Commonwealth Edison Company
LaSalle Generating Station
2601 North 21st Road
Marseilles, IL 61341-9757
Tel 815-357-6761

ComEd

March 10, 2000

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

LaSalle County Station, Units 1 and 2
Facility Operating License Nos. NPF-11 and NPF-18
NRC Docket Nos. 50-373 and 50-374

Subject: Response to Request for Additional Information License Amendment Request for Power Uprate Operation

References: (1) Letter from R. M. Krich, Commonwealth Edison (ComEd) Company, to U.S. NRC, "Request for License Amendment for Power Uprate Operation," dated July 14, 1999.

(2) Letter from D. M. Skay, U.S. NRC, to Commonwealth Edison (ComEd) Company, "Request for Additional Information – LaSalle County Station, Units 1 and 2 (TAC Nos. MA6070 and MA6071)," dated February 15, 2000.

In the Reference 1 letter, pursuant to 10 CFR 50.90, "Application for Amendment of License or Construction Permit," we proposed to operate both LaSalle County Station Units at an "uprate" power level of 3489 Megawatts Thermal (MWT). In the Reference 2 letter, the NRC requested additional information concerning the proposed amendment request to support their review. The attachment to this letter provides our response to the request for additional information.

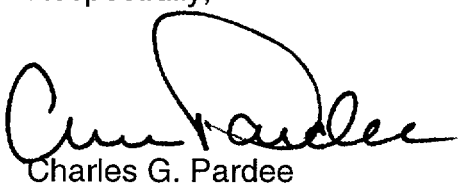
This response provides answers to NRC questions 2 through 4. The response to NRC question 1 is delayed due to calculations that are not complete at this time. The response to NRC question 1 will be submitted by March 31, 2000, which is about 45 days from the date of the reference 2 letter.

The no significant hazards consideration, submitted in Reference 1, remains valid for the information attached.

A001

Should you have any questions concerning this letter, please contact Mr. Frank A. Spangenberg, III, Regulatory Assurance Manager, at (815) 357-6761, extension 2383.

Respectfully,



Charles G. Pardee
Site Vice President
LaSalle County Station

Attachment

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – LaSalle County Station

STATE OF ILLINOIS)

IN THE MATTER OF)

COMMONWEALTH EDISON COMPANY)

LASALLE COUNTY STATION - UNIT 1 & UNIT 2) Docket Nos. 50-373
50-374

Subject: Response to Request for Additional Information License Amendment Request for Power Uprate Operation

AFFIDAVIT

I affirm that the content of this transmittal is true and correct to the best of my knowledge, information and belief.

Charles G. Pardee
Site Vice President
LaSalle County Station

Subscribed and sworn to before me, a Notary Public in and for the State above named, this 10th day of March, 2000.
My Commission expires on 8-12-2000, _____.

OFFICIAL SEAL
LYNN E. OLSON
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 8-12-2000

Lynn E. Olson
Notary Public

Attachment
Response to Request for Additional Information

The following questions refer to Attachment E of your submittal dated July 14, 1999, GE Report NEDC-32701P, "Power Uprate Safety Analysis Report for LaSalle County Station, Units 1 and 2."

Question 2:

Section 4.1.1.1 for Steam Bypass Case states that an analysis was performed to bound 102 percent of uprated power to ensure that there is sufficient time for corrective operator action. Please quantify the available time for corrective operator action.

Response 2:

The Updated Final Safety Analysis Report (UFSAR) Section 6.2.1.1.5, "Suppression Pool Bypass Effects," analysis assumes that the plant operator is alerted to the steam bypass leakage only when the wetwell airspace pressure reaches 30 psig. The analysis also assumes that the corrective action taken by the operator to terminate the transient is not effective before a 15-minute time delay.

The UFSAR event was re-analyzed at a bounding power level for the limiting event of a 0.4 ft^2 intermediate steam line break with the maximum allowable bypass leakage path, $A/\sqrt{k}$, of 0.03 ft^2. The re-analysis shows that the wetwell pressure reaches 30 psig at approximately 18 minutes and the drywell pressure reaches 45 psig at about 77 minutes at the bounding power uprate condition. Thus, the operator has 59 minutes to effectively take corrective action to terminate the transient, which is more than the 15 minutes postulated in the UFSAR, Section 6.2.1.1.5, "Suppression Pool Bypass Effects." Also, at the end of the postulated 15-minute time delay, the drywell pressure is only about 37 psig, which is well below the design limit of 45 psig.

Based on the above evaluation, it is concluded that power uprate does not have a significant impact on suppression pool steam bypass.

Question 3:

Section 4.1.1.3 for Short-Term Pressure Response states that the peak calculated drywell-to-wetwell pressure difference is less than or equal to design value using M3CPT code which is overly conservative and that a new analysis is being performed to account for air space compressibility to recapture margin with respect to the design value. Please provide a description of the new analysis and the factors which make M3CPT overly conservative.

Response 3:

The drywell-to-wetwell pressure difference during the Design Basis Accident - Loss of Coolant Accident (DBA-LOCA) was evaluated using the GE M3CPT and PICSM computer codes. The PICSM code uses the GE Pool Swell Analytical Model (PSAM) of Reference 1, which was accepted by the NRC in NUREG-0487 and NUREG-0808 (References 2 and 3).

The drywell-to-wetwell pressure difference was obtained directly from the M3CPT code, Version 05V (M3CPT05V), output for times prior to vent clearing and for times after completion of the pool swell transient. However, during the pool swell transient period to the time of bubble breakthrough, the drywell-to-wetwell pressure difference calculation used the wetwell pressures calculated with the GE PICSM code, Version 01V (PICSM01V). The results of the PICSM01V code were also used to determine the drywell-to-wetwell pressure difference during the transition period immediately following pool swell bubble breakthrough. The transition period is defined as the time during which the effects of wetwell compression dissipate. The PICSM model includes the effects of wetwell airspace compression effect during pool swell. The PICSM01V code was used to calculate the wetwell pressure during pool swell, because the wetwell pressure, which is provided in the M3CPT05V output and used by M3CPT05V to calculate the drywell-to-wetwell pressure, does not include the effects of pool swell induced wetwell compression. (The M3CPT05V drywell pressure response does include the effects of wetwell pressurization due to wetwell compression during pool swell.) Therefore, M3CPT05V overpredicts the drywell-to-wetwell pressure difference during pool swell. A maximum calculated drywell-to-wetwell pressure difference of 21.1 psid was calculated for the pool swell period, prior to bubble breakthrough.

Following bubble breakthrough, a transition period occurs during which the effects of wetwell compression dissipate. This causes the wetwell pressure to drop and the drywell-to-wetwell pressure difference to increase. The transition period ends at approximately 0.4 seconds after bubble breakthrough, (or approximately two seconds following the LOCA) when the effects of wetwell compression are fully dissipated. The maximum drywell-to-wetwell pressure difference occurs at the end of this transition period. The peak drywell-to-wetwell pressure difference of 22.4 psid that occurs at this time is obtained using PICSM01V and M3CPT05V codes. After this time, the drywell-to-wetwell pressure difference begins to fall as the wetwell pressurizes due to the transfer of drywell non-condensable gas to the wetwell.

The peak drywell-to-wetwell pressure difference of 22.4 psid, which was determined for the limiting condition with power uprate, is less than the design limit of 25 psid.

Response 3 References:

1. NEDE-21544P, "Mark II Pressure Suppression Containment Systems: An Analytical Model of the Pool Swell Phenomenon," December 1976.

2. NUREG-0487, "Mark II Containment Lead Plant Program Load Evaluation and Acceptance Criteria," October 1978.

3. NUREG-0808, " Mark II Containment Program Load Evaluation and Acceptance Criteria," August 1981.

Question 4:

Please provide the Containment Maximum Pressure and Temperature analyses curves at uprated power.

Response 4:

Please refer to the attached Figures 4-1 through 4-6, for the power uprate (and re-analyzed current rated power), drywell pressures and temperatures responses for the DBA-LOCA (a double-ended break of a recirculation suction line).

Regarding the maximum containment temperature, the drywell design temperature of 340 °F documented in UFSAR Section 6.2.1.1.3.1.4, "Small Size Breaks," is based on the combination of primary system pressure and containment pressure that produces the maximum possible superheat temperature. The calculation assumes a reactor leak consisting of saturated steam only, with isenthalpic expansion to the maximum drywell pressure limit. Because saturated steam has a higher enthalpy than saturated liquid, and because steam with the maximum enthalpy is assumed (at approximately 460 psia), this drywell design temperature limit bounds all analyses within the drywell pressure limit, regardless of the initial dome pressure or initial reactor power.

A small reactor leak consisting of steam only imposes the most severe temperature conditions on the drywell structures and safety related equipment in the drywell. For large steam line breaks, the superheat temperature is nearly the same as for small breaks, but the duration of the high temperature condition is shorter due to the rapid depressurization of the reactor. However, because the drywell design pressure limit is not exceeded in any of these cases, the resulting drywell temperatures are bounded by the drywell design temperature limit.

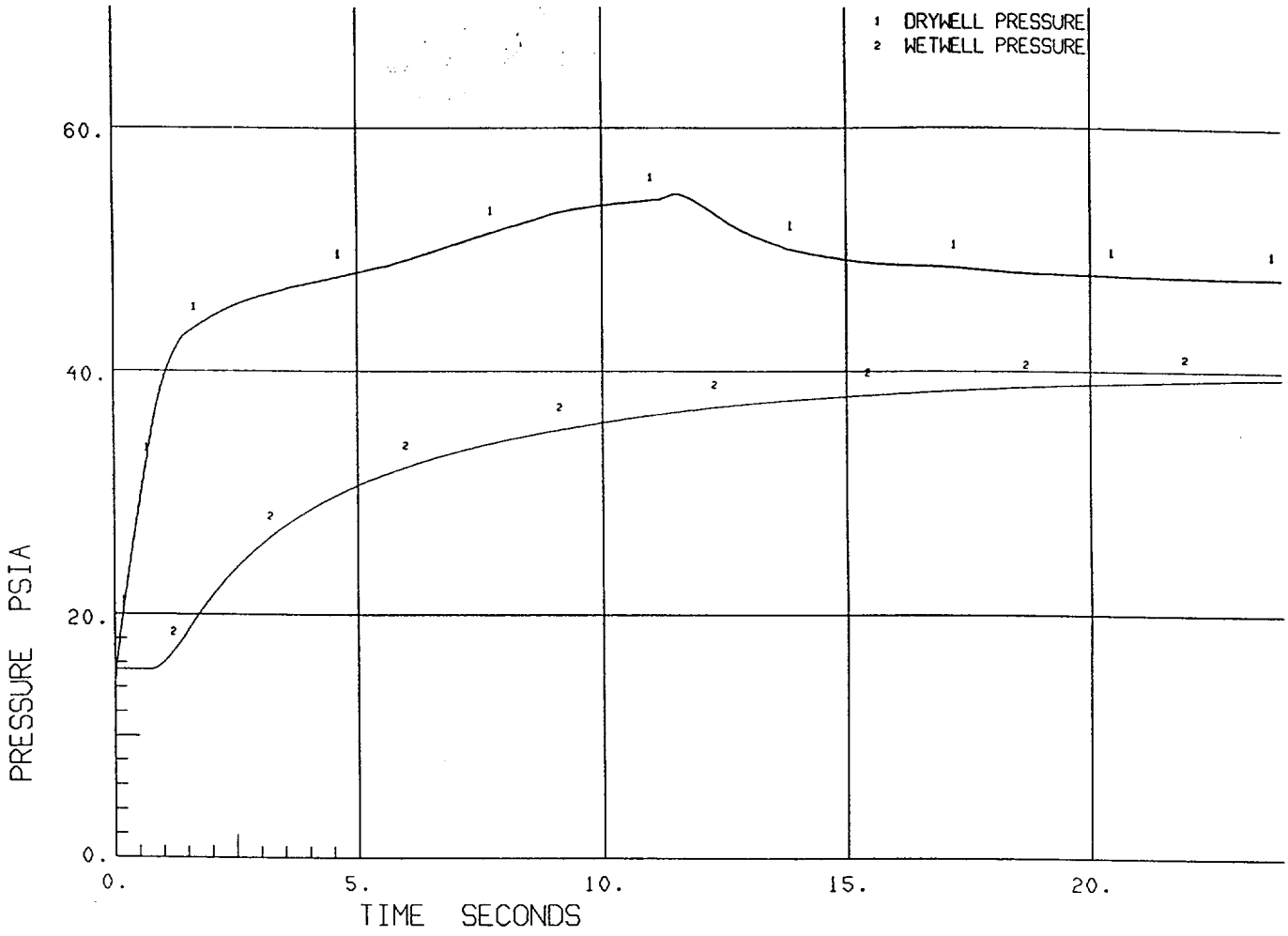


Figure 4-1: Short-Term Drywell and Wetwell Pressure Response to DBA-LOCA For Power Uprate Conditions (102% of 105% Rated Thermal Power)

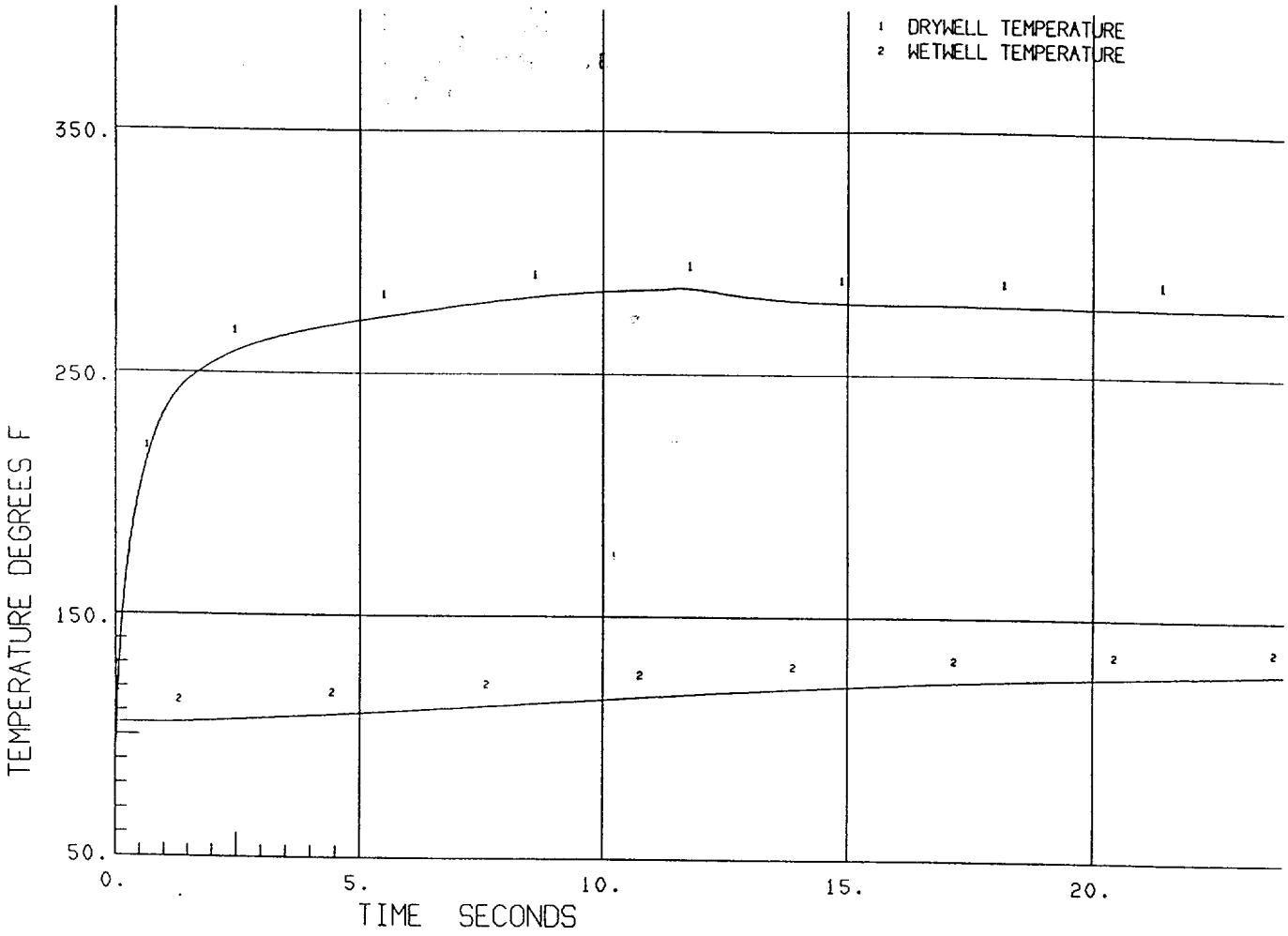


Figure 4-2: Short-Term Drywell and Wetwell Temperature Response to DBA-LOCA For Power Uprate Conditions (102% of 105% Rated Thermal Power)

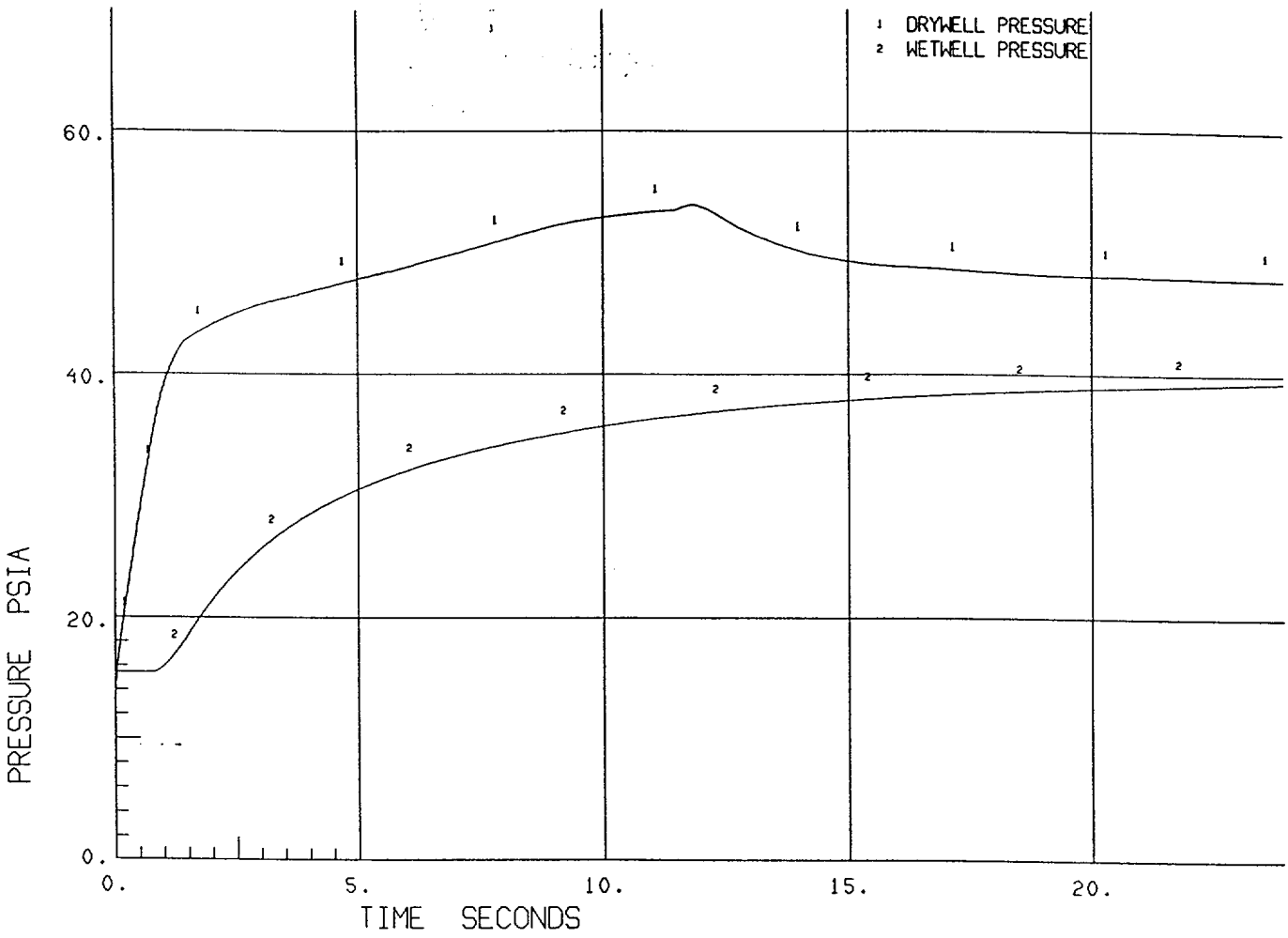


Figure 4-3: Short-Term Drywell and Wetwell Pressure Response to DBA-LOCA For Rated Power Conditions (102% Rated Thermal Power)

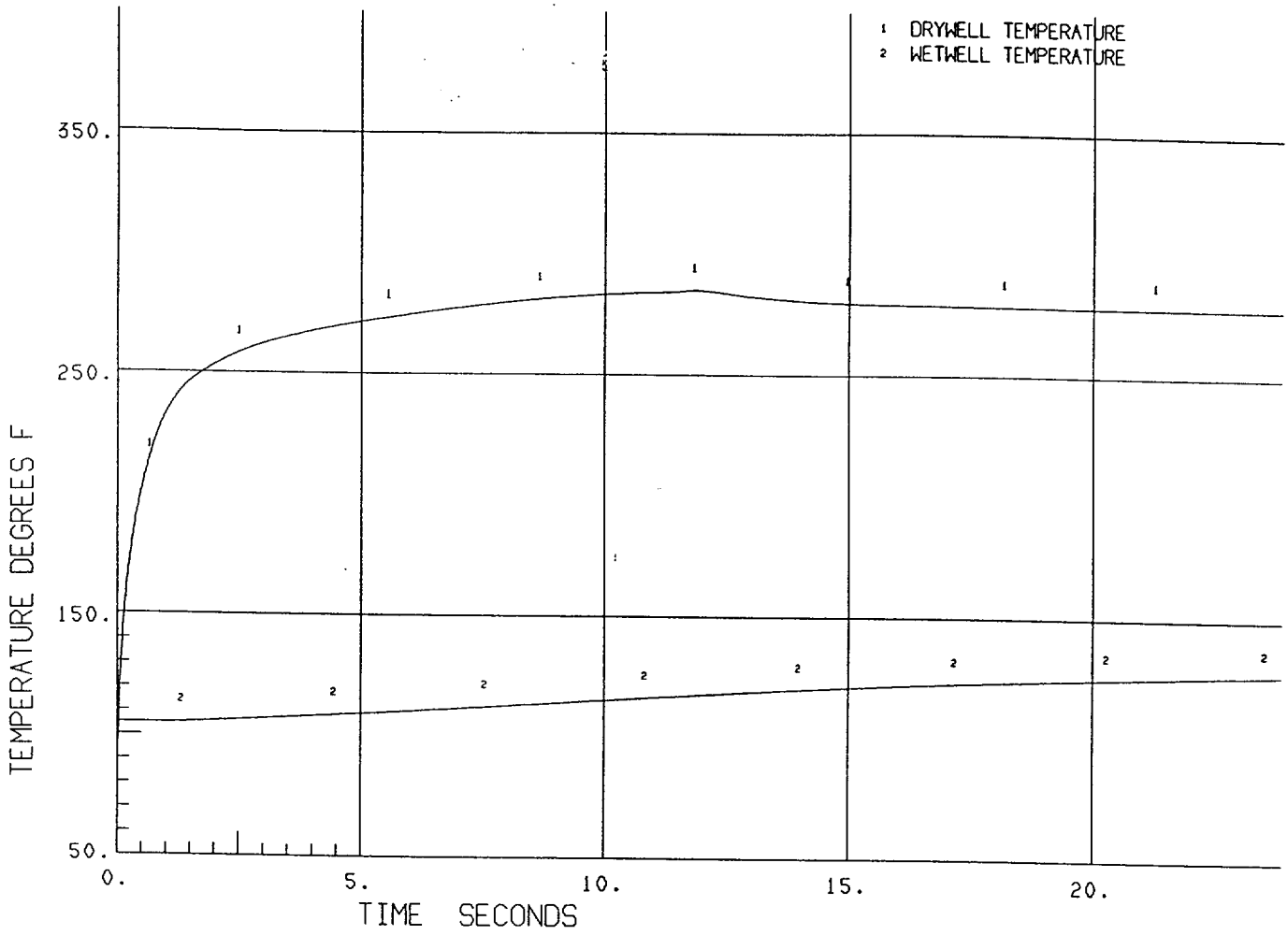


Figure 4-4: Short-Term Drywell and Wetwell Temperature Response to DBA-LOCA For Rated Power Conditions (102% Rated Thermal Power)

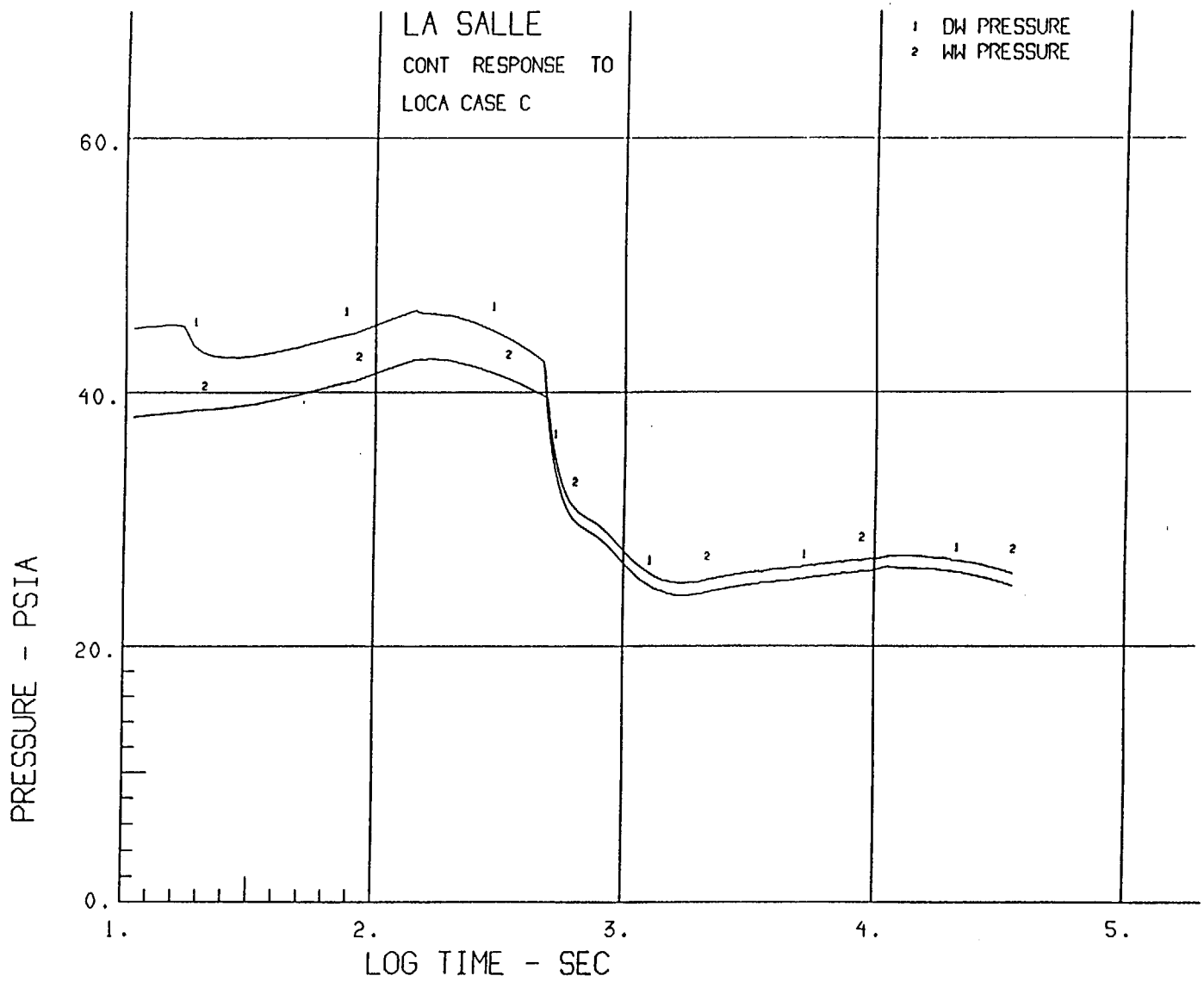


Figure 4-5: Long-Term Containment Pressure Response Following a Recirculation Line Break (at 3559 MWt) - Case C (Two Pumps, One Heat Exchanger, Without Continuous Spray)

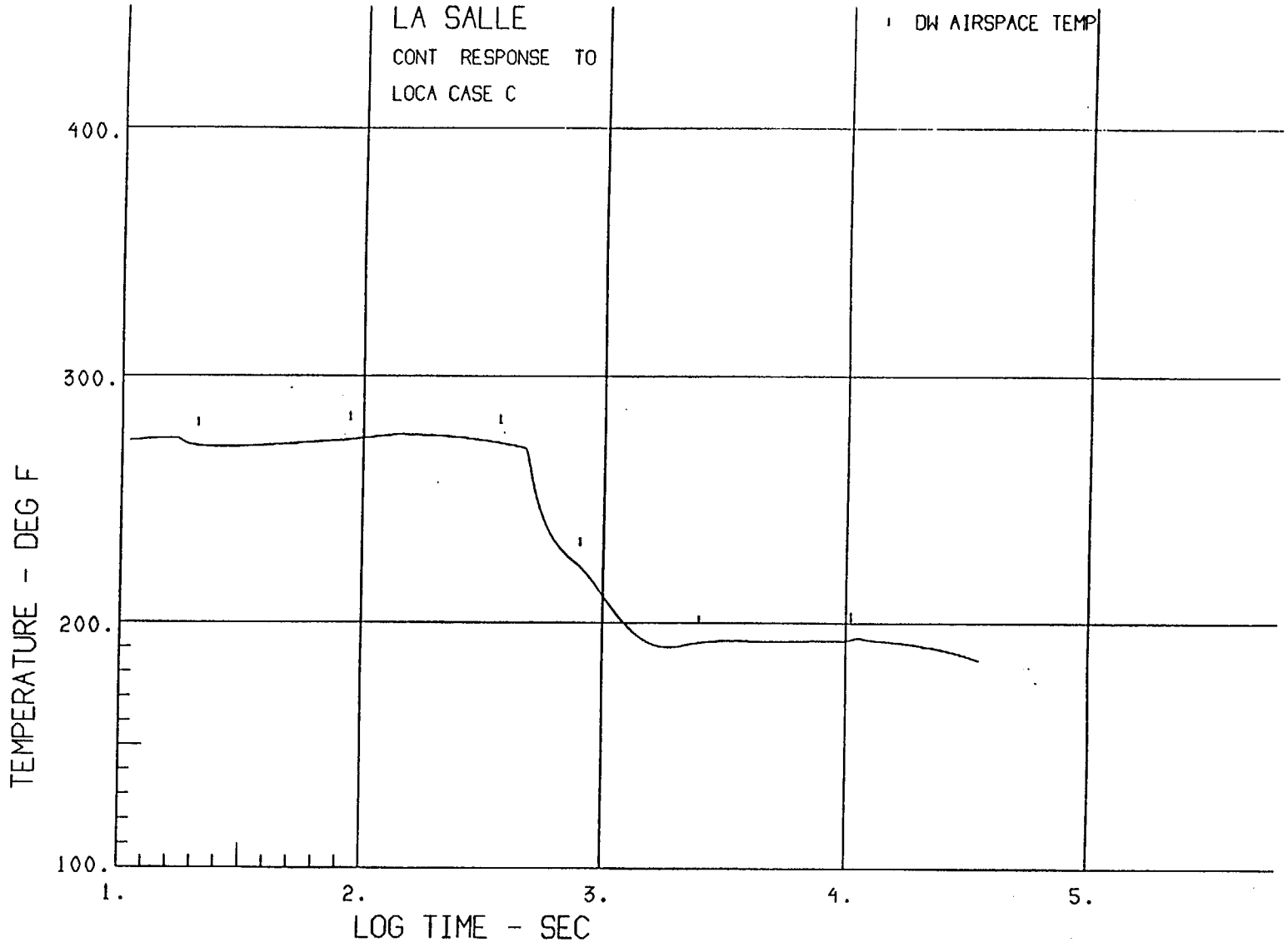


Figure 4-6: Long-Term Drywell Temperature Response Following a Recirculation Line Break (at 3559 MWt) - Case C (Two Pumps, One Heat Exchanger, Without Continuous Spray)