August 13, 2004

MEMORANDUM TO: Laura A. Dudes, Section Chief
New Reactors Section
New, Research and Test Reactors Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

FROM: Nanette V. Gilles, Exelon ESP Project Manager ***/RA/***
New Reactors Section
New, Research and Test Reactors Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

SUBJECT: TRIP REPORT FROM SITE VISIT TO THE CLINTON EARLY SITE PERMIT (ESP) SITE AND AUDIT OF HYDROLOGY AND SECURITY ASPECTS OF EXELON ESP APPLICATION

On May 11, 2004, Goutam Bagchi and Nanette Gilles of the Office of Nuclear Reactor Regulation, and supporting contractor personnel, visited the site designated by Exelon Generation Company, LLC (Exelon) in its application for an ESP in accordance with 10 CFR Part 52 and conducted an audit of hydrology-related information presented in the application. Attachment 1 is the trip report from this activity. On May 12, 2004, Al Tardiff of the Office of Nuclear Security and Incident Response and Nanette Gilles of the Office of Nuclear Reactor Regulation visited the Exelon ESP site and conducted an audit of site security information presented in the application. Attachment 2 is the trip report from this activity.

cc: D. Matthews
F. Gillespie
W. Beckner
G. Imbro
J. Shea

Docket No. 52-007

Attachment: As stated

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DISTRIBUTION: E-mail

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OFFICE	PM:RNRP	BC:EMEB	SC:NSIR	OGC	SC:RNRP
NAME	NGilles	GImbro	SMorris	AHodgdon	LDudes
DATE	7/30/04	8/3/04	8/3/04	8/9/04	8/12/04

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TRIP REPORT
SITE VISIT AND AUDIT
EXELON EARLY SITE PERMIT APPLICATION REVIEW
MAY 11, 2004

Subject

Site visit and audit in support of review of hydrology sections of Exelon early site permit (ESP) application

Dates of Site Visit

May 11, 2004

NRC staff participants

- Nanette Gilles, New, Research and Test Reactors Program, Division of Regulatory Improvement Programs, Office of Nuclear Reactor Regulation
- Goutam Bagchi, Division of Engineering, Office of Nuclear Reactor Regulation
- Lance Vail (Consultant)
- Christopher Cook (Consultant)

Applicant staff participants

- Tom Mundy, Exelon
- Eddie Grant, Exelon
- Amy Lientz, CH2MHill
- George Howroyd, CH2MHill
- Jewelle Keiser, CH2MHill
- Joe Stuber, CH2MHill
- Mike Cambria, Parsons

Background/Purpose

By letter dated September 25, 2003, Exelon Generation Company, LLC (Exelon) submitted an early site permit (ESP) application to the NRC for the Clinton ESP site. By letter dated October 27, 2003, and by *Federal Register* Notice (68 FR 61835, October 30, 2003), the NRC accepted Exelon's application for review.

As part of the NRC staff's review of the Exelon ESP application, the staff assesses the compliance of the applicant's site safety analysis report (SSAR) with applicable regulations. In support of the staff's review of the applicant's SSAR, staff reviewers visit the ESP site to observe relevant onsite and local area conditions. The staff also audits information in the SSAR and its references. These audits may include visits to the applicant's offices to obtain a better understanding of the application's contents through technical discussions with knowledgeable applicant staff.

This trip report documents the staff's site visit in the hydrology area, as well as an audit conducted at offices at the Clinton Power Station of hydrology-related information provided in the ESP application.

Discussion

Prior to meeting with the applicant, NRC staff and their consultants took a road tour of the watershed upstream of the plant. This road tour included a visual inspection of the terrain and hydrologic features of the upper watershed. Subsequent to the road tour, NRC staff and their consultants, joined by the applicant and their consultants, participated in a tour of the region near the plant and the Lake Clinton Dam. The impoundment of the North Fork and Salt Creek behind Lake Clinton Dam provides the cooling water for the existing Clinton Power Station unit (once-through cooling) and is proposed to provide cooling tower makeup water for the future units proposed in the ESP application. During this portion of the site visit, the physical relationship of the proposed site with respect to the existing operational plant was examined. Insights were gained with respect to differences in elevation between the proposed plant grade and Clinton Lake, and the general layout of the submerged Ultimate Heat Sink (UHS). Staff and consultants also visited portions of the 3.4 mi discharge flume. At the Lake Clinton Dam, staff viewed both the service and auxiliary spillways.

Following the tour, NRC staff and staff consultants, and the applicant and their consultants, discussed a number of hydrology-related sections of the ESP application, including Sections 3.2 (Thermal Discharges) and 2.4 (Hydrologic Engineering) of the Site Safety Analysis Report (DEL096-REV0). Calculations supporting sub-section results performed by Exelon's consultants were discussed and explained in greater detail (e.g., the potential for icing and ice thickness estimates, etc.). These discussions clarified for the staff which results presented in the application were new calculations, and which results were borrowed from the USAR for the CPS unit. Exelon also provided copies of several figures from the application that were difficult for the staff to read. These documents were:

- ESP Figure 2.4-2 "Figure 2.4-13 Plan – Dam, Spillways and Outlet works, CPS USAR."
- ESP Figure 2.4-3 "Figure 2.4-12 Lake Area – Capacity Curves, CPS USAR."
- ESP Figure 2.4-10 "Figure 2.4-6 Unit Hydrographs for Salt Creek at Dam site under Natural River Conditions, CPS USAR."
- ESP Figure 2.4-11 "Figure 2.4-7 Unit Hydrographs for Sub-Basin Area, CPS USAR."
- ESP Figure 2.4-12 "Figure 2.4-8 Spillway Rating Curves, CPS USAR."
- ESP Figure 2.4-14 "Figure 2.4-23 Ultimate Heat Sink Plan, CPS USAR."
- ESP Figure 2.4-15 "Figure 2.4-24 Ultimate Heat Sink Sections, CPS USAR."

TRIP REPORT
SITE VISIT AND AUDIT
EXELON EARLY SITE PERMIT APPLICATION REVIEW
MAY 12, 2004

Subject

Site visit and audit in support of review of security sections of Exelon early site permit (ESP) application

Dates of Site Visit

May 12, 2004

NRC staff participants

- Nanette Gilles, New, Research and Test Reactors Program, Division of Regulatory Improvement Programs, Office of Nuclear Reactor Regulation
- Al Tardiff, Division of Nuclear Security, Office of Nuclear Security and Incident Response

Applicant staff participants

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- Eddie Grant, Exelon
- Amy Lientz, CH2MHill
- Mike Cambri, Parsons
- Charlie Williamson, AmerGen

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This trip report documents the staff's site visit in the security area, as well as an audit conducted at offices at the Clinton Power Station of security-related information provided in the ESP application.

Upon arrival at the site, the NRC physical security reviewer performed a tour of the site by vehicle and on foot to gather information to allow actual site conditions to be accurately documented. The site's physical characteristics with respect to waterborne-, air-, vehicle-, and land-based approaches to the site and protected area were observed. The proximity of the ESP site to offsite resources was investigated. The staff reviewer interviewed the corporate ESP project manager and site security personnel to ensure full understanding of information on physical security presented in the SSAR.