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 50-316 Donald C. Cook Nuclear Power Plant, Unit 2, Indiana M. 05000316  
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 RECIP. NAME RECIPIENT AFFILIATION  
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SUBJECT: Provides annual rept of LOCA evaluation model changes.  
 Attachment 1 provided to NRC by Westinghouse, describing LOCA  
 model changes, permanently implemented.

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March 22, 1996

AEP:NRC:1118K

Docket Nos.: 50-315  
                  • 50-316

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D. C. 20555

Gentlemen:

Donald C. Cook Nuclear Plant Units 1 and 2  
ANNUAL REPORT OF LOCA EVALUATION MODEL CHANGES

Pursuant to the requirements of 10 CFR 50.46(a)(3)(ii), this letter provides our annual submittal of LOCA model changes.

Attachment 1, which was provided to us by Westinghouse Electric Corporation (Westinghouse), describes LOCA model changes which have been permanently implemented and provides a discussion in general terms of the impact of these changes on calculated peak clad temperatures (PCT's).

Attachment 2 contains the PCT's calculated specifically for Donald C. Cook Nuclear Plant Units 1 and 2. In all cases, the calculated PCT's remain within the 10 CFR 50.46 limit of 2200°F. In accordance with the guidance in WCAP-13451, "Westinghouse Methodology for Implementation of 10CFR50.46 Reporting," evaluations of plant changes performed under 10CFR50.59 are not reported under 10CFR50.46, unless an offsetting change to the Evaluation Model was made to provide sufficient margin to accommodate the proposed change.

As in previous submissions, an analysis of record for the high head safety injection (HHSI) crossties open, Unit 1 SBLOCA analysis has been included. The new analysis is now complete and is reported as the "crossties open" analysis of record in this submittal. Only the limiting, "crossties closed" cases have been submitted for NRC review and approval. We do not intend to operate Unit 1 at the conditions assumed in the HHSI "crossties open" analysis (i.e. 3588 MWt). Operation with the crossties open is conservative compared to the approved "crossties closed" case at 3250 MWt. Therefore, the "crossties open" case for Unit 1 is not considered to be limiting and has not been submitted for NRC review and approval. However, for consistency, a new analysis that was performed by Westinghouse in conjunction with the effort to support an increased tolerance on the main steam safety valve setpoint has been

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included. This new analysis uses the COSI model and the same conservatively low auxiliary feedwater flow used in the "crossties closed" case.

Attachment 3 contains LOCA PCT's calculated for both Unit 1 and Unit 2 based on analyses that have not yet been approved by the NRC. This data is provided for information and does not reflect the current license basis for Cook Nuclear Plant. Currently, both LBLOCA and SBLOCA reanalyses are being reviewed by NRC staff in conjunction with evaluations and analyses to support an increase in allowable steam generator tube plugging (SGTP) for Unit 1. This work was submitted to the staff in May 1995 with our letter identified as AEP:NRC:1207. A specific letter explaining the effect of the revised power shape on the increased SGTP LOCA analyses was submitted with our letter identified as AEP:NRC:1207A.

New LBLOCA and SBLOCA analyses of record for Unit 2 will be included as part of a planned uprating effort. The submission of the results of these new Unit 2 analyses is planned for 1996, by letter that will be identified as AEP:NRC:1223.

Sincerely,

  
for E. E. Fitzpatrick  
Vice President

eh

Attachments

cc: A. A. Blind  
G. Charnoff  
J. Miller  
NFEM Section Chief  
NRC Resident Inspector - Bridgman  
J. R. Padgett



ATTACHMENT 1 TO AEP:NRC:1118K  
WESTINGHOUSE ELECTRIC CORPORATION  
DESCRIPTION OF LOCA MODEL CHANGES

**SKEWED POWER SHAPES / ESHAPE / PSSM WITHDRAWAL**Affected Evaluation Models

1981 Westinghouse Large Break LOCA Evaluation Model Using BASH

1981 Westinghouse Large Break LOCA Evaluation Model Using BART

Background

Starting in 1991, Westinghouse began using the PSSM (Power Shape Sensitivity Model, WCAP-12909-P) as a methodology for addressing skewed axial core power shapes in LBLOCA analyses. In 1995, Westinghouse elected to withdraw the PSSM methodology and implement an updated version of previously approved methodology which incorporated explicit analysis of skewed power shapes (WCAP-10266-P-A, Addendum 1, Revision 2-P-A). This withdrawal was formally requested of the NRC in letter NTD-NRC-95-4518, effective October 30, 1995. The new process is designated ESHAPE (Explicit Shape Analysis for PCT Effects).

Estimated Effect

Evaluations were performed for all affected plants and the results reported to the affected utilities in 1995. In some cases, credit for a Hot Leg Nozzle Gap 'compensatory benefit' improvement to the BASH Large Break LOCA Evaluation Model (WCAP-14404) was required to continue to meet the 10 CFR 50.46 limit of 2200°F. For the affected plants, revised LBLOCA Margin Utilization Summary Tables were transmitted along with sufficient information for reporting.



**NOTRUMP SPECIFIC ENTHALPY ERROR**Affected Evaluation Model

1985 Westinghouse Small Break LOCA Evaluation Model Using NOTRUMP

Background

A typographical error was found in a line of coding in the NOTRUMP code. This line of coding was intended to model the calculation found in Equation L-127 of WCAP-10079-P-A. Although the equation in the topical report is correct, the coding represented the last term as a partial derivative with respect to the fluid node mixture region total energy instead of the mixture region total mass. This correction is a Non-Discretionary Change in accordance with Section 4.1.2 of WCAP-13451.

Estimated Effect

Representative plant calculations have led to an estimated effect of +20°F for this error correction.





1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

**SALIBRARY DOUBLE PRECISION ERRORS**Affected Evaluation Models

1981 Westinghouse Large Break LOCA Evaluation Model Using BASH  
1985 Westinghouse Small Break LOCA Evaluation Model Using NOTRUMP

Background

During migration of the LOCA codes from the CRAY computer to UNIX-based platforms, programming errors were made in two library routines related to improper specification of double precision variables. These errors were found and fixed during later code maintenance.

Estimated Effect

Test cases with individual codes in the models demonstrated very small differences in only the SATAN and NOTRUMP code results, with correspondingly minor effects on final peak clad temperature predictions. Because the error only affects a very limited number of LBLOCA analyses which were performed on the UNIX platform prior to correcting the codes, the evaluation of effects for LBLOCA analyses were assessed on a plant-specific basis. For SBLOCA analyses performed on the UNIX platform, representative plant calculations resulted in an estimated generic effect of -15°F for affected analyses.

ATTACHMENT 2 TO AEP:NRC:1118K

WESTINGHOUSE ELECTRIC CORPORATION

DETERMINATION OF EFFECT OF LOCA MODEL CHANGES ON

COOK NUCLEAR PLANT LOCA ANALYSES

## LARGE BREAK LOCA

PLANT NAME: Donald C. Cook Unit 1

|   |
|---|
| Comments: Evaluation Model: <u>BASH</u> , FQT- <u>2.15</u> , FdH- <u>1.55</u> , SGTP- <u>15%</u> ,<br>Other: RHR Cross Tie Valve Closed, 3250 MWt Reactor Power |
|---|

|    |   |                                      |
|----|---|--------------------------------------|
| A. | ANALYSIS OF RECORD                          | PCT- <u>2162</u> °F                  |
| B. | PRIOR LOCA MODEL ASSESSMENTS - 1989         | $\Delta$ PCT- <u>+</u> <u>0</u> °F   |
| C. | PRIOR LOCA MODEL ASSESSMENT - 1990          | $\Delta$ PCT- <u>+</u> <u>0</u> °F   |
| D. | PRIOR LOCA MODEL ASSESSMENTS - 1991         | $\Delta$ PCT- <u>+</u> <u>20</u> °F  |
| E. | PRIOR LOCA MODEL ASSESSMENTS - 1992         | $\Delta$ PCT- <u>-117</u> °F         |
| F. | PRIOR LOCA MODEL ASSESSMENTS - 1993         | $\Delta$ PCT- <u>-6</u> °F           |
| G. | PRIOR LOCA MODEL ASSESSMENTS - 1994         | $\Delta$ PCT- <u>0</u> °F            |
| H. | 1995 10CFR50.46 MODEL ASSESSMENTS           |                                      |
|    | 1. Skewed Power Shape Penalty               | $\Delta$ PCT- <u>+</u> <u>253</u> °F |
|    | 2. Hot Leg Nozzle Gap Benefit               | $\Delta$ PCT- <u>-237</u> °F         |
| I. | LICENSING BASIS PCT + PERMANENT ASSESSMENTS | PCT- <u>2075</u> °F                  |

## LARGE BREAK LOCA

PLANT NAME: DONALD C. COOK UNIT 1

|   |
|---|
| Comments: Evaluation Model: <u>BASH</u> , FQT= <u>2.15</u> , FdH= <u>1.55</u> , SGTP= <u>15%</u> ,<br>Other: RHR Cross Tie Valve Open, 3413 MWt Reactor Power |
|---|

|    |   |       |                 |
|----|---|-------|-----------------|
| A. | ANALYSIS OF RECORD  | PCT=  | <u>2181</u> °F  |
| B. | PRIOR LOCA MODEL ASSESSMENTS - 1989                           | ΔPCT= | + <u>0</u> °F   |
| C. | PRIOR LOCA MODEL ASSESSMENTS - 1990                           | ΔPCT= | + <u>0</u> °F   |
| D. | PRIOR LOCA MODEL ASSESSMENTS - 1991                           | ΔPCT= | + <u>30</u> °F  |
| E. | PRIOR LOCA MODEL ASSESSMENTS - 1992                           | ΔPCT= | <u>-25</u> °F   |
| F. | PRIOR LOCA MODEL ASSESSMENTS - 1993                           | ΔPCT= | <u>-6</u> °F    |
| G. | PRIOR LOCA MODEL ASSESSMENTS - 1994                           | ΔPCT= | <u>0</u> °F     |
| H. | 1995 10CFR50.46 MODEL ASSESSMENTS                             |       |                 |
|    | 1. Skewed Power Shape Penalty                                 | ΔPCT= | + <u>253</u> °F |
|    | 2. Hot Leg Nozzle Gap Benefit                                 | ΔPCT= | <u>-237</u> °F  |
| I. | OTHER MARGIN ALLOCATIONS (Use of PCT Margin):                 |       |                 |
|    | 1. ANALYSIS MARGINS USED: Power Margin                        | ΔPCT= | <u>-94</u> °F   |
| J. | LICENSING BASIS PCT + PERMANENT ASSESSMENTS<br>& POWER MARGIN | PCT=  | <u>2102</u> °F  |

JUSTIFICATION FOR USE OF POWER MARGIN  
IN DONALD C. COOK NUCLEAR PLANT UNIT 1 LARGE BREAK PCT RACK UP

The analysis peak clad temperature (PCT) for Donald C. Cook Nuclear Plant Unit 1 at 3413 MW<sub>t</sub> with the RHR cross tie valve open is 2181°F. When the 1991 LOCA model assessment of 30°F was added, the resulting PCT exceeded 2200°F. The following calculation shows that power margin exists for Cook Nuclear Plant Unit 1 since the core is currently licensed at 3250 MW<sub>t</sub> versus the analysis power level of 3413 MW<sub>t</sub>.

A sensitivity to power was previously determined for the Donald C. Cook Nuclear Plant Unit 2 large break analysis. It was conservatively demonstrated that a reduction of 20°F<sub>PCT</sub>/ % power could be applied for reduced power. This sensitivity is conservative since it only accounts for the assumed power reduction in the LOCBART run. A similar reduction in the assumed power for the SATAN run produces an added benefit to PCT during the blowdown portion of the transient. A reduction in power in the blowdown portion of the transient (i.e., SATAN) would be an added benefit which was not accounted for in this sensitivity. Since both Cook Nuclear Plant unit 1 and unit 2 are four loop ice condenser plants, this sensitivity will be applied to the reduction in power from the unit 1 analysis power of 3413 MW<sub>t</sub> to the licensed operating condition of 3250 MW<sub>t</sub> (a 4.7% reduction in power):

$$(20^{\circ}\text{F}_{\text{PCT}}/\% \text{ Power}) (4.7\% \text{ Power}) = 94^{\circ}\text{F}$$

When this 94°F margin is applied to the Unit 1, 3413 MW<sub>t</sub> analysis with RHR cross tie valves open, the 10 CFR 50.46 PCT limit is not exceeded.



## SMALL BREAK LOCA

PLANT NAME: DONALD C. COOK NUCLEAR PLANT UNIT 1

|  |
|--|
| Comments: Evaluation Model: NOTRUMP, FQ-2.32, FΔH-1.55, SGTP-15% |
| Other: HHSI Cross Tie Valve Closed, 3250 MWt Reactor Power       |

- |    |  |       |                     |
|----|--|-------|---------------------|
| A. | ANALYSIS OF RECORD                           | PCT=  | 1951°F              |
| B. | PRIOR LOCA MODEL ASSESSMENTS - 1992          | ΔPCT= | + 3°F <sup>1</sup>  |
| C. | PRIOR LOCA MODEL ASSESSMENTS - March 1994    | ΔPCT= | -16°F               |
| D. | PRIOR LOCA MODEL ASSESSMENTS - December 1994 | ΔPCT= | -223°F              |
| E. | 1995 10CFR50.46 MODEL ASSESSMENTS            |       |                     |
|    | 1. NOTRUMP Specific Enthalpy Error           | ΔPCT= | + 20°F              |
|    | 2. SALIBRARY Double Precision Errors         | ΔPCT= | -15°F               |
| F. | Burst and Blockage/Time in Life              | ΔPCT= | + 15°F <sup>2</sup> |
| G. | LICENSING BASIS PCT + PERMANENT ASSESSMENTS  | PCT=  | 1735°F              |

1. The 1992 assessment for 15x15 hydraulic test results was not included in the new analysis of record. However, the drift flux flow regime error was incorporated.
2. It should be noted that the burst and blockage assessment is subject to change as other model assessments are made because the magnitude of the burst and blockage assessments depends on the PCT without burst and blockage.





## SMALL BREAK LOCA

PLANT NAME: DONALD C. COOK NUCLEAR PLANT UNIT 1

|   |
|---|
| Comments: Evaluation Model: <u>NOTRUMP</u> , FQ- <u>2.32</u> , FΔH- <u>1.55</u> , SGTP- <u>15%</u><br>Other: HHSI Cross Tie Valve <u>Open</u> , <u>3588</u> MWt Reactor Power |
|---|

- |    |  |                      |
|----|--|----------------------|
| A. | ANALYSIS OF RECORD                           | PCT=- <u>1047</u> °F |
| B. | PRIOR LOCA MODEL ASSESSMENTS - December 1994 | ΔPCT= + <u>20</u> °F |
| C. | 1995 10CFR50.46 MODEL ASSESSMENTS            |                      |
|    | 1. NOTRUMP Specific Enthalpy Error           | ΔPCT= + <u>20</u> °F |
|    | 2. SALIBRARY Double Precision Errors         | ΔPCT= <u>-15</u> °F  |
| D. | LICENSING BASIS PCT + PERMANENT ASSESSMENTS  | PCT=- <u>1072</u> °F |

1. All prior permanent LOCA model assessments were resolved by the new analysis except for the 20°F penalty for Containment Spray During Small Break LOCA.

## LARGE BREAK LOCA

PLANT NAME: DONALD C. COOK NUCLEAR PLANT UNIT 2

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|---|
| Comments: Evaluation Model: <u>BASH</u> , FQT- <u>2.335</u> , FdH- <u>1.644</u> , SGTP- <u>15%</u> ,<br>Other: RHR Cross Tie Valve Closed, 3413 MWt Reactor Power |
|---|

|    |   |  |
|----|---|--|
| A. | ANALYSIS OF RECORD  | PCT= <u>2090</u> °F                                  |
| B. | PRIOR LOCA MODEL ASSESSMENTS - 1989<br>(Analysis of record was completed in<br>January 1990. No prior LOCA Model<br>assessments were made.) | ΔPCT= <u>+</u> <u>NA</u> °F                          |
| C. | PRIOR LOCA MODEL ASSESSMENTS - 1990   | ΔPCT= <u>+</u> <u>0</u> °F                           |
| D. | PRIOR LOCA MODEL ASSESSMENTS - 1991   | ΔPCT= <u>+</u> <u>30</u> °F                          |
| E. | PRIOR LOCA MODEL ASSESSMENTS - 1992   | ΔPCT= <u>-25</u> °F                                  |
| F. | PRIOR LOCA MODEL ASSESSMENTS - 1993   | ΔPCT= <u>-6</u> °F                                   |
| G. | PRIOR LOCA MODEL ASSESSMENTS - 1994   | ΔPCT= <u>0</u> °F                                    |
| H. | 1995 10CFR50.46 MODEL ASSESSMENTS<br>1. Skewed Power Shape Penalty<br>2. Hot Leg Nozzle Gap Benefit   | ΔPCT= <u>+</u> <u>253</u> °F<br>ΔPCT= <u>-237</u> °F |
| I. | LICENSING BASIS PCT + PERMANENT ASSESSMENTS   | PCT= <u>2105</u> °F                                  |



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## LARGE BREAK LOCA

PLANT NAME:. DONALD C. COOK NUCLEAR PLANT UNIT 2

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|---|
| Comments: Evaluation Model: <u>BASH</u> , FQT- <u>2.22</u> , FdH- <u>1.62</u> , SGTP- <u>15%</u> ,<br>Other: RHR Cross Tie Valve Open, 3588 MWt Reactor Power |
|---|

|    |   |  |
|----|---|--|
| A. | ANALYSIS OF RECORD  | PCT= <u>2140</u> °F                                  |
| B. | PRIOR LOCA MODEL ASSESSMENTS - 1989<br>(Analysis of record was completed in<br>January 1990. No prior LOCA model<br>assessments were made.) | ΔPCT= <u>+</u> <u>NA</u> °F                          |
| C. | PRIOR LOCA MODEL ASSESSMENTS - 1990   | ΔPCT= <u>+</u> <u>0</u> °F                           |
| D. | PRIOR LOCA MODEL ASSESSMENTS - 1991   | ΔPCT= <u>+</u> <u>30</u> °F                          |
| E. | PRIOR LOCA MODEL ASSESSMENTS - 1992   | ΔPCT= <u>-25</u> °F                                  |
| F. | PRIOR LOCA MODEL ASSESSMENTS - 1993   | ΔPCT= <u>-6</u> °F                                   |
| G. | PRIOR LOCA MODEL ASSESSMENTS - 1994   | ΔPCT= <u>0</u> °F                                    |
| H. | 1995 10CFR50.46 MODEL ASSESSMENTS<br>1. Skewed Power Shape Penalty<br>2. Hot Leg Nozzle Gap Benefit   | ΔPCT= <u>+</u> <u>253</u> °F<br>ΔPCT= <u>-237</u> °F |
| I. | OTHER MARGIN ALLOCATIONS<br><br>1. Power Margin   | ΔPCT= <u>-98</u> °F <sup>1</sup>                     |
| J. | LICENSING BASIS PCT + PERMANENT ASSESSMENTS   | PCT= <u>2057</u> °F                                  |

1. This value was obtained by temporarily allocating 4.9% of power margin using a sensitivity of 20°F/% power. See the Unit 1 justification for the use of power margin in the Donald C. Cook Nuclear Plant Unit 1 Large Break PCT Rack up on page 3 of this attachment.

## . SMALL BREAK LOCA

PLANT NAME: DONALD G. COOK NUCLEAR PLANT UNIT 2

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|--|
| Comments: Evaluation Model: <u>NOTRUMP</u> , FQ= <u>2.45</u> , FΔH= <u>1.666</u> , SGTP= <u>15%</u><br>Other: HHSI Cross Tie Valve <u>Closed</u> , <u>3250</u> MWt Reactor Power |
|--|

|    |   |   |
|----|---|---|
| A. | ANALYSIS OF RECORD  | PCT= <u>1956</u> °F                     |
| B. | PRIOR LOCA MODEL ASSESSMENTS - October 1993                             | ΔPCT= <u>-13</u> °F                     |
| C. | PRIOR LOCA MODEL ASSESSMENTS - March 1994                               | ΔPCT= <u>-16</u> °F                     |
| D. | PRIOR LOCA MODEL ASSESSMENTS - December 1994                            | ΔPCT= <u>+</u> <u>69</u> °F             |
| E. | 1995 10CFR50.46 MODEL ASSESSMENTS<br>1. NOTRUMP Specific Enthalpy Error | ΔPCT= <u>+</u> <u>20</u> °F             |
| E  | Burst and Blockage/Time in Life   | ΔPCT= <u>+</u> <u>0</u> °F <sup>1</sup> |
| E. | LICENSING BASIS PCT + PERMANENT ASSESSMENTS                             | PCT= <u>2016</u> °F                     |

1. It should be noted that the burst and blockage assessment is subject to change as other model assessments are made because the magnitude of the burst and blockage assessments depends on the PCT without burst and blockage.

## SMALL BREAK LOCA

PLANT NAME: DONALD C. COOK NUCLEAR PLANT UNIT 2

|  |
|--|
| Comments: Evaluation Model: <u>NOTRUMP</u> , FQ= <u>2.44</u> , FAH= <u>1.644</u> , SGTP= <u>15%</u><br>Other: HHSI Cross Tie Valve <u>Closed</u> , <u>3413</u> MWt Reactor Power |
|--|

|    |   |  |
|----|---|--|
| A. | ANALYSIS OF RECORD  | PCT= <u>1947</u> °F                      |
| B. | PRIOR LOCA MODEL ASSESSMENTS - October 1993                               | ΔPCT= <u>-13</u> °F                      |
| C. | PRIOR LOCA MODEL ASSESSMENTS - March 1994                                 | ΔPCT= <u>-16</u> °F                      |
| D. | PRIOR LOCA MODEL ASSESSMENTS - December 1994                              | ΔPCT= <u>-33</u> °F                      |
| E. | 1995 10CFR50.46 MODEL ASSESSMENTS .<br>1. NOTRUMP Specific Enthalpy Error | ΔPCT= <u>+</u> <u>20</u> °F              |
| F. | Burst and Blockage/Time in Life   | ΔPCT= <u>+</u> <u>74</u> °F <sup>1</sup> |
| G. | LICENSING BASIS PCT + PERMANENT ASSESSMENTS                               | PCT= <u>1979</u> °F                      |

1. It should be noted that the burst and blockage assessment is subject to change as other model assessments are made because the magnitude of the burst and blockage assessments depends on the PCT without burst and blockage.





## SMALL BREAK LOCA

PLANT NAME: DONALD C. COOK NUCLEAR PLANT UNIT 2

|   |
|---|
| Comments: Evaluation Model: <u>NOTRUMP</u> , FQ- <u>2.32</u> , FΔH- <u>1.62</u> , SGTP- <u>15%</u> ,<br>Other: HHSI Cross Tie Valve <u>Open</u> , <u>3588</u> MWt Reactor Power |
|---|

|    |   |                             |
|----|---|-----------------------------|
| A. | ANALYSIS OF RECORD  | PCT= <u>1531</u> °F         |
| B. | PRIOR LOCA MODEL ASSESSMENTS - October 1993                             | ΔPCT= <u>-13</u> °F         |
| C. | PRIOR LOCA MODEL ASSESSMENTS - March 1994                               | ΔPCT= <u>-16</u> °F         |
| D. | PRIOR LOCA MODEL ASSESSMENTS - December 1994                            | ΔPCT= <u>+</u> <u>35</u> °F |
| E. | 1995 10CFR50.46 MODEL ASSESSMENTS<br>1. NOTRUMP Specific Enthalpy Error | ΔPCT= <u>+</u> <u>20</u> °F |
| F. | LICENSING BASIS PCT + PERMANENT ASSESSMENTS                             | PCT= <u>1557</u> °F         |

ATTACHMENT 3 TO AEP:NRC:1118K

WESTINGHOUSE ELECTRIC CORPORATION

DETERMINATION OF EFFECT OF LOCA MODEL CHANGES ON

UNAPPROVED COOK NUCLEAR PLANT LOCA ANALYSES

## LARGE BREAK LOCA

PLANT NAME: DONALD C. COOK NUCLEAR PLANT UNIT 1

|   |
|---|
| Comments: Evaluation Model: <u>BASH</u> , FQT- <u>2.15</u> , FdH- <u>1.55</u> , SGTP- <u>30%</u> ,<br>Other: RHR Cross Tie Valve Closed, 3250 MWt Reactor Power |
|---|

- |    |   |   |
|----|---|---|
| A. | <u>SUBMITTED</u> ANALYSIS OF RECORD         | PCT- <u>2164</u> °F                             |
| B. | PRIOR LOCA MODEL ASSESSMENTS                | $\Delta$ PCT- <u>+</u> <u>0</u> °F <sup>1</sup> |
| C. | 1995 10CFR50.46 MODEL ASSESSMENTS           |   |
|    | 1. SALIBRARY Double Precision Errors        | $\Delta$ PCT- <u>-5</u> °F                      |
| D. | LICENSING BASIS PCT + PERMANENT ASSESSMENTS | PCT- <u>2159</u> °F                             |

1. All prior permanent LOCA model assessments were resolved by the new analysis.

## SMALL BREAK LOCA

PLANT NAME: DONALD C. COOK NUCLEAR PLANT UNIT 1

|   |
|---|
| Comments: Evaluation Model: <u>NOTRUMP</u> , FQ- <u>2.32</u> , FAH- <u>1.55</u> , SGTP- <u>30%</u> ,<br>Other: <u>HHSI Cross Tie Valve Closed</u> , <u>3250</u> MWt Reactor Power |
|---|

|    |   |                             |
|----|---|-----------------------------|
| A. | ANALYSIS OF RECORD                          | PCT- <u>1443</u> °F         |
| B. | PRIOR LOCA MODEL ASSESSMENTS                | ΔPCT- <u>0</u> °F           |
| C. | 1995 10CFR50.46 MODEL ASSESSMENTS           |                             |
|    | 1. NOTRUMP Specific Enthalpy Error          | ΔPCT- <u>+</u> <u>20</u> °F |
|    | 2. SALIBRARY Double Precision Errors        | ΔPCT- <u>-15</u> °F         |
| D. | LICENSING BASIS PCT + PERMANENT ASSESSMENTS | PCT- <u>1448</u> °F         |

1. All prior permanent LOCA model assessments were resolved by the new analysis.



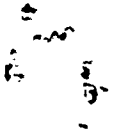
LARGE BREAK LOCA

PLANT NAME: DONALD C. COOK NUCLEAR PLANT UNIT 2

|  |
|--|
| Comments: Evaluation Model: <u>BASH</u> , FQT- <u>2.335</u> , FdH- <u>1.644</u> , SGTP- <u>15%</u> ,<br>Other: RHR Cross Tie Valve <u>Closed</u> , <u>3588</u> MWt Reactor Power |
|--|

- |    |   |   |
|----|---|---|
| A. | <u>NOT YET SUBMITTED</u> ANALYSIS OF RECORD | PCT- <u>2051</u> °F                             |
| B. | PRIOR LOCA MODEL ASSESSMENTS                | $\Delta$ PCT- <u>+</u> <u>0</u> °F <sup>1</sup> |
| C. | LICENSING BASIS PCT + PERMANENT ASSESSMENTS | PCT- <u>2051</u> °F                             |

1. All prior permanent LOCA model assessments were resolved by the new analysis.



## SMALL BREAK LOCA

PLANT NAME: DONALD C. COOK NUCLEAR PLANT UNIT 2

|   |
|---|
| Comments: Evaluation Model: <u>NOTRUMP</u> , FQ- <u>2.32</u> , FΔH- <u>1.62</u> , SGTP- <u>15%</u> ,<br>Other: HHSI Cross Tie Valve <u>Closed</u> , <u>3588</u> MWt Reactor Power |
|---|

- |    |   |                             |
|----|---|-----------------------------|
| A. | <u>NOT YET SUBMITTED</u> ANALYSIS OF RECORD | PCT- <u>2065</u> °F         |
| B. | PRIOR LOCA MODEL ASSESSMENTS                | ΔPCT- <u>0</u> °F           |
| C. | 1995 10CFR50.46 MODEL ASSESSMENTS           |                             |
|    | 1. NOTRUMP Specific Enthalpy Error          | ΔPCT- <u>+</u> <u>20</u> °F |
|    | 2. SALIBRARY Double Precision Errors        | ΔPCT- <u>-15</u> °F         |
| D. | LICENSING BASIS PCT + PERMANENT ASSESSMENTS | PCT- <u>2070</u> °F         |

1. All prior permanent LOCA model assessments were resolved by the new analysis.



