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Remarks by
South Carolina Governor's Nuclear Advisory Council
to the Blue Ribbon Commission on America's Nuclear Future
January 7, 2011
Augusta, GA

General Scowcroft and members of the Commission, the South Carolina Governor's Nuclear Advisory Council appreciates the opportunity to speak to you regarding nuclear wastes. I am Karen Patterson, a member of the Council and a resident of Aiken for almost 40 years. I will be providing the Council's comments this afternoon which focus on challenges and solutions.

The [SC Governor's Nuclear Advisory] Council was created by statute to "provide advice and recommendations to the Governor for the use, handling, and management of transportation, storage and disposal of nuclear materials, and regarding the various programs of the U.S. Department of Energy pertaining to nuclear waste."

The statute prescribes the composition of the council: one member each from the State Senate and the State House of Representatives, two members involved in environmental protection, two scientists or engineers from state universities, one member with experience in nuclear power generation, one with experience in nuclear activities other than power generation, and one member of the public at large.

We appreciate the fact that the Commission on America's Nuclear Future is charged with recommending ways to manage the back end of the fuel cycle, including "the storage, processing and disposal of civilian and defense used nuclear fuel, high-level waste, and materials derived from nuclear activities."¹ We firmly believe that the single thing impeding the country's nuclear future is the effective handling of waste.

In South Carolina we have a unique perspective on civilian and defense used nuclear fuel, and defense high-level waste. We have seven commercial reactors at four sites, all storing used fuel. Defense waste has been generated at the SRS since 1954, resulting in 36 million gallons of liquid high-level waste waiting for vitrification prior to disposal in a geologic repository. We have the only operational reprocessing facility in America. We also have foreign and domestic research reactor used fuel, the nation's excess plutonium, and commercial and defense low-level waste disposal sites. Construction on two new commercial reactors has begun, with two more planned, and we have a commercial fuel fabrication facility. Few states can boast such a large and varied inventory of nuclear materials.

Two points frame our thinking about nuclear waste disposal options:

- First, the liquid defense waste at SRS must be disposed in a geologic repository. For one thing, it is required by law. For another, as you know, the decision to dispose of it in a geologic repository was made after exploring all the options under the sun, including sending it to the sun. Finally, the waste currently is being vitrified into a form that meets

¹ From the BRC charter.

the waste acceptance criteria for a deep geologic repository with characteristics consistent with Yucca Mountain.

- Our second point is that current U.S. recycling generates too much waste. We agree with the critics on that point. However, we do not agree that reprocessing is a reason to dismiss a nuclear future out of hand. We understand that recycling has challenges that need to be resolved but, our experience is that the technology exists to solve those challenges.

With these points as our basis we identify four broad challenges to successfully managing nuclear waste:

- The first, and in some ways the easiest to address, are the technical challenges.
Since the end of WWII we have developed the capabilities to safely manufacture, use, and dispose of nuclear materials.
I reiterate that we believe that reprocessing should be part of our nuclear future. However, in addition to developing a more efficient recycling process, we would also encourage research programs that focus on fuel production and reactor technology with the goal of creating a more efficient way to burn nuclear fuel.
- The second challenge is the economics of nuclear energy and one that I believe has both direct implications to the government and utilities and indirect implications to the public and our economy in general. I will comment only on the indirect implications.
Tourism is a very large economic driver for South Carolina. Now, consider that many people have incomplete or inaccurate understandings of nuclear energy, leading to unfounded but very real fears about their health and safety. People will not vacation here, or retire here, if they believe that nuclear wastes could harm them. The State will not embrace any project that threatens its most successful industry.
I will point out that, despite nuclear critics' belief that local communities support nuclear facilities only because they fear the economic bust should such a facility leave, that is not the case. Rather, local communities support nuclear facilities not only because they are economic engines, but because they are clean, safe, and well-run industries.
- The third challenge is political.
For any national policy to succeed there has to be commitment and continuity by the federal government. Even though the Council looks forward to South Carolina's role in the nation's nuclear future, we are very sensitive to the fact that the government has not always met its commitments regarding nuclear materials in South Carolina. We are prepared to work with the federal decision makers to ensure that changing commitments do not unduly affect the forward progress of waste disposition, however, we expect better alignment between the federal government's plans and the execution of those plans.
- The fourth challenge is building public acceptance. Nuclear power is accepted now more than ever before. However, without almost universal public acceptance, it is unlikely any policies the Commission recommends will come to fruition because any

Administration's willingness to commit to an action appears to be directly related to public acceptance.

I believe that the root cause of the failure of Yucca Mountain was the lack of true public participation in the decision process. The country has demonstrated a reasonable and responsible solution to the disposal of highly radioactive materials, and the failure of Yucca Mountain is not due to technical inadequacies. This happens to be my soapbox issue, but I will not belabor the point. Suffice to say, the National Academies of Sciences² have concluded that better decisions are generated when the public is fully involved in every phase of the decision process. Other countries have successfully involved the public in difficult decision processes, and the United States should follow their example.

The Council feels that any national nuclear waste policy must be multi-pronged and have, at a minimum, the following six elements:

1. Flexibility – Different waste configurations and the environmental characteristics of potential disposal sites influence disposal options. One size will not fit all. Perhaps the approach of putting all commercial and defense waste in one facility or even one state is flawed and should be reevaluated.
2. Regulatory Certainty – As I mentioned earlier, the vitrified waste at SRS is designed to be disposed in a facility that looks and acts like Yucca Mountain, and we cannot reconfigure that waste nor reengineer the vitrification process to meet every new Administration's new ideas about how to manage the waste.

Based on public law, the industry sized their used fuel storage, and probably based their economic models on, the expectation that they would not need to store, manage, or provide security for a reactor's lifetime-worth of used fuel.

There should be a reasonable expectation that the rules won't change.

3. A repository or repositories – Even with improved recycling, a repository will be needed to dispose of commercial used fuel. I have already discussed the necessity of a repository for high-level defense wastes.
4. Recycling – The technological basis for cost-effective recycling of spent fuel exists, using lessons learned from DOE and the programs of other nations, such as France. We believe that recycling must be a significant component of any policy. We also believe that the technology can be improved from its current inefficiencies.
5. Interim storage for used fuel – We offer than an effective way to identify potential sites for interim storage is to ask for volunteer communities. This method worked in Sweden. There is no reason it can't work here.
6. Funding for a rigorous R&D program to improve repositories, recycling and interim storage.

² Public Participation in Environmental Assessment and Decision Making. T.Dietz and P.C. Stern, Eds. National Academies Press, 2008.

Our final point: No solution is perfect or pleases everyone. Even if some people consider our current solutions for nuclear waste disposal flawed, we should not delay implementing them.

South Carolina has the benefit of more than 50 years of lessons learned regarding nuclear materials. From that vantage point, we well understand the risks. We also know that our current technologies provide for the safe and secure management of nuclear materials.

We support the country's need to be energy-independent, and recognize nuclear technology as an important component.

We believe that the storage and disposal of nuclear waste is not yet a crisis, that there are multiple paths to resolution. That being said, it is time for the government to make some decisions and begin.

South Carolina Governor's Nuclear Advisory Council

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