

**Commissioner Burns Remarks  
NRC Workshop on Vendor Oversight  
Thursday, June 14, 2018**

I'm pleased to be here today. I appreciate the opportunity to provide some of my perspectives at this Sixth Workshop on Vendor Oversight. This workshop brings together a broad range of stakeholders to discuss vendor oversight issues. Today's workshop will cover a number of important and timely topics in this arena that I hope you will find engaging and enlightening. You will hear from an impressive array of people from both inside and outside the NRC.

**The Existing Fleet**

Let me first discuss the state of the U.S. operating nuclear power plant fleet. 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 3½ years. This reflects positively both on the NRC's oversight as well as licensee performance. The three reactors that were in the lowest performance category have been subject to additional NRC inspection and oversight. The NRC recently announced that two of those reactors have met all of their commitments to improve safety performance and these plants are being moved back to the NRC's highest performance category.

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. 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. In addition to NRC's routine licensing and inspection activities, we are very close to completing our efforts to address lessons learned from the 2011 accident at Fukushima Daiichi nuclear power plant. We also are expending significant effort in the areas of cyber security, modernizing our framework for dealing with digital instrumentation and control, and developing an effective path forward for licensing of accident tolerant fuel, among other issues.

The increasing trend toward premature shut down of operating plants and a renewed focus on the specific technical areas I mentioned can all have a direct impact on the supply chain. I encourage you to closely follow and actively involve yourselves in the issues that can affect your activities. Your participation in these discussions can make a difference in reaching meaningful solutions on difficult technical issues in a changing environment for the U.S. operating nuclear fleet.

**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 in South Carolina last year was a shock to many. Southern Company has committed to completion of

the Vogtle AP1000 units, and received permission from the Georgia Public Utilities Commission to continue construction.

Notwithstanding these challenges, the NRC continued to review and approve applications for new combined licenses. To date, 14 new reactor licenses at 8 sites have been issued. In almost every instance other than Vogtle and VC Summer, however, the applicant has indicated an intent to hold off on construction for the foreseeable future. In one instance (Levy), the licensee recently terminated the combined licenses for two units in Florida, stating that it no longer intended to build the two units it had received the licenses for just 15 months beforehand. As it stands today, the NRC has no active applications for new combined licenses, nor do we anticipate any in the foreseeable future.

That does not mean that the NRC is not busy in the licensing department. The NRC has, for instance, reviewed and approved two applications for medical radioisotope production facilities and last year granted the first construction permit for such a facility to SHINE Medical Technologies Inc. (Wisconsin). The NRC issued the second such construction permit to Northwest Medical Isotopes (Missouri) last month.

We've also experienced 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 2017 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 ensure that the NRC is ready to review potential applications for non-light water reactor (non-LWR) technologies effectively and efficiently and we have dedicated resources to preparing to review applications as they arrive, regardless of the specific technology. The NRC staff is currently engaged with pre-application interactions with several companies pursuing advanced reactor designs and we could see an application for approval of an advanced reactor within the next couple years.

Just as the changing landscape for operating reactors will affect vendors supporting the current fleet, so can the evolutions in the new reactors arena result in new opportunities for vendors looking to enter the supply chain for these new designs. Again, I encourage you to take part in the dialogue to ensure supply chain issues are highlighted and appropriately attended to.

### **Vendor Oversight**

So, why does the NRC continue to host this workshop? One very important reason is so that we can emphasize that the products and services that you provide to nuclear power plants play a major role in nuclear safety. For this reason, the NRC has developed a vigorous vendor oversight program that includes inspections conducted at vendor shops that supply components to both the existing operating fleet and to new reactors under construction. These inspections take place in the U.S. and abroad. The NRC's vendor oversight program is managed by our Vendor Inspection Center of Expertise. The Center is responsible for performing inspections in response to operating experience, reports of defects and noncompliances, and allegations. We also conduct inspections to verify the effective implementation of vendor quality assurance programs in order to assure the quality of materials, equipment, and services supplied to the commercial nuclear power reactor industry.

I'd like to mention a few topics that are of specific importance to our oversight of the vendor community, many of which will be highlighted throughout the day today.

### **Safety Culture**

The first topic is safety culture. Based on our many years inspecting suppliers of safety-related parts, materials, and services, and nuclear power plants themselves, we know that safety culture plays a major role in safety performance. It has been that NRC's experience that organizations that continually seek to improve upon the quality and reliability of their products and services will have less issues identified through inspections or problems revealed during plant operation. The NRC recently issued a revised brochure discussing the Commission's Safety Culture Policy Statement. You will be hearing more about this and about the importance of a safety conscious work environment later this morning.

### **Quality Assurance**

Another extremely important aspect of our oversight of the nuclear supply chain involves our review and inspection of vendor quality assurance programs. The construction of the existing fleet of nuclear power plants in the 1960s and 70s highlighted the importance of quality assurance. In the early 1980s, Congress directed the NRC to conduct a study of programs for improving quality assurance in the design and construction of commercial nuclear power plants. A primary focus of the study was to determine the underlying causes of major quality-related problems in the construction of some plants and the untimely detection and correction of these problems. The resulting report led to an NRC decision to support increased focus on inspection and oversight of industry vendor activities.

Unfortunately, it appears that the nuclear industry has had to relearn some of these same lessons more recently during the early construction of the AP1000 units at the Vogtle and now-abandoned VC Summer construction sites. Some of the same issues related to inadequate implementation of quality assurance program requirements and a weak safety culture plagued suppliers of key components for the plants, resulting in necessary rework, increased costs, and significant schedule delays. A former quality assurance manager for the main subcontractor on the projects later said he was not familiar with any schedule that included quality-related activities. He noted, referring to the managers at the facility where he worked, "They were clueless" about the complex geometry of nuclear welds, the nuclear supply chain and the need for a nuclear safety culture. The NRC, after numerous inspections, concluded that a chilled work environment existed at the subcontractor, noting that portions of the workforce, "especially employees with nuclear and quality control backgrounds, have the perception that they are not free to raise safety concerns using all available avenues." These issues ultimately contributed to the abandonment of one of the projects and significant cost and schedule overruns for the other.

### **Commercial Grade Dedication**

One specific area that has been particularly challenging over the years is ensuring proper commercial grade dedication of parts and materials. There is new regulatory guidance available, and this provides an opportunity for vendors to improve upon their commercial grade dedication processes. This topic will be explored in more detail in one of the afternoon panel sessions.

### **Emerging Threats and Emerging Opportunities**

On a very serious note, it is also extremely important that the vendor community be aware of emerging threats. These threats include such things as cyber attacks or loss of control of a long and global supply chain in an attempt to assemble a final product.

It's also important for your community to stay abreast of emerging opportunities. These may include things such as the use of new technologies like additive manufacturing (also called 3-D printing) that could improve upon the safety of products and services, if applied appropriately. Additive manufacturing is another topic that will be explored further this afternoon.

### **Counterfeit, Fraudulent, and Suspect Items**

As highlighted by recent international events, counterfeit, fraudulent, and suspect items, commonly referred to as CFSI, continue to enter the nuclear supply chain. CFSI is an ever-present threat to the quality of components in nuclear facilities. CFSI is not a new occurrence in the nuclear industry and was seen as far back as the construction of today's operating reactors. Non-nuclear industries, such as the defense and construction industries, have long been challenged by CFSI.

A representative from the Department of Homeland Security's Intellectual Property Rights Center will be making a presentation later this morning to discuss Operation Chain Reaction and how the federal government can be a partner in fighting CFSI. The NRC encourages nuclear suppliers to remain vigilant against CFSI and actively participate in discussions within your community about tools that could be used to combat it.

In closing, I'd like to again emphasize the importance of the work you do. The necessity of maintaining the integrity of the nuclear supply chain cannot be overemphasized. In today's global economy and environment of persistent threats to U.S. interests, your job of maintaining the integrity of the supply chain is increasingly challenging. I encourage you all to be vigilant and to work diligently to avoid becoming a weak link in the chain. Thank you, and I am happy to take your questions.