



CHAIRMAN

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 1, 2015

The Honorable Lamar Alexander
Chairman, Subcommittee on Energy and
Water Development
Committee on Appropriations
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

The U.S. Nuclear Regulatory Commission appeared before the Subcommittee on Energy and Water Development on March 4, 2015. From that hearing, you forwarded questions for the hearing record. The responses to those questions are enclosed.

If you need any additional information, please contact me or Mr. Eugene Dacus, Director of the Office of Congressional Affairs, at (301) 415-1776.

Sincerely,

A handwritten signature in black ink, appearing to read "Stephen G. Burns".

Stephen G. Burns

cc: Senator Dianne Feinstein

Enclosure:
As stated

Senator Lankford to Chairman Burns

1. **The rules governing the Commission allowed for a former Chairman to keep his fellow commissioners poorly informed and pursue a personal agenda without ever, technically, breaking laws or procedures. What has the NRC done, if anything, to prevent such an abuse in the future?**

Answer

The existing laws governing the Commission provide a framework for effective agency governance by a collegial Commission. Section 201 of the Energy Reorganization Act of 1974 provides that each member of the Commission shall have full access to all information related to the performance of his or her duties and responsibilities. Further, Section 2(c) of the Reorganization Plan No. 1 of 1980 provides that the Chairman is responsible "for insuring that the Commission is fully and currently informed about matters within its functions."

The Commission's internal procedures have been updated in recent years and set forth the procedures governing the conduct of business by the Commission consistent with these legal requirements. The specific procedures may be changed or waived by a majority of the Commission, and questions regarding implementation and interpretation are decided by the Commission as a collegial body, consistent with existing law. The internal procedures are periodically reviewed by the Commission and approved by majority vote.

2. **Sen. Vitter and Rep. Terry have proposed codifying organizational operation procedures for the Commission, which include explicitly making the Chairman responsible for keeping the other Commissioners fully informed "about matters within the functions of the Commission". If a majority of the other Commissioners determine the Chairman has not been acting appropriately, this legislation would provide a way to report that and allow Congress to evaluate whether a change in leadership is needed. Would such a policy safeguard against future abuses? If this type of policy is not needed, how can the American public and the regulated community be assured that one member of the Commission is not legally able to drive the agenda without informed consent of the other Commissioners?**

Answer

As discussed above, the law currently requires the Chairman and the Executive Director for Operations, through the Chairman, to keep the Commissioners fully and currently informed about matters within their functions. Further, each Commissioner is required to have full access to all information relating to the performance of his or her duties. In this context, the Chairman is also "governed by the general policies of the Commission, and by such regulatory decisions, findings, and determinations ... as the Commission may by law, including this Plan, be authorized to make." The internal Commission procedures reflect these provisions. In addition, the Consolidated and Further Continuing Appropriations Act, 2015 (Public Law 113-235) established a requirement that the NRC Chairman inform the Commission and the Congress should he or she begin performing functions under the emergency authority provided for in section 3 of Reorganization Plan No. 1 of 1980.

- 3. With regard to the power reactor fees, the NRC takes the amount of fees to be recovered and simply divides by the number of reactors. In light of the reductions to the number of reactors – four have gone offline in the past 2 years, with another one slated to go offline soon – has the Commission revisited how they collect fees?**

Answer

The agency has considered how fees are assessed to reactor licensees. The NRC calculates the 10 CFR Part 171 annual fee based upon the requirement of the Omnibus Budget Reconciliation Act of 1990 (OBRA-90), to fairly and equitably collect fees in order to recover approximately 90 percent of the agency's budget authority. The budgeted resources for power reactors constitute approximately 86% of the NRC's overall recoverable fee budget. The current methodology is used, in part, to provide industry with a predictable annual fee cost while also implementing the agency's responsibility to equitably assess fees. Additionally, the NRC publishes its proposed fee rule annually, taking public comment before issuing its final rule.

- 4. Is the Commission concerned that with the competition of other relatively cheap power sources, such as natural gas, this rather arbitrary increase in fees is encouraging nuclear plants to close sooner than they otherwise would?**

Answer

While the Commission is aware of the economic pressures resulting from competition in the energy sector generally, the Commission's role as a regulator is to ensure that the nation's nuclear plants operate safely, consistent with the agency's health and safety mission. The NRC formulates its budget based on estimates of the activities that will be required to license and regulate safe and secure use of nuclear materials during the year of execution. The agency is concerned with carrying out its mission in the most efficient way possible and is continually engaged in identifying how to fulfill that mission with the appropriate level of resources.

Senator Shaheen to Chairman Burns

1. As you know, the nuclear plant operator, NextEra, has applied to renew its operating license for the Seabrook Station in Seabrook, New Hampshire for an additional 20 years. Their current license expires in 2030, which means if approved, Seabrook will have a license to operate until 2050.

Seabrook Station has, however, encountered concrete degradation issues due to alkali-silica reaction (ASR). Throughout the re-application process NextEra has taken actions to understand and monitor the extent of the plant's concrete degradation; however, I have heard concerns from constituents about the testing being conducted to test the long-term impacts of ASR, and I want to make certain it is being conducted in a way that ensures precise results about the plant's structural integrity.

For example, it is my understanding that NextEra is using a combined crack indexing (CCI) measurement as the primary criterion for assessing the progression of ASR. However, I have also heard that steel reinforcement bars embedded in the building structure may reduce the growth in the width of the cracks in the concrete. Moreover, in the August 9, 2013 inspection report, NRC noted inconsistencies found in tests at Seabrook between NextEra's CCI results and other measures of concrete expansion due to ASR.

Given these variances in measurement, can you please explain NRC's determination process to allow CCI testing as opposed to any other, generally accepted methods of assessment to quantify the progression of ASR?

Answer

In its license renewal application for Seabrook Station, NextEra has proposed combined crack indexing as a method for assessing the progression of alkali-silica reaction. However, the NRC is still reviewing this proposal.

As part of the ongoing review, the staff issued requests for additional information noting that it is not clear how combined crack indexing accurately correlates cracking due to alkali-silica reaction to structural degradation of affected structures. The requests for additional information ask the licensee to "(1) demonstrate the adequacy of the parameters [cracking] proposed to be monitored or inspected by the program to manage the effects of aging due to alkali-silica reaction; and (2) clearly establish the link between the parameters that will be monitored and how monitoring these parameters will ensure adequate aging management such that the intended function will be maintained during the period of extended operation." The licensee is currently expected to respond to these requests in June 2015. The staff will evaluate the responses against guidance and industry standards to ensure that the proposed monitoring program is adequate to detect alkali-silica reaction and to properly correlate alkali-silica reaction progression with structural degradation.

2. I also understand that NextEra has commissioned replica studies at the University of Texas in order to determine the long-term effects of ASR on the power plant walls. However, I have heard concerns that the concrete materials used in the study do not precisely mimic the environmental conditions of the Seacoast region or the materials used to build the Seabrook plant. Can you describe the Commission's involvement in the replica studies and what the NRC is doing to ensure the efficacy of the testing?

Answer

The NRC staff continues to monitor NextEra's testing activities at the University of Texas as part of our oversight of Seabrook Station, including conducting multiple inspections of these activities. The inspections focused on how information gathered from NextEra's test program is considered for applicability to the current conclusions regarding alkali-silica reaction-affected structures at Seabrook Station. While NextEra chose to conduct a large-scale testing program at the University of Texas as a possible basis for developing future actions to address the alkali-silica reaction issue, the NRC has neither directed nor approved this test program. If the licensee determines that future test results provide a technical basis to resolve this non-conforming condition, the NRC would expect NextEra to provide the results to the agency for our review and approval. Any submittal by NextEra would need to demonstrate that the test program and results accurately reflect conditions at the Seabrook Station.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

June 26, 2015

The Honorable John Shimkus
Chairman, Subcommittee on Environment and
the Economy
Committee on Energy and Commerce
United States House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

The U.S. Nuclear Regulatory Commission appeared before the Subcommittee on Environment and the Economy on May 15, 2015. Following that hearing, you forwarded questions for the hearing record. The responses to those questions are enclosed. If I can be of further assistance, please do not hesitate to contact me at (301) 415-1776.

Sincerely,

A handwritten signature in black ink that reads "Eugene Dacus, for".

Eugene Dacus, Director
Office of Congressional Affairs

Enclosure:
(As stated)

cc: Representative Paul Tonko

The Honorable John Shimkus

QUESTION 1. Recently, multiple private companies have announced their intention to pursue an NRC license to serve as a consolidated interim storage site for high-level radioactive waste and commercial spent nuclear fuel. However, we have experience trying to license and operate one of these facilities. Private Fuel Storage, a private company, pursued a storage facility in partnership with an Indian tribe in Utah, but was doomed due to opposition from powerful political forces.

a) Please describe the PFS experience, including NRC's actions on the license.

ANSWER.

The Private Fuel Storage (PFS) Independent Spent Fuel Storage Installation (ISFSI) application was a first-of-a-kind application and review for the NRC. The State of Utah and others intervened in the proceeding, and numerous issues for hearing (or "contentions") were adjudicated by the Atomic Safety and Licensing Board Panel. The hearing process took a total of seven years, some of which overlapped with the safety review. There were numerous factors that contributed to the length of the hearing process, e.g., the cask system selected by the applicant was not certified at the time the application was submitted; during the application review process the applicant submitted multiple amendments to its application; revisions to the application prompted new hearing rights and, subsequently, new contentions; additional requests for information were required in order to clarify portions of the revised application; and

adjudication of late-filed contentions. As a result of these factors, the application review took nine years, at a cost of approximately \$9 million, which included 35 Full Time Equivalents (FTE).

The Commission issued the license to PFS in February 2006. PFS has been unable to construct and operate an ISFSI due to its inability to secure two required approvals from the U.S. Department of the Interior (DOI). The first is a permit to construct a railroad on a right of way through land managed by DOI's Bureau of Land Management; and the second is final approval by DOI's Bureau of Indian Affairs for a proposed lease of tribal lands owned by a Native American Tribe (the Skull Valley Band of Goshute Indians).

b) What did NRC learn from this experience?

ANSWER.

The PFS experience illustrates potential impacts that application quality and an adjudicatory proceeding can have on a licensing schedule. As noted in answer 1.a, PFS was a first-of-a-kind application, and during the review process the applicant submitted multiple revisions to its application, and the NRC staff had several rounds of requests for additional information. In addition, the State of Utah and others strongly opposed the PFS project.

The NRC has recognized the importance of an application that includes sufficient, high-quality information to allow completion of a timely review, as well as the benefits of holding public meetings near the proposed facility site to enhance communication with stakeholders. If there is State, regional, and local support for a project, this can help expedite the licensing proceeding. In addition, since the PFS experience, the NRC has revised its adjudicatory procedural rules so that they are more efficient than the rules in place at the time of the PFS proceeding. Finally, following PFS, the NRC improved its internal review processes in an effort to provide for better internal coordination and to improve the effectiveness and efficiency of the review process.

c) Please describe the process for and timeline that is reasonably expected if another private company applies for an NRC license.

ANSWER.

The NRC staff is available to answer questions about its licensing process through public pre-application meetings with prospective applicants. These meetings are scheduled at the prospective applicant's request. Upon receipt of an application, the NRC staff first does an acceptance review to make sure the application contains sufficient information to complete the safety, environmental, and security reviews. A notice of docketing, notice of proposed action, and opportunity for a hearing is published in the *Federal Register*, and interested persons are able to submit hearing requests and intervention petitions. Notices associated with the staff's environmental evaluation are also published. If the application is accepted for review, the NRC staff begins the safety, environmental, and security reviews of the application to determine whether it meets applicable requirements for spent fuel storage, following the NRC guidance in the "Standard Review Plan for Spent Fuel Dry Storage Facilities." If the NRC determines that all pertinent regulations are satisfied, a license is issued.

Based on lessons learned from the PFS license issued in 2006, the NRC estimates that its safety, security, and environmental reviews will take approximately three years (not including any hearings that may be required). That timeframe depends on the quality of the application. As described above, there is an opportunity for a hearing as part of our licensing process. While the NRC cannot predict how many parties will seek a hearing, how many issues will be admitted for hearing, or how long the hearing process will take, there will be some overlap of the adjudicatory process with the staff's review of the application. Upon receipt of an application, NRC staff are ready to commence review of the application and conduct a hearing, if applicable, as efficiently as possible.

d) What sort of responsibilities would be required of the Federal government?

ANSWER.

As the independent regulator of civilian uses of nuclear materials, the NRC is responsible for the safety, environmental, and security license reviews and oversight to ensure the applicable requirements are satisfied. The NRC's license review determines if the proposed facility meets all the agency's applicable regulatory requirements. The NRC's ongoing oversight ensures that the facility operates in accordance with the NRC's regulations. Actions by other agencies may be required.

e) Who would be required to pay for the costs to acquire a license?

ANSWER.

The applicant would be required to pay for the cost associated with the licensing review.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

December 18, 2015

The Honorable John Shimkus
Chairman, Subcommittee on Environment
and the Economy
Committee on Energy and Commerce
United States House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

The U.S. Nuclear Regulatory Commission appeared before the Subcommittee on Environment and the Economy on October 28, 2015, at the hearing entitled, "Update on Low-level Radioactive Waste Disposal Issues." From that hearing, you forwarded questions for the hearing record to Mr. Michael Weber. The responses to those questions are enclosed. If I can be of further assistance, please do not hesitate to contact me.

Sincerely,


James Colgary, Associate Director
Office of Congressional Affairs

Enclosure:
As stated

cc: Representative Paul Tonko, Ranking Member

The Honorable John Shimkus

QUESTION 1. In the hearing, you indicated that the NRC evaluated in the 1980s whether an integrated or coordinated rulemaking was needed and concluded it wasn't necessary. Given the substantive comments regarding this issue in the Part 61 rulemaking docket, will NRC re-evaluate the prior determination? If not, why not?

ANSWER.

The NRC is not reevaluating whether a more extensive rulemaking is needed at this time. The definitions of radioactive waste are established in a variety of Federal statutes, including the Low-Level Radioactive Waste Policy Amendments Act, the Nuclear Waste Policy Act, and the Uranium Mill Tailings Radiation Control Act. The NRC has developed a regulatory frameworks consistent with the governing statutes that ensures protection of the public. An integrated approach would likely require changes to Federal statutes. In addition, the substantial effort to develop and coordinate such an integrated rulemaking would not be justified by the safety or other potential benefits of such a rulemaking.

With respect to low-level radioactive waste, in Revised SRM-SECY-13-0001, "Staff Recommendations for Improving the Integration of the Ongoing 10 CFR Part 61 Rulemaking Initiatives," the Commission directed the staff in 2013 to avoid any additional changes to Part 61 until the current limited scope rulemaking is complete. The current limited scope rulemaking may obviate the need for more comprehensive revisions to the rule, such as revising the waste classification tables. The Commission directed the staff to, after the limited rulemaking is complete, solicit public comments, consider the comments, and provide a recommendation to

the Commission on whether there is a need for a second rulemaking effort to revise waste classification tables that are contained in Part 61.

QUESTION 2. **Mr. Weber, have you completed an analysis of the technical basis for adding Greater Than Class C (GTCC) and transuranic (TRU) waste to the Part 61 rulemaking?**

- a. If you do not have a technical basis for these wastes, how can you determine the timing for the rulemaking?**
- b. What are the key technical considerations in expanding Part 61 to include these wastes?**

ANSWER.

- a. The NRC staff has not completed a technical basis for adding Greater than Class C (GTCC) and transuranic waste to the current Part 61 rulemaking effort. The Commission will decide whether and how to proceed with a proposed rulemaking on GTCC and TRU waste in response to the paper evaluating options currently before the Commission for consideration.
- b. The key technical considerations for such a rulemaking will depend on the Commission's directed approach. Based on the NRC's previous rulemakings in this area, the staff anticipates that key considerations could include:
 - Performance objectives for low-level waste disposal, including protection of the public and workers, as well as the security of certain wastes
 - Durability and effectiveness of engineered barriers in isolating wastes
 - Risks associated with potential inadvertent intrusion into the wastes
 - Durability and effectiveness of institutional controls

- Intergenerational equity
- Consistency with the level of protection accorded to other radioactive wastes

QUESTION 3.

The NRC is considering significant changes to Part 61 requirements for disposal of depleted uranium. Given the downturn in nuclear fuel markets that continues after the 2011 events at Fukushima, plans for a number of new uranium enrichment projects licensed by the NRC - Areva's Eagle Rock project, Centrus' American Centrifuge plant, GE's Global Laser Isotope facility, as well as International Isotope's proposed depleted uranium deconversion facility - appear to be on-hold.

- a. Are the changes to Part 61 still justified if these projects don't materialize?**
- b. Prior to undertaking a rulemaking process, does NRC Staff consider market outlook for the licensees who are impacted [by] the Commission's undertaking?**

ANSWER.

- a. Yes, the proposed rule change is justified because there already is a large volume of depleted uranium being stored until it can be disposed of or otherwise dispositioned safely. This includes depleted uranium resulting from the Louisiana Energy Services (LES, URENCO-USA) enrichment facility's previous and current operations, as well as the past operations of the Department of Energy (DOE) enrichment facilities. Additionally, the DOE is considering using commercial facilities to dispose of its large quantities of depleted

uranium. The current Part 61 rulemaking will address the safety of shallow land disposal of depleted uranium.

- b. Yes, the staff considers market outlook when considering the need for rulemaking. For example, the projected outlook for the generation of waste affects the characteristics of the waste considered by the NRC in assessing the impacts and benefits of regulatory changes. The staff reviewed information from the Agreement States and NRC indicating two of the four existing low-level radioactive waste (LLRW) disposal facilities have expressed an interest in accepting large quantities of LLRW, including depleted uranium. Regarding the other two disposal facilities, one indicated it would not accept additional long-lived LLRW like depleted uranium, and the other has not made its intentions known. In this case, the current large supply of depleted uranium demonstrates a need for this proposed rule change.