OPPD’s Fort Calhoun Station

A History of Power and Pride

January 12, 2017
Agenda

• Decommissioning Overview
  – Decision
  – Options
  – Phases

• FCS-Specific Update
  – Milestones
  – Activities
  – Employees and Communities

• Open Forum Discussion
Decommissioning Decision-Making Process

• Financial stewardship – maintain corporate health, reputation and goodwill
• Regulatory flexibility – provide margin while maintaining industry-best safety
• Customer-owners, communities and company – *Your Energy Partner*
Nuclear Decommissioning Options

- Safety is paramount
- Decommissioning must be completed within 60 years of the plant’s cessation of operations
- DECON (deconstruction) – immediate dismantling
- SAFSTOR (safe storage) – deferred dismantling
- Entomb
  - Radioactive contaminants are permanently encased on site in structurally sound material, such as concrete
  - No utility has requested this option
Decommissioning Phases

• End-of-Life Operation:
  the period from
decommissioning decision
until permanent shutdown
on Oct. 24, 2016
  – Continue safe operation of
    the plant
  – Final reactor shutdown
  – Develop / activate approved
    series of decommissioning
    procedures and project plans
  – Decommissioning planning
Decommissioning Phases

- **Decommissioning Phase 1**: Period from shutdown until permanent fuel removal (Oct. 24 – Nov. 7, 2016)
  - Defuel reactor vessel
Decommissioning Phases

- **Decommissioning Phase 2:**
  - Period from permanent defueling until fuel energy has sufficiently decayed, providing additional response margin in the unlikely event of a loss of cooling (Nov. 7, 2016 – April 7, 2018)
  - Implement defueled license and technical specifications
  - Initiate plant configuration for SAFSTOR
  - Maintain spent fuel pool configuration / cooling
Decommissioning Phases

- **Decommissioning Phase 3**: ~5 year period from the end of fuel cooling until the fuel pool is empty and bundles are in the Independent Spent Fuel Storage Installation (ISFSI)
- **Decommissioning Phase 4**: Period from fuel in the ISFSI until license termination
- **Decommissioning Phase 5**: The period of site restoration following license termination
# Decommissioning Status


<table>
<thead>
<tr>
<th>Reactor</th>
<th>Location</th>
<th>Capacity (MW)</th>
<th>Ceased Operations After 2000</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystal River 3</td>
<td>Crystal River, FL</td>
<td>860</td>
<td>2/20/2013</td>
<td>SAFSTOR</td>
</tr>
<tr>
<td>Kewaunee</td>
<td>Carlton, WI</td>
<td>556</td>
<td>5/7/2013</td>
<td>SAFSTOR</td>
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<tr>
<td>San Onofre 2 and 3</td>
<td>San Clemente, CA</td>
<td>1,127 each</td>
<td>6/12/2013</td>
<td>DECON</td>
</tr>
<tr>
<td>Vermont Yankee</td>
<td>Vernon, VT</td>
<td>605</td>
<td>12/29/2015</td>
<td>SAFSTOR</td>
</tr>
</tbody>
</table>

* A number of reactors have completed DECON, but many started in SAFSTOR.
SAFSTOR – Deferred Dismantlement

• Advantages
  – Improved regulatory and financial flexibility
  – More time to accumulate funding
  – Radioactive waste classifications may shift
  – Take advantage of technology improvements

• Disadvantages
  – Site-specific expertise
  – Funding growth subject to market changes
2016 Decommissioning Milestones

- OPPD board decision: June 16
- Submit permanent shutdown letter to NRC: June 24
- Employee notifications: Sept. 1
- Permanently cease operations: Oct. 24
- Fuel loaded in spent fuel pool: Nov. 7
- Submit permanently defueled letter to NRC: Nov. 14
Decommissioning Planning Progress

- Preparing for decommissioning
  - Post-Shutdown Decommissioning Activities Report (PSDAR)
  - Decommissioning Cost Estimate (DCE)
  - Limited Site Characterization
  - License Amendment Requests
  - Fuel decay heat analysis and calculations
  - De-scoping work no longer required
  - Benchmarking industry for lessons learned
Employee Career Transition

• Career Transition Experience
  – Job search roadmap
  – Meaningful connections
  – One-on-one coaching
  – Employer spotlights
  – Resiliency
  – Assessment
  – Skill-building
  – Education
We Honor our Community

- Ongoing commitment to safety throughout decommissioning
- No projected general rate increase through 2021
- Recover and eventually repurpose the 600-acre site →

OPPD will continue to be a great community partner
Thank you for your support!