

A Commissioner's Perspective on Advanced Reactor Licensing

NRC Commissioner William C. Ostendorff

Advanced Reactors Technical Summit
Oak Ridge, TN

February 11, 2016

Agenda

- U.S. Energy Policy and the NRC's Role
- Part 52 Licensing Experience
- SMR Readiness and Strategies
- Non-LWR Program Strategies

Roles of the NRC and DOE

DOE

- Support development of innovative nuclear power plant design
- Fund grants for development
- GAIN initiative

NRC

- Review and approve license applications
- Assure demonstrated nuclear safety of the design
- Operational oversight and enforcement

Part 52 Experience

- **Design Certifications**

- ABWR (1997)
- Systems 80+ (1997)
- AP600 (2000)
- AP1000 (2006)
- ABWR Amendment (2011)
- AP1000 Amendment (2011)
- ESBWR (2014)
- Under Review: APR1400 and U.S. APWR

- **Early Site Permits**

- Clinton, Grand Gulf, and North Anna (2007)
- Vogtle (2009)
- Under Review: PSEG site

Part 52 Experience (cont.)

- Combined Licenses Issued
 - Vogtle Units 3 and 4 (AP1000s) issued 2012
 - Summer Units 2 and 3 (AP1000s) issued in 2012
 - Fermi Unit 3 (ESBWR) issued in 2015
- COL Hearing in progress
 - South Texas Units 3 and 4 (ABWR) - Licensing decision expected in early 2016
- COLs Under Review
 - Levy (AP1000)
 - Lee (AP1000)
 - Turkey Point (AP1000)
 - North Anna (ESBWR)
- Part 50 License issued to Watts Bar Unit 2 in 2015
 - Commercial Operation planned for 2016

Small Modular Reactors

mPower™

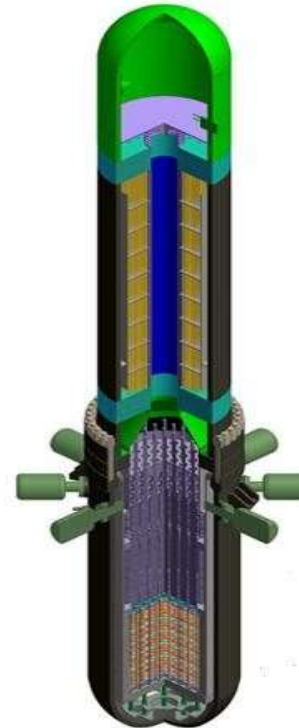


Babco



NuScale

Westinghouse SMR



Holtec SMR-160

Preparing for SMR reviews

- Pre-Application Reviews
- Design Specific Review Standards
- Standard Review Plan Updates
- Policy Issues

Strategies for Successful SMR Reviews

- Complete High Quality Applications
 - Mature design with sufficient design detail
 - Justify new design features, methods, and alternative licensing strategies
 - Minimize design changes after submittal

U.S. Non-LWR Experience



Fermi Unit 1 – Sodium Cooled Faster Breeder Reactor



Peach Bottom Unit 1 - HGTR



Fort St. Vrain - HGTR

Non-LWR Program

- Strategically prepare for non-LWR applications
- Activities underway
 - Technical Preparation
 - Licensing Process Preparation
 - Outreach

Non-LWR Preparation

- **Non-LWR General Design Criteria (GDC)**
 - DOE proposed GDC for non-LWRs
 - NRC staff reviewed DOE report and is developing proposed GDCs for non-LWR designs
 - Staff plans to publish draft non-LWR GDC for comment in March 2016.
 - Staff plans to publish regulatory guide in early CY2017.

Non-LWR Preparation

- Processes to provide interim feedback on innovative designs
 - Step-wise review approach
 - Use current NRC regulations (i.e., pre-application SERs or topical reports)
 - Expecting to receive white paper with industry proposal in early 2016

Non-LWR Preparation Challenges

- Wide variety of technologies
- Lack of design maturity and specificity
- Uncertainty in plans for potential applications
- NRC funding limitations
 - Fee-Recoverable Agency



Summary

- NRC will continue to engage with prospective applicants and other stakeholders to resolve technical and policy issues while remaining focused on fulfilling its safety and security mission
- Success requires common vision of goals and objectives and engagement from potential applicants and external stakeholders