

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401  
400 Chestnut Street Tower II

April 15, 1983

Director of Nuclear Reactor Regulation  
Attention: Ms. E. Adensam, Chief  
Licensing Branch No. 4  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Ms. Adensam:

In the Matter of  
Tennessee Valley Authority

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Docket Nos. 50-327  
50-328

As requested by D. G. Eisenhower's December 17, 1982 letter to "All Licensees of Operating Reactors, Applicants for Operating Licenses, and Holders of Construction Permits" regarding Supplement 1 to NUREG-0737 Requirements for Emergency Response Capability (Generic Letter #82-33), we are providing the enclosed response.

Please note under item E.3 of the enclosure that TVA no longer intends to install the data link as described in our response to Generic Letter 81-10 submitted June 1, 1981. Appropriate plant parameters essential for the Emergency Operations Facility (EOF) functions will be provided to the EOF by facsimile transmission.

If you have any questions concerning this matter, please get in touch with Ken Parr at FTS 858-2685.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*L. M. Mills*  
L. M. Mills, Manager  
Nuclear Licensing

Sworn to and subscribed before me  
this 15th day of April 1983

*Paullette H. White*  
Notary Public  
My Commission Expires 9-5-84

Enclosure

cc: U.S. Nuclear Regulatory Commission (Enclosure)  
Region II  
Attn: Mr. James P. O'Reilly Administrator  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30303

Boo!

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ENCLOSURE

RESPONSE TO GENERIC LETTER NO. 82-33  
SUPPLEMENT 1 TO NUREG-0737

SEQUOYAH NUCLEAR PLANT (SQN)

A. SAFETY PARAMETER DISPLAY SYSTEM (SPDS)

The Technical Support Center/SPDS computer system hardware has been delivered to the plant site. TVA intends to install this hardware and terminate instrumentation inputs to this system such that the system, including SPDS displays, is operable, verified, validated, and operators trained by startup following the second refueling outage for each unit consistent with existing license commitments and our integrated modification schedule.

The implementation of SPDS has been reviewed in accordance with the technical specifications and determined not to either involve an unreviewed safety question or a change of technical specifications. A written safety analysis for SPDS describing the basis on which the selected parameters are sufficient to assess the safety status of each of the following functions will be provided by January 1, 1984 for Sequoyah.

1. Reactivity control,
2. Reactor core cooling and heat removal from the primary system,
3. Reactor coolant system integrity,
4. Radioactivity control, and
5. Containment.

TVA intends to verify the SPDS by performing extensive tests which ensure that the displayed data is accurate and the system performs as specified.

B. CONTROL ROOM DESIGN REVIEW

Before licensing SQN unit 1, TVA conducted a preliminary review of the unit 1 control room. In addition, TVA participated in a preliminary control room assessment conducted by the NRC staff and assisted by consultants from the Essex Corporation. The objective of these reviews was to assess, before licensing, the degree to which the control room design complied with specific human factors criteria. Several immediate modifications were made to improve communication capabilities, lighting, and noise levels. In addition, changes were made to control boards to prevent inadvertent activation of controls and to aid in the recognition of system controls, indicators, and alarms. These changes have been made to both units 1 and 2.

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TVA intends to complete the control room design review consistent with a program plan to be submitted two months before the start of the review activity. This review will be completed within six months after validated, symptom-oriented emergency operating procedures are implemented and will include a control room task analysis based on these procedures. A summary report of the completed review will be submitted within nine months following the completion of the review activities.

C. REGULATORY GUIDE 1.97

For SQN, our March 15, 1982 submittal (L. M. Mills to E. Adensam) meets the intent of Generic Letter 82-33 with respect to Regulatory Guide 1.97.

Our submittal addressed instrument range, environmental qualification, seismic qualification, quality assurance, redundancy, power supply, and display location. It addressed deviations from the guidance in Regulatory Guide 1.97 (Revision 2), provided justification for the deviations, and showed acceptable alternatives to the guidance given.

We have identified the need to elucidate our submittal with respect to Category 3 instrumentation, i.e., support instrumentation.

Post Accident Monitoring (PAM) consists of a set of process variables along with the instrumentation necessary to monitor the variables in the control room required to ensure safety during and following an accident. Support instrumentation may provide additional information to the operator during and following an accident, but this information is not required.

Types A, B, and C variables comprise the complete set of variables for PAM instrumentation by the functional definition of these variable types. Types D and E variables are not part of the set of variables which comprise the set of variables for PAM instrumentation. Types D and E variables are support instrumentation by the functional definition of the variable types.

Support instrumentation does not serve a primary safety function; therefore, indication of these variables is not required during and following an accident. These variables are not considered PAM instrumentation, and they only provide additional information by indicating system operating status, diverse variables, and radiation releases.

The variables can be used to enhance safety, if the instrumentation is available, by allowing the operator to improve the system operation over the minimum required for design basis behavior or determine what

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system has failed. The instrumentation to indicate these variables is not essential for the safety functions provided by PAM; therefore, no special design requirements are specified for this instrumentation, but some special design requirements may be utilized for this instrumentation to provide functions not within the scope of safety functions provided by PAM.

A preliminary design change request has been completed, and we are preparing the preliminary Engineering Change Notice (ECN) which will address costs and equipment delivery. Schedules will be identified for installation or upgrade when equipment delivery dates, outage projections, load demand, and manpower requirements are all identified and the Regulatory Guide 1.97 data set is integrated into the control room design review. At that time, we will modify and submit our integrated schedule as necessary to accomplish the needed installations or upgrade.

As our design and procurement phases progress, we may identify additional deviations or exceptions we must take in the implementation of the regulatory guide.

D. UPGRADED EMERGENCY OPERATING PROCEDURES (EOPs)

TVA is an active member of the Westinghouse Owners' Group (WOG) Procedures Subcommittee. The Emergency Response Guideline (ERG) Program has been in development since early 1981. The ERG program has an overall objective of providing human-factored, symptom-oriented, emergency operating procedures with improved human reliability and the ability to mitigate the consequences of a broad range of initiating events and subsequent multiple failures or operator errors without the need to diagnose specific events as required per NUREG-0737, item I.C.1.

The generic WOG high-pressure, Revision 1 ERGs should be available in August 1983. These guidelines (technical guidelines) will be submitted by WOG to NRC some time thereafter in the same manner as with the previous submittals. Sequoyah contains two major differences from the Westinghouse generic high-pressure reference plant. These differences are the upper head injection (UHI) system and the ice condenser. We have requested Westinghouse to evaluate the generic ERGs taking into account these differences. Westinghouse has indicated that some reanalysis may be required. The UHI/ice condenser ERGs from which plant-specific emergency operating procedures can be written will not be available before September 1983. Depending on the amount of reanalysis required, completion of the UHI/ice condenser ERGs may be delayed until 1984.

The procedures generation package includes the following:



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1. Plant-specific technical guidelines (a description of planned method for developing plant-specific EOPs from generic guidelines),
2. Writer's guide,
3. Description of program for validation of EOPs, and
4. Brief description of training program for the upgraded EOPs.

The procedures generation package will be submitted to NRC by October 1983 for Sequoyah.

The upgraded EOPs will be implemented, including completion of validation and training, within 12 months after completion of any required UHI/ice condenser reanalysis and issuance of the NRC Safety Evaluation Report (SER) for the WOG generic high-pressure Revision 1 ERGs.

E. EMERGENCY RESPONSE FACILITIES (ERF)

1. Technical Support Center (TSC)

A description of the TSC has been provided in a previous submittal to NRC in response to Generic Letter 81-10. The TSC is operational with the exception of the appropriate data systems in accordance with Sequoyah's integrated plan. The TSC will be fully functional including these data systems, necessary procedure changes, and training related to the data systems by startup following the second refueling outage for each unit consistent with our existing license commitments and our integrated modification schedule. The data systems will include appropriate variables essential for TSC functions.

2. Operations Support Center (OSC)

The OSC is fully functional.

3. Emergency Operations Facility (EOF)

TVA has implemented a centralized emergency management system to satisfy the EOF requirement for all TVA plants. This operation has received previous Commission approval as indicated in a letter from Darrell G. Eisenhut (NRC) to H. G. Parris (TVA) dated March 19, 1981. This system consists of a Central Emergency Control Center (CECC) located in Chattanooga, Tennessee, and two emergency support

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facilities; the Knoxville Emergency Center (KEC) located in Knoxville, Tennessee and the Muscle Shoals Emergency Center (MSEC) located in Muscle Shoals, Alabama.

To augment these facilities and satisfy the additional elements listed in Mr. Eisenhower's letter to Mr. Parris as well as the requirements of Generic Letter 82-33, TVA has established a "Local Recovery Center (LRC)" at Sequoyah to accommodate an NRC site team.

TVA's offsite emergency centers have been described in previous submittals to NRC in response to Generic Letter 81-10 and are applicable to Sequoyah. In that response, TVA describes a data-link between the CECC central data processor and the TSC and SPDS data base. Meteorological variables are transmitted by an automated data system. TVA provides appropriate plant parameters essential for EOF functions to the EOF by way of facsimile transmission (these parameter lists are provided in the Sequoyah Radiological Emergency Plant Implementing Procedures Documents). We believe this data transmission system is a fully adequate means of supplying the EOF with the essential parameters for EOF functions in a timely manner. With this data transmission system, the requirements of Generic Letter 82-33 will be met. These facilities will be considered fully operational, and we no longer intend to install the data link as described in our response to Generic Letter 81-10.

F. INTEGRATED TRAINING PLAN

The integrated program for training the Sequoyah operators on the upgraded emergency operating instructions, the Safety Parameter Display System, and any plant modifications as a result of the control room design review and Regulatory Guide 1.97 will be conducted as follows.

The plant operators will be trained during the regularly scheduled requalification and group training. Special training sessions will be scheduled as necessary. The simulator will be used extensively in this effort.

G. INTEGRATION OF EMERGENCY RESPONSE CAPABILITY INITIATIVES

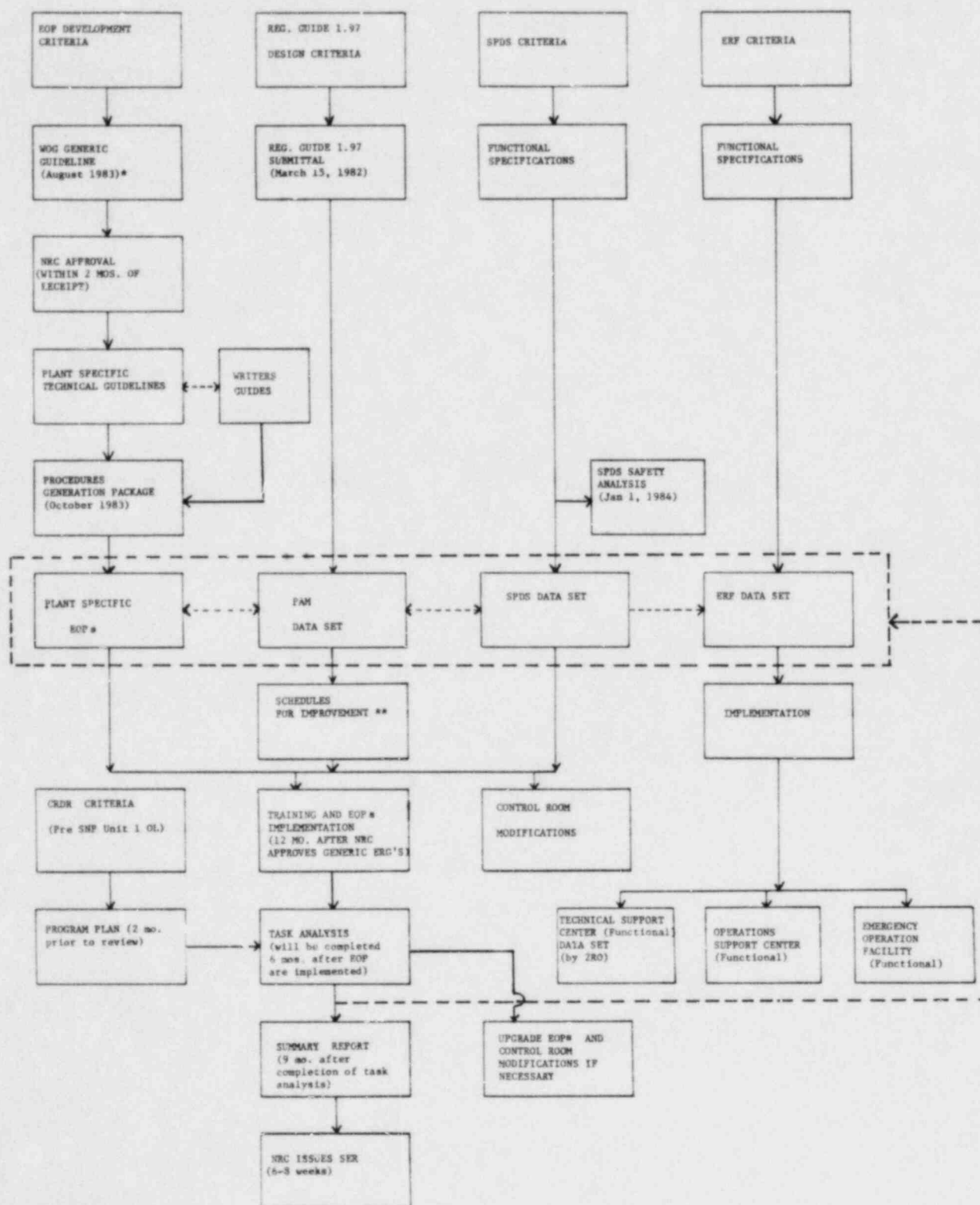
Effective implementation of emergency response capability initiatives requires the integration of these capabilities into an action plan which recognizes their interdependence. TVA intends to accomplish this using an integrated action plan which is graphically illustrated in the attached flowchart. This action plan has been simplified to identify fundamental relationships between the initiatives. As such, it does not show all interactions between them.

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It must also be recognized that this is an interactive process. Implementation of various control room modifications will be coordinated and integrated with other plant modifications consistent with our integrated schedule concept. As control room/plant modifications are implemented, procedures will be reviewed and revised as necessary and operators trained on these changes consistent with our established operator training programs. Training will thus be an integral activity in the implementation of these initiatives. Implementation schedules will be discussed in response to each of the individual initiatives.

SEQUOYAH NUCLEAR PLANT  
INTEGRATED ACTION PLAN



\* WOG Guidelines will be developed for UHI/ice condenser and will not be available before September 1983-  
Pending possible reanalysis this date may be as late as 1984

\*\* Schedules for installation or upgrade will be identified when Reg. Guide 1.97 data set is integrated  
into CCRM and equipment delivery dates, outage projection, load demand, and manpower requirements are identified.