Barnwell Complex
South Carolina Nuclear Advisory Council

All you need in radioactive and hazardous waste management
Safety

- **Barnwell Complex**
  - First aids – 0
  - Total Recordable Case Rate (TRC) – 0.0
  - Days Away, Restricted or Transferred (DART) – 0.0
  - Days Away Case (DAC) – 0.0

- **National Safety Council**
  - 2016 Perfect Record Award
  - 2016 Safety Leadership Award
Barnwell Disposal Facility (BDF)

Blue indicates areas available for future waste disposal.
Yellow indicates closed areas.
- 235 Acres Owned by the State of South Carolina
  - *EnergySolutions* leases the facility from South Carolina
  - *EnergySolutions* operates the disposal facility under SC DHEC Radioactive Material License 097
- Atlantic Compact member
  - Acceptance of Class A/B/C waste shipments 7 days per week
  - Acceptance of large components and irradiated hardware shipments
- Institutional Activities
  - Site maintenance
  - Environmental monitoring
BDF Current Status

- **Atlantic Compact Host Site – SC, NJ, & CT**
  - ~ 95% of the 235 acres under Institutional Care
  - 28 million cubic feet of buried waste consisting of 14.3 million curies
  - ~ 1 million cubic feet of disposal capacity remaining
Class A/B/C Waste Disposal

- All waste arrives by truck
- Most shipments are HIC liners
- Vertical crane lift to place liner in prepositioned DHEC approved vault
- All waste classes in same trench
  - Separate vaults for stable/unstable waste
Large Component Shipments

- Pricing based on case-by-case basis
- Generators are encouraged to coordinate shipments
Recent Annual Waste Volumes Received (Fiscal Years)

* FY09-10 includes large components (27,304 cu ft)

** as of April 6, 2017
## Recent Waste Volumes

<table>
<thead>
<tr>
<th>Waste Type</th>
<th>FY 12/13 cubic feet</th>
<th>FY 13/14 cubic feet</th>
<th>FY 14/15 cubic feet</th>
<th>FY 15/16 cubic feet</th>
<th>FY 16/17* cubic feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routine Utility Waste</td>
<td>8,582</td>
<td>8,366</td>
<td>9,424</td>
<td>8,124</td>
<td>2,730</td>
</tr>
<tr>
<td>Non-Utility Waste</td>
<td>171</td>
<td>13</td>
<td>140</td>
<td>68</td>
<td>22</td>
</tr>
<tr>
<td>Large Components</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Irradiated Hardware</td>
<td>0</td>
<td>115</td>
<td>0</td>
<td>113</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>8,753</td>
<td>8,494</td>
<td>9,564</td>
<td>8,305</td>
<td>2,752</td>
</tr>
</tbody>
</table>

* as of April 6, 2017
BDF Regulatory Agencies

- SC Office of Regulatory Staff (ORS)
  - Sets prices for waste disposal
  - Detailed audits of actual costs

- SC Public Service Commission (PSC)
  - Determines allowable costs

- SC Department of Health and Environmental Control
  - Licenses Radioactive Materials – Disposal
Memorandum of Understanding

- SC Budget & Control Board, SC Department of Revenue and Chem-Nuclear Systems signed MOU June 30, 2009

- Disposal rates and/or access fees cover operating costs plus margin only (Revenue neutral for SC)

- Institutional costs of $2.3M (increased annually by PPI) are disbursed from Decommissioning Trust Fund or Extended Care Fund for maintenance and monitoring of site closed portions

- No use of public funds to cover operational cost shortfalls other than as allowed by law
Atlantic Compact Disposal Rates


- Maximum Uniform Rate Schedule
  - Permanent ceiling on disposal rates applicable to Atlantic Compact waste
  - Adjusted each year in accordance with PPI
  - Pricing based on several factors including:
    - Density and weight
    - Dose rate
    - Radioactivity
    - Biological waste
    - Other charges (Irradiated hardware, SNM, Atlantic Compact Commission)
Atlantic Compact Disposal Rates

- Option B provides Access Fee pricing
  - Annual volume allocation: 538.46 cubic feet per reactor
  - Current Quarterly Access Fee:
    - $87,711.54 per reactor (first and second quarters)
    - $131,749.54 per reactor (third and fourth quarters)
  - Additional volume: $133 per cubic foot (11,500 cubic feet maximum total volume)
  - Utilities can share annual volume allocation with appropriate contract changes
Utility Agreements for FY 2016/2017

- All 5 utilities with 13 reactors chose Option B pricing
- Access Fee determined by Cost of Operations plus statutory margin (29%)
- Budget base is 7,000 cubic feet
- Access Fee reassessed in FY 2016/2017 after lengthy discussions with utilities, and provide stable access fees for a calendar year.
- Proviso fund exhausted
Trust Funds

- Decommissioning Trust Fund
  - Balance as of March 31, 2017: $2,993

- Extended Care Fund
  - Balance as of March 31, 2017: $149,565,247

- FY16/17 Institutional Cap: $2,295,258

- Projected Cost of Phase II Decommissioning: $5,000,000
Barnwell Environmental and Dosimetry Laboratory

- Environmental Monitoring
- Radiological Laboratory
- Radiation Dosimetry
- Engineering Support
- Site Characterization
- Hazardous Material Management
Barnwell Processing Facility (BPF)
BPF

- 17-acre facility that consists of two primary buildings
  - 101 – 7,500 ft^2
  - 201 – 24,500 ft^2

- Services provided
  - Volume reduction
  - Dewatering
  - Waste treatment
  - Decontamination
  - Water processing

- BPF shares a boundary to the west with the Department of Energy Savannah River Site
Hittman Transport Services

- Two Dispatch Terminals
  - Barnwell and Tennessee
- 92 Drivers (Company & Owner Operator)
- 82 Tractors
- Equipment
  - Flat Beds
  - Double & Single Drop Trailers
  - Vans
  - Pup Trailers
  - Curtain Trailers
  - 65-ton Multi Axle Trailer
  - Cask Trailers
  - Tankers
  - Pan Vans
Cask Logistics

- **Key Assets**
  - Proprietary NRC Type B Shipping Casks
    - 10-160B
    - 8-120B
    - 3-60B
  - DOT Type A and IP-II Shipping Casks
    - 8-120A
    - 10-142
    - 14-170 Series
    - 14-190
    - 14-195H
    - 21-300

- **Capabilities**
  - Cask Rental
  - Cask Sales and Maintenance
  - Specialty Package Design, Fabrication, and Licensing

EnergySolutions maintains the largest fleet of licensed shipping casks in the country!
Questions
Thank you