

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

June 4, 1982

Director of Nuclear Reactor Regulation
Attention: Ms. E. Adensam, Chief
Licensing Branch No. 4
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Ms. Adensam:

In the Matter of the Application of) Docket Nos. 50-390
Tennessee Valley Authority) 50-391

In my letter to you dated April 9, 1982, TVA provided the results of an analysis for the effect of inadvertent containment spray and air return fan actuation on containment pressure at Watts Bar Nuclear Plant. During a telephone conference call on May 20, 1982, TVA was requested to rerun the analysis for inadvertent air return fan actuation with an ice bed temperature of 30°F and actuation of one fan and two fans. Enclosed is the requested information.

If you have any questions concerning this matter, please get in touch with D. P. Ormsby at FTS 858-2682.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills
L. M. Mills, Manager
Nuclear Licensing

Sworn to and subscribed before me
this 4th day of June 1982

Paulette H. White

Notary Public

My Commission Expires 9-5-84

Enclosure

cc: U.S. Nuclear Regulatory Commission (Enclosure)
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

BOO!

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PDR ADOCK 05000390
A PDR

ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
VACUUM RELIEF ON THE CONTAINMENT VESSEL

Two additional analyses have been performed to determine containment pressure versus time for the case of an inadvertent air return fan actuation. This event results in containment atmosphere cooldown by circulating the containment air through the ice condenser.

In the first analysis, it was assumed that the containment was isolated with initial conditions of 110°F and 14.4 lb/in²a. The ice condenser was assumed to remain at a temperature of 30°F throughout the transient. An air return fan was then assumed to actuate conservatively assuming a flow rate 20 percent higher than nominal. The pressure inside containment was then calculated as a function of time. Results of this analysis, illustrated in Figure 1, show that a differential pressure of -2.0 lb/in²g across the containment vessel occurs at approximately 790 seconds into the event. This analysis does not include the moderating effects of the heat capacity of internal structures and the containment shell or any heat sources present on pressure.

Thus, for this event, the operator will have more than adequate time to either shut off the fan or open the manual pressure control line presently provided at Watts Bar.

The second analysis is identical to the first except that two air return fans were actuated instead of one. Results of this analysis are illustrated in Figure 2. From this figure, it is seen that a differential pressure of -2.0 lb/in²g across the containment vessel occurs at approximately 390 seconds into the event.

TVA does not consider the inadvertent operation of both air return fans a credible event. The operator would have to manually start the fans from two separate switches or manually initiate a Phase B isolation signal. The Phase B signal would result in several alarms informing the operator of the action taken. The fans start 10 minutes after initiation of the Phase B signal due to a delay designed into the signal. This delay gives the operator sufficient time to reset the signal before the fans actuate.

For the above reasons and those presented in our previous letter from L. M. Mills to E. Adensam dated April 14, 1982, it is TVA's conclusion that the Watts Bar containment design is totally adequate, due to its structural capability, without an automatic vacuum relief system.

Figure 1.

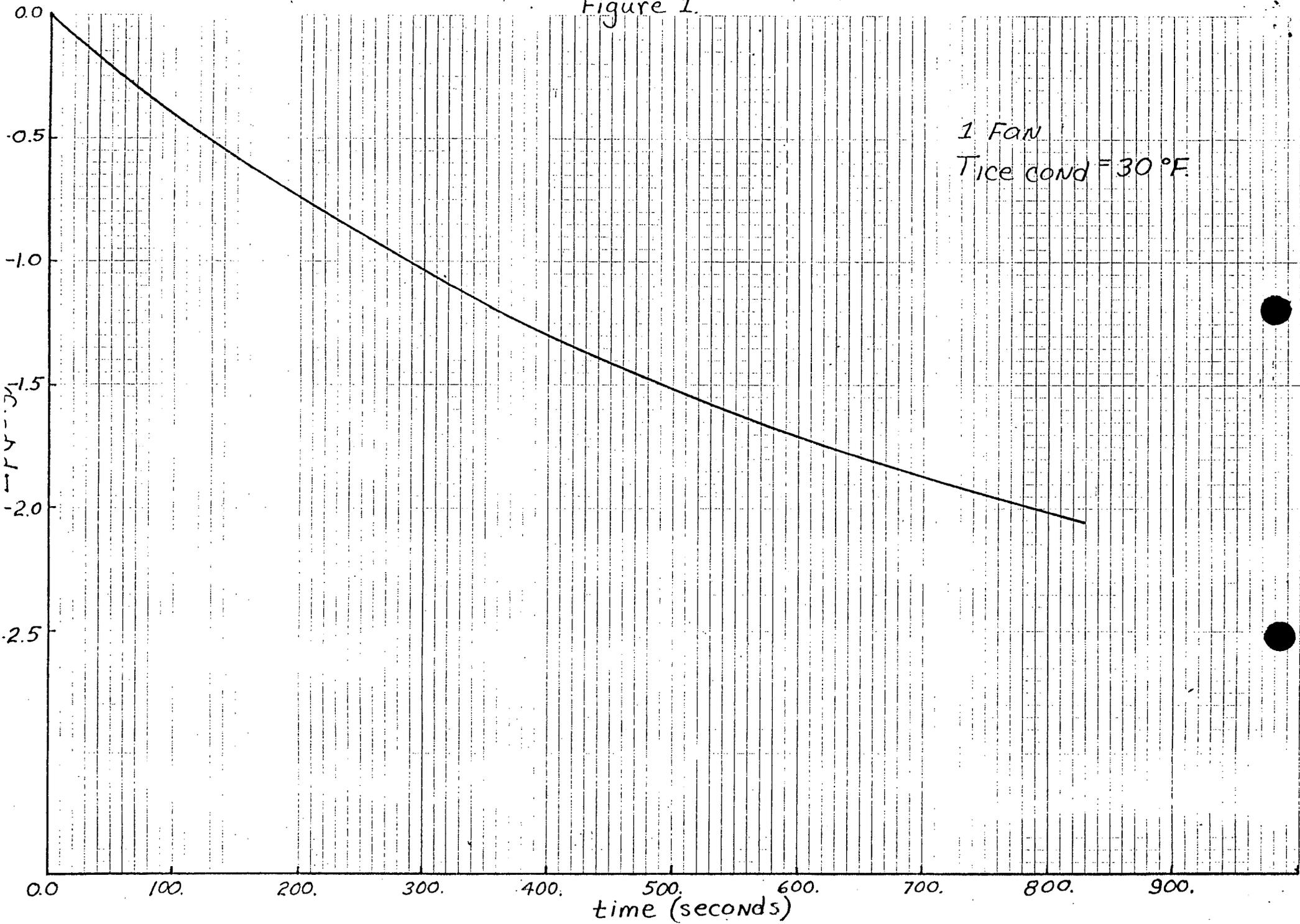
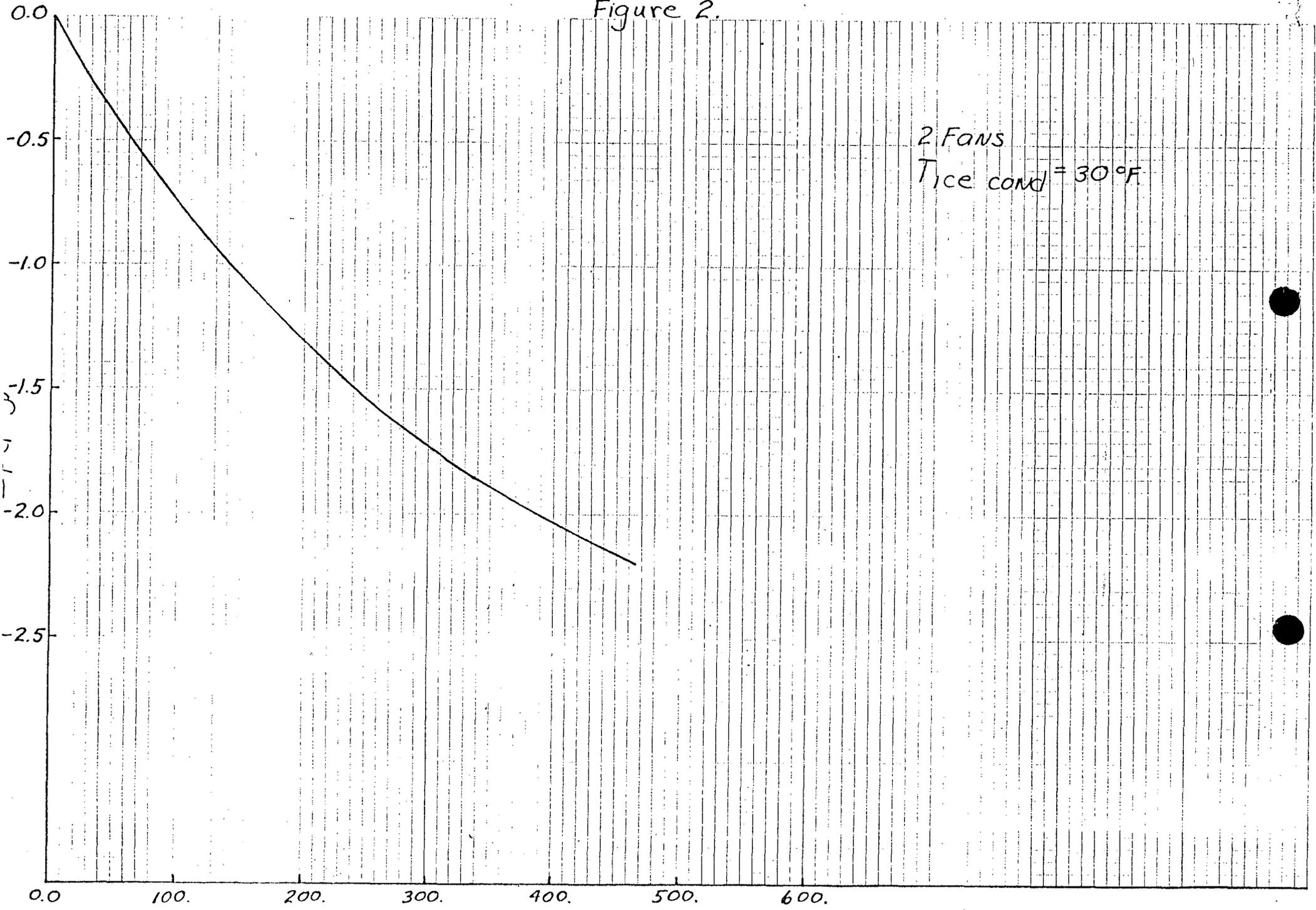


Figure 2.



2 Fans
T_{ice cond} = 30°F