

February 27, 2012

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 16  
(SRP SECTIONS: 02.03.01 – REGIONAL CLIMATOLOGY, 11.02 – LIQUID  
WASTE MANAGEMENT SYSTEM, AND 11.03 – GASEOUS WASTE  
MANAGEMENT SYSTEM) RELATED TO THE VICTORIA COUNTY STATION  
EARLY SITE PERMIT APPLICATION

Dear Ms. Kray:

By letter dated March 25, 2010, Exelon Nuclear Texas Holdings, LLC (Exelon) submitted an early site permit application for Victoria County Station pursuant to 10 CFR Part 52. The Nuclear Regulatory Commission (NRC) staff is performing a detailed review of this application.

The staff has identified that additional information is needed to continue portions of the review and the request for additional information (RAI) is contained in the enclosure to this letter. Exelon is requested to respond within 30 days of the date of this letter. However, the Exelon staff has requested the following response times for each question:

<b>30 days</b>	<b>60 days</b>
02.03.01-2	11.03-4
11.02-6	

If the RAI response involves changes to application documentation, Exelon is requested to include the associated revised documentation with the response.

Should you have questions, please contact Michael Eudy at (301) 415-3104 or via e-mail at [Michael.Eudy@nrc.gov](mailto:Michael.Eudy@nrc.gov).

Sincerely,

**/RA/**

Michael A. Eudy, Project Manager  
Licensing Branch 3  
Division of New Reactor Licensing  
Office of New Reactors

Docket No.: 52-042  
Enclosure: Request for Additional Information

Ms. Marilyn C. Kray  
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New Plant Development  
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By letter dated March 25, 2010, Exelon Nuclear Texas Holdings, LLC (Exelon) submitted an early site permit application for Victoria County Station pursuant to 10 CFR Part 52. The Nuclear Regulatory Commission (NRC) staff is performing a detailed review of this application.

The staff has identified that additional information is needed to continue portions of the review and the request for additional information (RAI) is contained in the enclosure to this letter. Exelon is requested to respond within 30 days of the date of this letter. However, the Exelon staff has requested the following response times for each question:

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Docket No.: 52-042  
Enclosure: Request for Additional Information

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NRO-002

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\*Approval captured electronically in the electronic RAI system

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Request for Additional Information No. 6254 Revision 0

Victoria County Station ESP  
Exelon Texas  
Docket No. 52-042  
SRP Section: 02.03.01 - Regional Climatology  
Application Section: Regional Climatology

02.03.01-2

10 CFR 52.17(1)(vi), *Contents of applications; technical information*, states that site safety analysis reports should include “the meteorological characteristics of the proposed site with appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area and with sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated.” In addition, 10 CFR 100.20(c)(2), *Factors to be considered when evaluating sites*, states that the “meteorological characteristics of the site that are necessary for safety analysis or that may have an impact upon plant design” must be identified and characterized. 10 CFR 100.21(d), *Non-seismic siting criteria*, states, in part, that the meteorological characteristics of the site “must be evaluated and site parameters established such that potential threats from such physical characteristics will pose no undue risk to the type of facility proposed to be located at the site.”

Nuclear power plants must be designed so that they remain in a safe condition under extreme meteorological events, including events such as tornadoes and hurricanes, that could result in the most extreme wind events that could reasonably be predicted to occur at the site. Initially, the NRC’s predecessor, the U.S. Atomic Energy Commission considered tornadoes to be the bounding extreme wind events and issued RG 1.76, “Design-Basis Tornado for Nuclear Power Plants,” in April 1974. The design-basis tornado wind speeds were chosen so that the probability that a tornado exceeding the design basis would occur was on the order of  $10^{-7}$  per year per nuclear power plant.

In February 2007, the National Weather Service implemented the Enhanced Fujita Scale, which is a revised assessment relating tornado damage to wind speed. Relying on the Enhanced Fujita Scale, in March 2007, the NRC issued Revision 1 of RG 1.76, “Design-Basis Tornado and Tornado Missiles for Nuclear Power Plants.” In Revision 1 of RG 1.76, the NRC decreased the design-basis tornado wind speed criteria. Since design-basis tornado wind speeds were decreased as a result of the analysis performed to update RG 1.76, it was no longer clear that the revised tornado design basis wind speeds would bound design-basis hurricane wind speeds in all areas of the United States. This prompted an investigation into extreme wind gusts during hurricanes and their relation to design basis hurricane wind speeds. As a result, in October 2011, the NRC issued RG 1.221, “Design-Basis Hurricane and Hurricane Missiles for Nuclear Power Plants” RG 1.221 provides the design-basis hurricane wind speeds that correspond to an exceedance frequency of  $10^{-7}$  per year.

Based on the data in RG 1.221, it is possible that the potential winds associated with hurricanes may exceed the wind speeds associated with tornadoes at the VCS site. The staff is therefore requesting, in accordance with the requirements of 10 CFR Parts 52 and 100, and the guidance of RG 1.221, that the applicant update the site characteristic values in the VCS ESP SSAR to

include a new site characteristic called "Hurricane Wind Speed." Alternatively, the applicant may provide a justification if the VCS ESP SSAR is not updated to include this new site characteristic.

Request for Additional Information No. 6302 Revision 0

Victoria County Station ESP  
Exelon Texas  
Docket No. 52-042  
SRP Section: 11.02 - Liquid Waste Management System  
Application Section: 11.2

11.02-6

The staff applies the current SRP review process of the LWMS system covering Part 50 Appendix I design objectives and ALARA provisions assuring compliance with Part 20 for workers and members of the public. In the review of SSAR Table 11.2.3-2, there are six different reactor design source terms provided to determine the PPE source term for the Victoria County ESP. However, these source terms are not referenced to an exact reactor design. In order to perform a validation and verification of each design source term that will be utilized in determination of a PPE source term, the staff requests the applicant to supply the DCD name, revision number and section table number(s) of each design source term; and, to provide the documentation for the source terms in other sections where applicable in the SSAR. In addition, please provide a SSAR mark up indicating the references used to provide the PPE source term tables as accordingly.

Request for Additional Information No. 6303 Revision 0

Victoria County Station ESP  
Exelon Texas  
Docket No. 52-042  
SRP Section: 11.03 - Gaseous Waste Management System  
Application Section: 11.3

11.03-4

The staff has evaluated SSAR Table 11.3.3-6 values for total body and skin dose and found that the doses provided have been calculated at the site boundary. However, the site boundary location only considers plume and ground doses. For comparison to the limits in 10 CFR 50 Appendix I the total dose utilized is to be at the nearest MEI and should also include all pathway doses at the MEI. In order to accurately compare the nearest MEI doses to the 10 CFR 50 Appendix I limits, the staff requests for the applicant to re-evaluate SSAR Table 11.3.3-6 and all affected tables accordingly. In addition, please provide a markup of all SSAR changes necessary.

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(Revised 01/26/2012)

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