



# Barnwell Extended Care Update

Presentation to the South Carolina Nuclear Advisory Council

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## Barnwell Low Level Radioactive Waste Disposal Facility

- ▶ Managed by Chem-Nuclear/Energy Solutions
  - ▶ Land is leased from the State of South Carolina
    - ▶ Federal law requires that states own land used for low level radioactive waste disposal
  - ▶ Current lease dates to 1976, amendments in 1979 and 1986, terminates in 2076.
  
- ▶ Closed to waste from outside of the Atlantic Compact
  - ▶ Atlantic Compact is made up of South Carolina, Connecticut and New Jersey
  
- ▶ Two funds set up for the decommissioning and long term care of the site
  - ▶ Decommissioning Trust Fund
  - ▶ Extended Care Maintenance Fund

# Decommissioning Trust Fund



- ▶ A contractual trust agreement was entered into between Chem-Nuclear, Inc., and the Budget and Control Board in 1981. A copy of the trust agreement and its 2002 Amendment are on the program's web site.
- ▶ The trust agreement establishes a fund to pay for activities related to the closure of the Barnwell site. This includes trench capping, ground contouring, dismantlement of buildings and related activities. It also includes an allocated portion of costs associated with the closed portions of the site, known as "institutional costs."
- ▶ Under the Trust Agreement, Chem-Nuclear remits \$4.20 per cubic foot of waste received on a monthly basis to the State Treasurer. The money is deposited in an interest-bearing account.
- ▶ A deposit of \$1,726,700 was made to establish the DTF by Chem-Nuclear/Energy Solutions in 1981 as part of the Trust Agreement.
- ▶ Fund retains its interest.

# Extended Care Maintenance Fund



- ▶ The Barnwell Extended Care Fund was established in 1971 pursuant to Section 13-7-30 of South Carolina Code of Laws for the long term care of the site after closure.
- ▶ The primary purpose of this fund is to pay for the State's costs of monitoring and maintaining the disposal site after it closes.
- ▶ In accordance with the lease agreement, Chem-Nuclear remits \$2.80 per cubic foot of waste received to the State Treasurer for the Fund. This amount was last updated in the 1986 lease amendment.
- ▶ Fund retains its interest.

# Decommissioning and Post Closure



## How do the DTF and ECMF work together?

- ▶ DTF established for decommissioning activities associated with closing portions of the site – capping trenches, etc.
- ▶ ECMF established for long term care and maintenance of the site.

## What rules govern withdrawals from the fund?

- ▶ 2008 Memorandum of Understanding – B&CB & Chem-Nuclear
- ▶ Chem-Nuclear is allowed to request a maximum amount per year for institutional costs, subject to documentation
  - ▶ \$2,295,258 for FY16-17
  - ▶ adjusted annually by PPI
  - ▶ SFAA, Energy Office and DHEC must review invoices
- ▶ Statute requires that the DTF must be completely exhausted before the ECMF is used.

# Extended Care Studies

## 2002 Bradburne, Briller and Johnson

- ▶ Only looked at ECMF
- ▶ For an average real rate of return of 2.0% for the 140 year period, the estimated balance would be adequate to cover expenses, subject to certain conditions.

# Extended Care Studies



## 2008 URS Corporation Study

- ▶ Used when negotiating the 2008 MOU
- ▶ Mid-Range projected need for planned activities was \$90-\$95 million

### Cost Estimate for Planned Post-Closure Activities

The mid-range annual costs to the Barnwell Extended Care Fund of planned monitoring and maintenance activities for the Barnwell facility (below) are estimated to vary with time as follows:

Program Phase	Years	Estimated Mid-Range Costs per Year	Present Value of Mid-Range Costs
To Beginning of Phase II of Closure	2010 through 2038	\$2.0 million/yr	\$41 million
Phase II Post-Closure Observation	2039 through 2043	\$4.0 million/yr	\$10 million
Stage I Institutional Control	2044 through 2068	\$2.3 million/yr	\$22 million
Stage II Institutional Control	2069 through 2093	\$1.7 million/yr	\$9.6 million
Stage III & IV Institutional Control	2094 through 2143	\$1.3 million/yr	\$7.5 million
Total			\$90 million

- ▶ Balance of the fund at the time of the study was \$123 million.
- ▶ Unplanned events depend on many factors, study states that \$33 million is a mid-range estimate for unplanned events.

# Decommissioning Trust Fund



FY	Deposits	Interest	Disbursements	Balance
<b>1981</b>	\$1,726,700.30	\$0.00	\$0.00	\$1,726,700.30
<b>1990</b>	\$0.00	\$0.00	\$0.00	\$3,973,921.04
<b>2000</b>	\$642,711.72	\$931,913.02	\$0.00	\$16,925,844.23
<b>2009</b>	\$52,494.82	\$947,739.48	(\$8,008,500.84)	\$15,329,987.03
<b>2010</b>	\$149,451.70	\$852,419.62	(\$4,939,295.84)	\$11,392,562.51
<b>2011</b>	\$43,036.77	\$564,953.64	(\$2,934,048.46)	\$9,066,504.46
<b>2012</b>	\$45,714.65	\$411,451.40	(\$2,363,547.41)	\$7,160,123.10
<b>2013</b>	\$34,177.58	\$333,926.21	(\$2,724,291.51)	\$4,803,935.38
<b>2014</b>	\$37,545.55	\$232,882.92	(\$2,231,988.89)	\$2,842,374.96
<b>2015</b>	\$42,842.77	\$155,127.79	(\$2,293,876.13)	\$746,469.39
<b>2016</b>	\$34,338.49	\$65,903.20	(\$846,711.08)	\$0.00
<b>TOTAL</b>	\$21,963,739.51	\$19,864,728.09	(\$41,828,467.60)	\$0.00



# Extended Care Maintenance Fund



<b>FY</b>	<b>Deposits</b>	<b>Interest</b>	<b>Disbursements</b>	<b>Balance</b>
<b>1972</b>	\$5,315.81	\$0.00	\$0.00	\$5,315.81
<b>1980</b>	\$826,970.00	\$148,044.55	\$0.00	\$2,189,164.78
<b>1990</b>	\$2,846,422.82	\$3,204,822.02	\$0.00	\$43,680,394.72
<b>2000</b>	\$321,056.70	\$6,598,771.94	\$0.00	\$105,775,109.78
<b>2009</b>	\$46,094.88	\$5,147,975.58	\$0.00	\$130,749,628.63
<b>2010</b>	\$104,960.33	\$4,773,730.68	\$0.00	\$135,628,319.64
<b>2011</b>	\$21,859.12	\$3,659,437.37	\$0.00	\$139,309,616.13
<b>2012</b>	\$31,415.27	\$2,904,364.85	\$0.00	\$142,245,396.25
<b>2013</b>	\$26,674.34	\$2,659,038.07	\$0.00	\$144,931,108.66
<b>2014</b>	\$23,330.13	\$1,973,285.93	\$0.00	\$146,927,724.72
<b>2015</b>	\$27,732.15	\$1,662,832.15	\$0.00	\$148,618,289.02
<b>2016</b>	\$25,610.62	\$1,895,604.60	(\$1,323,035.61)	\$149,216,468.63
<b>2017</b>	\$10,012.21	\$256,621.98	(\$194,366.09)	\$149,288,736.73

# Questions?



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