

**Commissioner Burns's Remarks for  
Nuclear Fuel Supply Forum  
January 17, 2018**

**Introduction**

I'm pleased to be here today. Thank you for the opportunity to provide some of my perspectives about the NRC to the Nuclear Fuel Supply Forum. I was asked to cover a broad range of topics regarding the NRC, so my remarks won't be limited to issues specific to fuel supply.

If you were to ask me what the main issues are that the agency is currently grappling with, I would boil them down to three main areas. I would say the first is adjusting the agency's priorities in light of the premature closure of operating plants and the abandonment of large new reactor projects. Second is the increasing interest in recent years in advanced and small modular reactors. Finally, on top of the inherent tension between these two realities is the intense pressure over the last few years for the NRC to reduce its staffing and budget, and to become more flexible in its regulatory approaches and oversight.

**Commission Business**

Before getting into these issues, I'll focus for a moment on the Commission. As I'm sure you are aware, we currently have three Commissioners, one Republican, one Democrat and one Independent – me. There are two open seats for which the President has nominated candidates. Commissioner Baran was also renominated for another term to begin after his current term ends in June of this year. As of today, the Senate has not confirmed the nominees.

For Commission trivia buffs in the audience, Commissioner Ostendorff's term on the Commission ended in June of 2016 (just over one and a half years ago) and Chairman Macfarlane departed in December of 2014 (just over 3 years ago). This means that we have essentially reached the longest consecutive period that the Commission has been down to 4 or fewer members (3 years, 2 months from July 1993 to late August 1996)

and, more significantly, when the Commission has had only had 3 members (July 2003 to late January 2005).

As you know, the President designates one member as Chairman. I served as Chairman in 2015 and 2016. In January 2017, President Trump designated Commissioner Svinicki as Chairman, and subsequently nominated her for another five-year term. She received Senate confirmation and began serving her new term on July 1, 2017.

The Chairman has a few more responsibilities, such as supervisory authority over the NRC staff and serving as agency spokesperson, but has the same single vote as Commission colleagues on policy matters. The Commissioners terms are staggered and all end on June 30 of different years. My term ends on June 30, 2019.

I'm often asked whether or not I think the Commission is functioning "well" at 3. The Commission was, of course, designed to operate optimally at 5 members, but as former Secretary of Defense Don Rumsfeld once observed "You go to war with the army you have, not the army you might want or wish to have at a later time." The three current members of the Commission function quite well together, and the agency has moved forward smoothly despite the diminished Commission. That said, we look forward to once again having a full Commission, hopefully sometime in the near future.

### **The Existing Fleet**

With that backdrop, let's turn to the key issues before the Commission as I see them. As I mentioned the future of the current operating fleet is in the forefront of the Commission's mind.

As a general matter, I believe nuclear plant safety performance has been strong. All but three reactors have remained in the highest two NRC performance categories for the past 3 years. This reflects positively both on the NRC's oversight as well as licensee performance. The three reactors in the lowest performance category are subject to additional NRC inspection and oversight. Three does not sound like many, but we'd of course like to get that number to zero.

In a recent trend, we have seen number of operating units that have either ceased operation, or indicated an intent to cease operation, before the end of their current

licensed term. As of today, these include: Crystal River Unit 3, Kewaunee, San Onofre Units 2 and 3, Vermont Yankee, Ft. Calhoun, Indian Point Units 2 and 3, Oyster Creek, Three Mile Island, Pilgrim, and Palisades. Even before this most recent spate of early shutdowns, the NRC already had a number of reactors in various stages of decommissioning.

As a result of the increase in decommissioning activities, the agency is reallocating resources and reassessing priorities, including focusing on revising the NRC's decommissioning regulations to make the transition from operation to decommissioning simpler.

Against the backdrop of this rapidly changing environment is the slew of ongoing and emergent safety and security issues that continue to demand attention: routine licensing and inspection activities, the effective close out of the efforts to address the 2011 accident at Fukushima Daiichi nuclear power plant, cyber security, modernizing our framework for dealing with digital instrumentation and control, developing an effective path forward for licensing of accident tolerant fuel, assessing the NRC's force-on-force program, among other issues.

### **New and Advanced Reactors**

The landscape with respect to new reactor licensing and construction is equally challenging. The bankruptcy of Westinghouse and the cessation of construction at VC Summer was a shock to many. Southern Company has committed to completion of the Vogtle AP1000 units, and recently received conditional permission from the Georgia Public Utilities Commission to continue construction. NRC has adjusted its resources accordingly during this time, but continues to monitor the situation closely.

Notwithstanding these challenges, the NRC has continued to approve applications for new combined licenses under 10 CFR Part 52. To date, 7 licensees (including Vogtle and Summer) have been issued combined licenses, and the Commission is nearing a decision on Turkey Point Units 6 and 7 following the mandatory hearing held in December. In almost every instance, however, the applicant has indicated an intent to hold off on construction for the foreseeable future.

Somewhat relatedly, I would note that the NRC has received applications for medical radioisotope production facilities and last year granted the first construction permit for such a facility to SHINE Medical Technologies Inc. (Wisconsin), and staff made its recommendation on the Northwest Medical Isotopes application to support a mandatory hearing to be held on January 23, 2018.

Contrasted with the decline in new reactor work related to large light-water reactors, we've seen a significant increase in our workload related to small modular and advanced reactors. We received our first application for certification of a small modular reactor design at the beginning of 2017. The NuScale application was accepted for review in March and we are now engaged in the full technical review. We are also reviewing an early site permit application from the Tennessee Valley Authority for two or more small modular reactor modules at the Clinch River site.

With respect to advanced, non-light-water reactors, the NRC is working on establishing a licensing framework to meet the needs of the wide variety of advanced reactor designers. In late 2016, we published a vision and strategy to assure that the NRC is ready to review potential applications for non-light water reactor (non-LWR) technologies effectively and efficiently and have dedicated resources to ensuring our readiness to review applications as they arrive, regardless of the specific technology. After receiving public comment, the NRC published in December 2017 a regulatory review "roadmap" to help reactor developers in their interactions with the NRC staff. In fact, the NRC staff is currently engaged with pre-application interactions with several companies pursuing advanced reactor designs.

We are also working closely with our federal partners at the Department of Energy on technical issues, such as developing general design criteria for advanced reactors. Last year, we published a draft regulatory guide (DG-1330) that takes into account work done in this area with DOE support. We expect to issue the final regulatory guide later this year.

## **The Regulatory Environment**

The challenges associated with overseeing the current fleet and keeping pace with future developments are amplified in an environment such as we have found ourselves in the last few years with shrinking budgets and increased pressure on regulators.

At the NRC, we have proactively taken a hard, honest look at ourselves to challenge what we're doing and how we're doing it. Throughout this period, the Commission has been pushing the staff to question itself on whether it is doing the right thing for the right reasons at the right time.

For instance, the NRC initiated its efforts to "right size" itself and its budget several years back, and these efforts have resulted in significant reductions to the NRC's budget and staff. From 2014 to the NRC's proposed FY 2018 budget, the NRC budget has been reduced by 10% from 1.055 billion to \$952 million, and the number of full time equivalent (FTE) staff has been reduced from around 3800 to 3284. Since 2011, the total number of FTE has been reduced by over 700.

The central, but not sole, component of these efforts has been an initiative known as Project Aim and its re-baselining initiative. Through Project Aim, the NRC identified 150 agency-wide activities to be shed or performed with fewer resources. Of these, 148 tasks have been completed and the remaining two are on schedule.

That said, we often get the question, "Is Project Aim" complete? Project Aim itself was never established to be an ongoing endeavor, but certainly a central objective of Project Aim was to infuse permanent process improvements and cultural changes within the NRC so that these efficiencies would endure beyond Project Aim.

However, it must be acknowledged that many of the adjustments come down to culture. The agency can refine its processes, create new internal procedures and management directives, impose management controls, but at the end of the day it's the people – the NRC staff – who must understand and embrace these approaches. As I'm sure you understand from your own experience in your own organizations that is much easier said than done.

Take, for instance, risk-informed regulation and decision making. The Commission issued its Policy Statement on Probabilistic Risk Assessment Methods in Nuclear Regulatory Activities in 1995 and put out its guidance on the use of risk information in licensing basis changes in the late 1990s. There has been renewed industry interest in

these and other risk-informed initiatives recently, and the industry has been pressing the NRC to use risk-informed thinking to a greater extent in its decision making. But while we all agree that this is a worthy goal, the path for getting there is challenging.

Our safety regulations, to a great extent developed in the 1960s and 70s, are largely deterministic. Past attempts to make wholesale changes to the regulatory framework to better embrace risk-informed principals have not met with initial success (e.g., Commissioner Apostolakis's Risk Management Task Force).

And again, a large reason for this resistance is cultural. Sometimes it's easier to deal with the devil you know than take on new approaches. There has to be incentive and value to moving from what some would call the "tried and true." The Commission is determined to take on this challenge and has directed the staff to give the Commission a plan for increasing staff capabilities to use risk information in decision-making activities, which the staff did this past November. The Commission has pushed the staff to utilize risk-informed thinking across a broad range of areas, including in Project Aim, but also in specific areas such as digital instrumentation and control, accident tolerant fuel, and advanced reactor licensing.

The NRC faces a similar cultural challenge in implementation of its backfitting requirements. The NRC's backfitting processes are not necessarily tied to risk informing our regulations, but understanding and appropriately implementing backfitting controls can include elements of resistance but also ignorance if we do not make the effort to ensure a consistent understanding of the principles among our staff. The Commission has taken a renewed focus on backfitting in the last few years, as has the Executive Director for Operations, Vic McCree. As a result, the staff has been undertaking efforts to improve our backfitting guidance, increase staff training in this area, improve our knowledge management of backfitting decisions and create a backfitting community of practice. This is indeed a work in progress. One might think of it as an ongoing journey.

## **Conclusion**

From the time I first arrived at the NRC in 1978 shortly before the Three Mile Island accident through today, I've seen a recurring pattern where certain issues rise to the

top, take precedence, and then recede as some new issue takes priority. This cycle occurs over and over, and the NRC has been largely successful at making the necessary adjustments to handle emergent issues and adapt to changing times.

Safety and security have always been the main focus of the NRC. When Congress created the NRC as an independent regulator, the legislation underscored the mandate of an unwavering focus on safety founded in the Atomic Energy Act of 1954. I believe the agency has time and again demonstrated its commitment to its mission while also being able to improve upon its way of doing business.

Thank you for inviting me to speak with you. I'm happy to take your questions.