Opening Statement Chairman Dianne Feinstein Safety and Economics of Light Water Small Modular Reactors June 14, 2011

Good morning ladies and gentlemen and welcome to the Energy and Water Subcommittee's oversight hearing on safety and economic issues for proposed light water small modular reactor.

The program, proposed by the Administration, is a major investment of taxpayer funds to help two private companies develop their designs and submit them to the Nuclear Regulatory Commission for certification.

In today's hearing we will look at the safety features and potential economics of light water small modular reactors.

We may not arrive at definitive answers today to the questions that are going to be raised-that's going to likely require the NRC to take action on the actual application. However, it is important that we try to understand the potential benefits and deficits and acknowledge uncertainties to determine whether such a large investment by the federal government is justified.

My friend and distinguished ranking member of this subcommittee often talks about subsidies for wind energy. I look at this program and think that it appears to be one heck of a proposed subsidy.

The Administration has proposed a five-year, \$452 million program to develop the designs for two light water small modular reactors.

These designs would then be presented to the Nuclear Regulatory Commission for certification.

It's important to note the program will have a cost-share of at least 50 percent from industry. But this immediately raises I think a significant point.

I'm told that the total cost to take two designs through the proposed process will cost at least \$1.5 billion. On a 50/50 cost-share basis, that would make the federal contribution \$750 million, not \$452 million.

So one thing we must determine is how the Administration plans to make up this difference.

- Will it require a higher industry cost-share? Say, 70 percent?
- Will the Administration choose only one design rather than two?
- Or will we blindly move forward, hoping \$300 million in additional funding will be approved by Congress?

As with any hearing on the nuclear industry, we have to recall the recent earthquake, tsunami and subsequent nuclear disaster in Japan. And just this morning, Japanese Prime Minister in Washington Post has said that he wants the country not only to shut down but get our of nuclear power entirely. These events have rightly caused a reexamination of nuclear safety internationally and here in the United States.

For me, one of the fundamental issues raised by events in Fukushima is whether multiple reactors should co-located.

The threat of high-level radiation exposure at one plant clearly compromised the ability of workers to adequately respond to events at nearby plants at the Daiichi site.

The premise of the small modular reactor program is that utilities could start with a small number of units and then install more as funding allowed and demand necessitated.

Now, how does that premise stack up against possible problems?

The Fukushima crisis also demonstrated the potential danger of storing spent fuel in pools on site. And yet the proposed small modular reactor designs do not appear to make any improvements on this method of spent fuel storage.

Bluntly, I'm struggling to reconcile the lessons of Fukushima with the principle design premise of small modular reactors. And so I look forward to witnesses addressing these issues today.

This hearing is not about spent fuel, but it's hard to have a hearing on new nuclear power without considering the issue of what we do with the waste.

The country has not, and I stress not, done a good job dealing with defense or commercial nuclear waste. That is simply a fact.

Today we have no national policy to address our commercial spent nuclear fuel, and we store it at every nuclear plant in the country—in pools and dry casks—for decades without end.

Yet today we are considering investing \$452 million in light water reactors that will result in more spent fuel stored at sights with no permanent storage of waste.

By law the federal government must take this waste and store it permanently. But today, the federal government is being sued and is making payments for lost cases because it cannot fulfill that obligation.

And this is not inexpensive. The Government Accountability Office estimates that we face \$12.3 billion in liability through 2020 if we fail to take the spent fuel from utilities. That's \$12.3 billion in liability. That's of very deep concern and should concern every one of us in Congress.

Presumably, building new plants licensed under the Small Modular Reactor Program would only increase this liability.

While we discuss the specific safety and economic issues of light water small modular reactors, I continue to view these issues with the absence of a spent fuel policy.

I visited our two reactors in California and, candidly, I don't know how the NRC can say it's a fine way to just keep re-racking spent fuel, adding more rods, keeping their waste in California for 24 years, transferring to dry casks, most of which are designed for transportation to permanent storage.

And we have no permanent storage. We have no repository. We have no regional storage. We have no permanent storage. And yet we're looking at a new start.

I'm struggling to understand how these reactors also will be economical.

The central premise I've been given is that for small modular reactors to be economical, they must offset the loss of economies of scale with economies of manufacturing.

If true, we need to determine how many reactors must be constructed to achieve cost effectiveness and competitiveness and how many must be sold to maintain a factory production level necessary to justify the capital investment.

The Nuclear Energy Agency, an arm of the Organization for Economic Co-operation and Development, recently released a report that said electric power from small modular reactors would cost 10 to 40 percent more than large reactors.

I have been told that anywhere between 20 and 1,000 reactors would be needed to be produced in order to be economical. How many are needed to be cost effective? Clearly, a larger number makes the endeavor questionable.

I understand the University of Chicago is completing a study for the Department of Energy on the economics of these reactors and perhaps that will provide some clarity.

But in the mean time, my hope is that representatives from the companies here today will elaborate on this particular issue.

Whether the companies would be selling these units in the United States or overseas, I would like to have a better understanding of what is necessary in terms of production levels to be economical and thus be a justified expenditure of federal resources.

On our first panel today, we will hear from Pete Lyons, the Assistant Secretary for Nuclear Energy at the Department of Energy. Dr. Lyons was also at one time a commissioner at the NRC.

We will also hear from Dr. Bill Magwood, a current commissioner on the NRC. Interestingly, he used to hold the position Dr. Lyons holds today.

On our second panel we will hear from Dr. Ed Lyman from the Union of Concerned Scientists and Dr. Ernie Moniz of Massachusetts Institute of Technology. Both of these have spent time considering the merits of small modular reactors.

The second panel will also feature

- Mr. Jim Ferland from Westinghouse,
- Mr. Christofer Mowry from Babcock and Wilcox, and
- Mr. Paul Lorenzini from NuScale.

These gentlemen represent three companies interested in pursuing the cost-shared programmed, but I understand there may be other companies interested as well.

I look forward to everyone's testimony, and even more so to the question and answer period. And I thank everyone for coming.

And now I would like to turn to our distinguished ranking member, Senator Alexander.