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OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

BELLEFONTE "To Be or Not To Be"

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

How can anyone think of having nuclear power in this most beautiful and pristine county! According to a very recent survey of Alabamians, many favored nuclear power but 70% did not want it in their area, and 82% would object to construction of a nuclear waste storage facility in their area. To me that means the people of Alabama do not want nuclear power and nuclear waste storage. Trying to complete Bellefonte as a nuclear plant is too risky and too costly. A nuclear plant has not been built in the United States since the 1970's. Where are all the start up nuclear engineers? Scientists are quite concerned about finding qualified and up to date people to complete or build a plant. Some scientists say the life of a nuclear plant is 40 years, but 20 years is more like it, according to other scientists. Bellefonte will have been setting (with some maintenance) for basically 20 years and it would probably take 5 to 10 years to complete it. Putting Bellefonte on line, to me, is like buying a near complete or completed car and letting it set for about 20 years. Sure you start it up every day, put gas and oil in it, make sure the radiator has coolant, and the battery is filled with distilled water, and other maintenance. So after 20 years you decide to drive it into town. Will you make it? Nuclear plants are far, far more complicated.

Burt Herman of the *Associated Press* reported; "Germany has signed an agreement with utility companies to close all their 19 nuclear plants by the year 2021. Germany will join Austria, Italy and other nations willingly abandoning nuclear power". Nuclear power is passe in Europe.

A. The Downside of Nuclear Plants and Things to Consider.

1. Remember that nuclear accidents have been mostly human error, with some equipment malfunction: Three Mile Island, Chernobyl, and the reactor at Brown's Ferry.
2. Just an academic note: Fuel generally used in nuclear plants is radioactive uranium 235 (half-life is 700 million years) and radioactive plutonium 239 (half-life is 24,600 years). A half-life is the time it takes for half of the nucleus to become non-radioactive.
3. Most important: Storage of nuclear waste is a major and hazardous problem. Governor Barnes of Georgia is afraid leaking nuclear waste at the Savannah River Site (Aiken, N.C., across from Augusta, Ga.) could get into Georgia's water aquifers by going under the Savannah River.
4. The end result of a meltdown is devastating, and is the same whether you have better built plants like in the United States, or not as well built plants like Chernobyl.
5. Three Mile Island had a partial meltdown, but it was only 30 minutes away from a complete meltdown, according to Harold Denton, a nuclear engineer in the Carter Administration. The Governor of Pennsylvania evacuated 140,000 people and was ready to evacuate another 400,000. The accident occurred March 29, 1979, and on April 26, 1979, radioactivity could be detected 50 times greater than the normal amount, 30 miles away.
6. Chernobyl - Since the accident on April 26, 1986, 4000 rescue workers have died from exposure to radioactivity, the cattle in Scandinavian countries are producing deformed cattle generation after generation, because of the radioactivity from

Chernobyl, and people hiking in the Alps today have to be careful because some parts of the Alps are still radioactive from that meltdown.

7. Mr. Kenneth Bergeron, a nuclear expert, worked at Sandia National Laboratories for 25 years, performing and managing research on "nuclear reactor safety" and tritium production. With regard to tritium, the plants at Sequoyah and Watts Bar have ice condenser containment structures. Mr. Bergeron, in his study of ice condensers, found that the system "has a high likelihood of failing in the event of a serious accident, leaving the public completely unprotected against the kind of massive release of radioactivity that occurred at Chernobyl". I do not know whether there are ice condensers or massive concrete and steel containment structures at Bellefonte.
8. Mr. Curtis Overall, a former employee of TVA's Watts Bar Plant, discovered in 1995, that more than 200 screws intended to hold the ice condenser baskets together were either broken or missing.
9. Ann Harris, another TVA employee, along with Mr. Overall, have filed reports about the safety issues at TVA's nuclear plants. Both have been fired.
10. The National Regulatory Commission (NRC) has taken over the safety checks at Oak Ridge.
11. Nuclear Plants produce only about 20% of the total national supply of energy. It is interesting that in 1998, with a partner it would take 4.8 billion dollars to complete Bellefonte, and now, three years later, Senator Sessions says, "it will only take 2.8 billion to complete". The figures just don't jive. For 2.8 billion a number of alternatives to nuclear power could be built, which is what the United States wants to do, and should do. Bellefonte's acreage could be turned into a high-tech industrial park or a nature preserve.

B. Alternatives to Nuclear Power

1. Bellefonte should be completed as a non-radioactive plant. TVA did an Environmental Impact Study in 1997, and came up with five alternatives to nuclear power:
 - (1.) Pulverized Coal (PC)
 - (2.) Natural Gas Combined Cycle (NGCC)
 - (3.) Integrated Gasification Combined Cycle (IGCC)
 - (4.) IGCC with Chemical Co-production (IGCC/C)
 - (5.) Combination of NGCC (No. 2) and IGCC (No. 4)TVA preferred No. 2, the natural gas combined cycle, in 1997.
2. Hydrogen Fuel Cells. This is the cleanest. The Leighty Foundation presented a Hydrogen Fuel Cell demonstration at a science fair in Iowa and wanted the State of Iowa to move on it.
3. Natural Gas.
4. Coal-gasification. A by-product of this is hydrogen, which can also be made into electricity. (I do not know how much, if any, sulfur is released into the atmosphere). Widow's Creek uses coal-fired furnaces, and these make the most pollution.
5. Hydro-electric power.
6. Wind Power. Farmers in western Iowa are putting propeller-like blades in their fields and are selling wind power instead of crops.

7. Solar Power - Solar power and wind power are used out West.
8. Geo-thermal Energy. Using heat from inside the earth for heating and cooling.
9. And, there are new alternatives being discovered to produce energy. We should not rely on any single source, but a combination of the alternative sources of power.

The United States has coal equal to the rest of world, enough to last for the next 250 years, according to Jack Gerard, the head of the National Mining Association. Canada and Mexico are great sources for oil, natural gas, and coal. So there are a number of alternatives to nuclear power.

Most importantly, the future of Scottsboro and Jackson County (our students) go to school probably within five miles of Bellefonte. A study which has been done by the "Nashville Tennessean" found that people living near Oak Ridge Nuclear Plant and other nuclear plants have come down with certain unexplained illnesses.

We have so much going for us now. Let's keep Jackson County beautiful and non-radioactive.

Liz Bennett
June 26, 2001

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References

1. Atomic Physics by Larkin Kerwin
2. Concerning Chemistry by Gene D. Schaumberg
3. The Internet regarding tritium
4. Discussions with people who have worked in a tritium plant in Livermore, CA
5. Talked to a physicist who helped design a tritium plant
6. Heard a lecture by Stephen M. Sohinki, Director of Commercial Light Water Tritium Project office
7. Heard a lecture by Dr. Arjun Makhijani, Ph.D. in physics and head of the Institute of Energy and Environmental Research, and Consultant to DOE—Takoma Park, MD
8. Heard a lecture by Stephen Smith of the Tennessee Valley Energy and Reform—Knoxville, TN
9. *Associated Press, Washington Post, Washington times, U.S. Today, and Huntsville Times.*