TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

JUN 06 1988

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

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

INDEPENDENT SAFETY ENGINEERING GROUP (ISEG) - BROWNS FERRY NUCLEAR PLANT

We understand that NRC will write a safety evaluation report on ISEG and needs additional detail beyond that provided in the TVA Nuclear Performance Plan.

The enclosure to this letter provides a description of applicable commitments and the TVA program developed to meet them. This information also addresses the NRC inspector's concerns raised in the Browns Ferry Inspection Report 87-14.

If you have any questions, please telephone J. L. Turner at (205) 729-2853.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

R. L. Gridley, Director
Nuclear Licensing and
Regulatory Affairs

Enclosure
cc: See page 2

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U.S. Nuclear Regulatory Commission

JUN 06 1988

cc (Enclosure):
Mr. K. P. Barr, Acting Assistant Director
for Inspection Programs
TVA Projects Division
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Mr. G. G. Zech, Assistant Director
for Projects
TVA Projects Division
U.S. Nuclear Regulatory Commission
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852

Browns Ferry Resident Inspector
Browns Ferry Nuclear Plant
Route 12, Box 637
Athens, Alabama 35611

ENCLOSURE

I. HISTORICAL BACKGROUND

After the Three Mile Island event, NRC concluded that nuclear safety would be enhanced by a licensee staff performing onsite safety reviews. The functions of this staff were described in SECY-80-242. The group was labeled the Independent Safety Engineering Group (ISEG) and was required by NUREG-0737 for new operating license applicants.

By letter dated February 24, 1984, TVA notified NRC of its intention to establish an ISEG at Browns Ferry Nuclear Plant (BFN) as part of the BFN Regulatory Performance Improvement Plan (RPIP). On September 17, 1985, NRC issued a letter to TVA pursuant to 10 CFR 50.54(f) identifying weaknesses in the TVA nuclear power program and requested a response to NRC concerns. This initiated an extensive improvement program which TVA has described in the Nuclear Performance Plan (NPP) Volumes 1-3.

The NPP describes the results of a methodical process used to develop the TVA ISEG. During the development of the ISEG, TVA reviewed NUREG-0737 Item I.B.1.2, SECY-80-242, TVA commitments, and technical specifications. Leading industry ISEG staffs were also surveyed. The commitments, guidance, and the resulting program are described below.

II. COMMITMENTS AND GUIDANCE

This section provides a summary of commitments and guidance that are applicable to the TVA ISEG program at BFN.

A. Commitment

The RPIP described TVA's intention to set up an "ISEG" at BFN although BFN is not a post-TMI plant. This document did not provide details on what the ISEG staffing levels would be nor did it specify the functions of the proposed BFN ISEG. This TVA intention was changed to a commitment by NRC using Confirmatory Order 84-54.

B. Guidance

The clarifications to NUREG-0737 Item I.B.1.2 state that ISEG is to supplement the Plant Operations Review Committee and the offsite independent review and audit group (Nuclear Safety Review Board (NSRB) for TVA). The staff is to include five onsite dedicated engineers reporting offsite to a technically oriented management position not responsible for power production. Location of the staff onsite is preferred; however, it is explicitly mentioned that, "for utilities with multiple sites it may be possible to perform portions of the independent safety assessment function in a central location." In such cases, the onsite staff may be smaller than would be the case if they were performing the entire safety assessment function.

For plants applying for an operating license, NUREG-0737 Item I.B.1.2 requires an ISEG to review plant operating characteristics, NRC issuances,and appropriate industry sources to determine areas for improving plant safety. This is to include detailed reviews of maintenance, modifications, and operational problems. ISEG is required to make detailed recommendations to corporate management. NUREG-0737 Item I.B.1.2 also states that ISEG will function independently to verify correct performance and reduce human errors. These functions provide ISEG with the ability to give appraisals of the quality and safety of operations to management. ISEG activities are to remain independent; therefore, it is not responsible for signoff functions.

SECY-80-242 provides a specific breakdown of activities to be covered by licensee safety review organizations, and it provides guidance on which groups would review each type of activity. In table 1 of SECY-80-242 the staff breaks down the ISEG items into onsite and offsite review responsibilities.

Surveys of highly regarded ISEG staffs were conducted to establish an industry norm for staffing levels, qualifications, functions performed, reporting chains, and training requirements. TVA found that ISEG staffs typically have five members. Groups with more than five members typically handle the formal experience review program in addition to their ISEG duties. Most utilities require degreed engineers or equivalent with experience requirements for nondegreed personnel, including senior reactor operators (SROs). ISEG functions include screening industry information, surveillance of operations, program reviews, and incident investigations. There is no consensus on reporting chains, but nuclear safety managers and design vice presidents were specified by more than one utility. Training for ISEG members is generally limited to an orientation to ISEG procedures and methods.

III. TENNESSEE VALLEY AUTHORITY ISEG PROGRAM

This section provides a description of the TVA ISEG program as established by charter and procedures.

A. Organization

The TVA ISEG program is designed to implement NUREG-0737 for SQN, BFN, WBN and BLN. The manager of ISEG reports technically and functionally to the TVA Director, Division of Nuclear Licensing and Regulatory Affairs (DNLRA). The TVA ISEG organization is shown in figure 1.

The TVA ISEG program provides four onsite staffs supported by a central staff in Chattanooga. The site staffs include positions for one lead reviewer, one reviewer, one staff specialist, and one clerk word-processor (BFN has an additional reviewer). The central staff

has four reviewers, one staff specialist, and one clerk word-processor. The site and central office staffs report to the Manager, ISEG, and are therefore independent from the power production management chain.

B. Functions

The TVA ISEG program is described in Program Manual Procedure 0604.05, "Independent Safety Engineering Group Evaluations." The ISEG program includes the functions listed below:

- Reviews of safety-related activities, programs, and events
- Surveillances to ensure activities are performed correctly and human errors are minimized
- Examination of plant operating characteristics, NRC issuances, and Nuclear Experience Review evaluations (industry issuances)
- Development of detailed recommendations for safety enhancements

Technical reports on the results of ISEG activities are issued by the Director, DNLRA, to the affected division or Site Directors, or Staff Managers, where appropriate. Where ISEG findings cannot be resolved, the program provides for escalation in stages through the Director, DNLRA, and up to and including the Manager of the Office of Nuclear Power.

C. Qualifications

The qualifications of TVA ISEG members are based on ANS 3.1 (1978) since NUREG-0737, SECY-80-242, and standard technical specifications, revision 4, do not provide guidance. For TVA's program, this means that the Manager, ISEG, must have at least eight years of nuclear experience with four years in a safety-related activity in addition to a Bachelor of Science (B.S.) degree or equivalent. A lead reviewer will have at least six years of nuclear experience with at least three years in a safety-related activity. Reviewers are required to have at least three years experience. Reviewers and lead reviewers are required to have a B.S. degree in engineering or equivalent. Staff specialist positions have been created and may be used to supplant one reviewer at each site and in the central office. The staff specialist positions (typically SROs with five years experience) strengthen the ISEG expertise in plant operations.

D. Training

The ISEG program includes training tailored to each individual. The intent is to ensure that ISEG is provided or is familiar with the following:

- ISEG procedures orientation,
- DNLRA policies, directives, and standards (procedures),

- Code of Federal Regulations,
- Final Safety Analysis Report,
- technical specifications,
- systems orientation,
- observation techniques,
- incident investigation techniques, and
- communication skills

E. Program Implementation

The TVA ISEG program provides positions for 19 technically oriented safety-review personnel covering SQN, BFN, WBN, and BLN. The Manager, ISEG, and SQN lead reviewer were appointed in February 1987. A SQN site staff was put in place and indoctrinated on March 31, 1987. A lead reviewer and reviewer are in place at BFN. The central office staff includes four reviewers and one staff specialist. WBN and BLN will be staffed later.

F. Effectiveness

To determine the effectiveness of ISEG, at least once every 12 months the TVA Division of Nuclear Quality Assurance verifies the independence, function, performance, and activities of the ISEG. This will include controlling procedures and objective evidence of performance. Additionally, the TVA NSRB can examine any area or organization in the TVA Office of Nuclear Power including ISEG, and make recommendations if needed to the TVA Manager of ONP. ISEG routinely provides reports to the NSRB and the NSRB routinely comments on ISEG activities during NSRB Board meetings.

G. NRC Concerns

The qualifications of the ISEG staff have been a concern of the NRC resident inspectors at BFN. Since NUREG-0737 provided no criteria, TVA has used ANS 3.1 to derive the minimum qualifications described in section III.C above. Within this framework, we are seeking highly qualified people who will be able to make meaningful enhancements to safety and quality of operations. By charter, ISEG will look at facets of design, construction, maintenance, and operations throughout ONP. To accomplish this, TVA has established a multidisciplined staff with varied experience which include all areas of plant operational support.

An additional concern was raised by the resident inspectors in Browns Ferry Inspection Report 87-14. They do not agree that the TVA ISEG program described in the TVA NPP meets NUREG-0737. It is important to note that TVA stated in the BFN RPIP that an "ISEG" would be established. NRC made this a commitment using Confirmatory

Order 84-54 but a definition of the group was not specified. The NPP Volume 3 correctly stated that the TVA program complies with NUREG-0737. The purpose of this NPP statement was to indicate TVA's concern for safety and quality by voluntarily implementing a NUREG-0737 style ISEG throughout the nuclear program. The clarification statements to NUREG-0737 Item I.B.1.2 reiterate that five onsite engineers are specified but they provide an exception for multiunit utilities.

TVA has four nuclear sites with central staffs at Chattanooga and Knoxville for various organizations. Portions of Design, Radiological Emergency Preparedness, Quality Assurance, Security, Radiological Control, and Fuel Analysis functions are conducted or controlled by central staffs. Locating five reviewers and staff specialists in the central office will provide the BFN ISEG staff ready access to these activities. The central staff also gives ISEG flexibility by providing a ready manpower source for special events and extra resources and experience for the sites to call upon. One-third of the activities noted in SECY-80-242, Table 1, can be performed by the offsite staff and therefore a central staff is appropriate for utilities with multiunit sites like TVA. In practice, the central staff is supporting the onsite staffs directly by conducting generic reviews.

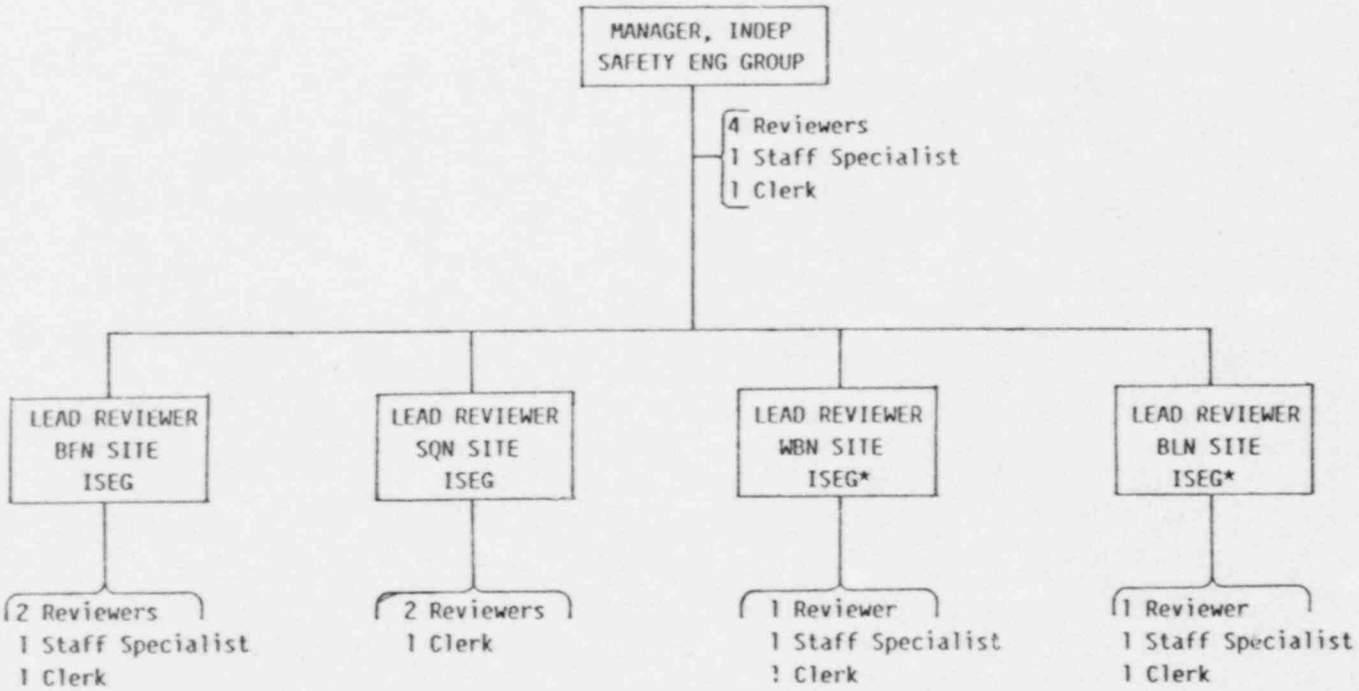
ISEG is working with the NSRB to ensure high-quality safety evaluations are performed. The ISEG program is using SECY-80-242 as a guideline and has already performed many activities specified in SECY-80-242, Table 1.

IV. SUMMARY

TVA voluntarily stated that it would institute an ISEG at BFN and has developed a program that will place four ISEG members at BFN. Five ISEG reviewers in the central office staff may be called upon for support by the BFN ISEG staff. This program will fulfill the commitment to implement an ISEG program at BFN and is consistent with NUREG-0737 Item I.B.1.2. The SECY-80-242 letter is being used as a program benchmark. These factors lead to the conclusion that the BFN ISEG program meets all commitments.

FIGURE 1

OFFICE OF NUCLEAR POWER
DIVISION OF NUCLEAR LICENSING & REGULATORY AFFAIRS
INDEPENDENT SAFETY ENGINEERING GROUP



* INCLUDES POSITIONS THAT WILL NOT BE FILLED IN FY 88