

**Barnwell Complex Update
Presented at
Governor's Nuclear Advisory Council**

January 9, 2014

Barnwell Complex 


- Safety and Compliance
- Workforce
- Barnwell Disposal Facility (BDF)
- Barnwell Environmental & Dosimetry Lab (BEDL)
- Barnwell Processing Facility (BPF)
- Hittman Transport Services
- Cask Logistics

Safety 

- **Barnwell Complex**
 - First aids – 3
 - Total Recordable Case Rate (TRC) – 2.0
 - Days Away, Restricted or Transferred (DART) – 5.0
 - Days Away Case (DAC) – 1.0
- **Safety Observation Checklist Program**
- **National Safety Council**
 - 2013 Perfect Record Award
 - 2013 Safety Leadership Award
- **Hittman Transport Services**
 - 2013 2nd Place Regional Fleet of the Year

Compliance 

- **43 Years of Uninterrupted Operations**
- **EnergySolutions Operation Assessments/Observations**
 - Internal, external, and independent assessments
 - Management Field Observations
- **DHEC Licensing and Oversight** (5 radioactive material licenses)
 - On-site inspector – all disposal shipments inspected
 - Engineers - weekly disposal site inspections
 - Staff - unannounced semi-annual license inspections
 - 2013 – 0 NOV's

Workforce 

- EnergySolutions employees in South Carolina – 232
 - Barnwell Disposal Facility – 36
 - Barnwell Processing Facility – 10
 - Hittman – 4
 - Cask Logistics – 4
 - Other ES Operations in Barnwell – 32
 - Aiken/Columbia Offices – 146
- Average length of employment at Barnwell Complex
 - Over 20 years

BDF 



Blue indicates areas available for future waste disposal.
Yellow indicates closed areas.



BDF



- 235 Acres Owned by the State of South Carolina
 - EnergySolutions leases the facility from South Carolina Budget and Control Board
 - 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 Configuration



Not to Scale

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

Disposal Site Key Event Dates

ENERGYSOLUTIONS

- 1969 License to receive and store LLRW
- 1971 License to dispose of LLRW in 17.2 acres
 - Extended Care Maintenance Fund established
- 1976 Lease amended to 235 acres
- 1980 US LLRW Policy Act passed
- 1981 Decommissioning Trust Fund established
- 1982 SC joins Southeast Compact
- 1985 US LLRW Policy Act Amendment passed
- 2000 SC joins Atlantic Compact with NJ & CT

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Class A/B/C Waste Disposal

ENERGYSOLUTIONS

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




Irradiated Hardware & Large Component Shipments

ENERGYSOLUTIONS


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



Barnwell Site Regulatory Agencies 


- SC Budget and Control Board (B&CB)
 - Sets prices for waste disposal
- SC Public Service Commission (PSC)
 - Determines allowable costs
- SC Office of Regulatory Staff (ORS)
 - Detailed audits of actual costs
- SC Dept. of Health & Environmental Control
 - Licenses radioactive materials - disposal

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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 only (Revenue neutral for SC)
- Institutional costs of \$2.02 million (increased yearly by PPI, \$2.17 m FY13/14) disbursed from Decommissioning Trust 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

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Atlantic Compact Disposal Rates 

- Alternative Rate Schedule for FY 2013/2014 approved by SC B&CB on July 1, 2012
- Individual reactors may elect Option B Access Fee pricing
- Interim revenue requirement for Option B participants for 7,000 cubic feet: \$4,561,000
 - Each Option B participant allocated an equal share of the volume and equal quarterly access fee
 - Differential to projected interim revenue requirement of \$5,829,503 made up from budget proviso funds
- Other generators use Maximum Uniform Rate Schedule

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Utility Agreements for FY 2013/2014

- All 5 Utilities with 13 Reactors chose Option B pricing
- Quarterly access fee: \$87,711.54 per reactor
- Annual volume allocation: 538.46 cubic feet per reactor
- Additional volume: \$133 per cubic foot (11,500 cubic feet maximum total volume)
- Utilities can share annual volume allocation with appropriate contract changes

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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)


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BEDL

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




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Closure Performance Objectives 

- License 097, Condition 98, 16 performance objectives
- License 097, Condition 99, requires closure plan and adequate financial assurance
- Phase I Closure Performance Objective Plan
 - Ensures compliance with closure performance objectives

Phase 1 Closure Completed June 2013

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Long-Term Financial Assurances 

- Decommissioning Trust Fund
 - Balance on 9/30/13:
 - \$4.185 million
- Extended Care Maintenance Fund
 - Balance on 9/30/13:
 - \$145.521 million

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BPF 



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BPF 


- 17-acre facility that consists of two primary buildings
 - 101 – 7,500 ft²
 - 201 – 20,000 ft²
- Services provided
 - High Activity Filter Processing
 - Volume reduction
 - Dewatering
 - Waste treatment
 - Decontamination
 - Water processing
- The BPF shares a boundary from the west with the Department of Energy Savannah River Site




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
- Super compactor



BPF Building 201 

- 20,000 square foot climate controlled concrete facility
- Open floor space for processing radioactive materials and waste
- High Activity Filter Processing
- Radiological waste testing laboratory
- 80-ton overhead bridge crane




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 (4 in fabrication)
 - 3-60B - designed not fabricated
 - 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



We own and maintain the largest fleet of licensed shipping casks in the country!