Exelon Nuclear
200 Exelon Way
Kennett Square, PA 19348

www.exeloncorp.com

Exelon Nuclear

10 CFR 50.90

August 21, 2008

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Peach Bottom Atomic Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-44 and DPR-56
Docket Nos. 50-277 and 50-278

Subject: Supplemental Response for License Amendment Request for Alternative Source Term

References:

1. Letter from Pamela B. Cowan, Exelon Generation Company, LLC, to U. S. Nuclear Regulatory Commission, "License Amendment Request – Application of Alternative Source Term," dated July 13, 2007

2. U. S. Nuclear Regulatory Commission e-mail dated July 18, 2008, draft Request for Additional Information (RAI), Peach Bottom Atomic Power Station, Units 2 and 3, License Amendment Request (LAR), Alternative Source Term Application (five questions)

3. U. S. Nuclear Regulatory Commission updated e-mail dated July 25, 2008, draft Request for Additional Information (RAI), Peach Bottom Atomic Power Station, Units 2 and 3, License Amendment Request (LAR), Alternative Source Term Application (one question)

4. Letter from Pamela B. Cowan, Exelon Generation Company, LLC, to U. S. Nuclear Regulatory Commission, "Response to Request for Additional Information Concerning License Amendment Request – Application of Alternative Source Term," dated July 29, 2008

5. Letter from Pamela B. Cowan, Exelon Generation Company, LLC, to U. S. Nuclear Regulatory Commission, "Response to Request for Additional Information Concerning License Amendment Request – Application of Alternative Source Term," dated August 7, 2008

6. Teleconference between U. S. Nuclear Regulatory Commission and Exelon Generation Company, LLC, dated August 12, 2008, draft Request for Additional Information (RAI), Peach Bottom Atomic Power Station, Units 2 and 3, License Amendment Request (LAR), Alternative Source Term Application (two issues)

In Reference 1, Exelon Generation Company, LLC (Exelon) submitted an application requesting a change to the Technical Specifications (TS), Appendix A, of Renewed Facility Operating License Nos. DPR-44 and DPR-56 for Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3, respectively. The proposed change was requested to support the application of Alternative Source Term (AST) methodology at PBAPS, Units 2 and 3.

In References 2 and 3, the U. S. Nuclear Regulatory Commission (NRC) issued draft requests for additional information (RAIs) concerning the PBAPS License Amendment Request (LAR). The NRC identified six questions in the draft RAIs in which additional information was requested concerning meteorological and dose consequence aspects related to AST. In References 4 and 5, Exelon responded to the six RAI questions.

In the Reference 6 teleconference, the NRC requested further clarification with regard to: 1) the atmospheric dispersion factors (X/Qs) for the fuel handling accident (FHA) listed in Table 6 of the Reference 5 response, and 2) the basis for establishing an 84-hour decay period in the definition for RECENTLY IRRADIATED FUEL. To address these issues, Exelon has revised Table 6 to show the specific X/Q values used in the FHA analysis. The X/Q values depicted in Table 6 represent the most bounding condition for each of the release points identified. In addition, the definition of RECENTLY IRRADIATED FUEL has been revised to remove the reference to the 84-hour decay period. Therefore, Exelon is hereby replacing the proposed definition for RECENTLY IRRADIATED FUEL as described in Reference 1 with the following proposed definition.

Previous Proposed Definition (Reference 1)

RECENTLY IRRADIATED FUEL	RECENTLY IRRADIATED FUEL is fuel that has occupied part of a critical reactor core within the previous 84 hours. This 84-hour time period may be reduced to 24 hours if all outside secondary containment ground-level hatches (hatches H15 through H24 and Units 2 and 3 Torus room access hatches) are closed.

New Proposed Definition for Unit 2 and Unit 3

Unit 2

RECENTLY IRRADIATED FUEL is fuel that has occupied part of a critical reactor core within the previous 24 hours. When using this definition to suspend the Applicability of LCOs, secondary containment ground-level hatches H15, H16, H17, H18, H19, and H33 shall be closed during the movement of any irradiated fuel in Secondary Containment.

Unit 3

RECENTLY IRRADIATED FUEL is fuel that has occupied part of a critical reactor core within the previous 24 hours. When using this definition to suspend the Applicability of LCOs, secondary containment ground-level hatches H20, H21, H22, H23, H24, and H34 shall be closed during the movement of any irradiated fuel in Secondary Containment.

Attachment 1 of this letter contains the Table 6 pages, which supercede the Table 6 contained in the Reference 5 response. Attachment 2 provides the revised Technical Specifications pages 1.1-5 for PBAPS, Units 2 and 3, which include the new proposed definition for RECENTLY IRRADIATED FUEL.

Exelon has concluded that the information provided in this response does not impact the conclusions of the: 1) Technical Analysis, 2) No Significant Hazards Consideration under the standards set forth in 10 CFR 50.92(c), or 3) Environmental Consideration as provided in the original submittal (Reference 1).

There are no regulatory commitments contained in this letter. If you have any further questions or require additional information, please contact Richard Gropp at 610-765-5557.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 21st day of August 2008.

Respectfully,

Pamela B. Cowan
Director – Licensing and Regulatory Affairs
Exelon Generation Company, LLC

Attachment 1: Supplemental Response to Request for Additional Information (Revised Table 6 from the Reference 5 Supplement)
Attachment 2: Revised Technical Specifications Page Mark-ups (Pages 1.1-5 for Units 2 and 3)

cc: Regional Administrator - NRC Region I w/ Attachments
NRC Senior Resident Inspector - PBAPS "
NRC Project Manager, NRR - PBAPS "
Director, Bureau of Radiation Protection - Pennsylvania Department of Environmental Protection "
S. T. Gray, State of Maryland "

ATTACHMENT 1

Peach Bottom Atomic Power Station
Units 2 and 3
Docket Nos. 50-277 and 50-278

License Amendment Request
Supplemental Response

Alternative Source Term (AST)

Table 6 (revised) from August 7, 2008 Supplemental Response

Table 6
X/Q (sec/m^3) Results Summary (from PM-1055 Rev. 1 Table 5-1 and PM-1059 Rev. 3 Table 4-1), Meteorological Database Utilized, and Dose Calculation Application Bases

Receptor	Release Point	0 – 0.5 hour	0-2 hour	2-8 hour	8-24 hour	1-4 day	4-30 day	Controlling Meteorological Tower Database Utilized	Justification for Usage	Used in Dose Calculation
Control Room Intake	Off-Gas Stack		3.31E-06	1.00E-15	1.00E-15	1.64E-08	4.54E-09	Tower 2	Tower 2 is the only representative database (See Calculation PM-1055, Rev 1, Sections 2.2.3 and 2.2.4)	PM-1077, Rev. 1
	Unit 2 Reactor Building Stack		1.18E-03	9.08E-04	4.14E-04	2.90E-04	2.26E-04	Tower 2 (0-2 hour) Tower 1A (all other periods)	The higher of the X/Qs predicted by representative Towers 2 and 1A databases were selected (See Calculation PM-1055, Rev 1, Sections 2.2.3 and 2.2.4)	PM-1077, Rev. 1, PM-1057, Rev. 2, PM-1059, Rev 3
	Unit 3 Reactor Building Stack (Unit 2 is limiting)		1.18E-03	8.91E-04	4.00E-04	2.51E-04	1.98E-04	Tower 2	The higher of the X/Qs predicted by representative Towers 2 and 1A databases were selected (See Calculation PM-1055, Rev 1, Sections 2.2.3 and 2.2.4)	PM-1077, Rev. 1, PM-1057, Rev. 2, PM-1059, Rev 3
	Ground-Level Hatches		1.28E-02	These are the maximum values for each. 0-2 hour values conservatively utilized for the Fuel Handling Accident				Tower 1A	Tower 1A is the most representative and conservative database (See Calculation PM-1059, Rev 3, Attachment G, Section 3.1 and Table 4-1)	PM-1059, Rev 3
	Reactor Building Personnel Access Doors		1.04E-03							
	Roof Scuttles		1.90E-03							
	Railway Bay Doors		4.54E-04							

Table 6 (continued)

Receptor	Release Point	0 – 0.5 hour	0-2 hour	2-8 hour	8-24 hour	1-4 day	4-30 day	Controlling Meteorological Tower Database Utilized	Justification for Usage	Used in Dose Calculation
EAB (823 m)	Off-Gas Stack	5.30E-05	9.17E-06	3.24E-06*	1.92E-06	6.22E-07	1.23E-07	Tower 2	Tower 2 is the only representative database (See Calculation PM-1055, Rev 1, Sections 3.2.3, 3.2.4, and 4.1)	PM-1077, Rev. 1
	Units 2 and 3 Reactor Building Stacks, Turbine Building, and Personnel Access Doors, Railway Bay Doors, and Roof Scuttle, and Ground-Level Hatches.		9.11E-04	4.67E-04*	3.35E-04	1.64E-04	6.26E-05	Tower 1A	The highest of the X/Qs predicted by the representative Towers 2, 1A, and River Tower/1A databases were selected (See Calculation PM-1055, Rev 1, Sections 3.2.4 and 4.1)	PM-1077, Rev. 1, PM-1057, Rev. 2, PM-1059, Rev 3
LPZ (7,300 m)	Off-Gas Stack	1.75E-05	9.05E-06	4.01E-06*	2.67E-06	1.10E-06	3.10E-07	Tower 2	Tower 2 is the only representative database (See Calculation PM-1055, Rev 1, Sections 3.2.3, 3.2.4, and 4.1)	PM-1077, Rev. 1
	Units 2 and 3 Reactor Building Stacks, Turbine Building, and Personnel Access Doors, Railway Bay Doors, and Roof Scuttle, and Ground-Level Hatches.		1.38E-04	5.81E-05*	3.77E-05	1.48E-05	4.15E-06	Tower 1A	The higher of the X/Qs predicted by the representative Towers 2 and 1A databases were selected (See Calculation PM-1055, Rev 1, Sections 3.2.4 and 4.1)	PM-1077, Rev. 1, PM-1057, Rev. 2, PM-1059, Rev 3

ATTACHMENT 2

Peach Bottom Atomic Power Station
Units 2 and 3
Docket Nos. 50-277 and 50-278

License Amendment Request
Supplemental Response

Alternative Source Term (AST)

Revised Technical Specifications Page Mark-ups

Unit 2	Unit 3
1.1-5	1.1-5

1.1 Definitions

PHYSICS TESTS (continued)	b. Authorized under the provisions of 10 CFR 50.59; or c. Otherwise approved by the Nuclear Regulatory Commission.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 3514 MWt.
REACTOR PROTECTION SYSTEM RPS) RESPONSE TIME	The RPS RESPONSE TIME shall be that time interval from the opening of the sensor contact up to and including the opening of the trip actuator contacts.
RECENTLY IRRADIATED FUEL	RECENTLY IRRADIATED FUEL is fuel that has occupied part of a critical reactor core within the previous 24 hours. When using this definition to suspend the Applicability of LCOs, secondary containment ground-level hatches H15, H16, H17, H18, H19, and H33 shall be closed during the movement of any irradiated fuel in Secondary Containment.
SHUTDOWN MARGIN (SDM)	SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical assuming that: a. The reactor is xenon free; b. The moderator temperature is 68°F; and c. All control rods are fully inserted except for the single control rod of highest reactivity worth, which is assumed to be fully withdrawn. With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM.
STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during *n* Surveillance Frequency intervals, where *n* is the total number of systems, subsystems, channels, or other designated components in the associated function.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

(continued)

1.1 Definitions

PHYSICS TESTS (continued)	b. Authorized under the provisions of 10 CFR 50.59; or c. Otherwise approved by the Nuclear Regulatory Commission.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 3514 MWt.
REACTOR PROTECTION SYSTEM RPS) RESPONSE TIME	The RPS RESPONSE TIME shall be that time interval from the opening of the sensor contact up to and including the opening of the trip actuator contacts.
RECENTLY IRRADIATED FUEL	RECENTLY IRRADIATED FUEL is fuel that has occupied part of a critical reactor core within the previous 24 hours. When using this definition to suspend the Applicability of LCOs, secondary containment ground-level hatches H20, H21, H22, H23, H24, and H34 shall be closed during the movement of any irradiated fuel in Secondary Containment.
SHUTDOWN MARGIN (SDM)	SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical assuming that: a. The reactor is xenon free; b. The moderator temperature is 68°F; and c. All control rods are fully inserted except for the single control rod of highest reactivity worth, which is assumed to be fully withdrawn. With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM.
STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during *n* Surveillance Frequency intervals, where *n* is the total number of systems, subsystems, channels, or other designated components in the associated function.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

(continued)