NRC NEWS

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Prepared Remarks for Commissioner William C. Ostendorff
United States Nuclear Regulatory Commission
American Nuclear Society Winter Conference
Panel: *Recognizing Existing Functional Links to National Security Policy That Could Properly Accelerate Development of Small Modular Reactors*
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Introduction

Good morning. Let me commend the American Nuclear Society for hosting this first annual embedded small modular reactor (SMR) conference. I would also like to express my appreciation of Mark Campagna's effort to sponsor this panel discussion. I am pleased to see the scope of the agenda and the expertise of this panel's participants. I see there is a wide range of topics on SMRs including the topics for this morning's panel on links to national security policy that could accelerate SMR development.

In June 2010, I noted at an SMR conference here in Washington D.C., that we find ourselves facing increasing energy demands, concerns with the environment and climate change, and dependence on fossil fuels. I am reminded of these challenges as I read news headlines this week of our world's population reaching 7 billion people. Although the circumstances for energy demands have not changed in the last year, the nuclear accident at the Fukushima Dai-ichi plant in Japan has brought additional focus and scrutiny on nuclear energy.

I recognize that the theme of this panel relates to functional links to national security policy as they impact SMR development. From my time in the Department of Energy as well as on the Hill working on nuclear weapons security and nonproliferation matters, I concur that this is an important topic. While others on this panel will cover this topic in greater detail, I will simply comment that from my experience, proliferation and security concerns associated with SMRs can be resolved.

In my role as an NRC Commissioner, I think it best to focus my comments on where the NRC is today in light of the Fukushima Dai-ichi accident. Thus, I will briefly comment on Fukushima, speak to SMR-related regulatory activities, and what I see as some of the next steps. I point out that my job as a Commissioner is that of a safety regulator, and not a promoter of

nuclear technologies. My perspectives are solely my own and do not necessarily represent the views of the Commission.

Fukushima Dai-ichi

The accident at Fukushima could be viewed in and of itself as a nuclear stress test. Somewould say the extreme natural forces produced an over-stress test that caused massive damage to the plant and the extended station blackout or loss of all AC power. Much has been said already about the accident itself and the rest of the facts will continue to emerge in due course. Growing evidence shows that that a megatsunami was not unimaginable or unlikely in this region of Japan given its proximity to a large tectonic subduction zone.

While no coastal U.S. nuclear plant is located near a tectonic subduction zone, this year, American plants have also been tested by a series of significant natural events. U.S. nuclear plants have experienced tornados at plants in the Southeast, flooding on the Mississippi and Missouri rivers, flooding in the Northeast from Hurricane Irene, and an earthquake in central Virginia. I think that the U.S. nuclear plants impacted by these natural events demonstrated the concepts of defense-in-depth and safety margin. I furthermore believe that the NRC has high confidence in the safety of U.S. plants. That said, the NRC will continue to consider opportunities to enhance safety of U.S. nuclear power plants based on what we learn from such events.

As you know, the Commission established a task force to review the Fukushima accident and make recommendations to the Commission. The NRC task force completed its work in July and provided the Commission with 35 specific recommendations. The task force concluded that there is no imminent risk to the public from the continued operations and licensing of U.S. nuclear power plants. I agree with the task force's conclusion. Nevertheless, I do believe we have a responsibility to make improvements in our safety regulatory framework where appropriate.

The Commission promptly dispositioned the task force report in August and directed the staff to: First, identify which task force recommendations could be implemented without delay, Second, integrate and prioritize all recommendations, and Third, address the task force's overarching recommendation on treatment of beyond design basis events as a separate matter on a longer time horizon. The NRC staff provided the Commission with two follow-up papers in response to the Commission's direction. In the first paper, commonly referred to as the 21 day paper, the NRC staff identified specific actions that could be implemented without delay. These items, as approved by the Commission, are:

- Information collection for seismic and flood hazard re-evaluations and walkdowns
- Rulemaking to strengthen station blackout capability
- Orders to protect equipment required post 9/11 for fires and large explosions
- Orders for reliable hardened vents for Mark I boiling water reactor containments
- Rulemaking to strengthen and integrate emergency operating procedures and severe accident management guidelines
- Information collection to evaluate emergency preparedness for multi-unit events

Regarding extended station blackout capability following a loss of all AC, my colleagues concurred with me that the NRC should expedite this action as a high-priority rulemaking. The

Commission directed that this rulemaking should be completed within 24 to 30 months. I think that extended station blackout coping capability is one of the most tangible safety improvements we can make to U.S. plants.

The second Commission paper is referred to as the 45-day paper and provides a three-tiered approach to integrate and prioritize the NRC's post-Fukushima actions. The Commission is currently voting on this paper now. This paper contains an integrated and prioritized approach to developing new requirements.

In my opinion, the NRC's task force report and subsequent Commission papers provide a solid foundation for enhancing safety of the current fleet of reactors. The full impact on new and advanced designs has yet to be determined. However, the Commission did not believe that it was necessary to suspend licensing activities. The NRC has the appropriate backfit process and authorities to impose new requirements resulting from the Fukushima lessons learned, if needed. Operating experience is a fact of life that is ingrained in our nuclear culture.

Irrespective of Fukushima, the NRC continues to gain significant experience with the 10 CFR Part 52 licensing process including the recent mandatory hearings on the Vogtle and Summer combined license applications and the activities associated with the ABWR, AP1000 and ESBWR design certifications. Building off that experience, I know that we will apply lessons learned to future SMR reviews as appropriate.

SMR regulatory work continues

The NRC continues to make progress in addressing key SMR issues. In the last year, the staff has provided the Commission with papers on control room staffing levels, use of risk insights in the SMR reviews, licensing structure, and annual fees. This week, the Commission received the staff's proposed approach to emergency planning zones. I was encouraged by the staff's structured approach. This coming December, the Commission should receive a staff paper addressing security requirements for SMRs, a paper germane to the topic of this morning's national security panel discussion.

As a practical matter, pre-application meetings between NRC staff and SMR stakeholders are vitally important to the successful resolution of technical and policy issues. Such interactions are critical to ensuring clarity and mutual understanding during a time of change. The existing regulatory framework is largely based on large light-water reactor safety and security experiences. This paradigm is rooted in reactors with large accident source terms, high power densities, and complex systems that are reflected in the comprehensive framework of safety and security requirements in place today. I believe we are on a good path to tailoring this historical approach, where appropriate, for regulating SMR plants with passive designs, smaller accident source terms, emphasis on increased safety margins and proliferation resistant features.

Next steps

As you may already be aware, the Commission's 2008 policy on regulation of advanced reactors encourages design innovations that enhance safety, reliability, security and minimize the potential for severe accidents and their consequences. I think that attributes such as these will enable SMRs to meet the regulatory demands in the post-Fukushima environment.

That said, SMRs becoming a reality are dependent on government and the nuclear industry. To date, the NRC has no SMR design certification applications for review. We all recognize that with respect to new reactor licensing, "the devil is in the details". In that spirit, I look forward to the first SMR design certification application.

Closing

In closing, I believe the United States best serves nuclear safety and security by being amongst the leaders in nuclear technology, SMRs included. I applaud the initiative to specifically engage the SMR topic at this conference and thank the American Nuclear Society for the invitation.

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