



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

NSIC

DEC 27 1979

POOR ORIGINAL

Docket Nos.: 50-327/328

Mr. H. G. Parris  
Manager of Power  
Tennessee Valley Authority  
500A Chestnut Street Tower II  
Chattanooga, Tennessee 37401

Dear Mr. Parris:

SUBJECT: ATWS PROCEDURES FOR SEQUOYAH

Enclosed are comments on your proposed ATWS emergency operating procedures that were submitted on October 17, 1979. The procedure addresses ATWS in the TVA Abnormal Operating Instruction (AOI-1), Reactor Trip Procedure. AOI-1 contains symptoms and automatic action which occur following a normal trip of the reactor. The operator utilizes these conditions to diagnose the event and thereby classify the emergency. The symptoms and automatic action for ATWS do not follow the normal trip sequence and therefore conflict with the procedure in its present form. Although AOI-1 requires the operators to be alert for ATWS, it does not provide sufficient insight on reactor and plant response until the event is terminated. Manual actions outside the control room may be required to terminate ATWS; therefore, the time frame or period, the plant response and concurrent operator action during this period, should be contained in the procedure.

We believe that including ATWS in the present form is contrary to Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operational)," which includes a specific procedure for anticipated transients. Also, ANS 3.2, ANSI N18.7-1976, "Quality Assurance for Operational Phase of Nuclear Power Plants," addresses emergency procedures in Section 5.3.9 and recommends separate procedures for reactor transients and excursions.

Your response is requested by January 10, 1980.

Sincerely,

L. S. Rubenstein, Acting Chief  
Light Water Reactors Branch No. 4  
Division of Project Management

Enclosure:  
As stated

90022:10

cc w/enclosure:  
See next page.

8001110487

Tennessee Valley Authority

ccs:

Herbert S. Sanger, Jr. Esq.  
General Counsel  
Tennessee Valley Authority  
400 Commerce Avenue  
E 11B 33  
Knoxville, Tennessee 37902

Mr. E. G. Beasley  
Tennessee Valley Authority  
W10C131 C  
400 Commerce Avenue  
Knoxville, Tennessee 37902

Mr. Michael Harding  
Westinghouse Electric Corporation  
P. O. Box 355  
Pittsburgh, Pennsylvania 15230

Mr. David Lambert  
Tennessee Valley Authority  
400 Chestnut Street Tower II  
Chattanooga, Tennessee 37401

90022511

REVIEW OF ATWS PROCEDURES FOR SEQUOYAH PLANT

A. Symptoms

1. The procedure lists the parameters which cause the reactor to scram, but does not describe the actual indications available to the operators in the control room which would make him aware that an ATWS event has occurred. These ATWS symptoms would depend on initiating event and, therefore, they ought to be evaluated for at least the following three key events:

Loss of Main Feedwater

Loss of Offsite Power

Stuck Open PORV

POOR ORIGINAL

In making the evaluation it is important to show for each event what symptoms would indicate to the operator that scram action was called for but did not occur.

B. Automatic Action

1. This section does not address how the automatic actions relate to ATWS. Some of the automatic actions (e.g., turbine trip) may not even occur after an ATWS. This should be specified in more detail in the procedure.
2. Why is automatic actuation of HPSI not included in this section of the procedure?

C. Immediate Operator Action

1. The procedure should specify critical indications available to the operator consistent with the initiating event and assumption that the reactor trip has not occurred.

90022 12

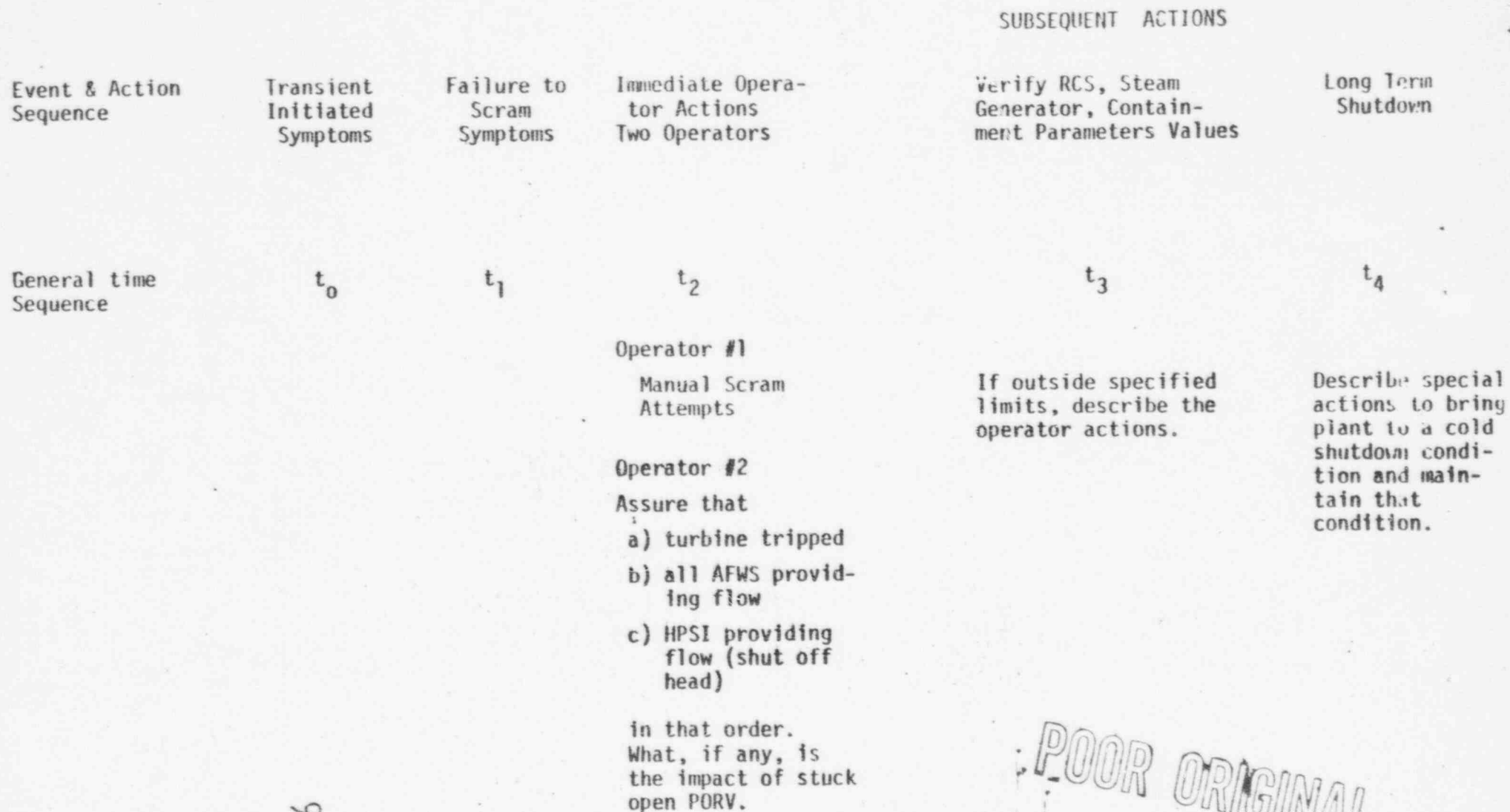
2. The immediate actions that the operators have to take after ATWS has occurred and an attempt to manually scram the reactor from the control room has failed should follow two parallel paths. While one operator should continue the operation of manually scrambling the reactor by tripping the breakers powering the control rod drive MG sets, the other operator should initiate the other actions leading to safe shutdown of the plant. The procedure should reflect that the actions described in sections A.2.b and A.2.c and those described in sections B.1 and B.2 are to be performed simultaneously. Section B should require sequential actuation of turbine trip, all auxiliary feedwater pumps, and high pressure safety injection system. (See Figure 1).
  
3. Describe the actions taken by the operator when he discovers, during the verification of reactor coolant system status (section C), that the conditions are not within the prescribed limits. What is the impact of loss of offsite power on availability of those signals to the operator. What is the shutoff head of the HPSI pumps? What provisions are taken to prevent pump damage when HPSI is operating against the RCS pressure which is higher than the shutoff head of the pump?

D. Subsequent Operator Action

1. What is the time frame for these actions?
2. What criteria are provided to verify that:
  - a. The auxiliary feedwater system is providing the necessary flow to the steam generators.
  - b. The HPSI is providing necessary flow to RCS.
  - c. The containment heat removal is being accomplished, if the containment conditions are outside the normally specified values.

3. What additional procedure does the operator have to follow in order to bring the plant to and maintain in a cold shutdown condition after an ATWS? For example, what boron concentration should be maintained in the RCS.

90022314



90022,15

POOR ORIGINAL

Figure 1. Generalized Approach to be followed for writing ATWS procedure(s)