

RAS #AA-11

Hearing Docket

From: k odo [katodpa@yahoo.com]
Sent: Thursday, August 07, 2008 6:31 PM
To: Paul Bollwerk
Cc: Hearing Docket
Subject: Limited Appearance Bellefonte Nuclear Plants Units 3 and 4 Docket No. 52-014-COL and 52-15-COL
Attachments: Talking Points.doc

Limited Appearance
Bellefonte Nuclear Plants Units 3 and 4
Docket No. 52-014-COL and 52-15-COL

Your Honor, Paul Bollwerk, and the Hearing Docket,

I am writing to oppose Bellefonte Nuclear Plants Units 3 and 4.

I have lived in the Tennessee Valley for over 35 years, having moved here because of the natural beauty and biodiversity. I am a participant in the Huntsville Utilities and TVA Generation Partners Program, using solar photovoltaic electric panels. I also have solar photovoltaic panels for my sole source of electricity in Sewanee, TN. I believe in applying sustainable energy solutions in the present, and for the future. I displayed a solar hot water heater and PV panel at the Sewanee July 4 celebration, and had numerous interested inquiries.

I implore you to stop the construction of Bellefonte Nuclear Plants Units 3 and 4.

The people of the Tennessee Valley can and will practice energy efficiency (EE); we need EE education to do so. Please support renewable and sustainable energy solutions rather than the toxic, short term, dead end attempts of Bellefonte Nuclear Plants.

I am attaching additional points for your reference.

Sincerely,

Kathleen O'Donohue
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DOCKETED
USNRC

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OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

Docket No. 52-014-COL and 52-015-COL

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Subject: Limited Appearance Bellefonte Nuclear Plants Units 3 and 4 Docket No. 52-014-COL
and 52-15-COL

To: paul.bollwerk@nrc.gov

CC: hearingdocket@nrc.gov

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NRC ENVIRONMENTAL IMPACT SCOPING COMMENTS

TVA Energy Projections are Unrealistic

- 1. TVA projects that the TN Valley will continue to increase its use of electricity 1.9% annually through 2022.**
 - TVA does not consider the effects of peak oil upon our energy use.
 - TVA does not consider the effects of a recession on our energy use.
 - In 2007, TVA sold nearly 2 gigawatt hours less electricity than it did in 2006. Its 2008 sales are below its expectations.
 - TVA projections reflect a Business as Usual mentality in a world being transformed by climate change, peak oil, and economic collapse.

- 2. TVA projects the cost of electricity will decrease through 2022.**
 - TVA's says that because electricity will become cheaper, people will use more electricity, thus justifying the need for new generating capacity.
 - April 1 TVA rates will go up 12%.
 - TVA does not consider the certainty that Congress will mandate carbon constraints of some form that will increase the cost of electricity.

- 3. TVA states that energy efficiency and demand side management will not be effective through 2022 within the TN Valley.**
 - TVA and the Southeast are energy efficiency laggards and resist implementing the energy efficiencies that are reaping success in other parts of the county.
 - Utilities in other parts of country have implemented plans for energy efficiency and demand response to meet all new demand and reduce existing energy use.
 - Through energy efficiency, TVA can avoid new construction of nuclear or coal plants.
 - TVA uses half of the total energy used in Tennessee to generate electricity, yet only 7% of that energy is actually used for its end purpose. Certainly, TVA can do better than 7% efficiency!

Benefits of Energy Efficiency, Demand Side Management, and Renewables

- 1. Energy Efficiency is the First Fuel**
 - EE is the first response to high energy prices and capacity shortages.
 - EE is two-thirds cheaper than the cost of electric power supply.
 - Efficiency requires aggressive policy action and incentives by utilities and states to overcome consumer barriers.
 - It is technically and economically feasible for TVA customers to reduce their electricity consumption by at least 21% over a 10-15 year period, and more with appropriate financial incentives.
 - Nationally, the overall median achievable potential for electricity savings through energy efficiency is 1.2% annually. Compared to TVA's negative growth in 2007 power sales, we in the TVA service area can reduce our energy consumption and carbon footprint through energy efficiency.
 - Most savings achieved through appliance efficiency standards, combined heat and

power policies, building energy codes, transportation (fuel economy and smart growth), tax incentives, and government leading by example.

- Electric energy efficiency spending per capita in the Southeast is just one-fifth the national average.
- The Southeast region has the lowest levels in the nation for Energy Star market penetration even though the region has the highest per capita's electricity consumption in the US.

2. Energy efficiency reduces a carbon footprint

- TVA's generation of electricity accounts for 30% of TN's CO2 emissions. Reducing the amount of electricity consumed will reduce the amount of emissions.

3. Energy Efficiency makes jobs and new industries

- A 1999 state study on reducing TN greenhouse gases estimated that more than 7500 jobs would be created annually in TN through energy efficiency programs.

4. Demand Side Management (DSM) Works

- TVA's most pressing short-term concern is the rapid growth in peak demand, largely due to hotter summers.
- DSM can meet 100% of TVA's growth in peak demand at a vastly lower cost than construction of new capacity.
- DSM reduces peak demand, the time of day or time of year when the most electricity is used, typically the hottest or coldest days. Utilities have to pay the most for producing peak electricity.
- Most ratepayers would reduce their energy use during peak times if they knew they were going to pay more for energy at those times of the day and year when demand for electricity is highest.

5. TVA states that renewable energy will not be effective through 2020 within the TN Valley.

- TVA has actively lobbied in Congress against Renewable Portfolio Standards, arguing that the Southeast is poor in renewable energies.
- Source of less than 1% of TVA's generating capacity: **Green Power Switch** - wind farm in Anderson County, methane gas site in Memphis, customer solar sites across the Valley

6. How Much Energy Efficiency will \$20 Billion Buy?

- If TVA dedicated \$20 billion to energy efficiency and DSM, the residents of the TVA service area would consume less energy and have a reduced carbon footprint, and enjoy increased job opportunities from the employment growth due to people working on realizing the benefits of energy efficiency.
- \$20 billion worth of energy efficiency would reduce as much energy consumption as the Bellefonte plant would produce and reduce our current use of electricity.

7. EE can more than meet demand for more power.

Cost of Bellefonte Nuclear Plants Are High and Climbing

1. Cost

- The construction of Bellefonte 3 and 4, if built today, would cost at least \$20 billion, nearly doubling TVA's existing debt of \$25 billion.
- TVA estimated the cost to build the two Bellefonte units at \$2.5 billion to \$3.5 billion each. At 1,000 MW that comes out to \$2,500-3,500/kW.
- A proposed Progress Energy nuclear venture in Florida escalated from an estimated range of \$5-7 billion in 2006 to over \$10 billion.
- A Florida Power and Light two-unit project, also using the Westinghouse AP1000 design, now ranges from \$12 to \$18 Billion.
- Because of increased reactor cost estimates, South Carolina Electric and Gas has reconsidered plans for more reactors at the V.C. Summer plant in South Carolina, as has expansion plans in Idaho.
- Southern Company intended to have reliable cost figures from Westinghouse for proposed new reactors in Georgia by the end of 2007, but slow downs in contract negotiations have brought company requests to extend state regulatory deadlines, reportedly due to cost uncertainties.
- 29% of TVA's current revenue pays debt which is why TVA's rates are no longer low. With the 12% rate increase, TVA's rates nationally are in the middle of the pack for the price of electricity.
- Nobody knows the real costs of these new units because none of them have been built yet. First-of-a-kind designs are typically very expensive.
- We want to know from TVA at what point do the costs of new nuclear plants become so unrealistic that TVA will reconsider the proposed expansion scheme?

2. KWh costs

- TVA, using nuclear industry's figures, estimates the cost to build the nuclear plants at \$2500 to 3500 /kW, or about 4 cents per kWh. If the costs on the interest on the construction debt, fuel and operating costs, spent fuel disposal, and decommissioning are added, the total cost total 7 - 8 cents per kWh.
- Real world experience paints a different picture. The only n-plant that is being constructed in the West is one in Finland. Its estimated cost is \$4,000/kW, but the reactor's completion has been delayed two years and is not finished. Its final cost will bring it close to 11 cents / kWh.
- Wall Street analyst Moody's estimates that the total nuclear costs of a new plant would cost in the range of \$5,000 to \$6000/kW, or about 14 cents per kWh.

3. Cost of Uranium Soars

- The price of uranium has increased tenfold since its low in 2000. 440 n-plants operate in the world, requiring 67,000 tons uranium per year. Mines supply 40,000 tons. The remainder comes from dismantled Soviet and US weapons, which are projected to be exhausted in 2010.

4. TVA "Low Cost" Mandate

- TVA has a statutory mission to provide electric power to the TN Valley "at rates

as low as feasible," (TVA Authorizing Act of 1933.)

- Clearly Energy Efficiency and Demand Side Management are cheaper than new generating capacity.

Bellefonte Water Concerns

1. Drought

- The Bellefonte area is experiencing an exceptional drought, one of the worst droughts the Southeast has ever experienced.
- According to TVA's application to the NRC, the two reactors will withdraw over 71 million gallons of water per day (mgd) from the Tennessee River (via the Guntersville reservoir) and evaporate two-thirds of that through its cooling towers. Only one-third of the water withdrawn will return to the river. The amount of water evaporated to cool the nuclear core is more than the water used by all the public water systems in the Guntersville watershed combined.
- The predicted effects of global warming in the region, such as summer heat waves or drought, will negatively impact the ability for the proposed Bellefonte reactors to generate electricity. TVA in its NRC application makes no mention of the predicted impacts of global warming in terms of drought and heat waves and how they could effect operation of the proposed reactors.

2. Thermal Pollution

- The water withdrawn from the Tennessee River will be used to cool the coolant that passes through the nuclear core. (Remember, the nuclear reactor is being used to boil water to create steam.)
- The water returned to the Tennessee River will have a temperature of 91 degrees.
- Thermal plumes stress on aquatic life, affecting species survival.
- Brown's Ferry and Sequoyah both had serious problems with the discharge being too close to the intake, preventing full operation during the hottest months. Both had to be shutdown this summer because of high intake water temperature.
- NPDES Permit - cannot discharge water warmer than 86.9 degrees F.

Bellefonte Safety Concerns

1. Population Centers within the 50 Mile Perimeter

- Huntsville (due west) 38 miles Scottsboro (SW) 7 miles
- Chattanooga (NE) 44 miles Gadsen (S) 48 miles Sewanee (N) 40 miles

2. Health Risks: Each new exposure to radiation adds to the risk of genetic mutations and cancer, damage to the immune system, spontaneous abortion, mental retardation, spina bifida, heart disease, leukemia, and more.

3. Seismic Concerns

- The Bellefonte plant is near the Eastern Tennessee Seismic Zone, which is considered to be one of the most active seismic areas east of the Rocky Mountains. Recent studies have indicated that this seismic zone may have the potential to produce large magnitude earthquakes.

- The NRC has expressed concern that the outdated hazard models used by TVA do not adequately characterize the potential for larger earthquakes.
- Fort Payne Earthquake - A magnitude 4.6 occurred in 2003, 50 miles ESE of Scottsboro, AL. The earthquake was deep enough to suppress significant damage in Fort Payne, the closest community, although this 4.6 magnitude event damaged weaker chimneys and formed cracks in some structures.
- The community now has many concerns related to this event. A top concern is the community's ability to cope with the potential occurrence of a larger earthquake when the magnitude 4.6 event raised

4. **Geologic Concerns**

- TVA fails to consider in its application the effects of drought and seismic activity on the karst terrain underlying the BLN site, a known and identified sink hole area.
- The area is susceptible to sink holes and may result in complete ground collapse. The application fails to consider historical maps of the area which clearly reflect sinkhole formation on and near the plant site.
- The anti-bellum community of Bellefonte was so named because the word *bellefonte* means beautiful spring.

5. **Transportation**

- Starting the summer of 2008, 66-70 truckloads of high-level nuclear waste will be shipped annually through Chattanooga from Oak Ridge on its way to Arizona.
- Ten times a year, spent nuclear fuel rods are shipped from Oak Ridge through Chattanooga to the Savannah River site in Aiken, SC.
- The Aiken site ships nuclear waste twice a year through Chattanooga to the Idaho National Laboratory.
- If a shipping container breaks open, those exposed would receive a lethal dose of radiation.

6. **Nuclear High-Level Waste Storage**

- Browns Ferry site: 1400 MT of high level radioactive waste stored in an elevated pool inside plant. 37 MT stored outside on TN River in dry cask storage
- Sequoyah site has a full inside storage pool and an additional outside dry cask storage
- Watts Bar will need to dry cask storage in 12 years
- No long term storage unavailable. No structure can isolate the lethal radiation from life for the 100,000 years needed.

7. **Cumulative Impacts**

- If the Bellefonte units are built, six nuclear reactors will be within 50 miles of downtown Chattanooga and four units within 50 miles of Huntsville.
- TVA does not address in its NRC application the cumulative impact of having possibly nine nuclear reactors operating on one river basin, let alone all of the other coal plants and industrial plants in the Tennessee River basin.
- The cities and region will experience accumulated risks from radioactive air emissions, radioactive water leaks, thermal pollution, diminished water supply,

and nuclear accidents.

- A Texas study found increased cancer rates in north central Texas since the Comanche Peak nuclear plant went online in 1992.

8. Nuclear Accidents

- The Chernobyl disaster forced the evacuation and resettlement of nearly 400,000 peoples and poisoned thousands with radiation.
- The 1979 partial meltdown at Three Mile Island triggered a 15-year cleanup effort and cost more than \$1 billion.

National Security Concerns

1. Nuclear Proliferation

- Every foreign nuclear proliferation concern is tied to a nuclear reactor program.
- It is impossible to guarantee that nuclear materials will not fall into the wrong hands.
- Nuclear power reactors create plutonium during their operating cycle, a substance from which bombs can be made. Plutonium remains lethally radioactive for more than 240,000 years.

2. National Security

- Nuclear reactors make an attractive target for terrorists.
- A 1982 Congressional report estimated that if a meltdown occurred at just one of Bellefonte's two reactors, it could cause up to 7,700 immediate injuries with costs of over \$80 billion (1980 dollars and Census figures.)

Need for NRC to Determine Need for New TVA Capacity

1. **TVA is a federal corporation which operates as an unregulated monopoly.** It is responsible to no other entity for its policies, programs, forecasts for power and energy requirements, and ratemaking.
2. **Existing Congressional oversight is limited** to Senate confirmation of board appointees, Congressional approval of increase in the TVA's bond capacity, and the options to remove board members and to hold Congressional hearings.
3. **No state government has any regulatory control over TVA's ratemaking.** TVA rates are not subject to review beyond its Board of Directors. The TVA Act does not provide for FERC review, and the courts have held the rates are not subject to judicial scrutiny.
4. **There are no statutory requirements for public involvement in the TVA wholesale rate process.** TVA governance has no provision for the residents of the Tennessee Valley or their elected representatives to have formal control over TVA policies and programs except through the President and Congress. TVA's current public involvement programs are voluntary and at the discretion of the Board.

5. TVA has not involved anyone outside TVA and the nuclear industry in the decision to move ahead with Bellefonte.

- At its September 2007 meeting, the TVA Board approved submitting the BLN 3 and 4 COL applications to the NRC. No other entity other than TVA and NuStart Energy were involved that decision. No public involvement process was even offered before or after the decision was made.
- Bill McCollom, TVA's Chief Operating Officer, said in November 2007, "At this point no decision has been made whether to build the two generating unit." However, in the ER (Table 1.1-1), TVA anticipates BLN early procurement activities to begin by summer 2009.

6. Consequences of Lack of Oversight Severe

- During the 1970s, TVA projected a large increase in demand growth and launched a nuclear plant construction campaign for 17 units.
- Because the demand did not materialize and the effectiveness of TVA's energy efficiency programs, the TVA Board cancelled or deferred nine units.
- This "miscalculation" resulted in \$27.2 billion of debt
- TVA current debt stands at more than \$25 billion, most of it related to its nuclear debacle. Its total assets are \$34 billion.

7. Need for NRC Oversight of TVA Projections: As no other entity with the TN Valley or within the federal government has the responsibility to review and determine the adequacy of TVA's power and energy requirement forecasts, it clearly becomes the responsibility of the NRC to review the adequacy of TVA's claims that the proposed Bellefonte units are needed.