

ENCLOSURE

AUDIT REPORT ON TENNESSEE VALLEY AUTHORITY CONFORMANCE WITH
TITLE 10 OF THE CODE OF FEDERAL REGULATIONS PART 50.4, 50.59, 50.71(e)
IN AMENDMENT 7 OF THE BROWNS FERRY UPDATED FINAL SAFETY ANALYSIS REPORT

The NRC staff has completed an audit of UFSAR Amendment No. 7 for conformance with the Code of Federal Regulations 10 CFR 50.4, 50.59 and 50.71(e). The subject UFSAR Amendment 7 was transmitted to the NRC by letter dated July 23, 1990. The UFSAR Amendment is an annual requirement in 10 CFR 50.71(e) for all licensees. It includes changes made to the BFN facility and procedures as described in the FSAR prior to the BFN annual cutoff date of January 22, 1990. The NRC granted TVA a temporary exemption from 10 CFR 50.71(e) by letter dated July 7, 1989. Amendment 7 is thus a two-year (1988 and 1989) update from Amendment 6 submitted in 1988.

The criteria used in this audit included: (1) comparing the UFSAR Amendment 7 with the itemized list of 50.59 changes in the Tennessee Valley Authority (TVA) BFN Units 1, 2, and 3 Annual Operating Reports for January 1 to December 31, 1988, 1989 and 1990 dated March 30, 1989, March 14, 1990 and March 1, 1991 respectively, (2) comparing the UFSAR Amendment 7 with BFN site licensing control records to determine if all 50.59 changes including changes greater than six months old from the date of filing were included in the updated FSAR; (3) confirmation that BFN Program Control had documented, pursuant to 50.71(e)(2), that a duly authorized officer of TVA certified the accuracy and completeness of UFSAR Amendment No. 7; (4) ensuring that TVA's records for the UFSAR include: (a) all changes made to the BFN facility or procedures; (b) safety evaluations performed by the licensee which either support the changes or conclude that changes did not involve an unresolved safety question; (c) all analyses of new safety issues performed by or on behalf of the licensee at the Commission's Request and the updated information is appropriately located within the UFSAR.

Amendment 7 of the FSAR was compared by the staff to the itemized list of 50.59 changes enumerated in the BFN Annual Operating Reports for Units 1, 2 and 3 covering calendar years 1988, 1989 and 1990, transmitted March 30, 1989, March 14, 1990 and March 1, 1991, respectively. There were 62 items reported as 50.59 changes in these three reports.

The Annual Operating Report for 1988 contains 24 items which were 50.59 changes. All 24 of these changes are incorporated in Amendment 7 of the UFSAR. The Annual Operating Report for 1989 contains six items which were 50.59 changes. The staff compared Amendment 7 with all 50.59 items listed in the Annual Operating Report for 1989 and found that one change, dealing with FSAR 12.2.8.1 - Tornado-Generated Missiles - All Units, which was listed in the 1989 Annual Operating Report, failed to be included in Amendment 7. This item should have been entered as a change in FSAR Amendment 7. The staff reviewed the records for this change to determine why it failed to be incorporated in Amendment 7. The tornado-generated missiles issue involved TVA criteria which had several parts and had been approved by an NRC Safety Evaluation dated January 16, 1984. TVA Nuclear Engineering took the position that the FSAR update should reflect the entire spectrum of the criteria.

Nuclear Engineering performed new calculations and made drawing modifications in order that BFN would be in conformance with the criteria approved by the NRC. The effort required time beyond the Amendment 7 publication deadline and was not included in Amendment 7. This change is slated to be a part of Amendment 8. The remaining five items were incorporated in Amendment 7.

BFN Site Licensing performs the necessary work involved with physically preparing UFSAR updating amendments between January and July of each year. During this period 50.59 changes to the FSAR to be included in the annual operating report and published the following year are being received. For this reason, 21 of the 33 changes attributed to 50.59 enumerated in the Annual Operating Report for 1991 were incorporated in Amendment 7; the remainder were scheduled to be incorporated in Amendment 8.

As a part of the audit at the BFN site, the staff compared Amendment 7 of the FSAR with BFN site licensing internal records for control of all FSAR changes. Site licensing utilizes BFN's Records Information Management System (RIMS) to collect information and data pertinent to licensing documentation. Amendment 7 records include an annotated copy of Amendment 6. The change package annotations are marginal notes on related pages of the FSAR Amendment 6 identifying the change package by RIMS number, the pertinent safety evaluations (also identified by a unique number) and copies of source documentation used to modify the text, tables or drawings for Amendment 7. The file for Amendment 7 is voluminous. The staff estimates that Amendment 7 includes between 500 to 600 plant modifications change packages, each identified by an individual RIMS number. The staff reviewed 300 summaries of plant modification packages (DCN's) and concluded that the 50.59 evaluation process is rigorous and effective pursuant to SDSP 27.4. Because of the large number of changes, BFN completely revised the FSAR, incorporating changes to the plant and procedures, and correcting syntax and typographical errors. Amendment 7 required changes to 3061 pages of the FSAR, with a range of 1 to 6 changes on each page changed.

Physical changes to the plant, including attendant drawing changes and calculations are accomplished by means of Design Change Notices (DCN). DCN's are controlled by BFN procedures. As a part of the audit, the staff reviewed pertinent procedures and audited control of revisions to these procedures. The DCN is the principal plant modification work package. The DCN is controlled by BFN Site Procedure (Site Director Standard Practice) SDSP 27.1, "Evaluation of Changes, Tests and Experiments - Unreviewed Safety Question Determination." The current issue of SDSP 27.1 is Revision 12, approved by the Site Director on October 29, 1990. The BFN procedure governing processing and approval of DCN's is SDSP 27.4, "Plant Operations Review Committee (PORC)." This procedure covers review, analysis approval, execution and closure of engineering change notices (ECN's) and DCN's. The current issue of SDSP 27.4 is Revision 11, effective May 16, 1991. SDSP 27.1 is referenced in SDSP 27.4 thus providing a link for documentation flow to site licensing for FSAR updates.

BFN Site Licensing maintains two copies of the FSAR, the current approved version, and a second copy with annotations of in-process changes. BFN Procedure SDSP 15.7, "Periodic FSAR Update," controls the items to be listed in the

Annual Operating Report and provides for the second FSAR copy, called the "living FSAR," as a control for in-process changes. The current issue of SDSP 15.7 is Revision 6, approved by the Site Director on July 23, 1990.

The remainder of substantive changes (i.e., changes to the plant involving the DCN process) were made according to Nuclear Engineering Procedure NEP-2.3, "Control of Changes to Licensing Documents." The current issue of NEP 2.3 is Revision 0-PCNI, approved by the Chief Engineer and issued March 26, 1991. The previous issue, Revision 0, was approved by the Vice President of Nuclear Products and issued November 30, 1987.

The process used by the Nuclear Engineering Department is line-in, line-out annotation of the FSAR being amended. In this case, Amendment 6 was annotated by nuclear engineering and transmitted to BFN Site Licensing. Site licensing verified the annotations by using the so-called "living FSAR" which, according to SDSP 15.7, is annotated in the page margins identifying changes in process.

The staff verified that controls maintained by BFN are in place and are followed effectively by the three entities principally involved; Site Licensing, Nuclear Engineering, and Plant Operations. The procedures used were reviewed by the staff to verify that the approval and revision processes are viable. The staff finds that BFN site meets criteria 1 and 2 described on Page 1 of this report (i.e., (1a) comparing the UFSAR Amendment 7 with 50.59 changes enumerated in the BFN Annual Operating Reports and (2) determining whether all 50.59 changes and changes greater than six months old were included in Amendment 7 of the FSAR). The staff finds that although there was one change which could have been included in Amendment 7, it was scheduled for Amendment 8 and sufficient procedures and checks and balances are in place to manage the amendment process effectively.

The staff finds that the BFN site meets criteria 3, that a duly authorized officer of TVA certified the accuracy and completeness of UFSAR Amendment 7. The affidavit was transmitted as an attachment to the July 23, 1990 letter which transmitted UFSAR Amendment 7 to the NRC. The staff finds that the BFN site meets criteria 4 as follows: (a) TVA records for the UFSAR Amendment 7 include all changes made to the facility or procedures, (b) all safety evaluations performed by the licensee are either in support of changes or that changes did not involve an unresolved safety question, and (c) all analyses of new safety issues performed by or on behalf of the licensee at the Commission's request are part of the updated information and located within the FSAR as appropriate. The staff finds that TVA meets the tests acceptably.

Dated: August 14, 1991

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