

ENCLOSURE 1

PROPOSED TECHNICAL SPECIFICATION CHANGE

SPOUYAH NUCLEAR PLANT UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

(TVA-SQN-TS-91-16)

LIST OF AFFECTED PAGES

Unit 1

3/4 3-21

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Unit 2

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TABLE 3.3-3 (Continued)

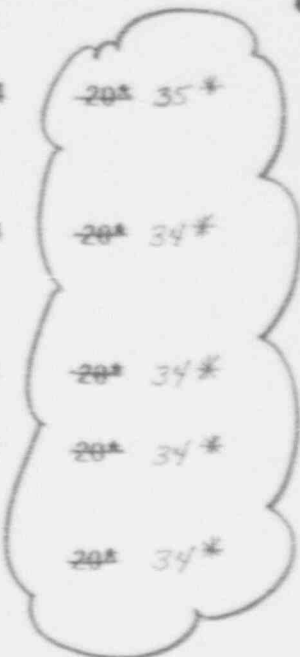
ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

SEQUOYAH - UNIT 1

3/4 3-21

Amendment No. 41, 129, 141  
MAY 16 1990

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
7. LOSS OF POWER					
a. 6.9 kv Shutdown Board --Loss of Voltage					R145
1. Start Diesel Generators	2/shutdown board	1 loss of voltage on any shutdown board	2/shutdown board	1, 2, 3, 4	<del>20*</del> 35*
2. Load Shedding	2/shutdown board	1/shutdown board	2/shutdown board	1, 2, 3, 4	<del>20*</del> 34*
b. 6.9 kv Shutdown Board Degraded Voltage					
1. Voltage Sensors	3/shutdown board	2/shutdown board	2/shutdown board	1, 2, 3, 4	<del>20*</del> 34*
2. Diesel Generator Start and Load Shedding Timer	2/shutdown board	1/shutdown board	1/shutdown board	1, 2, 3, 4	<del>20*</del> 34*
3. SI/Degraded Voltage Enable Timer	2/shutdown board	1/shutdown board	1/shutdown board	1, 2, 3, 4	<del>20*</del> 34*
8. ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS					
a. Pressurizer Pressure - P-11/Hot P-11	3	2	2	1, 2, 3	22a
b. Deleted					R145
c. Steam Generator Level P-14	3/loop	2/loop any loop	3/loop	1, 2	22c



R145

TABLE 3.3-3 (Continued)

ACTION 21 - With less than the Minimum Number of Channels OPERABLE, declare the associated auxiliary feedwater pump inoperable, and comply with the ACTION requirements of Specification 3.7.1.2.

ACTION 22 - With less than the Minimum Number of Channels OPERABLE, declare the interlock inoperable and verify that all affected channels of the functions listed below are OPERABLE or apply the appropriate ACTION statement(s) for those functions. Functions to be evaluated are:

- a. Safety Injection
  - Pressurizer Pressure
  - Steam Line Pressure
  - Negative Steam Line Pressure Rate
- b. Deleted.
- c. Turbine Trip
  - Steam Generator Level High-High
  - Feedwater Isolation
  - Steam Generator Level High-High

R145

ACTION 23 - With the number of OPERABLE channels one less than the Total Number of Channels, be in at least HOT STANDBY within 6 hours and in at least HOT SHUTDOWN within the following 6 hours; however, one channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.2.1.

ACTION 24 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within 6 hours and in at least HOT SHUTDOWN within the following 6 hours.

ACTION 25 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or declare the associated valve inoperable and take the ACTION required by Specification 3.7.1.5.

ADD INSERT A →

ACTION 26 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:

R145

- a. The inoperable channel is placed in the tripped condition within 6 hours.
- b. For the affected protection set, the Trip Time Delay for one affected steam generator ( $T_S$ ) is adjusted to match the Trip Time Delay for multiple affected steam generators ( $T_M$ ) within 4 hours.

INSERT A

ACTION 34 - a. With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPEPABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With the number of OPERABLE channels less than the Total Number of Channels by more than one, declare the associated 6,900-volt shutdown board inoperable, and comply with the action requirements of Specification 3.8.2.1 or 3.8.2.2 as applicable.

ACTION 35 - With the number of OPERABLE channels less than the Total Number of Channels by one or more, declare the associated diesel generator set inoperable, and comply with the action requirements of Specification 3.8.1.1 or 3.8.1.2 as applicable.

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
7. LOSS OF POWER					
a. 6.9 kv Shutdown Board --Loss of Voltage					R132
1. Start Diesel Generators	2/shutdown board	1 loss of voltage on any shutdown board	2/shutdown board	1, 2, 3, 4	-20* 35*
2. Load Shedding	2/shutdown board	1/shutdown board	2/shutdown board	1, 2, 3, 4	-20* 34*
b. 6.9 kv Shutdown Board Degraded Voltage					R18
1. Voltage Sensors	3/shutdown board	2/shutdown board	2/shutdown board	1, 2, 3, 4	-20* 34*
2. Diesel Generator Start and Load Shedding Timer	2/shutdown board	1/shutdown board	1/shutdown board	1, 2, 3, 4	-20* 34*
3. SI/Degraded Voltage Enable Timer	2/shutdown board	1/shutdown board	1/shutdown board	1, 2, 3, 4	-20* 34*

R132

SEQUOYAH - UNIT 2

3/4 3-21

Amendment No. 18, 132

007111-100

TABLE 3.3-3 (Continued)

ACTION 21 - With less than the Minimum Number of Channels OPERABLE, declare the associated auxiliary feedwater pump inoperable, and comply with the ACTION requirements of Specification 3.7.1.2.

R116

ACTION 22 With less than the Minimum Number of Channels OPERABLE, declare the interlock inoperable and verify that all affected channels of the functions listed below are OPERABLE or apply the appropriate ACTION statement(s) for those functions. Functions to be evaluated are:

- a. Safety Injection
  - Pressurizer Pressure
  - Steam Line Pressure
  - Negative Steam Line Pressure Rate
- b. Deleted
- c. Turbine Trip
  - Steam Generator Level High-High
  - Feedwater Isolation
  - Steam Generator Level High-High

R132

ACTION 23 - With the number of OPERABLE channels one less than the Total Number of Channels, be in at least HOT STANDBY within 6 hours and in at least HOT SHUTDOWN within the following 6 hours; however, one channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.2.1.1.

R55

ACTION 24 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within 6 hours and in at least HOT SHUTDOWN within the following 6 hours.

ACTION 25 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or declare the associated valve inoperable and take the ACTION required by Specification 3.7.1.5.

ADD INSERT A →

ACTION 36 With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:

- a. The inoperable channel is placed in the tripped condition within 6 hours.
- b. For the affected protection set, the Trip Time Delay for one affected steam generator ( $T_S$ ) is adjusted to match the Trip Time Delay for multiple affected steam generators ( $T_M$ ) within 4 hours.

R132

INSERT A

- ACTION 34 - a. With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With the number of OPERABLE channels less than the Total Number of Channels by more than one, declare the associated 6,900-volt shutdown board inoperable, and comply with the action requirements of Specification 3.8.2.1 or 3.8.2.2 as applicable.
- ACTION 35 - With the number of OPERABLE channels less than the Total Number of Channels by one or more, declare the associated diesel generator set inoperable, and comply with the action requirements of Specification 3.8.1.1 or 3.8.1.2 as applicable.

ENCLOSURE 2

PROPOSED TECHNICAL SPECIFICATION CHANGE

SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

(TVA-SQN-TS-91-16)

DESCRIPTION AND JUSTIFICATION FOR  
REVISION OF ACTIONS FOR TABLE 3.3-3



### Description of Change

TVA proposes to modify the Sequoyah Nuclear Plant (SQN) Units 1 and 2 Technical Specifications (TSs) to revise the required actions for inoperability of loss of power instrumentation in Item 7 of Table 3.3-3. This change adds two new actions (34 and 35) to Table 3.3-3. Action 34 addresses actions for 6.9-kilovolt (kV) shutdown board load shedding and degraded voltage instrumentation inoperability. The "a" portion of this action is for operable channels one less than the total number of channels and has not changed from Action 20, which presently applies. However, the "b" portion of the proposed Action 34 for operable channels more than one less than the total number of channels allows continued operation provided the associated 6.9-kV shutdown board is declared inoperable and the actions of TS 3.8.2.1 or 3.8.2.2 are complied with. Action 35 addresses actions for 6.9-kV shutdown board diesel generator (D/G) start instrumentation inoperability. This action requires declaring the associated D/G inoperable and complying with the actions of TS 3.8.1.1 or 3.8.1.2 for one or more operable channels less than the total number of channels.

### Reason for Change

The requested changes are needed for the following reasons and were identified by Operations personnel when they pointed out that literal reading of the requirements appear to require TS 3.0.3 entry for TS testing.

The existing Action 20 of Table 3.3-3 does not adequately provide for TS testing of the loss of power instrumentation. The test switches and test blocks provided for testing purposes do not have the capability to disable only one channel and perform all the required testing without actuating engineered safety features (ESF) unnecessarily. To perform all required TS testing with only one channel inoperable, multiple wire lifts and jumpers would be required with significant potential for the inadvertent actuation of ESF equipment. Additionally, design changes to provide circuitry to allow testing under this action would be very complex, expensive, and could create test performance sequences that could also challenge ESF actuations. The proposed change to add Actions 34 and 35 to Table 3.3-3 for loss of power instrumentation will allow performance of required TS testing with'n the allowed actions of the equipment directly affected by the instrumentation inoperability.

### Justification for Change

The loss of power instrumentation provides detection of loss-of-voltage or degraded voltage at the 6.9-kV shutdown boards. These instruments initiate load shedding for the shutdown board and initiate the start of the D/Gs. SQN utilizes a two out of three logic for degraded voltage identification that actuates two parallel and redundant sets of timers and relays. The ability to verify the functions of the voltage sensors without initiating load shedding is not available with test switches and blocks unless both sets of timers and relays are disabled. For D/G start instrumentation, the single test switch provided also disables all channels that would initiate a loss-of-voltage start signal. Because of these system configurations, TS-required testing cannot be performed without multiple wire lifts and jumpers, which would significantly increase the potential for inadvertent D/G starts or shutdown board load shedding.

The requirements of Action 20 require returning an inoperable channel to operable status within 48 hours with one less than the total number of channels operable or initiate unit shutdown. For more than one channel inoperable, the action does not apply, and the requirements of TS 3.0.3 would be applicable to require an expedited shutdown on the unit. The shutdown boards and D/Gs that this instrumentation supports are the only devices affected by their inoperability. Therefore, more than one or all channels inoperable cannot be any more limiting than the loss of a shutdown board or a D/G. For this reason, the application of TS 3.0.3 is overly restrictive; the TSs for the equipment affected already provide acceptable action statements to ensure safe operation of the unit for more than one inoperable loss of power instrumentation channel. The proposed revision requires declaring the shutdown board inoperable for more than one load shedding or degraded voltage channel inoperable and maintains the existing action for only one channel inoperable. For the D/G, the inoperability of any loss of power start channel would require declaring the D/G inoperable and complying with the associated actions. These changes are acceptable because the accident mitigation equipment (i.e., shutdown boards and D/Gs) that can be affected by this instrumentation inoperability is the primary safety concern, and complying with the actions for its inoperability will maintain safe operation of the unit.

Therefore, the proposed revisions are acceptable from a nuclear safety standpoint based on the above discussions. The Action 20 changes that create the new Actions 34 and 35 ensure the application of actions for the equipment affected by the loss of power instrumentation when multiple inoperabilities occur and prevent unnecessary TS 3.0.3 entries to perform TS-required testing.

#### Environmental Impact Evaluation

The proposed change request revises the required actions for inoperability of ESF instrumentation, but will not alter the operation or functions of any system and will not impact the environment. Therefore, this change does not involve an unreviewed environmental question because operation of SQN Units 1 and 2 in accordance with this change would not:

1. Result in a significant increase in any adverse environmental impact previously evaluated in the Final Environmental Statement (FES) as modified by the staff's testimony to the Atomic Safety and Licensing Board, supplements to the FES, environmental impact appraisals, or decisions of the Atomic Safety and Licensing Board.
2. Result in a significant change in effluents or power levels.
3. Result in matters not previously reviewed on the licensing basis for SQN that may have a significant environmental impact.

Enclosure 3

PROPOSED TECHNICAL SPECIFICATION CHANGE

SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

(TVA-SQN-TS-91-16)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

## Significant Hazards Evaluation

TVA has evaluated the proposed technical specification (TS) change and has determined that it does not represent a significant hazards consideration based on criteria established in 10 CFR 50.92(c). Operation of Sequoyah Nuclear Plant in accordance with the proposed amendment will not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

The changes to existing TS Table 3.3-3 action requirements for loss of power instrumentation that creates the new Actions 34 and 35 only affect the requirements for instrumentation inoperability. These actions do not alter plant configurations for accident mitigation equipment, but provide acceptable time requirements for inoperability and provide for instrumentation conditions that are consistent with plant design. The revised actions will not disable safety-related instrumentation outside of the TS requirements for the associated accident mitigation equipment or allow inappropriate inhibits to safety functions and, therefore, will not significantly increase the consequences of an accident. The functions of the instrumentation remain the same; only the actions for inoperability are modified. The proposed changes to these TS actions do not alter plant equipment configurations such that the potential for an accident is impacted. The affected instrumentation and associated equipment are utilized for accident mitigation and are not considered to be the source of any accident. Therefore, the probability of an accident previously evaluated is not increased.

2. Create the possibility of a new or different kind of accident from any previously analyzed.

As discussed above, only accident mitigation equipment is affected by the proposed changes. The equipment functions have not been altered; only the actions for inoperability have been modified to allow TS-required testing. Therefore, no equipment postulated to create an accident is impacted, and the possibility of a new or different kind of accident is not increased.

3. Involve a significant reduction in a margin of safety.

These proposed changes do not alter the functions of any safety-related equipment. All accident mitigation functions will remain the same, and actions for inoperable instrumentation will provide for TS-required testing. This will allow for operability testing of equipment used to mitigate accidents to ensure margins of safety are not impacted. The changes to the actions for inoperable loss of power instrumentation are still consistent with the actions for the associated equipment. Therefore, a significant reduction in any margin of safety is not involved as a result of the proposed changes.