Florida Power & Light, 9760 S.W. 344 St. Homestead, FL 33035

FPL

JUL 29 2011
L-2011-278
10 CFR 50.90
10 CFR 2.390

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

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Response to NRC Request for Additional Information Regarding
Extended Power Uprate License Amendment Request No. 205 and
Nuclear Performance and Code Review (SNPB) Issues

References:

(1) M. Kiley (FPL) to U.S. Nuclear Regulatory Commission (L-2010-113), "License Amendment Request for Extended Power Uprate (LAR-205)," (TAC Nos. ME4907 and ME4908), Accession No. ML103560169, October 21, 2010.

The following information is provided by Florida Power & Light (FPL) Company in response to the U. S. Nuclear Regulatory Commission's (NRC) Request for Additional Information (RAI). This information was requested to support the review of License Amendment Request (LAR) No. 205, Extended Power Uprate (EPU), for Turkey Point Nuclear Plant (PTN) Units 3 and 4 that was submitted to the NRC by FPL via letter (L-2010-113) dated October 21, 2010 [Reference 1].

During a public desk audit meeting held on July 11, 2011, FPL agreed to provide the NRC additional information on various topics pertaining to the analytical methods used to show that boric acid precipitation is prevented in the reactor vessel during long term core cooling after an accident. The topics of discussion and the applicable FPL responses are documented in Attachment 1 (non-proprietary) and Attachment 2 (proprietary) to this letter.

As Attachment 2 contains information proprietary to Westinghouse Electric Company, LLC (Westinghouse), it is supported by an affidavit signed by Westinghouse, the owner of the information. The affidavit, included as Attachment 3 to this letter, sets forth the basis for which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of §2.390 of the Commission's regulations. Accordingly, it is respectfully requested that the information which is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR 2.390 of the Commission's regulations.

Correspondence with respect to the copyright or proprietary aspects of items in the response to the RAI questions in Attachment 2 of this letter or the supporting Westinghouse affidavit should reference CAW-11-3214 and should be addressed to J. A. Gresham, Manager, Regulatory Compliance and Plant Licensing, Westinghouse Electric Company LLC, Suite 428, 1000 Westinghouse Drive, Cranberry Township, PA 16066.

In accordance with 10 CFR 50.91(b)(1), a copy of this letter is being forwarded to the State Designee of Florida.

This submittal does not alter the significant hazards consideration or environmental assessment previously submitted by FPL letter L-2010-113 [Reference 1].

A001
NRR

This submittal contains no new commitments and no revisions to existing commitments.

Should you have any questions regarding this submittal, please contact Mr. Robert J. Tomonto, Licensing Manager, at (305) 246-7327.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on July 29, 2011.

Very truly yours,

Michael Kiley
Site Vice President
Turkey Point Nuclear Plant

Attachments (3)

cc: USNRC Regional Administrator, Region II
USNRC Project Manager, Turkey Point Nuclear Plant
USNRC Resident Inspector, Turkey Point Nuclear Plant
Mr. W. A. Passetti, Florida Department of Health (without Attachment 2)

Turkey Point Units 3 and 4

RESPONSE TO NRC RAI REGARDING EPU LAR NO. 205
AND SNPB NUCLEAR PERFORMANCE AND CODE REVIEW ISSUES

ATTACHMENT 1

NON-PROPRIETARY RESPONSE

Response to NRC Questions Regarding Boric Acid Precipitation

The following information is provided by Florida Power & Light (FPL) Company in response to the U. S. Nuclear Regulatory Commission's (NRC) Request for Additional Information (RAI). This information was requested to support License Amendment Request (LAR) No. 205, Extended Power Uprate (EPU), for Turkey Point Nuclear Plant (PTN) Units 3 and 4 that was submitted to the NRC by FPL via letter (L-2010-113) dated October 21, 2010 [Reference 1].

During a public desk audit meeting held on July 11, 2011, FPL agreed to provide the NRC additional information on various topics pertaining to the analytical methods used to show that boric acid precipitation is prevented in the reactor vessel during long term core cooling after an accident. The topics of discussion and FPL's response for each are provided below.

This attachment presents the non-proprietary version of the RAI response. Responses containing information proprietary to Westinghouse Electric Company LLC (Westinghouse) are provided in Attachment 2. Attachment 3 contains the affidavit signed by Westinghouse, as the owner of the information, which sets forth the basis for withholding the information from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of § 2.390 of the Commission's regulations.

SNPB-3.1 Describe the primary input assumptions used in the analysis of post-accident boric acid precipitation and any uncertainty in the analysis results. Provide the basis for FPL's input assumption of 100% condensation efficiency, and include a discussion of containment vapor space water mass as a function of time.

The SKBOR computer program is part of the Westinghouse methodology for long term cooling (LTC). SKBOR is used to determine the time at which an active dilution mechanism should be re-established (i.e. hot leg recirculation) to prevent the precipitation of boric acid in the core.

A typical SKBOR calculation considers two volumes: one representing the effective vessel mixing volume (denoted as the CORE), and one representing the remaining system inventory (denoted as the SUMP). The CORE and SUMP are initially assumed to contain borated liquid at the system-average boric acid concentration. Vapor generated due to decay heat boiling exits the CORE with a boric acid concentration of zero (vapor is assumed to condense fully in containment) and is returned to the SUMP as unborated liquid (see additional discussion below). Borated liquid is added from the SUMP as required to keep the CORE volume full. In this way, the SUMP boric acid concentration gradually decreases, while the CORE boric acid concentration increases toward the boric acid solubility limit. The logic of the mass and boric acid calculations in SKBOR is shown in Figures 1 and 2.

Most of the inputs to SKBOR are used to specify plant-specific parameters such as the component masses and boric acid concentrations, the effective vessel mixing volume, and the initial core power level. These inputs are chosen to maximize the rate at which boric acid accumulates in the core, based on plant-specific configuration information. The results of the analysis are used to establish the times at which the necessary operator actions should be initiated. These times are typically reflected in the Final Safety Analysis Report (FSAR) and the Emergency Operating Procedures (EOP).

As described above, SKBOR assumes that vapor generated in the core returns to the sump as unborated liquid (i.e. 100% condensation). The containment will reach saturated conditions (100% relative humidity) very quickly after the pipe break. At this point, since the containment atmosphere cannot hold any more water vapor, 100% of the steam generated in the core will condense. The amount of water vapor in the containment atmosphere, both before and after the pipe break is small relative to the amount of water in the sump. These assumptions are validated by examining the predicted conditions from the Turkey Point EPU LOCA Containment Analysis (Figures 3 and 4).

Figure 3 shows the relative humidity versus time for the limiting LOCA containment pressure analysis. As indicated, the relative humidity in containment rises to 100% very quickly, within seconds of the pipe break. There are several dips from 100% relative humidity related to the relatively rapid changes in containment pressure. The assumption that the amount of water vapor in the containment atmosphere is small relative to the amount of water in the sump can be justified by examining Figure 4, the containment water vapor mass (or steam mass) as a function of time after a large break LOCA. The maximum containment steam mass is approximately 150,000 lbm very early in the transient, and falls to approximately 80,000 lbm after about 3600 seconds. The water vapor mass in the containment atmosphere before the LOCA is approximately 2750 lbm. Thus, it is demonstrated that the containment atmosphere's retention of water vapor mass is small compared to the total water mass in the sump (approximately 4,700,000 lbm). The transients in Figures 3 and 4 are modeled to maximize containment pressure. A more representative condition for limiting boric acid precipitation scenarios would be a minimum containment pressure transient, which is consistent with the minimum containment pressure assumption used in the boric acid precipitation analysis. Lower containment pressure would reduce the potential containment atmosphere retained water mass from what is indicated in Figure 4. The effect of 100,000 lbm of water vapor mass retained in the containment atmosphere on computed Hot Leg Switchover (HLSO) time was examined by reducing the pure water mass in the SKBOR initial sump conditions. The effect on boric acid buildup in the core was small (time to reach 29.27 wt% boric acid concentration was 8.02 hours versus 8.28 hours[1]).

Explicit uncertainties are not applied to SKBOR results. Rather, the analysis relies on the selection of conservative inputs to the calculations. For example, bounding inputs are chosen to maximize the mass of boration contributors to the sump and minimize the mass of dilution contributors to the sump. Similarly, bounding boric acid concentration inputs are chosen to maximize the boric acid mass in the sump. Other input options allow conservative modeling such as options to instruct the code to conservatively ignore safety injection subcooling effects in either the lower plenum or upper plenum.

[1] These times are meant as a comparison to assess the impact of the containment volume on sump dilution. The actual calculated HLSO time is shorter due to the maximum of a 3-minute interruption at HLSO.

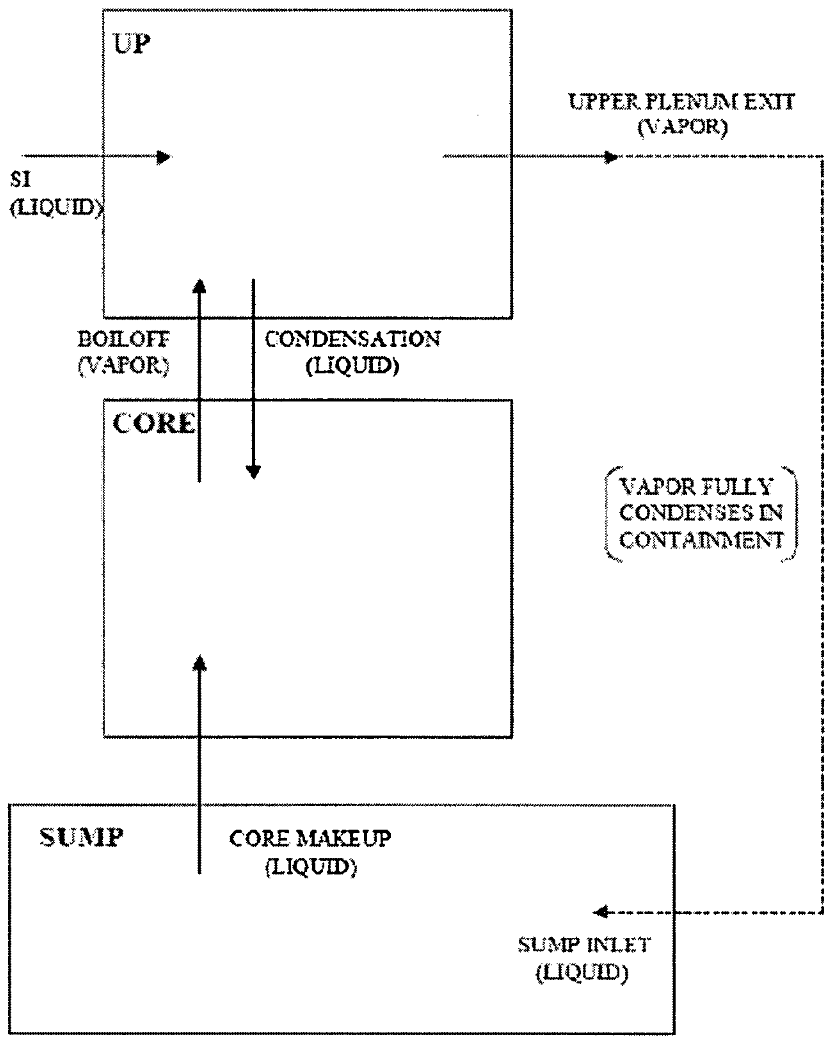

Figure 1 – Mass Calculations in SKBOR

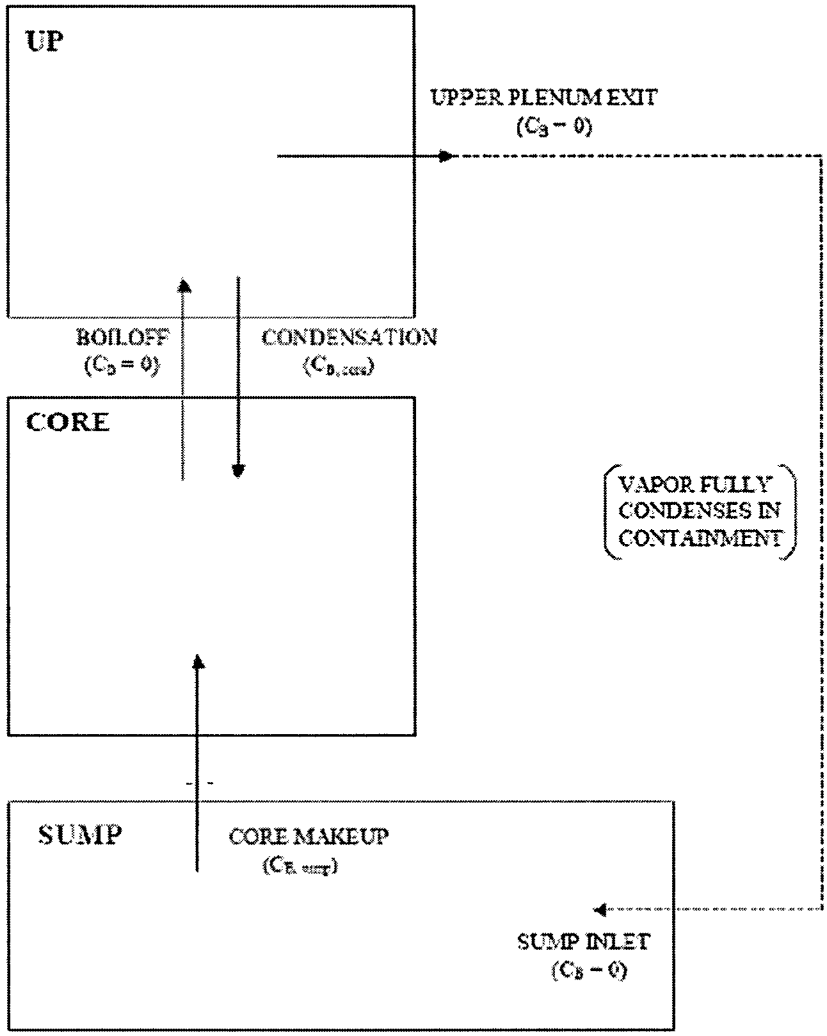

Figure 2 – Boron Calculations in SKBOR

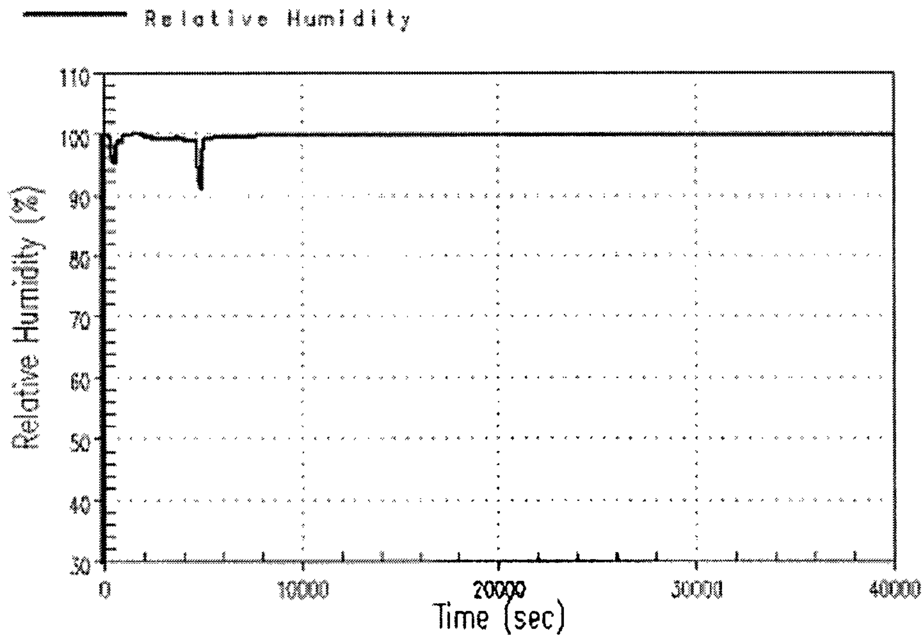

Figure 3 – Turkey Point EPU LOCA Containment Analysis – Relative Humidity

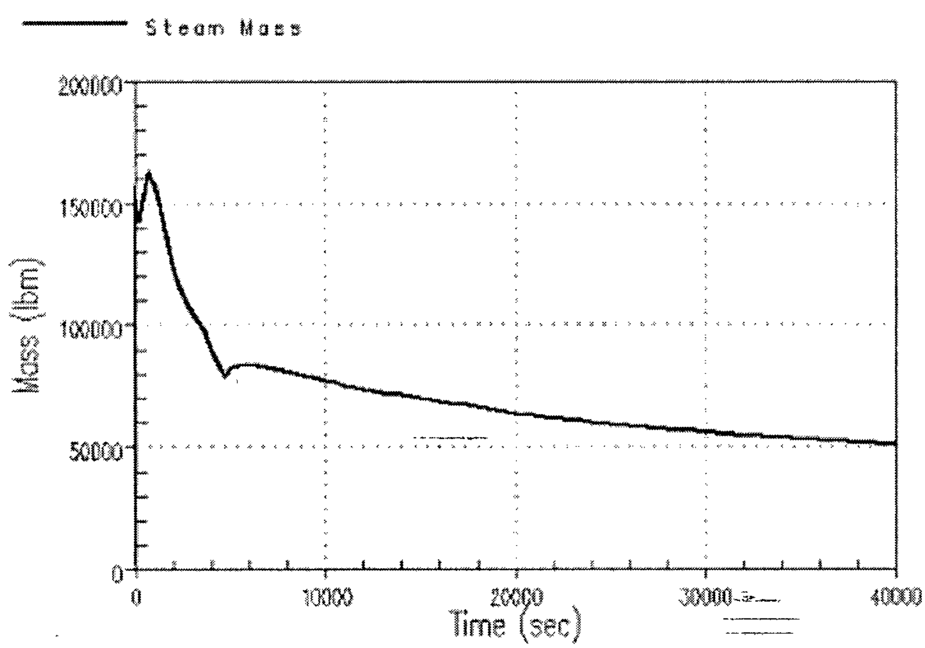

Figure 4 – Turkey Point EPU LOCA Containment Analysis – Containment Steam Mass

SNPB-3.2 Assess the sensitivity of the calculated hot leg switchover time to the condensation efficiency that is assumed for vapor released from the RCS to the containment atmosphere.

The post-LOCA boric acid precipitation analysis model used for the Turkey Point EPU assumes that vapor generated in the core returns to the sump as unborated liquid (i.e. 100% condensation). This assumption is based on the limited capacity of the containment atmosphere to hold water vapor mass relative to the total water mass in the containment sump. A consequence of this assumption is steady dilution of containment sump throughout the transient as boric acid is transferred from the sump to the reactor vessel. Results based on this assumption were submitted to the NRC in the LAR and are shown in Table 1, represented as the base case (which assumes 100% containment condensation).

In order to assess the effect of more conservative assumptions regarding containment condensation, a sensitivity study was performed. The study used modified inputs to the SKBOR computer program to simulate various levels of sump dilution in the post-LOCA boric acid precipitation scenario and thus various efficiencies of containment condensation. For example, by adjusting the SKBOR initial conditions appropriately, a sump of nearly infinite mass can be modeled. This case would show negligible sump dilution throughout the transient as the sump is so large that condensing steam returning to the sump would have an insignificant effect on the sump boric acid concentration. Consequently, the core boric acid buildup calculation would not benefit from any reduction in the sump boric acid concentration. This case is represented in Table 1 as the 0% Containment Condensation case. Using similar methods, the containment sump initial conditions can be adjusted to study the effects of other levels of containment condensation. Tables 1 and 2 contain the results of calculations using a range of assumptions for containment condensation. As demonstrated in Table 1, the most conservative assumption of 0% containment condensation results in a 1.19 hour reduction on the time to reach the boric acid precipitation point from the LAR base case (which assumes 100% containment condensation). Table 2 shows that even with the most conservative containment condensation assumption of 0% there is still margin to the solubility limit at atmospheric conditions at the HLSO time of 5.5. hours. Figure 5 shows the boric acid concentration versus time for various containment condensation assumptions. Figure 6 shows the boric acid concentration in the containment sump versus time for the various containment condensation assumptions. Figure 7 shows the core average and core exit void fraction versus time. Further discussion of the void fraction correlation utilized in the boric acid concentration calculations is contained in Reference 2.

Reductions in boric acid precipitation control action times (i.e. Emergency Operating Procedure actions) require consideration of potential negative effects on the capability to remove decay heat. This concern is driven by higher decay heat levels at times closer to the initiating event. For Turkey Point Nuclear Plant, boric acid precipitation control action time is the transfer of high head safety injection (HHSI) delivery from the cold legs to the hot legs.

Containment Condensation Assumption	Time to Reach Precipitation Point(1) (hours)	Initial Sump Concentration (ppm)	Sump Concentration at Precipitation Point (ppm)
Base Case – 100%(2)	8.28	2583.1	2086.1
86.8%(3)	8.02	2637.7	2131.6
36.8%(3)	7.51	2610.1	2361.7
0%(3)	7.09	2583.4	2581.0

Notes:

(1) Sensitivities are meant as a baseline for comparison and do not account for the maximum of a 3-minute complete interruption of ECCS at the transfer to hot leg recirculation. A solubility limit of 29.27 wt% associated with the atmospheric saturation temperature of boric acid is utilized.

(2) This case represents the analysis as submitted in LAR 205.

(3) The total boil-off mass from the start of the transient until HLSO is calculated and then an adjusted containment condensation efficiency is reported while accounting for the 100,000 lbm of water vapor that could be contained within the free air space.

Table 1 – Sensitivity of Turkey Point EPU Post-LOCA Boric Acid Precipitation Analysis Results to Containment Condensation Assumptions

Containment Condensation Assumption	Core Concentration @ HLSO(1) (wt%)	Core Concentration @ HLSO w/ 3-min ECCS Interruption(1) (wt%)	Initial Sump Concentration (wt%)	Sump Concentration at HLSO(1) (wt%)
Base Case – 100%(2)	23.28	26.18	1.477	1.261
86.8%(3)	23.73	26.56	1.509	1.284
36.8%(3)	24.36	27.27	1.493	1.379
0%(3)	25.01	27.99	1.478	1.476

Notes:

(1) This represents a HLSO time of 5.5 hours as submitted in LAR 205.

(2) This case represents the analysis as submitted in LAR 205.

(3) The total boil-off mass from the start of the transient until HLSO is calculated and then an adjusted containment condensation efficiency is reported while accounting for the 100,000 lbm of water vapor that could be contained within the free air space.

Table 2 – Sensitivity of Turkey Point EPU Post-LOCA Boric Acid Precipitation Analysis Containment Condensation Efficiency Results to Maximum of a 3-Minute Complete Interruption of ECCS

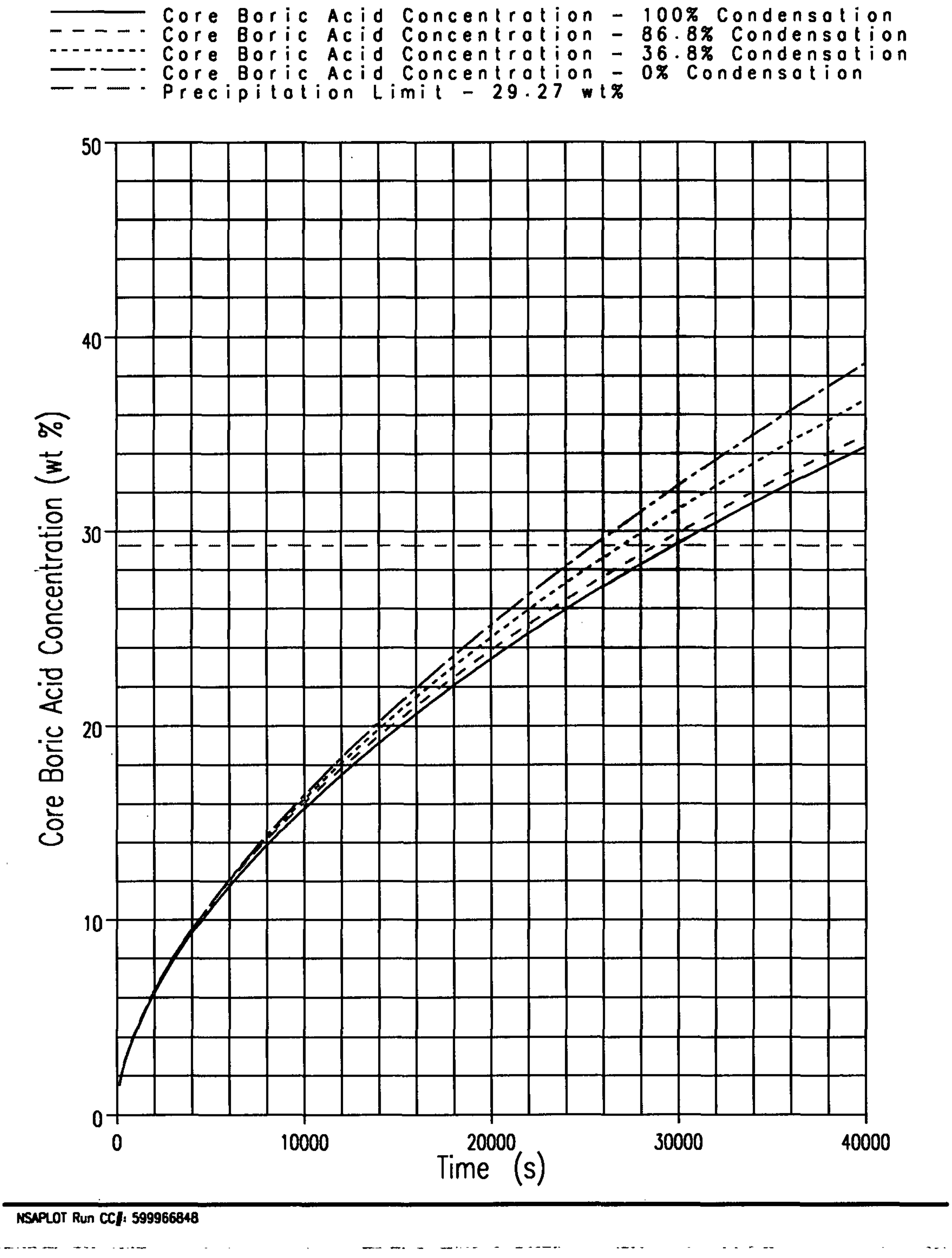

Figure 5 – Core Region Boric Acid Concentrations for Various Containment Condensation Assumptions

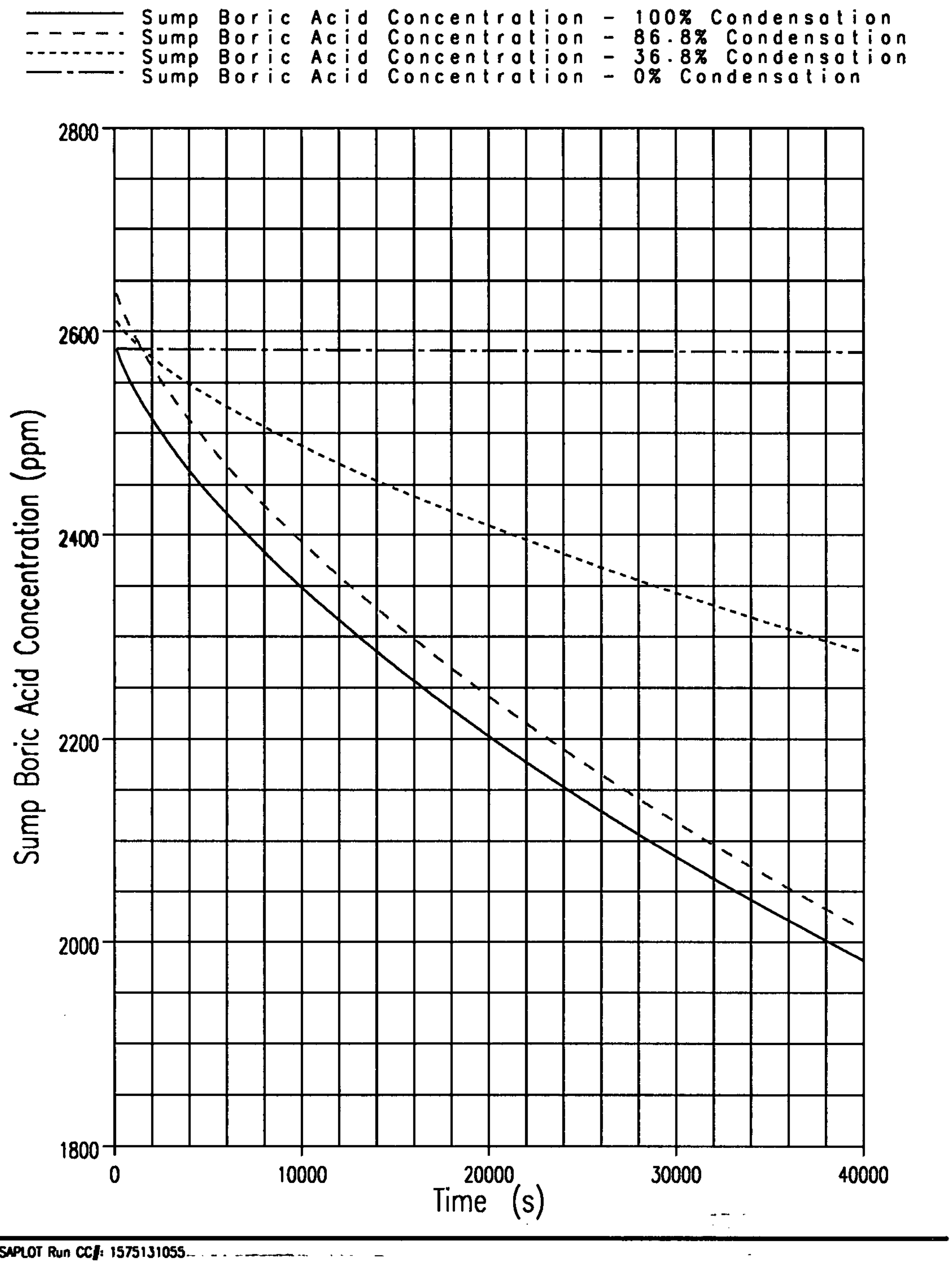

Figure 6 – Containment Sump Boric Acid Concentrations for Various Containment Condensation Assumptions

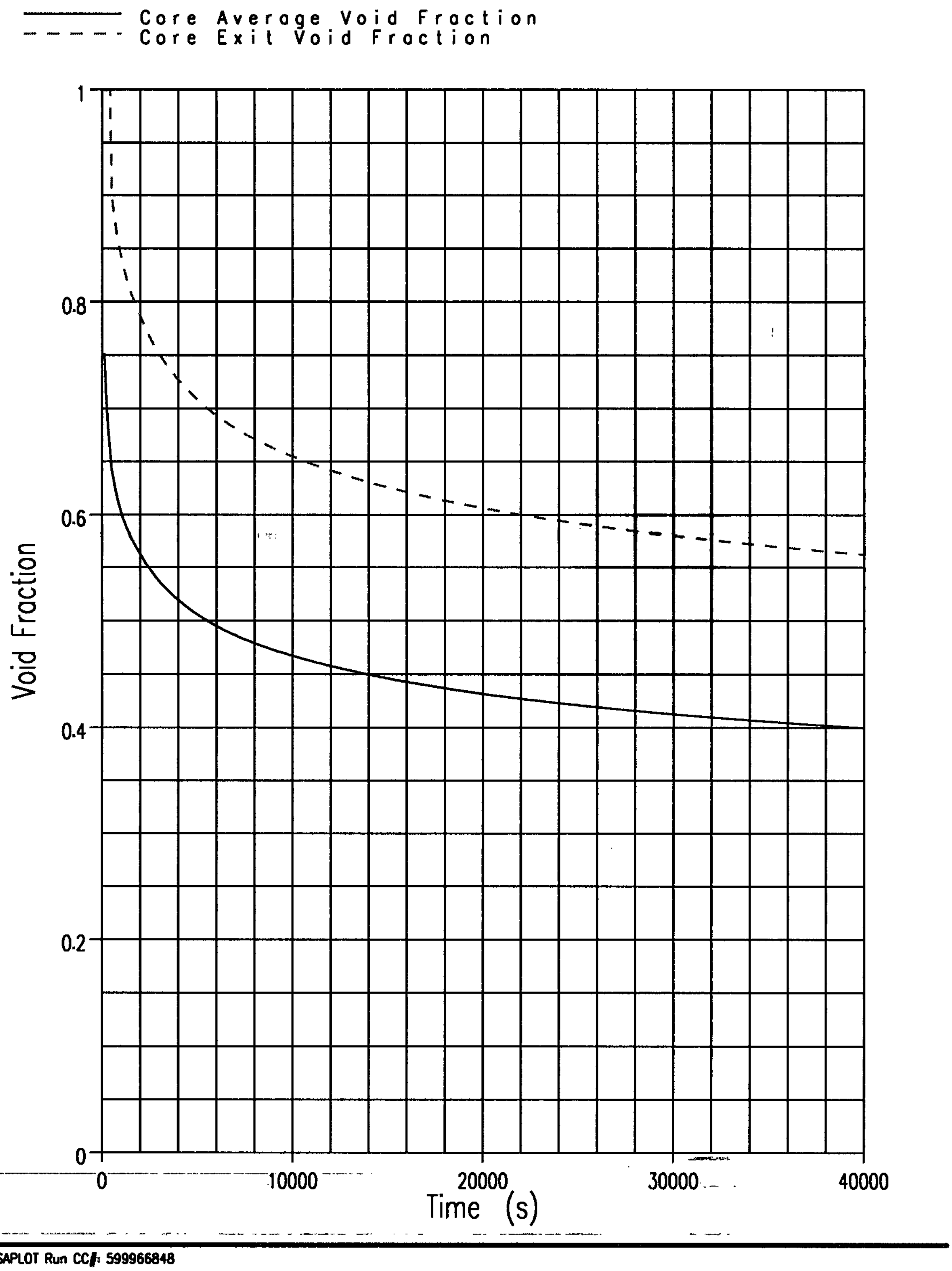

Figure 7 – Core Average and Core Exit Void Fraction

SNPB-3.3 Provide additional description of the mixing model in the lower plenum for the boric acid precipitation analysis. Show that when conservative values are used for ECCS fluid temperature and flowrate during the injection phase of a LOCA, lower plenum fluid temperature remains above the point at which boric acid precipitation could occur.

On page 2.8.5.6.3-15 of the EPU licensing report [Reference 1], it is stated that the mixing volume includes 50% of the lower plenum. This response will provide more insight into how this is implemented in the boric acid precipitation analysis.

After the stored energy in the reactor vessel walls has been removed, and assuming the coolant is cooled by the residual heat removal (RHR) heat exchangers, the liquid temperature distribution in the reactor vessel during long term cooling is expected to be:

- subcooled single phase liquid in the lower plenum
- subcooled to saturated liquid in the lower core region
- saturated two-phase liquid-vapor in the remainder of the core region and upper (outlet) plenum region

This represents a hydrodynamically stable condition, i.e., the layers (less dense atop more dense) will remain heterogeneous unless a destabilizing force is applied. Up to the point of the transfer to sump recirculation, the coolant is an aqueous boric acid solution. The boric acid is only mildly miscible in the vapor phase so it accumulates in the liquid phase as boiling occurs in the core region. The accumulation of solute can provide the destabilizing force needed to produce convection (heat and mass transport) between the layers.

a,c

a,c

In the period after core quench but prior to sump recirculation for the cold leg break scenario with low natural circulation flow through the reactor vessel, the temperature in the lower plenum is expected to be near the saturation temperature. This expectation is confirmed by calculations using the WCOBRA/TRAC thermal-hydraulic code. Boundary/initial conditions include minimum safety injection flow at a temperature of 69.5 °F until the emergency core cooling system suction is realigned for sump recirculation at 45 minutes into the event. Figure 8 and Figure 9, respectively, show the upper (core support) lower plenum and lower head liquid temperatures and saturation temperatures. Figure 10 shows the pumped ECCS mass flow rate on each of the intact loops as well as the temperature of the coolant (Figure 11).

a,c

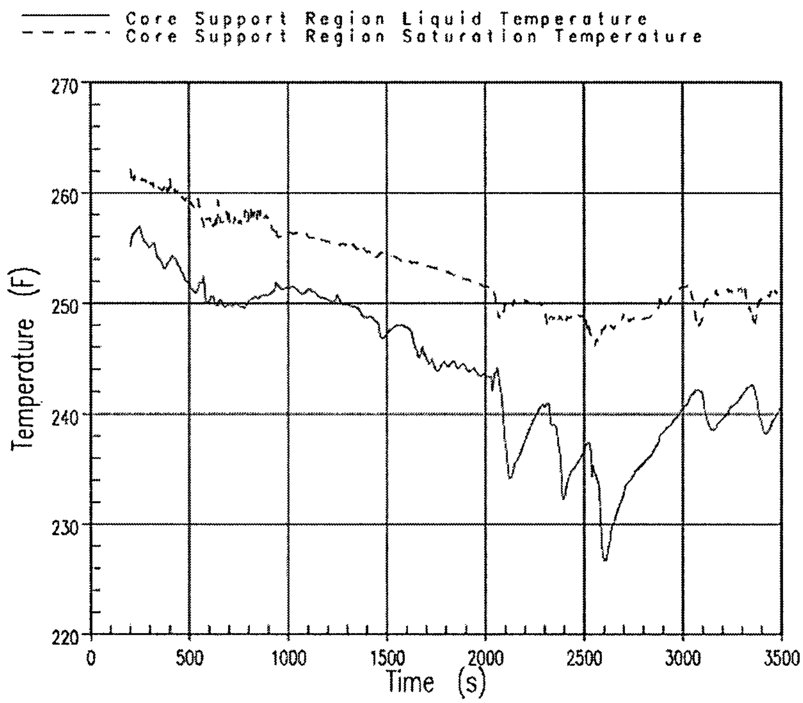

Figure 8 – Core Support Region Liquid Temperature and Saturation Temperature

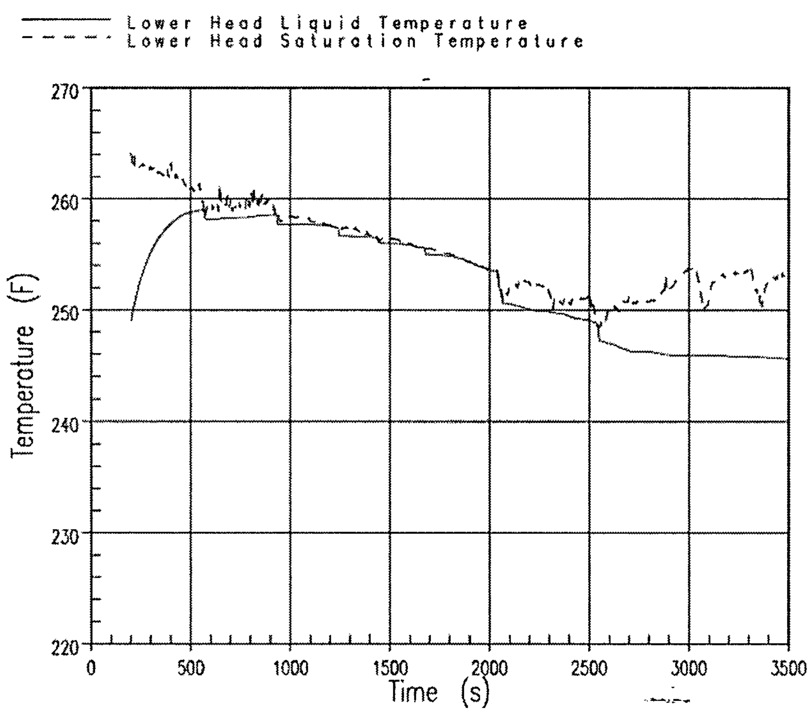

Figure 9 – Lower Head Region Liquid Temperature and Saturation Temperature

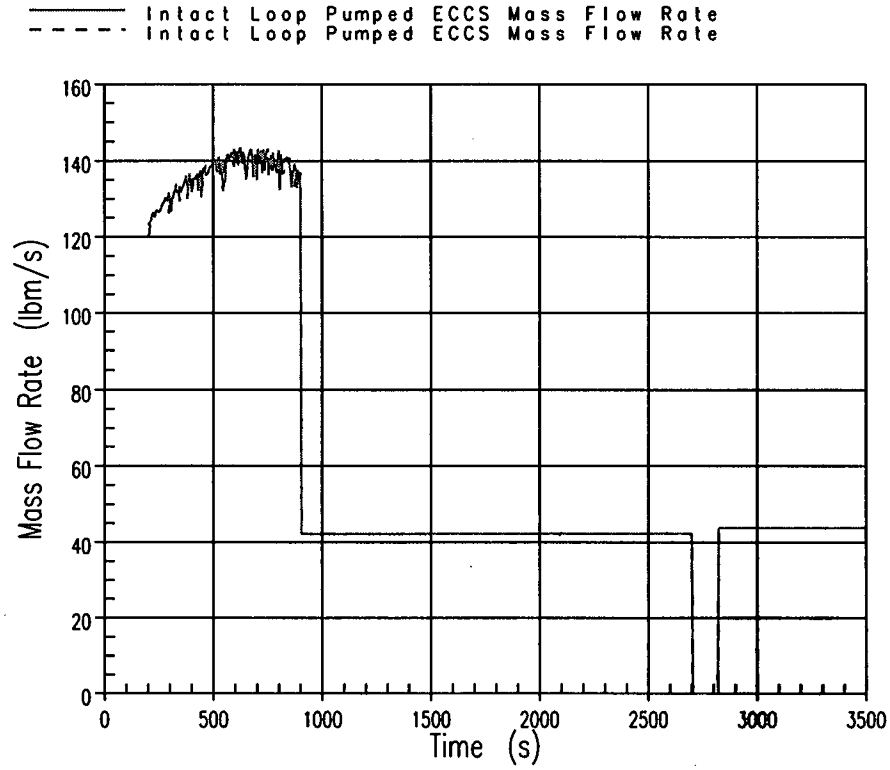

Figure 10 – Pumped ECCS Mass Flow Rate (each intact loop)

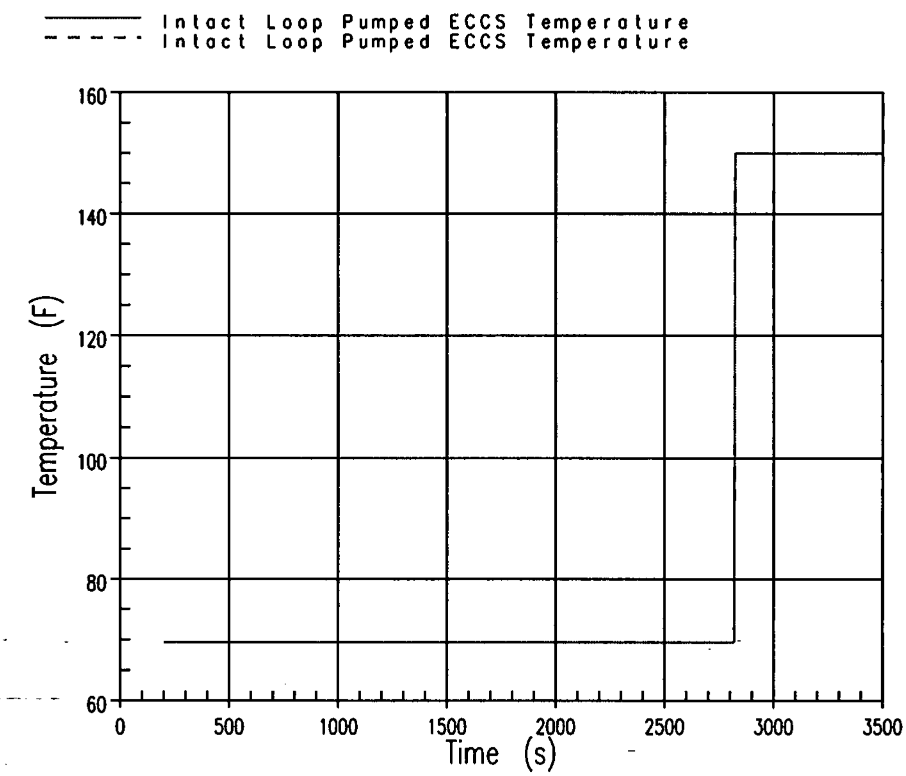

Figure 11 – Pumped ECCS Temperature (each intact loop)

SNPB-3.4 In the event that boration is in progress when a LOCA occurs, is manual operator action required to terminate flow from the boric acid storage tank?

The charging pumps are automatically tripped on an SI signal. In the event that the RCS is undergoing boration when the LOCA occurs, the charging pump trip will prevent the continued injection of highly concentrated boric acid from the boric acid storage tank. Thus, this source is not considered in the boric acid precipitation analysis.

SNPB-3.5 Describe how the boric acid precipitation control analysis addresses the hot leg break scenario. Clarify the actual calculated cycling times (i.e., continuous transfer of hot leg and cold leg injection) and the margin to the onset of precipitation associated with the calculated cycling times.

In the event of a hot leg break, a forward flushing flow path would exist during the injection and cold leg recirculation phase. The operators have no way of identifying the break location so hot leg recirculation will be initiated for both a cold leg or a hot leg break. For a hot leg break, the boric acid precipitation concentration calculation would begin upon termination of cold leg recirculation when the HHSI are transferred from the cold legs to the hot legs. Since the Turkey Point EOPs instruct operators to terminate cold leg safety injection (SI) upon transfer to hot leg recirculation, a cycling time is calculated to preclude the precipitation of boric acid in the inner vessel region of the core in the event of a hot leg break. Table 3 lists the calculated cycling times. Table 4 provides the case-specific analysis inputs that yielded the calculated cycling times shown in Table 3.

The current procedures that guide the operators in re-aligning the system to hot leg recirculation from cold leg recirculation is detailed in EOP-ES-1.4, "Transfer to Hot Leg Recirculation." The procedure requires four steps to re-align and will restart two HHSI pumps for EPU. The steps required for switching the HHSI pump discharge source are as follows (excluding the steps that verify that specific valves are closed, and including only those steps that normally result in an immediate operator action):

- Stop all HHSI pumps
- Open both loop hot leg safety injection valves (MOV-866 A&B)
- Verify closed both SI to cold leg isolation valves (MOV-843 A&B)
- Start two HHSI pumps

Also note that the limiting single failure of the loss of a diesel generator eliminates 1 of the 4 available HHSI pumps and 1 of the 2 available RHR pumps. Thus, the third HHSI pump is manually shut off prior to hot leg recirculation, but would be available in the event that an additional failure of a HHSI pump were assumed to occur.

	HL Recirc #1	CL Recirc #2(2)	HL Recirc #2	CL Recirc #3
Initiation Time(1)	5.5-6.7(4) hrs	17 hrs	33 hrs	49 hrs(3)

Notes:
(1) The interruption time is included in the initiation time.

(2) Reduction from 2 HHSI pumps to 1 HHSI pump is acceptable at 14 hours into the transient.

(3) Cycling shall occur on 16 hour intervals for the remainder of the transient.

(4) Completion time for the described recirculation phase.

Table 3 – Cycling Time Initiation

	Case Specific Inputs			Results			
#	**TSTART (sec)**	**VCORE (ft^3)**	**WSI(3) (lbm/sec)**	**Time (sec)**	**WTPCORE (wt%)**	**Precipitation Time**	**Cycling Time**
I	0	N/A(1)	0	29800	29.261	29816 sec (8.28 hr)	19800 sec (5.5 hr)
				29900	29.315		
II	19800	763.1(2)	28.13	62500	29.268	62503 sec (17.36 hr)	61200 sec (17 hr)
				62600	29.317		

Notes:
(1) Mixing volume a variable quantity with time.

(2) Mixing volume conservatively held constant at the VCORE value from the end of transient run I.

(3) WSI corresponds to the flow rate of pumped ECCS fluid reaching the core during hot leg injection.

Table 4 – Cycling Time Data

SNPB-3.6 Demonstrate that additional margin is available beyond the 1-hour and 3-minute window for transitioning from cold leg to hot leg recirculation to prevent boric acid precipitation.

A summary of the Turkey Point Unit 3 and Unit 4 EPU analysis of record for boric acid precipitation is given in Table 5.

A review of the EPU analysis shows that there is additional margin available beyond the one-hour analyzed hot leg switchover (HLSO) window. An evaluation has been performed for a HLSO that is completed 7 minutes later than what was analyzed for the EPU (5 hour and 30 minutes to 6 hour and 40 minutes). A summary of the results of the 7 minute expansion of the late HLSO window is presented in Table 6.

The evaluation demonstrates that the Turkey Point Unit 3 and Unit 4 EPU HLSO window (5 hours and 30 minutes – 6 hours and 33 minutes) could be extended to accommodate a latest completion time of 6 hours and 40 minutes.

	Calculated Precipitation Time (hr)	Core Boric Acid Weight Percent @ 6 hr, 30 min(1)	Core Boric Acid Weight Percent @ 6 hr, 33 min(2)
LBLOCA (P = 14.7 psia) (Solubility Limit = 29.27 wt%)	8.28	25.58	28.46

Notes:
(1) 6 hours, 30 minutes corresponds to the latest allowable time to initiate HLSO.

(2) 6 hours, 33 minutes corresponds to the latest allowable time to complete HLSO while accounting for the maximum of a 3-minute complete interruption of emergency core cooling system (ECCS) flow to the core.

Table 5 – Summary of Calculated Boric Acid Precipitation Times from EPU AOR

	Core Boric Acid Weight Percent @ 6 hrs, 30 min(1)	Core Boric Acid Weight Percent @ 6 hrs, 37 min(2)	Core Boric Acid Weight Percent @ 6 hrs, 40 min(2,3)
LBLOCA (P = 14.7 psia) (Solubility Limit = 29.27 wt%)	25.58	25.84	28.71

Notes:
(1) 6 hours, 30 minutes corresponds to the latest allowable time to initiate HLSO.

(2) 6 hours, 37 minutes corresponds to the latest allowable time to initiate HLSO.

(3) 6 hours, 40 minutes corresponds to the latest allowable time to complete HLSO while accounting for the maximum of a 3-minute complete interruption of ECCS flow to the core. The core boric acid weight percent is calculated using the following equation:

$$\text{WTPLIMIT} = \frac{m_{boron}}{m_{boron} + m_{water} - (t_{int} \times \dot{m}_{boil})}$$

Table 6 – Evaluation of 7 Minute Expansion of Late HLSO Window

References:

1. M. Kiley (FPL) to U.S. Nuclear Regulatory Commission (L-2010-113), "License Amendment Request for Extended Power Uprate (LAR 205)," (TAC Nos. ME4907 and ME4908), Accession No. ML103560169, October 21, 2010.
2. Yeh, Hsu-Chieh, "Modification of Void Fraction Correlation," Proceedings of The Fourth International Topical Meeting on Nuclear Thermal Hydraulics, Operations and Safety, Volume 1, Taipei, Taiwan, April 5-9, 1994.
3. W3FI-2005-0007, "Supplement to Amendment Request NPF 38 249, Extended Power Uprates, Waterford Steam Electric Station, Unit 3," February 5, 2005, (ML050400463).

Turkey Point Units 3 and 4

RESPONSE TO NRC RAI REGARDING EPU LAR NO. 205
AND SNPB NUCLEAR PERFORMANCE AND CODE REVIEW ISSUES

ATTACHMENT 3

WESTINGHOUSE AFFIDAVIT CAW-11-3214 FOR ATTACHMENT 2

This coversheet plus 8 pages

Westinghouse Electric Company
Nuclear Services
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USA

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Rockville, MD 20852

Direct tel: (412) 374-4643
Direct fax: (724) 720-0754
e-mail: greshaja@westinghouse.com
Proj letter: FPL-11-186

CAW-11-3214

July 25, 2011

APPLICATION FOR WITHHOLDING PROPRIETARY INFORMATION FROM PUBLIC DISCLOSURE

Subject: FPL-11-186 P-Attachment, "Turkey Point Units 3 and 4 – Response to NRC Informal Request for Additional Information (RAI) from the Nuclear Performance and Code Review Branch (SNPB) Related to Extended Power Uprate (EPU) License Amendment Request (LAR) No. 205 (TAC Nos. ME 4907 and ME 4908)" (Proprietary)

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-11-3214 signed by the owner of the proprietary information, Westinghouse Electric Company LLC. The affidavit, which accompanies this letter, sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR Section 2.390 of the Commission's regulations.

Accordingly, this letter authorizes the utilization of the accompanying affidavit by Florida Power and Light.

Correspondence with respect to the proprietary aspects of the application for withholding or the Westinghouse affidavit should reference this letter, CAW-11-3214, and should be addressed to J. A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company LLC, Suite 428, 1000 Westinghouse Drive, Cranberry Township, Pennsylvania 16066.

Very truly yours,

W J Broody /FOR

J. A. Gresham, Manager
Regulatory Compliance

Enclosures

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

ss

COUNTY OF BUTLER:

Before me, the undersigned authority, personally appeared T. Rodack, who, being by me duly sworn according to law, deposes and says that he is authorized to execute this Affidavit on behalf of Westinghouse Electric Company LLC (Westinghouse), and that the averments of fact set forth in this Affidavit are true and correct to the best of his knowledge, information, and belief:

Thomas Rodack

T. Rodack, Director
Quality & Licensing Programs

Sworn to and subscribed before me
this 25th day of July 2011

Cynthia Olesky
Notary Public

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Cynthia Olesky, Notary Public
Manor Boro, Westmoreland County
My Commission Expires July 16, 2014
Member, Pennsylvania Association of Notaries

(1) I am Director, Quality & Licensing Programs, in Nuclear Fuel, Westinghouse Electric Company LLC (Westinghouse), and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing and rule making proceedings, and am authorized to apply for its withholding on behalf of Westinghouse.

(2) I am making this Affidavit in conformance with the provisions of 10 CFR Section 2.390 of the Commission's regulations and in conjunction with the Westinghouse Application for Withholding Proprietary Information from Public Disclosure accompanying this Affidavit.

(3) I have personal knowledge of the criteria and procedures utilized by Westinghouse in designating information as a trade secret, privileged or as confidential commercial or financial information.

(4) Pursuant to the provisions of paragraph (b)(4) of Section 2.390 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.

(i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Westinghouse.

(ii) The information is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public. Westinghouse has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitutes Westinghouse policy and provides the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

(a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of

Westinghouse's competitors without license from Westinghouse constitutes a competitive economic advantage over other companies.

(b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage, e.g., by optimization or improved marketability.

(c) Its use by a competitor would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.

(d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Westinghouse, its customers or suppliers.

(e) It reveals aspects of past, present, or future Westinghouse or customer funded development plans and programs of potential commercial value to Westinghouse.

(f) It contains patentable ideas, for which patent protection may be desirable.

There are sound policy reasons behind the Westinghouse system which include the following:

(a) The use of such information by Westinghouse gives Westinghouse a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Westinghouse competitive position.

(b) It is information that is marketable in many ways. The extent to which such information is available to competitors diminishes the Westinghouse ability to sell products and services involving the use of the information.

(c) Use by our competitor would put Westinghouse at a competitive disadvantage by reducing his expenditure of resources at our expense.

(d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Westinghouse of a competitive advantage.

(e) Unrestricted disclosure would jeopardize the position of prominence of Westinghouse in the world market, and thereby give a market advantage to the competition of those countries.

(f) The Westinghouse capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.

(iii) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.390; it is to be received in confidence by the Commission.

(iv) The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.

(v) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in FPL-11-186 P-Attachment, "Turkey Point Units 3 and 4 – Response to NRC Informal Request for Additional Information (RAI) from the Nuclear Performance and Code Review Branch (SNPB) Related to Extended Power Uprate (EPU) License Amendment Request (LAR) No. 205 (TAC Nos. ME 4907 and ME 4908)" (Proprietary) for submittal to the Commission, being transmitted by Florida Power and Light letter and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk. The proprietary information as submitted by Westinghouse for use by Turkey Point Units 3 and 4 is expected to be applicable for other licensee submittals in response to certain NRC requirements for Extended Power Uprate submittals and may be used only for that purpose.

This information is part of that which will enable Westinghouse to:

(a) Provide input to the U.S. Nuclear Regulatory Commission for review of the Turkey Point EPU submittals.

(b) Provide results of customer specific calculations.

(c) Provide licensing support for customer submittals.

Further this information has substantial commercial value as follows:

(a) Westinghouse plans to sell the use of the information to its customers for the purpose of meeting NRC requirements for licensing documentation associated with EPU submittals.

(b) Westinghouse can sell support and defense of the technology to its customer in licensing process.

(c) The information requested to be withheld reveals the distinguishing aspects of a methodology which was developed by Westinghouse.

Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Westinghouse because it would enhance the ability of competitors to provide similar information and licensing defense services for commercial power reactors without commensurate expenses. Also, public disclosure of the information would enable others to use the information to meet NRC requirements for licensing documentation without purchasing the right to use the information.

The development of the technology described in part by the information is the result of applying the results of many years of experience in an intensive Westinghouse effort and the expenditure of a considerable sum of money.

In order for competitors of Westinghouse to duplicate this information, similar technical programs would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expended.

Further the deponent sayeth not.

PROPRIETARY INFORMATION NOTICE

Transmitted herewith are proprietary and/or non-proprietary versions of documents furnished to the NRC in connection with requests for generic and/or plant-specific review and approval.

In order to conform to the requirements of 10 CFR 2.390 of the Commission's regulations concerning the protection of proprietary information so submitted to the NRC, the information which is proprietary in the proprietary versions is contained within brackets, and where the proprietary information has been deleted in the non-proprietary versions, only the brackets remain (the information that was contained within the brackets in the proprietary versions having been deleted). The justification for claiming the information so designated as proprietary is indicated in both versions by means of lower case letters (a) through (f) located as a superscript immediately following the brackets enclosing each item of information being identified as proprietary or in the margin opposite such information. These lower case letters refer to the types of information Westinghouse customarily holds in confidence identified in Sections (4)(ii)(a) through (4)(ii)(f) of the affidavit accompanying this transmittal pursuant to 10 CFR 2.390(b)(1).

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