

ATTACHMENT 1

10CFR50.46

MARGIN UTILIZATION

BYRON AND BRAIDWOOD STATION

UNITS 1 and 2

DRR:kab
ZKAB:27:2

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BYRON 1
LARGE BREAK LOCA
10CF..50.46 MARGIN UTILIZATION

PLANT NAME: BYRON STATION UNIT 1
UTILITY NAME: COMMONWEALTH EDISON

- A. ANALYSIS OF RECORD PCT= 1883.07°F
(Comments: Calc-Note No. SEC-SAII-3157-C0
Evaluation Model: BASH, FQT=2.50, FdH=1.65,
SGTP = 15 %, Other: _____)
- B. PRIOR LOCA MODEL ASSESSMENTS - 1989 ΔPCT= + 0°F
(Permanent Assessment of PCT Margin - Letter #: CAE-90-314)
- C. PRIOR LOCA MODEL ASSESSMENTS - 1990 ΔPCT= + 0°F
(Permanent Assessment of PCT Margin - Letter #: CAE-91-135)
- D. CURRENT LOCA MODEL ASSESSMENTS - 06/1991
(Permanent Assessment of PCT Margin)
- | | |
|---------------------------------------------|-----------------------|
| 1. FUEL ROD INITIAL CONDITION INCONSISTENCY | ΔPCT= + <u>10</u> °F |
| 2. LB-LOCA BURST & BLOCKAGE ASSUMPTION | ΔPCT= + <u>0</u> °F |
| 3. SG TUBE SEISMIC/LOCA ASSUMPTION | ΔPCT= + <u>7.2</u> °F |
- E. 10CFR50.59 SAFETY EVALUATIONS - (Permanent Assessment of PCT Margin)
- | | |
|------------------------------------------------------|---------------------|
| 1. Letter: <u>NOTE 1</u> Issue: <u>PRIOR TO 1990</u> | ΔPCT= + <u>1</u> °F |
| 2. Letter: _____ Issue: _____ | ΔPCT= _____°F |
- F. OTHER MARGIN ALLOCATIONS (Temporary Use of PCT Margin):
- | | |
|----------------------------------------------------------------|-----------------------|
| 1. ANALYSIS MARGINS USED: <u>VANTAGE 5 TRANSITION (NOTE 2)</u> | ΔPCT= + <u>50</u> °F |
| 2. PLANT MARGINS USED: <u>N/A</u> | ΔPCT= _____°F |
| 3. FUEL MARGINS USED: <u>LB-LOCA POWER DIST. (NOTE 3)</u> | ΔPCT= + <u>100</u> °F |
- LICENSING BASIS PCT + MARGIN ALLOCATION ΔPCT= 2051.3°F

Notes:

1. This penalty resulted from an evaluation of the containment mini-purge valve as discussed in UFSAR Sect. 6.2.1.5.
2. The transition core penalty for 17x17 Vantage 5 fuel is addressed in WCAP 10444-P-A.
3. A temporary PCT penalty of 100°F was applied beginning in August 1990 to bound the potential PCT impact associated with the adequacy of the assumed power shape (chopped cosine) for the LBLOCA initial condition.

BYRON 2/BRAIDWOOD 2
LARGE BREAK LOCA
10CFR50.46 MARGIN UTILIZATION

PLANT NAME: BYRON STATION UNIT 2/BRAIDWOOD STATION UNIT 2
UTILITY NAME: COMMONWEALTH EDISON

- A. ANALYSIS OF RECORD PCT= 1883.07°F
(Comments: Calc-Note No. SEC-SAII-3157-C0
Evaluation Model: BASH, FQT=2.50, FdH=1.65,
SGTP = 15 %, Other: _____)
- B. PRIOR LOCA MODEL ASSESSMENTS - 1989 Δ PCT= + _____ °F
(Permanent Assessment of PCT Margin - Letter #: CAE-90-314/CCE-90-309)
- C. PRIOR LOCA MODEL ASSESSMENTS - 1990 Δ PCT= + _____ °F
(Permanent Assessment of PCT Margin - Letter #: CAE-91-135/CCE-91-136)
- D. CURRENT LOCA MODEL ASSESSMENTS - 06/1991
(Permanent Assessment of PCT Margin)
- | | |
|---------------------------------------------|--------------------------|
| 1. FUEL ROD INITIAL CONDITION INCONSISTENCY | Δ PCT= + _____ °F |
| 2. LB-LOCA BURST & BLOCKAGE ASSUMPTION | Δ PCT= + _____ °F |
| 3. SG TUBE SEISMIC/LOCA ASSUMPTION | Δ PCT= + _____ °F |
- E. 10CFR50.59 SAFETY EVALUATIONS - (Permanent Assessment of PCT Margin)
- | | |
|------------------------------------------------------|--------------------------|
| 1. Letter: <u>NOTE 1</u> Issue: <u>PRIOR TO 1990</u> | Δ PCT= + _____ °F |
| 2. Letter: _____ Issue: _____ | Δ PCT= _____ °F |
- F. OTHER MARGIN ALLOCATIONS (Temporary Use of PCT Margin):
- | | |
|----------------------------------------------------------------|--------------------------|
| 1. ANALYSIS MARGINS USED: <u>VANTAGE 5 TRANSITION (NOTE 2)</u> | Δ PCT= + _____ °F |
| 2. PLANT MARGINS USED: <u>N/A</u> | Δ PCT= _____ °F |
| 3. FUEL MARGINS USED: <u>LB-LOCA POWER DISTR. (NOTE 3)</u> | Δ PCT= + _____ °F |
- LICENSING BASIS PCT + MARGIN ALLOCATION Δ PCT= 2064.1°F

Notes:

1. This penalty resulted from an evaluation of the containment mini-purge valve as discussed in UFSAR Sect. 6.2.1.5.
2. The transition core penalty for 17x17 Vantage 5 fuel is addressed in WCAP 10444-P-A.
3. A temporary PCT penalty of 100°F was applied beginning in August 1990 to bound the potential PCT impact associated with the adequacy of the assumed power shape (chopped cosine) for the LBLOCA initial condition.

BYRON 1,2/BRAIDWOOD 2
 SMALL BREAK LOCA
 10CFR50.46 MARGIN UTILIZATION

PLANT NAME: BYRON STATION UNITS 1 & 2/BRAIDWOOD STATION UNIT 2
 UTILITY NAME: COMMONWEALTH EDISON

- A. ANALYSIS OF RECORD PCT= 1453.1°F
 (Comments: Calc-Note No. SEC-SAII-3173-C0
 Evaluation Model: NOTRUMP, FQT=2.50, FdH=1.65,
SGTP = 15 %, Other: _____)
- B. PRIOR LOCA MODEL ASSESSMENTS - 1989 ΔPCT= + 0°F
 (Permanent Assessment of PCT Margin - Letter #: CAE-90-314/CCE-90-309)
- C. PRIOR LOCA MODEL ASSESSMENTS - 1990 ΔPCT= + 0°F
 (Permanent Assessment of PCT Margin - Letter #: CAE-91-135/CCE-91-136)
- D. CURRENT LOCA MODEL ASSESSMENTS - 06/1991
 (Permanent Assessment of PCT Margin)
- | | |
|---------------------------------------------|----------------------|
| 1. FUEL ROD INITIAL CONDITION INCONSISTENCY | ΔPCT= + <u>37</u> °F |
| 2. NOTRUMP SOLUTION CONVERGENCE RELIABILITY | ΔPCT= + <u>0</u> °F |
| 3. SB-LOCA ROD INTERNAL PRESSURE ASSUMPTION | ΔPCT= + <u>0</u> °F |
- E. 10CFR50.59 SAFETY EVALUATIONS - (Permanent Assessment of PCT Margin)
- | | | |
|------------------|--------------|---------------|
| 1. Letter: _____ | Issue: _____ | ΔPCT= _____°F |
| 2. Letter: _____ | Issue: _____ | ΔPCT= _____°F |
- F. OTHER MARGIN ALLOCATIONS (Temporary Use of PCT Margin):
- | | |
|---------------------------------------------------|----------------------|
| 1. ANALYSIS MARGINS USED: <u>N/A</u> | ΔPCT= _____°F |
| 2. PLANT MARGINS USED: <u>HHSI SURV. (NOTE 1)</u> | ΔPCT= + <u>20</u> °F |
| 3. FUEL MARGINS USED: <u>N/A</u> | ΔPCT= _____°F |
- LICENSING BASIS PCT + MARGIN ALLOCATION ΔPCT= 1510.1°F

Notes:

1. A temporary PCT penalty of no more than 20°F was assessed by Westinghouse (SECL-90-015) in support of a potential change to the charging pump surveillance acceptance limit. This proposed change is still under review and has not yet been submitted for NRC approval. The SBLOCA penalty would result from a slight reduction in delivered SI under spilling line conditions between 1400 psia and 1000 psia RCS pressure.

BRAIDWOOD 1
SMALL BREAK LOCA
10CFR50.46 MARGIN UTILIZATION

PLANT NAME: BRAIDWOOD STATION UNIT 1
UTILITY NAME: COMMONWEALTH EDISON

- A. ANALYSIS OF RECORD PCT= 1453.1°F
(Comments: Calc-Note No. SEC-SAII-3173-CO
Evaluation Model: NOTRUMP, FQT=2.50, FdH=1.65,
SGTP = 15 %, Other: _____)
- B. PRIOR LOCA MODEL ASSESSMENTS - 1989 ΔPCT= + 0°F
(Permanent Assessment of PCT Margin - Letter #: CCE-90-309)
- C. PRIOR LOCA MODEL ASSESSMENTS - 1990 ΔPCT= + 0°F
(Permanent Assessment of PCT Margin - Letter #: CCE-91-136)
- D. CURRENT LOCA MODEL ASSESSMENTS - 06/1991
(Permanent Assessment of PCT Margin)
- | | |
|---------------------------------------------|----------------------|
| 1. FUEL ROD INITIAL CONDITION INCONSISTENCY | ΔPCT= + <u>37</u> °F |
| 2. NOTRUMP SOLUTION CONVERGENCE RELIABILITY | ΔPCT= + <u>0</u> °F |
| 3. SB-LOCA ROD INTERNAL PRESSURE ASSUMPTION | ΔPCT= + <u>0</u> °F |
- E. 10CFR50.59 SAFETY EVALUATIONS - (Permanent Assessment of PCT Margin)
- | | |
|-----------------------------------------------------------------|----------------------|
| 1. Letter: <u>SECL-91-188D</u> Issue: <u>MISSING GRID PIECE</u> | ΔPCT= + <u>17</u> °F |
| 2. Letter: _____ Issue: _____ | ΔPCT= _____°F |
- F. OTHER MARGIN ALLOCATIONS (Temporary Use of PCT Margin):
- | | |
|---------------------------------------------------|----------------------|
| 1. ANALYSIS MARGINS USED: <u>N/A</u> | ΔPCT= _____°F |
| 2. PLANT MARGINS USED: <u>HHSI SURV. (NOTE 1)</u> | ΔPCT= + <u>20</u> °F |
| 3. FUEL MARGINS USED: <u>N/A</u> | ΔPCT= _____°F |
- LICENSING BASIS PCT + MARGIN ALLOCATION ΔPCT= 1527.1°F

Notes:

1. A temporary PCT penalty of no more than 20°F was assessed by Westinghouse (SECL-90-015) in support of a potential change to the charging pump surveillance acceptance limit. This proposed change is still under review and has not yet been submitted for NRC approval. The SBLOCA penalty would result from a slight reduction in delivered SI under spilling line conditions between 1400 psia and 1000 psia RCS pressure.