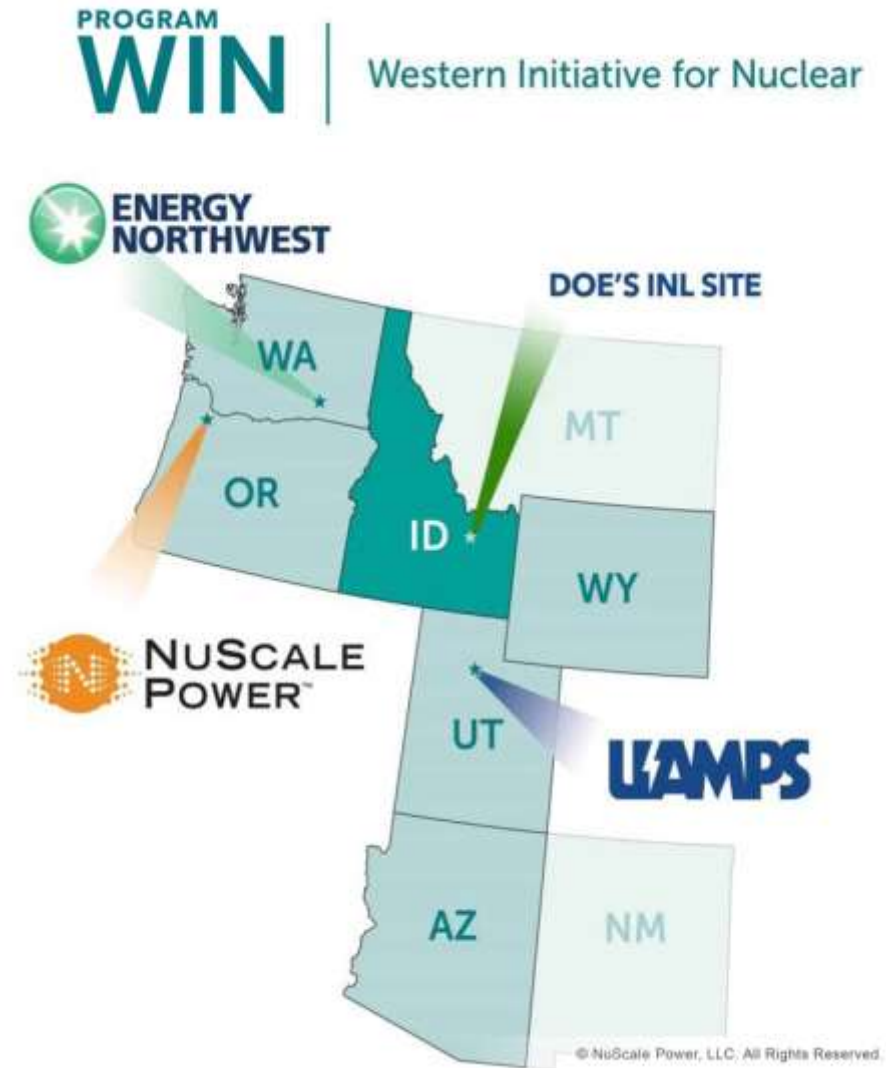
- Prior history with interest in supply chain development
- Formal governance structure
- Ability to attract energy grants
- Core members
  - Sponsoring utility
  - Economic Development organization
  - Sponsoring University
- Sponsoring NIC Member(s)
- Consider partnering/alliances/Joint Ventures with more experienced organizations
- **Start Now**/Identify any barriers

- Possible SMR/AR locations
- NuScale Site
- Multiple MOUs
- CANM





- Utah Associated Municipal Power Systems (UAMPS) Carbon Free Power Project (CFPP) will be first deployment, sited somewhere in Idaho.
- Site selection underway
- DOE INL site use agreement
- NRC COLA commitment
- UAMPS consists of 45 members serving load in 8 western states.
- 33 UAMPS members are subscribers in CFPP



# Benefits

- Localized supply chain can capture 25% to 50% of the project market share
- SMR/AR Projects are \$400M to \$2B
- Capability of the local supply chain can be an enabling factor to being selected for a project
- It takes about 3 years to build a successful supply chain for each SMR-AR design

# Supply Chain Development

- Via Supply Chain Mapping as tool
  - Compile lists of supplier capabilities
  - Align equipment model components and capabilities to suppliers
  - Assess demand and capacity
  - Get new suppliers started on “The Journey”
  - Support Members to assess consortia opportunities
- Work with Federal, State and Local Government
- Participate in NIC developmental activities

# How You Can Help...

Join the US Nuclear Infrastructure Council  
- Lets Make it Happen !

Questions?

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## Other Speakers

- **Dwaine Raper**, Solutions Consultant Team Leader, UT Center for Industrial Services
- **Adam Murray**, Senior Target Market Specialist, TVA
- **Bill Peter**, Director, Manufacturing Demonstration Facility, ORNL