U.S. Nuclear Regulatory Commission’s Non-Light Water Reactor Licensing Activities

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Outline

• Vision and Strategy
• Implementation Action Plans
• Flexible Review Processes
• Early Resolution of Issues
• Pre-application Interactions
• Stakeholder Engagement
Executing the Vision and Strategy
Near-Term Implementation Action Plan

Strategy 1
- Knowledge, Skills and Capacity
  - ORNL Molten Salt Reactor Training ✓
  - Knowledge Management
  - Competency Modeling ✓

Strategy 2
- Computer Codes
  - Identification/Assessment of available tools

Strategy 3
- Flexible Review Processes
  - Regulatory Roadmap ✓
  - Prototype Guidance ✓
  - Non-LWR Design Criteria
  - Licensing Modernization Project:
    - LBE Selection
    - Defense in Depth
    - PRA Approach
    - SSC Safety Classification

Strategy 4
- Industry Codes and Standards
  - ASME BPVC Sect. III Div. 5
  - ANS Standards 20.1, 20.2, 30.2, 54.1
  - Non-LWR PRA Standard

Strategy 5
- Technology-Inclusive Policy Issues
  - Siting near densely populated Areas
  - Insurance and Liability
  - Consequence Based Security
  - EP for SMRs and ONTs
  - Functional Containment Performance Criteria

Strategy 6
- Communication
  - NRC DOE Workshops ✓
  - Periodic Stakeholder Meetings
  - NRC DOE GAIN MOU
  - International Coordination

IAPs – Making Progress in the Near-Term
Clarifying Flexible Review Processes

- Manufacturing License
- Preapplication Assessment
- Standard Design Approval
- Research or Test Reactor
- Many paths available
- Construction Permit
- Combined License
- Operating License
- Design Certification
Resolving Key Policy Issues Early

• Non-LWR Design Criteria
• Risk-Informed and Performance-Based Licensing Basis Event Selection
• Functional Containment Performance
• Consequence Based Security
• Emergency Preparedness Rulemaking
## Pre-Application Interactions

- Pre-application underway with Oklo, Inc.
  - Core Review Team Approach
- Additional pre-application reviews anticipated in FY2018 and FY2019

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<th>Design</th>
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Robust Stakeholder Engagement

- Successful outreach
- Periodic stakeholder meetings
- Coordination with DOE
- International cooperation
Summary

• NRC is executing its Vision and Strategy -
  – Transitioned from strategic planning to execution of implementation action plans to prepare for anticipated applications

• Near term-priority is on advancing risk-informed and performance-based approaches and resolution of key policy issues

• Significant outreach and close coordination with external stakeholders
Questions?
References

- NRC Vision and Strategy (ML16356A670)
- Implementation Action Plans (IAPs)
  - Near-Term (ML17165A069)
  - Mid- and Long-Term (ML17164A173)
- Regulatory Review Roadmap (ML17312B567)
- Draft Functional Containment Performance Criteria White Paper (ML18010A516)
- Draft Physical Security White Paper (ML17333A524)
- Final Regulatory Basis for Emergency Preparedness Rulemaking (ML17206A265)
- SECY-18-0011, “Advanced Reactor Program Status” (ML17334B217)