

December 04, 2006

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

NRC STAFF'S RESPONSE TO THE
LICENSING BOARD'S ORDER OF NOVEMBER 17, 2006

In its Order of November 17, 2006, the Licensing Board directed the U.S. Nuclear Regulatory Commission ("NRC") Staff ("Staff") to file a brief addressing two post hearing questions related to the Staff's population projections and a lack of availability of skilled workers to construct a new nuclear unit at the Exelon Generation Company, LLC. ("EGC") Early Site Permit ("ESP") site. The Staff hereby files its brief in response to the Board's Order.

The Staff's brief consists of responses from Staff experts addressing the Board's questions. The Staff believes that the technical reviewers responsible for these areas of the ESP review are best qualified to address the Board's questions. Affidavits have been provided for the Staff's experts.

A. Population Projections

The Board raised the following question:

In Section 2.8 of the Final Environmental Impact Statement (FEIS) the Staff produced tables depicting population projections for the region around the proposed Clinton ESP site. For example, Table 2-6 provides projections for decades 2010 through 2060. However, these projections provided by the Staff in the FEIS, as adopted from the Applicant, appear to be inconsistent with projections referenced during the November 8, 2006 limited appearance session and performed by the Illinois Department of Commerce and Economic Opportunity, which used data from the 2000 U.S. Census to perform its projections. See IL Dept. of Commerce Projections, at http://www.commerce.state.il.us/dceo/Bureaus/Facts_Figures/Population_Projections. The parties shall provide the Board with briefings discussing the materiality

of the apparent inconsistency and how this affects determinations made by the Staff regarding its health and safety and environmental findings in this proceeding.

The Staff provides the written responses of Jay Y. Lee, to address the safety portion of the question, and John A. Jaksch, to address the environmental review portion of the question.

Response of Jay Y. Lee

Exelon Generation Company submitted its application for an Early Site Permit at its Clinton, Illinois, site to the Nuclear Regulatory Commission (NRC) on September 25, 2003. The NRC Staff conducted its review of the application and issued its Draft Safety Evaluation Report (“DSER”) in February 2005 (The Staff issued the Final Safety Evaluation Report (NUREG-1844) in May 2006). The Staff reviewed and evaluated the Applicant’s methodology and the reasonableness of its population distribution and projections for the proposed site environs based on 2000 population data from the US Census Bureau’s website and data projected by Illinois State University (ISU). The Illinois Department of Commerce and Economic Opportunity (IDCEO) population projections data, referred in this question, were completed in June 2005. Since the IDCEO data were not available to the Staff as it was preparing its DSER, the Staff was not able to address these data in that document.

With respect to the Staff’s health and safety review, using the newly available population data projected by the IDCEO, the Staff has re-evaluated the population projections within 20 and 50 miles of the proposed ESP site, for the years 2000, 2010, 2020, and 2030. The IDCEO provided population projections for each county for the years 2000, 2010, 2020, and 2030. The Staff applied the IDCEO county population data to the 20 and 50 mile radial grid lines. If a county was bisected by the radial grid lines, the population data were proportioned by percentage of the county falling in the radial grid as estimated by the Staff. The Staff implicitly assumed that population is fairly uniform throughout each bisected county.

In Section 2.1.3, “Population Distribution,” of the FSER, the Staff evaluated the proposed site against the criterion in Regulatory Position C.4 of Regulatory Guide (RG) 4.7, “General Site Suitability Criteria for Nuclear Power Station,” regarding the need to consider alternative sites with lower population densities. This criterion specifies that if the population density in the vicinity of the proposed site projected at the time of initial site approval and within about 5 years thereafter were to exceed 500 persons per square mile averaged over any radial distance out to 20 miles, alternative sites should be considered. The Staff had determined in the FSER that population densities for the proposed site would be well below 500 persons per square mile averaged over any radial distance out to 20 miles. The Staff re-evaluated population densities based on the new IDCEO data for years 2000, 2010, 2020, and 2030 over radial distances out to 20 miles. They were 116, 123, 132, and 138 persons per square mile for years 2000, 2010, 2020, and 2030, respectively, and were still well below the population density criterion specified in RG 4.7.

Response of John A. Jaksch

The commenter at the limited appearance public meeting in Clinton, Illinois on November 8, 2006 raised two similar comments on the Draft Environmental Impact Statement (DEIS) for the Exelon Early Site Permit. Those comments and the Staff's responses appear in Appendix E (comment 110-2 and 58-1) of the Final Environmental Impact Statement (FEIS). In summary, the Staff stated in the Final EIS that the projected populations were presented for three reasons:

- To give a sense of projected population growth within the region (within a 80km [50-mi] radius of the ESP site at Clinton Power Station), based on the latest information available.
- To show the projected population changes over the potential licensed life of a new facility of 40 years, assuming construction takes place and the plant comes online by 2020.
- To estimate the population in the vicinity and region for the Exelon's "Site Safety Analysis Report."

The population projections in Table 2-6 (p. 2-42) were not used directly during the Staff's environmental evaluation of the impacts of construction and operation of a nuclear plant at the EGC ESP Site, as they were based on 1990 Census data. The table was meant to describe the "affected" environment, and to provide a sense of what the population growth could be.

However, the population projections for each of the potentially economically impacted counties in the region described in Table 2-8 in the FEIS (p. 2-44) are based on population projections prepared by the Illinois Department of Commerce and Economic Development (IDCEO), Office of Policy, Development, Planning, and Research. These population projections are based on 2000 Census data and were employed in the analysis. Note that these projections are undertaken in recognition of the fact that the future cannot be precisely predicted. IDCEO is continually updating its projections for population growth. These updates have not affected the impact levels arrived at in the FEIS.

The Staff considered how the influx of personnel working on the facility would impact the area based on the 2000 Census data. Future changes to the socioeconomic infrastructure due to population increases from other causes would be addressed through the normal county planning processes. Given the potential 20-year time horizon for the ESP to be referenced and the need for Exelon to come back to the NRC for CP/COL approval before a nuclear plant could be constructed or operated, it is likely that new (and possibly significant) information on population and demography would be identified and considered during the CP/COL review.

The Staff concludes that, as the witnesses' written testimony demonstrates, the new population projections are still well below the population density criterion specified in RG 4.7. Furthermore, there is no significant difference between the Staff's population projections employing 2004 IDCEO data and the more recent updates of IDCEO population projections, and neither the results contained in the Safety Evaluation Report nor the environmental impacts presented in the Environmental Impact Statement would be affected.

B. Availability of Skilled Workers

The Board raised the following question:

As recently noted by NRC Chairman Klein, the nuclear industry is confronted with a lack of the skilled labor required to construct and operate new reactors. See Prepared Remarks by Chairman Dale Klein, September 7, 2006, No. S-06-023, available at www.nrc.gov/reading-rm/doc-collections/commission/speeches/2006/s-06-023.html. The Staff has indicated that it expects that the majority of the workforce needs can be satisfied by persons residing in the region surrounding the ESP site, or from close metropolitan areas. The Staff has acknowledged that it did not evaluate the need for specially qualified and certified construction workers when it made its findings regarding the availability of a construction workforce in the surrounding area and as a result chose to estimate the impact as SMALL to MODERATE on the affected environment. See Mandatory Hearing Transcript, November 8, 2006. In light of Chairman Klein's comments regarding workforce shortages, even without new plants under construction, does the Staff believe a larger impact characterization would be more appropriate, why or why not?

The Staff provides the response of John A. Jaksch to address the environmental review portion of the question.

Response of John A. Jaksch

The Staff did not review the availability of specific types of construction workers necessary to support building nuclear power plants. As discussed in the FEIS (page 4-26), the Staff questioned local authorities whether there would be a sufficient number of construction workers (3150) available, with the requisite skills, to build a new nuclear unit at the ESP site. The Staff analysis and information obtained from the interviews conducted by the Staff during the week of March 1, 2004, confirmed that sufficient numbers of construction workers would be available to meet demand. Although there could be certain skill shortages as discussed in Chairman Klein's speech of September 7, 2006, the Staff believes that in those particular cases, market forces will respond to the industry demand for skilled workers in those fields required for construction of the facility. If the available workers with the requisite skills could not be

found within the region, they would either be recruited from the outside or trained to meet the demands of the construction activities. As the demand for skilled laborers increases, the market will respond accordingly.

Given the potential 20-year time horizon for the ESP to be referenced and the need for Exelon to come back to the NRC for CP/COL approval before a nuclear plant could be constructed or operated, it is likely that new (and possibly significant) information on labor skills and potential shortages would be identified and considered during the CP/COL review. The Staff concludes that a SMALL, and as discussed during its November 8, 2006 testimony, possibly MODERATE, impact level is sufficient to bound the impacts on the availability of a work force with the skills to construct and operate a nuclear plant.

As the witness's response demonstrates, market forces would likely address any potential shortfall in skilled labor at the time of construction. The Staff therefore concludes that this question does not affect the conclusions of the Staff's review of the EGC ESP application.

CONCLUSION

The Staff concludes that neither of the questions raised in the Board's Order affects the conclusions reached in the SER, EIS, or the Staff's testimony entered into the record at the Mandatory Hearing.

Respectfully submitted,

/RA/

Ann P. Hodgdon
Counsel for the NRC Staff

Dated at Rockville, MD
this 4th day of December, 2006

December 2, 2006

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

AFFIDAVIT OF JAY Y. LEE CONCERNING PREFILED
DIRECT TESTIMONY IN THE CLINTON ESP PROCEEDING

I, Jay Y. Lee, do hereby state as follows:

1. I am a Senior Health Physicist in the Nuclear Regulatory Commission's (NRC's), Office of Nuclear Reactor Regulation (NRR), Division of Risk Assessment (DRA). A statement of my professional qualifications has already been entered into the record of this proceeding.
2. In response to the Atomic Safety and Licensing Board's November 17, 2006, Order, I provided written responses to the Board's questions regarding the Staff's population projections in the FEIS.
3. I attest to the accuracy of those statements and support them as my own. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information, and belief.

/RA/

Jay Y. Lee

November 29, 2006

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

AFFIDAVIT OF JOHN A. JAKSCH CONCERNING PREFILED
DIRECT TESTIMONY IN THE CLINTON ESP PROCEEDING

I, John A. Jaksch, do hereby state as follows:

1. I employed as a Staff Scientist with the Risk and Decision Sciences Group at the Batelle Pacific Northwest Division, Pacific Northwest National Laboratory. I am providing this written response under a technical assistance contract with the staff of the U.S. Nuclear Regulatory Commission ("NRC"). A statement of my professional qualifications has already been entered into the record of this proceeding.
2. In response to the Atomic Safety and Licensing Board's November 17, 2006, Order, I provided written responses to the Board's questions regarding: (1) the Staff's population projections in the FEIS and (2) whether a change in the Staff's impact characterization for the affected environment would be appropriate in light of a current skilled worker shortage in the nuclear industry.
3. I attest to the accuracy of those statements and support them as my own. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information, and belief.

/RA/

John A. Jaksch

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

CERTIFICATE OF SERVICE

I hereby certify that copies of the "NRC STAFF's RESPONSE TO THE LICENSING BOARD'S ORDER OF NOVEMBER 17, 2006," in the above-captioned proceeding, have been served by deposit in the NRC's internal mail system as indicated by a single asterisk, or by deposit in the U.S. Mail, first class, as indicated by a double asterisk, this 4th day of December, 2006:

Administrative Judge*
Paul B. Abramson, Chair
Atomic Safety and Licensing Board Panel
Mail Stop: T-3F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
(E-mail: PBA@nrc.gov)

Office of the Secretary*
ATTN: Docketing and Service
Mail Stop: 0-16C1
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
(E-mail: HEARINGDOCKET@nrc.gov)

Administrative Judge*
Anthony J. Baratta
Atomic Safety and Licensing Board Panel
Mail Stop: T-3F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
(E-mail: AJB5@nrc.gov)

Office of Commission Appellate
Adjudication*
Mail Stop 0-16C1
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Administrative Judge**
David L. Hetrick
8740 East Dexter Drive
Tucson, AZ 85715
(E-mail: dlmwh@dakotacom.net)

Atomic Safety and Licensing Board*
Mail Stop: T-3F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Thomas S. O'Neill**
Associate General Counsel
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555
(E-mail: thomas.oneill@exeloncorp.com)

Howard A. Learner**
Ann Alexander**
Shannon Fisk**
Environmental Law and Policy Center
35 East Wacker Drive, Suite 1300
Chicago, Illinois 60601
(E-mail: hlearner@elpc.org,
aalexander@elpc.org, sfisk@elpc.org)

Diane Curran**
Harmon, Curran, Spielberg
& Eisenberg LLP
1726 M. Street N.W., Suite 600
Washington, D.C. 20036
(E-mail: dcurran@harmoncurran.com)

Dave Kraft**
Executive Director, Nuclear Energy
Information Service
PO Box 1637
Evanston, IL 60204-1637
(E-mail: neis@neis.org)

Michele Boyd**
Legislative Representative, Public Citizen
215 Pennsylvania Avenue, SE
Washington, D.C. 20003
(E-mail: mboyd@citizen.org)

Janet Marsh Zeller, Executive Director**
Blue Ridge Environmental Defense League
P.O. Box 88
Glendale Springs, NC 28629
(Email: bredl@skybest.com)

Paul Gunter**
Director, Reactor Watchdog Project
Nuclear Information and Resource Service
1424 16th Street, N.W. #404
Washington, D.C. 20036
(E-mail: nirsnet@nirs.org)

Stephen P. Frantz**
Paul M. Bessette**
Alex S. Polonsky**
Morgan, Lewis & Bockius, LLP
1111 Pennsylvania Avenue, N.W.
Washington, D.C. 20004
(E-mail: sfrantz@morganlewis.com,
pbessette@morganlewis.com,
apolonsky@morganlewis.com)

Jered J. Lindsay*
Law Clerk
Atomic Safety and Licensing Board Panel
Mail Stop: T-3F23
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
(E-mail: JJL5@nrc.gov)

/RA/

Ann P. Hodgdon
Counsel for the NRC Staff