NRC’s Non-Light Water Reactor Licensing Activities

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Session TH26
Advanced Reactors: Licensing Readiness 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
Making Progress in the Near-Term

Clarifying Flexible Review Processes

Resolving Key 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

<table>
<thead>
<tr>
<th>Developer</th>
<th>Design</th>
<th>Power</th>
<th>Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oklo Inc.</td>
<td>Compact Fast Reactor</td>
<td>7 MWt</td>
<td></td>
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<tr>
<td>Transatomic Power</td>
<td>Transatomic Small scale Molten Salt Reactor</td>
<td>Small scale Molten Salt Reactor</td>
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<tr>
<td>Transatomic Power</td>
<td>Integral Molten Salt Reactor (IMSR)</td>
<td>400 MWt</td>
<td>Molten Salt Reactor</td>
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<tr>
<td>X Energy</td>
<td>Modular High Temperature Gas-Cooled</td>
<td>60-100</td>
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<tr>
<td>X Energy</td>
<td>Molten Chloride Fast Reactor (MCFR)</td>
<td>200 MWt</td>
<td>Molten Salt Reactor</td>
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</tbody>
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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
• NRC is focused on implementing risk-informed and performance-based approaches to resolving key issues
• Continued stakeholder input is vital for success
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 (ML17334A155)
- Draft Physical Security White Paper (ML17333A524)
- Final Regulatory Basis for Emergency Preparedness Rulemaking (ML17206A265)