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

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<th>DOE</th>
<th>NRC</th>
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<tr>
<td>• Support development of innovative nuclear power plant design</td>
<td>• Review and approve license applications</td>
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<td>• Fund grants for development</td>
<td>• Assure demonstrated nuclear safety of the design</td>
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<td>• GAIN initiative</td>
<td>• Operational oversight and enforcement</td>
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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™

NuScale

Westinghouse SMR

Holtec SMR-160

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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