UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

**DOCKETED 03/08/07**
**SERVED 03/08/07**

Dale E. Klein, Chairman
Edward McGaffigan
Jeffrey S. Merrifield
Gregory B. Jaczko
Peter B. Lyons

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| In the Matter of | ) | |
| EXELON GENERATION COMPANY, LLC | ) | Docket No. 52-007-ESP |
| (Early Site Permit for Clinton ESP Site) | ) | |

**CLI-07-12**

**MEMORANDUM AND ORDER**

Today we approve the issuance of an Early Site Permit (ESP) for the Clinton ESP site.

## I. BACKGROUND

Exelon Generation Company, LLC, filed its application for an ESP for the Clinton, Illinois, site in 2003. Although a group of intervenors was admitted as a party to the proceeding at its onset, the group's contention was resolved through summary disposition in 2005.[1] After that action, the proceeding became uncontested but still subject to a mandatory hearing under the Atomic Energy Act.[2] After the Board issued its Initial Decision,[3] the Commission invited the

[1] *Exelon Generation Company, LLC* (Early Site Permit for the Clinton ESP site), LBP-05-19, 62 NRC 134, 183 (2005), *rev. den'd*, CLI-05-29, 62 NRC 801 (2005), *pet. for rev. den'd sub. nom. Environmental Law and Policy Center v. NRC*, 470 F.3d 676 (7th Cir. 2006).

[2] *See* AEA, §189a, 42 U.S.C. §2239(a).

[3] LBP-06-28, 65 NRC __ (Dec. 28, 2006).

parties to the proceeding to submit comments responding to the Board's findings therein.[4]

Pursuant to 10 C.F.R. § 2.340(f), an initial decision authorizing a construction permit is considered stayed pending Commission action. An early site permit is considered a partial construction permit, and thus requires action by the Commission even in the absence of any appeal from the Board's Initial Decision.

In this instance a stay is not warranted. No party has requested a stay and the Commission approves, in this memorandum and order, issuance of the ESP. In any event, it should be recognized that an ESP is not an authorization to construct or operate a nuclear power plant. It relates only to site suitability.

## II. ISSUES ON REVIEW

In support of our review, we asked the NRC Staff and Exelon to respond to two specific findings in the Board's order and invited them to provide comments on any other matter of concern. In addition to responding to our two inquiries, the NRC Staff asked us to clarify an issue raised by the Initial Decision. Exelon confined itself to answering our two questions. Because we have confidence in our staff's review, no party has brought any other issue to our attention, and we see no additional issues, we have confined our review to these issues.

### A. Modification of Hydrology Permit Conditions.

We asked the NRC Staff and Exelon for comments on the Board's expansion of Permit Condition 3 and the Board's characterization of Permit Condition 4. We have considered the three hydrology related permit conditions in the SER, the Board's discussion of them, and the NRC Staff's and Exelon's explanation of them.

Permit Conditions 3 and 5 were included to ensure that the effects that construction of a particular facility will have on groundwater flows are considered at the later construction permit

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[4] CLI-07-04, 65 NRC __(Jan. 22, 2007).

or combined license (COL) phase. According to the Staff's Final Safety Evaluation Report (FSER),[5] the applicants' safety analysis report described the groundwater flowpath in "limited detail," and did not provide the precise location for the proposed ESP facility.[6] The Staff concluded that the applicant had not provided sufficient information on the potential impact of the ESP facility on groundwater flows.[7] Permit Condition 3 was included to resolve the missing information:

> The applicant's description of the effluent-holding facility presumed (see Section 2.4.13.1 and 2.4.13.3 of this SER) that there will be no scenario where liquid radioactive effluent could be released above the ambient groundwater table, including the scenario where the effluent-holding facility could be flooded raising the release point above the ambient groundwater table. The staff agreed that under these assumptions, release of liquid radioactive effluent to ambient groundwater can be precluded. Therefore, the staff determined that it is necessary to ensure that the hydraulic gradient will always point inwards into the radwaste holding and storage facility from ambient groundwater during construction and operation of the ESP facility, including the time during which recovery of groundwater occurs to near its pre-dewatering elevation.[8]

Permit Condition 5 requires groundwater monitoring to assure that Permit Condition 3 is not violated.[9]

Permit Condition 4 would provide: "The NRC staff proposes to include a condition in any ESP that might be issued in connection with this application requiring a radwaste facility design for a future reactor with features to preclude any and all accidental releases of radio-nuclides

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[5] NUREG 1844, Safety Evaluation Report for an Early Site Permit (ESP) at the Exelon Generation Company, LLC (EGC) ESP Site (May 2006).

[6] FSER at 2-156.

[7] *See* FSER at 2-159. This was designated Open Item 2.4-18 in the draft SER.

[8] FSER, Appendix A, at A-3.

[9] *Id.* The Staff has said it intends to combine these two conditions in the ESP. *See* NRC Staff's Response to Commission's January 22, 2007, Order (Feb. 1, 2007), at 3 n.2.

into any potential liquid pathway is necessary."[10]

The Board found Permit Condition 4's language precluding "any and all" releases to be so broad as to be "unachievable as a practical matter" and potentially unenforceable.[11] The Board proposed that Permit Condition 3 be expanded to say that the hydraulic gradient must point inward, not only to the radwaste facility itself, but to any "piping leading into the radwaste facility or other buildings containing liquid radwaste."[12]

The NRC Staff insisted, as it still does, that no modification of Permit Condition 3 is necessary in light of Permit Condition 4, which will assure that the appropriate design features are included to protect surface and ground waters outside the engineered systems.[13]

The Commission believes that a modification of Permit Condition 4 is warranted in order to meet the intent of the staff's proposed language while addressing concerns raised by the Board and the applicant. The Commission revises Permit Condition 4 to require, as a condition of the grant of the ESP, that:

> radioactive waste management systems, structures, and components, as defined in Regulatory Guide 1.143, for a future reactor include features to preclude accidental releases of radionuclides into potential liquid pathways.

In light of this revision of Permit Condition No. 4, the Commission does not believe that the Board's expansion of Permit Condition No. 3 is necessary. Although the Commission is not altering the staff's proposed permit conditions 3 and 5 out of deference for the Staff's findings in this particular case, this decision should not be considered to be precedent-setting in regard to

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[10] FSER, Appendix A, at A-3.

[11] LBP-06-28, slip op. at 40.

[12] *Id.*

[13] *See* NRC Staff's Response to the Board's December 12, 2006, Order (Dec. 14, 2006); *see* NRC Staff's Response to Commission's January 22, 2007, Order (Feb. 1, 2007), at 2-4.

the need for these conditions for any other current or future ESP applications. The Commission believes that the issues addressed by Permit Conditions 3 and 5 will be more fully fleshed out in a COL application referencing this ESP. The Commission also cautions the Staff that a more functional, performance-oriented approach, when adequate, is likely to avoid the questions of interpretation and practicality that have arisen in this case.

**B. NRC Staff's "Audit" Method of Verifying Underlying Facts**

In its ruling, the Board stated that it had been constrained by previous Commission rulings on the scope of its review and expressed concerns about the extent of the staff's independent verification of factual assertions in Exelon's ESP application.[14] We consider our current regulatory approach, of relying on our licensees to submit complete and accurate information, and auditing that information as appropriate, to be entirely consistent with sound regulatory practice.

First, the NRC has broad legal authority under the Atomic Energy Act and certainly has authority to independently verify the facts contained in an application. However, as explained in its brief for the Commission, the Staff uses an audit system which allows it to prioritize which facts it will independently verify. We agree with the staff that it appropriately selects areas to verify information, "such as areas involving first-of-a-kind analysis, use of new modeling techniques, application of new or revised review guidance, areas of higher significance based upon risk-informed reviews, or where the Staff's independent analysis or technical experience and judgment does not support the analysis results of the Applicant."[15] In addition, according to the Staff, the review here was conducted in conformity with the *Standard Review Plan for the*

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[14] LBP-06-28, slip op. at 35-37.

[15] *Id.*, *citing Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants*, NUREG-0800 (1996), and *Processing Applications for Early Site Permits,* RS-002 (2004).

*Review of Safety Analysis Reports for Nuclear Power Plants*, NUREG-0800 (1996), and *Processing Applications for Early Site Permits*, RS-002 (2004).

Moreover, applications – and statements made in connection with applications, such as this one -- are required to be made under oath or affirmation.[16] Section 186 of the Atomic Energy Act allows the NRC to revoke any license for a material false statement in the application. Thus, the NRC reasonably relies on its licensees and applicants to submit complete and accurate information. A violation of this requirement is a serious violation and can result in a range of enforcement actions.

Therefore, we fully expect our Staff to continue to utilize our long-standing regulatory practice of only verifying facts as necessary, based on its expert judgment, as it did in this case.

**C. Open or Unresolved Items.**

In its response to our order seeking comments on the Board's Initial decision, the NRC Staff raised a concern that the Board's order improperly characterized as "unresolved" issues relating to permit conditions and COL action items.[17] Specifically, in the portion of its order addressing NEPA, the Board said that, while the ESP should be issued subject to the permit conditions and COL action items identified in the staff's review, "none of the aforesaid Permit Conditions, the COL Action Items, or items listed as requiring further action or follow-up shall be treated as 'resolved' for the purposes of 10 C.F.R. §52.39(a)(2)."[18]

NRC regulations provide that all issues resolved in the ESP proceeding shall be treated "as resolved" in a subsequent construction permit or COL proceeding that references the ESP,

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[16] *See*, AEA § 182, 42 USC 2232.

[17] Staff's Response to Commission's January 22, 2007, Order, at 8.

[18] LBP-06-28, slip op. at 30.

unless a contention is admitted under narrowly specified conditions.[19] For instance, a contention arguing that the proposed reactor does not fit into the site parameters of the ESP would be admissible at the COL stage, providing that the petitioner meets the applicable contention standards. A contention arguing that the terms or conditions of the ESP are not met would fall into this category. But any challenge arguing that the terms or conditions of the ESP should be modified may only be raised as a petition to modify a license under 10 C.F.R. §2.206.

It is unclear to us whether the Board intended its statement about "unresolved" matters to say anything more than the regulation already says. Certainly, whether or not a permit condition is met would be a potentially litigable issue in a construction permit or COL proceeding for the Clinton site.[20] Similarly, whether or not any petitioner challenges the construction permit, the NRC Staff will address each COL action item, so that those matters are not "resolved" in the sense that they will receive further attention in the future.

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[19] 10 C.F.R. §52.39(a)(2).

[20] *See* Staff Response to Commission's January 22, 2007, Order, at 8.

## III. CONCLUSION

For the foregoing reasons, we authorize the staff to issue the ESP, subject to the direction in this memorandum and order.

IT IS SO ORDERED.

For the Commission

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Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, MD
this 8th day of March, 2007

**Commissioner Merrifield - Concurring in Part and Dissenting in Part**

I agree with the majority decision in most respects. I write separately to emphasize my disagreement with the majority's approval of Permit Condition 3 which requires that the hydraulic gradient will always point inwards into the radwaste holding and storage facility during construction and operation of the ESP facility.

I am disappointed that the majority has chosen to leave this permit condition undisturbed. In this instance it appears that the applicant has identified a favorable site condition -- that due to the hydraulic gradient of the site, it was extremely unlikely that any radioactive liquids would be released into the surrounding environment. Rather than accepting this for what it was, a measure of additional protection, the Staff decided to make maintaining the inward pointing hydraulic gradient an absolute requirement.

The applicant proposed modifying the permit condition so that they would either ensure that the hydraulic gradient is pointed in an inward direction, or they would provide design features to preclude accidental releases of radionuclides. As the applicant correctly notes, the Staff has not required either the Grand Gulf Early Site Permit or the North Anna Early Site Permit to have a hydraulic gradient that points in an inward direction.

For the Clinton ESP, the Staff has required the applicant to have both the hydraulic gradient pointing inward, and design features to preclude any release. The Staff asserts that both are needed for adequate protection, but fails to explain why they are required at the Clinton site, but not required at any other site.

In my mind it is poor regulatory practice to turn favorable site characteristics that an applicant has brought to our attention into absolute permit conditions. I am concerned that we are imposing a condition that could potentially require the permit holder to construct unusual and unnecessary means (such as continuous groundwater pumping to maintain hydrologic

flow) to maintain the gradient when there is no corresponding safety need for such a requirement. I am unaware of any other instances in which a federal regulator has imposed ongoing groundwater pumping requirements as a site condition absent actual contamination at the site. I believe this outcome could lead to regulatory instability in this area and would have preferred to see the Commission remove this absolute requirement that the hydraulic gradient always point in an inward direction.

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CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing COMMISSION MEMORANDUM AND ORDER (CLI-07-12) have been served upon the following persons by electronic mail this date, followed by deposit of paper copies in the U.S. mail, first class, or through NRC internal mail.

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[Original signed by Evangeline S. Ngbea]

Office of the Secretary of the Commission

Dated at Rockville, Maryland,
this 8th day of March 2007