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RS-16-049

10 CFR 50.90

February 12, 2016

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

Braidwood Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-72 and NPF-77
NRC Docket Nos. 50-456 and 50-457

Subject: Supplemental Information Regarding Request for a License Amendment to Braidwood Station, Units 1 and 2, Technical Specification 3.7.9, "Ultimate Heat Sink"

References:

1) Letter from D. M. Gullott (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Request for a License Amendment to Braidwood Station, Units 1 and 2, Technical Specification 3.7.9, 'Ultimate Heat Sink,'" dated August 19, 2014 (ML14231A902)

2) Email from J. Wiebe (NRC) to J. Krejcie (Exelon Generation Company, LLC) Preliminary RAIs for LAR Regarding Braidwood Station Technical Specification, "Ultimate Heat Sink," dated February 5, 2015 (ML15036A431)

3) Letter from D. M. Gullott (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Response to Request for Additional Information Regarding Request for a License Amendment to Braidwood Station, Units 1 and 2, Technical Specification 3.7.9, 'Ultimate Heat Sink,'" dated March 31, 2015 (ML151090A604)

4) Letter from D. M. Gullott (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Response to Request for Additional Information Regarding Request for a License Amendment to Braidwood Station, Units 1 and 2, Technical Specification 3.7.9, 'Ultimate Heat Sink,'" dated April 30, 2015 (ML15120A396)

5) Email from J. Wiebe (NRC) to J. Krejcie (Exelon Generation Company, LLC) Additional RAI Regarding Containment Analysis for Braidwood UHS LAR (MF4671 and MF4672), dated July 22, 2015

6) Email from J. Wiebe (NRC) to J. Krejcie (Exelon Generation Company, LLC) Need Clarification Conference Call Regarding Your April 30, 2015 Response to SCVB-RAI-1(a), dated August 12, 2015 (ML15224B548)

7) Email from J. Wiebe (NRC) to J. Krejcie (Exelon Generation Company, LLC) Additional RAIs Regarding Braidwood Ultimate Heat Sink Temperature Amendment, dated September 29, 2015

8) Letter from D. M. Gullott (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Response to Request for Additional Information Regarding Request for a License Amendment to Braidwood Station, Units 1 and 2, Technical Specification 3.7.9, 'Ultimate Heat Sink,'" dated October 9, 2015

9) Letter D. M. Gullott (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Response to Request for Additional Information Regarding Request for a License Amendment to Braidwood Station, Units 1 and 2, Technical Specification 3.7.9, 'Ultimate Heat Sink,'" dated October 30, 2015

10) Letter D. M. Gullott (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Response to Request for Additional Information Regarding Request for a License Amendment to Braidwood Station, Units 1 and 2, Technical Specification 3.7.9, 'Ultimate Heat Sink,'" dated November 9, 2015

11) Email from J. Wiebe (NRC) to J. Krejcie (Exelon Generation Company, LLC) Preliminary Balance of Plant RAIs for Braidwood Ultimate Heat Sink LAR, dated October 26, 2015

12) Letter Glen T. Kaegi (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Response to Request for Additional Information Regarding Request for a License Amendment to Braidwood Station, Units 1 and 2, Technical Specification 3.7.9, 'Ultimate Heat Sink,'" dated December 16, 2015

In Reference 1, Exelon Generation Company, LLC, (EGC) requested an amendment to the Technical Specifications (TS) of Facility Operating License Nos. NPF-72 and NPF-77 for Braidwood Station, Units 1 and 2. The proposed amendment would modify TS 3.7.9, "Ultimate Heat Sink (UHS)," by changing the maximum allowable temperature of the UHS from 100 °F to a maximum UHS temperature of 102°F.

The U. S. Nuclear Regulatory Commission (NRC) requested additional information related to its review of Reference 1 in References 2, 5, 6, 7 and 11. In response to the requested information, EGC responded in References 3, 4, 8, 9, 10 and 12.

As part of Reference 12, EGC indicated in the response to SBPB RAI-10 that design calculations in accordance with 10 CFR Appendix B would be revised and completed for the equipment that is cooled by the Ultimate Heat Sink via the Essential Service Water System and that Section 3.5 of the UHS LAR (Reference 1) would be revised based on the results of the design calculations. Revised design calculations have been completed and the Attachment 1

response provides a revision to the affected sections of Section 3.5 of Reference 1. Sections 3.5.6.3, 3.5.8 and 3.5.10 remain as stated in Reference 1.

Additionally, during a teleconference that was held with NRC technical reviewers on February 3, 2016, the NRC staff requested clarification on the EGC response to SBPB RAI-7 that was provided in Reference 12. Clarification is provided in Attachment 1.

EGC has reviewed the information supporting a finding of no significant hazards consideration that was previously provided to the NRC in Attachment 1 of Reference 1. The information provided in this submittal does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration.

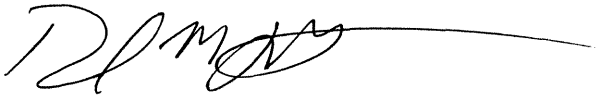
There are no regulatory commitments contained within this letter.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), a copy of this letter and its attachment is being provided to the designated State of Illinois official.

Should you have any questions concerning this letter, please contact Ms. Jessica Krejcie at (630) 657-2816.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 16th day of February 2016.

Respectfully,



David M. Gullott
Manager - Licensing
Exelon Generation Company, LLC

Attachment 1: Supplemental Information

cc: NRC Regional Administrator, Region III
NRC Senior Resident Inspector, Braidwood Station
Illinois Emergency Management Agency – Division of Nuclear Safety

Attachment 1

Supplemental Information

Attachment 1
Supplemental Information

In Reference 1, Exelon Generation Company, LLC, (EGC) requested an amendment to the Technical Specifications (TS) of Facility Operating License Nos. NPF-72 and NPF-77 for Braidwood Station, Units 1 and 2. The proposed amendment would modify TS 3.7.9, "Ultimate Heat Sink (UHS)," by changing the maximum allowable temperature of the UHS from 100 °F to a maximum UHS temperature of 102°F.

The U. S. Nuclear Regulatory Commission (NRC) requested additional information related to its review of Reference 1 in References 2, 5, 6, 7 and 11. In response to the requested information, EGC responded in References 3, 4, 8, 9, 10 and 12.

As part of Reference 12, EGC indicated in the response to SBPB RAI-10 that design calculations in accordance with 10 CFR Appendix B would be revised and completed for the equipment that is cooled by the Ultimate Heat Sink via the Essential Service Water System and that Section 3.5 of the UHS LAR (Reference 1) would be revised based on the results of the design calculations. Revised design calculations have been completed and the below response provides a revision to the affected sections of Section 3.5 of Reference 1. Sections 3.5.6.3, 3.5.8 and 3.5.10 remain as stated in Reference 1.

Additionally, during a teleconference that was held with NRC technical reviewers on February 3, 2016, the NRC staff requested clarification on the EGC response to SBPB RAI-7 that was provided in Reference 12. Clarification is provided below.

Revised Reference 1 Section 3.5, "Evaluation of Equipment"

Revised engineering calculations have been completed to review the impact of the increase in the UHS maximum temperature of 102°F and the increase in the maximum post-accident SX inlet temperature of 105.2°F. For conservatism, a temperature of 106°F was used for the maximum post-accident temperature.

The heat load on the UHS is determined based on one unit undergoing a LOCA with a LOOP and the other unit going through a normal shutdown from maximum power. Heat loads for the UHS DBA event are shown in UFSAR Table 9.2-1 and were evaluated for the components listed in sections 3.5.1 through 3.5.5 with the exception of the Positive Displacement (PD) Charging Pump Cubicle Cooler since the PD Charging pumps are not operated at Braidwood Station. While SX flow to the PD Charging Pump Room Cubicle Cooler is not isolated, the heat load in the room is insignificant with the pump idle. Note, the heat load for the Spent Fuel Pit Heat Exchanger includes the Spent Fuel Pool background heat load due to Spent Fuel Assemblies that are stored in the pool.

Note, all equipment that is cooled by the SX system is within the scope of the Generic Letter (GL) 89-13, "Service Water System Problems Affecting Safety-Related Equipment" program. The information below describes the revised engineering calculations that have been performed to ensure that required plant equipment can continue to perform their design function at the elevated UHS temperature.

3.5.1 Pump Room Cubicle Coolers

Pump room cubicle coolers are required to remove equipment heat from rooms with operating pumps. Revised design calculation demonstrated that all cubicle coolers cooled by SX have adequate margin between the heat removed and the design heat load at design SX cooling flow rates:

- Essential Service Water (SX) Pump Cubicle Coolers
- Residual Heat Removal (RHR) Pump Cubicle Coolers
- Safety Injection (SI) Pump Cubicle Coolers
- Charging (CV) Pump Cubicle Coolers
- Spent Fuel Pit Pump Room Cubicle Coolers
- Diesel Driven Auxiliary Feedwater (AF) Pump Room Cubicle Coolers
- Containment Spray (CS) Pump Room Cubicle Coolers

These margins were calculated under design conditions for a conservative maximum post-accident SX inlet temperature of 106°F which bounds the maximum calculated SX inlet temperature of 105.2°F. The calculations were performed to determine the maximum number of tubes plugged allowable with the increased UHS temperature. All coolers (with the exception of the CS Pump room cubicle coolers and spent fuel pit pump cubicle cooler) showed considerable margin (i.e., greater than 10% to the required heat load) while maximizing the analyzed number of tube plugged which provides margin in the tube plugging limits. All current actual tube plugging values are less than the calculated maximum number of tubes plugged allowable at the increased UHS temperature.

The CS Pump room cubicle coolers and spent fuel pit pump cubicle cooler calculations were performed in the same manner to maximize allowable tube plugging limits while maintaining margin. With no tubes plugged, the CS Pump room cubicle coolers have 7.2% margin and with 16 of 160 tubes plugged, there is approximately 1.5% margin to the required capacity. The current CS Pump room cubicle coolers have no more than 8 tubes plugged per cooler. The spent fuel pit pump room cubicle coolers calculation showed 7.9% margin with no tubes plugged and approximately 1.4% margin with 15 tubes plugged. There are currently a maximum of 8 tubes plugged in any cooler.

3.5.2 Oil Coolers

The SX system provides cooling water to oil coolers for safety related pumps. The lube oil coolers for safety related pumps are small heat exchangers that are periodically cleaned and inspected in accordance with GL 89-13. The oil cooler margins were evaluated under design conditions for a conservative maximum post-accident SX inlet temperature of 106°F which bounds the maximum calculated SX inlet temperature of 105.2°F. Oil cooler calculations were performed to determine the maximum number of tubes plugged allowable with the increased UHS temperature. All coolers showed margin in heat load removal while maximizing the analyzed number of tube plugged, allowing for margin in the tube plugging limits. All current actual tube plugging values are less than the calculated maximum number of tubes plugged allowable with the increased UHS temperature. The oil coolers evaluated are:

- SX Pump Oil Coolers
- SI Pump Oil Coolers
- Diesel Driven AF Pump Gear Oil Cooler
- CV Centrifugal Pump Gear Oil Coolers
- Motor and Diesel Driven AF Pump Oil Coolers
- Diesel Driven AF Pump Right Angle Gear Lube Oil Cooler
- CV Centrifugal Pump Oil Coolers

3.5.3 Engine Coolers

The SX system provides cooling water to diesel engine cooling systems. Revised design calculation demonstrated that all engine coolers cooled by SX have adequate margin between the heat removed and the design heat load at design values. The revised calculations utilized a post-accident SX inlet temperature of 106°F at design flow conditions to confirm that the maximum shell side temperature remains below the maximum temperature alarm setpoint. All engine coolers cooled by the SX system have been evaluated and demonstrate margin at the increased SX temperature. Evaluations of both the engine coolers identified below determined margin available to their respective high jacket water temperature alarm setpoints:

- Diesel Driven AF Pump Engine Closed Cycle Heat Exchanger
- Emergency Diesel Generator (EDG) Jacket Water Coolers

For the Diesel Driven AF pump engine closed cycle heat exchanger, the UHS temperature increase was evaluated using the design SX cooling flow rate of 250 gpm and 1 tube plugged and demonstrated that the resultant shell inlet temperature was 194°F which is below the alarm setpoint of 195°F. There are currently 0 tubes plugged on Unit 1 and 1 tube plugged on Unit 2. A case was analyzed using a SX cooling flow rate of 350 gpm and determined 27 tubes could be plugged to remain below the alarm setpoint of 195°F. Flow modeling and surveillance test results support use of a higher flow rate.

The EDG Jacket Water Coolers calculation was performed at the design SX cooling flow rate and assumed 54 tubes plugged. The resultant temperature was 189.5°F which remains below the alarm setpoint of 190°F. Currently, the most number of tubes plugged for any cooler on either unit is 30 tubes. Therefore, adequate margin exists to the allowable tubes plugged limit for the increased SX temperature. Additional detailed information on the evaluation of the diesel driven AF pump is contained in the response to SBPB RAI-12 in Reference 12.

3.5.4 Main Control Room Chiller Condenser

The SX system provides cooling water to the Main Control Room (MCR) chiller condensers, which remove sensible and latent heat from the control room to ensure equipment operability and personnel occupancy. A revision to the design analysis calculation was performed to assess an increase in UHS temperature up to 106°F using design heat loads and design SX cooling flow rates and to determine limits on tube plugging values. The results show that the MCR chiller condenser is able to remove the required heat load with up to 24 tubes plugged for the Main Control Room Chiller evaporator and up to 84 total for the Main Control Room Chiller condenser. The current maximum tubes plugged for the main control room chiller evaporator is 11 tubes and 1 tube for the main control room condenser. Additional detailed information on the evaluation of the main control room chiller condenser is contained in the response to SBPB RAI-11 from Reference 12.

3.5.5 CC Heat Exchangers

The CC system rejects heat to the UHS during normal plant operation and during accident conditions. Five different operating scenarios were evaluated to model the different plant configurations where the CC system is designed to operate (e.g., two units operating at power, one unit operating at power with the other unit shutdown, normal unit shutdown with other unit experiencing a LOCA, etc.). The CC heat exchangers were evaluated for increased normal operating UHS temperature of 102°F and increased post-DBA UHS temperature of 106°F using

existing tube plugging values. The design basis scenario for the UHS DBA results in a margin of 30% for the CC heat exchangers.

Of the five operating scenarios evaluated, normal operating scenarios are more limiting than the design basis scenario described above. Normal operating scenarios are the limiting configurations with respect to CC heat exchanger performance since the allowed maximum CC temperature for normal operations is 105°F which is lower than the allowed maximum CC temperature of 120°F for the normal shutdown unit and 128°F for the other unit during post-LOCA operations. The limiting CC heat exchanger scenario has the following margins:

Table 1: CC Heat Exchanger Margins

CC HX	Margin
U-0 CC HX	43%
U-1 CC HX	7%
U-2 CC HX	84%

The margins are based on actual fouling factors from recent thermal performance testing. Additional detailed information on the evaluation of the CC Heat Exchangers is contained in the EGC response to RAI-1 in Reference 3.

3.5.6 Net Positive Suction Head (NPSH) Evaluations

The NPSH for all safety related pumps which take suction from the UHS has been evaluated and found to remain acceptable for the higher UHS temperature. Sections 3.5.6.1 through 3.5.6.3 describe the revision to the design analyses of NPSH.

3.5.6.1 SX Pump

The analysis has been revised to incorporate a maximum SX temperature of 106 °F. The new NPSH Available (NPSHA) has been calculated to be 42 feet which has significant margin above the NPSH Required (NPSHR) value of 36 feet at 28,000 gpm per pump.

3.5.6.2 SX Booster Pumps

The SX booster pumps provide flow to various coolers associated with the diesel driven AF pumps. Normally, suction for the pumps is supplied by the SX pumps with more than adequate NPSHA.

The SX booster pump analysis calculates a limiting NPSHA for a Station Blackout event initial configuration when the SX pumps are not running. The Braidwood Station licensing basis does not postulate a Station Blackout concurrent with a UHS Design Basis Event. Therefore, assuming a maximum SX inlet temperature of 102°F, a minimum margin of 10.3 feet was calculated based on an NPSHA of 28 feet with an NPSHR of 17.7 feet. When considering the increase in SX temperature for the recirculation case (refer to Section 3.5.7), the NPSH margin decreases by less than 2.5 feet (difference in water vapor pressure between the initial temperature of 102°F, 1.00789 psia, and the final temperature of 126 °F, 1.9959 psia) and remains acceptable.

3.5.7 Diesel Driven AF Pump Operation during Loss of AC Power

The Braidwood AFW system is capable of supplying the required flow to the steam generators independent of any AC power source for a duration of two hours. This condition is more limiting than a SBO scenario because during a SBO one SX pump is available from the non-blackout Unit after the Unit SX supply cross-tie isolation valves are opened.

In the event of a complete loss of onsite AC electrical power; the Diesel Driven AF pump (i.e., the 'B' AF pump) is credited for steam generator inventory makeup. The Braidwood Station licensing basis does not postulate a simultaneous UHS DBA. Therefore, water temperature experienced by the 'B' AF pump and its associated diesel driven SX booster pump at the start of the event is limited to the proposed TS maximum temperature of 102°F.

During a Loss of All AC Power scenario, the SX booster pump operates to provide cooling water to the 'B' AF pump's heat exchangers and coolers. Flow recirculates through the different heat exchangers and coolers back to the SX booster pump suction, resulting in isolation of the cooling water heat sinks and heat-up of the isolated SX booster pump cooling loop during the Braidwood Station coping time of two hours. The final calculated SX temperature is 126°F. The analysis shows that the AF diesel engine is able to operate during the transient without exceeding its jacket water high temperature trip setpoint.

The NPSHA analysis for the recirculation mode during this scenario is discussed in section 3.5.6.2 above.

3.5.9 Spent Fuel Pool Cooling

The spent fuel pool cooling heat exchanger is cooled by the CC system. Since the CC Heat Exchangers have been evaluated to be capable of removing the required heat load at the increased UHS temperature of 102°F during normal operation (see section 3.5.5), the spent fuel pool heat exchanger will continue to be able to perform its required design function. During a UHS DBA, the CC Heat Exchanger is also analyzed at 106°F and is capable of removing the required spent fuel pool heat exchanger heat load. Thus, the spent fuel pool cooling heat exchanger will remain capable of removing the required heat load ensuring the maximum pool bulk temperature is below the bounds of the design analysis.

3.5.11 Conclusions

Revised analyses have been completed in accordance with Regulatory Commitment #1 of Reference 1. Revised analyses have confirmed that margins in the design analyses are present to address the increased SX temperature.

Clarification to EGC Response to SBPB RAI-7 from Reference 12

The heat load tables from calculation ATD-0109 Attachment C (Attachment 5 of Reference 1) were recalculated using 1 hour time intervals in response to SBPB RAI-7. The following table (Table 2) presents the equivalent of Table C1 from calculation ATD-0109 Attachment C performed for 1 hour intervals. These 1 hour average heat loads were converted to Plant Temperature Rise and displayed on Figure 2 of the previously submitted response (page 18 of 28 of Reference 12). The 1 hour Plant Temperature Rise is then used as an input to the LAKET-PC computer program. The results of the LAKET-PC case runs (for 1 hour and 3 hour

heat loads) are presented on Figures 3 and 4 of the previously submitted response (pages 19 and 21 of 28 Reference 12).

Table 2: Determination of 1hr Average Heat Loads for First 24 Hours

Time (hours)	Time (seconds)	Total Heat Load to the UHS (Worst Case from ATD-0063, page E9, Table 13) (Btu/Hr)	Trapezoidal Rule Integration Over Previous Time Step (Btu-sec/hr)	Sum of Previous Column Over Time Interval (Btu-sec/hr)	Average Heat Load Over Time Interval (Btu/hr)
0.00	0.0000E+00	0			
0.00	1.0000E+01	8.30E+07	4.15E+08		
0.01	2.0000E+01	8.30E+07	8.30E+08		
0.01	2.1000E+01	5.85E+08	3.34E+08		
0.01	3.3000E+01	5.75E+08	6.96E+09		
0.01	5.0000E+01	5.68E+08	9.72E+09		
0.03	1.0200E+02	5.54E+08	2.92E+10		
0.04	1.3100E+02	5.47E+08	1.60E+10		
0.06	1.9900E+02	5.33E+08	3.67E+10		
0.08	2.8900E+02	5.22E+08	4.75E+10		
0.10	3.4900E+02	5.17E+08	3.12E+10		
0.13	4.5900E+02	5.08E+08	5.64E+10		
0.17	5.9900E+02	4.99E+08	7.05E+10		
0.19	6.9500E+02	4.94E+08	4.77E+10		
0.19	6.9500E+02	7.87E+08	7.69E+05		
0.25	8.9900E+02	7.93E+08	1.61E+11		
0.28	9.9900E+02	7.96E+08	7.95E+10		
0.31	1.0990E+03	7.95E+08	7.96E+10		
0.33	1.1990E+03	7.86E+08	7.91E+10		
0.36	1.2990E+03	7.77E+08	7.82E+10		
0.39	1.3990E+03	7.68E+08	7.73E+10		
0.49	1.7640E+03	7.34E+08	2.74E+11		
0.64	2.2990E+03	6.35E+08	3.66E+11		
0.81	2.8990E+03	5.60E+08	3.59E+11		
1.00	3.5990E+03	5.19E+08	3.78E+11	2.28E+12	6.35E+08
1.39	4.9990E+03	4.58E+08	6.84E+11		
1.94	6.9990E+03	3.79E+08	8.37E+11		
2.00	7.2000E+03	3.76E+08	7.59E+10	1.60E+12	4.44E+08
2.78	9.9990E+03	3.32E+08	9.91E+11		
3.00	1.0800E+04	3.27E+08	2.64E+11	1.25E+12	3.48E+08
4.00	1.4400E+04	3.03E+08	1.13E+12	1.13E+12	3.15E+08
5.00	1.8000E+04	2.80E+08	1.05E+12	1.05E+12	2.92E+08
5.56	1.9999E+04	2.67E+08	5.47E+11		
6	2.1600E+04	2.67E+08	4.27E+11	9.74E+11	2.71E+08

Attachment 1
Supplemental Information

Time (hours)	Time (seconds)	Total Heat Load to the UHS (Worst Case from ATD-0063, page E9, Table 13) (Btu/Hr)	Trapezoidal Rule Integration Over Previous Time Step (Btu-sec/hr)	Sum of Previous Column Over Time Interval (Btu-sec/hr)	Average Heat Load Over Time Interval (Btu/hr)
7.00	2.5200E+04	2.67E+08	9.61E+11	9.61E+11	2.67E+08
8.00	2.8800E+04	2.67E+08	9.61E+11	9.61E+11	2.67E+08
8.33	2.9998E+04	2.67E+08	3.20E+11		
8.33	2.9999E+04	5.51E+08	4.09E+08		
9	3.2400E+04	5.34E+08	1.30E+12	1.62E+12	4.51E+08
10	3.6000E+04	5.08E+08	1.88E+12	1.88E+12	5.21E+08
11	3.9600E+04	4.83E+08	1.78E+12	1.78E+12	4.96E+08
11.11	3.9999E+04	4.80E+08	1.92E+11		
12	4.3200E+04	4.34E+08	1.46E+12	1.65E+12	4.60E+08
13	4.6800E+04	3.82E+08	1.47E+12	1.47E+12	4.08E+08
13.89	4.9999E+04	3.36E+08	1.15E+12		
14.00	5.0400E+04	3.36E+08	1.35E+11	1.28E+12	3.57E+08
15	5.4000E+04	3.33E+08	1.20E+12	1.20E+12	3.34E+08
16	5.7600E+04	3.30E+08	1.19E+12	1.19E+12	3.31E+08
16.67	5.9999E+04	3.28E+08	7.89E+11		
17.00	6.1200E+04	3.27E+08	3.93E+11	1.18E+12	3.28E+08
18	6.4800E+04	3.24E+08	1.17E+12	1.17E+12	3.26E+08
19	6.8400E+04	3.21E+08	1.16E+12	1.16E+12	3.23E+08
20	7.2000E+04	3.18E+08	1.15E+12	1.15E+12	3.20E+08
21	7.5600E+04	3.16E+08	1.14E+12	1.14E+12	3.17E+08
22	7.9200E+04	3.13E+08	1.13E+12	1.13E+12	3.14E+08
22.22	7.9999E+04	3.12E+08	2.50E+11		
23.00	8.2800E+04	3.10E+08	8.71E+11	1.12E+12	3.11E+08
24	8.6400E+04	3.07E+08	1.11E+12	1.11E+12	3.08E+08
24-End of Transient	8.9999E+04	3.04E+08	1.10E+12		

References:

1) Letter from D. M. Gullott (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Request for a License Amendment to Braidwood Station, Units 1 and 2, Technical Specification 3.7.9, 'Ultimate Heat Sink,'" dated August 19, 2014 (ML14231A902)

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10) Letter D. M. Gullott (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Response to Request for Additional Information Regarding Request for a License Amendment to Braidwood Station, Units 1 and 2, Technical Specification 3.7.9, 'Ultimate Heat Sink,'" dated November 9, 2015

11) Email from J. Wiebe (NRC) to J. Krejcie (Exelon Generation Company, LLC) Preliminary Balance of Plant RAIs for Braidwood Ultimate Heat Sink LAR, dated October 26, 2015

12) Letter Glen T. Kaegi (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Response to Request for Additional Information Regarding Request for a License Amendment to Braidwood Station, Units 1 and 2, Technical Specification 3.7.9, 'Ultimate Heat Sink,'" dated December 16, 2015