

EnergySolutions Barnwell Complex

South Carolina Nuclear Advisory Council

April 25, 2019



ENERGY SOLUTIONS

problemsolved

*All you need in radioactive and hazardous waste
management*

Safety

■ 2018 Barnwell Complex

- First aids – 3
- Total Recordable Case Rate (TRC) – 0.0
- Days Away, Restricted or Transferred (DART) – 0.0
- Days Away Case (DAC) – 0.0

■ Recent Safety Awards

- 2018 EnergySolutions Presidential Safety Award
- 2016 National Safety Council Perfect Record Award
- 2016 National Safety Council Safety Leadership Award

Barnwell Complex



BDF

- 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

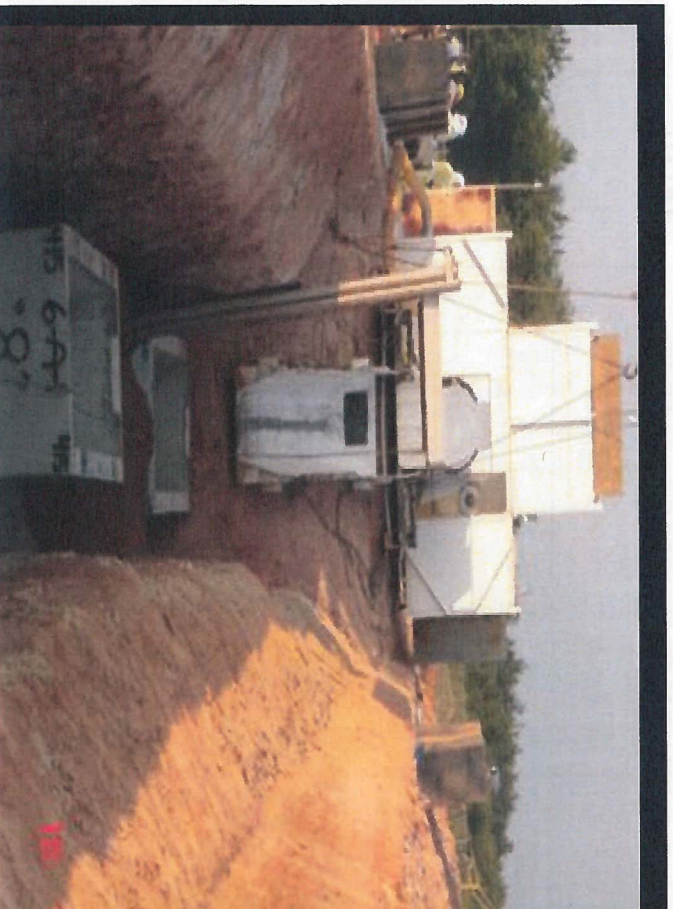
Class A/B/C Waste Disposal

- 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

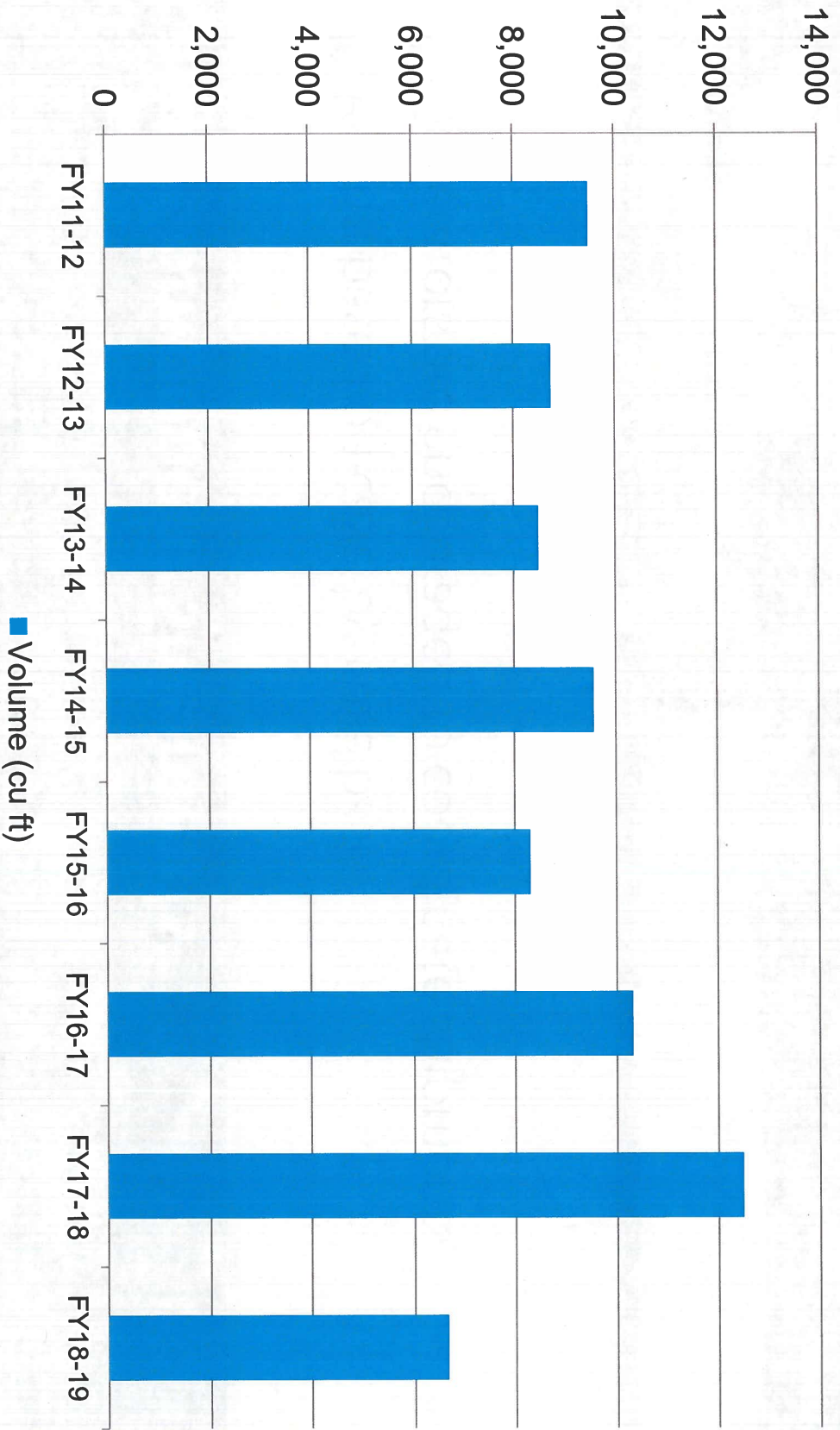


Large Component Shipments

- Pricing based on case-by-case basis
- Generators are encouraged to coordinate shipments



Recent Annual Waste Volumes Received (Fiscal Years)



Recent Waste Volumes

Waste Type	FY 12/13 cubic feet	FY 13/14 cubic feet	FY 14/15 cubic feet	FY 15/16 cubic feet	FY 16/17 cubic feet	FY 17/18 cubic feet	FY 18/19 cubic feet
Routine Utility Waste	8,582	8,366	9,424	8,123	6,510	12,255	6,385
Non-Utility Waste	171	13	140	68	44	235	112
Large Components	0	0	0	0	3,764	0	0
Irradiated Hardware	0	115	0	113	0	0	168
Total	8,753	8,494	9,564	8,304	10,318	12,490	6,665*

* as of April 1, 2019

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

- Disposal rates and/or access fees cover operating costs plus margin only (Revenue neutral for SC)
- Institutional costs are disbursed from Decommissioning Trust Fund or Extended Care Fund for maintenance and monitoring of closed site areas

Atlantic Compact Disposal Rates

- ORS Approves Rate Schedules
- OPTION A: 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)
- OPTION B: Alternative Rate (Access Fee) Schedule for FY 2018/2019 approved by SC Energy Office – effective July 1, 2018

Atlantic Compact Disposal Rates

- Option B Access Fee pricing
 - Quarterly Access Fee per reactor
 - Annual volume allocation: 538.46 cubic feet per reactor
 - Additional volume: \$133 per cubic foot
 - Utilities can share annual volume allocation with appropriate contract changes

Utility Agreements for FY 2018/2019

- 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/year

Trust Funds

- Extended Care Fund

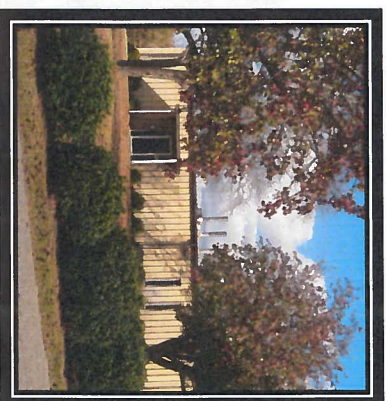
- Balance as of March 31, 2019

\$149,864,491

- Site Characterization
- Engineering Subcontract
- Radiation Dosimetry
- Radiological Reporting
- Environmental Monitoring

Barnwell Environmental and Dosimetry Laboratory

- Environmental Monitoring
- Radiological Laboratory
- Radiation Dosimetry
- Engineering Support
- Site Characterization
- Hazardous Material Management



Barnwell Processing Facility (BPF)



BPF

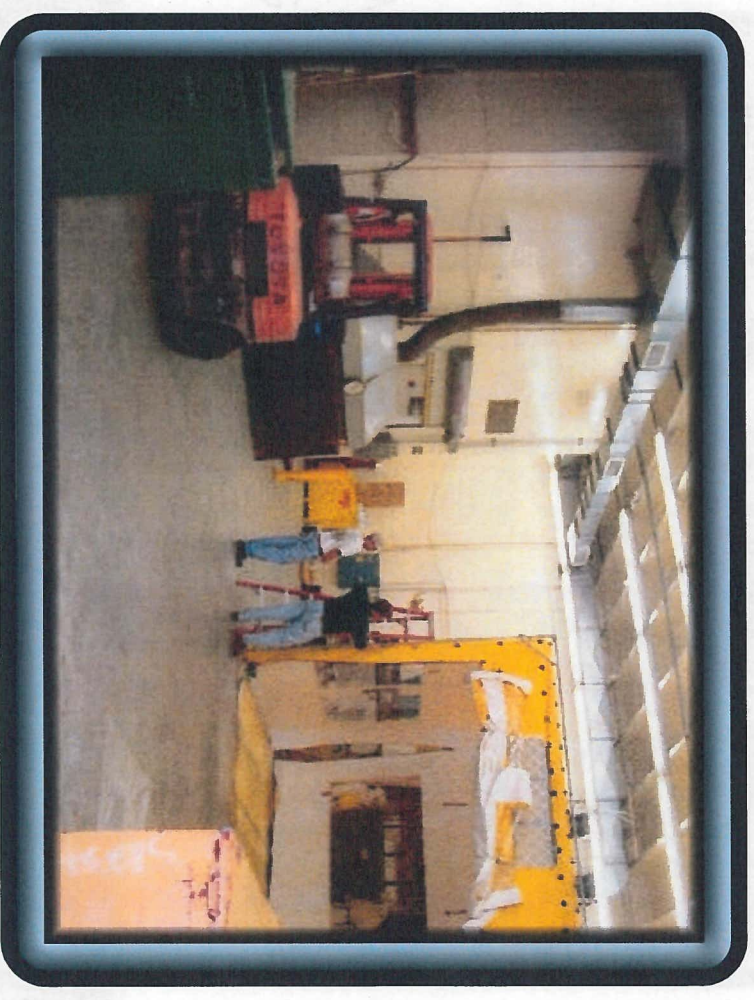
- 17-acre facility that consists of two primary buildings
 - 101 – 7,500 ft²
 - 201 – 24,500 ft²
- Services provided
 - Volume reduction
 - Dewatering
 - Waste treatment
 - Decontamination
 - Water processing
- BPF shares a boundary to the west with the Department of Energy Savannah River Site



www.bpfenergy.com

BPF Building 101

- Climate controlled concrete facility
- 7,500 square feet
- Large open work bay for processing and compacting various radioactive material and waste streams
- Sort and Segregation Facility (SSF)
 - 700 square feet
- Equipment Storage



BPF Building 201

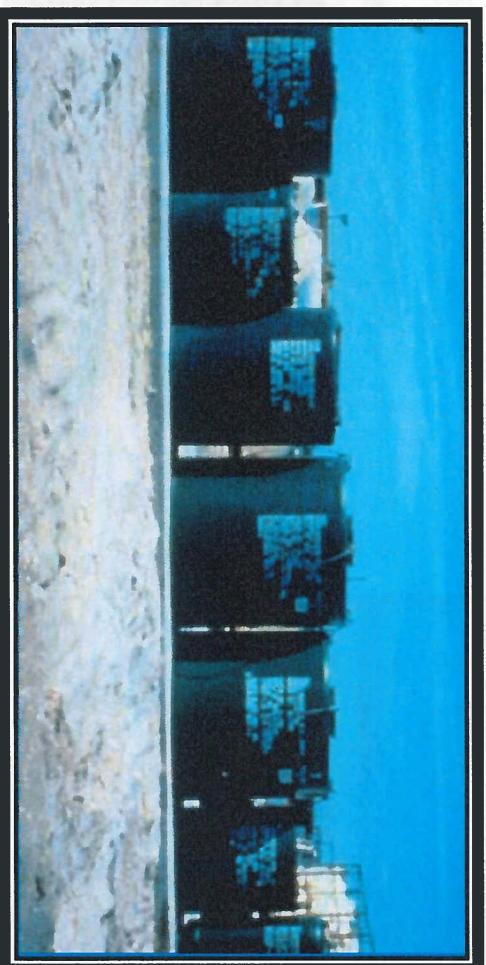
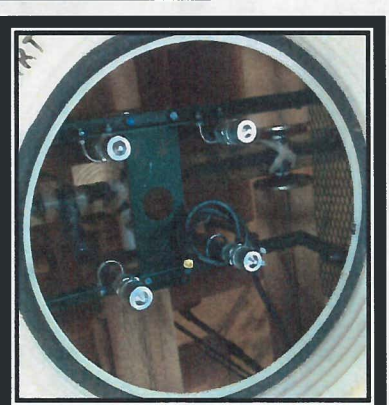
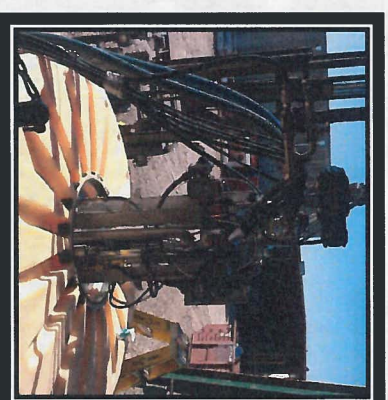
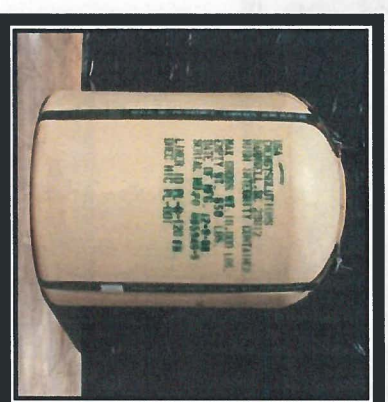
- 24,500 square foot climate controlled concrete facility
- Radioactive Water Processing
- 80-ton overhead bridge crane
- Special projects



Nuclear Services Support Facility

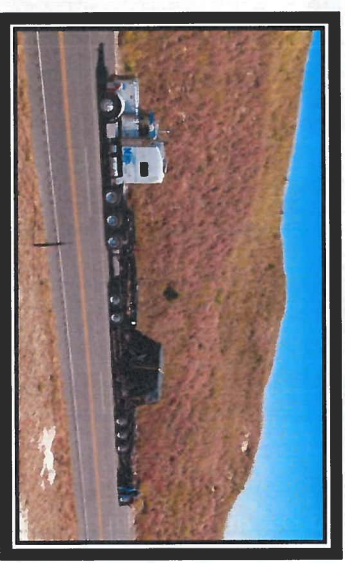
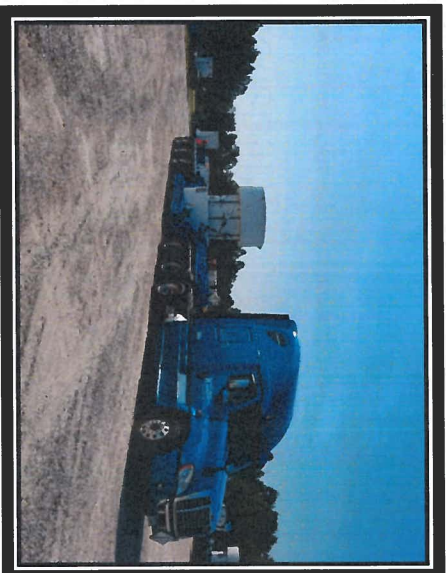
■ Containers

- Waste Shipping, Processing, & Disposal
- Interim and Long-Term Storage
- Addresses Special Packaging Needs
- Large Equipment Packaging
- High Rad
- Proven Design and Reliability



Hittman Transport Services, Inc.

- Three Locations
 - Barnwell, SC
 - Oak Ridge, TN
 - Richland, WA
- Assets
 - 86 Tractors
 - Equipment
 - Flat Beds
 - Vans
 - Curtain Trailers
 - Cask Trailers
 - 80-ton Multi Axle Trailer
 - Tankers
- Capabilities
 - NRC NQA-1 Approved Program
 - New and Used Nuclear Fuel Transport
 - DOE Classified Shipments
 - RAMQC Shipments
 - Integrated Proprietary Cask Fleet
 - Oversize/Overwidth Project Management



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



Energy Solutions
*maintains the largest fleet
of licensed shipping
casks in the country!*

Questions

Thank you

