## $20 Billion solution is in South Carolina

Proposed by Joe Wojcicki, MSEE and project verifier/troubleshooter

South Carolina Electric and Gas Company (SCE&G) applied to the Public Service Commission (–PSC") for permit to build two new nuclear reactors in Jenkinsville, SC. After construction and commissioning, their generators should deliver 2,234 MW of electric power.

In the Southeast region of the USA there are 24 existing nuclear facilities generating electricity. Each system requires an enormous volume of water for cooling. They are forced to be shut down in time of drought and/or higher temperatures. Some problems were already experienced in the summer of 2007 in this region. In a similar situation, the heat waves of 2006 in Europe caused many French and Spanish nuclear reactors as well as all German to be shut down. Germany switched from nuclear to solar power.

Our applicants, SCE&G, fail to prove that the required estimated volume of cooling water for their location in Jenkinsville will not lead to the situation already experienced in this region and also in the world. The volume of necessary cooling water exceeds the needs of over **300,000 people** (according to Clemson University's rate of **150 gallons of water per person**), which is higher than the current city of Columbia population. This huge amount of water taken from the Broad and Congaree Rivers can significantly harm residents, farming and industry in the Midlands, especially during the summer time.
When restricting usage to 40 gallons per person per day, they will need to **take away water from over one million residents!**

**My, suggested by engineering science and electrical power distribution rules, solution** is to situate new reactors in another **location, closer to the Atlantic Ocean**. In this location, cooling systems can use salt water, which is a much better cooling medium than drinking water.
Most important in this solution are:

(a) Independence from drought and water level fluctuation in reservoirs such as Monticello and Lake Murray—aspects that must be seriously considered in the Jenkinsville location.
(b) Independence from temperature increase over technically approved limits—it is crucial for process control and protections.
(c) More effective Electric Energy Distribution—shortened distances to large groups of base load such as ports (including a new one in Jasper County), a new refinery, etc.
(d) Creating a model solution for the world with new AP 1000 type reactors.
(e) Giving higher reliability and reserve factors, especially in seasons when forces of nature may create power outages.

I am ready to explain the deeper aspects of this power generation solution or be part of any Discussion Panels, etc. The state of South Carolina could take a very significant first step in solving the energy problems for the Nation, and maybe the world.

This solution will create a general win-win situation:
Win – people of SC, their environment, convenience and necessity – guarded by PSC.
Win – SCE&G, their shareholders, and Santee Cooper customers.
Win – State of SC
Win – Nation and maybe the world.

The estimated cost of two reactors is 10 to 12 billion dollars, and the cost of saved water with my solution for South Carolina and potentially its neighbors, Georgia and North Carolina, is estimated to be 8 to 10 billion dollars.

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

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