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

JAN 16 2012
L-2012-007
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 Reactor Systems Branch Request for Additional Information Regarding Extended Power Uprate License Amendment Request No. 205 and Thermal Conductivity Degradation

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) M. Kiley (FPL) to U.S. Nuclear Regulatory Commission (L-2011-561), "Response to NRC Reactor Systems Branch Request for Additional Information Regarding Extended Power Uprate License Amendment Request No. 205 and Thermal Conductivity Degradation," December 31, 2011.

(3) WCAP-16009-P-A, "Realistic Large-Break LOCA Evaluation Methodology Using the Automated Statistical Treatment of Uncertainty Method (ASTRUM)," January 2005.

By letter L-2010-113 dated October 21, 2010 (Reference 1), Florida Power and Light Company (FPL) requested to amend Renewed Facility Operating Licenses DPR-31 and DPR-41 and revise the Turkey Point Units 3 and 4 Technical Specifications (TS). The proposed amendment will increase each unit's licensed core power level from 2300 megawatts thermal (MWt) to 2644 MWt and revise the Renewed Facility Operating Licenses and TS to support operation at this increased core thermal power level. This represents an approximate increase of 15% and is therefore considered an extended power uprate (EPU).

As a result of recent information presented to the U. S. Nuclear Regulatory Commission (NRC) on December 6, 2011, FPL was asked to address the impact of Thermal Conductivity Degradation (TCD) on the Turkey Point EPU safety analyses. On December 31, 2011, FPL provided its response to the NRC's request for additional information (RAI) via letter L-2011-561 (Reference 2). On January 4, 2012, the NRC informed FPL of the need for additional information regarding the TCD issue and its impact on the EPU Large Break Loss-of-Coolant-Accident (LBLOCA) analyses. Attachments 1 and 2 to this letter provide additional information to support the updated LBLOCA analysis provided in Reference 2. Although using inputs from PAD 4.0 incorporating the effects of TCD in the analysis of the LBLOCA is a deviation from the NRC approved ASTRUM methodology (Reference 3), the attached provides specific information justifying the steps needed to perform the LBLOCA analysis in a manner consistent with the ASTRUM Evaluation Methodology (Reference3) while using PAD 4.0 TCD. It addresses specific questions on the number of cases rerun, treatment of burnup, duration of selected plots regarding consideration of stable and sustainable quench, decay heat, and downcomer boiling. It includes justification for the validity of the original confirmatory studies and for the statistical viability of the current modeling. This information is provided to support the Staff review of FPL's approach to address the impacts of TCD. FPL is providing the

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remainder of the updated LBLOCA analysis results including the analysis results for non-IFBA and IFBA fuel under separate correspondence.

Attachment 3 contains applications for withholding the proprietary information contained in Attachment 2 from public disclosure. 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 affidavits set forth the bases for which the information may be withheld from public disclosure by the Commission and address with specificity the considerations listed in paragraph (b)(4) of §2.390 of the Commission's regulations. Accordingly, it is respectfully requested that 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 affidavits should reference CAW-12-3348, CAW-12-3359, and CAW-12-3360 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.

This submittal does not alter the significant hazards consideration or environmental assessment previously submitted by FPL letter L-2010-113 (Reference 1) or PTN Technical Specifications.

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

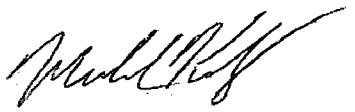
In accordance with 10 CFR 50.91(b)(1), a copy of this letter is being forwarded to the State Designee of Florida.

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 January 16, 2012.

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 SRXB RAI REGARDING EPU LAR NO. 205
AND THERMAL CONDUCTIVITY DEGRADATION

ATTACHMENT 1

RAI RESPONSE
(Non-Proprietary)

Response to Request for Additional Information

1.0 RAI Introduction

The following information is provided by Florida Power and Light Company (FPL) 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 letter L-2010-113 on October 21, 2010 (Reference 1).

On October 8, 2009, the NRC issued Information Notice 2009-23, "Nuclear Fuel Thermal Conductivity Degradation," (Reference 2) which noted that irradiation damage and the progressive buildup of fission products in the fuel pellets result in reduced thermal conductivity of the pellets. Data was collected from an instrumented assembly at the Halden ultra-high-burnup experiment during the 1990s which indicated steady degradation in the thermal conductivity of uranium fuel pellets with increasing exposure. This data indicated a degradation of approximately 5 to 7 percent for every 10 gigawatt-days per metric tonne of exposure. The NRC expressed concern that some vendors might still be using codes for safety analyses that do not account for this phenomenon and therefore may produce non-conservative results. As a result of recent information presented to the NRC on December 6, 2011, the NRC issued Information Notice 2011-21, "Realistic Emergency Core Cooling System Evaluation Model Effects Resulting from Nuclear Fuel Thermal Conductivity Degradation," on December 13, 2011 (Reference 3) and asked FPL to address the impact of fuel Thermal Conductivity Degradation (TCD) on the PTN EPU safety analyses. On December 31, 2011, FPL provided its response to the NRC's RAI via FPL letter L-2011-561 (Reference 4).

On January 4, 2012, the NRC informed FPL of the need for additional information regarding the TCD issue and its impact on the EPU Large Break Loss-of-Coolant-Accident (LBLOCA) analyses. FPL's response to this request for additional information is presented in this non-proprietary attachment (Attachment 1) and in the proprietary attachment (Attachment 2).

The affidavits that set forth the bases for which the information may be withheld from public disclosure by the NRC in accordance with 10 CFR 2.390 are contained in Attachment 3. Proprietary information is contained within brackets and the basis for claiming the information as proprietary is indicated by means of lower case letters (a) - (f) located as a superscript immediately following the brackets enclosing each item of information identified as proprietary. These lower case letters refer to the types of information Westinghouse customarily holds in confidence identified in Sections (4)(ii)(a) - (4)(ii)(f) of the affidavits accompanying this submittal pursuant to 10 CFR 2.390(b)(1). In this attachment, the proprietary information has been deleted and only the brackets remain.

2.0 Justification of Compliance with ASTRUM EM Licensing/Design Basis

Westinghouse performed safety analyses to support the Turkey Point Units 3 and 4 EPU Project. The large-break Loss-of-Coolant Accident (LOCA) analysis submitted as part of the FPL EPU LAR (Reference 1) was based on the currently licensed Westinghouse Best-Estimate LOCA (BELOCA) Automated Statistical Treatment of Uncertainty Method (ASTRUM) methodology (Reference 5) with the plant-specific adaptations as described in (Reference 1). In a response to an RAI from the NRC staff, an updated analysis was performed explicitly considering the effects of fuel Thermal Conductivity Degradation (TCD) on the BELOCA analysis for non-Integral Fuel Burnable Absorber (IFBA) fuel (Reference 4). The updated analysis in Reference 4 provides the aggregate effect of fuel TCD and offsetting input updates on the Peak Cladding Temperature (PCT), Maximum Local Oxidation (MLO) and Core-Wide Oxidation (CWO) results provided in the submitted LAR (Reference 1).

The purpose of this letter is to provide justification that the updated analysis was performed in compliance with the ASTRUM Evaluation Model (EM) licensing basis and associated guidance; namely, to demonstrate that each step of the ASTRUM EM was executed consistently with the ASTRUM EM licensing basis and guidance outlined in WCAP-16009-P-A with the only deviation being the inclusion of the features needed to explicitly account for TCD. Additionally, this letter provides discussion on the method and results of the evaluation of fuel in its second and third cycle of irradiation. Evaluation of fuel in its second and third cycle of irradiation is beyond the first cycle considered in the approved ASTRUM EM, but was considered in the updated analysis when explicitly modeling TCD to demonstrate that analyzing the hot rod and hot assembly in the first cycle of operation is still bounding with respect to PCT and MLO. FPL will submit the remainder of the updated LBLOCA analysis results for non-IFBA and IFBA fuel under separate correspondence.

The ASTRUM EM analysis process is presented for a sample PWR in Section 12 of WCAP-16009-P-A and is based on the following steps:

1. Plant description and nodalization (Section 12-2 of WCAP-16009-P-A)
2. Development of the reference transient and allowable plant operating ranges (Section 12-3 of WCAP-16009-P-A)
3. Execution and analysis of the reference transient (Section 12-4 of WCAP-16009-P-A)
4. Development of ASTRUM run matrix (Section 12-5 of WCAP-16009-P-A)
5. ASTRUM analysis results, determination of the 95/95 singular uncertainty statement and compliance with 10 CFR 50.46 criteria (Sections 12-6 and 12-7 of WCAP-16009-P-A)

An additional step that is performed for plant specific analyses and LARs is the analysis of IFBA fuel. While this is not stipulated in WCAP-16009-P-A, it is part of Westinghouse procedures for the execution of an ASTRUM analysis.

1. Plant Description and Nodalization (Section 12-2 of WCAP-16009-P-A)

The plant description and nodalization of the original ASTRUM analysis (Reference 1) is unchanged with the consideration of TCD and the other input updates.

In particular, the selection of the hot assembly and surrounding assemblies for the Turkey Point ASTRUM analysis is based on the geometry of the structures above the core. The input changes to the ASTRUM updated analysis do not impact the physical geometry of these structures in the vessel; therefore the hot assembly selection remains valid.

2. Development of the Reference Transient and Allowable Plant Operating Ranges (Section 12-3 of WCAP-16009-P-A)

The plant initial operating conditions (per Section 12-3-2 of WCAP-16009-P-A) of the original ASTRUM analysis (Reference 1) are generally unchanged by the consideration of TCD and other input updates used as offsets.

For the purpose of the updated analysis including TCD, the following changes to the plant operation ranges were considered (Reference 4):

- Minimum accumulator water volume 872 ft^3 (increased from 865 ft^3)
- High head safety injection (HHSI) time delay with offsite power available: 17s (reduced from 23s)
- Minimum vessel average temperature: 577°F (increased from 570°F)
- Maximum steam generator tube plugging (SGTP): 5% (reduced from 10%)
- Changes in peaking factors (Table 5-5 of Reference 4)

As stated in Section 12-3-6 of WCAP-16009-P-A, several of the reference conditions assumed to be bounded are verified on a plant-specific basis. The list of these parameters is presented in Section 11-3-1 of WCAP-16009-P-A, which includes: the Steam Generator Tube Plugging (STGP) level, the Offsite Power Availability (LOOP/OPA), the peripheral assembly average power (PLOW), and nominal RCS coolant temperature (TAVG).

2.1 Rationale for Applicability of the Original (Reference 1) Confirmatory Studies

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2.2 Further Support to the Adequacy of the Confirmatory Calculations

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3. Execution and Analysis of the Reference Transient (Section 12-4 of WCAP-16009-P-A)

This comprises the execution of a steady-state, followed by the reference transient calculation with WCOBRA/TRAC.

The steady-state conditions are calibrated to ensure that the desired steady-state reactor conditions are achieved.

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4. Development of ASTRUM Run Matrix (Section 12-5 of WCAP-16009-P-A)

The process utilized to generate the ASTRUM sample is provided in Section 12-5 of WCAP-16009-P-A. An ASTRUM analysis requires the generation of 124 runs. The treatment of uncertainties in the ASTRUM Methodology is described in Section 11-1 of Reference 5. As discussed in Reference 5, to identify the 95th percentile PCT, MLO, and CWO at a 95% confidence (as a joint probability singular statement), the top rank (maximum value) of the 124 run-set samples is selected as the estimator (limiting PCT, MLO, and CWO results from the set).

A fundamental aspect of the ASTRUM methodology is the random generation of the uncertainty attributes for the 124 runs that constitute a complete set. Similarly to a traditional Monte Carlo computer simulation, the sampling is based on the use of computer generated 'pseudo-random' numbers. A pseudo-random number generation approximates the sampling of a random number from an infinite population of numbers uniformly distributed from 0 to 1. Once such a random number is sampled, it is translated into the corresponding value of the attributes based on the attribute probability density function.

In the ASTRUM methodology the limiting PCT, MLO and CWO of the 124 random run-set corresponds to a 95% probability (confidence) that the limiting PCT, MLO and CWO of the ASTRUM run set bounds the 95th percentile for their respective population. The nature of nonparametric statistics (which in the ASTRUM application is based on the minimum number of runs necessary to achieve the desired confidence level for a given target percentile) makes it possible (and actually highly likely) for a seed to include a run that will yield results significantly beyond the 95th percentile. On the contrary there is also a small but non zero probability (less than 5% PCT/MLO/CWO joint-probability) that a seed will yield an ASTRUM sample where the top rank is lower than the 95th percentile of the (PCT/MLO/CWO) population.

[An analyst may in this situation ask himself the following question: "If performing 124 runs will give me the desired 95/95 coverage, what would be wrong in generating a new set of 124 cases and performing again the analysis so to try to eliminate the 'bad' run or see if I can get a better result?". While reasonable, the very nature of this question compromises the basis of the statistical approach, by including a level of human decision making that violates the random nature of the seed, thus reducing the confidence level in the final result.

As a result, Westinghouse has developed seed procedures with the intent of removing the analyst from the decision process. The purpose was to maintain fairness and purity in the random sampling in the context of the non-parametric technique.]^{a,c}

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5. ASTRUM Analysis Results, Determination of the 95/95 Singular Uncertainty Statement and Compliance with 10 CFR 50.46 Criteria (Sections 12-6 and 12-7 of WCAP-16009-PA)

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The new estimate will satisfy the ASTRUM EM 95/95 singular statement of uncertainty (joint probability on PCT, MLO and CWO) with TCD effects included.

10 CFR.50.46 requires a "high level of probability" to comply with the acceptance criteria. The ASTRUM SER stated that conformance with this requirement was achieved to satisfaction with a 95/95 tolerance limit jointly on the three criteria (PCT, MLO and CWO). However it is also recognized that the ASTRUM EM retains an additional layer of conservatism in the both the EM and the inputs which enhance further the confidence significantly beyond 95% level. Also, a joint probability tolerance limit based on three outcomes is quite conservative as it ignores correlation between PCT and MLO. Moreover the 3rd criterion (CWO) was shown to typically satisfy the acceptance criterion with ample margin.

Additional Analysis of Integral Fuel Burnable Absorber (IFBA) Fuel

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Evaluation of Fuel in its Second and Third Cycle of Irradiation

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Fuel in its third cycle of irradiation was not explicitly evaluated. With the method described above, Cycle 1 calculations include a hot rod burnup range of approximately 0-30 GWd/MTU, and Cycle 2 calculations include a hot rod burnup range of approximately 30-60 GWd/MTU. Fuel with a burnup greater than 60 GWd/MTU has lower power and would not lead the core; therefore, the effects of TCD on these fuel assemblies is judged to be bounded by the first and second cycle analysis and the evaluation performed.

The evaluation performed showed that second-cycle Non-IFBA fuel was non-limiting by 105°F PCT and 1.72% MLO when compared to the first cycle results. Examining the calculated PCT and MLO results as a function burnup (Figures 3 and 4) shows the limiting case (for both PCT and MLO) occurs in the first cycle of irradiation. The peaking factor burndown was effective in offsetting the increasing impact of fuel TCD as the fuel is burned (e.g. increasing fuel temperatures at a constant linear heat rate). Consistent with expectation, the trend with respect to burnup is an increase of PCT (and MLO) in the 1st cycle and a decrease in 2nd cycle. Without the mitigating peaking factor burndown, the second cycle results would also show an increasing PCT and MLO trend as function of burnup, consistent with fuel temperature at a constant linear heat rate. Since the limiting case occurs in the first cycle of irradiation and the first and second cycle results are similar, the updated TCD analysis was performed consistent with the ASTRUM EM, which assumes the hot assembly in its first cycle of operation.

Conclusion:

The above discussion provides justification that the TCD updated analysis was performed in compliance with ASTRUM EM. This demonstrates that each step of the ASTRUM EM was executed consistently with the ASTRUM EM licensing basis and guidance. Additionally, the assumption that the hot rod and hot assembly are in its first cycle of irradiation was confirmed to be limiting for the Turkey Point Units 3 and 4 ASTRUM analysis when considering fuel TCD and offsetting effects.

3.0 Additional Information on LBLOCA Analysis

Additional information regarding selected areas of the LBLOCA analysis provided in Reference 4 is presented below in response to specific questions posed by the technical reviewer.

Additional Information on Treatment of Burnup:

The NRC-approved Westinghouse ASTRUM Methodology (Reference 5) assumes a LOCA to be [

]^{a,c} Refer to Section 11-2-2 of

the ASTRUM Topical (Reference 5) for more information.

For each of the second cycle runs, [

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The hot rod burnup of the 67 cases re-executed explicitly modeling TCD for the first and second cycle of irradiation has been added to Table 5-9 of Reference 4 for clarification (see updated Table 5-9 below). For additional clarification, the hot rod burnup values corresponding to the 124 cases in Table 1.3.34-1 in the response to RAI SRXB-1.3.34 are also provided (see supplemental table below). It is noted that slight differences in the hot rod burnup values exists between the first cycle run sets since the radial power factor was reduced in the updated TCD analysis.

The updated TCD analysis also credited peaking factor burndown shown in Table 5-5 of Reference 4 to address fuel in its second cycle of irradiation. [

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Consideration of Stable and Sustained Quench:

The run time of the limiting PCT and MLO case presented in Reference 4 has been extended to 600 seconds to show a steadily increasing trend in the vessel liquid inventory.

Figure 5 provides the PCT for the five (5) rods modeled in WCOBRA/TRAC. It is observed that the PCT remains quenched for a remainder of the extended simulation.

Figures 6, 7 and 8 provide the collapsed liquid level in the lower plenum, the average of the core channel and the average of the downcomer channels, respectively. A steadily increasing trend is observed in the lower plenum and the core and a stable level is shown in the downcomer from 300 to 600 seconds.

Finally, Figure 9 presents the vessel fluid mass and indicates a stable and increasing trend in the overall vessel liquid inventory. This indicates that the pumped safety injection is more than offsetting the loss of inventory through the break.

Based on these results, it is concluded that stable and sustained quench has been established for the updated TCD analysis, and the core will remain covered with a two-phase mixture and can be cooled for an indefinite period of time.

Additional Information on Downcomer Boiling:

The responses to NRC RAIs on downcomer noding for the Turkey Point Units 3 and 4 ASTRUM analysis (Reference 6) were provided prior to the consideration of fuel TCD. The responses to these RAIs remain valid for the following reasons:

1. The downcomer noding is the same in the updated TCD analysis (Reference 4) and the ASTRUM analysis execution (Reference 1).
2. Fuel performance inputs do not affect heat removal from the downcomer and lower plenum metal structures.

3. As was the case in the original ASTRUM analysis execution, the time of the PCT for the limiting PCT case in the TCD assessment occurs well before the onset of downcomer boiling. In the TCD assessment, the time of PCT for the limiting PCT case was shown to occur at 46 seconds in Table 5-8 of Reference 4, well before the onset of downcomer boiling, which is shown to begin at roughly 140 seconds in Figure 5-15 of Reference 4.
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Additional Information on Decay Heat:

The decay heat multiplier corresponds to "Decay Heat" in ASTRUM Topical (Reference 6) Table 1-10, [

]^{a,c} Application of the uncertainty is through the multiple decay groups shown in ASTRUM Topical (Reference 6) Table 8-14.

The principal impact of fuel TCD is to increase the initial stored energy at the onset of a postulated LOCA. [

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Although unrelated, it is noted that the as-sampled decay heat multiplier for the limiting PCT case in the updated TCD analysis corresponds to [

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4.0 Applicability of PAD 4.0 Fission Gas Release Calibration to PAD 4.0 with TCD

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The technical basis for this approach is provided below.

PAD 4.0 FGR Database

The steady state FGR data in PAD 4.0 calibration and verification cover burnup up to [

]^{a,c} A complete list of the fission gas release data is provided in the topical report for

PAD 4.0 (Reference 7). The database in Reference 7 was considered adequate to address FGR for fuel rods [ ]^{a,c}

The transient FGR data are [

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PAD 4.0 FGR Calibration

Figures 10 and 11 (extracted from Reference 7) compare the predicted and measured fission gas release for the entire steady-state fission gas release database. [

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As discussed in the database section above, [

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Conclusion

The licensed PAD 4.0 fission gas release model already implicitly includes the effects of TCD because the model was calibrated to measured data for a full range of fuel rod burnup and operating conditions. Additionally, conservatism is considered in the original PAD 4.0 calibration process and in fuel rod design analysis.

Table 5-9: ASTRUM Uncertainty Attributes for PTN Best-Estimate Large-Break LOCA Updated Analysis (Ranked by Updated HOTSPOT PCT)

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Table 5-9: ASTRUM Uncertainty Attributes for PTN Best-Estimate Large-Break LOCA Updated Analysis (Ranked by Updated HOTSPOT PCT)

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Table 5-9: ASTRUM Uncertainty Attributes for PTN Best-Estimate Large-Break LOCA Updated Analysis (Ranked by Updated HOTSPOT PCT)

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Table 1.3.34-1 Supplement - Turkey Point Units 3 and 4 Original ASTRUM Execution Attributes

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Figure 1
WCOBRA/TRAC Hot Rod PCT Comparison
Between Original (Reference 1) and Updated (Reference 4) Analyses

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Figure 2
Vessel Liquid Mass Comparison
Between Original (Reference 1) and Updated (Reference 4) Analyses

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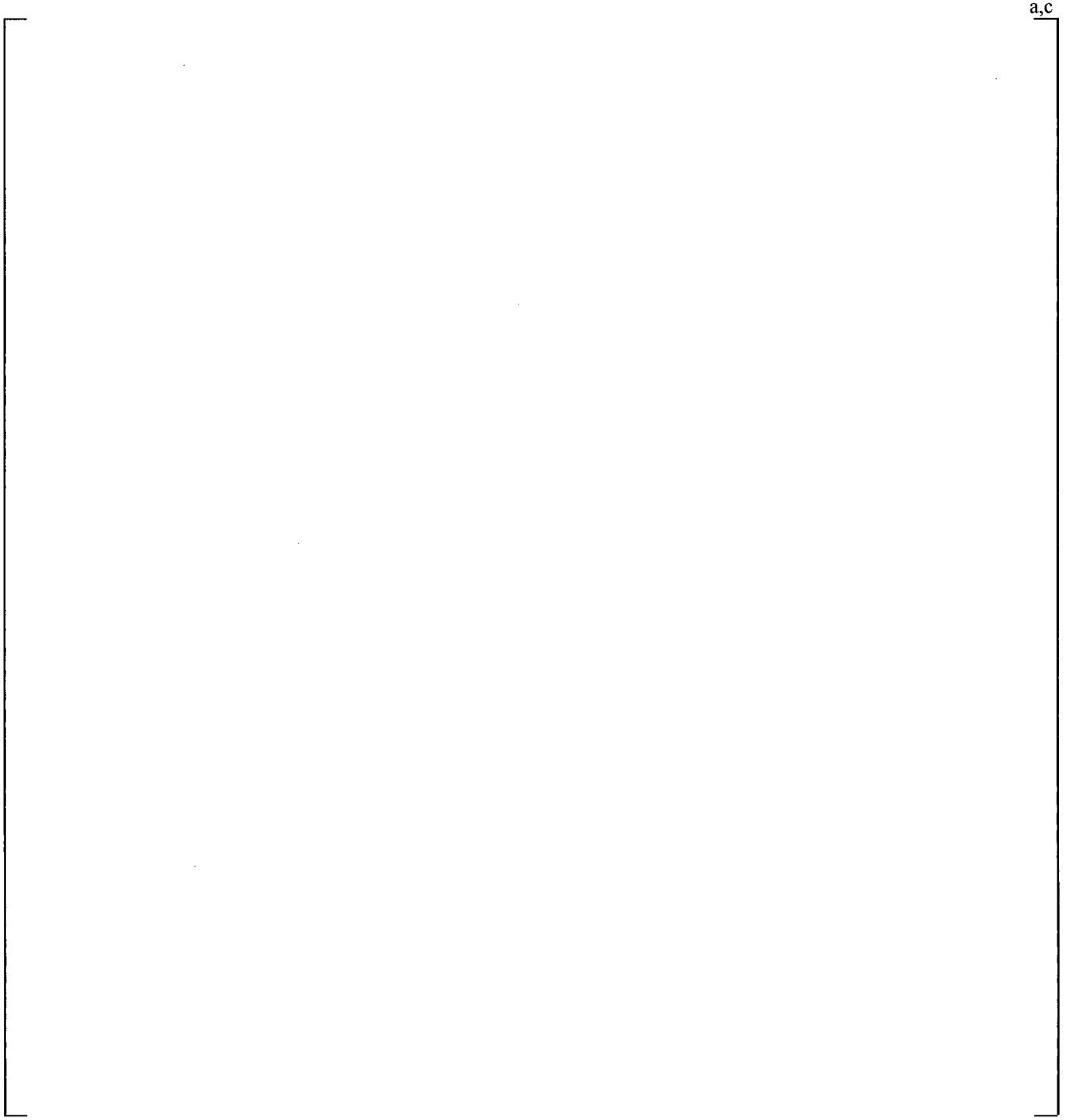

Figure 3
Comparison of First and Second Cycle Calculated Non-IFBA PCT Results

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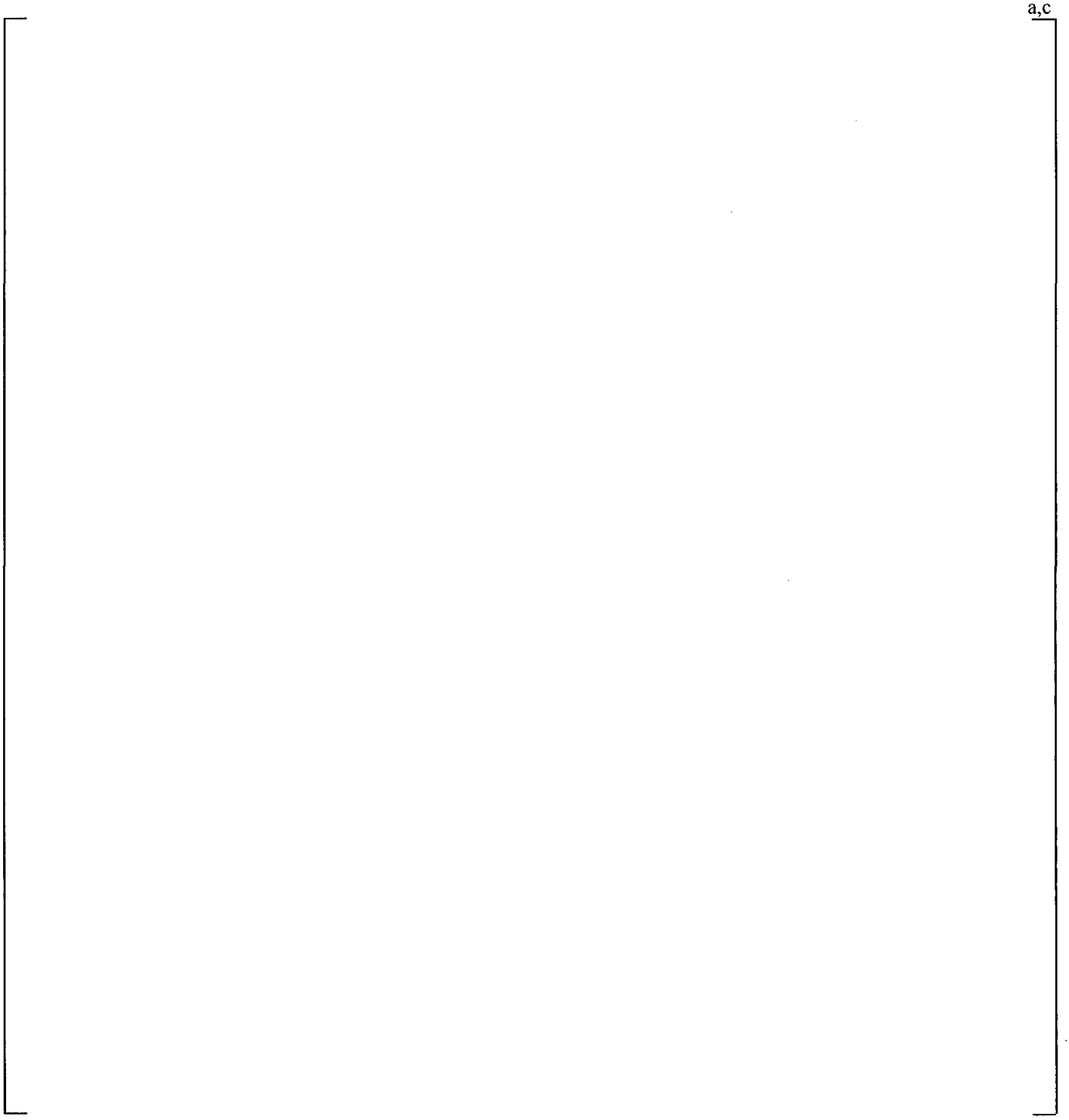

Figure 4
Comparison of First and Second Cycle Calculated Non-IFBA MLO Results

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Figure 5 (Figure 5-19 in Reference 4)
Limiting PCT Case Peak Cladding Temperature for all 5 Rods

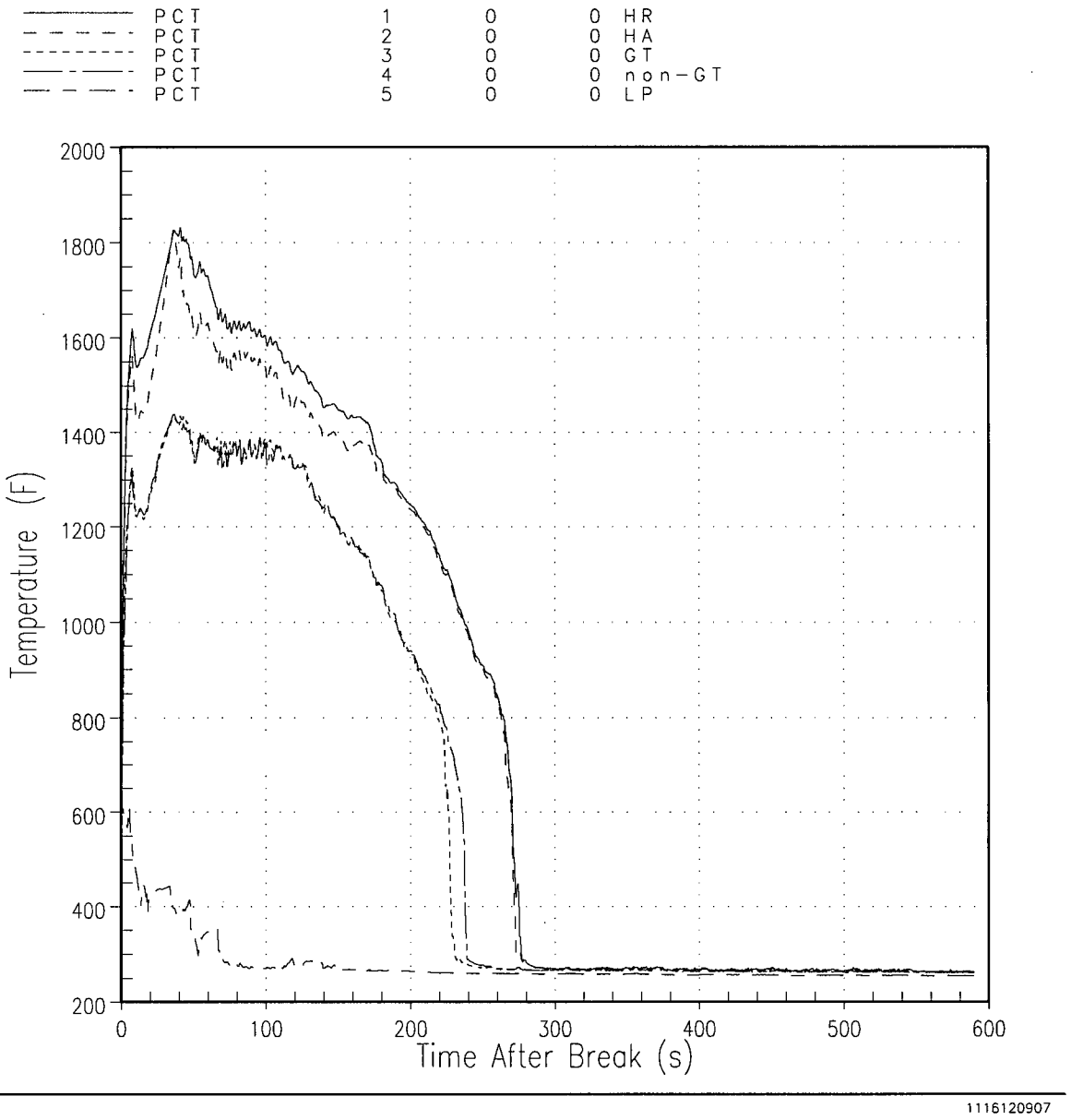

Figure 6 (Figure 5-15 in Reference 4)
Limiting PCT Case Lower Plenum Collapsed Liquid Level

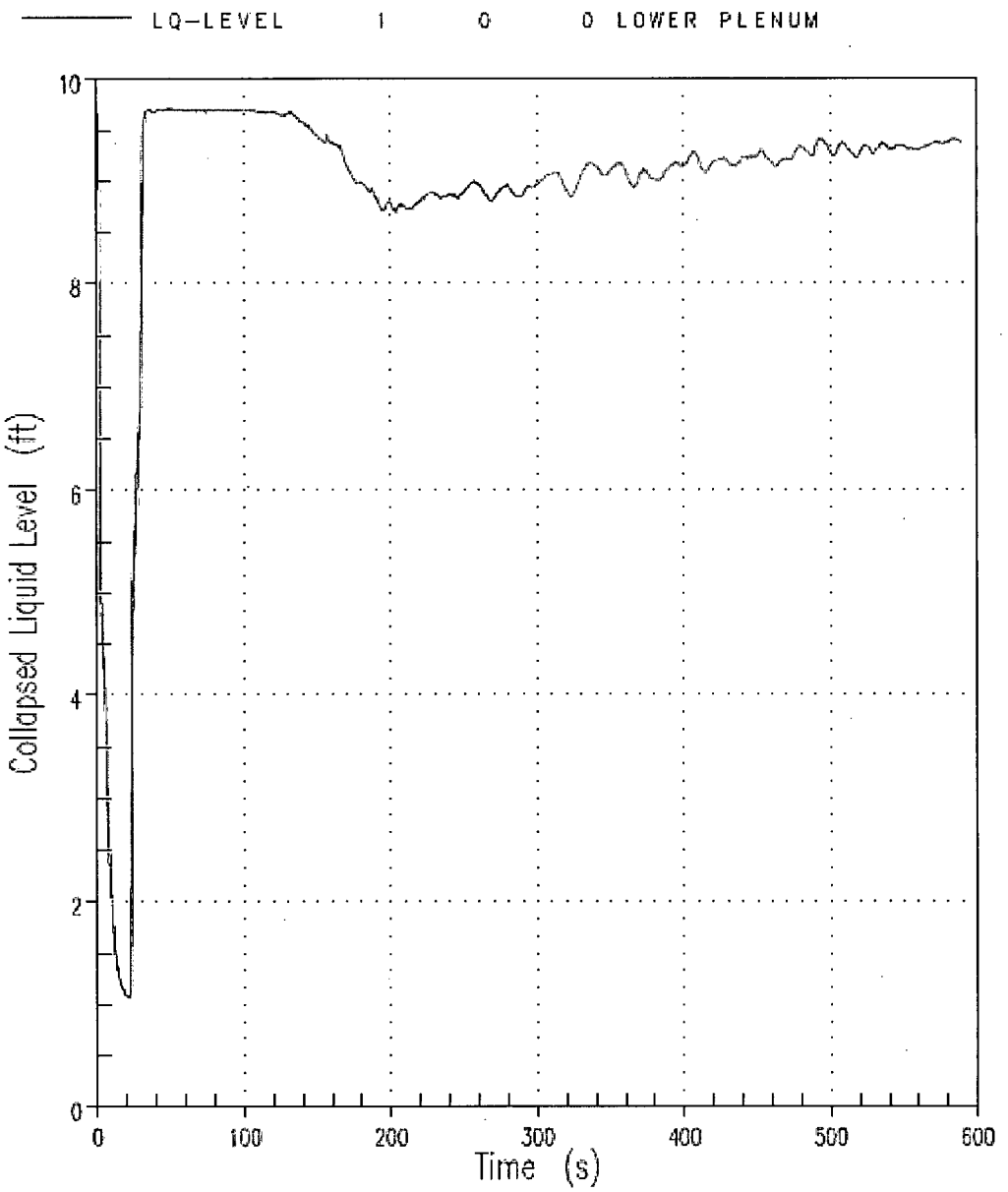

Figure 7 (Figure 5-17 in Reference 4)
Limiting PCT Case Core Channels Collapsed Liquid Levels

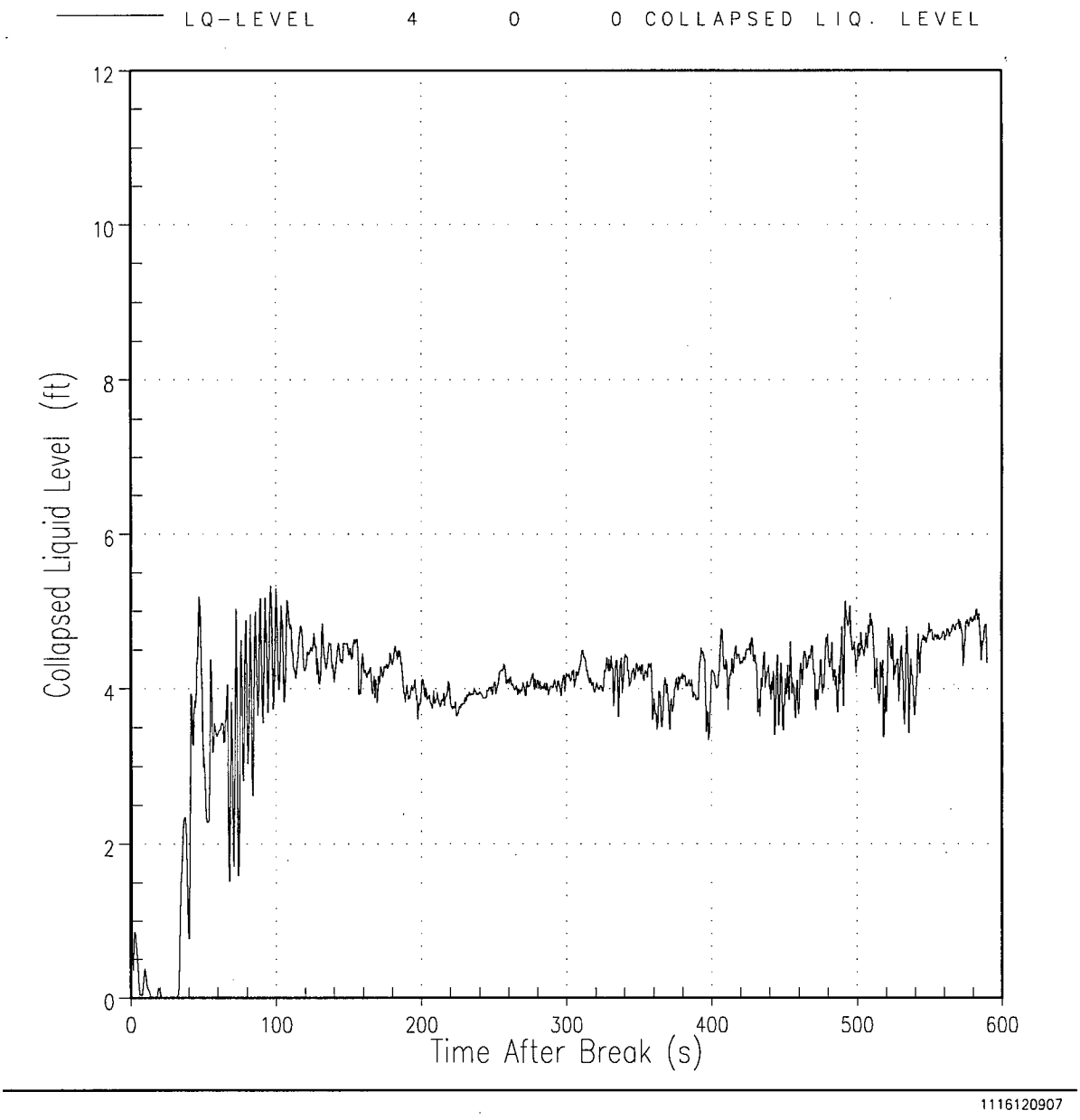

Figure 8 (Figure 5-16 in Reference 4)
Limiting PCT Case Average Downcomer Collapsed Liquid Level

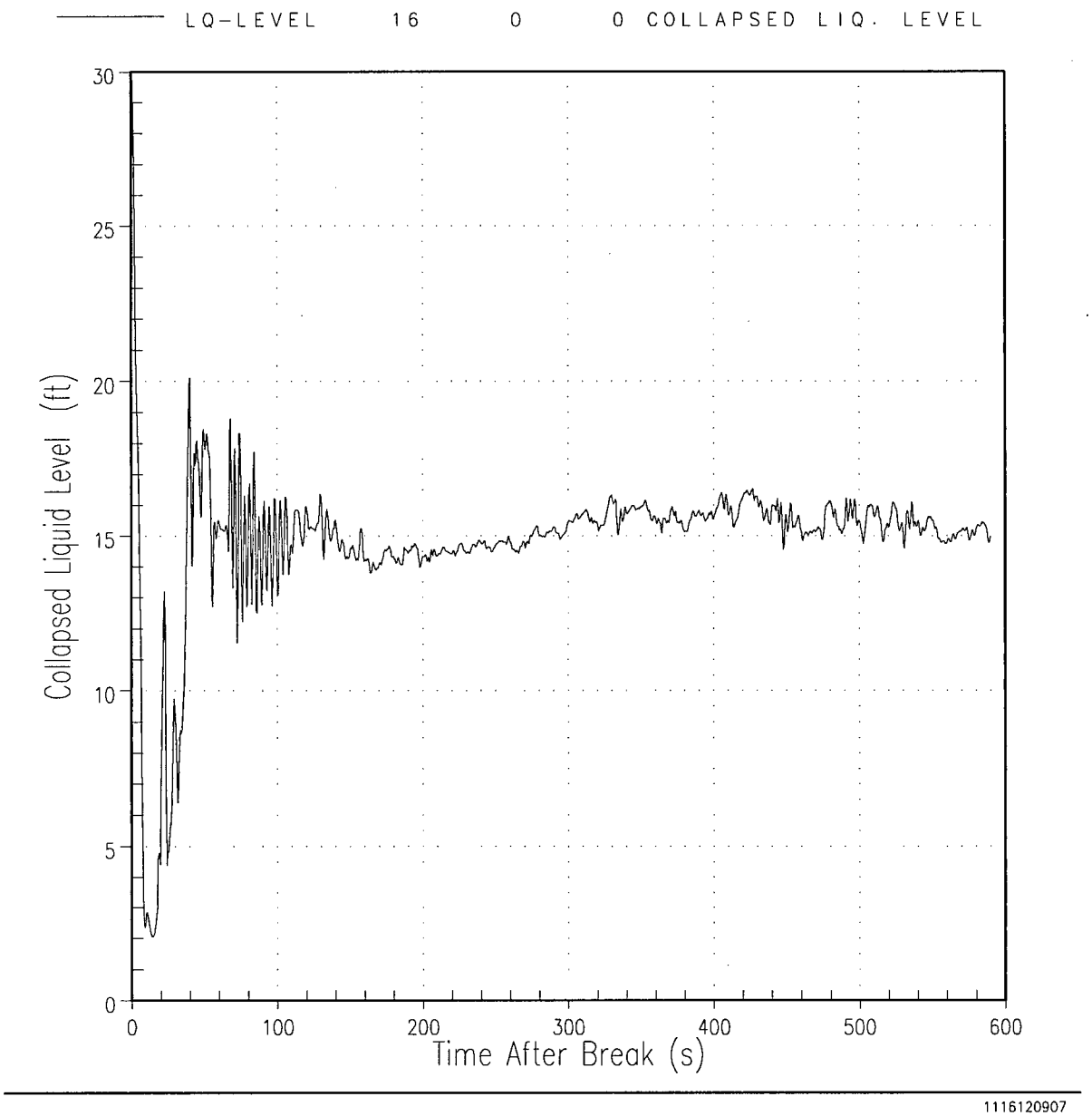

Figure 9 (Figure 5-18 in Reference 4)
Limiting PCT Case Vessel Fluid Mass

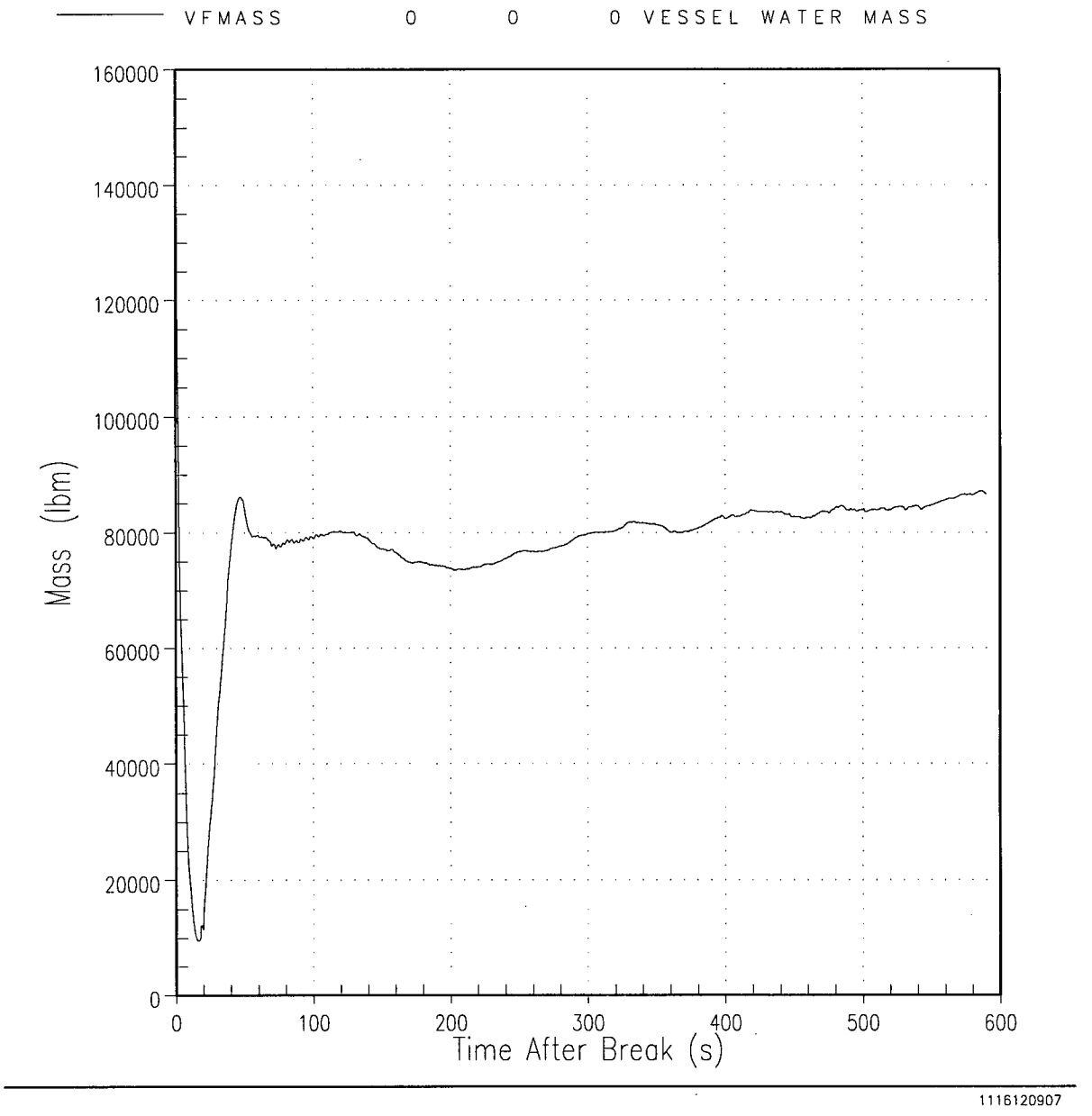

Figure 10
Predicted vs. Measured Fission Gas Release
(All Steady-State Fission Gas Release Data)

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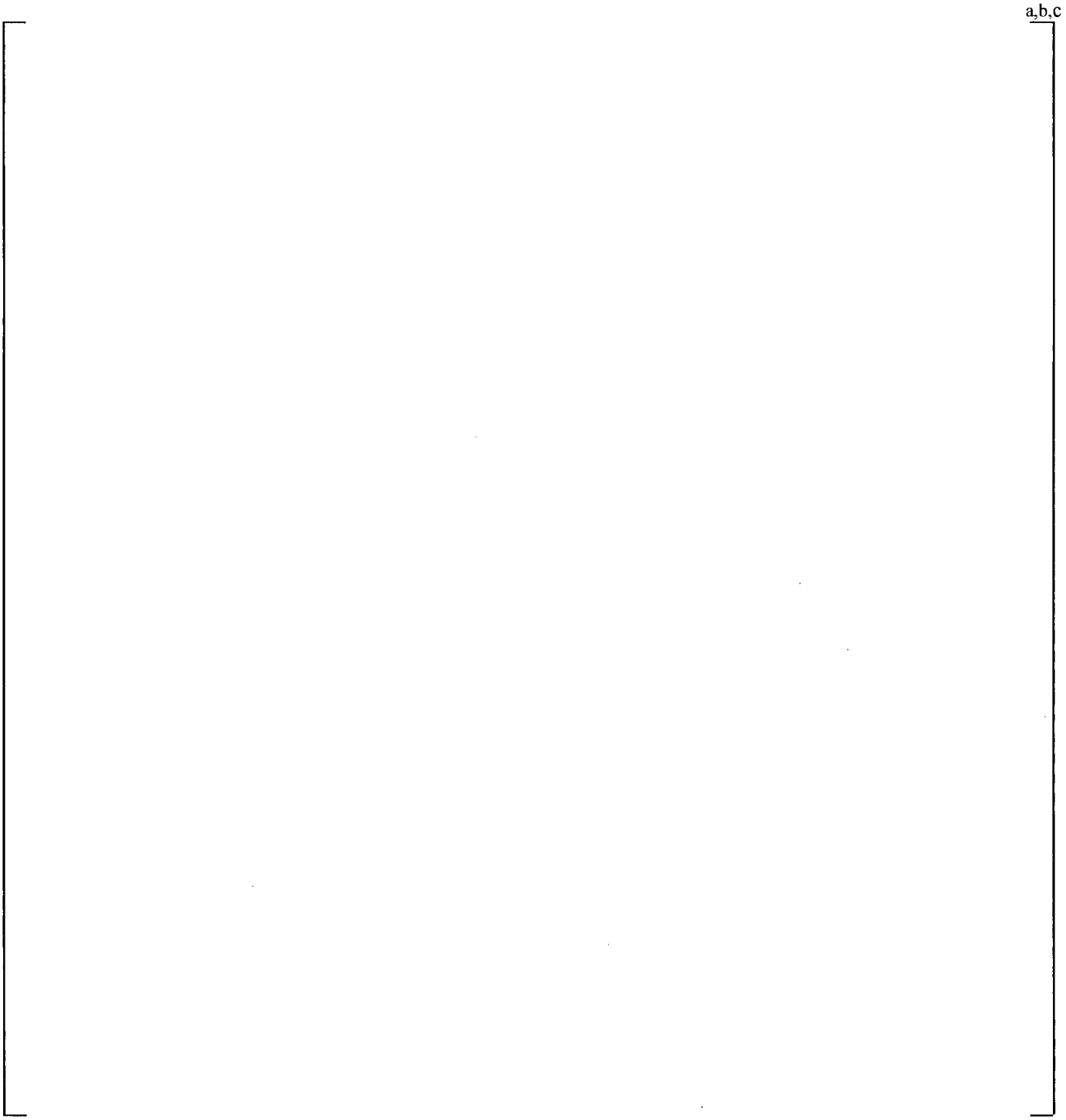

Figure 11
Measured/Predicted Fission Gas Release vs. Burnup
(All Steady-State Fission Gas Release Data)

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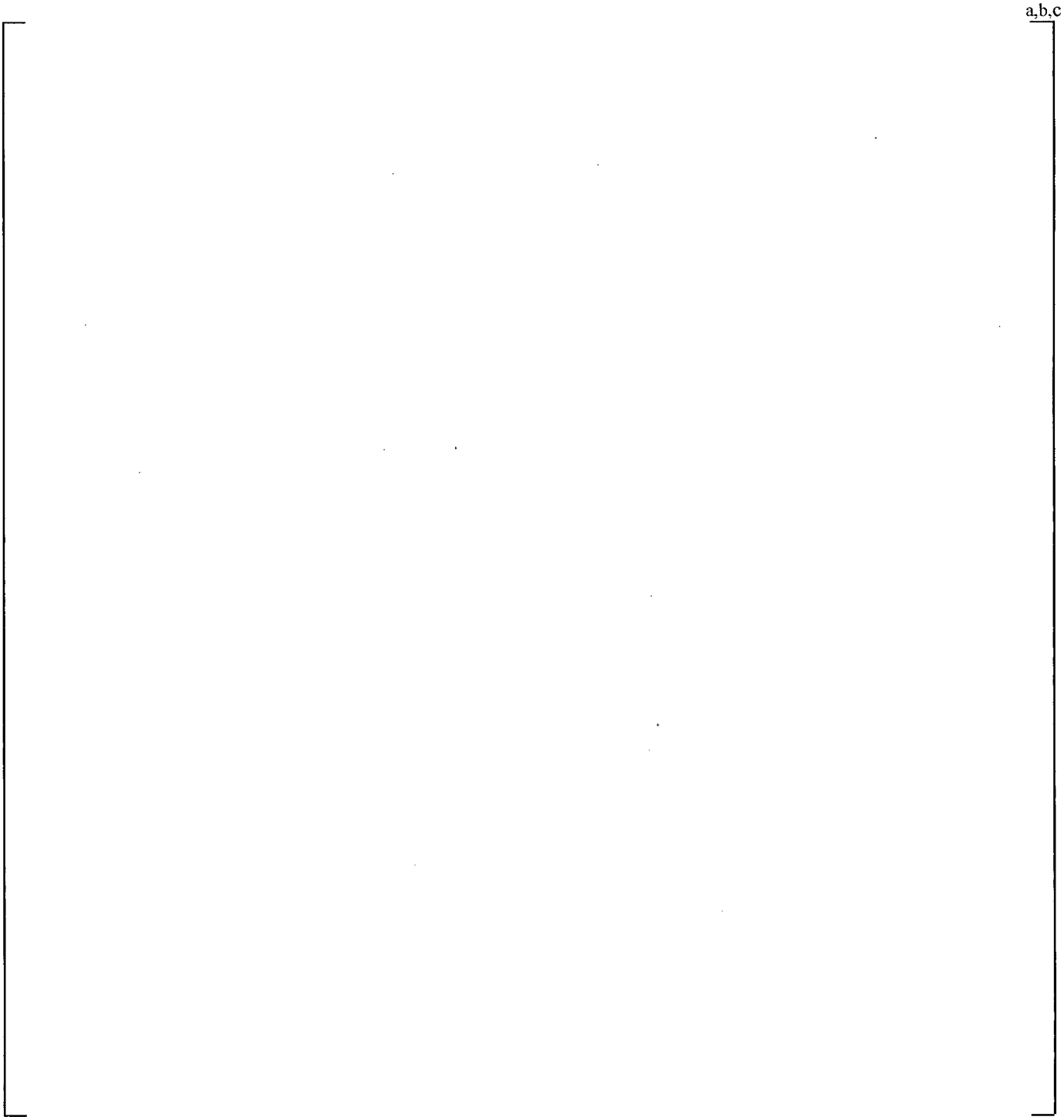

5.0 References

1. M. Kiley (FPL) to U.S. Nuclear Regulatory Commission (L-2010-113), "License Amendment Request for Extended Power Uprate (LAR 205)," Accession No. ML103560169, October 21, 2010.
2. NRC Information Notice 2009-23, "Nuclear Fuel Thermal Conductivity Degradation," Accession No. ML113430785, October 8, 2009.
3. NRC Information Notice 2011-21, "Realistic Emergency Core Cooling System Evaluation Model Effects Resulting from Nuclear Fuel Thermal Conductivity Degradation," Accession No. ML091550527, December 13, 2011.
4. M. Kiley (FPL) to U.S. Nuclear Regulatory Commission (L-2011-561), "Response to NRC Reactor Systems Branch Request for Additional Information Regarding Extended Power Uprate License Amendment Request No. 205 and Thermal Conductivity Degradation," December 31, 2011.
5. WCAP-16009-P-A, "Realistic Large-Break LOCA Evaluation Methodology Using the Automated Statistical Treatment of Uncertainty Method (ASTRUM)," January 2005. (Westinghouse Proprietary Class 2).
6. M. Kiley (FPL) to U.S. Nuclear Regulatory Commission (L-2011-028), "Response to NRC Request for Additional Information Regarding Extended Power Uprate License Amendment Request No. 205 and Safety Analyses Issues – Round 1," Accession No. ML110790019, March 16, 2011.
7. WCAP-15063-P-A, Revision 1 with Errata, "Westinghouse Improved Performance Analysis and Design Model (PAD 4.0)."

Turkey Point Units 3 and 4

RESPONSE TO NRC SRXB RAI REGARDING EPU LAR NO. 205
AND THERMAL CONDUCTIVITY DEGRADATION

ATTACHMENT 3

Westinghouse Affidavits CAW-12-3348, CAW-12-3359 & CAW-12-3360 for Attachment 2

This coversheet plus 23 pages

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U.S. Nuclear Regulatory Commission
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Proj letter: FPL-12-3

CAW-12-3348

January 5, 2012

APPLICATION FOR WITHHOLDING PROPRIETARY INFORMATION FROM PUBLIC DISCLOSURE

Subject: FPL-12-3 P-Attachment, "Turkey Point Units 3 and 4 – Additional Information on Fuel Thermal Conductivity Degradation Impact on BELOCA for 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-12-3348 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-12-3348, 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,

J. A. Gresham, Manager
Regulatory Compliance

Enclosures

CAW-12-3348

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

ss

COUNTY OF BUTLER:

Before me, the undersigned authority, personally appeared J. A. Gresham, 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:

J. A. Gresham, Manager
Regulatory Compliance

Sworn to and subscribed before me
this 5th day of January 2012

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 Manager, Regulatory Compliance, in Nuclear Services, 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-12-3 P-Attachment, "Turkey Point Units 3 and 4 – Additional Information on Fuel Thermal Conductivity Degradation Impact on BELOCA for 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 (EPU) 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 Extended Power Uprate (EPU) submittals.

(b) Provide additional information on fuel thermal conductivity degradation impact on BELOCA.

(c) Provide licensing support for customer submittal.

Further this information has substantial commercial value as follows:

(a) Westinghouse plans to sell the use of this information to its customers for purposes of meeting NRC requirements for licensing documentation.

(b) Westinghouse can sell support and defense of the technology to its customer in the 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 calculations 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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Proj letter: FPL-12-10

CAW-12-3359

January 13, 2012

APPLICATION FOR WITHHOLDING PROPRIETARY INFORMATION FROM PUBLIC DISCLOSURE

Subject: FPL-12-10 P-Attachment, "Thermal Conductivity Degradation Effect on the Large-Break LOCA Analysis: Justification of Full Compliance with ASTRUM EM Licensing Basis and Procedures for 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-12-3359 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-12-3359, and should be addressed to J. A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company, Suite 428, 1000 Westinghouse Drive, Cranberry Township, Pennsylvania 16066.

Very truly yours,

J. A. Gresham, Manager
Regulatory Compliance

Enclosures

CAW-11-3359

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:

T. Rodack, Director
Licensing and Engineering Programs

Sworn to and subscribed before me
this 13th day of January 2012

Notary Public

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Joyce A. Szapessy, Notary Public
Parks Twp., Armstrong County
My Commission Expires April 16, 2013
Member, Pennsylvania Association of Notaries

(1) I am Director, Licensing and Engineering Programs, in Nuclear Fuels, 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-12-10 P-Attachment, "Thermal Conductivity Degradation Effect on the Large-Break LOCA Analysis: Justification of Full Compliance with ASTRUM EM Licensing Basis and Procedures for 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 (EPU) 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 Extended Power Uprate (EPU) submittals.

(b) Provide additional information on fuel thermal conductivity degradation impact on full compliance with ASTRUM EM.

(c) Provide licensing support for customer submittal.

Further this information has substantial commercial value as follows:

(a) Westinghouse plans to sell the use of this information to its customers for purposes of meeting NRC requirements for licensing documentation.

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

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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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Proj letter: FPL-12-17

CAW-12-3360

January 13, 2012

APPLICATION FOR WITHHOLDING PROPRIETARY INFORMATION FROM PUBLIC DISCLOSURE

Subject: FPL-12-17 P-Attachment, "Response to NRC Request for Additional Information Relative to Fission Gas Releases in the PAD Code for 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-12-3360 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-12-3360, and should be addressed to J. A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company, Suite 428, 1000 Westinghouse Drive, Cranberry Township, Pennsylvania 16066.

Very truly yours,

/for

J. A. Gresham, Manager
Regulatory Compliance

Enclosures

CAW-11-3360

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:

T. Rodack, Director
Licensing and Engineering Programs

Sworn to and subscribed before me
this 13th day of January 2012

Notary Public

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Joyce A. Szepessy, Notary Public
Parks Twp., Armstrong County
My Commission Expires April 16, 2013
Member, Pennsylvania Association of Notaries

(1) I am Director, Licensing and Engineering Programs, in Nuclear Fuels, 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.

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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-12-17 P-Attachment, "Response to NRC Request for Additional Information Relative to Fission Gas Releases in the PAD Code for 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 (EPU) 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 Extended Power Uprate (EPU) submittals.

(b) Provide additional information on fission gas releases in the PAD code.

(c) Provide licensing support for customer submittal.

Further this information has substantial commercial value as follows:

(a) Westinghouse plans to sell the use of this information to its customers for purposes of meeting NRC requirements for licensing documentation.

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

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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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