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NRC Licensing Board Raises Serious Concerns About Scope and Adequacy of Review of Exelon's Application for an Early Site Permit for the Proposed Clinton 2 Nuclear Plant

On December 28, 2006, the U.S. Nuclear Regulatory Commission's ("NRC") Atomic Safety and Licensing Board ("Board") published an initial decision recommending the issuance of an Early Site Permit ("ESP") to Exelon for its proposed Clinton 2 nuclear power plant in Clinton, Illinois. In doing so, however, the Board expressed serious concerns about the NRC Staff's failure to independently evaluate or offer logical conclusions about the issues at hand, and about the limitations that the NRC placed on the Board's ability to review the Staff's analysis. The Board concluded that in future construction and combined license proceedings, the approach taken here would be "extremely troubling." With numerous proposals for nuclear facilities pending before the NRC or being discussed, we call on Congress to take steps to ensure that the NRC engage in the independent and thorough evaluation of permit applications needed to protect health and public safety.

I. Background

On September 25, 2003, Exelon filed an application for an ESP for the proposed Clinton 2 nuclear power plant. The ESP process was developed by the NRC and the Nuclear Energy Institute, and codified in the 1992 Energy Policy Act, in order to allow a company to obtain site approval for a new nuclear plant in advance of applying for the permits necessary to construct and operate the plant. Through the ESP process, a company can resolve issues related to the safety and environmental impacts of a site before applying for a construction and operating permit. Site approval is valid for up to 20 years, can be renewed for up to 20 additional years, and allows for some construction activities to begin.

NRC regulations require a company seeking an ESP to submit an application that addresses various safety and environmental issues identified in 10 C.F.R. 52.17. The NRC Staff is assigned with evaluating the application and other relevant information in order to create a Safety Evaluation Report ("SER") and an Environmental Impact Statement ("EIS"). The Board then reviews the SER and EIS, requests additional information as needed, and holds a mandatory hearing on the application. On the basis of this review, the Board must conclude whether: (1) issuance of the ESP will be inimical to the common defense and security or to the health and safety of the public, (2) a plant can be built at the site without undue risk to the health and safety of the public, and (3) the requirements of the National Environmental Policy Act ("NEPA") have been complied with. The

Board's initial decision is then reviewed by the NRC Commissioners, which make a final ruling on the application.

Interested parties can move to intervene in the proceeding by demonstrating a material dispute of law or fact with regards to the ESP application or the NRC Staff's analysis. In the Clinton proceeding, various public interest organizations moved to intervene on the basis that Exelon's application was deficient on six grounds. The Board allowed intervention only on a portion of one of those grounds – that Exelon had not adequately evaluated clean energy alternatives to the proposed Clinton 2 nuclear plant. The Board later dismissed the intervening parties after Exelon and the NRC Staff submitted a purportedly more thorough analysis of clean energy alternatives. The Board's dismissal was upheld by the NRC Commissioners and a federal appellate court.

II. The Board's Attempt to Obtain Further Information From the NRC Staff

In March 2005, faced with the first mandatory hearings in nearly 20 years, the Chief Judge of the Atomic Safety Licensing Board Panel (from which the Boards in the Clinton proceeding and three other proceedings were selected) requested clarification from the NRC Commissioners regarding the scope and level of review the Boards were to engage in. In a July 28, 2005 Order, the Commissioners responded that the Boards should not engage in *de novo* review of the NRC Staff's findings but, instead, should carry out only a "sufficiency review" that examines whether the Staff "performed an adequate review and made findings with reasonable support in logic and fact." (July 28, 2005 NRC Order at 18). The Commissioners further directed that the Board should take a "hard look" at the Staff's analysis, but should not "second guess underlying technical or factual findings by the NRC Staff." (*Id.* at 11, 27).

Upon receiving the SER and EIS, the Board concluded that the Staff's review was highly inadequate. In particular, the Board found that the Staff's review "did not supply adequate technical information or flow of logic to permit a judgment as to whether the Staff had a reasonable basis for its conclusions(s)". (Board Decision at 12). As a result, the Board requested that the Staff: (1) create a narrative summary of its review of Exelon's application, (2) identify any guidance documents relevant to the issues and describe how the Staff followed or deviated from those documents, and (3) provide a list of any areas where the project manager or supervisor disagreed with the proposed findings of the Staff member charged with reviewing a portion of the application, and describe how such disagreement was settled.

The Staff challenged these requests before the NRC Commissioners, who concluded that the requests would impose "unnecessarily burdensome or duplicative efforts on the NRC Staff." (July 26, 2006 NRC Order at 2). In particular, the Commissioners rejected the Board's request for a narrative summary and discussion of pre-decisional disagreements, and instead ordered the Board to tailor its requests to focus on specific issues where additional information is needed. The Commissioners also noted that the Board should issue an initial decision "within four, and at most six, months" of receiving the SER and EIS, and that "in most cases, we expect that the time would be significantly shorter." (*Id.* at 15). Commissioner Jaczko dissented from the Order, concluding that it "restricts the ability of the" Board to carry out its duties in an "efficient manner that ensures the adequate protection of public health and safety." (*Id.* at 17-18).

In response to the Commissioners' Order, the Board sent to the NRC Staff more than 200 requests for additional information and also required additional briefing by the Staff and Exelon

both before and after the hearing that was held on November 7 and 8, 2006. On December 28, 2006, the Board issued its Initial Decision recommending that the ESP be granted.

III. Serious Concerns Raised by the Board in its Initial Decision

While the Board recommended that the ESP be granted, its Initial Decision is rife with statements that the Staff's analysis of the application was inadequate and/or illogical and that the NRC Commissioners had constrained the Board's ability to thoroughly review the Staff's analysis. Examples include:

- “The Board found in many instances that the technical portions of the Staff documents in the record (particularly the SER and, to some degree, the EIS) did not support a finding that the Staff's review supported its decisions.” (p. 12)
- “In our view, the lack of explanation and lack of clarity of logic found in a large portion of the FSER and, to a lesser degree, the FEIS placed an unnecessary burden on all participants, including the Board, and could have been avoided by a more detailed initial Staff explanation of its analysis and reasoning.” (p. 13).
- “In examining the Staff's portion of the record, we found a plethora of instances where the Staff's conclusions could only be characterized as conclusory.” (p. 20).
- “While the FSER represented a material improvement over the Draft SER, it still failed, in a large number of instances, to logically connect facts to conclusions.” (p. 20).
- “While the Staff only identified ten instances where regulatory guidance was not prescriptively followed, there remained numerous instances where it failed to set out its logic leading from recited facts to recited conclusions.” (p. 21).
- “In addition to our concern regarding the lack of a clear logic flowing from the facts recited in the FSER to the conclusions the Staff reached, we observed a large number of instances wherein the Staff appeared to simply accept, without checking or verifying, the facts stated by the Applicant.” (p. 35).
- “Notwithstanding these clear inconsistencies, we find ourselves compelled by Commission rulings and policy statements to accept this approach by the Staff because the Commission has advised that their ‘longstanding practice . . . grounded in sound policy’ is to ‘leave to the expert NRC technical staff prime responsibility for technical fact finding on uncontested matters.’” (p. 36).
- “Therefore, in these instances, where the Staff has provided an explanation rooted in an established and, in the context of the relative simple safety matters at issue in this ESP proceeding, not-unreasonable basis for accepting the Applicant's facts without checking them, we accept the Staff's factual findings as conforming to the Commission's instructions. Nonetheless, our confidence in the Staff's judgment would have been materially improved had the more important of those facts been checked.” (p. 37).

- “When it comes, however, to a construction permit application, or a combined license application, which may require complex transient, accident, and other detailed safety analyses, in every instance performed with computer codes used to simulate the plant’s behavior, we would find such an approach regarding the assumptions underlying the models incorporated into those codes and input data used for the analyses extremely troubling.” (p. 37).
- “Another aspect of the Staff’s review process that the Board found to be illogical was the multifaceted approach, in the FSER and FEIS, to documenting issues that remained unresolved or open after the completion of the Staff’s review of the ESP.” (p. 41).
- “We found a wide variation in the depth of detail and the level of inclusion of logic from subsection-to-subsection in the FSER This variation was disturbing [because in some instances] we could not determine what, if any, logic was used by the Staff reviewer when performing his/her task, and it implied that there was, at the least, a lack of coordination among the reviewers, and at the worst, a lack of supervision over the product/project. These concerns, absent the Commission mandated deference to the Staff’s judgment, might well have been the source of a much more probing review, particularly in those areas where the subject matter of the subsection was complicated or highly technical.” (p. 42).
- “In a material number of instances the Agency’s internal work product did not rise to the level produced by contractors, and, might not have risen to a desirable level at all without our probing and prodding.” (p. 43).
- “Until a number of months into this review, the Staff fought our requests for information at every turn. This was counterproductive, led to material delays, and shifted workload for the Staff, the Applicant, and the Board toward the end of the proceeding.” (p. 43).

All of these statements demonstrate that the NRC Staff did not engage in the thorough and independent evaluation of Exelon’s ESP application that is needed to protect public health and safety, and that the Commissioners unduly constrained the Board’s ability to thoroughly review the NRC Staff’s work. On January 22, 2007, the Commissioners requested comments from the NRC Staff and Exelon about some of the concerns raised by the Board. Given that the Commissioners made the rulings that limited the Boards’ review, however, we doubt that this development will lead to any significant improvement in the review process that occurred here or will occur in future licensing proceedings. Therefore, we urge Congress to take action to ensure that thorough and independent evaluations occur in NRC licensing proceedings.