Dry Cask Storage Defense-in-Depth

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Dry Cask Storage Defense-in-Depth

Regulatory Oversight

Design

Fabrication

Operations, Maintenance & Security

Inspection

Remediation

“Aging Management”
Historical References

- **Design**: 07/23/15, 09/15/16, 09/14/17
- **Fabrication**: 07/23/15, 09/15/16, 09/14/17
- **Operations, Maintenance & Security**: 09/15/16, 09/14/17
- **Inspection**: 10/14/14, 07/23/15, 09/15/16, 09/14/17
- **Remediation**: 07/23/15, 09/15/16, 09/14/17
Today’s Discussion

- Design
- Fabrication
- Inspection
### Aging Management Implementation Timing

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<tr>
<th>Storage System</th>
<th>Program</th>
<th>Implementation</th>
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<tr>
<td>AREVA NUHOMS</td>
<td>Aging Management Program</td>
<td>2023</td>
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<tr>
<td>Holtec HI-STORM</td>
<td>Inspection &amp; Maintenance</td>
<td>2020</td>
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SONGS Canister Improvements

• Design
  – 316L stainless steel due to marine environment
  – 5/8-inch thick shell (1/2-inch is industry standard)

• Fabrication
  – Improved weld design minimizes heat affected zone
  – Laser peening welds further reduces susceptibility
  – Steel rolling technique minimizes residual stresses

  Reduced susceptibility to chloride induced stress corrosion cracking
Fabrication Improvement: Peening Canister Welds
Holtec Inspection Improvements

- Test canister to reflect actual conditions (minus spent fuel) of most likely conditions for CISCC
  - Heated to mirror conditions for loaded canisters
  - Located in spot on pad near ocean
- Also available for inspection tool development
- Special Holtec lid will allow for inspections
## Inspection Equipment Status

<table>
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<tr>
<th>System</th>
<th>Robotics</th>
<th>Inspection Ring</th>
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<tbody>
<tr>
<td>AREVA TN</td>
<td>Available</td>
<td>Available</td>
</tr>
<tr>
<td>Holtec UMAX</td>
<td>Pending</td>
<td>Available</td>
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AREVA inspection ring