

**BEFORE  
THE PUBLIC SERVICE COMMISSION OF  
SOUTH CAROLINA  
DOCKET NO. 2008-196-E**

INRE:

Combined Application of South Carolina )  
Electric & Gas Company for Approval )  
of a Certificate of Environmental )  
Compatibility and Public Convenience and  
Necessity and for a Base Load Review Order  
for the Construction and Operation of a )  
Nuclear Facility in Jenkinsville, South Carolina )

**THE REQUEST FOR THE HELP IN  
OBTAINING INTERVENOR'S STATUS IN  
US NUCLEAR REGULATORY  
COMMISSION ("NRC") IN ABOVE  
APPLICATION.**

I, Joseph Wojcicki, one of the intervenors in the above case, respectfully submit my request to

**OFFICE OF REGULATORY STAFF of SOUTH CAROLINA ("ORS").**

To obtain any necessary help to receive status of Intervenor in the next stage of reviewing SCE&G Application in US Nuclear Regulatory Commission. From ORS statements I do understand this important SC institution has ability and represent State and public interests in this State.

**FACTS:**

1. Today's situation in the process of hearing under SC Public Service Commission does not guarantee that very serious decision errors could happen but I believe that they still could be corrected in the next step to be under US NRC.
2. I see possible wrong decisions based on 2005 SCE&G findings and site location selection which disregards not only public but Southeast states necessity in electric power generation and distribution as well as future water needs. The new fundamental analysis must be present now to be reanalyzed in the end of 2008. The submitted by SCE&G, based on 2005 SCE&G findings is without, of already known South Carolina and Georgia Governors' multi-billion decisions done in 2007 carrying huge responsibility of southeast and national energy sectors including GW range electricity production. It even has no a map of the SC grid now and planned for the future perspective of 2024. This terrible mistake would be in acceptance of the location new two reactors in Jenkinsville, SC instead of another one closer to the SC Atlantic shore.
3. It is now very rare opportunity to install these two reactors close to Atlantic Ocean and save enormous number (see Supporting Calculations) of water from land source in Southeast region of the USA already known as a drought zone and already created trends to existing 24 reactors in this zone.
4. Just in yesterday's testimony of one civil engineer, owner of local business (Fairfield County) and strong supported of nuclear technology and others witnesses reported already water problems in this area that has one SCE&G Reactor facility VC Summer. Anyway the installation of two new units (2 and 3) will not improve water situation, quite opposite will make it worse. The each day necessary changes in the scheduled testimonies in this hearing and serious perspective of the cross examinations of ORS panel of

experts to be next week, create for me real chance to miss dead line for petition to intervene in the NRC next stage, hearings.

5. The weight of the problem is so important for:
  - 5.1. National level in so critical financial situation: this multi-billion investment could be found to be very bad solution in the unnecessary construction costs and even worst future operational costs/losses.
  - 5.2. Disrespect of national security aspects that I could present in details later if I will miss this opportunity in this stage because of continues rescheduling witnesses' testimony ,possible finding of lack of proper experts etc.
  - 5.3. Possible loss of the State/ SE Governors' interest representation which can create enormous non-reversible future losses in the economy of SE states.
  - 5.4. Wrong configuration of the SE grid.
  - 5.5. Any decisions made in all stages of this expensive project have a large risk of create above losses of opportunity to do this investment proper from the first invested million US dollars or other currency paid to overseas suppliers.
  - 5.6. National aspect is so important as this matter will be one of the first to be heard under NRC
  - 5.7. South Carolina being in recognized by US nuclear family to be in the US southeast drought zone, has the unit opportunity to locate these two new reactors in the nuclear renaissance without drawing their necessary cooling water from the SE natural land resources and using much more efficient cooling medium – seawater as it is used for nuclear submarine reactors and, I believe in Japanese nuclear electricity generating stations. It will leave room for next possible reactors in SC that have no such opportunity as SCE&G having their clients in the SC Coastal area and cooperate with the other SC electric company - Santee Cooper.

Let me also cite some more information from the documents I did submit already to Applicant, PSC and ORS and there are none rebuttal testimonies.

*“1. My proposed localization close to the Atlantic Ocean has enormous savings over the Jenkinsville location selected by SCE&G. In the —Atlantic location” all necessary water required for cooling will be saved for the State of South Carolina (—SC) as well as for the entire Southeast region of the USA. Here nuclear facilities already had problems in times of higher temperatures and/or drought. The Atlantic Ocean Location (—OL”) will also save electric energy estimated in the hundreds of millions of US dollars, giving a higher chance to keep lower kWh rates and SCE&G competitiveness on the energy market as well as minimizing risk of bailouts.*

*It is obvious that lower kWh rates are in the great interest of the general public, industry, and several institutions of SC.*

*2. Everyone who has read the material submitted by SCE&G, experts from ORS, and witnesses could not find a serious analysis of the location aspect as well as the enormous cooling water demand by nuclear installations. There is nothing mentioned about cooling alternatives, such as seawater. Also, a future refinery is planned to be constructed near the shoreline, which will require megawatts of power for operation.*

*3. I deliver a solution carefully analyzed, having the support by science and common sense. The scope of required knowledge is entirely in my education and experience. A partial list is shown below:*

*3.1. Over 40 years of engineering experience in programming, design, construction, startups, and troubleshooting from planning to operational stages of small and big projects.*

*3.2. Over 20 years in education (lecturing in Colleges and Universities), teaching electrical power generation and distribution, process control, cybernetics, mechanical and electronic technology,*

and computer programming. My students, many graduating Cum Laude, placed my name in the top few percent of USA educators (*Who's Who Among American Teachers*).

3.3 Over 25 years in design, working as lead designer in large, multi-disciplinary projects within different industries and for different investors.

3.4. Troubleshooter and verifier—over 15 years experience from small to large scale and working with billion dollar investments.

#### SUPPORTING CALCULATIONS.

4. Basic data from SCE&G: Their reactor needs 31 cubic feet per second (—cfs) of make-up water, mostly for cooling. Two reactors need 62 cfs. This water is mostly evaporated. In the Jenkinsville location, an extra 82 cfs would be taken from Monticello Reservoir. Warm 20 cfs is the effluent discharge to Parr Reservoir. In the maximum case, values are:  $138 - 68 = 70$  cfs. See SCE&G Response to ORS CHG 2-29 Request (Page 1301 – Table 3.3-1).

In gallons:  $(7.48 \text{ gal/cfs}) * (62 \text{ cfs}) = 464$  gallons per second (—gal/s) is removed from SC water sources, or about 27,800 gpm (gal/min).

Per hour:  $(3600 \text{ s/h}) * (464 \text{ gal/s}) = 1,664,536 \text{ gal/h}$  (Note: Over 1.6 million gallons per hour!)

Per day:  $(24 \text{ h/d}) * (1,664,536 \text{ gal/h}) = 40,068,864 \text{ gal/d}$

Per week:  $(7 \text{ d/w}) * (40,068,864 \text{ gal/d}) = 280,482,048 \text{ gal/w}$

Per year:  $(52 \text{ w/y}) * (280,482,048 \text{ gal/w}) = 14,585,066,496 \text{ gal/y}$  (Note: Over 14.5 billion gallons annually)

Per reactor's life expectancy:  $(60 \text{ y/life}) * (14,585,066,496 \text{ gal/y}) = 875,103,989,760 \text{ gal/life}$

5. Unit price (UP) of water.

At Wal-mart today: 37 cents to 600 cents per gallon

I paid \$29.30 per 2,035 gallons for city water.  $UP = 2930 \text{ cent} / 2035 \text{ gal} = 1.44 \text{ cent/gal}$ . Even at this price you may see \$ billions saved on water.

Note to readers: **calculate cost of the water** with any of your assumptions. Respect the perspective of increase —bas demand/load” in the next 60 years. Do calculation for the disaster time as post hurricane, drought, highest temperature recorded in your county, etc. Remember, at these times water becomes very expensive.

My proposed location entirely eliminates the necessity to use water from SC land natural resources. In addition, cooling will be much better using seawater.

6. Better location in a network topology will lower transmission losses.

In this case, losses may be estimated as 2 or more percent of rated power (i.e. 2,234 MW). Planned time is 95%. Therefore, annual losses in energy could be at least:

Energy lost per year =  $0.02 * 2,234 \text{ MW} * 0.95 * 8760 \text{ h/y} = 371,827 \text{ MWh /y}$ .

Using approximate future rate:  $10 \text{ cent} / \text{kWh} * 2 = \$0.20 / \text{kWh}$  or  $\$200 / \text{MWh}$ . Note: Here are eliminated the demand charges for MW, MVA, Power factor, etc. as well as construction and operation costs.

Lost minimum amount in earning:  $(\$200 / \text{MWh}) * (371,827 \text{ MWh /y}) = \$74,365,392 / \text{y}$ .

Maximum could be (if more wholesale customers would be connected to the grid and other factors come to life) up to 2.5, so max losses could be over \$180 million annually.

Detailed estimation can be done after SCE&G will submit realistic network configuration with topology of future loads, especially the big ones planned in the state and the southeast region.

7. *Savings on energy using seawater for cooling is another significantly big number.*
8. *Selection of the two AP 1000 units location at Jenkinsville is shown in response to ORS Request CHG 2-1 (Page 898) in SCE&G Audit Information (Pages 909-942) from the analysis of only two options: VCSNS/Jenkinsville and SRS/Aiken. Other locations analyzed in the 1970's were rejected. Skipping the discussion on selection criteria (Criterion P1-P10) we may find an interesting summary on Table 3-1 (Page 917).*
  - 8.1. *Adding to the table a third option, my Atlantic Ocean location, will significantly change the rating at least for P1 (Cooling water supply) and P8 (Transmission access). SRS and VCSNS must be corrected, lowering their rating to almost zero (0) compared to AOL which would get a value of five (5).*
  - 8.2. *Composite Site Rating for AOL would exceed the selected VCSNS location by at least 7 points.*
9. *More supporting arguments will add to a better economical model, lowering overall capital investment dollars for construction and optimize operational costs.*
10. *An initial set of information is in PSC Docket 2008-196-E as doc #195528 entered on 10/15/2008.*

*We have to remember that any legal arguments CANNOT OVERRULE the laws of physics, chemistry, energy, and common sense.*

#### *CONCLUSION.*

*Considering my proposal of the "Atlantic Ocean Location" ("AOL") with its enormous savings and assurance of water for the SC Midlands and the southeast region of the United States, it should convince the applicant to reanalyze this part of the application. It should also influence in a positive way other SC projects.*

*This win-win situation will be for:*

- \_ SCE&G and Santee Cooper costumers because of lower rates*
- \_ SCE&G competitiveness*
- \_ SCANA shareholders*
- \_ People of SC and the southeast region because of better stability of water supply*
- \_ Industry of SC – lower MVA, MWmax, MVAr, MWh rates and a reserve in water*
- \_ Possible positive influence on future AP 1000 installations all over the world*

*SCE&G has not considered in their election of a location those factors and also ignored the planned Duke Power's reactors that need water, too.*

*The initial proposal, which I have submitted to the PSC on 10/15/2008 (doc #195525), has some details supporting this Motion.*

*The suggested AOL will have a significant effect on the economy of South Carolina.*

*Very truly yours,*

*Joseph "Joe" Wojcicki - Intervenor.  
Columbia, SC      November 10, 2008*

**I do ask all South Carolina agencies to support my urgent appeal for help in this initial petition filing legal help but urgent/prompt to meet dead line set by NRC and not clearly stated by other local institutions, including ORS.**

**I do apologize for any possible typo and others error, because this letter got no proofreading and a legal review bur I assume support from SC institutions, especially Governor's Agencies because I practically represent their interest from the my professional ability.**

**Sincerely**

**Joseph "Joe" Wojcicki**

**Submitted in PSC in Columbia, SC on December 4, 2008**