U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

NRC Regulatory Overview, NPP Operations, NRC/FERC/NERC Interactions, License Renewal, Decommissioning, New Reactors

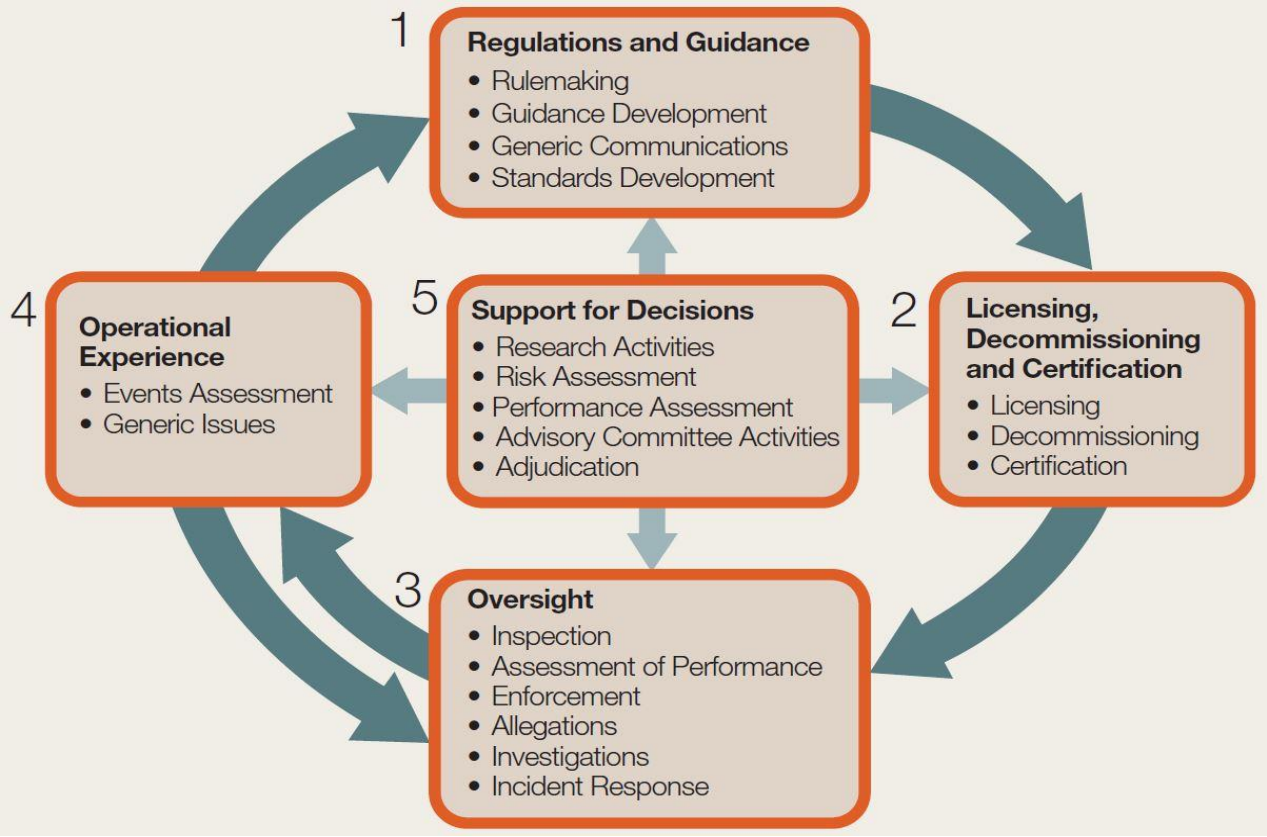
NRC/FERC Joint Commission Meeting

June 7, 2018

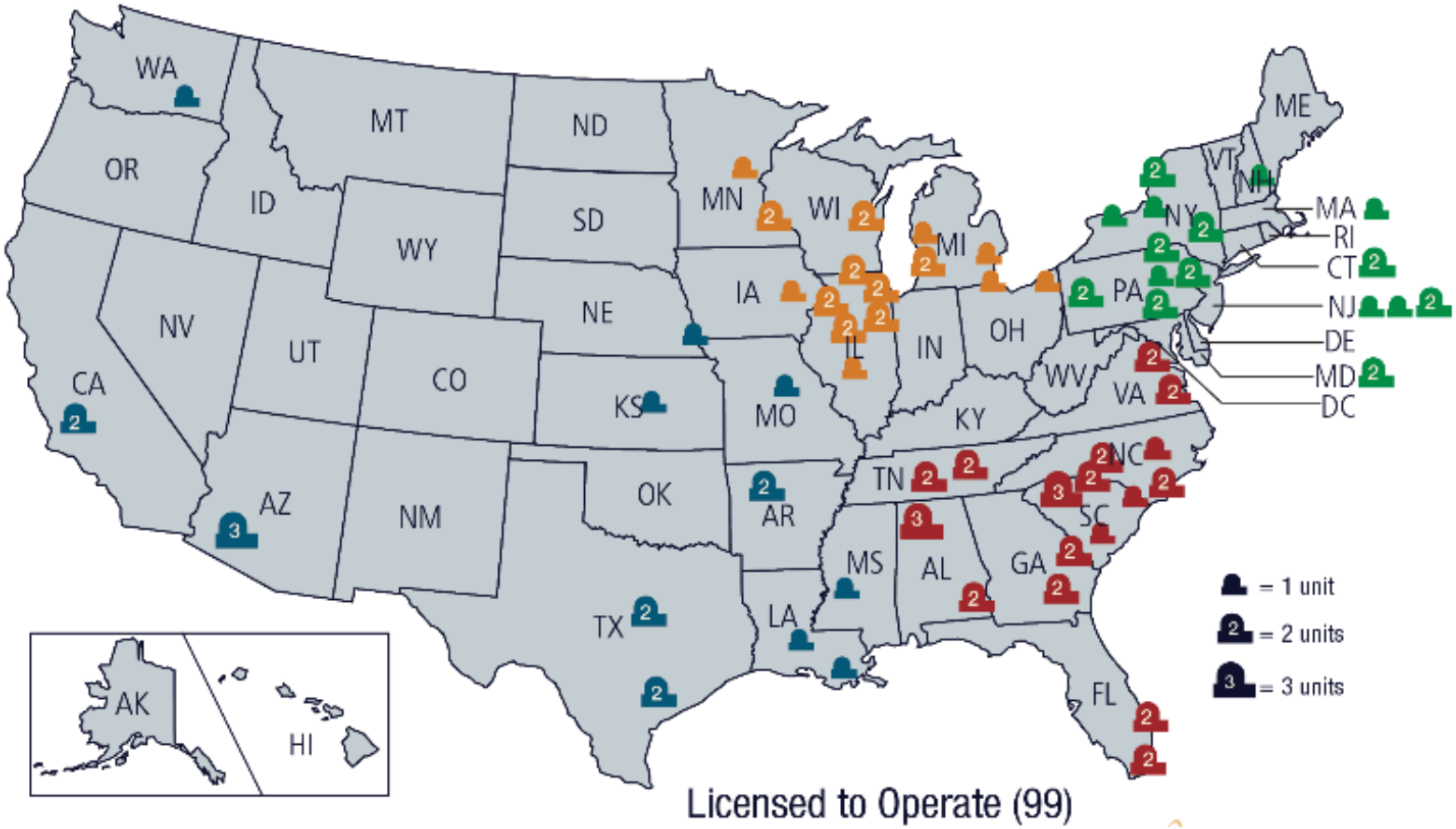
Agenda

- Brian Holian, Acting Director, Office of Nuclear Reactor Regulation
- Shana Helton, Deputy Director, Division of Engineering, Office of Nuclear Reactor Regulation
- Anna Bradford, Deputy Director, Division of Licensing, Siting, And Environmental Analysis, Office New Reactors

Safe and Secure Nuclear Electric Generation



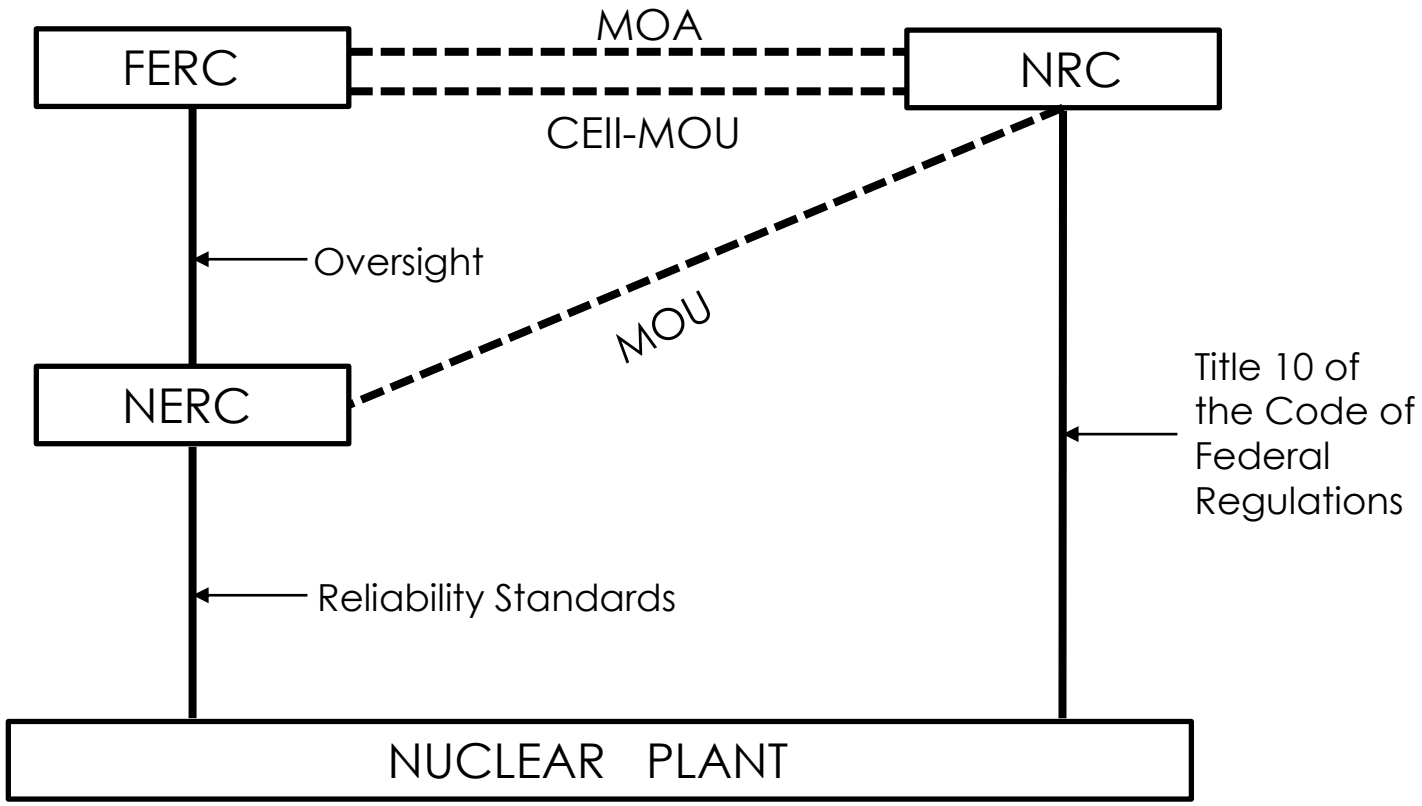
Nuclear Power is a Significant Portion of the U.S. Electric Generation



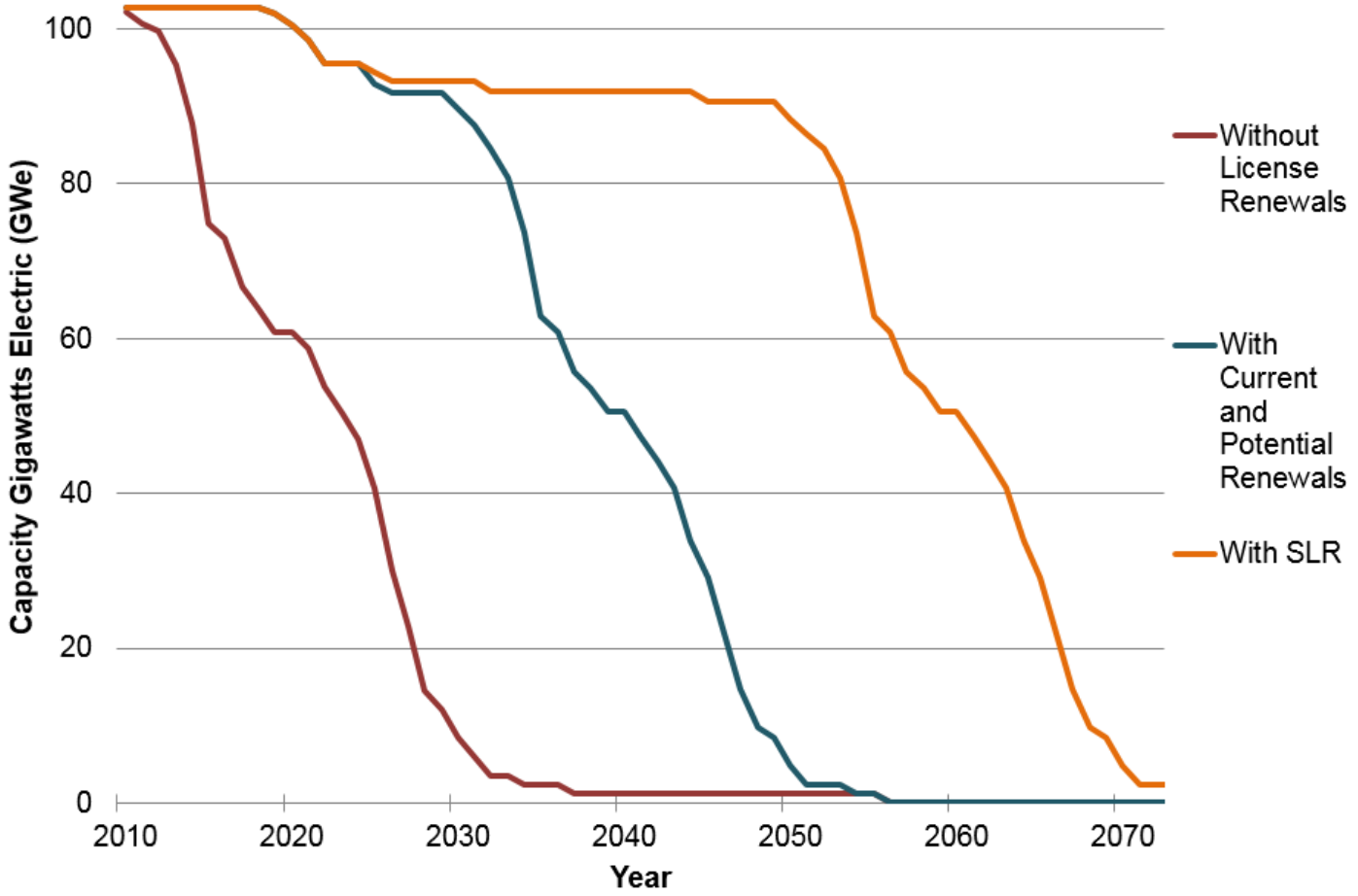
Shana Helton, Deputy Director, Division of Engineering, Office of Nuclear Reactor Regulation

- NRC/FERC/NERC Interactions
- License Renewal
- Subsequent License Renewal
- Decommissioning

Nuclear Safety & Security Enhanced by Interagency Agreements and Interactions



Projected Electric Capacity Dependent on License Renewals

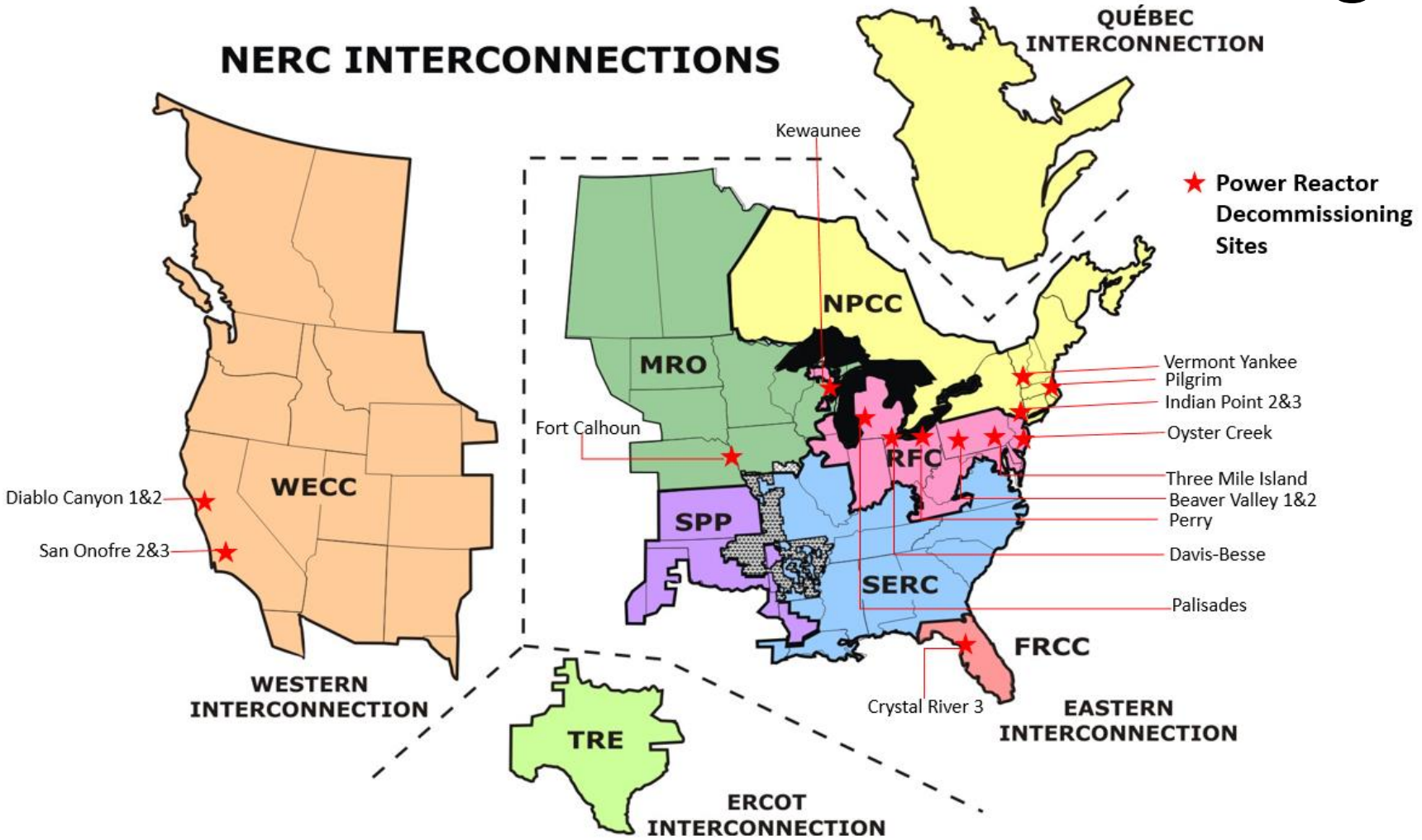


As of May 2018

Subsequent License Renewal (SLR) Moving Forward

- Issued SLR guidance in July 2017 in anticipation of applications
- Reviewing 1 application
- Anticipating 3 more applications between 2018 and 2021
- Making progress on technical issues

Electric Capacity Decreased by Power Reactors Decommissioning



"NERC Interconnections." NERC. Web. 22 May 2018. <https://www.nerc.com>.

Safety Ensured Prior to and During Decommissioning Activities

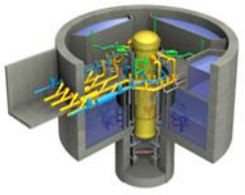
- NRC continues to ensure safety during the entire decommissioning process
  - Timely reviews
  - Draft proposed rule
- Decommissioning rulemaking aligns regulatory requirements to reflect decreased risk at decommissioning sites

Anna Bradford, Deputy Director, Division of Licensing, Siting, And Environmental Analysis, Office of New Reactors

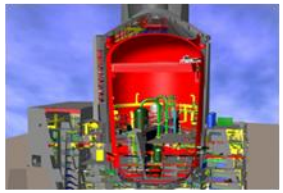
- New Reactors

New Reactor Licensing in the U.S.

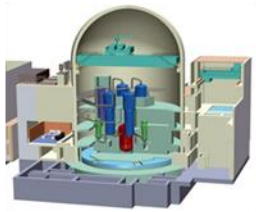
ABWR –
1,300 MWe



ESBWR –
1,500 MWe

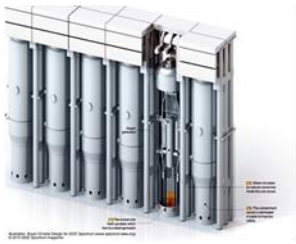


AP1000 –
1,110 Mwe



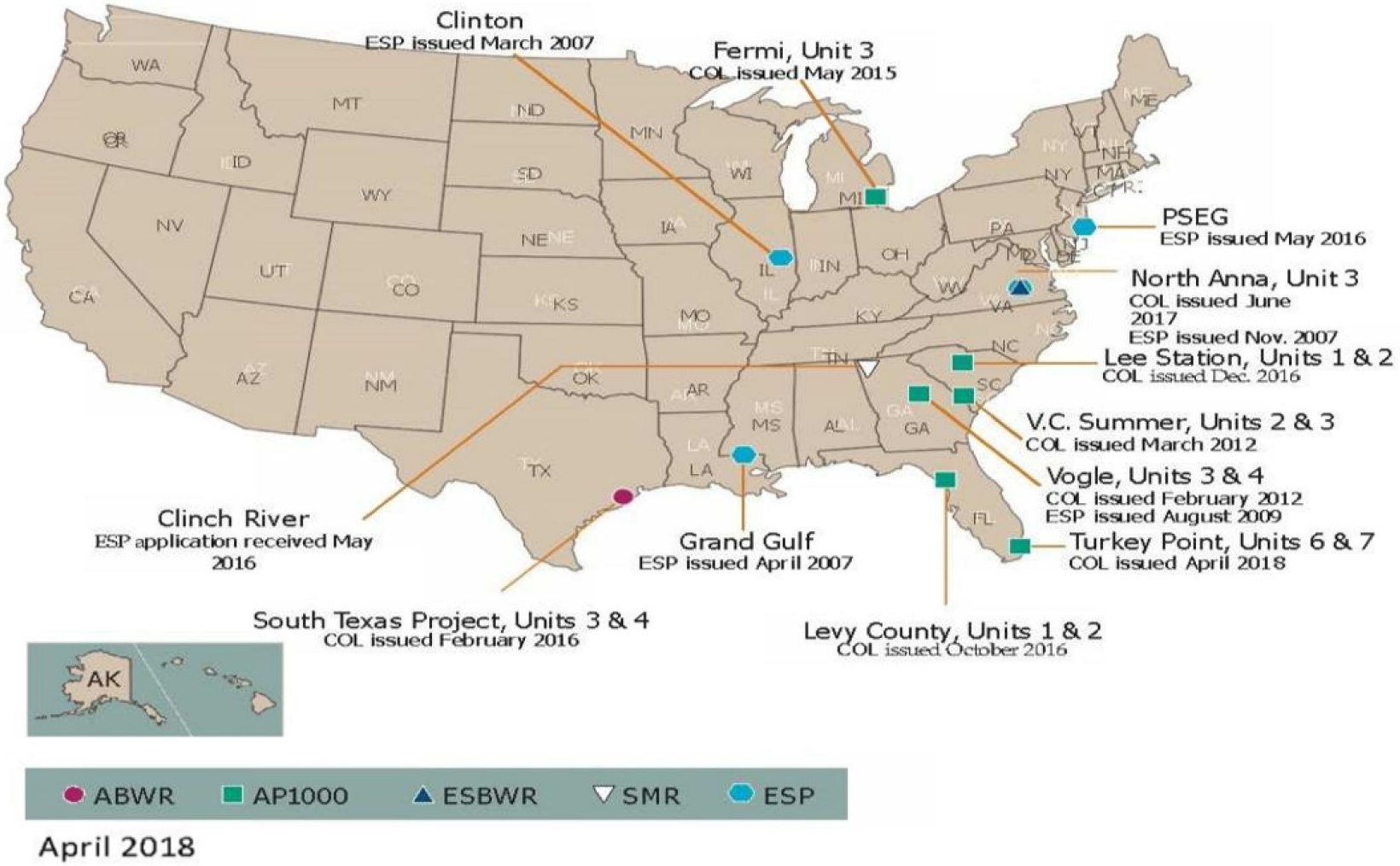
US APWR –
1,700 MWe

APR1400 –
1,450 MWe



NuScale
50 MWe/module

Fourteen Licenses for Light Water Reactors Issued

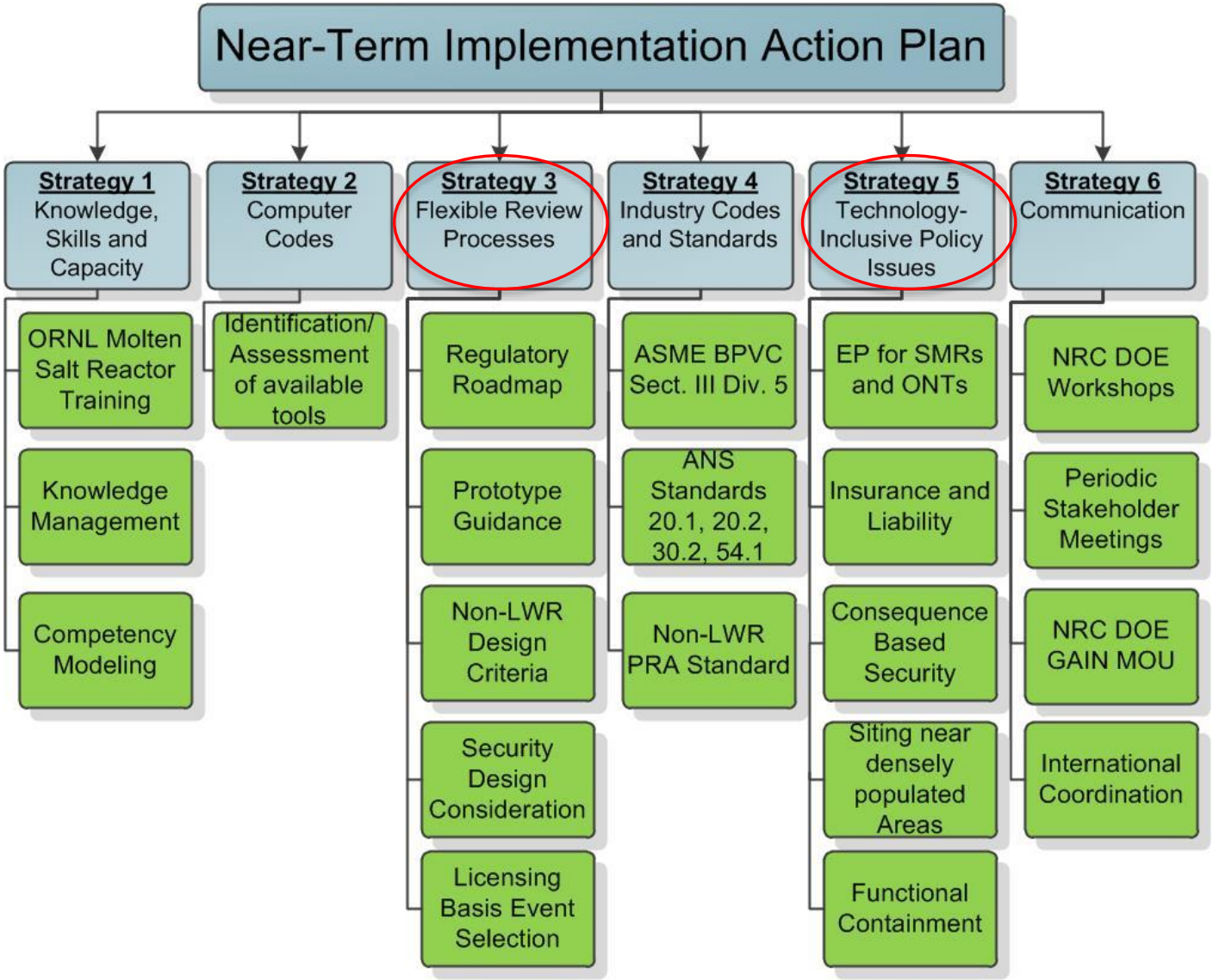


Supporting Small Modular Reactors (SMRs) Efforts

- NuScale Phase 1 review completed on April 16, 2018.
- TVA ESP application for SMR modules submitted in December 2016.
- UAMPS plans to reference the NuScale design.

Executing the Vision and Strategy

Making Progress in the Near-Term



Supporting Early Preapplication Interactions

Developer	Design	Power	Technology
Oklo Inc.	Oklo	~2 MWe*	Compact Fast Reactor
Transatomic Power	Transatomic	Small scale	Molten Salt Reactor
Terrestrial Energy	Integral Molten Salt Reactor (IMSR)	~190 MWe*	Molten Salt Reactor
X-Energy	Xe-100	~76 MWe*	Modular High Temperature Gas-Cooled Reactor (Pebble Bed)
TerraPower	Molten Chloride Fast Reactor (MCFR)	~1000 MWe*	Molten Salt Reactor

*Estimated output based on conceptual design information, subject to change

Acronyms

- CEII – Critical Energy/Electric Infrastructure Information
- ESP – Early Site Permit
- FERC – Federal Energy Regulatory Commission
- IAP – Implementation Action Plans
- MOA – Memorandum of Agreement
- MOU – Memorandum of Understanding
- MWe – Megawatt electric

Acronyms

- NERC – North American Electric Reliability Corporation
- NPP – Nuclear Power Plant
- SLR – Subsequent License Renewal
- SMR – Small Modular Reactor
- TVA – Tennessee Valley Authority
- UAMPS – Utah Associated Municipal Power Systems