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10 CFR 50.90

December 20, 2013

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

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

Subject: Extended Power Uprate License Amendment Request – Supplement 16 Corrections, Clarifications and Additional Information – Extended Power Uprate

Reference:

1. Letter from K. F. Borton (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission "License Amendment Request – Extended Power Uprate," dated September 28, 2012 (ADAMS Accession No. ML122860201)

2. Letter from K. F. Borton (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Supplemental Information Supporting Request for License Amendment Request – Supplement 5," dated June 27, 2013 (ADAMS Accession No. ML13156A368)

In accordance with 10 CFR 50.90, Exelon Generation Company, LLC (EGC) requested amendments to Facility Operating License Nos. DPR-44 and DPR-56 for Peach Bottom Atomic Power Station (PBAPS) Units 2 and 3, respectively (Reference 1). Specifically, the proposed changes would revise the Renewed Operating Licenses to implement an increase in rated thermal power from 3514 megawatts thermal (MWt) to 3951 MWt.

The attachments to this letter provide responses to follow-up questions resulting from the Health Physics and Human Performance Branch (AHPB) review of Reference 2 as well as corrections and clarifications to the information provided in Reference 1.

The attachments to this supplement are summarized as follows:

Attachment 1 – Exelon responses to AHPB RAI-8, 9 and 10.

Attachment 2 – This attachment corrects errors in the description of monitoring locations in Attachment 13, Tables 3-1, 3-2, 3-3, 3-4 and 3-5 of Reference 1. Specifically, the errors involved the description nomenclature that mistakenly used information from the other unit. The actual monitoring locations are unchanged with the exception of one Unit 2 location (Support

6DD-H10 in Table 3-2). In this case, the Unit 2 monitoring location is slightly different than the Unit 3 monitoring location due to differences in the dead weight support configurations. The analyses and resulting acceptance criteria as described in Attachment 13 are unaffected by these changes. Replacement Tables 3-1, 3-2, 3-3, 3-4 and 3-5 are provided.

Attachment 3 – This attachment provides replacement pages that supersede Technical Specification page 3.3-7 for Unit 2 and Unit 3 contained in Reference 1, Attachment 2 (Revised Tech Spec Pages). Specifically, in Insert B, note (e), the word "predetermined" was changed to "predefined" to be consistent with Attachment 1 to Reference 1 and TSTF-493 and capitalization of the word "in" was corrected in note (f).

Attachment 4 – This attachment provides a clarification to the descriptions in Attachment 9 and Enclosure 9b to Reference 1 of the purpose of the EPU modification that increases the isotopic enrichment of the Boron-10 (B-10) in the Standby Liquid Control (SLC) System sodium pentaborate (SPB) solution.

EGC has reviewed the information supporting a finding of no significant hazards consideration and the environmental consideration provided to the U. S. Nuclear Regulatory Commission in Reference 1. The supplemental information provided in this submittal does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration. Further, the additional information provided in this submittal does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in connection with the proposed amendment.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), EGC is notifying the Commonwealth of Pennsylvania and the State of Maryland of this application by transmitting a copy of this letter along with the attachments to the designated State Officials.

There are no regulatory commitments contained in this letter.

Should you have any questions concerning this letter, please contact Mr. David Neff at (610) 765-5631.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 20th day of December 2013.

Respectfully,

Kevin F. Borton
Manager, Licensing – Power Uprate
Exelon Generation Company, LLC

Attachments:

1. Responses to Health Physics and Human Performance Branch RAI-8, 9 and 10
2. Corrections to EPU LAR Attachment 13 (Flow Induced Vibration)
3. Corrections to EPU LAR Attachment 2 (Revised Tech Spec Pages)
4. Clarification to EPU LAR Enclosure 9b (Standby Liquid Control System Modifications)

cc:	USNRC Region I, Regional Administrator	w/attachments
	USNRC Senior Resident Inspector, PBAPS	w/attachments
	USNRC Project Manager, PBAPS	w/attachments
	R. R. Janati, Commonwealth of Pennsylvania	w/attachments
	S. T. Gray, State of Maryland	w/attachments

Attachment 1

Peach Bottom Atomic Power Station Units 2 and 3

NRC Docket Nos. 50-277 and 50-278

<u>Responses to Health Physics and Human Performance Branch RAI-8, 9 and 10</u>

Response to Request for Additional Information
Health Physics and Human Performance Branch

By letter dated September 28, 2012, Exelon Generation Company, LLC (EGC) submitted a license amendment request for Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3. The proposed amendment would authorize an increase in the maximum power level from 3514 megawatts thermal (MWt) to 3951 MWt. The requested change, referred to as an extended power uprate (EPU), represents an increase of approximately 12.4 percent above the current licensed thermal power level. Supplement 5 to the license amendment request, submitted to the NRC on June 27, 2013, (ADAMS Accession No. ML13156A368) included Attachment 4 which provided a revision to Reference 1, Attachments 4 and 6, Section 2.11, Human Performance. In an email dated November 1, 2013, from the NRC (Rick Ennis) to Exelon (Kevin Borton and Dave Neff), the NRC provided additional RAIs seeking clarification of certain issues related to Attachment 4 to Supplement 5. This attachment provides responses to those RAIs.

AHPB RAI-8

As discussed on page 4 of Attachment 4 to Supplement 5 dated June 27, 2013, as part of the containment accident pressure credit elimination strategy, operators will manage entry into alternate shutdown cooling (ASDC), when required, to ensure that suppression pool temperature remains below the limit needed to maintain adequate net positive suction head for operating the emergency core cooling pumps. This will be accomplished by providing guidance in the ASDC procedure "for the operator to anticipate a 10 °F rise in suppression pool temperature upon initiation of ASDC." There is no additional information as to how the operator might verify that this rise in temperature is or is not happening. Please provide information as to what cues the operator will use to anticipate this rise, along with what indications or displays will show this temperature change.

RESPONSE

The 10 °F temperature rise is an anticipated value and the procedures will prepare the operator to expect a conservative suppression pool (SP) temperature rise when ASDC is initiated. Existing procedures for reactor depressurization and implementation of ASDC will be used by the operators and employ the use of safety grade main control room instruments for monitoring reactor pressure, SP temperature and SP level prior to and during ASDC operation.

The existing procedure guidance will be enhanced to use these parameters in conjunction with a new curve for determining the expected SP temperature rise based on the reactor pressure and the SP water level. The procedures will include the following enhanced guidance:

1. Determine SP temperature prior to initiation of ASDC.

2. Determine the anticipated rise in SP temperature (based on reactor pressure) using the new curve.

3. Add the anticipated rise in SP temperature to current SP temperature to determine the anticipated maximum SP temperature.

4. Plot the maximum anticipated SP temperature on emergency core cooling system (ECCS) pump net positive suction head (NPSH) curve in the emergency operating procedure.

5. If adequate ECCS pump NPSH is available, initiate ASDC; if not, delay ASDC initiation and re-perform the previous steps after SP temperature has been lowered.

The enhanced procedural guidance will ensure that operators verify that adequate ECCS pump NPSH margin exists prior to initiating ASDC.

AHPB RAI-9

Please provide information on the verification and validation process used to evaluate the timing analyses for the new or changed operator actions.

RESPONSE

New and changed operator actions for both the design basis accidents (DBA's) and Special Events were evaluated for EPU LAR purposes consistent with the requirements of the Peach Bottom Operator Response Time Program. The process compared the time when the action is required to the expected performance times. Validation methods for the expected performance times are from simulator runs, plant walkthroughs, or benchmarking against other existing operator actions that were previously validated by simulator runs and walkthroughs. The sequencing of the actions and number of operators available were factored into the evaluation. Implementation of EPU will include updating of the associated EOPs, training, and the Operator Response Time Program, including updates to the Master List of Time Critical and Time Sensitive Actions.

This evaluation was documented in accordance with the EGC Configuration Change Process and included cross-discipline reviews from a Senior Reactor Operator and Engineering.

AHPB RAI-10

As discussed on page 4 of Attachment 4 to Supplement 5 dated June 27, 2013, fire safe shutdown Method D was reviewed using the plant simulator. It is not clear whether all of the Methods were reviewed using the simulator as well. If they were not, please provide justification.

RESPONSE

A proposed reduction in operator action time for initiation of ASDC for FSSD Method D was verified in the simulator as part of EPU analysis for CAP credit elimination. A review of the operator action timeline analyses for Methods A/B/C in the FSSD calculations for the EPU analysis determined that there were no fire areas where operator availability or time constraints would prevent completion of required actions in accordance with the revised response times. Therefore, no additional verification of operator timelines in the plant or in the simulator was necessary.

Attachment 2

Peach Bottom Atomic Power Station Units 2 and 3

NRC Docket Nos. 50-277 and 50-278

<u>Corrections to EPU LAR Attachment 13 (Flow Induced Vibration)</u>

Table 3-1
Drywell EPU Monitoring Locations for MS and FW, PBAPS Unit 2

System	Location[1]	Direction	Allowable Peak-to-Peak Displacement, mils	Description
MS	4	X	48	At support ~~M2191-2~~ M2194-HB3, in the X (north-south) and Z (east-west) directions.
MS	4	Z	32	
MS	10J	X	24	At support ~~M2191-2~~ M2194-HB4 in the X (north-south), Y (vertical) direction and Z (east-west) directions.
MS	10J	Y	16	
MS	10J	Z	22	
MS	80	X	22	At support ~~M2191-2~~ M2194-HA3 in the X (north-south), Y (vertical) and Z (east-west) directions
MS	80	Y	38	
MS	80	Z	24	
MS	15	X	26	At support ~~M2191-2~~ M2194-HA1 in the X (north-south), and Z (east-west) directions.
MS	15	Z	94	
FW	400	X	252	At pipe support 6DDNL-H33, in the X (east-west), Y (vertical), and Z (north-south) directions.
FW	400	Y	278	
FW	400	Z	272	
FW	200	X	143	At pipe support 6DDNL-~~H42~~ H41, in the X (east-west), Y (vertical), and Z (north-south) directions.
FW	200	Y	40	
FW	200	Z	90	

Note (1): Since the Unit 2 and 3 piping geometries are similar, only the Unit 3 piping was modeled. Therefore, the Unit 2 locations are identified with the corresponding Unit 3 node numbers.

Table 3-2
Turbine Building EPU Monitoring Locations for MS and FW, PBAPS Unit 2

System	Location[1]	Direction	Allowable Peak-to-Peak Displacement, mils	Description
MS	24	X	500	At support ~~IDB~~ [1DB]-H10, in the X (north-south) direction, Y (vertical) direction, and Z (east-west) direction
MS	24	Y	130	
MS	24	Z	284	
MS	52	X	190	At support ~~IDB~~ [1DB]-H33, in the X (north-south) direction, Y (vertical) direction, and Z (east-west) direction
MS	52	Y	234	
MS	52	Z	202	
MS	942	X	284	At the low point drain line [CV4] branch connection to the turbine lead, in the X (north-south) direction and Z (east-west) direction.
MS	942	Z	500	
MS	78	X	136	At support ~~IDB~~ [7DB]-H77, in the X (north-south) direction and Y (vertical) direction
MS	78	Y	216	
MS	922	X	126	At the low point drain line [CV2] branch connection to the turbine lead, in the X (north-south) direction and Z (east-west) direction.
MS	922	Z	500	
FW	59	Y	294	At support ~~2-6DD~~ [6DD]-S2, in the Y (vertical) and Z (east-west) directions
FW	59	Z	276	
FW	175	X	306	At support ~~2-6DD-H71~~ [6DD-H10] in the X (north-south) and Y (vertical) directions
FW	175	Y	398	
FW	310	Y	336	At support ~~2-6DD~~ [6DD]-H15 in the Y (vertical) and Z (east-west) directions
FW	310	Z	330	

18GF

FW	435	X	216	At support ~~2-18GF~~-H372, in the X (north-south) and Z (east-west) directions
FW	435	Z	286	

Note 1: Since the Unit 2 and 3 piping geometries are similar, only the Unit 3 piping was modeled. Therefore, the Unit 2 locations are identified with the corresponding Unit 3 node numbers.

Table 3-3

Drywell EPU Monitoring Locations for MS and FW, PBAPS Unit 3

System	Location	Direction	Allowable Peak-to-Peak Displacement, mils	Description
MS	4	X	48	At support M2191-3-HB3, in the X (north-south) and Z (east-west) directions.
MS	4	Z	32	
MS	10J	X	24	At support M2191-3-HB4 in the X (north-south), Y (vertical) direction and Z (east-west) directions.
MS	10J	Y	16	
MS	10J	Z	22	
MS	80	X	22	At support M2191-3-HA3 in the X (north-south), Y (vertical) and Z (east-west) directions.
MS	80	Y	38	
MS	80	Z	24	
MS	15	X	26	At support M2191-3-HA1 in the X (north-south), and Z (east-west) directions
MS	15	Z	94	
FW	400	X	252	At pipe support 3-6DDNL-H33, in the X (east-west), Y (vertical), and Z (north-south) directions
FW	400	Y	278	
FW	400	Z	272	
FW	200	X	143	At pipe support 3-6DDNL-~~H42~~ H41, in the X (east-west), Y (vertical), and Z (north-south) directions.
FW	200	Y	40	
FW	200	Z	90	

Table 3-4

Turbine Building EPU Monitoring Locations for MS and FW, PBAPS Unit 3

System	Location	Direction	Allowable Peak-to-Peak Displacement, mils	Description
MS	24	X	500	In the X (north-south) direction, Y (vertical) direction, and Z (east-west) direction, at support 3-~~IDB~~-H10 (1DB)
MS	24	Y	130	
MS	24	Z	284	
MS	52	X	190	In the X (north-south) direction, Y (vertical) direction, and Z (east-west) direction, at support 3-~~IDB~~-H33 (1DB)
MS	52	Y	234	
MS	52	Z	202	
MS	942	X	284	In the X (north-south) direction and Z (east-west) direction, at the low point drain line branch connection to the turbine lead (CV1)
MS	942	Z	500	
MS	78	X	136	In the X (north-south) direction and Y (vertical) direction, at support 3-~~IDB~~-H77 (7DB)
MS	78	Y	216	
MS	922	X	126	In the X (north-south) direction and Z (east-west) direction, at the low point drain line branch connection to the turbine lead (CV3)
MS	922	Z	500	
FW	59	Y	294	at support 3-6DD-S2, in the Y (vertical) and Z (east-west) directions
FW	59	Z	276	
FW	175	X	306	at support 3-6DD-H71 in the X (north-south) and Y (vertical) directions
FW	175	Y	398	

FW	310	Y	336	at support 3-6DD-H15 in the Y (vertical) and Z (east-west) directions
FW	310	Z	330	
FW	435	X	216	at support 3-18GF-H372, in the X (north-south) and Z (east-west) directions
FW	435	Z	286	

Table 3-5
Turbine Building EPU Monitoring Locations for CD, ES and HD, PBAPS Unit 2

System	**Location[1]**	**Direction**	**Allowable Peak-to-Peak Displacement, mils**	**Description**
CD	95	X	500	At support ~~2-~~ 18GFH-238
CD	95	Y	337	
CD	95	Z	500	
CD	930	X	417	At support ~~2-~~ 18GFH-261
CD	930	Y	172	
CD	930	Z	389	
ES	42	X	500	At support ~~2-~~ 16GA-H60
ES	42	Y	500	
ES	42	Z	500	
ES	23D	X	397	At support ~~2-~~ 16GA-H51
ES	23D	Y	329	
ES	23D	Z	500	
ES	174	X	209	At Support ~~2-~~ 16HA-H33
ES	174	Y	305	
ES	74	Y	231	At Support ~~2-~~ 16HA-H27
ES	74	Z	144	
ES	117	X	500	At Support ~~2-~~ 16HA-H37
ES	117	Z	311	
HD	110	X	500	At support ~~2-~~ ~~17GE~~-H9
HD	110	Z	500	

17GF

HD	140	Y	70	At support ~~2-17GE-394~~ 17GF-H394
HD	40	X	332	At support ~~2-~~ 17GE-H2
HD	40	Z	64	

Note 1: Since the Unit 2 and 3 piping geometries are similar, only the Unit 3 piping was modeled. Therefore, the Unit 2 locations are identified with the corresponding Unit 3 node numbers.

Attachment 3

Peach Bottom Atomic Power Station Units 2 and 3

NRC Docket Nos. 50-277 and 50-278

Corrections to EPU LAR Attachment 2 (Revised Tech Spec Pages)

Table 3.3.1.1-1 (page 1 of 3)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Wide Range Neutron Monitors					
a. Period-Short	2	3	G	SR 3.3.1.1.1 SR 3.3.1.1.5 SR 3.3.1.1.12 SR 3.3.1.1.17 SR 3.3.1.1.18	≥ 13 seconds
	5[(a)]	3	H	SR 3.3.1.1.1 SR 3.3.1.1.6 SR 3.3.1.1.12 SR 3.3.1.1.17 SR 3.3.1.1.18	≥ 13 seconds
b. Inop	2	3	G	SR 3.3.1.1.5 SR 3.3.1.1.17	NA
	5[(a)]	3	H	SR 3.3.1.1.6 SR 3.3.1.1.17	NA
2. Average Power Range Monitors					
a. Neutron Flux-High (Setdown)	2	3[(c)]	G	SR 3.3.1.1.1 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.12	≤ 15.0% RTP
b. Simulated Thermal Power-High	1	3[(c)]	F	SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.12 ← (e), (f)	≤ ~~0.65~~ 0.55 W + ~~63.7~~ 63.3% RTP[(b)] and ≤ 118.0% RTP
c. Neutron Flux-High	1	3[(c)]	F	SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.12	≤ 119.7% RTP
d. Inop	1,2	3[(c)]	G	SR 3.3.1.1.11	NA
e. 2-Out-Of-4 Voter	1,2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.11 SR 3.3.1.1.17 SR 3.3.1.1.18	NA
f. OPRM Upscale	≥~~25~~ 21.2% RTP	3[(c)]	I	SR 3.3.1.1.1 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.12 SR 3.3.1.1.19	(d)

(continued)

(a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.

(b) ~~0.65~~ 0.55 (W - ΔW) + ~~63.7~~ 61.5% RTP when reset for single loop operation per LCO 3.4.1, "Recirculation Loops Operating."

(c) Each APRM channel provides inputs to both trip systems.

(d) See COLR for OPRM period based detection algorithm (PBDA) setpoint limits.

Insert B

Section 3.3.1.1 Insert B

(e) If the as-found channel setpoint is outside its predefined as-found tolerance, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.

(f) The instrument channel set point shall be reset to a value that is within the Leave Alone Zone (LAZ) around the Nominal Trip Setpoint (NTSP) at the completion of the surveillance; otherwise, the channel shall be declared inoperable. Setpoints more conservative than the NTSP are acceptable provided the as-found tolerance and LAZ apply to the actual setpoint implemented in the Surveillance procedures to confirm channel performance. The NTSP methodologies used to determine the as-found tolerance and the LAZ are specified in the Bases associated with the specified function.

Table 3.3.1.1-1 (page 1 of 3)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Wide Range Neutron Monitors					
a. Period-Short	2	3	G	SR 3.3.1.1.1 SR 3.3.1.1.5 SR 3.3.1.1.12 SR 3.3.1.1.17 SR 3.3.1.1.18	≥ 13 seconds
	5[(a)]	3	H	SR 3.3.1.1.1 SR 3.3.1.1.6 SR 3.3.1.1.12 SR 3.3.1.1.17 SR 3.3.1.1.18	≥ 13 seconds
b. Inop	2	3	G	SR 3.3.1.1.5 SR 3.3.1.1.17	NA
	5[(a)]	3	H	SR 3.3.1.1.6 SR 3.3.1.1.17	NA
2. Average Power Range Monitors					
a. Neutron Flux-High (Setdown)	2	3[(c)]	G	SR 3.3.1.1.1 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.12	≤ 15.0% RTP
b. Simulated Thermal Power-High	1	3[(c)]	F	SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.12 ← (e), (f)	≤ ~~0.65~~ 0.55 W + ~~63.7~~ 63.3% RTP[(b)] and ≤ 118.0% RTP
c. Neutron Flux-High	1	3[(c)]	F	SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.12	≤ 119.7% RTP
d. Inop	1,2	3[(c)]	G	SR 3.3.1.1.11	NA
e. 2-Out-Of-4 Voter	1,2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.11 SR 3.3.1.1.17 SR 3.3.1.1.18	NA
f. OPRM Upscale	≥~~25~~ 21.2% RTP	3[(c)]	I	SR 3.3.1.1.1 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.12 SR 3.3.1.1.19	(d)

(continued)

(a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.

(b) ~~0.65~~ 0.55 (W - ΔW) + ~~63.7~~ 61.5% RTP when reset for single loop operation per LCO 3.4.1, "Recirculation Loops Operating."

(c) Each APRM channel provides inputs to both trip systems.

(d) See COLR for OPRM period based detection algorithm (PBDA) setpoint limits.

Insert B

Section 3.3.1.1 Insert B

(e) If the as-found channel setpoint is outside its predefined as-found tolerance, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.

(f) The instrument channel set point shall be reset to a value that is within the Leave Alone Zone (LAZ) around the Nominal Trip Setpoint (NTSP) at the completion of the surveillance; otherwise, the channel shall be declared inoperable. Setpoints more conservative than the NTSP are acceptable provided the as-found tolerance and LAZ apply to the actual setpoint implemented in the Surveillance procedures to confirm channel performance. The NTSP methodologies used to determine the as-found tolerance and the LAZ are specified in the Bases associated with the specified function.

Attachment 4

Peach Bottom Atomic Power Station Units 2 and 3

NRC Docket Nos. 50-277 and 50-278

Clarification to EPU LAR Enclosure 9b (Standby Liquid Control System Modifications)

Attachment 9 and Enclosure 9b of the PBAPS EPU LAR currently state that one of the purposes of increasing the isotopic enrichment of the Standby Liquid Control (SLC) System Boron-10 (B-10) sodium pentaborate (SPB) solution is to limit the suppression pool (SP) temperature to meet the inlet temperature restrictions for the High Pressure Coolant Injection (HPCI) and Reactor Core Isolation Cooling (RCIC) pumps. Although the increased B-10 SPB solution enrichment does reduce SP temperature, the statement is misleading. The design basis analysis for the Anticipated Transient Without SCRAM (ATWS) event assumes that the suction source for the HPCI and RCIC pumps during the ATWS event is the Condensate Storage Tank (CST) and not the SP. This is clearly stated in other sections of the EPU LAR (see Attachment 9 Section 3.2.3.2 and Enclosure 9e Section 1.0). Therefore, the stated purpose of the B-10 modification related to HPCI and RCIC inlet temperature from the SP is removed as noted below. Additions are indicated with **bolded** characters and deletions are indicated with ~~strikethrough~~ markers.

The clarified sections are provided below:

1. Attachment 9 Section 3.2.3.2 Page 11

   In addition to the modifications discussed above that increase the NPSH margin for the ECCS pumps sufficient to preclude reliance on CAP, the SLC System Modifications (Enclosure 9b) also supports an increase in NPSH margin. The proposed change in B-10 enrichment is required to keep the suppression pool temperature within the limits of the ATWS analysis, described in PUSAR section 2.8.5.7 ~~and to meet inlet temperature restrictions for the HPCI and RCIC pumps~~. Since the increase in B-10 enrichment in the SLC system will facilitate a faster reactor shutdown during an ATWS event, it results in a reduced heat load input into the suppression pool. The reduction in the heat load reduces the peak suppression pool temperature which improves NPSH margin.

2. Enclosure 9b Section 1.0 Paragraph 1

   Exelon Generation Company (EGC) is pursuing an Extended Power Uprate (EPU) of approximately 12.4 percent at the Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3. As part of the EPU, PBAPS proposes to increase the isotopic enrichment of the Boron-10 (B-10) in the Standby Liquid Control (SLC) System sodium pentaborate (SPB) solution, which is the credited neutron absorber. Increasing the isotopic enrichment of B-10 in the SPB solution effectively increases the amount of B-10 in the SPB solution. This increases the potential rate of available negative reactivity in the SLC system and which when inserted into the core, results in a faster shut down of the reactor. A faster shut down reduces the amount of heat that is generated in the reactor and ultimately transferred to the suppression pool. The proposed change in B-10 enrichment is required to keep the suppression pool temperature within the limits in the Anticipated Transient Without Scram (ATWS) analysis, described in PUSAR section 2.8.5.7, “Anticipated Transient Without Scram~~,~~**.**” ~~and to meet inlet temperature restrictions for the High Pressure Coolant Injection (HPCI) and Reactor Core Isolation Cooling (RCIC) pumps.~~

3. Enclosure 9b Section 3.3

   SLC system shutdown capability is discussed in Attachment 6, PUSAR Section 2.8.4.5, “Standby Liquid Control System.” SLC system shutdown capability is evaluated for each fuel reload. The boron shutdown concentration of 660 ppm does not change for EPU. Specifically, changes are not necessary to the SPB solution volume, the SPB concentration or B-10 enrichment for EPU to achieve the required reactor boron concentration for cold shutdown conditions and to comply with the ATWS rule in 10 CFR 50.62. However, the increase in the minimum B-10 enrichment from 61.92 atom percent to 92 atom percent for EPU is based **B-10** on injection rate demands for the EPU ATWS analysis.~~, which maintains the pool temperature below design limits to meet inlet temperature restrictions for the HPCI and RCIC pumps and support increasing NPSH margin for the ECCS pumps.~~

4. Enclosure 9b Section 3.4 Paragraph 2

   Attachment 6, PUSAR Section 2.8.5.7, demonstrates that PBAPS satisfies the boron injection equivalency requirement in 10 CFR 50.62. The equivalency requirement is satisfied at EPU power levels with the minimum SLC system pump flow rate of 49.1 gpm, the minimum concentration of 8.32 percent weight SPB, and the minimum B-10 enrichment of 92 atom percent. As shown in the PUSAR Section 2.8.5.7, the equivalency equation product is 1.69, which exceeds the requirement of 1.0. ~~It is important to note that the use of the SLC system EPU parameters in the equivalency equation yields results greater than 1.0 because the parameters are also used to maintain suppression pool temperature below the design limits to meet inlet temperature analysis restrictions for the HPCI and RCIC pumps and to support increasing NPSH margin for the ECCS pumps.~~