# TENNESSEE VALLEY AUTHORITY

CHATTANOOGA. TENNESSEE 37401 500A Chestnut Street Tower II

DEC 10 1979

Director of Nuclear Reactor Regulation Attention: Mr. Thomas A. Ippolito, Chief Branch No. 3 Division of Operating Reactors U.S. Nuclear Regulatory Commission Washington, DC 20555

Dear Mr. Ippolito:

In the Matter of the	)	Docket Nos.	50-259
Tennessee Valley Authority	)		50-260
			50-296

In response to your letter dated October 22, 1979, to H. G. Parris regarding containment purging and venting during normal operation, we are submitting our commitment to operate the Browns Ferry Nuclear Plant units 1, 2, and 3 in conformance with the interim position provided as an enclosure to your letter. In addition, we are reevaluating purge valve operability and studying our valves using the guidance provided as the enclosure to the September 27, 1979, letter from D. G. Eisenhut to All Light Water Reactors regarding containment purging and venting during normal operation-guidelines for valve operability. Information regarding the necessity for limited purge capability during hot conditions and our analytical basis for satisfactory valve performance under DBA-LOCA conditions was presented in our letters dated March 1, 1979, and June 12, 1979, and during our meeting with the NRC staff and consultants on June 1, 1979.

Based on our enclosed commitment to operate in conformance with the NRC's interim position, continued operation of the Browns Ferry Nuclear Plant is justified and the operating licenses for Browns Ferry units 1, 2, and 3 should not be modified, suspended, or revoked.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

unny L. Cirs Jimmy L. Cross

Executive Assistant to the Manager of Power

Subscribed and sworn to before me this \_\_\_\_\_\_ day of \_\_\_\_\_\_ 1979.

Notary Public

My Commission Expires

Enclosure

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#### ENCLOSURE

# COMMITMENT TO OPERATE IN CONFORMANCE WITH INTERIM POSITION FOR CONTAINMENT PURGE AND VENT VALVE OPERATION

BROWNS FERRY NUCLEAR PLANT UNITS 1, 2, AND 3 (DOCKET NOS. 50-259, 50-260, 50-296)

## 1. NRC POSITION

Whenever the containment integrity is required, emphasis should be placed on operating the containment in a passive mode as much as possible and on limiting all purging and venting times to as low as achievable. To justify venting or purging, there must be an established need to improve working conditions to perform a safety related surveillance or safety related maintenance procedure. (Examples of improved working conditions would include deinerting, reducing temperature, humidity, and airborne activity sufficiently to permit efficient performance or to significantly reduce occupational radiation exposures.)

## TVA RESPONSE

Whenever containment integrity is required, TVA will emphasize the need to minimize purging operations. Our present technical specifications already restrain purge operations to a large extent. Purging will be performed only to provide a suitable atmosphere for personnel engaged in safety-related activities or maintenance in the containment. At Browns Ferry Nuclear Plant there are no routine surveillance tests that require containment entry. Normally, all containment entries during hot reactor conditions are performed for safety-related maintenance, or in the support of safety activities. Following entries, the containment must be reinerted as required by technical specifications.

### 2. NRC POSITION

Maintain the containment purge and vent isolation valves closed whenever the reactor is not in the cold shutdown or refueling mode until such time as you can show that:

a. All isolation valves greater than 3" nominal diameter used for containment purge and venting operations are operable under the most severe design basis accident flow condition loading and can close within the time limit stated in your Technical Specifications, design criteria or operating procedures. The operability of butterfly valves may, on an interim basis, be demonstrated by limiting the valve to be no more than 30° to 50° open (90° being full open). The maximum opening shall be determined in consultation with the valve supplier. The valve opening must be such that the critical valve parts will not be damaged by DBA-LOCA loads and that the valve will tend to close when the fluid dynamic forces are introduced.

#### TVA RESPONSE

TVA will limit the disc opening of the containment purge valves greater than 3" diameter to 50° open, pending resolution of the generic operability issue. We expect to complete the modification on all three units by May 1, 1980. We are also reevaluating the operability analysis with the additional emphasis placed on considerations stated in NRC's September 27, 1979, letter.

The manufacturer of the Browns Ferry valves was Rockwell-Edwards. Rockwell no longer manufactures butterfly valves, and the engineering sections associated with the butterfly valves were disbanded. TVA has held consultations with several valve vendors to determine the effects of dynamic torques on our valves. Based on these discussions, particularly with Henry Pratt and Continental Fisher Valve Companies, TVA still firmly believes that our symmetric disc butterfly valves do not experience torque reversal during valve closure that can be found with offset disc valves. TVA also believes that the valves are structurally adequate to withstand closing loads produced by DBA

fluid flow regardless of initial disc angle. Nonetheless, for the sake of conservatism, TVA will modify the subject valves to be no more than 50° open. This angular setting is acceptable based on the above-mentioned discussions with valve vendors.

## NRC POSITION

b. Modifications, as necessary, have been made to segregate the containment ventilation isolation signals to ensure that, as a minimum, at least one of the automatic safety injection actuation signals is uninhibited and operable to initiate valve closure when any other isolation signal may be blocked, reset, or overridden.

### TVA POSITION

A review of Browns Ferry containment ventilation systems indicates that there is only one case involving the Containment Atmosphere Dilution (CAD) system post-LOCA controls where our design deviates from the above position. The CAD system is designed to permit the operator to vent containment atmosphere through a 2" line to standby gas treatment system after a LOCA. In the event of failure of the preferred vent line, a secondary backup 2" path can be established by opening an inboard containment ventilation isolation valve and a downstream valve in a second 2" line. This safety system is designed to provide long-term post-LOCA venting of the containment to prevent overpressurization and for combustible gas control. It is imperative that these CAD controls be operable even in the simultaneous presence of all PCIS trip signals. The CAD switches are keylock type, and their use is administratively restricted, being used briefly for required monthly surveillance testing of the CAD system. Note that the main containment purge outboard

valves cannot be opened using the CAD switches. TVA, in response to NRC concerns stated during the June 1, 1979, meeting concerning testing of the CAD switches during operation, has submitted a proposed technical specification change to limit testing of the CAD override switches to cold conditions. We understand that this change has recently been approved.

The CAD system performs a primary safety function after a LOCA. The modifications proposed by the NRC reduce the reliability of the system to perform its function and increase the number of actions an operator must take to initiate CAD system operations. TVA believes that making this change will not enhance public safety during normal operation, but rather reduces the plant's ability to cope with a LOCA and is, therefore, detrimental to safety.

We ask that NRC consider the CAD system logic design as a necessary exception to the 2.b. interim position.

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