

June 4, 2012

Ms. Marilyn C. Kray  
Vice President  
New Plant Development  
Exelon Generation  
200 Exelon Way  
Kennett Square, PA 19348

SUBJECT: ENVIRONMENTAL REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 15 RELATED TO HYDROLOGY FOR VICTORIA COUNTY STATION EARLY SITE PERMIT APPLICATION

Dear Ms. Kray:

By letter dated March 25, 2010, Exelon Nuclear Texas Holdings, LLC (Exelon) submitted its application to the U.S. Nuclear Regulatory Commission (NRC) for an early site permit (ESP) for the Victoria County Station (VCS) site in accordance with the requirements contained in Title 10 of the *Code of Federal Regulations* (CFR) Part 52, "Licenses, Certifications and Approvals for Nuclear Power Plants." The NRC staff is performing a detailed review of this application to enable the staff to reach a conclusion regarding the environmental impacts of the proposed action.

The NRC staff has identified that additional information is needed to continue portions of the environmental review. The staff's request for additional information (RAI) is contained in the enclosure to this letter.

To support the review schedule, you are requested to respond within 45 days of the date of this letter. However, your staff has requested the following response times for each question:

**45 days**      **60 days**

HY-2            HY-1  
HY-3            HY-5  
HY-6  
HY-8  
HY-9

If you are unable to provide a response within 45 or 60 days, please state when you will be able to provide the response. In the event the response submitted is incomplete, please indicate in the response when the complete response will be provided. If changes are needed to the ESP application, the staff requests that the RAI response include the proposed wording changes.

M. Kray

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Your response should also indicate whether any of the information provided is to be withheld as exempt from public disclosure pursuant to 10 CFR 2.390. If you have any questions or comments concerning this matter, you may contact me at 301-415-1488 or via e-mail at [Tomeka.Terry@nrc.gov](mailto:Tomeka.Terry@nrc.gov).

Sincerely,

***/RA/***

Tomeka Terry, Environmental Project Manager  
Environmental Projects Branch 2  
Division of New Reactor Licensing  
Office of New Reactors

Docket No. 52-042  
eRAI Tracking Nos. 6483-6484, 6521, 6591-6592

Enclosure:  
As stated

cc: w/enclosure see next page

M. Kray

- 2 -

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Sincerely,

**/RA/**

Tomeka Terry, Environmental Project Manager  
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Enclosure:  
As stated

cc: w/enclosure see next page

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**ADAMS Accession Number: ML12 NRO-002**

<b>OFFICE</b>	NRO/DNRL/ LA	NRO/DNRL/EPB2/PM
<b>NAME</b>	MBrown	TTerry*
<b>DATE</b>	5/30/2012	6/4/2012

\* Approval captured electronically in the electronic RAI system.

**OFFICAL RECORDS COPY**

Request for Additional Information  
No. 6483 Revision 0

Victoria County Station ESP  
Exelon Texas  
Docket No. 52-042  
SRP Section: ESP EIS 2.3.2 - Water Use  
Application Section: Part 3, Environmental Report (ER) Section 2.3

QUESTIONS for Environmental Projects Branch 2 (RAP2)

ESP EIS 2.3.2-1

HY-1 ESRP Section 2.3, "Water Use" directs the staff to obtain information for the proposed site related to the potential impacts on existing and known future water users during the period of project operation. ESRP Section 4.2 directs staff to obtain information to describe the hydrological alterations and water-use impacts from construction. ESRP Section 9.3 the staff to perform similar analyses for alternative sites in the region of interest. The staff needs to review surface water and groundwater uses at the alternative sites, particularly with regard to cumulative effects. The applicant agreed to provide links to water authorities that have this information. However, this form of reference citation only partially fulfills the applicant's responsibility to provide this information, and we therefore request that the applicant compile the information from the source documents. Provide information on past, present, and reasonably foreseeable water users in the vicinity of the alternative sites; i.e., users that could impact surface water and groundwater use and quality in bodies used by or affected by a potential nuclear plant at that location during the periods of construction and operation.

Request for Additional Information  
No. 6484 Revision 0

Victoria County Station ESP  
Exelon Texas  
Docket No. 52-042

SRP Section: ESP EIS 3.4 - Operational Activities  
Application Section: Part 3, Environmental Report (ER) Section 3.4

QUESTIONS for Environmental Projects Branch 2 (RAP2)

ESP EIS 3.4-1

HY-2 ESRP Section 3.4.2 directs the staff to obtain information on the proposed intake, discharge, and heat-dissipation systems. ESRP Section 5.2.1 directs the staff to identify, analyze, and describe hydrologic alterations resulting from plant operation and the adequacy of water sources to supply plant water needs. ESRP section 9.4.2 directs the staff's analysis of alternatives to the proposed circulating water system. The staff needs to review the performance of the intake structure, particularly the approach velocity, trash removal, and maintenance. Therefore, the staff requests that the applicant provide information on the design and performance characteristics of the intake structure on the Guadalupe River and the alternative sites location. This information includes the approach velocity, trash removal, and maintenance of the structures, where available. Provide and docket the design reports for the VCS intake structure at the Guadalupe River location and the alternative sites location.

HY-3 ESRP Section 3.4.2 directs the staff's preparation of the proposed intake, discharge, and heat dissipation system design and performance characteristics. The staff needs to review the performance of the discharge structure in terms of the thermal plume, erosion, and maintenance under a range of flow conditions in the Guadalupe River. Therefore, the staff requests that the applicant provide and docket any design reports on the discharge structure, especially the CORMIX model run reports. Provide additional information on the design and performance of the discharge structure in the Guadalupe River.

Request for Additional Information  
No. 6521 Revision 0

Victoria County Station ESP  
Exelon Texas  
Docket No. 52-042  
SRP Section: ESP EIS 5.2 - Water-Related Impacts  
Application Section: Part 3, Environmental Report (ER) Section 5.2

QUESTIONS for Environmental Projects Branch 2 (RAP2)

ESP EIS 5.2-1

HY-5 ESRP Section 5.2.1 directs the staff's identification, analysis, and description of hydrologic alterations resulting from plant operation and the staff's analysis of the adequacy of the water sources proposed to supply plant water needs. It was mentioned during the VCS site audit meetings that there are calculations showing the effect of freshwater inflows from the Guadalupe River on the average salinity of San Antonio Bay. The staff would like to review the calculations and results from any available reports on this subject. The staff also requests any reports that estimate the effects of freshwater flow from the Guadalupe River on the salinity of Aransas Bay, particularly with regard to the Whooping Crane habitat. Provide available calculations for the Guadalupe River estuary, San Antonio Bay, and adjacent bays showing the potential effect of freshwater flow rate on salinity.

HY-6 ESRP Section 5.2.1 directs the staff's identification, analysis, and description of hydrologic alterations resulting from plant operation and the staff's analysis of the adequacy of the water sources proposed to supply plant water needs. ESRP Section 5.2.2 directs the staff's analysis and assessment of predicted impacts of plant operation on water use. ER Section 5.2.1.2.1 and 5.2.2.2 describe the analysis of development of groundwater from the Evangeline aquifer for VCS needs. The staff needs to review these studies for the adequacy of groundwater supply, effects on other groundwater users, and the potential for salt water intrusion. Please provide and docket the report "Groundwater Supply Development Study (25352-000-G65-GEK-00001, Rev 001)" and any other similar reports on this subject. Provide information on development of groundwater from the aquifers beneath the site for construction and operational needs.

Request for Additional Information  
No. 6491 Revision 0

Victoria County Station ESP  
Exelon Texas

Docket No. 52-042

SRP Section: ESP EIS 9.3 - Alternative Sites

Application Section: Part 3, Environmental Report (ER) Section 9.3

QUESTIONS for Environmental Projects Branch 2 (RAP2)

ESP EIS 9.3-1

HY-8 ESRP Section 9.3 directs the staff's analysis and evaluation of alternatives to the applicant's proposed site for the construction and operation of a nuclear power plant. There is no information on the proposed water treatment options for the alternative sites. Staff needs to review water treatment options that might differ from those options explored for the preferred site. Provide information on water treatment options for the alternative sites, including chemicals used and rates of use for fresh water and salt water cooling systems.

Request for Additional Information  
No. 6492 Revision 0

Victoria County Station ESP  
Exelon Texas

Docket No. 52-042

SRP Section: ESP EIS 9.4 - System Design Alternatives

Application Section: Part 3, Environmental Report (ER) Section 9.4

QUESTIONS for Environmental Projects Branch 2 (RAP2)

ESP EIS 9.4-1

HY-9 ESRP Section 9.4.2 directs the staff's analysis of alternatives to the proposed circulating water system. Radial collector wells are a technology often evaluated as a low-impact alternative for nuclear power plant water supplies. Staff would like to review the feasibility of their use at the preferred and alternative sites. Provide information on the practicality of radial collector wells as an alternative technology for providing intake water.