Exelon Nuclear
200 Exelon Way
KSA3-N
Kennett Square, PA 19348

Telephone 610.765.5610
Fax 610.765.5755
www.exeloncorp.com

Exelon Nuclear

52.17

December 13, 2004

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Subject: Response to Request for Additional Information (RAI) – Exelon Early Site Permit (ESP) Application for the Clinton ESP Site (TAC No. MC1125)

Re: Letter, U.S. Nuclear Regulatory Commission (Thomas Kenyon) to Exelon Generation Company, LLC, (M. Kray), dated November 15, 2004, Request for Additional Information (RAI) Regarding the Environmental Portion of the Early Site Permit Application for the Exelon Generation Company Site (TAC No. MC1125)

Enclosed, as requested in the referenced letter, is a response to request for additional information (RAI) associated with Uranium Fuel Cycle Impacts (E5.7-1).
Please contact Bill Maher of my staff at 610-765-5939 if you have any questions regarding this submittal.

Sincerely yours,

Marilyn C. Kray

Marilyn C. Kray
Vice President, Project Development

TPM/wdm

D073

cc: U.S. NRC Regional Office (w/ enclosures)
Mr. Thomas Kenyon (w/ enclosures)

Enclosure: Response to RAI E5.7-1

AFFIDAVIT OF MARILYN C. KRAY

State of Pennsylvania

County of Chester

The foregoing document was acknowledged before me, in and for the County and State aforesaid, by Marilyn C. Kray, who is Vice President, Project Development, of Exelon Generation Company, LLC. She has affirmed before me that she is duly authorized to execute and file the foregoing document on behalf of Exelon Generation Company, LLC, and that the statements in the document are true to the best of her knowledge and belief.

Acknowledged and affirmed before me this 13th day of December, 2004.

My commission expires 10-6-07.

Vivia V. Gallimore

Notary Public

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Vivia V. Gallimore, Notary Public
Kennett Square Boro, Chester County
My Commission Expires Oct. 6, 2007
Member, Pennsylvania Association Of Notaries

Response to environmental RAI E5.7-1

NRC Letter Dated: 11/15/2004

NRC RAI No. RAI E5.7-1

The Exelon ESP environmental report used Table S-3 as the basis for evaluating the contribution of the environmental effects of the fuel cycle. Table S-3, however, does not estimate releases or consider the environmental effects of radon-222 and technetium-99. The effects of these gases should be included in the environmental report. Provide a detailed analysis of estimated releases and environmental effects of radon-222 and technetium-99 for the uranium fuel cycle.

EGC RAI ID: R16-1

EGC RESPONSE:

The Exelon Generating Company, LLC (EGC) analysis of the environmental effects of the uranium fuel cycle for the Exelon ESP application included a review of impact considerations due to Radon-222 (Ra-222) and Technetium-99 (Tc-99). This assessment took full advantage of previous analyses documented in NUREG-1437, "*Generic Environmental Impact Statement for License Renewal of Nuclear Plants*", Section 6.2, including Tables 6.1 through 6.4.

As described in NUREG-1437, Chapter 6, the NRC supplemented the data on environmental impacts of the uranium fuel cycle presented in Table S-3 (which didn't address the impacts of Ra-222 and Tc-99) to extend the coverage of assessed impacts to include these two radionuclides. NUREG-1437 states, "principal radon releases occur during mining and milling operations and as emissions from mill tailings, whereas principal Tc-99 releases occur from gaseous diffusion enrichment facilities." The NRC concluded that the radiological impacts from these two radionuclides are small.

Furthermore, in accordance with the guidance provided in NUREG-1555 (Section 5.7, Appendix A) and the NEPA evaluation process, EGC determined that there was no new significant information relevant to the impacts of Rn-222 and Tc-99 for the EGC ESP site. Since the principal fuel cycle and waste management techniques and impact evaluations for new reactor technologies are bounded by the existing LWR impact assessment, EGC has concluded that the overall radiological impacts due to the contribution from Ra-222 and Tc-99 would remain small. Furthermore, the NRC noted that the EPA had found that current emissions from power plants were at levels that provided an ample margin of safety. Therefore, since uranium fuel cycle facilities must comply with federal and state regulatory limits, dose contribution to the public would also be considered small.

ASSOCIATED EGC ESP APPLICATION REVISIONS:
Revise ER, Chapter 5, Section 5.7, Table 5.7-3, note (a), from:

(a) In some cases where no entry appears it is clear from the background documents that the matter was addressed and that, in effect, the Table, should be read as if a specific zero entry had been made. However there are other areas that are not addressed at all in the Table. Table S-3 does not include health effects from the effluents described in the Table, or estimates of releases of Radon-222 from the uranium fuel cycle or estimates of Technetium-99 released from waste management or reprocessing activities. These issues may be the subject of litigation in the individual licensing proceedings.

Data supporting this table are given in the Environmental Survey of the Uranium Fuel Cycle," WASH-1248, April 1974; the "Environmental Survey of Reprocessing and Waste Management Portion of the LWR Fuel Cycle," NUREG-0116 (Supp. 1 to WASH-1248); the "Public Comments and Task Force Responses Regarding the Environmental Survey of the Reprocessing and Waste Management Portions of the LWR Fuel Cycle," NUREG-0216 (Supp.2 to WASH-1248): and in the record of final rulemaking pertaining to Uranium Fuel Cycle Impacts from Spent Fuel Reprocessing and Radioactive Waste Management, Docket RM-50-3. The contributions from reprocessing, waste management and transportation of wastes are maximized for either of the two fuel cycles (uranium only and fuel recycle). The contribution from transportation excludes transportation of cold fuel to a reactor and of irradiated fuel and radioactive wastes from a reactor which are considered in Table S-4 of §51.20(g). The contributions from the other steps of the fuel cycle are given in columns A-E of Table S-3A of WASH-1248.

To read:

(a) In some cases where no entry appears it is clear from the background documents that the matter was addressed and that, in effect, the Table, should be read as if a specific zero entry had been made. However here are other areas that are not addressed at all in the Table. Table S-3 does not include health effects from the effluents described in the Table, or estimates of releases of Radon-222 from the uranium fuel cycle or estimates of Technetium-99 released from waste management or reprocessing activities. Radiological impacts of these two radionuclides are addressed in NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants, May 1996" and it was concluded that the health effects from these two radionuclides pose a small significance.

Data supporting this table are given in the Environmental Survey of the Uranium Fuel Cycle," WASH-1248, April 1974; the "Environmental Survey of Reprocessing and Waste Management Portion of the LWR Fuel Cycle," NUREG-0116 (Supp. 1 to WASH-1248); the "Public Comments and Task Force Responses Regarding the Environmental Survey of the Reprocessing and Waste Management Portions of the LWR Fuel Cycle," NUREG-0216 (Supp.2 to WASH-1248): and in the record of final rulemaking pertaining to Uranium Fuel Cycle Impacts from Spent Fuel Reprocessing and Radioactive Waste Management, Docket RM-50-3. The contributions from reprocessing, waste management and transportation of wastes are maximized for either of the two fuel cycles (uranium only and fuel recycle). The contribution from transportation excludes transportation of cold fuel to a reactor and of irradiated fuel and radioactive wastes from

a reactor which are considered in Table S-4 of §51.20(g). The contributions from the other steps of the fuel cycle are given in columns A-E of Table S-3A of WASH-1248.

RAI ATTACHMENTS

None