

January 8, 2010

The Honorable Byron Dorgan  
Chairman, Subcommittee on Energy  
and Water Development  
Committee on Appropriations  
United States Senate  
Washington, D.C. 20510

Dear Mr. Chairman:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am pleased to provide the following report on the NRC's process for reviewing applications for combined licenses for new nuclear power plants. This report fulfills H.R. 3183, Section 401, which requires the NRC to identify barriers and recommendations for streamlining the issuance of combined construction and operating licenses for new reactors, as well as any recommendations for overcoming those barriers to the House and Senate Appropriations Committees.

Consistent with its statutory responsibility, the NRC's primary focus is on ensuring the safety and security of nuclear power plants and radioactive materials, and protecting the public and the environment. Accordingly, for over 20 years, the NRC has been working to create an effective, efficient, and predictable new reactor licensing process. As a result of this work, the agency believes that no significant barriers exist in the new reactor licensing process. The agency is committed to continual improvement and implements improvements as they are identified in ongoing safety, security, and environmental reviews. In fact, the NRC has identified and implemented several measures to increase the predictability and efficiency of the new reactor licensing processes while maintaining the integrity of our safety, security, and environmental reviews. Background information on the development of the new licensing process is included in the enclosure to this letter.

While there are no significant barriers in the NRC's process, there are developments that have affected schedule predictability for COL applications. One of the chief developments is that applicants have referenced design certifications that are not final or certified designs that are being amended. As a result, COL applicants have submitted their applications while the design certification applications (or amendments thereto) are still undergoing review. All COL applicants to date are referencing proposed reactor designs that the NRC has not yet certified or are being amended. Although this circumstance is not precluded by NRC's process, the NRC cannot complete its safety, security, and environmental reviews of these COL applications until all NRC requirements are met, including certification of the referenced designs in accordance with 10 CFR Part 52 through rulemaking.

The actions taken by the NRC to prepare for new reactor licensing have been successful in both eliminating any barriers in the NRC's new reactor licensing process and maintaining the

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focus on safety of new reactors. During the course of its reviews, the NRC staff will continue to look for efficiencies in the new reactor licensing processes without compromising safety, security, and protection of the environment.

Please contact me for any additional information that you may need.

Sincerely,

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Gregory B. Jaczko

Enclosure:  
Overview of New Reactor  
Licensing Process

cc: Senator Robert F. Bennett

Identical letter sent to:

The Honorable Byron Dorgan  
Chairman, Subcommittee on Energy  
and Water Development  
Committee on Appropriations  
United States Senate  
Washington, D.C. 20510  
cc: Senator Robert F. Bennett

The Honorable Peter J. Visclosky  
Chairman, Subcommittee on Energy  
and Water Development  
Committee on Appropriations  
United States House of Representatives  
Washington, D.C. 20515  
cc: Representative Rodney Frelinghuysen

## Overview of the New Reactor Licensing Process

### New Reactor License and Certification

In 1989, after several years of consideration, the NRC established in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 52, a single-step process for licensing nuclear power plants. Prior to the issuance of 10 CFR Part 52, nuclear power plant licensing was a two-step process: an applicant first obtained a construction permit and then separately sought an operating license. As a result, the issuance of a construction permit and subsequent issuance of an operating license for a plant were usually years apart. For example, about a third of the reactors currently operating had a period of 10 years or more between the issuance of their construction permits and the issuance of their operating licenses. The shortest amount of time between construction permit and operating license was about 3 years; the longest amount of time was more than 20 years.

The first step in the two-step licensing process required a preliminary safety analysis report for application for a construction permit. The second step for application for an operating license required final design information and a supporting final safety analysis report. The time lag in this process sometime resulted in applicants changing designs or the NRC changing requirements between the construction permit phase and the operating license phase. Inevitably, such changes impacted the staff's review of the operating license. The passage of a significant amount of time also created the potential for a changing regulatory environment between the two reviews. This led to uncertainty in the basis used for the review of the operating license. In addition, under the two-step licensing process, the NRC conducted separate hearings for the construction permit and operating license, creating further uncertainty in the outcome and timing of the decision to issue an operating license.

Under the single-step process established in 10 CFR Part 52, an applicant can apply for a single combined license addressing both the construction and operation of a nuclear power plant. The combining of these two actions into a single license eliminates the need for two distinct reviews that are separated significantly in time. It also reduces the potential for changes in design and regulatory basis for review of the operating license. In addition, in the single-step licensing process, the hearings on construction and operation are combined, thereby further reducing the uncertainty in the licensing decision prior to construction of the plant. Our process under 10 CFR Part 52 also provides for a potential limited hearing upon a *prima facie* showing that the facility as constructed does not comply with the acceptance criteria in the combined license and that the specific operational consequence of nonconformance would be contrary to providing reasonable assurance of adequate protection of public health and safety.

In addition to the combined license process, 10 CFR Part 52 allows an applicant to address environmental and siting issues early by applying for and obtaining an early site permit for a site where the applicant intends to construct and operate a reactor. Additionally, a design vendor can resolve design issues early by applying for and obtaining certification for a standard design which can be referenced in a combined license application. As originally envisioned, an application for a combined license would include reference to a certified standard design (that had previously addressed design issues) and possibly an early site permit (that had previously resolved the siting and environmental issues). This would reduce the number and types of

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issues that remain to be addressed during the review of the combined license application. However, this sequencing of applications is not required by the regulation and most of the current applicants have chosen to pursue combined licenses in parallel with ongoing design certification and siting reviews. As a result, the full benefits of 10 CFR Part 52 are unlikely to be achieved for the early combined license reviews. As design certifications are completed, the NRC anticipates that subsequent combined license applications will benefit more fully from the efficiencies of 10 CFR Part 52 while maintaining the integrity of the NRC's safety, security, and environmental reviews.

### **Public Participation and Hearings**

Public participation is an important part of the NRC's regulatory processes and the NRC has taken steps to enhance the effectiveness and timeliness of public participation. A key component for public participation in the combined license and early site permit processes is the hearing process. Any person whose interests may be affected by a combined license or early site permit proceeding and desires to participate as a party in the proceeding is provided an opportunity to file a written petition for leave to intervene in accordance with 10 CFR 2.309. A hearing held as a result of a successful petition to intervene is a "contested" hearing. Such a hearing is separate and distinct from the mandatory, uncontested hearing required by the Atomic Energy Act.<sup>1</sup>

In order to enhance the efficiency and effectiveness of NRC adjudications while ensuring that the rights of all parties to fair, effective, and timely adjudications are maintained, the NRC established a set of model milestones in 2005 to use as a guideline in developing a hearing schedule. The model milestones for a hearing on a combined license, which are in 10 CFR Part 2, Appendix B, include for example, a milestone for the evidentiary hearing to begin within 175 days of the NRC staff's issuance of the safety evaluation report and the environmental impact statement. They also include a milestone for the presiding officer for the hearing to issue the initial decision within 90 days of the end of the evidentiary hearing and closing of the record. For the ongoing new reactor licensing reviews, all hearing schedules issued to date anticipate the presiding officer for the hearing will issue an initial decision on the application within the established milestone.

A key component for public participation in the standard design certification process is a public rulemaking. As part of the standard design certification process, the NRC issues a draft standard design certification rule in the *Federal Register* and seeks public comments for consideration. This is done prior to issuing a final standard design certification rulemaking and makes the overall process more efficient while maintaining effective public participation. The NRC recently completed a Lean Six Sigma streamlining review and initiated certain process changes, such as determining steps that could be completed in parallel rather than sequentially. These and other such changes will shorten the overall standard design certification rulemaking schedule by 7 months, from an estimated 19.5 months to 12.5 months without detracting from safety considerations.

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<sup>1</sup> The Commission has previously communicated to the Congress that it believes amending the Atomic Energy Act to eliminate the mandatory, uncontested hearing on combined license and early site permit applications could enhance the efficiency of NRC operations.

### **Design-Centered Review Approach**

Also in 2006, the NRC recognized that the large number of anticipated applications presented a challenge regarding NRC's ability to complete the reviews in a timely manner. The NRC turned its focus to standardization to address this challenge in a manner that ensures that the reviews continue to adequately address safety, security, and environmental issues. The NRC developed the design-centered review approach based on a concept of one issue -- one review -- one position for multiple applications. This approach relied heavily on applicants' ability to standardize combined license applications referencing the same design. Standardization among combined licenses is achieved by the first (or reference) combined license application providing standard information that is used by subsequent combined license applications referencing the same design. Using this approach, the NRC conducts the review of a technical issue once on the initial application; where the same issue was appropriately standardized in subsequent applications, the NRC would apply its decision to those applications without further review. This standardized approach significantly reduces the scope of review for subsequent applications, and as a result the NRC will be able to optimize its review efforts, the resources needed to complete the review, and the review schedules. To ensure the success of this approach, the NRC called on applicants and vendors to establish design-centered working group activities to facilitate maximum standardization and early resolution of issues within a design center. The design-centered review approach and its associated activities are key to the timely completion of new reactor licensing reviews.

In 2008 and 2009, the NRC staff identified and eliminated unnecessary steps in the process for the review of subsequent combined license applications. Recognizing that the design-centered review approach significantly reduces the review scope of these applications, the NRC eliminated two of the six phases established for the review of subsequent combined license applications and thus reduced the resources needed for completing the subsequent combined license reviews without detracting from safety.