WOLF CREEK
NUCLEAR OPERATING CORPORATION

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WM 94-0061

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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Subject: Docket No. 50-482: 10 CFR 50.46 Annual Report of ECCS Model Revisions

Gentlemen:

This letter describes revisions to the Emergency Core Cooling System (ECCS) Evaluation Models and the estimated effect on the limiting ECCS analysis for Wolf Creek Generating Station (WCGS) in accordance with the criteria and reporting requirements of 10 CFR 50.46(a)(3)(i) and (ii), as clarified in Section 5.1 of WCAP-13541, "Westinghouse Methodology for Implementation of 10 CFR 50.46 Reporting." The changes in calculated Peak Cladding Temperatures (PCT) due to the revisions of Westinghouse ECCS Evaluation Models are reportable per 10 CFR 50.46 guidelines as follows:

1. For Large Break Loss of Coolant Accident (LOCA), the net PCT benefit due to Evaluation Model revisions is 6 degrees Fahrenheit (°F), for a net PCT of 1955.2°F which remains less than the 10 CFR 50.46 limit of 2200°F.

2. For Small Break LOCA, the net PCT benefit due to Evaluation Model revisions is 29°F, for a net PCT of 1532.6°F which remains less than the 10 CFR 50.46 limit of 2200°F.

Attachment I describes the resolution of ECCS Evaluation Model issues and the impact of the ECCS Evaluation Model changes. Attachment II contains the calculated Large Break LOCA and Small Break LOCA PCT margin allocations resulting from the permanent changes to the Evaluation Models. Since the PCT values determined in the Large Break and Small Break LOCA analysis of record, which combined with all PCT margin allocations, remain well below the 2200°F regulatory limit, no reanalysis will be performed.

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If you have any questions concerning this matter, please call me at (316) 364-8831 extension 4000 or Mr. Kevin J. Moles at extension 4565.

Very truly yours,

Neil S. Carns

Neil S. Carns

NSC/jra

Attachments

cc: L. J. Callan (NRC), w/a
G. A. Pick (NRC), w/a
W. D. Reckley (NRC), w/a
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ATTACHMENT I

CHANGES TO THE WESTINGHOUSE EMERGENCY CORE COOLING SYSTEM EVALUATION MODELS

Annual 10 CFR 50.46 Report on Emergency Core Cooling System Evaluation Models Changes

1.0 INTRODUCTION

The Large Break and Small Break Loss of Coolant Accidents (LOCA) for Wolf Creek Generating Station (WCGS) were reanalyzed in 1992 using the latest acceptable Westinghouse Evaluation Models to support the WCGS Power Rerate Program. The results of the reanalyses were submitted to the NRC as part of the Cycle 7 and power rerate license amendment requests. The NRC has reviewed and approved these licensing submittals [Reference 1 and 2]. Since the reanalyses have been reviewed and approved by the NRC, these analyses effectively replace the previous analysis of record and have become the licensing basis analyses. Using the calculated Peak Cladding Temperatures (PCT) from the reanalyses as the reference point for determining margin to the 10 CFR 50.46(b)(1) PCT requirement, a 30 day report [Reference 3] was submitted in October 1993 for the significant PCT changes associated with the safety injection modeling in the broken loop for the Small Break LOCA analysis.

Wolf Creek Nuclear Operating Corporation (WCNOC) has reviewed the annual 10 CFR 50.46 summary report of Emergency Core Cooling System (ECCS) Evaluation Model changes that were implemented by Westinghouse during 1993. The report includes information concerning changes to and errors discovered in the Evaluation Models as well as evaluations performed to address the identified LOCA-related potential issues. The review concludes that the cumulative effect of changes to, or errors in the Evaluation Models on the limiting transient PCT is not significant. Therefore, reporting of the ECCS Evaluation Model changes can be submitted on an annual basis according to the reporting requirements set forth in 10 CFR 50.46(a)(3)(ii).

Attachment II provides an update of PCT margin rack-up for WCGS. The PCT margin rack-up demonstrates that compliance with the requirements of 10 CFR 50.46 would be maintained considering the combined effects of the ECCS Evaluation Model changes with the plant design changes performed under 10 CFR 50.59.

2.0 EVALUATION MODEL CHANGES

The following sections describe the nature of each change or error and its estimated effect on the calculated PCT for the limiting ECCS analysis.

2.1 Vessel And Steam Generator Calculation Errors In LUCIFER

Background

The LUCIFER code is used to generate the component databases, from raw input data, to be used in the Small Break and Large Break LOCA analyses. Errors were found in the VESCAL subroutine of the LUCIFER code. These errors were in the geometric and mass calculations of the vessel and steam generator portions of the needed data. All LOCA analyses using the LUCIFER code outputs are affected by these error corrections. The errors were corrected in a manner to maintain the consistency of the LUCIFER code.

The errors were determined to be a Non-discretionary Change as described in Section 4.1.2 of WCAP-13451, "Westinghouse Methodology for Implementation of 10 CFR 50.46 Reporting," and were corrected in accordance with Section 4.1.3 of WCAP-13451.

Estimated Effect

For the purposes of tracking PCT, a net PCT effect of -16 degrees Fahrenheit (°F) for a Small Break LOCA and -6°F for a Large Break LOCA based on representative plant calculations have been incorporated into the PCT margin allocations.

2.2 ISHII Drift Flux Errors

Background

An error was discovered both in WCAP-10079-P-A, "NOTRUMP - A Nodal Transient Small Break and General Network Code," and the relevant coding in NOTRUMP SUBROUTINE ISHIIA that led to an incorrect calculation of the drift flux in NOTRUMP when a laminar film annular flow was predicted. The affected equation in WCAP-10079-P-A is Equation G-74 wherein a factor of 'g', the gravitational constant, was inadvertently omitted from both the documentation and the equivalent coding. The correction of this error returned NOTRUMP to consistency with the ultimate reference for the affected correlation.

This was determined to be a Non-discretionary Change as described in Section 4.1.2 of WCAP-13451 and was corrected in accordance with Section 4.1.3 of WCAP-13451.

Estimated Effect

Representative plant analyses were used to estimate a generic PCT effect of 0°F.

2.3 NOTRUMP Point Kinetics Error

Background

An error was discovered in the coding used in the NOTRUMP User External SUBROUTINE VOLHEAT. The coding did not correctly perform the calculation described by Equation 3-12-28 of WCAP-10054-P-A, "Westinghouse Small Break ECCS Evaluation Model Using the NOTRUMP Code." This calculation is only used during the time when the Point Kinetics option is used to determine the core power before reactor trip. Therefore, any analysis that utilized the more conservative assumption of constant core power until reactor trip time is not affected by this error. The correction of this error returned NOTRUMP to consistency with WCAP-10054-P-A.

This was determined to be a Non-discretionary Change as described in Section 4.1.2 of WCAP-13451 and was corrected in accordance with Section 4.1.3 of WCAP-13451.

Estimated Effect

Representative plant analyses were used to estimate a generic PCT effect of 0°F.

2.4 Core Node Initialization Error

Background

An error was discovered in how the properties of Core Node components were initialized for non-existent regions in the adjoining Fluid Node. In particular this led to artificially high core temperatures during the time step when the core mixture level crossed a node boundary, conservatively causing slightly more core mixture level depression than appropriate during this time step. Correction of this error allows for a smoother mixture level uncover transient during node crossings.

This was determined to be a Non-discretionary Change as described in Section 4.1.2 of WCAP-13451 and was corrected in accordance with Section 4.1.3 of WCAP-13451.

Estimated Effect

The nature of this error led to an estimated generic PCT effect of 0°F.

2.5 NOTRUMP HEAT LINK Pointer Error

Background

An error was discovered in how NOTRUMP initialized certain HEAT LINK pointer variables at the start of a calculation. Correction of this error made NOTRUMP consistent with the original intent of this section of coding.

This was determined to be a Non-discretionary Change as described in Section 4.1.2 of WCAP-13451 and was corrected in accordance with Section 4.1.3 of WCAP-13451.

Estimated Effect

Representative plant analyses were used to estimate a generic PCT effect of 0°F.

2.6 Fuel Rod Model Errors In Small Break LOCA

Background

A number of minor programming errors were corrected in the fuel rod heat up code used in the Small Break LOCA analyses. These corrections were related to:

1. Individual rod plenum temperatures
2. Individual rod stack lengths
3. Clad thinning logic
4. Pellet/clad contact logic
5. Corrected gamma redistribution
6. Including ZrO_2 thickness at t=0 initialization
7. Numerics and convergence criteria of initialization.

These changes were determined to be Non-discretionary Changes as described in Section 4.1.2 of WCAP-13451 and were implemented in accordance with Section 4.1.3 of WCAP-13451.

Estimated Effect

The cumulative effect of the error corrections and convergence criteria change was found to be less than approximately ±4°F. This change is therefore judged to have a negligible effect on PCT and on a generic basis the estimated effect will be reported as 0°F.

2.7 Large Break LOCA Fuel Rod Model Errors

Background

Minor errors in the rod heat up code used in the Large Break LOCA analyses were corrected. These errors concerned conditions which exist during periods of pellet/clad contact and the internal bookkeeping logic associated with clad thinning.

..ese changes were determined to be Non-discretionary Changes as described in Section 4.1.2 of WCAP-13451 and were implemented in accordance with Section 4.1.3 of WCAP-13451.

Estimated Effect

Representative plant calculations have indicated that these corrections have a negligible effect on PCT for near Beginning-of-Life (BOL) fuel rod condition (i.e. < 2000 MWD/MTU). These effects become prevalent as burnup increases, but are not expected to be of any significance until pellet/clad contact is predicted for steady-state operating conditions (typically > 8000 MWD/MTU). These corrections therefore result in a negligible PCT impact for Large Break LOCA licensing basis PCT which are calculated with near BOL conditions. This impact is being reported generically as 0°F.

2.8 High Temperature Fuel Rod Burst Model

Background

A model for calculating the prediction of zircaloy cladding burst behavior above the previous limit of 1742°F was implemented. This model was described to the NRC in:

> Letter ET-NRC-92-3746, N. J. Liparulo (W) to R. C. Jones (NRC), "Extension of NUREG-0630 Fuel Rod Burst Strain and Assembly Blockage Models to High Fuel Rod Burst Temperatures," September 16, 1992.

This was determined to be a Non-discretionary Change as described in Section 4.1.2 of WCAP-13451 and was corrected in accordance with Section 4.1.3 of WCAP-13451.

Estimated Effect

The effect of the extended burst model has been determined to be not applicable to the analysis of record for WCGS because rod burst occurs below the limit of 1742°F. This correction therefore results in a PCT effect of 0°F for the limiting Large Break LOCA analysis.

2.9 Hot Assembly Average Rod Burst Effects

Background

The rod heat up code used in Small Break LOCA analyses contains a model to calculate the amount of clad strain that accompanies rod burst. Historically, the methodology used did not apply this burst strain model to the hot assembly average rod. This was done so as to minimize the rod gap and therefore maximize the heat transferred to the fluid channel, which in turn would maximize the hot rod temperature. However, due to mechanisms governing the zircaloy-water temperature excursion (which is the subject of the Small Break LOCA Limiting Time-in-Life penalty for the hot rod), modeling of clad burst strain for the hot assembly average rod can result in a penalty for the hot rod by increasing the channel enthalpy at the time of PCT. Therefore, the methodology has been revised such that burst strain will also be modeled on the hot assembly average rod.

This was determined to be a Non-discretionary Change as described in Section 4.1.2 of WCAP-13451 and was corrected in accordance with Section 4.1.3 of WCAP-13451.

Estimated Effect

Representative plant calculations have indicated that this change introduces an approximate 10 percent increase in the Small Break LOCA Limiting Time-in-Life penalty on the hot rod. However, there is no Small Break LOCA Limiting Time-in-Life penalty assessed for WCGS. Therefore, this change would impose an effect of 0°F to the calculated PCT in the limiting Small Break LOCA analysis.

2.10 Revised Burst Strain Limit Model

Background

A revised burst strain limit model which limits strains is being implemented into the rod heat up codes used in both the Large Break and Small Break LOCA. This model, which is identical to that previously approved for use for Appendix K analyses of Upper Plenum Injection plants with WCOBRA/TRAC, as described in WCAP-10924-P-A, Revision 1, Volume 1, Addendum 4, "Westinghouse Large Break LOCA Best Estimate Methodology: Volume 1: Model Description and Validation, Addendum 4: Model Revisions," 1991.

This has been determined to be a Non-discretionary Change as discussed in Section 4.1.2 of WCAP-13451 and is being implemented in accordance with Section 4.1.3 of WCAP-13451.

Estimated Effect

The estimated effect on the Large Break LOCA PCT ranges from negligible to a moderate unquantified benefit, which will be inherent in calculations once this model is implemented. In the Small Break LOCA, implementation of this change would not affect the calculated PCT because fuel rod burst was calculated not to occur at any time in life fuel conditions.

3.0 RESOLUTION OF POTENTIAL ISSUES

Westinghouse has completed the evaluation of several LOCA-related potential issues. Each of these issues is discussed in the following sections, which include a brief description of the issue, the technical evaluation, and the estimated effect of the change on the calculated PCT.

3.1 Charging/Safety Injection System Issues

Background

Westinghouse has recently completed its evaluation of a potential safety issue regarding four specific issues related to the design and use of the miniflow line for the charging/safety injection pumps. Two of these issues involved Small Break LOCA PCT penalties for certain plants. One issue involves the operation of the centrifugal charging pump (CCP) miniflow line during accident conditions. A CCP runout condition may occur if the CCP injection lines were balanced with the CCP miniflow path closed and credit was taken for operator action to isolate the miniflow line during the accident. Also, the existence of this condition may impact the ECCS flows assumed in plant specific Small Break LOCA analyses. The other issue involves miniflow orifices that are used for the charging/safety injection pumps. Westinghouse has supplied two different orifice types: 60 or 70 gpm orifice at a differential head of 6000 feet. Additional confirmation testing indicates that the orifice plates will allow a higher than design flow rate through the orifice at the design differential head. As a result, a discrepancy may exist between the installed miniflow line capacity and the ECCS analysis assumptions. The discrepancy would occur if the ECCS analysis assumed that the miniflow line resistance was based on the orifice allowing design flow at the design head as opposed to the higher as tested flow and head. Consequently, the miniflow path may permit more flow than previously determined which may reduce safety injection flow during injection.

Technical Evaluation

The concern of this issue is that flow diversion to the mini-flow line during a Small Break LOCA may result in degradation of the available centrifugal charging flow for Reactor Coolant System (RCS) injection and therefore the total pumped safety injection flow to the RCS may be less than that assumed for the LOCA analyses. However, this concern is not applicable to WCGS based on the current design and use of the charging/safety injection miniflow line during a transient event. Under normal operation, the mini-flow isolation valve is open to provide recirculation flow to the CCP. Following receipt of a safety injection signal, the mini-flow isolation valve will remain open if there is not sufficient flow passing through the flow switch in order to maintain adequate minimum flow to the CCP. This recirculation flow is necessary at high RCS pressure in order to prevent damage to the CCP under low flow conditions. The mini-flow isolation valve also receives an auto-closure signal to automatically isolate the recirculation line when sufficient flow has been sensed by the flow switch.

It should be noted that the charging/safety injection flowrates used in the Small Break LOCA analyses were conservatively generated based on the configurations in which the CCP mini-flow isolation valves remain continuously open during the entire transient. This was done for added conservatism in simulating the ECCS performance during accident conditions and also for a possible design change that would convert the automatic safety grade miniflow control system to a continuously open miniflow valve.

Estimated Effect

The PCT effect on the Small Break LOCA Evaluation Model for this issue varied depending on the affected plant ECCS configuration and capability. An assessment of this issue concluded that the concerns regarding the design and use of the charging/safety injection miniflow line are not applicable to WCGS and would not involve Small Break LOCA PCT penalties at this time, based on the current ECCS configuration and capability.

3.2 Double-Disk Gate Valve Pressure Equalization

Background

Westinghouse completed the evaluation of a potential issue concerning the use of double-disk gate valves in the ECCS as hot leg isolation valves. Use of these double-disk gate valves may involve an inner disc pressure equalization line that could set up a leak path into the hot leg during cold leg injection following a LOCA. This condition could lead to inadequate cold leg injection resulting in an increase in PCT.

The design characteristic of a double-disk gate valve provides isolation by the downstream disk sealing against the valve seat. The mechanical seating force and the hydraulic force from the upstream pressure (safety injection pump) act to provide force to the valve seal surfaces. The double-disk gate valve design results in a volume of fluid which is enclosed between the discs when the valve is closed. As the fluid volume heats up, pressure greater than system pressure may develop and may cause the disks to bind against the seats to the extent that the valves cannot be opened. To avoid this, many double-disk gate valves have been modified to include a pressure equalization line or a small hole in one of the disks to relieve the pressure between the disks. Based on generic leakage calculations it was determined that the double-disk gate valves modified to eliminate concerns for thermal binding could leak as much as 30 gallons per minute per valve. This leakage into the RCS hot legs will increase steam binding during reflood and result in an increase in the calculated PCT.

Estimated Effect

This issue would only affect plants that have modified the configuration of the double-disc gate valves that could be susceptible to pressure locking. A review of the current ECCS configuration indicates that the configuration of the double disc gate valves installed in the ECCS does not involve a pressure equalization device, e.g., a bypass line installed or a relief hole drilled in one of the discs. Therefore, the concern is not applicable to WCGS at this time and a Large Break LOCA PCT penalty does not need to be assessed.

3.3 Large Break LOCA Rod Internal Pressure Issues

Issue Description

Westinghouse recently completed an evaluation of a potential issue concerning the impact of increased beginning of life rod internal pressure uncertainties on LOCA analyses. Historically, beginning of life fuel pressure and temperature uncertainties, were based upon end of life considerations. These rod internal pressure uncertainties were found to be potentially nonconservative. During the evaluation of this issue, a second issue related to the applicability of the generic Integral Fuel Burnable Absorber (IFBA) fuel analyses to the updated ECCS Evaluation Models was also identified and combined with this issue since the underlying mechanisms were the same.

Technical Evaluation

This issue concerns the potential that a lower rod internal pressure for reload fuel than that assumed in the analyses may result in a Large Break LOCA PCT penalty. The initial fuel rod internal pressure is important to the LOCA analyses since it affects several Appendix K requirements, including accounting for the effects of fuel rod swelling and rupture and any flow blockage during reflood. The Large Break LOCA analysis is sensitive to this parameter, with higher pressures generally being more limiting if the nominal design fuel rod pressurization is greater than 275 pounds per square inch-gauge (psig).

The technical evaluation of this issue concluded that both the rod internal pressure uncertainty and the current IFBA designs with 200 psig initial fill pressure fuel will typically result in a maximum ±15°F PCT variation. Consequently, rod internal pressure manufacturing uncertainties and 200 psig initial fill pressure IFBA fuel do not have significant effects on the Large Break LOCA analyses. Also, based on these results, it was concluded that only nominal rod internal pressure (with an upper bound bias) should be used in the LOCA analyses for fuel designs with an initial cold fill pressure ≥ 200 psig. This is consistent with past LOCA analyses.

Estimated Effect

Based on the current fuel rod design that utilizes an initial backfill pressure of 275 psig and the core configuration that uses no IFBA fuels, there is no plant specific PCT change associated with this issue for WCGS at this time. However, any new reloads which would utilize low (<200 psig) initial fill pressure fuel would be specifically analyzed or evaluated.

3.4 Small Break LOCA Limiting Time In Life - Zircaloy/Water Oxidation Temperature Excursion

Issue Description

Westinghouse recently completed an evaluation of a potential issue with regard to burst/blockage modeling in the Westinghouse Small Break LOCA Evaluation Model. This potential issue involved a number of synergistic effects, all related to the manner in which the Small Break LOCA model accounts for the swelling and burst of fuel rods, modeling of the rod burst strain, and resulting effects on clad temperature and oxidation from the metal/water reaction models and channel blockage.

Technical Evaluation

The limiting Small Break LOCA is typically assumed to occur at beginning of life fuel rod conditions where temperatures are the highest. The highest clad temperature would be expected to occur at a time when the fuel is most active. However, during the life of the fuel, the rod internal pressure increases greatly while the temperature decreases only slightly. It is postulated that the fuel rod could burst during a transient as a result of the increased rod internal pressure. Fuel rod burst during the course of a Small Break LOCA analysis was found to potentially result in a significant temperature excursion above the clad temperature transient for a non-burst case. Since the methodology for Small Break LOCA analyses had been to perform the analyses at a near beginning of life condition, where rod internal pressure is relatively low, most analyses did not result in the occurrence of rod burst, and therefore may not have reflected the most limiting time in life PCT. For WCGS, this concern has been incorporated into the current analysis of record for the Small Break LOCA. Because rod burst is most sensitive to rod internal pressure, a plant specific calculation was performed under the highest fuel rod pressures which occur at the fuel end of life conditions (i.e. 60,000 MWD/MTU) to determine whether or not fuel rod burst would occur. The results of this calculation indicated that fuel rod burst would not occur at the very high rod internal pressures. Because fuel rod burst was not calculated to occur when the fuel would undergo the most severe rod internal pressure excursion, fuel rod burst would not be calculated to occur at any other time in life fuel conditions.

Estimated Effect

Because fuel rod burst would not be calculated to occur at any time in life fuel conditions, the beginning of life fuel conditions are limiting for WCGS and therefore no Time-in-Life penalty on the hot rod needs to be assessed at this time for the limiting Small Break LOCA.

4.0 REFERENCES

1. Wolf Creek Generating Station - Amendment No. 61 to Facility Operating License No. NPF-42, dated March 30, 1993.

2. Wolf Creek Generating Station - Amendment No. 69 to Facility Operating License No. NPF-42, dated November 10, 1993.

3. Letter ET 93-0121 dated October 26, 1993, from F. T. Rhodes, WCNOC, to USNRC.

ATTACHMENT II

ECCS EVALUATION MODEL
PCT MARGIN ASSESSMENTS

*** Large Break LOCA PCT Margin Rack-Up Summary ***

A. ANALYSIS OF RECORD[1]

Evaluation Model:	1981 Evaluation Model with BASH
Peaking Factor:	FQT=2.50, F_{DH}=1.65
SG Tube Plugging:	10 percent
Power Level/Fuel:	3565MW_t/17x17 V5H w/IFM, non-IFBA
Limiting transient:	C_D=0.4, Min. Safeguards, Reduced Tavg

Peak Cladding Temperature (PCT):	1916°F
B. PRIOR PERMANENT ECCS MODEL ASSESSMENTS	DPCT = -25°F
C. 10 CFR 50.59 EVALUATION	
1. RCS Loose Parts	DPCT = +20.2°F
D. 1993 10 CFR 50.46 MODEL ASSESSMENTS (Permanent Assessment of PCT Margin)	
1. LUCIFER Error Corrections	DPCT = -6°F
E. TEMPORARY USE OF PCT MARGIN	DPCT = 0°F
F. OTHER MARGIN ALLOCATIONS	
1. Transition Core (STD/V5H)	DPCT = +50°F[3]
2. Cold Leg Streaming Temperature Gradient	DPCT = 0°F[4]
NET PCT Result	**1955.2°F**

Notes:

1. Based on the reanalyses that was performed to support the WCGS Power Rerate Program. The results of the reanalyses have been reviewed and approved by the NRC.

2. The Power Shape Sensitivity Methodology (PSSM) is used to assure that cycle-specific power distribution will not lead to results more limiting than those of the analysis of record. Therefore, there is no PCT effect assessed for this issue.

3. Transition core penalty applies on a cycle-specific basis for reloads utilizing both V5H (with IFMs) and STD fuel until a full core of V5H is achieved.

4. A PCT benefit of $< 25°F$ was assessed. For the purposes of tracking PCT, a benefit of 0°F has been assigned to this change.

*** Small Break LOCA PCT Margin Rack-Up Summary ***

A. ANALYSIS OF RECORD[1]

Evaluation Model:	1985 EM with NOTRUMP
Peaking Factor:	FQT=2.50, F_{DH}=1.65
SG Tube Plugging:	10 percent
Power Level/Fuel:	3565MW_t/17x17 V5H w/IFM
Limiting transient:	3-inch Break

Peak Cladding Temperature (PCT):		1510°F
B. PRIOR PERMANENT ECCS MODEL ASSESSMENTS	DPCT =	0°F
C. 10 CFR 50.59 EVALUATION		
1. RCS Loose Parts	DPCT =	+44.6°F
D. 1993 10 CFR 50.46 MODEL ASSESSMENTS (Permanent Assessment of PCT Margin)		
1. Effect of SI in Broken Loop	DPCT =	+150°F
2. Effect of Improved Condensation Model	DPCT =	-150°F
3. Drift Flux Flow Regime Errors	DPCT =	-13°F
4. LUCIFER Error Corrections	DPCT =	-16°F
E. TEMPORARY USE OF PCT MARGIN	DPCT =	0°F
F. OTHER MARGIN ALLOCATIONS		
2. Cold Leg Streaming Temperature Gradient	DPCT =	+7°F
NET PCT Result		**1532.6°F**

Notes:

1. Based on the reanalyses that was performed to support the WCGS Power Rerate Program. The results of the reanalyses have been reviewed and approved by the NRC.