Chairman Lamar Alexander Opening Statement
Committee on Appropriations Subcommittee on Energy and Water Development

Hearing on the Future of Nuclear Power

November 16, 2016

(*As prepared for delivery*)

The Subcommittee on Energy and Water will please come to order.

This afternoon we will have the second of two oversight hearings to discuss the future of nuclear power in the United States.

In our previous hearing, in September, we discussed what actions should be taken to maintain today's nuclear power plants and ensure our country continues to invest in nuclear power.

Today, we will discuss the recent Task Force Report on the Future of Nuclear Power from the Secretary of Energy's Advisory Board.

We will also discuss:

- Basic energy research and development to support nuclear power;
- The work that's being done to safely extend reactor licenses from 60 to 80 years; and
- The development of new nuclear technologies, including advanced reactors, small modular reactors, and accident tolerant fuels.

Ranking Member Feinstein and I will each have an opening statement.

I will then recognize each Senator for up to five minutes for an opening statement, alternating between the majority and minority, in the order in which they arrived.

We will then turn to the witnesses for their testimony.

The first panel will be Dr. John Deutch.

He is the Chair of the Secretary of Energy's Advisory Board and an Institute Professor at the Massachusetts Institute of Technology.

He is also a former Director of the Central Intelligence Agency, Deputy Secretary of Defense, and Director of Energy Research at the Department of Energy.

The second panel includes Dr. Alan Icenhour and Dr. Matthew McKinzie.

Dr. Icenhour is the Associate Laboratory Director for Nuclear Science and Engineering at the Oak Ridge National Laboratory.

Dr. McKinzie is the Director of the Nuclear Program at the Natural Resources Defense Council.

Questions

After witness testimony, Senators will then be recognized for five minutes of questions each, alternating between the majority and minority in the order in which they arrived.

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Today's hearing is our second oversight hearing to discuss steps we can take to help ensure that carbon-free nuclear power has a strong future in this country.

In September we held our first oversight hearing on the future of nuclear power, and we heard from Secretary Moniz about the biggest challenges facing nuclear power, and the work the Department of Energy is supporting in nuclear research and development programs to help solve those problems. A lot of that research and development is performed at Oak Ridge National Laboratory, and the other laboratories. We'll hear more about that today.

At that hearing, Senator Whitehouse discussed his efforts to drive innovation in next generation nuclear technologies at our national laboratories, and foster a regulatory environment that enables these technologies to come to market. He explained the reasons he supports advanced nuclear reactors—compared to today's reactors, they are potentially safer, less costly, may produce less used fuel.

We also heard from former Senator Judd Gregg and Jay Faison, CEO of ClearPath Foundation. Senator Gregg said it makes no sense to close down nuclear reactors if they still have useful life. He explained how nuclear plants are closing, in part because they are competing with other forms of energy that are highly subsidized. Mr. Faison talked about the innovation—he said 40 to 50 companies are working on advanced reactor concepts that have lower construction costs, increased safety and better used fuel management than today's reactors.

Our nuclear future can be bright, but I believe we need to prepare now by

- building more reactors
- ending the stalemate on what to do about nuclear waste
- stopping Washington from picking winners and losers in the marketplace
- pushing back on excessive regulation
- fueling more free market innovation with government sponsored research

The witnesses today will discuss:

- The Secretary of Energy Advisory Board Task Force Report on The Future of Nuclear Power
- Research and development of the next generation of nuclear reactors
- Steps we can take to maintain our existing reactor fleet
    - Recognizing nuclear as a carbon-free source of electricity
    - Extending reactor licenses from 60 to 80 years if it is safe to do so
    - Solving the nuclear waste stalemate

In October we received the Secretary of Energy Advisory Board Task Force Report on The Future of Nuclear Power.

The report examined challenges that the nuclear industry is facing today, as well as the steps that are necessary to deploy new advanced nuclear technologies in the future.

The report concluded that there are five factors that are limiting investment in nuclear power in the U.S.

1) Nuclear power does not get credit for being carbon-free;
2) New nuclear technologies are complex, expensive and are heavily regulated
3) We have not solved the nuclear waste stalemate
4) Market conditions
5) Unanticipated events, such as a nuclear accident

At a time when he leading science academies of 20 developed countries, and many Americans, say climate change is a threat – and that humans are a significant cause of that threat – nuclear power produces about 60 percent of our country's carbon-free electricity.

Power plants produce nearly 40 percent of the carbon produced in our country.

If in my hometown of Maryville, I had twenty fire marshals come around and tell me my house might burn down, I think I would buy some fire insurance.

So my recommendation is that we should get some insurance against climate change.

I think the best insurance is nuclear power. It makes no sense whatsoever to close reactors at a time when many people think climate change is a problem.

We need to invest today in the next generation of nuclear reactors, advanced reactors, small modular reactors, and accident tolerant fuels.

The Department of Energy should continue to work with the Nuclear Regulatory Commission to move forward with small modular reactors, a technology I strongly support.

The Senate Energy and Water Appropriations bill includes $95 million for this work.

The Task Force recommends that the United States undertake an advanced nuclear reactor program to support the design, development, demonstration, licensing and construction of a first-of-a-kind commercial-scale reactor.

Dr. Icenhour, who is here today on behalf of Oak Ridge National Laboratory, leads the Consortium for Advanced Simulation of Light Water Reactors, also known as CASL.

Dr. Icenhour and his colleagues at our national laboratories are currently developing the advanced nuclear technologies that will be needed to ensure nuclear power has a future in our country.

Secretary Moniz said at our hearing that by the end of the year the Department would begin the process to move forward with interim storage facilities for nuclear waste.

Solving the nuclear waste stalemate is a priority that Senator Feinstein and I agree on.

I am pleased to report that after our hearing the Department took the initial step of seeking information on private interim nuclear waste storage sites.

We need to move on all tracks at the same time to solve the nuclear waste stalemate, and I appreciate the Secretary's attention to this issue.

Secretary Moniz has taken an important step. Now Congress should take the next steps, and pass the bipartisan Nuclear Waste Administration Act, which was introduced last year by me, and Senators Feinstein, Murkowski, and Cantwell. Congress should also pass the pilot program that would allow the Secretary to take title to used nuclear fuel. Both the pilot program and funding for private interim storage were included in this year's Senate Energy and Water Appropriations bill.

We need to maintain our existing nuclear fleet and extend reactor licenses from 60 to 80 years if it is safe to do so.

We need to relieve the burdens of unnecessary regulation. We want to be safe, but we don't want to make it so expensive and difficult to build reactors that we don't build them.

We need to use our supercomputing resources to model and simulate reactor designs in ways that we never could before to make sure new reactors are safe and more cost-effective.

Since our hearing another reactor has shut down – the Fort Calhoun Nuclear Generating Station in Nebraska shut down on October 24 which means we have lost another 484MW of carbon-free electricity.

Imagine a day the United States is without nuclear power – a day I don't want to see in our country's future.

That seems like a distant and unlikely scenario but in fact it's more of a threat than many people realize.

By 2038– that's just over 20 years from now – 50 reactors will have reached 60 years of operation, representing 42 percent of the nuclear generating capacity in the United States. The U.S. could lose about half our reactors if existing licenses can't be extended from 60 to 80 years and those reactors close.

While there are four reactors being built, all in the southeast, there are eight reactors, three in the northeast, at seven plants, which are scheduled to shut down by 2025.

The Energy Information Administration estimates that shutting down these eight reactors, plus the recently closed Fort Calhoun reactor, will result in a 3 percent increase in total carbon emissions from the U.S. electricity sector.

We need to take steps today to ensure nuclear power has a future in our country, and with that, I'd like to recognize Senator Feinstein, our subcommittee's ranking member, for her opening statement.

At this time, we will turn to the Dr. Deutch, who will share his remarks.

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