

Barrett Responses to 24-04-10 HECC Hearing QFRs

The Honorable Jeff Duncan

1. There was reference to the coming operation of the geologic repository in Finland. Would you please describe the process Finland followed, the lessons that may hold for the United States, and what key differences there are between Finland and United States that suggest it will be difficult to implement that approach in the United States?

Answer:

Finland is a small homogeneous country with about 5 million people without a complex federal-state structure like the United States of America. It is also geologically homogeneous with a common granite geology across the entire country. This common granite geology is a good geologic media for long term safe disposal for radioactive wastes. There have been decades of joint technical safety work between scientists in Finland's waste disposal and US DOE's waste disposal programs that have confirmed each other's technical approaches as safe and environmentally protective.

The implementing waste management organization within Finland is a government sponsored private public service corporation, Posiva, led by the two nuclear utilities that generate all spent fuel within Finland which primarily function at two different reactor sites. There is a long term established trust and confidence between organizations there and the siting of a geologic repository is a relatively simple socio/economic/political discussion between Posiva and the two local nuclear communities to reach a mutually beneficial disposal site arrangement. These relationships and siting discussions have been ongoing for decades and agreements have been finalized, safety licensing completed, and final repository construction is near completion. There has been little political differences within the central or local governments regarding nuclear energy and nuclear waste disposal responsibilities, including fair implementation.

Our United States nuclear spent fuel and nuclear waste situation is much more complicated, mostly because we are a government of individual States that have considerable autonomy with politically very important US Senators and Presidential electoral votes that are elected state-wide. This adds considerable state level social/political difficulties when siting nuclear spent fuel disposal or storage facilities which involve out of state wastes being imported.

In the past DOE, and others, have generally had acceptable hosting relationships with local communities, but most have fallen short of State level acceptance. For example, DOE had long term positive relationships with Nye County Nevada, the local government for Yucca Mountain, and also Roane County and the City of Oak Ridge TN, the proposed location of the Monitored

Retrievable Storage facility back in 1985. However, state level relationships were negative. In addition, Private Fuel Storage had a good working relationship with the Skull Valley Goshute tribe for a spent fuel storage facility but was blocked by state level opposition. In my view, these facilities would all have been successfully sited, if not for state level social/political opposition, thus the Finnish experience is not directly applicable to the USA because we have states and they do not.

However, there are good lessons to be learned from the Finnish experience that are applicable to the USA. For example, the Finnish spent fuel implementation organizational structure of a responsible corporation to work out hosting agreements and implement safe solutions, under a strong independent safety regulator, has been extremely successful and could be used here in the USA. Also the Finnish cooperative social spirit to work very hard together to maintain positive attitudes and relationships for the common good to develop mutually beneficial outcomes is an attribute that could be extremely valuable moving forward here. Establishing mutual trust and confidence among the parties to work together to find mutually beneficial solutions is another attribute that we must strive to earn here which can serve us well in meeting our performance goals.

2. There was discussion in the hearing about the prioritization of spent fuel, and the urgency of addressing the fuel from sites that no longer have an operating reactor. What are some of the contractual impediments to prioritization?

Answer: The original construct of the 1982 Nuclear Waste Policy Act was to be neutral regarding incentivizing either extended operation or early reactor shutdowns with utility fuel pickup allocations being based on oldest fuel generated first basis per the DOE-utility contracts. The general approach, at that time, was that fuel pickup would likely begin within most reactor operating lifetimes and that utilities could and would exchange pickup allocation rights in discussion with DOE to arrange for the most systematic efficient national fuel removal arrangement within the capacity of the DOE receipt capabilities. In addition to this expected arrangement, the Secretary was also given authority to pick up shutdown reactor fuels first if necessary or appropriate to do so.

Today, in general, there is a widespread nationwide understanding by all parties, including the utilities having early allocations, that the stranded spent fuel at permanently shut down reactor sites should be removed first, even though there may be some financial value in having early removal oldest-fuel-first contractual allocations. The key issue is establishing an operable receiving facility location somewhere. Thus, I do not foresee a contractual impediment to removal of shutdown reactor fuel first, since either exchanges or direct Secretarial action can accomplish this goal. We have more than sufficient time to work out shipping campaign technical and administrative details once a receiving facility siting decision has been made.

3. What are some steps the Department can take over the next few years to restore its capacity for managing spent fuel, including for transportation of spent fuel? Are there operations and activities Congress should encourage DOE to undertake in lieu of any reforms to the Nuclear Waste Policy Act?

Answer: The existing Nuclear Waste Policy Act provides the Secretary of Energy considerable authority to make progress if she chooses to utilize now in advance of major amendments of the NWPA. The Secretary, or a Secretarial delegee, can engage with the State of Nevada to try to work out some arrangement to move forward with something that can be mutually acceptable to both parties. Any such agreement, if necessary, can be brought forward to Congress for confirmation via an amendment to the NWPA, if necessary, or just appropriations to implement.

Working with Congress, DOE can immediately start the process for a second repository to restore at least some aspect of an alternate disposal program. The Office of Civilian Radioactive Management should be restored to perform its statutory duties. DOE should continue transportational readiness activities as well as its Consent Based Siting efforts for an interim storage facility.

DOE should again revisit Section 303 of the NWPA to update the report to Congress on “alternative approaches to managing” the program including “establishing a private corporation...”. Such information should be helpful in guiding future overall program improvements including the views of potential host states and communities.

The Honorable Larry Bucshon, M.D.

1. As these new reactor technologies are licensed by the Nuclear Regulatory Commission, the Nuclear Waste Policy Act requires that they confirm the existence of contracts with the Department of Energy to take their spent fuel for ultimate disposal. Given the state of this program, is the Department of Energy entering into contracts with these companies?

Answer: This question refers to future decisions to be taken by the Nuclear Regulatory Commission and Department of Energy, of which I am no longer a member of and thus this is just my personal understanding of the situation.

To my knowledge, the Department of Energy has not entered into any new contracts for advanced reactors since the DOE suspended its disposal program and terminated the Office of Civilian Waste Management in 2010. I do not believe that any of the proposed new advanced reactors have reached the operating reactor license decision stage that would likely trigger the need for a waste disposal contract as implied by Section 302 (b) of the Nuclear Waste Policy Act. However, if

advanced reactor development continues forward as hoped, this matter will have to be resolved by the DOE and NRC within the next few years.

Section 303(b)(1)(B) gives the NRC the latitude to decide what is necessary to allow reactor operation (and thus waste generation), and while the intent of these provisions were for there to be a disposal contract in place to ensure that newly generated wastes would have a disposal path forward, the DOE currently has no program at all for waste disposal, so there is considerable uncertainty as to whether DOE can sign such a contract or under what open ended conditions a prospective licensee would be willing to accept. It is also unclear what the NRC may require for reactor operation at that stage if there is no contract in place.

As a nation, we are currently spending billions of dollars to develop clean energy from new advanced reactors, so it seems appropriate that DOE should restore a geologic disposal program to provide a clear basis for a disposal contract and remove any uncertainties that could hinder clean energy production due to a future licensing problem and possible complex litigation complications.