UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Appeal Board

In the Matter of

TENNESSEE VALLEY AUTHORITY	Docket Nos. 50-259 OLA 50-260 OLA 50-296 OLA
(Browns Ferry Nuclear Plant, Units 1, 2, and 3)	(Low-Level Radioactive Waste Storage Facility)

STATEMENT OF JOHN W. HUTTON REGARDING TENNESSEE VALLEY AUTHORITY'S ANSWERS TO THE APPEAL BOARD'S QUESTIONS ABOUT LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT OPTIONS FOR BROWNS FERRY NUCLEAR PLANT

QUALIFICATIONS OF JOHN W. HUTTON

My name is John W. Hutton. My business address is the Tennessee Valley Authority, 1730 CST2, Chattanooga, Tennessee. I was, until recently promoted to the position of Chief of the Reactor Engineering Branch, the Supervisor of the Low-Level Radioactive Waste Management Group, within that branch of the Division of Nuclear Power, Office of Power.

Prior to coming with the Tennessee Valley Authority, I spent six years in the United States Navy, with duty on nuclear submarines and as an instructor at the Navy Nuclear Power School. I have a bachelor of science degree in mechanical engineering from Vanderbilt University.

I have been employed by the Tennessee Valley Authority (TVA) for the past seven and one-half years as a part of the Office of Power's reactor engineering organization. That organization is responsible for nuclear licensing, safety analysis, fuel management, and radioactive waste management. For two and one-half years as supervisor, I was principally responsible for managing the day-to-day processing, storage, and disposal of low-level wastes. I have also been involved in planning for future options for dealing with low-level wastes. I have been specifically responsible for planning for the Browns Ferry Nuclear Plant. I am familiar with the licensing amendment proceedings before the Nuclear Regulatory Commission (NRC) for this plant and have read the September 20 order of the Atomic Safety and Licensing Appeal Board (Appeal Board).

QUESTIONS AND ANSWERS

Question 1: What approvals are now being sought by TVA for storage of low-level radioactive waste at Browns Ferry?

Answer: TVA is presently seeking a 5-year license to store low-level radioactive waste (LLRW) at Browns Ferry on an interim basis as a backup measure to immediate disposal. It will ensure, at least on an interim basis, continued plant operations even with widespread disposal restrictions.

Question 2: What approvals does TVA contemplate seeking in the future?

Answer: Although TVA has no plans at this time beyond the 5-year storage period for which approval is now being sought, TVA would probably seek to renew the 5-year disposal license prior to its expiration.[1] This would appear to be desirable regardless of the extent to which use of the modules becomes necessary during the initial 5-year term simply because the modules are already constructed and, without NRC authorization, would be useless even as an emergency backup measure. Because of the enactment of the Low-Level Radioactive Waste Policy Act, the significant progress of the southeastern States toward enacting a Southeast Interstate Low-Level Radioactive Waste Management Compact, and TVA's decision to utilize facilities available under that compact (see response to question 8), TVA has determined that life-of-plant storage no longer appears desirable and has decided to maintain the onsite storage modules for emergency use only. If approval to use the storage modules at Browns Ferry is not given by NRC and all offsite disposal space were to become unavailable, TVA would, of course, be forced to seek approval for such measures as necessary to cope with such an emergency. However, beyond the current 5-year storage approval, TVA does not now plan to seek any further NRC approvals for LLRW storage.

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1 Generic letter 81-38 on NRC's LLRW storage policy provides that "[a]ny license issued will be for a standard five-year term, renewable if continued need is demonstrated." NRC further states that no licensing action will be undertaken "that would hinder the establishment of additional disposal capacity by the states." It will license added storage capacity "only for interim contingency storage, and low-level wastes should continue to be shipped to disposal sites to the extent practicable."

Question 3: How many storage modules have been constructed thus far? What is their capacity and what is planned for them if the approvals TVA is seeking are granted?

Answer: TVA has constructed four modules of 30,000 cubic feet capacity each at Browns Ferry.[2] As indicated in the response to question 2, TVA intends to ship all LLRW produced at Browns Ferry to offsite disposal facilities and use onsite storage only on an interim basis if offsite disposal becomes unavailable.

Question 4: How many storage modules does TVA plan on constructing? What is their capacity and what use is planned for them if the approvals TVA is seeking are granted?

Answer: As stated in the response to question 3, TVA has completed four modules at Browns Ferry and has no plans to complete any additional modules.[3]

Question 5: What are the current and projected rates of production of low level waste from operations at Browns Ferry Nuclear Plant?

Answer: Historically, Browns Ferry has produced about 90,000 cubic feet of LLRW annually, but this number can vary depending

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2 Some foundation work on two additional modules has been done, but TVA has no plans to complete these modules.

3 Four modules identical to those at Browns Ferry have been completed at TVA's Sequoyah Nuclear Plant. The NRC staff, on September 17, issued a materials license authorizing the use of these modules for storage for up to five years of LLRW produced during operation of Sequoyah Nuclear Plant. Wastes produced at Browns Ferry cannot be transferred to Sequoyah for storage or disposal.

on outage and modification activities. The amount of LLRW produced is not expected to increase.[4] Recent data is provided below for all three units.

1980	95,000 cubic feet
1981	92,800 cubic feet
1982 (8 months)	59,200 cubic feet

Question 6: How does TVA now accommodate, and plan to accommodate, the storage and disposal of that waste?

Answer: TVA now ships all its wastes to offsite disposal sites and will continue to do so as long as disposal space is available. Thus, if sufficient offsite disposal is available during the next five years, TVA will continue to ship offsite for disposal all LLRW, and no LLRW will be stored in the modules. If because of temporary unavailability of offsite disposal it becomes necessary to use the modules, such use would be only as needed, and any LLRW stored in the modules under those conditions would probably be removed and shipped offsite as adequate space becomes available. TVA anticipates that offsite LLRW disposal capacity will increase as regional LLRW management compacts are enacted and implemented pursuant to the Low-Level Radioactive Waste Policy Act of 1980 (Pub. L. No. 96-573, 94 Stat. 3347 (1980)).

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4 As indicated in the response to question 3, the 120,000-cubic foot capacity of the four completed modules at Browns Ferry could accommodate slightly in excess of one year's production of LLRW at the plant.

Question 7: What offsite disposal facilities are now available to TVA and what is TVA's allocation at each for Browns Ferry originating waste?

Answer: Presently, two LLRW disposal facilities are available. The site near Richland, Washington, has no allocation restrictions. TVA's allocation at the other site near Barnwell, South Carolina, restricts TVA to 4,050 cubic feet per month. The total disposal space is allocated on a per-utility, not per-reactor, basis. In addition to allocated disposal space at Barnwell, additional disposal space is made available on a daily indeterminate first come, first served basis. A third LLRW disposal facility is located at Beatty, Nevada. The license for this facility recently expired and has not been renewed. Thus, this facility is not currently available.

Question 8: What is the current status of the Southeast Interstate Low-Level Radioactive Waste Management Compact and of TVA's participation in it? How will its implementation affect the storage and disposal of low level radioactive waste from Browns Ferry?

Answer: The States eligible for membership in the Southeast Interstate Low-Level Radioactive Waste Management Compact are Tennessee, Georgia, Mississippi, Alabama, Florida, South Carolina, North Carolina, and Virginia. All eligible States except North Carolina have passed legislation enacting the compact. However, there are some differences between the versions enacted by each State. Those differences have recently been resolved in meetings among the States. It is expected

that most, if not all, of the eligible States will enact the necessary conforming amendments in their next legislative sessions. TVA has decided to participate as a user under the Southeast Compact.

Under the compact, at least at first, Barnwell should continue to serve the region, and restrictions on waste disposal from the southeast region should be relaxed after January 1, 1986. The compact anticipates that additional disposal facilities will eventually open in other southeastern States, relieving Barnwell. Once the regional compact is in full operation, TVA anticipates that its LLRW will be accommodated at the regional facilities. In the meantime, prior to 1986, TVA hopes to be able, barring unforseen circumstances, to utilize the Barnwell site and one or more western disposal sites for disposal of all LLRW generated at Browns Ferry.

Question 9: What are TVA's plans with regard to either volume reduction or incineration of Browns Ferry low level radioactive waste?

Answer: TVA has been evaluating various types of volume reduction technologies since the mid-1970s. These include dewatering, calcination evaporation, compaction, and incineration methodologies. Large-scale advanced-technology facilities have not been cost effective until recently. However, with rising disposal costs volume reduction has become economically feasible.[5]

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5 Also important in any consideration of a volume reduction system are NRC's policy statement (46 Fed. Reg. 51,100 (1981)) encouraging the use of volume reduction methods and the Southeast Interstate Low-Level Radioactive Waste Management Compact policy that regional users minimize the volume of waste for disposal.

No volume reduction system is yet ready for a licensing proposal for Browns Ferry, and TVA has made no decision regarding the use of incineration as a volume reduction method. However, a volume reduction system may be purchased for Browns Ferry (perhaps as early as within the next six months), but this will depend on the results of as yet uncompleted engineering, economic, and licensing analyses.

SUMMARY

The probability that TVA will use the storage modules during the next five years or beyond is dependent on factors essentially beyond TVA's control. It appears that over the next five years adequate space will be available to dispose of low-level wastes, but this is not certain. Either interim storage or immediate disposal is an acceptable option to TVA, and from a health, safety, and environmental standpoint, the impacts from 5-year or longer term storage are insignificant. TVA now ships all of its wastes to offsite disposal sites and will continue to do so as long as disposal space is available. TVA's decision to construct LLRW storage modules was based on operational considerations. However, a commitment to storage does not inevitably lead to volume reduction in any form. Volume reduction appears to be economically advantageous regardless of whether LLRW is temporarily stored onsite or immediately shipped offsite, and TVA will probably propose some system of volume reduction for Browns Ferry at some time in the future. Thus, any decision about volume reduction will be based primarily on economic considerations. Accordingly, volume

reduction and interim storage are from that perspective independent. The NRC staff's environmental evaluation of storage impacts and the TVA LLRW management options are fully consistent with TVA's findings, and TVA does not contest any of its conclusions. TVA's approach to LLRW management at Browns Ferry is fully consistent with the Commission's November 10, 1981 generic letter 81-38 concerning LLRW storage.

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	)	50-296 OLA
(Browns Ferry Nuclear Plant,	)	(Low-Level Radioactive
Units 1, 2, and 3	)	Waste Storage Facility

AFFIDAVIT OF JOHN W. HUTTON

COUNTY OF HAMILTON)
) SS
STATE OF TENNESSEE)

John W. Hutton, being duly sworn, deposes and says as follows:

1. That he is presently an employee of the Tennessee Valley Authority.

2. That the "Statement of John W. Hutton Regarding Tennessee Valley Authority's Answers to the Appeal Board's Questions About Low-level Radioactive Waste Management Options for Browns Ferry Nuclear Plant" is true and correct to the best of his knowledge and belief.

John W Hutton
John W. Hutton

Subscribed and sworn to before me

this 1 day of October, 1982.

Patt A. Gibson
Notary Public

My commission expires: 7-29-86

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(Browns Ferry Nuclear Plant, Units 1, 2, and 3)	)	(Low-Level Radioactive Waste Storage Facility)

CERTIFICATE OF SERVICE

I hereby certify that I have served the original and two conformed copies of the following documents on the Nuclear Regulatory Commission by depositing them in the United States mail, postage prepaid and addressed to Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Docketing and Service Section:

Statement of John W. Hutton Regarding Tennessee Valley Authority's Answers to the Appeal Board's Questions About Low-Level Radioactive Waste Management Options for Browns Ferry Nuclear Plant

Affidavit of John W. Hutton

and that I have served a copy of the above documents upon the persons listed below by depositing them in the United States mail, postage prepaid and addressed:

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This 4th day of October, 1982.

W. Walter LaRoche

W. Walter LaRoche
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