

June 30, 2006

The Honorable Pete V. Domenici  
Chairman, Committee on Energy and Natural  
Resources  
United States Senate  
Washington, D.C. 20510

Dear Mr. Chairman:

The Nuclear Regulatory Commission appeared before the Committee on Energy and Natural Resources on May 22, 2006. From that hearing, you forwarded questions that were submitted for the hearing record. The responses to your questions have been reproduced and are enclosed.

If we can be of further assistance, please do not hesitate to contact us.

Sincerely,

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Rebecca L. Schmidt, Director  
Office of Congressional Affairs

Enclosure:  
As stated

cc: Senator Jeff Bingaman

Question 1: What steps can be taken by the NRC to make the licensing process as efficient as the licensing process in other countries?

ANSWER:

Many countries use a licensing process that is similar to the NRC's 10 CFR Part 50 construction permit and operating license process. The U.S. Congress amended the Atomic Energy Act and the NRC promulgated 10 CFR Part 52 to establish a more efficient and predictable one-step licensing process.

The NRC continues to take steps to make our licensing process more efficient. This is being accomplished through the ongoing 10 CFR Part 52 rulemaking. The NRC is working through the rulemaking process, which includes the opportunity for public comment, to enhance efficiency, while also ensuring safety. In addition to the 10 CFR Part 52 rulemaking, the staff plans to use a design-centered review approach which will increase the review process efficiency. This approach will use, to the extent practicable, a "one issue-one review-one position" strategy in order to optimize the review effort; that is, the staff will conduct one technical review for each reactor design issue and use this one decision to support the design certification and multiple COL applications. See also responses to questions 11 and 13.

Question 2:

What guidance will the Commission be giving to the ASLBs that are formed for combined license applications, with regard to the conduct of the hearing, admissibility of contentions, disposition of contentions, and schedules?

ANSWER:

The Commission substantially revised its hearing procedures in 2004, to address these matters and, more recently, in 2005, adopted model milestones for the conduct of proceedings. If necessary, the Commission may provide additional guidance to its Boards to ensure fair and expeditious conduct of proceedings in the form of an updated adjudicatory policy statement, or in individual cases, by issuing case specific orders (similar to those issued at the start of the LES and USEC enrichment facility adjudications and the order issued to set up the three ESP adjudications) that establish deadlines, emphasize the use of expediting processes, and provide early guidance on particular policy matters that may be involved in the case.

Question 3:

The Part 52 licensing process is meant to be more efficient. NRC review schedules indicate that it will take 42 months to review a combined license application, even if the applicant referenced a certified design and an early site permit.

What is the basis for this estimate?

ANSWER:

The 42 month schedule includes 30 months for the technical review and an estimated 12 months for the mandatory hearing and completion of the hearing process. The overall hearing process, starting with prehearing activities, starts upon docketing of an application, but commencement of the hearing itself is dependent upon completion of the principal staff review documents – the Safety Evaluation Report and Final Environmental Impact Statement. The review schedule is based on the NRC staff and industry experience with other complex technical safety reviews including the four completed Design Certifications and takes into account the expected efficiencies associated with standardized reviews.

Question 4:

What can be done to reduce the schedule after that initial first plant has received its combined license?

ANSWER:

The 30 month technical review includes a significant period of time for NRC questions and applicant answers to address incomplete or inadequate elements of the COL application. More complete and higher quality applications are therefore an obvious area for reducing the schedule. To clarify the requirements for, and to facilitate the quality of COL applications, and to incorporate lessons learned from related reviews, the NRC has issued a proposed revision to 10 CFR Part 52 and is working closely with stakeholders to develop COL application guidance. Several workshops and meetings have already been held and more are planned.

In addition, the NRC staff has recently accelerated its efforts on the staff's review guidance (i.e. the Standard Review Plans) and expects to complete all necessary updates by the Spring of 2007, well in advance of the expected applications. The staff also intends to employ a "Design-Centered" review approach – one issue-one review-one position – for standardized applications to establish a "reference application" and utilize the positions developed for the multiple applications conforming to the reference application.

Question 5:

What NRC activities are being performed to ensure that there will be an efficient implementation of the ITAAC (inspections, tests, analyses and acceptance criteria) process, including consistent application and interpretation of ITAAC sign-off criteria between different inspectors and different projects?

ANSWER:

ITAAC are part of the combined license and define specific requirements to be met prior to operation. To gain staff efficiencies, facilitate knowledge transfer, and ensure consistency in NRC activities related to the implementation of ITAAC, all construction inspection management and resources will be located in a single NRC region which will schedule all construction inspections nationwide.

Question 6: Why is NRC proposing such a substantial revision to part 52 on the eve of so many new plant applications?

ANSWER:

The NRC proposed changes to Part 52 to provide a greater level of clarity and specificity of the existing requirements, to incorporate lessons learned from related recent reviews, and to address operational program information to implement recent Commission policy decisions on this matter. Prospective combined license applicants can use the requirements in the Part 52 proposed rule to prepare their applications and still be in compliance with the current requirements.

Question 7: Doesn't the scope of the proposed revision inject regulatory uncertainty and confusion at a critical time? Isn't it likely that plant applications may be delayed for no reason other than potential applicants will take time to try to understand so many changes to the rule?

ANSWER:

The NRC believes that completing this rulemaking will benefit the NRC's stakeholders by affording a high degree of predictability to the licensing processes in Part 52 and providing increased clarity to all parties involved in the licensing process. Issues resolved in the rulemaking will not have to be addressed on a case-by-case basis during NRC review of applications. While the timing of issuance of the proposed rule could be causing some apprehension for prospective applicants preparing COL applications in 2006, the NRC believes that resolution of generic issues in the rulemaking provides added regulatory predictability that outweighs possible short-term concerns being expressed by some prospective COL applicants. In addition, given the steady stream of COL applications that the NRC expects to receive in the coming years, there does not appear to be a more desirable time to implement these changes.



Question 8: Why is it necessary to have such a complex and substantial revision to part 52? Why can't the NRC implement the Rule as presently structured?

ANSWER:

The NRC has consistently held the position that it could implement the rule as presently structured. However, the Commission believes that this rulemaking action will improve the effectiveness and efficiency of the licensing and approval processes for future applicants. If the Commission decided not to go forward with the current rulemaking, the NRC and its stakeholders would lose the value gained from incorporating lessons learned during early site permit and design certification reviews, and during interactions with stakeholders on the COL process. In addition, the NRC believes that completion of the rulemaking will provide early resolution of generic issues that would otherwise have to be addressed during NRC's review of the first COL applications.

Question 9: Do any of the proposed revisions to Part 52 conflict with Congress' goal in the Energy Policy Act of 1992 to achieve efficiency and certainty in the regulatory process? Do you agree with me that the number of applications currently planned demonstrates public confidence in the reliability and regulatory certainty of the current rule?

ANSWER:

The NRC believes the proposed revisions to Part 52 are consistent with Congress' goal of achieving efficiency and certainty in the regulatory process. In fact, the NRC believes the revisions will achieve greater efficiency and certainty. Should the NRC determine through the public comment phase of the rulemaking process that some elements of the rulemaking conflict with Congress' goal to achieve efficiency and certainty in the regulatory process, the NRC will take appropriate action to address such unintended consequences at the final rule stage. With regard to the number of applications currently planned, we believe that passage of the Energy Policy Act of 2005, which provides incentives for companies that take the lead to construct new nuclear power plants, is in great part responsible for the current interest in new reactors.

Question 9.A: In particular, do any of the proposed revisions increase the probability that issues that would have been finalized at an early stage in the process under the current version of Part 52, such as at the early site permit stage, will be subject to another review at the COL stage if the proposed revisions are adopted? Is that a desired result?

ANSWER:

Part 52 contains provisions designed to preserve the finality of issues at the COL stage that have been previously resolved at an earlier stage in the licensing process, e.g., at the early site permit or design certification stage. The NRC did propose to modify Part 52 to require a COL applicant referencing an Early Site Permit (ESP) to update the emergency preparedness information provided under the ESP application. This modification was proposed by the industry after one of the States suggested that emergency plans approved as part of an ESP review be kept up to date throughout the duration of an ESP and the construction phase of a COL.

In addition, the NRC proposed revisions to its environmental regulations in 10 CFR Part 51 to require that a COL application referencing an ESP contain any new and significant information on the site or design. The issuance of a COL to authorize construction and operation of nuclear power plant is a major Federal action significantly affecting the quality of the human environment; consequently, the NRC must consider environmental impacts of the action. For matters resolved at the ESP stage, if there is no new and significant information that materially affects the NRC's decision on issuance of the COL, then the staff will rely upon the conclusions provided in the ESP environmental impact statement for such matters. Such matters will not be subject to litigation at the COL stage. The NRC has recently received stakeholder comments

on this aspect of the proposed rule and recently held public discussions on regulatory guidance for these proposed requirements. We are considering all of these inputs in formulating further revisions to the rule language for the final rulemaking.

Question 9.B: What can Congress do to help the NRC conduct its reviews of the various stages of the plant licensing process more efficiently? Would legislation according finality to NRC's findings at various stages of the process be something that NRC would welcome?

ANSWER:

The existing statutory authority provided by the Atomic Energy Act of 1954, as amended, as well as by the Energy Policy Act of 1992 and the recent Energy Policy Act of 2005, is, in our view, sufficient, and new legislation is not needed to provide stability and finality for NRC processes. Under our current authority, we have developed a regulatory framework in our regulations in 10 C.F.R. Part 52, as well as in our Rules of Practice in 10 C.F.R. Part 2, which, we believe, will enable the NRC to complete the licensing process for new reactors – both the technical and environmental reviews and any associated hearings – in a timely and efficient manner. In order to realize this potential, the NRC expects that the forecasted applications will include complete information to minimize the need for requests for additional information, and that they will maximize the level of standardization among applicants to reduce the need for customized and repetitive reviews. We also believe that ability of a Combined License applicant to reference previously- approved Early Site Permits and certified designs can help ensure the overall effectiveness and efficiency of the licensing process.

Question 10: Would you also agree that substantial revisions to Part 52 that are perceived to eliminate some of the regulatory certainty might cause potential applicants and the financial to lose some of that confidence. Do you agree that public confidence that the licensing process is efficient and reliable is important?

ANSWER:

The Commission believes that regulatory certainty will be increased under the proposed revisions. The Commission shares the goal of an efficient and predictable licensing process and agrees that this is important. The Commission believes that the general public's confidence in our licensing processes is based on opportunities for their participation and on the safe operation of nuclear power plants.

Question 11: Would you also agree that the efficiency of the licensing process, particularly the potential for duplicative reviews at the COL stage of issues that should have been foreclosed at an earlier stage, such as the early site permit or design certification stage, cause NRC to need more reviewers and is generally an inefficient way to do business?

ANSWER:

One of the NRC's main goals in promulgating 10 CFR Part 52 in 1989 was to resolve issues early in the licensing process. The NRC is committed to avoiding multiple reviews of the same information, as evidenced by our commitment to a design-centered approach in the review of multiple COL applications that reference the same design. This approach will use, to the extent practicable, a "one issue-one review-one position" strategy in order to optimize the review effort and resources needed to perform these reviews; that is, the staff will conduct one technical review for each reactor design issue and use the result of this review in multiple applications to the extent practicable.

Question 12: Several potential applicants have indicated that they would like to consider a hybrid approach for a COL application, where the COL application references either an application for Design Certification or ESP application. I understand that the reference of an application is explicitly authorized in your Part 52, but there is no guidance on how the processing of such a COL application would be accomplished. Why don't the proposed revisions to Part 52 expressly provide guidance to the industry and the Commission regarding how to process such applications in an efficient, straightforward way?

ANSWER:

As noted in the question above, Part 52 already allows combined license applicants to reference a docketed application that has not been granted. The Commission is currently preparing guidance on the information that those types of applications should contain. A COL applicant is authorized to reference an application for an early site permit pursuant to 10 C.F.R. § 52.27(c), and/or an application for a certified design, in accordance with 10 C.F.R § 52.55 (c). Based on longstanding Commission case law and fundamental principles of administrative practice, a pending application for either an ESP or certified design cannot be treated as having received NRC approval and, therefore, is not entitled to any finality unless and until acted on and approved. Thus, a COL applicant choosing to reference a pending ESP or design certification application, rather than addressing the matters in the context of its Combined License application, must await the outcome of the ESP proceeding or design certification rulemaking to obtain the finality needed to foreclose re-review by the staff and possible relitigation in connection with the COL itself.



Question 13: Wasn't there a provision for a phased licensing approach under the old Construction Permit - Operating License process? Is NRC prepared to allow the same flexibility under the Part 52 process? Can Congress assist NRC in giving it direction to pursue these kinds of efficiencies in its processes?

ANSWER:

The Construction Permit - Operating License process (i.e., the 10 CFR Part 50 process) can still be used. Under the 10 CFR Part 50 process, an applicant for a Construction Permit could obtain a Construction Permit on the basis of more preliminary design information than is today required of a Combined License (COL) applicant. The lack of the more detailed information in this approach precluded finality of Construction Permit findings and exposed applicants to a second staff review and possible relitigation of issues at the Operating License stage. The Commission created 10 CFR Part 52 to provide a more efficient and predictable licensing process. In addition, because of the difficulties in simultaneously designing and building nuclear plants under the 10 CFR Part 50 phased licensing approach, the Commission encourages potential applicants to use the Part 52 processes.

Under Part 52, an applicant has considerable flexibility in preparing a COL application. An applicant for a COL may reference a previously-issued Early Site Permit or provide the necessary environmental and siting information in the COL application. In similar fashion, a COL applicant may reference a certified standard design or provide the necessary design information otherwise required of an applicant for an Operating License under Part 50 (10 CFR. § 50.34) in the COL application. In both instances, a COL applicant must provide its proposed Inspections, Tests, Analyses and Acceptance Criteria (ITAAC).

In addition, a Limited Work Authorization (LWA) – which enables an applicant to undertake certain limited activities at a site before obtaining full authority to engage in safety-related construction as would be permitted under a Construction Permit or COL – is provided by both the Part 50 approach and the Part 52 approach.

In similar fashion, a COL applicant may reference a certified standard design and provide the additional site-specific information as well as information demonstrating compliance with the interface requirements and other procurement, construction and installation and technical details, or, if its chooses not to reference a certified design, it may provide that information otherwise required of an applicant for an Operating License under Part 50 (10 C.F.R. § 50.34). In both instances, a COL applicant must provide its proposed Inspections, Tests, Analyses and Acceptance Criteria (ITAAC).

Question 14: Does NRC have firm milestone schedules for completing hearings on early site permits and COLs? Why aren't the suggested milestones in Appendix B to Part 2 of your rules binding on the Atomic Safety and Licensing Boards? How can we make sure that the milestone schedules for hearings are realistic and enforceable?

ANSWER:

Although the Commission, in revising its Rules of Practice several years ago, declined to establish rigid schedules for adjudications, it nonetheless stressed the importance of setting and adhering to milestone schedules such as those set out in Appendix B to Part 2. This approach was adopted in recognition of the need, on the one hand, to ensure that our hearings provide a forum for resolution of issues material to the licensing process that is fair to all participants and can accommodate potentially widely varying complexity of litigation, and, on the other, to avoid unnecessarily protracted proceedings. Our Atomic Safety and Licensing Boards and the parties have been mindful of the foregoing – both have recognized that extensions of time beyond that provided by the regulations will not be granted casually, but only for good cause, and Boards have, in the few situations encountered since the revision of the Rules of Practice two years ago, kept the Commission informed if delay of the overall schedule would exceed the expectations of the milestone schedule.

Question 15: Please explain how well NRC's projected workforce needs compare with projections for graduates in nuclear engineering and sciences.

ANSWER:

The NRC's ability to successfully execute activities in support of our mission depends on our highly skilled and experienced work force. Like other government agencies, the NRC continues to be challenged by an aging workforce complicated by substantial growth in new work at a time when senior experts are increasingly eligible to retire. To mitigate the impact of these challenges, the agency has developed human capital strategies to find, attract, and retain critical-skill staff.

The NRC is aggressively recruiting a mixture of recent college graduates and experienced professionals which positions us to meet our hiring challenges. Approximately 25% of the agency's technical new hires are entry-level (i.e., recent college graduates). The remaining 75% are experienced professionals from nuclear generating companies, architect-engineering firms, consultants, military, etc.. New positions will be filled with a mixture of entry-level and experienced staff with education or expertise in a number of engineering or scientific disciplines including digital electronic engineering, electrical engineering, materials engineering, chemical engineering, mechanical engineering, human factors, quality assurance, health physics, environmental sciences, fire protection engineering, risk and reliability engineering, project management, and reactor systems/nuclear engineering.

A 2006 report from the Oak Ridge Institute for Science and Education indicates a substantial increase in the number of nuclear engineering enrollments and degrees. Although this appears to be a recent trend, the total number of enrollments and degrees still don't match those from

the mid-1990's. There have been more job opportunities than graduates in nuclear engineering over the years, even without growth in the nuclear industry. If dramatic growth materializes in the nuclear industry, the job market competition for these graduates would also increase. To remain competitive, NRC will continue to utilize a variety of recruitment and retention incentives but expects it will likely become more difficult for the Commission, as for many Federal agencies, to hire and retain personnel with the knowledge, skills, and abilities to conduct the safety reviews, licensing, research, and oversight actions that are essential to our safety mission.

As our nation prepares for the potential resurgence of commercial nuclear energy coupled with the increase in retirements among the current nuclear workforce, continued Federal support will help ensure high quality and robust university nuclear engineering and science programs and contribute to the availability of highly skilled graduates when they are most needed. Provisions of the Energy Policy Act of 2005 authorized the NRC to fund scholarships, fellowships, and support grants to universities which may help to partially support these programs.