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Constellation Energy
R.E. Ginna Nuclear Power Plant

September 19, 2005

U. S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: **R.E. Ginna Nuclear Power Plant**
Docket No. 50-244

Response to NRC Generic Request for Additional Information Regarding Relaxed Axial Offset Control, R.E. Ginna Nuclear Power Plant (TAC No. MC6867)

REFERENCES:

(a) Letter from Mr. Patrick Milano (NRC) to Mrs. Mary G. Korsnick (Ginna LLC), dated August 11, 2005, Request for Additional Information Regarding Relaxed Axial Offset Control

(b) Letter from Mrs. Mary G. Korsnick (Ginna LLC) to Ms. Donna M. Skay (NRC), dated April 29, 2005, License Amendment Request Regarding Adoption of Relaxed Axial Offset Control (RAOC)

The purpose of this letter is to forward R.E. Ginna Nuclear Power Plant, LLC's (Ginna LLC's) response to the Nuclear Regulatory Commission (NRC) request for additional information regarding the proposed license amendment to adopt Relaxed Axial Offset Control (Reference a). The requested additional information is contained in Attachment 1. As indicated in Attachment 2, there are no new regulatory commitments associated with the response to this request for additional information.

Should you have questions regarding the information in this submittal, please contact George Wrobel at (585) 771-3535 or george.wrobel@constellation.com.

Very truly yours,

Mary G. Korsnick

Mary G. Korsnick

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STATE OF NEW YORK :
: **TO WIT:**
COUNTY OF WAYNE :

I, Mary G. Korsnick, being duly sworn, state that I am Vice President – R.E. Ginna Nuclear Power Plant, LLC (Ginna LLC), and that I am duly authorized to execute and file this request on behalf of Ginna LLC. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other Ginna LLC employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.

Mary G. Korsnick

Subscribed and sworn before me, a Notary Public in and for the State of New York and County of MONROE, this 19 day of September, 2005.

WITNESS my Hand and Notarial Seal:

Sharon L Miller
Notary Public

SHARON L. MILLER
Notary Public, State of New York
Registration No. 01MI6017755
Monroe County
Commission Expires December 21, 20 06

cc: S. J. Collins, NRC
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RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION REGARDING RELAXED AXIAL OFFSET CONTROL, R.E. GINNA NUCLEAR POWER PLANT

RAI #1

Provide the Results of the RAOC analysis (permissible axial flux differentials).

Response:

Due to the potential for cycle-to-cycle variations in operating conditions, loading patterns, and fuel design features, RAOC analyses are performed on a plant-specific, cycle-specific basis in accordance with the WCAP-9272-P-A reload methodology (approved via NRC letter from Cecil O. Thomas (NRC) to E. P. Rahe (W), "ACCEPTANCE FOR REFERENCING OF LICENSING TOPICAL REPORT WCAP-9272(P)/9273(NP) WESTINGHOUSE RELOAD SAFETY EVALUATION METHODOLOGY," May 28, 1985). Although primarily confirmatory, these analyses may result in adjustment of the COLR limits to ensure that applicable safety criteria continue to be satisfied for each reload core.

The initial transition to the RAOC methodology requires changes in Technical Specifications, and the associated License Amendment Request must include a reasonable basis for the plant-specific Technical Specification changes. However, the amendment request must be submitted well in advance of the actual reload evaluation to allow the NRC reasonable time for review. Studies supporting the submittal are typically based on conditions that challenge anticipated future plant operation as a demonstration of the viability of the methodology and as a leading indicator of anticipated safety margins for the future cycle-specific analyses.

This is the standard approach and it has been applied in the Ginna LLC application of 29 April 2005. While numerous prior applications have demonstrated the viability of the RAOC methodology over a wide range of applications (for example, Point Beach, Kewaunee, Seabrook, Vogtle, Wolf Creek, and St. Lucie 2), plant-specific bases are included in the application to provide a reasonable demonstration of the viability of the RAOC methodology.

The RAOC analysis identified in the 29 April 2005 application was performed based on representative uprated core loading patterns. The anticipated permissible axial flux difference (AFD) limits based on these loading patterns will be -12% to +6% AFD at 100% of rated thermal power, and -30% to +24% at 50% of rated thermal power. These typical limits are shown graphically on Figure B3.2.3-1 of the 29 April 2005 application.

Cycle-specific RAOC analyses will be performed starting with the Ginna Cycle 33 reload based on the power level, operating temperatures, final loading pattern, fuel characteristics, and other conditions associated with the reload cycle. These results will be checked against the applicable safety analysis limits (including LOCA) as part of the reload evaluation process. It is expected that these results will confirm the continued acceptability of the anticipated AFD limits identified in the 29 April 2005 application. However, should these limits be determined to be unacceptable, further restrictions would be applied in the Ginna Cycle 33 COLR to ensure that all applicable safety criteria are satisfied. This commitment is consistent with the approved reload methodology and is reinforced by the "List of Regulatory Commitments" included in the 29 April 2005 application.

The Ginna Cycle 33 reload evaluation, including the cycle-specific RAOC analyses and any necessary COLR updates will be performed under the conditions set forth in Generic Letter 88-16, 10 CFR 50.59 and Section 5.6.5 of the Ginna Technical Specifications. These activities are anticipated to be conducted in the first half of 2006. This approach will also be applied to subsequent reloads in accordance with the approved reload methodology.

Thus, while it is not possible to provide final permissible axial flux differentials, as described above, it is possible to demonstrate the validity of the methodology change.

RAI #2

WCAP-10216-P-A delineates a calculational procedure for determining the final RAOC limit. In its review of the application, the NRC staff does not find evidence that the procedure was explicitly followed.

Provide a description of how the calculational procedure of WCAP-10216-P-A was followed. Justify any exceptions to the calculational procedure in WCAP-10216-P-A.

Response:

Westinghouse incorporates NRC-approved calculational procedures into internal design manuals. In accordance with procedures, any changes to the internal design manuals are reviewed by methodology experts for continued compliance with the original approved topical report(s), and when necessary, the applicable topical reports are revised and re-submitted for approval. The same process is used if an exception is taken to an approved calculational procedure in an analysis (i.e., a review is conducted by a methodology expert to determine continued compliance with the approved methodology).

The RAOC procedure has been maintained in compliance with the approved procedure in WCAP-10216-P-A (approved via NRC letter from Cecil O. Thomas (NRC) to E. P. Rahe (W), "Acceptance -for Referencing of Licensing Topical Report WCAP 10216(P) - (NS-EPR-2649)," February 28, 1983). In the case of the Ginna RAOC analysis, the Westinghouse internal calculations reference the internally documented calculational procedures for the methods that were used.

The standard RAOC methods were used to perform the Ginna RAOC analysis, with only one exception. This exception involved determination of a Condition II cooldown accident input assumption. Rather than using the generic 30°F cooldown assumption in all cases, a Ginna-specific analysis was performed to determine the maximum credible Condition II cooldown applicable specifically to Ginna, for initial conditions between 50% and 100% power. This analysis consisted of non-LOCA transient simulations of Condition II accidents, and determined that cooldowns larger than 20°F are not credible for Ginna, as long as the moderator density coefficient is greater than +0.1 $\Delta k/g/cc$. Westinghouse calculated the moderator density coefficients for the representative Ginna cores, and determined that this condition would easily be met for end-of-life core conditions. Therefore, for a limited set of end-of-life cases, a 20°F cooldown input assumption was used instead of the generic 30°F cooldown assumption. The above exception was evaluated by Westinghouse, and was determined to remain in compliance with WCAP-10216-P-A, on the basis that the topical report defines the maximum amount of temperature reduction that will be analyzed, but has allowances for analyzing lesser cooldowns.

RAI #3

On page A-16 of WCAP-10216-P-A, under paragraph 2, "F_Q Analysis," it is stated, "Each power shape generated in Section C.1, above is analyzed to determine if LOCA [loss of coolant accident] constraints are met or exceeded. The peaking factor, F_Q^T, is determined using standard synthesis methods as described in WCAP-8385..," However, in the application, Ginna LLC is deleting WCAP-8385 from the list of approved methodologies.

Identify the methodology that is the replacement for WCAP-8385. Provide the justification for that replacement.

Response:

There is no "replacement" for the methods; the same standard synthesis methods are used in practice. The synthesis is based on standard industry definitions and practices, as follows:

$$F_Q = MAX\{P_z(Z) * F_{XY}(Z)\} * F_U^N * F_Q^E$$

While the standard synthesis definition is found in WCAP-8385 (approved via NRC letter from J. F. Stolz (NRC) to C. Eicheldinger (W), "SAFETY EVALUATION OF WCAP-8385 (P) AND WCAP-8403 (NP)," received January 31, 1978), this presentation was primarily informational at a time when the application of synthesis techniques was not yet standardized. This approach is a well-founded and common industry practice whose only unique features are the values identified for uncertainties. These uncertainties are defined in separate references, and are discussed explicitly in the response to RAI #6.

The majority of WCAP-8385 is devoted to describing the CAOC operating strategy and analysis approach, including the various types of load follow simulations that are performed, and the technical specifications that are applicable to CAOC plants. As such, when a plant switches to RAOC-based methods, the unique features of WCAP-8385 are no longer applicable. To avoid possible confusion about what type of reload analysis will be performed to support each cycle, it was deemed appropriate to delete WCAP-8385 in favor of WCAP-10216-P-A (approved via NRC letter from Cecil O. Thomas (NRC) to E. P. Rahe (W), "Acceptance -for Referencing of Licensing Topical Report WCAP 10216(P) - (NS-EPR-2649)," February 28, 1983). Examples of NRC-approved RAOC applications that have deleted WCAP-8385 from the list of approved methodologies in the Technical Specifications in favor of WCAP-10216 include Point Beach, Kewaunee, Seabrook, Vogtle, and Wolf Creek.

RAI #4

Provide a description of the derivation of the $f_1(\Delta I)$ and $f_2(\Delta I)$ functions.

Response:

As described in Section 4.0 (1st paragraph) of the 29 April 2005 application , the changes to the overtemperature ΔT setpoints were determined in accordance with analytical methods which can be found in WCAP-8745-P-A (specifically, Appendix C), (approved via NRC letter from Charles E. Rossi (NRC) to E. P. Rahe (W), "ACCEPTANCE FOR REFERENCING OF LICENSING TOPICAL REPORT WCAP-8745(P)/ 8746(NP), "DESIGN BASIS FOR THE THERMAL OVERPOWER AND THERMAL OVERTEMPERATURE AT TRIP FUNCTIONS," April 17, 1986).

RAI #5

Provide the results of the F_Q analysis (i.e., the permissible F_Q and the W(Z) function).

Response:

As described in the response to RAI #1, the analysis performed for Ginna was based on representative uprated loading patterns, and a specific reload analysis will be performed for each reload to check the applicable limits. The requested results from the most limiting representative loading pattern studied for Ginna are shown in Figures 1 and 2. These results correspond to the typical AFD band limits identified in the response to RAI #1. The maximum transient F_Q result for the limiting representative cycle was 2.432, compared to a LOCA limit of 2.60. These results only confirm the viability of the methodology and should not be used as a defining basis for NRC approval. As described in the 29 April 2005 application, the actual determination of the permissible F_Q and the W(Z) values is performed for each reload cycle.

The cycle-specific F_Q analysis will be performed for Cycle 33 based on the power level, operating temperatures, actual loading pattern details, fuel characteristics and other conditions associated with the reload cycle. These results will be confirmed as part of the reload evaluation process to ensure that the applicable safety criteria will be met. This confirmation process is consistent with the NRC-approved reload methodology of WCAP-9272-P-A (approved via NRC letter from Cecil O. Thomas (NRC) to E. P. Rahe (W), "ACCEPTANCE FOR REFERENCING OF LICENSING TOPICAL REPORT WCAP-9272(P)/9273(NP) WESTINGHOUSE RELOAD SAFETY EVALUATION METHODOLOGY," May 28, 1985) and the conditions set forth in 10 CFR 50.59.

RAI #6

When establishing the $F_Q(Z)$ surveillance, WCAP-10216-P-A states that the measured $F_Q(Z)$ is increased by appropriate uncertainties to account for manufacturing tolerances and measurement uncertainties. WCAP-10216-P-A later states those uncertainties to be 3% and 5%, respectively. Ginna LLC has adopted these uncertainties as appropriate for its application.

Provide a description of how these uncertainties are appropriate for the licensee.

Response:

The NRC approved the 5% measurement uncertainty in WCAP-7308-L-P-A (approved via NRC letter from A. C. Thadani (NRC) to W. J. Johnson (W), "ACCEPTANCE OF LICENSING TOPICAL REPORT WCAP-7308-L AND UPDATE OF MARCH 1984, "EVALUATION OF NUCLEAR HOT CHANNEL FACTOR UNCERTAINTIES AS A REFERENCE DOCUMENT" March 24, 1988). The approval applied to all Westinghouse plants except for plants that do not have a full complement of incore detectors (San Onofre 1, Connecticut Yankee, and Yankee Rowe, for example), and plants with axially heterogeneous cores that do not use elevation dependent INCORE constants.

Ginna has the standard complement of 36 instrumented locations for a 2-loop plant. In addition, the INCORE constants provided to the plant by Westinghouse are elevation dependent, capturing the differences in each major axial zone, as required for the axially heterogeneous fuel used in Ginna reloads cores.

The 3% manufacturing tolerance uncertainty was developed by Westinghouse to account for local variations in fuel enrichment, pellet density and diameter, and fuel rod dimensional tolerances. These parameters are controlled by Westinghouse fuel manufacturing specifications. Since Ginna reload cores contain all Westinghouse fuel, the 3% manufacturing tolerance is appropriate.

RAI #7

The proposed application for the RAOC/F_Q surveillance requirements indicates that the supporting analysis was performed at extended power uprate (EPU) conditions. Ginna LLC has indicated that it intends to implement the RAOC/ F_Q surveillance changes regardless of the approval outcome of its EPU application. To that end, the April 29 application states in several locations that, "...supporting analyses performed for the EPU bounds operation at the current power level." However, there is no information provided to support this statement. In order to implement the EPU, Ginna LLC will be making a number of changes to its facility and analyses. Some of those changes could affect the analyses used to support the acceptability of the RAOC/ F_Q surveillance changes. It is the synergistic combination of these changes that has led Ginna LLC to determine that the RAOC/ F_Q surveillance changes were acceptable. Absent those synergistic effects, the analysis used to support the April 29 application may not bound the current conditions.

Provide a description of how the supporting analyses performed for the EPU bounds operation at the current power level. Include the following:

- **a. A complete listing of inputs, assumptions, and methodologies used in the analysis of the RAOC/ F_Q surveillance application.**
- **b. Identify the current condition and the RAOC/ F_Q surveillance supporting analysis values for each, highlighting any differences.**
- **c. Explain the impact of all differences. Include a justification as to why the RAOC/ F_Q surveillance application supporting analysis condition bounds the current condition.**
- **d. Explain the impact should any change not be implemented where there was a difference between current conditions and RAOC/ F_Q surveillance application supporting analysis conditions.**

Response:

As stated in the 29 April 2005 application, and in related RAI responses, the commitment of the Westinghouse reload methodology is to check all key core-related design parameters against LOCA analysis limits on a cycle-specific basis for reload cycles that utilize the RAOC methodology. RAOC/F_Q surveillance methodologies, as approved by the NRC, are not dependent on the EPU and would not be subject to change if the EPU were not approved.

With regard to the application of the RAOC methodology for Ginna providing the support basis for the 29 April 2005 application, the following lists the key Ginna specific inputs and assumptions that may be subject to change in the reload-specific RAOC analysis, if the EPU is not approved. For each item, a discussion is provided on how the item may be affected if EPU approval is not obtained, and how the change would affect the results of the RAOC/F_Q surveillance analysis in general terms.

Inasmuch as the confirmatory calculations to assure compliance with applicable safety criterion are future activities to be based on as-yet unknown conditions for the operating cycle of interest, the specific details with regard to the representative calculations and potential synergistic effects are not available. However, in clarification of the RAOC methodology and its application to Ginna, the following explanatory responses are provided.

a. A complete listing of inputs, assumptions, and methodologies used in the analysis of the RAOC/ F_Q surveillance application.

The specific input values for the representative cases are meaningful only insofar as they are truly representative of the expected operation of the plant under EPU conditions, since the confirmatory calculations are performed with the actual anticipated conditions appropriate to the cycle of interest. However, values for key parameters important in the RAOC analysis are identified throughout the additional information provided below. Assumptions are addressed in the 29 April 2005 application, in topical report WCAP-10216-P-A (approved via NRC letter from Cecil O. Thomas (NRC) to E. P. Rahe (W), "ACCEPTANCE FOR REFERENCING OF LICENSING TOPICAL REPORT WCAP 10216(P) - (NS-EPR-2649)", February 28, 1983) and supplemented by the responses to RAI #2 and RAI #6 reported here. Methodologies are those described in the 29 April 2005 application, in topical report WCAP-10216-P-A as clarified by the response to RAI #3 reported here.

b. Identify the current condition and the RAOC/ FQ surveillance supporting analysis values for each, highlighting any differences.

The "current condition" for which the RAOC analysis will be applied is not yet known. As indicated in the response to RAI #1, the RAOC analysis identified in the 29 April 2005 application was performed based on the expected analytically bounding representative uprated core loading patterns. The additional information below contains a description of the key parameters from the analysis supporting the 29 April 2005 application and forms the basis for the Westinghouse judgment that the anticipated EPU results are reasonable and likely bounding (see heading "Rated Thermal Power") for the expected operation without EPU. Further, should cycle-specific calculations warrant, COLR limits for the operating cycle would be restricted, as required, to ensure continued compliance with all applicable safety criteria.

c. Explain the impact of all differences. Include a justification as to why the RAOC/ FQ surveillance application supporting analysis condition bounds the current condition.

See the additional information below for the basis for the Westinghouse judgment that the anticipated EPU results are reasonable and likely bounding for the expected operation without EPU.

d. Explain the impact should any change not be implemented where there was a difference between current conditions and RAOC/ FQ surveillance application supporting analysis conditions.

The additional information provided below contains the expected impact of differences in key parameters. The final application of RAOC will be based on the actual anticipated operating conditions identified through the reload evaluation process.

Additional Information

Ginna will implement the transition to 422V+ during the next cycle independent of the approval of the EPU. The following discussion describes how key parameters will be affected if the uprate is not approved. This information forms the basis for the Westinghouse judgment that the anticipated EPU results are reasonable and likely bounding for operation without EPU.

Rated Thermal Power – A conservative rated thermal power of 1811 MWt was assumed in the RAOC analysis (including the effects of up to 2% calorimetric uncertainty). The rated power will remain at 1520 MWt (approximately 84% of the maximum analyzed Condition I power level) if the EPU is not approved. The corresponding core average kW/ft and clad surface heat fluxes would be significantly lower, resulting in more margin to DNB and centerline fuel melt limits. Since the RAOC analysis at the EPU power level analyzed a range of Condition I power levels from 50% up to 100% of the 1811 MWt rated power level, the analysis clearly bounded the non-uprated power level, and the AFD band analyzed at 84% of the EPU power level was approximately -18 to +12%.

The actual bands will be dependent on the LOCA peaking factor F_Q limit at the time of RAOC implementation. This is dependent on a third separate application (letter from Mary G. Korsnick (Constellation) to Donna M. Skay (NRC), "License Amendment Request Regarding Revised Loss of Coolant Accident (LOCA) Analyses-Changes to Accumulator, Refueling Water Storage (RWST), and Administrative Control Technical Specifications R.E. Ginna Nuclear Power Plant Docket No. 50-244", 29 April 2005). If approved, the LOCA peaking factor F_Q limit will increase from the current value of 2.45 to 2.60. If the EPU is not approved and the LOCA peaking factor F_Q limit remains at 2.45, the reload-specific RAOC analysis may result in more restrictive AFD limits than are discussed in RAI #1. If EPU is not approved but the higher LOCA peaking factor F_Q limit is implemented, it could result in an AFD band in the reload-specific RAOC analysis approximately the same as discussed in RAI #1. Therefore, the EPU RAOC analysis at the EPU power level is clearly more conservative than a reload-specific RAOC analysis at the 1520 MWt power level. A cycle-specific analysis will be performed during the reload regardless of which power level and peaking factor limit are in effect to confirm the continued acceptability of the RAOC bands, or to determine more restrictive AFD bands which ensure continued compliance with the applicable safety criteria. The final AFD bands will be contained in the COLR.

Trip Setpoints - The RAOC analysis credits the overpower and overtemperature ΔT trip setpoints in the analysis of Condition II events. Specific values for the trip setpoints are potentially reload-dependent and are therefore located in the COLR. The trip setpoints associated with the EPU analysis are more restrictive than the current setpoints, in terms of the maximum Condition II event overpower and AFD

operating space before the trips are expected to occur. If the EPU analysis is not approved, and the new trip setpoints are not implemented as a result, Westinghouse RAOC procedures require that the Condition II analysis be re-analyzed (based on the trigger of having different setpoints from those assumed in the original RAOC Condition II analysis). This would be completed as part of the normal reload-specific analysis. In the unlikely event the current trip setpoints (in conjunction with the 1520 MWt rated thermal power level) do not support meeting the Condition II design criteria, then revised setpoints will be developed and implemented in the COLR, through the normal reload process, using approved methodologies.

Rod Insertion Limits (RILs) – The RAOC analysis credits the RILs in both the Condition I and Condition II analyses. It was assumed that the RILs would not change when the EPU is implemented. Therefore, regardless of whether the EPU is approved or not, the RILs are not expected to change. If they do change, for any reason, the reload-specific RAOC analysis will capture the effects of the change.

AFD Limits - The RAOC AFD band limits the potential axial peaking factors that may be obtained during Condition I operation. If the EPU is not approved, and RAOC is still implemented, the AFD limits will be confirmed to result in acceptable power peaking as part of the reload-specific analysis. It is likely that the target axial flux differentials for the reload specific analysis will still be on the order of -12% to +6% AFD at 100% of rated thermal power, and -30% to +24% at 50% of rated thermal power, because the LOCA peaking factor limit must be met regardless of the rated thermal power level.

Coolant Temperature – The RAOC analysis considered models with a relatively large range of vessel average temperatures between 564.6°F and 576°F. In the event the EPU is not approved, the current vessel average temperature of approximately 561°F would likely be retained. Core radial peaking factors are a weak function of temperature, with lower temperatures generally resulting in slightly higher radial peaks. The effects of the slightly lower temperature on peaking factors would be captured in the reload-specific analysis, and if necessary, AFD limits would be revised to ensure total peaking factor limits are met. The lower vessel average temperature would also result in an increase in available DNB margin, during both Condition I and II operation, relative to what has been analyzed to support the EPU.

Fuel Management – The RAOC analysis was performed using models representative of future uprated cores, including the effects of a transition from Westinghouse OFA to 422V+ fuel. If the EPU is not approved, the future cores may have significantly different characteristics, because the total energy requirements for each cycle will be significantly lower. However the fuel transition from OFA to 422V+ will still occur. Due to the lower energy requirements, the specific reload cycles may use a lower total number of feed assemblies, and may therefore have higher radial peaking factors. However, this effect will be limited by the fact that the pre-EPU $F_{\Delta H}$ limit is only about 2% higher than the post-EPU $F_{\Delta H}$ limit, and is small when compared to the significantly lower rated thermal power level. The effects of different fuel management on peaking factors would be captured in the reload-specific analysis, and if necessary, AFD limits would be revised to ensure total peaking factor limits continue to be met.

In addition, the following table provides a comparison of Ginna to recent results from other similar 2-loop plants that are representative of both uprated and non-uprated conditions, and that are currently approved for RAOC. In comparing the results below, it should be noted that while all AFD band limits reported result in meeting the F_Q limit, the resulting margin between the peak calculated transient F_Q and the F_Q limit varies.

Attachment 1

Parameter	Ginna with EPU	Ginna without EPU[1]	Kewaunee	Point Beach 1&2
Rated Thermal Power (MWt, Best Estimate, without calorimetric uncertainty)	1775	1520	1772	1540
F_Q limit	2.60	2.60[2]	2.50	2.60
$F_{\Delta H}$ Limit	1.72 (422V+) 1.60 (OFA)	1.72 (422V+)[2] 1.60 (OFA)	1.70 (422V+)	1.77 (422V+)
Fuel Rod Outer Diameter (in.)	0.422 (422V+) 0.400 (OFA)	0.422 (422V+) 0.400 (OFA)	0.422	0.422
Vessel Average Temperature (°F)	564.6 to 576.0 (analyzed)	561.0	572.0	570.0
HFP AFD Band (typical)	-12% to +6%	-12% to +6% (estimated)	-9% to +8%	-8% to +9%

[1] Anticipated conditions.
[2] Assumes approval of LOCA analyses supporting EPU.

Figure 1 (F_Q Results from Most Limiting Representative LP)

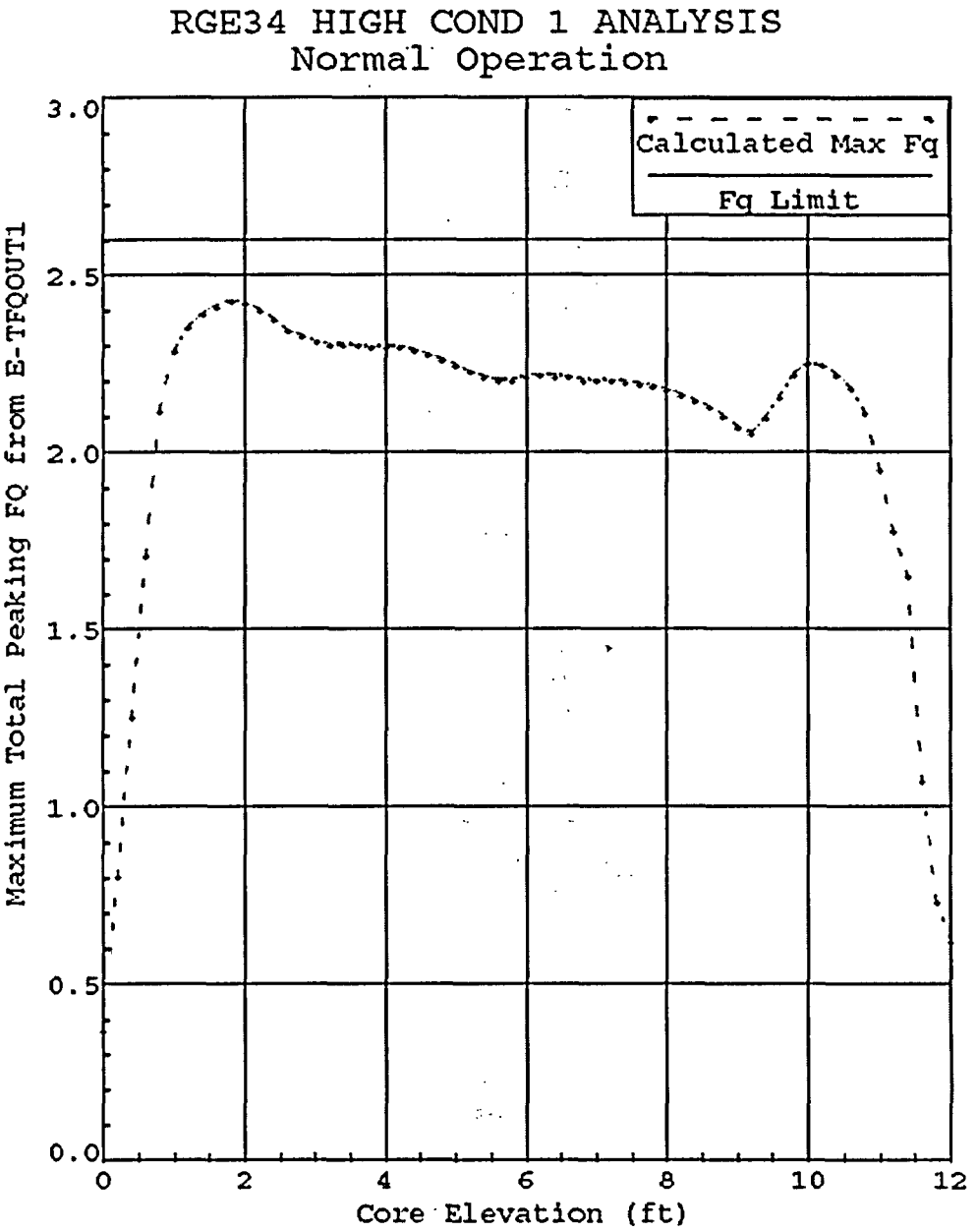
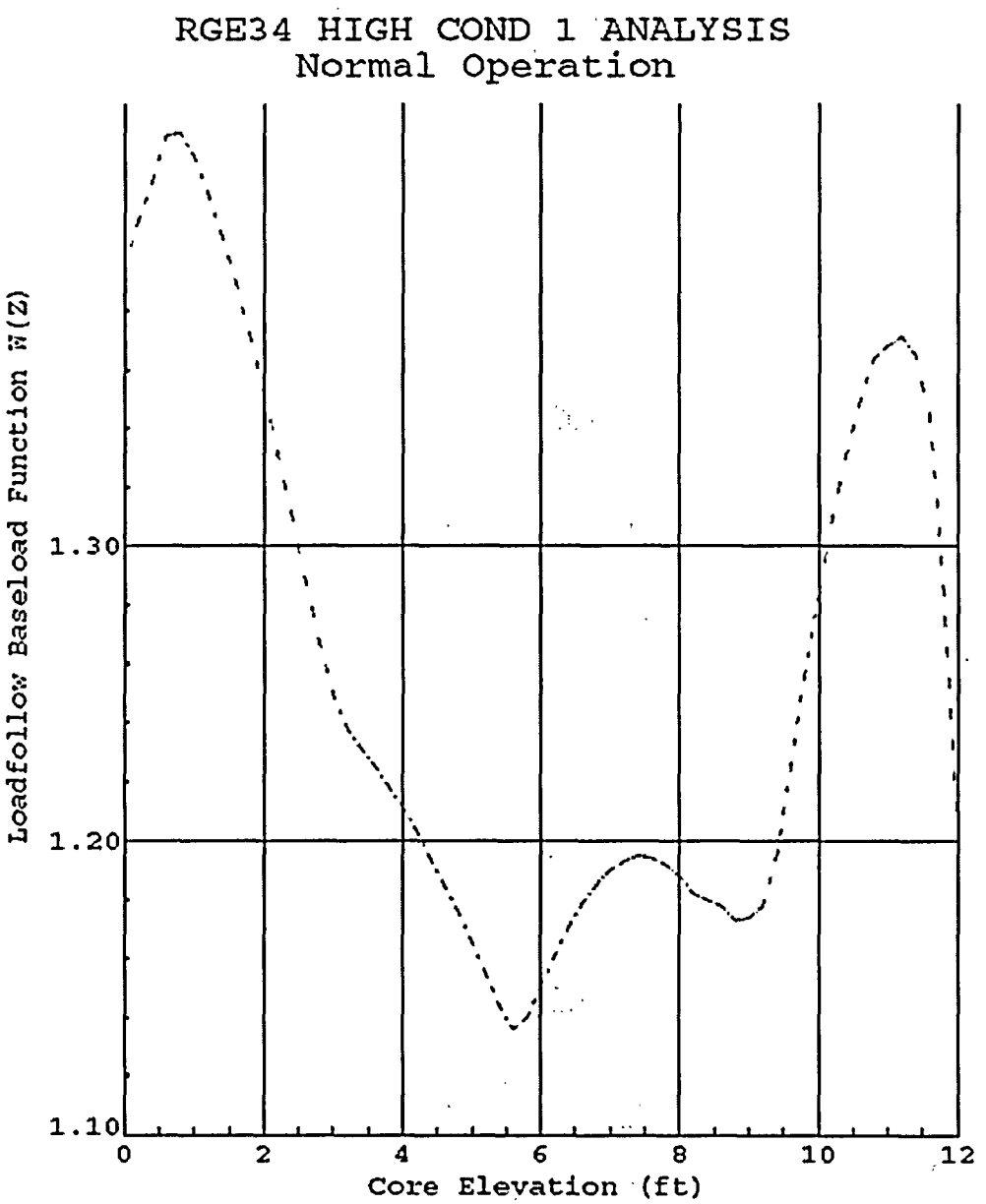


Figure 2 (W(z) Results from Most Limiting Representative LP)



Attachment 2

REGULATORY COMMITMENT	DUE DATE
None	Not applicable.