ATTACHMENT I

DUKE POWER COMPANY

MCGUIRE NUCLEAR STATION

PROPOSED TECHNICAL SPECIFICATION REVISION

CONTAINMENT ICE BED WEIGHT

3/4.6.5 ICE CONDENSER

ICE BED

LIMITING CONDITION FOR OPERATION

3.6.5.1 The ice bed shall be OPERABLE with:

a. The stored ice having a boron concentration of at least 1800 ppm boron as sodium tetraborate and a pH of 9.0 to 9.5,

b. Flow channels through the ice condenser,

c. A maximum ice bed temperature of less than or equal to 27°F,

d. A total ice weight of at least ~~2,466,420~~ 2,355,320 pounds at a 95% level of confidence, and

e. 1944 ice baskets.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With the ice bed inoperable, restore the ice bed to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.1 The ice condenser shall be determined OPERABLE:

a. At least once per 12 hours by using the Ice Bed Temperature Monitoring System to verify that the maximum ice bed temperature is less than or equal to 27°F,

b. At least once per 9 months by:

1) Chemical analyses which verify that at least nine representative samples of stored ice have a boron concentration of at least 1800 ppm as sodium tetraborate and a pH of 9.0 to 9.5 at 20°C;

2) Weighing a representative sample of at least 144 ice baskets and verifying that each basket contains at least 1269 lbs of ice. The representative sample shall include 6 baskets from each of the 24 ice condenser bays and shall be constituted of

3/4.6.5 ICE CONDENSER

The requirements associated with each of the components of the ice condenser ensure that the overall system will be available to provide sufficient pressure suppression capability to limit the containment peak pressure transient to less than 14.8 psig during LOCA conditions.

3/4.6.5.1 ICE BED

The OPERABILITY of the ice bed ensures that the required ice inventory will: (1) be distributed evenly through the containment bays, (2) contain sufficient boron to preclude dilution of the containment sump following the LOCA, and (3) contain sufficient heat removal capability to condense the Reactor Coolant System volume released during a LOCA. These conditions are consistent with the assumptions used in the accident analyses.

The minimum weight figure of 1212 pounds of ice per basket contains a 10% conservative allowance for ice loss through sublimation which is a factor of 10 higher than assumed for the ice condenser design. The minimum weight figure of 2,355,320 pounds of ice also contains an additional 1% conservative allowance to account for systematic error in weighing instruments. In the event that observed sublimation rates are equal to or lower than design predictions after 3 years of operation, the minimum ice baskets weight may be adjusted downward. In addition, the number of ice baskets required to be weighed each 9 months may be reduced after 3 years of operation if such a reduction is supported by observed sublimation data.

3/4.6.5.2 ICE BED TEMPERATURE MONITORING SYSTEM

The OPERABILITY of the Ice Bed Temperature Monitoring System ensures that the capability is available for monitoring the ice temperature. In the event the system is inoperable, the ACTION requirements provide assurance that the ice bed heat removal capacity will be retained within the specified time limits.

3/4.6.5.3 ICE CONDENSER DOORS

The OPERABILITY of the ice condenser doors and the requirement that they be maintained closed ensures that the Reactor Coolant System fluid released during a LOCA will be diverted through the ice condenser bays for heat removal and that excessive sublimation of the ice bed will not occur because of warm air intrusion.

ATTACHMENT II

Justification and Safety Analysis

The proposed amendment incorporates the results of a reanalysis of the containment Pressure Calculation following a LOCA (FSAR Section 6.2.1.4) to the Technical Specifications.

The previous calculation assumed an ice weight of 2.22×10^6 lbs in the containment and partial RHR flow diversion to the containment sprays at 3590 seconds following a LOCA event. Westinghouse performed a reanalysis of the Containment Pressure Calculation assuming an ice weight of 2.12×10^6 lbs and partial RHR flow diversion to the containment sprays at 3000 seconds instead of 3590 seconds assumed in the earlier calculation. The RHR flow diverted to the sprays is 1623 gpm for both calculations. It should be noted that the core temperature transient is over relatively early (within 400 seconds) during a LOCA event and the core temperature considerations have no bearing on the Containment Pressure Calculation. The Westinghouse reanalysis establishes that earlier diversion of the RHR flow to the containment sprays is more effective in controlling the containment pressure transient. The net result of the calculation assumptions of 2.12×10^6 lb of ice and diversion of RHR flow to the sprays at 3000 seconds after LOCA is an earlier ice bed melt out (at 2715 seconds instead of 3139 seconds) and a slightly reduced containment peak pressure (14.7 psig vs. 14.8 psig). The peak pressure is attained earlier at 3354 seconds instead of at 3599 seconds.

Attached figures (Attachment IIa) provide the containment pressure and temperature response to the design basis transient with reduced ice weight (2.12×10^6 lbs) and revised assumptions regarding earlier RHR spray actuation (at 3000 seconds).

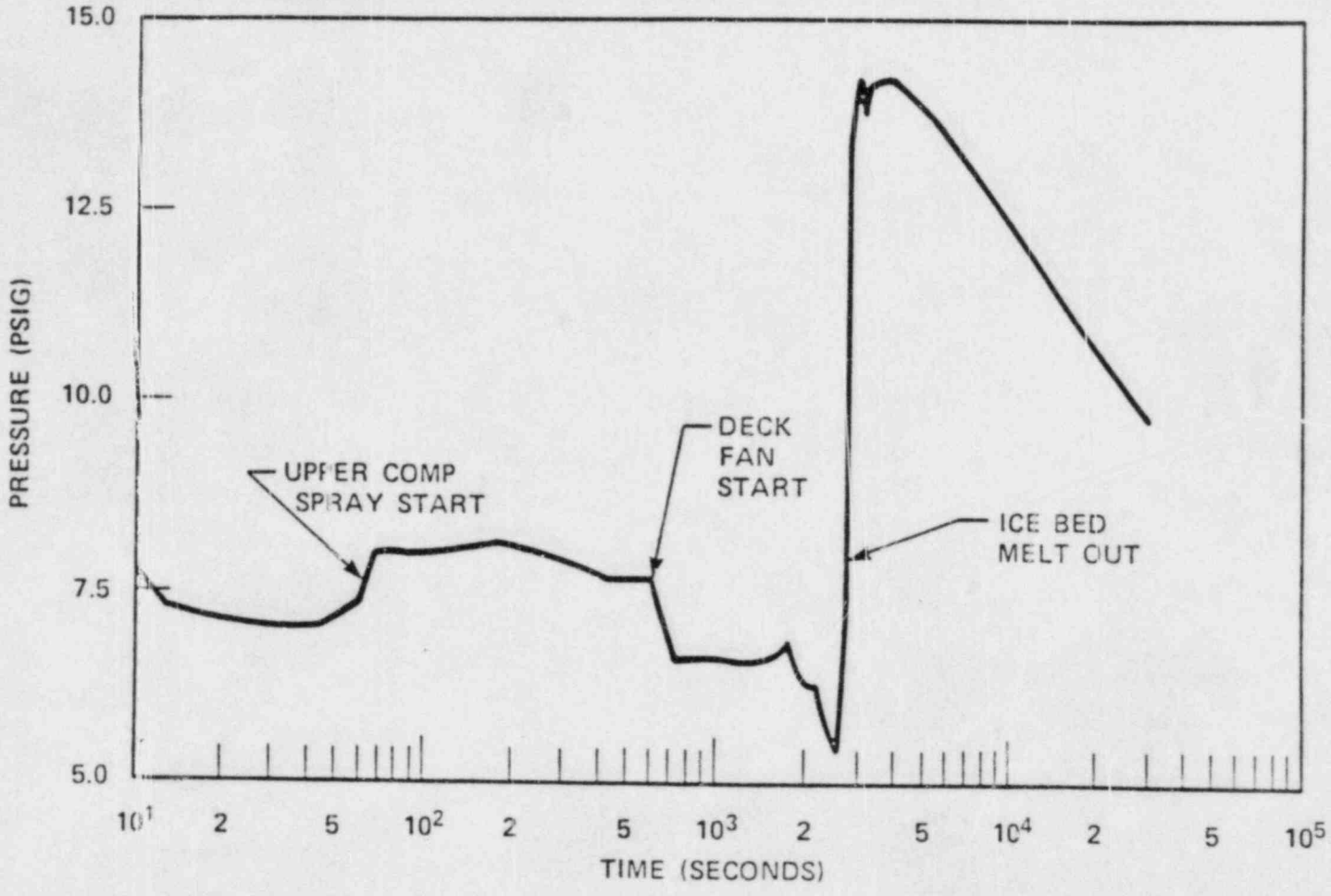
The Westinghouse reanalysis of the Containment Pressure Calculation provides the justification of reducing the ice weight in the containment to 2,355,320 lbs and changing the plant operating procedures to institute an earlier RHR spray actuation during a LOCA event. The proposed ice weight Technical Specification (3/4.6.5.1) of 2,355,320 lbs maintains the 10% conservative allowance for ice loss through sublimation and 1% allowance to account for systematic error in weighing instruments.

The proposed changes are based on a conservative analysis performed by Westinghouse.

The proposed amendments would not reduce existing safety margins or have any adverse safety implications. Appropriate changes in the station operating procedures will be implemented upon NRC approval of the proposed Technical Specifications. Approval of the proposed amendments would provide additional flexibility in maintaining the required ice weight for the containment ice condenser.

ATTACHMENT IIa

(Sheet 1 of 5)

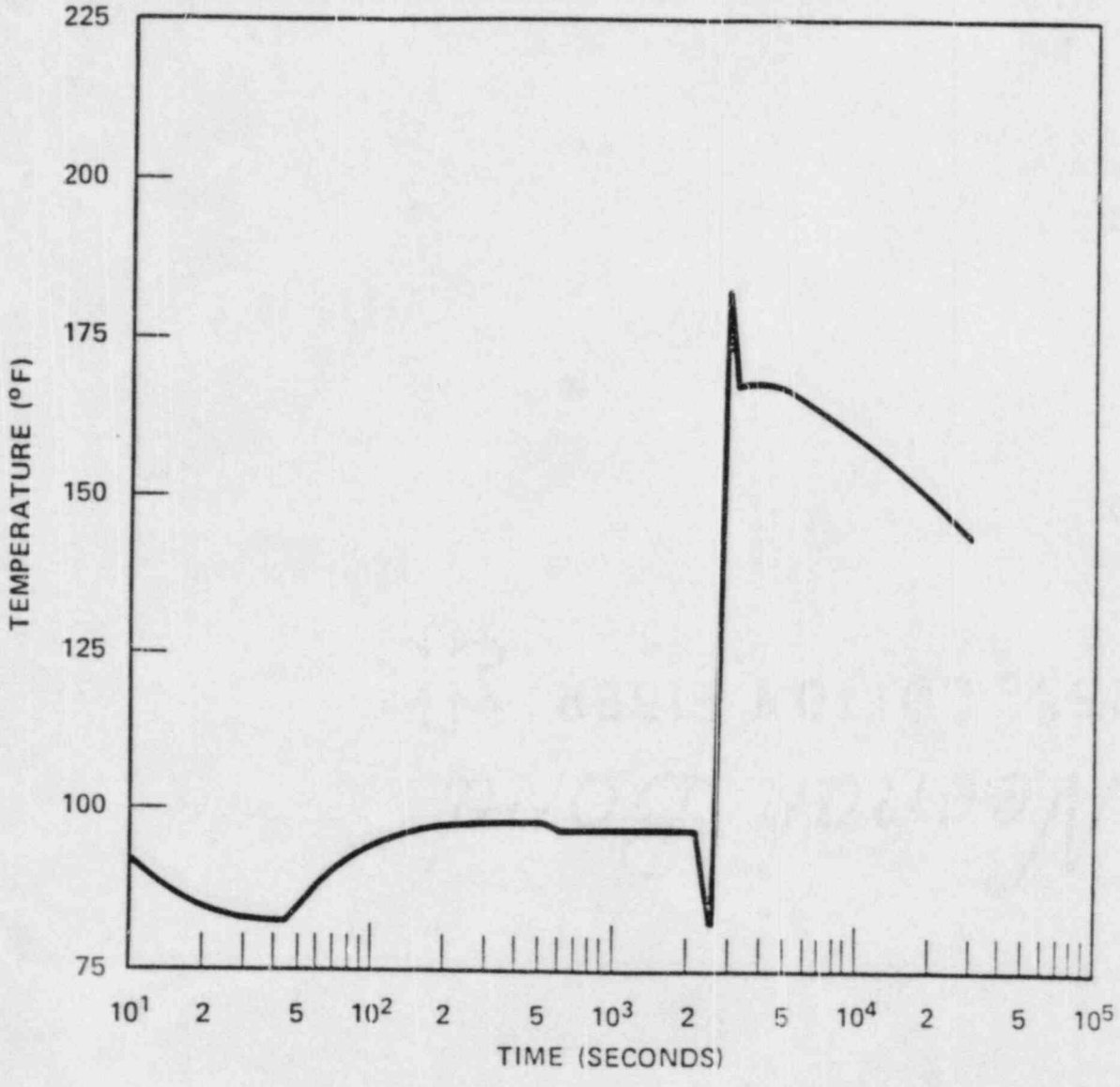


CONTAINMENT PRESSURE TRANSIENT

(COMPARE TO McGUIRE NUCLEAR STATION FSAR FIGURE 6.2.1–15)

ATTACHMENT IIa

(Sheet 2 of 5)

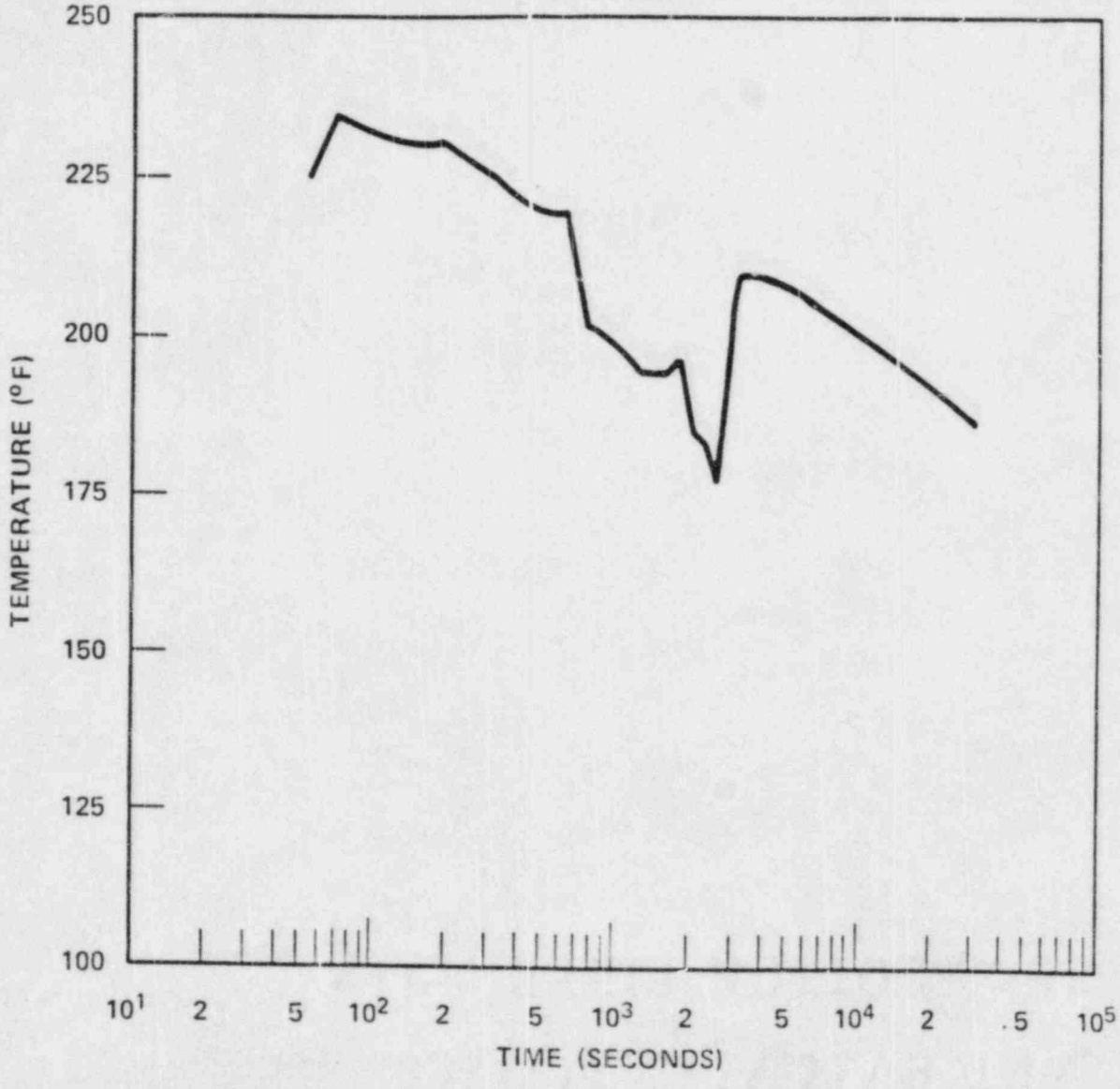


UPPER COMPARTMENT TEMPERATURE TRANSIENT

(COMPARE TO McGUIRE NUCLEAR STATION FSAR FIGURE 6.2.1–16)

ATTACHMENT IIa

(Sheet 3 of 5)

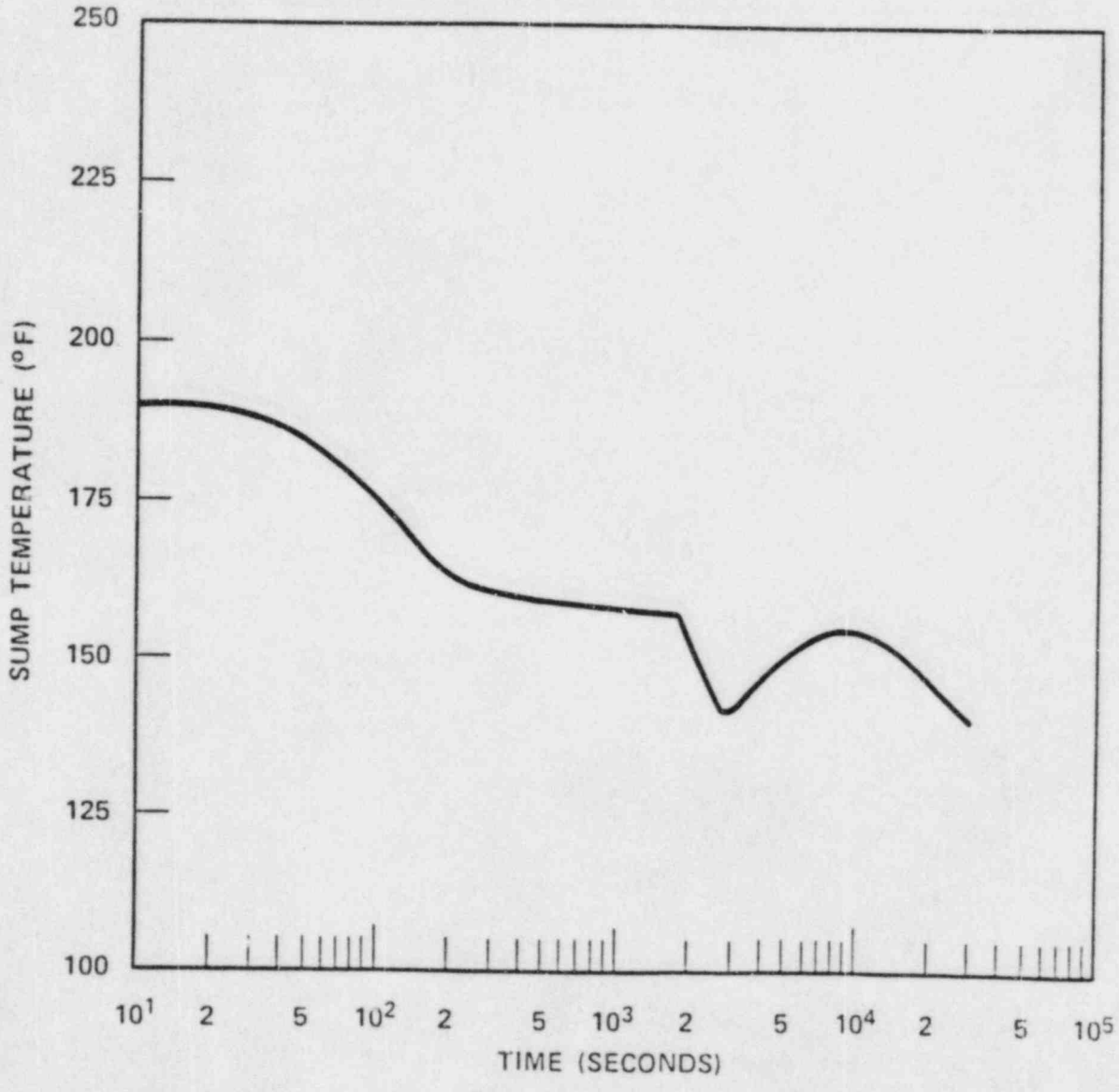


LOWER COMPARTMENT TEMPERATURE TRANSIENT

(COMPARE TO McGUIRE NUCLEAR STATION FSAR FIGURE 6.2.1–17)

ATTACHMENT IIa

(Sheet 4 of 5)

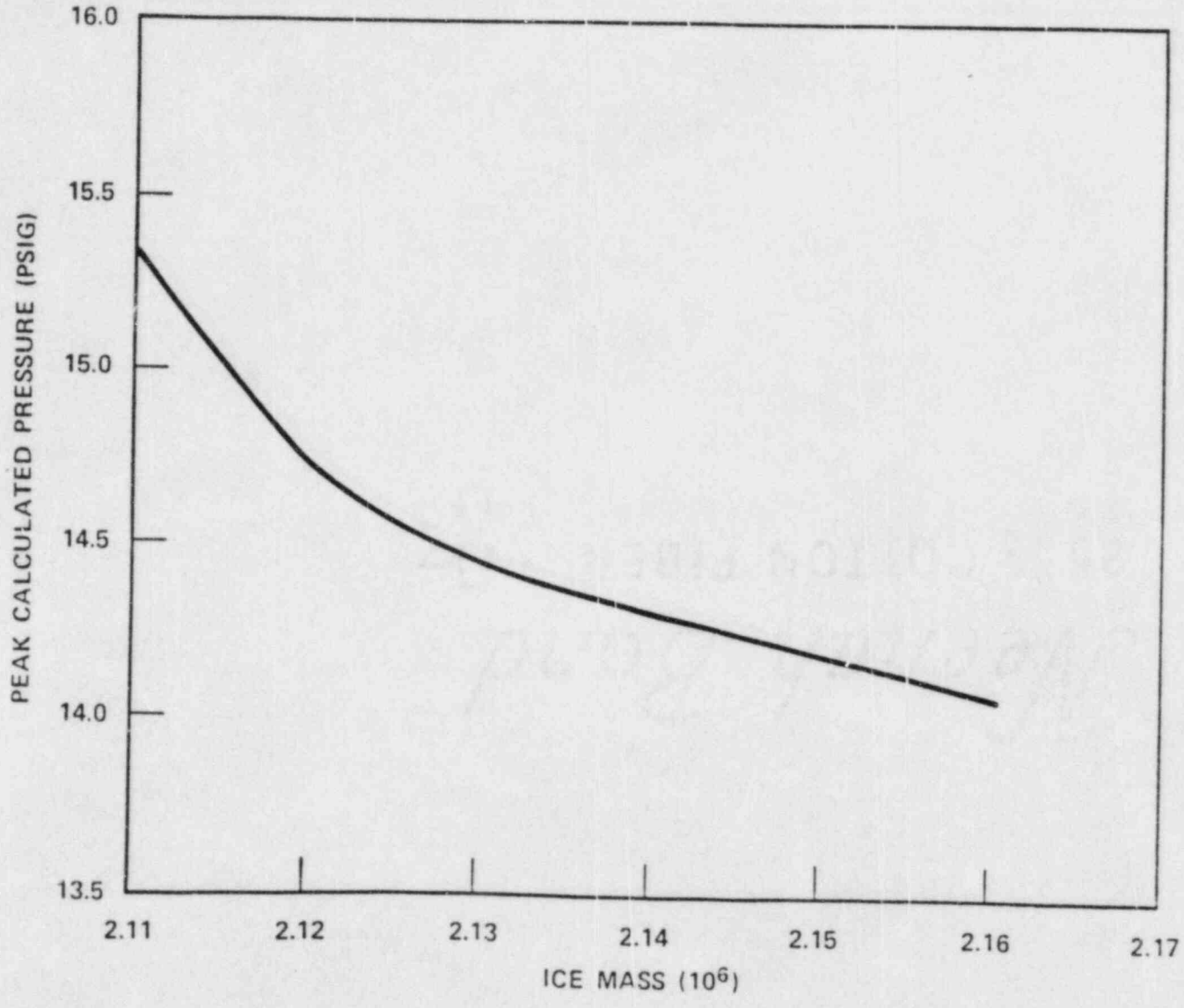


ACTIVE AND INACTIVE SUMP TEMPERATURE TRANSIENT

(COMPARE TO McGUIRE NUCLEAR STATION FSAR FIGURE 6.2.1–18)

ATTACHMENT IIa

(Sheet 5 of 5)



PEAK CALCULATED PRESSURE VS ICE MASS

(COMPARE TO McGUIRE NUCLEAR STATION FSAR FIGURE 6.2.1–19)

ATTACHMENT III

Analysis of Significant Hazards Consideration

As required by 10CFR50.91 this analysis provides a determination that the proposed changes to the Technical Specifications do not involve any Significant Hazards Consideration as defined by 10CFR50.92.

The proposed changes to the Technical Specifications are supported by a reanalysis of the Containment Pressure Calculation performed by Westinghouse. The Westinghouse analysis establishes that the containment pressure transient will be controlled in a shorter time without reduction of existing safety margins upon implementation of the proposed changes. Similar changes have already been approved by NRC for some other power plants.

The proposed amendment would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated; or

2. Create the possibility of a new or different kind of accident from any accident previously evaluated; or

3. Involve a significant reduction in a margin of safety.

Based upon the preceding analysis Duke Power Company concludes that the proposed amendments do not involve a significant hazards consideration.