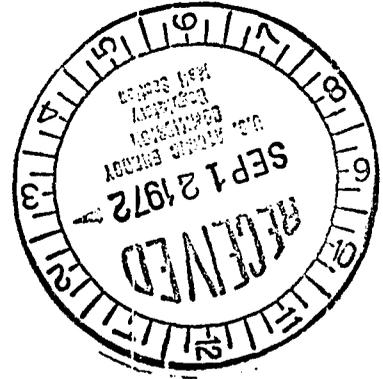


TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

SEP 12 1972



Mr. John F. O'Leary, Director
Directorate of Licensing
United States Atomic Energy Commission
Washington, DC 20545

Dear Mr. O'Leary:

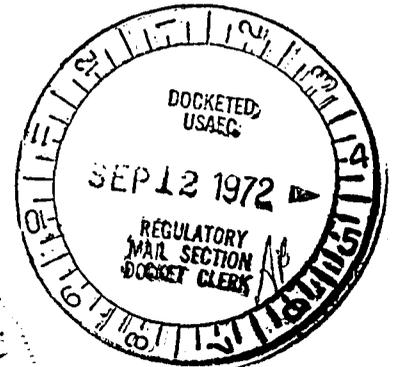
In the Matter of the Applications of) Docket Nos. 50-390
Tennessee Valley Authority) : 50-391

Submitted herewith is Amendment 16 to the TVA application for units 1 and 2 of the Watts Bar Nuclear Plant. Amendment 16 consists of miscellaneous preliminary safety analysis report page revisions.

Instructions for incorporating the new and revised material into the preliminary safety analysis report are included with the amendment.

Very truly yours,

J. E. Gilleland
Assistant to the Manager of Power



Subscribed and sworn to before me this 12th day of Sept 1972

Patricia A. Verling
Notary Public

My Commission Expires 9-14-72

My Commission Expires Sept. 14, 1972

Enclosure

5040

LB

INSTRUCTIONS FOR AMENDMENT SIXTEEN PAGE CHANGES

The following instructional information and check list is furnished to help you insert Amendment Number Sixteen into the Watt's Bar Nuclear Plant PSAR.

Since in most cases the original PSAR contains information printed on both sides of a sheet of loose leaf paper, a new sheet is furnished to replace sheets containing superseded material. As a result, the front or back of a sheet may contain information that is merely reprinted rather than changed.

Only pages which contain amended (i.e., added, deleted, or revised) information are identified with the cipher "WBNP-16" at the top of the page. Further, where amended information is new or revised, a vertical bar has been inscribed adjacent to the information in the outside margin of the page.

Discard the old sheets and insert the new sheets, as listed below. Keep these instruction sheets in the front of Volume I to serve as a record of changes.

WATTS BAR NUCLEAR PLANT
Amendment No. 16

INSTRUCTION SHEET

Remove (Front/Back)

List of Amendments i/
List of Amendments ii

7.2-15/7.2-16

Insert (Front/Back)

List of Amendments i/ List
of Amendments ii

7.2-15-7.2-16

*Superseded Per
Amend #16 to PSAR
dtd 9-12-72*

List of Amendments

(Place in Volume I immediately after title page. The instructions sheets for each individual amendment should follow this page.)

<u>Amendment No.</u>	<u>Description of Amendment</u>
1	Miscellaneous PSAR page revisions and addition of Appendix E, Comparison of the Watts Bar and Sequoyah Nuclear Plants
2	Miscellaneous PSAR page revisions
3	Responses to a portion of the AEC's November 23, 1971, questions
4	Responses to a portion of the AEC's November 23, 1971, and January 5, 1972, questions
5	Responses to the AEC's November 23, 1971, January 5, 1972, and January 7, 1972, questions and addition of Appendix F, Emergency Core Cooling Performance for Spectrum of Break Sizes
6	Revisions to the document entitled, "Information furnished Pursuant to Section 50.33 of the Commission's Rules and Regulations as Part of the Application for Construction Permits."
7	Revisions to PSAR Sections A.1 and A.2 and miscellaneous PSAR page revisions
8	Submission of document entitled, "Antitrust Information Pursuant to AEC Letter of July 22, 1971."
9	Revision to Section 2.7A, Watts Bar Maximum Possible Flood
10	Miscellaneous PSAR page revisions
11	Miscellaneous PSAR page revisions and the addition of Appendix 14C, Sensitivity Analyses of LOCA Dose Calculations
12	Revisions to the document entitled, "Information Furnished Pursuant to Section 50.33 of the Commission's Rules and Regulations as Part of the Application for Construction Permits."
13	Miscellaneous PSAR page revisions

List of Amendments

(Place in Volume I immediately after title page. The instruction sheets for each individual amendment should follow this page.)

<u>Amendment No.</u>	<u>Description of Amendment</u>
14	Revisions to the document entitled, "Information furnished Pursuant to Section 50.33 of the Commission's Rules and Regulations as Part of the Application for Construction Permits."
15	Miscellaneous PSAR page revisions

Operational Limits

The operational limits for the Reactor Protection System are derived by analyses of all plant operating and fault conditions where automatic rapid control rod insertion is necessary in order to prevent or limit core or reactor coolant boundary damage. The limits which form the design bases for this system are:

1. Minimum DNBR shall not be less than 1.3 as a result of any anticipated transient or malfunction (Condition II faults)
2. Clad strain on the fuel elements shall not exceed 1% as a result of any anticipated transient or malfunction (Condition II faults)
3. No center melting shall occur in the fuel elements as a result of any anticipated transient or malfunction (Condition II faults)
4. The stress limit of the Reactor Coolant System for a faulted condition shall not be exceeded as a result of any anticipated transient or malfunction (Condition II faults)
5. Release of radioactive material shall not be sufficient to interrupt or restrict public use of those areas beyond the exclusion distance as a result of any Condition III fault
6. For any Condition IV fault, release of radioactive material shall not result in an undue risk to public health and safety. The potential exposure of the public to radioactivity will be below the Reference values of 10CFR100.

Codes and Standards

The reactor protection instrumentation meets the intent of "Proposed IEEE Criteria for Nuclear Power Plant Protection Systems", IEEE No. 279, August, 1968.

The Reactor Protection System meets the intent of proposed draft No. 7 of ANS 4.2, "Design Basis for the Protection and the Actuation Systems of Nuclear Fueled Generating Stations".

Seismic Requirements

For either earthquake (operational or design basis) the equipment will be designed to assure that it does not lose its capability to perform its function; i.e., shut the plant down and maintain it in a safe shutdown condition.

For the design basis earthquake, there may be permanent deformation of the equipment provided that the capability to perform its function is maintained.

5 | Typical protection system equipment has been subjected to type tests under simulated seismic accelerations to demonstrate its ability to perform its function. Reference 7 (WCAP-7817) all 3 Supplements, provides a description of test bases, descriptions and results.

Environmental Requirements

In addition to the environmental design bases listed in IEEE-279, the following additional environmental requirements shall be applicable:

- 1) During the initial phase of either a loss of coolant or a steam line break accident, the pressurizer pressure and level channels must operate in accordance with design requirements. After reactor trip and safety injection have been actuated, the pressurizer pressure and pressurizer water level channels must be operable for a specified time limit to the extent that they enable the monitoring of post accident conditions.
- 2) The containment pressure signal must remain operable to monitor containment pressure in the post accident phase of a loss of coolant or steam break accident. The sensors are installed outside containment, are not subject to post accident environment and can be checked.