



Florida Electric Power
Coordinating
Group

Industry Report on Policy & Regulatory Issues Related to Advanced Nuclear Development

FPSC Advanced Nuclear Staff Workshop
Tallahassee, Florida
September 5, 2024

Presenters: Jacob Williams, FCG Board of Directors, Chair
Lauren Sher, FCG Next Generation Nuclear Workgroup, Chair

FCG BACKGROUND

For more than 52 years, the FCG is the umbrella organization in Florida that has represented investor-owned utilities, rural electric cooperatives, and municipal electric utilities on environmental, transportation, and mutual aid assistance issues affecting the utility industry.



FCG Members

City of Lake Worth Utilities
City of Lakeland (Lakeland Electric)
City of Tallahassee
Duke Energy-Florida
Florida Municipal Power Agency
Florida Power & Light Company
Gainesville Regional Utilities
Homestead Energy Services
JEA
Ocala Electric Utility
OUC
Central Florida Tourism Oversight District
Seminole Electric Cooperative, Inc.
Sumter Electric Cooperative
Tampa Electric Company

FCG Associate Members

Homestead Energy Services
Kissimmee Utility Authority
Florida Public Utilities
PowerSouth Energy Cooperative
Central Florida Electric
Escambia River Electric
Glades Electric Cooperative
Okefenokee Rural Electric
Peace River Electric
Withlacoochee Electric



FCG Next Generation Nuclear Workgroup

- FCG recently convened the Next Generation Nuclear Workgroup (NGNW) to discuss the potential state, legal, and regulatory changes that may be needed to move advanced nuclear projects forward over the next decade in Florida.
- Lauren Sher, from FPL, is the 2024 Chair of the NGNW



Support for nuclear is widespread, but many of the incentives available today are focused on first movers and technology development, not deployment

Regulatory and Incentive Summary

- At the federal level, nuclear is seeing support through government funding efforts as well as regulatory changes to speed up permitting
 - Government funding is currently offered through tax credits, grants and loans
 - NRC rule changes regarding permitting are progressing with final action on Part 53 expected at the end of 2025
- Many states have created working groups to discuss opportunities and regulations for new nuclear
 - Some states, such as Illinois, have undertaken studies to understand the impact of new nuclear in their state
 - The Idaho Office of Energy and Mineral Resources has convened a workgroup to establish an “Advanced Nuclear Energy Strategic Framework”
 - The workgroup’s mission is to promote economic development opportunities around the technology in the state

While there are many initiatives to support new nuclear at the federal level, many of the programs will not have a significant impact on projects for several years

Federal government can provide support for nuclear through tax credits, grants and loans

Federal Funding Opportunities

Federal Tax Credits

- IRS Incentives⁽¹⁾
- **IRC Sec:**
 - 30% ITC (48E) is a technology-neutral ITC for the COD year of the facility
 - \$30.0/MWh⁽¹⁾ PTC (45Y) is a technology-neutral, emissions-based PTC for facilities placed in service after 2025
- \$18/MWh advanced nuclear tax credit under Section 45J for new nuclear generation for facilities built before 2021⁽¹⁾
- 45X manufacturer credit may be of interest to certain equipment and component manufacturers

DOE Grants

- Gen III + SMR Pathway to Deployment Program⁽²⁾
 - \$800 MM for up to two projects focused on first mover support
 - \$100 MM used for fast follower support spread out across multiple awards
- Low Enriched Uranium (LEU) Enrichment Acquisition Program
 - Up to \$3.4 B focused on securing a non-Russian supply chain
 - \$2.7 B has already been appropriated to DOE who will then sell the LEU to operating U.S. facilities

DOE Loans

- DOE Loan Program Office (LPO) can provide loan to support Advanced Nuclear projects
 - LPO originally allocated \$310 B for Title 17 financing
 - ~\$60 B remaining
 - Funds must be committed by September 2026 and used by September 2031
- LPO has recently provided support to two nuclear projects
 - \$12 B in loan guarantees for Vogtle
 - \$1.5 B loan guarantee for Palisades restoration

1) Many of the tax credit programs cannot be stacked

2) Program is focused on project teams made up of developers, suppliers, customers, etc.

NRC current licensing processes are based on legacy nuclear technology, namely large-scale light water reactors

NRC Background and Strategies

- NRC licensing experience for commercial reactors is based on large-scale light water reactors (LWRs)
 - Light water reactors require large security and emergency planning areas; licensing processes are lengthy due to extended NRC reviews (environmental reviews typically take three years to complete)
 - Current licensing processes require each proposed reactor to be treated as a unique license since there are no standard reactor designs
- NuScale, a LWR, is the only standard design approved by the NRC
 - Design approval means the NRC will not revisit the technical plant design aspects but will review site specific details
- NRC has also proposed alternative security, physical and emergency preparedness requirements for SMRs
 - Updated requirements specific to SMRs would facilitate development of new advanced reactor projects

Recent interest in SMR technology has spurred industry groups to push for accelerated permitting processes

Permitting Process OVERVIEW

- Two current NRC licensing pathways:
 - 1) Part 50 is a two-step process with a construction permit followed by an operating license
 - 2) Part 52 is a combined construction and licensing process that references an approved reactor design
 - These are traditional, prescriptive and lengthy licensing processes
- Third proposed NRC licensing pathway for SMRs:
 - 3) Part 53 is a proposed risk-informed licensing process specifically designed for advanced reactor design⁽¹⁾
 - Intended to be more streamlined and efficient than the Standard Review Plan and can be completed within two years
 - Rulemaking is in progress for Part 53 pathway, including on-going industry feedback; NRC needs to provide additional clarity on site specific requirements (e.g., security) and the sequence of licensing steps
- There is some risk that limited NRC resources could adversely impact permitting timelines for select later applicants

1) Source: <https://www.nrc.gov/reactors/new-reactors/advanced/rulemaking-and-guidance/part-53.html>

NRC's forecast final rule on Part 53 will be submitted to Commission by December 2024, with final rule expected to be issued by July 2025

The bipartisan ADVANCE Act, passed earlier this year, aims to modernize licensing new reactor technologies

Federal Legislative Update

- Congress passed the bipartisan (Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy) ADVANCE Act in early 2024; legislation creates new authority for the NRC to prioritize and streamline permitting for new nuclear
 - Reduces the cost of NRC permitting of advanced reactor designs
 - Requires the NRC to issue a combined license not later than 25 months after the date of which the Commission accepts an application
 - Incorporates efficient process for National Environmental Review Act (NEPA) by consolidating reviews and increasing funding for increased agency workload
 - NRC must consider existing site-specific environmental data and previously approved environmental reviews which would allow for existing environmental review documents to be utilized for new applications
 - Requires the NRC to speed up permitting when using site locations that have retired or retiring fossil generation or at a brownfield site; rulemaking to follow
 - NRC must complete rulemakings for several of the recently passed provisions, which will take two to three years for full implementation

A handful of states have adopted pro-SMR incentives and policies

Recent State Level Actions

- Alaska
 - In 2022, Senate Bill 177 was enacted, which makes it easier to obtain permits for microreactors in Alaska
- Iowa
 - In April 2024, Iowa enacted HF 2279 to allow for advanced ratemaking for utilities with nuclear facilities
 - While there are no direct incentives for SMRs in Iowa, state policymakers and the state's economic development leadership remain interested in nuclear
- Illinois
 - In 2023, HB 2473 was enacted, which started the process for the creation of a regulatory structure for the construction of SMRs, and requires the state to perform a study that will inform rules for regulating SMRs, which is set to be adopted by state regulators by January 2026

A handful of states have adopted pro-SMR incentives and policies

Recent State Level Actions (continued)

- Idaho
 - In 2023, House Bill 93 was enacted, shifting the existing “renewable energy” definition to a “clean energy” definition inclusive of nuclear generation
- Tennessee
 - Governor Bill Lee stated his support for SMRs, and partnered with the state’s General Assembly to create a \$50 MM nuclear fund in the states 2023-2024 budget, to help support nuclear development and manufacturing
- Virginia
 - In 2023, the commonwealth enacted the Virginia Power Innovation Fund, which provides \$10 MM in support to the development of advanced energy technology, including SMRs
 - *Additional background: There is a significant interest in SMRs especially given the large number of data centers within the commonwealth, and the governor has publicly stated his desire for an operational SMR by 2032*

A handful of states have adopted pro-SMR incentives and policies

Recent State Level Actions (continued)

- Texas
 - Governor directed PUC to sponsor the Advanced Nuclear Task Force in 2023
 - Advanced Nuclear Task Force directed to study and plan for SMRs; expected to file a report in December 2024
 - Dow and X-Energy announced they are planning to develop a SMR in TX in May 2023
- Wyoming
 - In 2020, Wyoming enacted legislation to authorize the permitting and operation of SMRs, including allowing the operation on previously existing coal or natural gas generation facilities
 - The state took these actions to pave the way for the Terrapower project in southwest Wyoming
 - In 2022, Governor Mark Gordon signed House Enrolled Act 59 to further set the regulatory framework for the Terrapower project
 - SMRs are currently subject to a generation tax of \$5 per MWh, but the 2022 law set a tax exemption if 80% of an advanced nuclear reactor's uranium used for producing electricity is sourced from uranium mines located in the U.S. beginning July 1, 2035

Questions?