TVA

July 11, 2006

TVA-SQN-TS-02-01, Revision 2 10 CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Gentlemen:

In the Matter of	)	Docket Nos. 50-327
Tennessee Valley Authority	)	50-328

SEQUOYAH NUCLEAR PLANT (SQN) - UNITS 1 AND 2 - TECHNICAL SPECIFICATIONS (TS) CHANGE 02-01, REVISION 2 - NOMINAL TRIP SETPOINTS FOR REACTOR PROTECTION SYSTEM (RPS) AND ENGINEERED SAFETY FEATURES (ESF) INSTRUMENTATION AND RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION (RAI) (TAC NOS. MC4408 AND MC4409)

References:
1. NRC letter to TVA dated March 2, 2006, "Sequoyah Nuclear Plant, Units 1 and 2 - Request for Additional Information Regarding Nominal Trip Setpoints (TAC Nos. MC4408 and MC4409) (TVA-SQN-TS-02-01)"
2. TVA letter to NRC dated August 18, 2004, "Sequoyah Nuclear Plant (SQN) - Units 1 and 2 - Technical Specification (TS) Change 02-01, Revision 1, Nominal Trip Setpoints for Reactor Protection System (RPS) and Engineered Safety Features (ESF) Instrumentation"

This letter responds to the RAI in Reference 1 associated with the TS change request in Reference 2 and revises the proposed change for the reactor coolant pump (RCP) undervoltage and

A001

underfrequency reactor trip instrumentation. This revision removes the proposed revision to the setpoint and allowable values for this instrumentation. The proposed changes were proposed to correct non-conservative values in the SQN TSs. Based on the ongoing resolution of the generic industry issue on setpoint methodology and the need to move forward with the original intent of the TS change (i.e., nominal trip setpoint), these proposed changes are being removed.

TVA is currently maintaining these values at the more conservative settings under administrative controls to ensure adequate performance of the reactor protection system. These functions will continue to be maintained in this manner until the final resolution of Technical Specification Task Force (TSTF) 493 Traveler is approved by NRC. At that time, a new TS amendment request will be submitted to NRC that will address these value changes and incorporate any applicable limited safety system setting (LSSS) impacts recommended by TSTF-493. No other changes, other than this deletion, are involved in this revision to the proposed changes. As this revision is a reduction in the previous scope and the other proposed revisions are not dependant on these instrument value changes, the previous significant hazards consideration continues to be applicable and bounding for the revised amendment request. Additionally, in accordance with 10 CFR 50.91(b)(1), TVA is sending a copy of this letter and attachments to the Tennessee State Department of Public Health.

Enclosure 1 provides TVA's responses to NRC's request for information. Please note that the responses exclude portions associated with the RCP undervoltage and underfrequency instrumentation as they are no longer to be considered in the amendment request. Enclosure 2 contains the two revised pages associated with the deletion of the RCP instrumentation. These are the only pages affected and all previously submitted pages remain applicable without change. There are no commitments contained in this letter.

If you have any questions about this change, please contact Jim Smith at 843-6672.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 11th day of July, 2006.

Sincerely,

P. L. Pace
Manager, Site Licensing
and Industry Affairs

Enclosures:
1. Response to Request for Additional Information
2. Revised Proposed Technical Specifications Changes (mark-up)

cc: See page 4

Enclosures

cc (Enclosures):

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ENCLOSURE 1

TENNESSEE VALLEY AUTHORITY (TVA)
SEQUOYAH NUCLEAR PLANT (SQN)
UNITS 1 AND 2

NRC Requested Information:

1. *"Setpoint Calculation Methodology: Provide documentation (including sample calculations) of the methodology used for establishing the limiting nominal setpoint and the limiting acceptable values for the As-Found and As-Left setpoints as measured in periodic surveillance testing as described below. Indicate the related Analytical Limits and other limiting design values (and the sources of these values) for each setpoint."*

Response:

Example for Intermediate Range Neutron Flux - (P-6) Enable Block Source Range Reactor Trip Permissive

TVA Calculation SQN-EEB-PS-TI28-0001, Revision 16 (R16) documents the setpoint and lower allowable value for the P-6 Permissive. The values are determined using the Westinghouse Electric Corporation setpoint methodology. The P-6 permissive is used to block the source range trip at 10^5 counts per second (CPS) when power is increased during startup. The acceptability of the P-6 setpoint is determined by performing a setpoint overlap evaluation between the source range trip setpoint and intermediate range P-6 setpoint. The P-6 setpoint is actuated by the intermediate range equipment before the source range trip is activated. TVA Calculation SQN-EEB-PS-TI28-0001, R16 shows that no setpoint overlap exists between the P-6 setpoint and the source range trip setpoint. The larger tolerance values for the post-accident monitoring (PAM) error terms are used for a conservative setpoint evaluation (source range verses intermediate range setpoints).

Error Terms (PAM):

Process Measurement Accuracy (PMa) =	± 5 percent (%)
Rack Calibration Rack Accuracy (RCa) =	± 2.0%
Measurement & Test (RMTe) =	± 2.0%
Comparator (RCSa) =	± 0.5% (Rack As-Left Value)
Rack Drift (Rd) =	± 1.88%

Rack As-Found:

Rack Statistical Allowance (RAt)

$$= \pm(RCa + RMTe + RCSa + Rd)$$
$$= \pm (2 + 2 + 0.5 + 1.88)$$
$$= \pm 6.38\% \text{ of Span}$$

Channel As-Found:

Channel Statistical Allowance (CSa)

$$= \pm (PMa^2 + RAt^2)^{1/2}$$
$$= \pm (5^2 + 6.38^2)^{1/2}$$
$$= \pm 8.11\% \text{ Span}$$

Converting to Rated Thermal Power (RTP)

Channel Statistical Allowance RTP

$$= \pm (8.11 \times 200/100)$$
$$= \pm 16.21\% \text{ RTP}$$

Setpoint Verification:

The P-6 setpoint is verified by calculating the decade equivalent of the setpoint and adding the error to this value to obtain the maximum P-6 error on the intermediate range equipment drawer. This value will be converted to the approximate equivalent CPS on the source range equipment drawer. To this CPS value, the maximum source range drawer error will be added to verify sufficient margin. No process error is included since the same error would be applied to both drawers in the same direction. Since no credit was taken for this setpoint in the safety analysis, no analytical limit was established.

The maximum error of the intermediate range drawer is ±8.11% of span; error due to rack only is ±6.38% of span. Where the intermediate range span is defined as 10^{-8} to 2×10^{2}% RTP or 10.3 decades.

P-6 Setpoint = 10^{-4}% RTP.

Converting to decades by Log (% RTP) = Decades

The P-6 Setpoint is, Log (10^{-4}) = -4.0 Decades

Positive error = +6.38% of 10.3 Decades = +.66 Decades

Only positive error will be examined for this function, since negative error would increase the margin between the trip setpoint and P-6 permissive setpoint.

Maximum P-6 value in Decades = -4.0 + .66 = -3.34
Decades = -3.34

Converting to % RTP $10^{-3.34} = 4.57 \times 10^{-4}$% RTP

From Calculation 1,2-XE-92-1, R4 "Intermediate Range Neutron Flux P-6 Setpoint,"

10^5 CPS is equivalent to 1.25×10^{-3}% RTP

And using a ratio to convert the P-6 max error value to CPS

$$\frac{10^5 \text{ CPS}}{1.25 \times 10^{-3}\% \text{ RTP}} = \frac{X}{4.57 \times 10^{-4}\% \text{ RTP}}$$

$X = 3.66 \times 10^4$ CPS

From Section 1.0 of TVA Calculation SQN-EEB-PS-TI28-0001, R16, the max error of the source range drawer is 11.86% of span; error due to rack only is 6.38% of span (the source range span is 10^0 to 10^6 CPS or 6 decades)

From above, P-6 maximum error in CPS = 3.66×10^4 CPS
The decade value is:
Log (3.66×10^4) = 4.56 Decades

The maximum source range drawer error is 6.38% of 6 decades.
.0638 x 6 = .38 Decades

When applying the maximum source range drawer error to the maximum P-6 error

$$\text{CPS} = 10^{(4.56 + .38)} = 10^{4.94}$$
$$= 8.71 \times 10^4 \text{ CPS}$$

The margin between the setpoint and the source range trip may now be computed in terms of decades.

5.0 - 4.94 = 0.06 Decades Margin

or (.06/6.0) * 100 = 1.0% of Span

The above evaluation has used the PAM tolerances, which are larger than the trip function tolerances, to demonstrate the intermediate range P-6 and source range trip values do not overlap. This methodology verifies acceptability of the setpoint.

Using the Trip Function Tolerances:

The smaller or more conservative error terms will be used for the as-found rack tolerance values.

Error Terms (Trip Function):

Rack Accuracy (RCa) =	± 1.1180 %
Measurement & Test (RMTe) =	± 0.1414 %
Comparator (RCSa) =	± 0.2236 %
Rack Drift (Rd) =	± 1.8750 %
Rack Temperature Effect (RTe) =	± 1.3332 %

Rack As-Found Tolerance

$= (RCa^2 + RMTe^2 + RCSa^2 + Rd^2 + RTe^2)^{1/2}$

= 2.752%

Decade error for Rack As-Found Value 2.572% channel error based on 10.3 decades full span

= ± 0.265 Decades.

Decade value of P-6 Setpoint of 10^{-4}% RTP is Log (10^{-4})

= - 4.0

As-Found Values are:

Positive Value = $10^{(-4 + .265)}$ = 1.8 x 10^{-4}% RTP

Negative Value = $10^{(-4 - .265)}$ = 5.4 x 10^{-5}% RTP

Decade error for rack As-Left Value 0.5% channel error based on 10.3 decades full span

= ± 0.0515 Decades.

Decade value of P-6 setpoint of 10^{-4}% RTP is Log(10^{-4})

= - 4.0

As-Left Values are:

Positive Value = $10^{(-4 + .0515)}$ = 1.1 x 10^{-4}% RTP

Negative Value = $10^{(-4 - .0515)}$ = 9 x 10^{-5}% RTP

Allowable value:

The technical specification (TS) allowable value is established here using the more conservative tolerance determined in TVA Calculation SQN-EEB-PS-TI28-0001. In this case the allowable value establishes a lower error band requirement for the P-6 permissive. The upper error band is effectively established by the source range trip function.

The allowable value of the TS setpoint shall be calculated based on TS equivalent rack errors for the intermediate range drawer above. This error will be converted to decade error and the TS allowable value is determined using the following formula:

TS Allowable Value = Setpoint + Rack Errors

Using the decade values from above for setpoint and rack error (negative)

TS Allowable Value = (-4) + (-.265) = -4.265 Decades

Converting Decades to % RTP:

$$10^{-4.265} = 5.4 \times 10^{-5}\% \text{ RTP}$$

The allowable value and the as-found value (5.4×10^{-5}% RTP) from above have been rounded up to 6 X 10^{-5}% RTP. Rounding up is toward the setpoint value and therefore is conservative.

The lower TS allowable value is 6 X 10^{-5}% RTP.

Summary of values for the Intermediate Range P-6 Permissive:

As Found	4.5×10^{-4}
As Left	1.1×10^{-4}
SetPoint	1×10^{-4}% RTP
As Left	9×10^{-5}
As Found	6×10^{-5}
Allowable Value	6×10^{-5}

Example for Spent Fuel Pool Monitor

TVA Calculation 0-RE-90-102/103, R1 documents the setpoint and allowable value for radiation monitoring of the air space above the fuel pool area. The bistable loop is composed of a rate meter module and the bistable. The accuracy of the components is provided.

Rate Meter

Re = ±3% of span	Reference Accuracy
OCTe = ±0.1% of span	Output Calibration Testing Error
ICTe = ±4% of reading	Input Calibration Testing Error
ICRe = ±4% of reading	Input Calibration Test Reading Error
Ab = ±3%of span	Acceptance Band

Reference Accuracy (Re) is 3% of span converted to voltage is:

Re = (Re%/100) x 10 volts
Re = ±.3 volts

Output Calibration Testing error (OCTe) = ±.1% of full span converted to voltage is:

OCTe = (.1%/100) x 10 volts
OCTe = ±.01 volts

Acceptance Band (Ab) = ±3% of full span converted to voltage is:

Ab = (3%/100) x 10 volts
Ab = ±.3 volts

ICTe and ICRe = 4% of reading and converting to volts equals;

ICTe and ICRe positive

$= LOG\ (1 + (\%Reading/100))/(No.\ Decades/Span)$

$= LOG\ (1 + (4\%/100))/(5/10)$

$= .034$ volts

ICTe and ICRe negative

$= LOG\ (1 - (\%Reading/100))/(No.\ Decades/Span)$

$= LOG\ (1 - (4\%/100))/(5/10)$

$= -.035$ volts

Normal Measurable Accuracy (Anf RM)

Anf RM positive

$= (Re^2 + OCTe^2 + Ab^2 + ICTe\ pos^2 + ICRe\ pos^2)^{1/2}$

Anf RM positive $= (.3^2 + .01^2 + .3^2 + .034^2 + .034^2)^{1/2}$

Anf RM positive = .427 volts

Anf RM negative

$= (Re^2 + OCTe^2 + Ab^2 + ICTe\ neg^2 + ICRe\ neg^2)^{1/2}$

Anf RM negative $= (.3^2 + .01^2 + .3^2 + .035^2 + .035^2)^{1/2}$

Anf RM negative = -.427 volts

Bistable

Ebs = ±1% of reading	Bistable Error
Ebd = +11.08% and -10.89% of reading	Net Count Rate Accuracy
ICTe = ±0.1% of span	Input Calibration Testing Error
Ab = ±3% of span	Acceptance Band

Bistable error (Ebs) is 1% of reading and converted to voltage is:

Ebs volts $= LOG\ (1 + (\%Reading/100))/(No.\ Decades/Span)$

Ebs volts = ±.008643 volts

Input calibration testing error (ICTe) = ±.1% of full span converted to voltage is:

ICTe = (.1%/100) x 10 volts

ICTe = ±.01 volts

Acceptance Band (Ab) = ±3% of full span converted to voltage is:

Ab = (3%/100) x 10 volts

Ab = ±.3 volts

Bistable drift (Ebd) transfer function is:

Ebd (volts) $= LOG\ (1 + (\%Reading/100))/(No.\ of\ Decades/Span)$

Ebd positive $= LOG\ (1 + 11.08/100)/(5/10)$

Ebd positive = .091 volts

Ebd (volts) = LOG (1 - (%Reading/100))/(No. of Decades/Span)
Ebd negative = LOG (1 - 10.89/100)/(5/10)
Ebd negative = -.1 volts

Normal Measurable Accuracy (Anf Bistable) is:

Anf Bistable positive

$$= (Ebs^2 + ICTe^2 + Ab^2 + Ebd\ pos^2)^{1/2}$$
$$= (.008643^2 + .01^2 + .3^2 + .091^2)^{1/2}$$
$$= .314 \text{ volts}$$

Anf Bistable negative

$$= (Ebs^2 + ICTe^2 + Ab^2 + Ebd\ neg^2)^{1/2}$$
$$= (.008643^2 + .01^2 + .3^2 + .1^2)^{1/2}$$
$$= -.317 \text{ volts}$$

Ratemeter-Detector

Encr = ± 14% of reading	Net Count Rate Accuracy
Eimp = ± 40.59% of reading	Imprecision Error
Eed = ± 15% of reading	Energy Dependence Error
Epc = ± 5% of reading	Calibration Error
Efac = ± 5% of reading	Factory Alignment Error

Ratemeter-Detector Error, Net Count Rate Accuracy, Encr = ± 14% of reading

Encr (volts) = LOG (1 + (%Reading/100))/(No. of Decades/Span)
Encr positive = LOG (1 + 14/100)/(5/10)
Encr positive = .114 volts

Encr (volts) = LOG (1 - (%Reading/100))/(No. of Decades/Span)
Encr negative = LOG (1 - 14/100)/(5/10)
Encr negative = -.131 volts

Ratemeter-Detector Error, Imprecision error, Eimp = ± 40.59% of reading

Eimp (volts) = LOG (1 + (%Reading/100))/(No. of Decades/Span)
Eimp positive = LOG (1 + 40.59/100)/(5/10)
Eimp positive = .296 volts

Eimp (volts) = LOG (1 - (%Reading/100))/(No. of Decades/Span)
Eimp negative = LOG (1-40.59/100) / (5/10)
Eimp negative = -.452 volts

Ratemeter-Detector Error, energy dependence error, Eed = ± 15% of reading

Eed (volts) = LOG (1 + (%Reading/100))/(No. of Decades/Span)
Eed positive = LOG (1 + 15/100)/(5/10)
Eed positive = .121 volts

Eed (volts) = LOG (1 - (%Reading/100))/(No. of Decades/Span)
Eed negative = LOG (1 - 15/100)/(5/10)
Eed negative = -.141 volts

Ratemeter-Detector Error, Calibration error, Epc = ± 5% of reading
Epc (volts) = LOG (1 + (%Reading/100))/(No. of Decades/Span)
Epc positive = LOG (1 + 5/100)/(5/10)
Epc positive = .042 volts

Epc (volts) = LOG (1 - (%Reading/100))/(No. of Decades/Span)
Epc negative = LOG (1 - 5/100)/(5/10)
Epc negative = -.045 volts

Ratemeter-Detector Error, Factory Alignment error, Efac = ± 5% of reading
Efac (volts) = LOG (1 + (%Reading/100))/(No. of Decades/Span)
Efac positive = LOG (1 + 5/100)/(5/10)
Efac positive = .042 volts

Efac (volts) = LOG (1 - (%Reading/100))/(No. of Decades/Span)
Efac negative = LOG (1 - 5/100)/(5/10)
Efac negative = -.045 volts

Normal Measurable Loop Accuracy (LAnf Bistable) is:

LAnf Bistable positive

$= (\text{Anf RM pos}^2 + \text{Anf Bistable pos}^2 + \text{Encr pos}^2 + \text{Eimp pos}^2)^{1/2}$

$= (.427^2 + .314^2 + .114^2 + .296^2)^{1/2}$

$= .618$ volts

LAnf Bistable negative

$= (\text{Anf RM neg}^2 + \text{Anf Bistable neg}^2 + \text{Encr neg}^2 + \text{Eimp neg}^2)^{1/2}$

$= (.427^2 + .317^2 + .131^2 + .452^2)^{1/2}$

$= -.71$ volts

Normal Loop Accuracy (LAn Bistable) is:

LAn Bistable positive

$= (\text{LAnf Bistable pos}^2 + \text{Eed pos}^2 + \text{Epc pos}^2 + \text{Efac pos}^2)^{1/2}$

$= (.618^2 + .121^2 + .042^2 + .042^2)^{1/2}$

$= .632$ volts

LAn Bistable negative

$= (\text{LAnf Bistable neg}^2 + \text{Eed neg}^2 + \text{Epc neg}^2 + \text{Efac neg}^2)^{1/2}$

$= (.71^2 + .141^2 + .045^2 + .045^2)^{1/2}$

= -.727 volts

Allowable Value (AV)

The limit is 375.49 mR/hr, as defined in Calculation TIPRS181, R5. This limit utilizes the recently NRC approved International Commission on Radiological Protection (ICRP)-30 methodology with a maximum 1530 effective full power day fuel rod burn-up value that includes the tritium production core parameters. This limit is converted to voltage as follows.

Limit volts = 2 x (LOG (limit mR) + 1)
Limit = 7.149 volts

The margin of 25% of LAn Bistable (positive) is added for conservatism.

AV volts = Limit - ((LAn - LAnf) + Margin)
= 7.149 volts - ((0.632 - 0.618) + (0.25 * 0.632))
= 7.149 volts - (0.014 + 0.158)
= 6.977 volts

Converting to mR/hr

$AV = 10^{(AV\ volts \times 5/10)-1}$
AV = 307.774 mR/hr

Rounding this value down for conservatism the calculation defines the upper TS AV:
AV = 307 mR/hr

Setpoint determination

A maximum setpoint value is determined based on the value defined for AV:
Setpoint max volts = AV volts - LAnf bistable pos
= 6.977 volts - .618 volts
= 6.359 volts

The Setpoint value expressed in mR/hr is:

$Setpoint\ max = 10^{((Setpoint\ max\ volts \times 5)/10)-1}$
$= 10^{((6.359 \times 5)/10)-1}$
= 151.16 mR/hr

As-left value is determined using Ab = ±.3 volts
As-Left pos = 6.359 + .3 volts
= 6.659 volts
As-Left neg = 6.359 - .3 volts
= 6.059 volts

As-found value is determined using LAnf bistable = +.618 volts and -.71 volts.

As-Found pos = 6.359 + .618 volts
= 6.977 volts
As-Found neg = 6.359 - .71 volts
= 5.649 volts

Summary of values for the Spent Fuel Pool Monitor (Bistable):

Upper Limit	7.149 volts (375.49 mR/hr)
Allowable Value	6.98 volts (307 mR/hr)
As Found	6.98 volts (307 mR/hr)
As Left	6.66 volts (213 mR/hr)
Setpoint	6.36 volts (151 mR/hr)
As Left	6.06 volts (107 mR/hr)
As Found	5.65 volts (67 mR/hr)

2. ***"Safety Limit (SL)-Related Determination: Provide a statement as to whether or not the setpoint is a limiting safety system setting for a variable on which a SL has been placed as discussed in Title 10 of the Code of Frederal Regulations (10 CFR) Part 50.36(c)(ii)(A). Such setpoints are described as 'SL-Related' in the discussions that follow. For each setpoint that you determined not to be SL-Related, explain the basis for this determination."***

Response:

The P-6 Permissive and the spent fuel pool radiation monitor setpoints are not a limiting safety system setting.

Permissive Function P-6

The overpower protection provided by the out-of-core nuclear instrumentation system consists of three discrete, overlapping levels (power range, intermediate range, and source range). Power escalation operations require a permissive signal from the higher range instrumentation channels before the lower range channels can be manually blocked by operator action. The P-6 permissive function requires a one-out-of-two intermediate range permissive signal prior to blocking of the source range reactor trip protection function. The source range reactor trip is automatically reactivated when both intermediate range channels return below the P-6 setpoint.

The function of the permissive is to prevent premature blockage of the source range trip function and to automatically reinstate it when power conditions warrant. The source range neutron flux reactor trip circuit performs a general anticipatory power excursion protection function during plant shutdown and low power startup operations. The source range protection channels do not provide the primary reactor protection function for any of the power excursion events analyzed in the Updated Final Safety Analysis Report

(UFSAR). Only power range protection functions are credited for mitigating these events.

Failure of the P-6 permissive results in two discreet failure modes. The first failure mode would result in the premature blockage of the source range reactor trip protection function during plant startup. For this failure mode, the reactor protection function would be provided by either the intermediate range neutron flux channels (when the reactor trip breakers are in the closed position, the control rod drive system is capable of rod withdrawal and fuel is installed in the reactor vessel) or the power range neutron flux channels (Modes 1 and 2). The second failure mode results in the failure to reactivate the source range channel trips when both intermediate range channels return below the permissive setpoint. As with the first failure mode discussed above, either the intermediate range neutron flux channels or the power range neutron flux channels would provide the reactor protection function in the absence of the source range channel trip. The limiting transient for the conditions associated with both P-6 failure modes is the uncontrolled rod cluster control assembly (RCCA) bank withdrawal from sub-critical conditions. As indicated in Section 15.2.1 of the Sequoyah UFSAR, the power range neutron flux channel low setpoint provides the reactor protection function for this transient. As such, the P-6 permissive setpoints associated with the source range neutron flux channels do not provide a limiting safety system function. The P-6 setpoint is not a limited safety system setting (LSSS).

Annunciation Function - Fuel Storage Pool Area Radiation Monitor

Two area type exposure rate radiation detectors are installed in the spent fuel pool area of the auxiliary building to monitor the gross radiation in the air space above the spent fuel pool. The function of the monitors is to initiate isolation of the ventilation paths in the auxiliary building upon detection of high radiation levels and to activate the auxiliary building gas treatment system.

The limiting radiation event in the auxiliary building is the fuel handling accident over the spent fuel pool (see UFSAR Section 15.5.6). As indicated in UFSAR Table 15.5.6-1, no credit is taken for any of the isolation or filtration functions initiated by the fuel storage pool area radiation monitors. The accident analysis for this event assumes all potential radioactive material is released to the environment within two hours. The resulting offsite and control room dose will meet applicable regulatory dose limits without the isolation functions of the radiation monitor. As such, the automatic isolation functions initiated by fuel storage pool area radiation monitors are

conservative features to further reduce dose consequences. They do not represent a limiting safety system function. The radiation monitor setpoint is not considered to be an LSSS.

3. *"For setpoints that are determined to be SL-Related: The NRC letter to the Nuclear Energy Institute (NEI) Setpoint Methods Task Force (SMTF) dated September 7, 2005 (ADAMS Accession Number: ML052500004), describes Setpoint-Related TS (SRTS) that are acceptable to the NRC for instrument settings associated with SL-related setpoints. Specifically: Part 'A' of the Enclosure to the letter provides limiting condition for operation (LCO) notes to be added to the TS, and Part 'B' includes a check list of the information to be provided in the TS Bases related to the proposed TS changes.*

   a. *Describe whether and how you plan to implement the SRTS suggested in the September 7, 2005, letter. If you do not plan to adopt the suggested SRTS, then explain how you will ensure compliance with 10 CFR 50.36 by addressing items 3b and 3c, below.*

   b. *As-Found Setpoint Evaluation: Describe how surveillance test results and associated TS limits are used to establish operability of the safety system. Show that this evaluation is consistent with the assumptions and results of the setpoint calculation methodology. Discuss the plant corrective action processes (including plant procedures) for restoring channels to operable status when channels are determined to be 'inoperable' or 'operable but degraded.' If the criteria for determining operability of the instrument being tested are located in a document other than the TS (e.g. plant test procedure), explain how the requirements of 10 CFR 50.36 are met.*

   c. *As-Left Setpoint Control: Describe the controls employed to ensure that the instrument setpoint is, upon completion of surveillance testing, consistent with the assumptions of the associated analyses. If the controls are located in a document other than the TS (e.g. plant test procedure) explain how the requirements of 10 CFR 50.36 are met."*

<u>Response:</u>

These setpoints are determined to be "non-SL-Related."

4. *"For setpoints that are not determined to be SL-related setpoints in response to Question 2: Describe the measures to be taken to ensure that the associated instrument channel is capable of performing its specified safety functions in accordance with applicable design requirements and associated analyses. Include in your discussion information on the controls you employ to ensure that the As-Left trip*

setting after completion of periodic surveillance is consistent with your setpoint methodology. If the controls are located in a document other than the TS (e.g., plant test procedure), describe how it is ensured that the controls will be implemented to satisfy operability requirements."

Response:

Engineering design output setpoint and scaling documents (SSDs) will specify the as-left calibration tolerance (Ab) and the as-found tolerance for the trip setting as evaluated within TVA calculations. Periodic plant calibration will incorporate the as-found and as-left calibration tolerance values ensuring compliance with the design basis requirements during performance of calibration activities. For the setpoint value found outside the as-left value and inside the as-found value, the setpoint will be adjusted and left within the as-left tolerance per the surveillance requirements.

Finding a component outside of the as-found tolerance will cause the senior instrument mechanic foreman to be notified. This notification is required by the associated calibration procedure. The foreman evaluates the condition and if the TS allowable value is exceeded or a potential TS inoperability exists, notifies the shift manager. Plant Procedure SPP-6.7, "Instrument Setpoint, Scaling, and Calibration Program," Section 3.4, gives direction for controlling out-of-calibration instrument conditions and states "Document the adverse condition in accordance with SPP-3.1." SPP-3.1 contains the requirements for the corrective action program (CAP) at SQN. SPP-6.7 ensures that the condition is handled in accordance with the CAP including immediate actions to return the instrument to proper calibration or repair of the instrument to meet TS required functions. Trending, recurrence controls, and causes of the condition are also part of the CAP process. The CAP will also ensure the notification to Operations but typically the foreman completes this notification in a timelier manner.

Periodic functional test are performed for the radiation monitor loops. However, setpoint verification is not performed as part of the functional test. No functional test is performed or required by TSs for the P-6 permissive.

ENCLOSURE 2

TENNESSEE VALLEY AUTHORITY
SEQUOYAH PLANT (SQN)
UNITS 1 AND 2

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE 02-01, REVISION 2
MARKED PAGES

I. AFFECTED PAGE LIST

Unit 1	Unit 2
2-6a	2-7

Note: All other pages previously provided with TS Change 02-01, Revision 1 are not affected by this revision and remain accurate for this amendment request. Only the above listed pages should be replaced for this revision.

II. MARKED PAGES

See attached.

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	⇓*NOMINAL* TRIP SETPOINT	ALLOWABLE VALUES
14. Deleted		
15. Undervoltage-Reactor Coolant Pumps	≥ 5022 volts-each bus	≥ 4739 volts-each bus
16. Underfrequency-Reactor Coolant Pumps	≥ 56.0 Hz - each bus	≥ 55.9 Hz - each bus
17. Turbine Trip		
A. Low Trip System Pressure	≥ 45 psig	≥ 43 psig
B. Turbine Stop Valve Closure	≥ 1% open	≥ 1% open
18. Safety Injection Input from ESF	Not Applicable	Not Applicable
19. Intermediate Range Neutron Flux - (P-6) Enable Block *Source Range Reactor Trip*	≥ 1 x ~~10-5~~ *10^{-4}*% of RATED THERMAL POWER	≥ 6 x ~~10-6~~ *10^{-5}*% of RATED THERMAL POWER
20. Power Range Neutron Flux (not P-10) Input to Low Power Reactor Trips Block P-7	≤ 10% of RATED THERMAL POWER	≤ 12.4% of RATED THERMAL POWER

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	⇓NOMINAL TRIP SETPOINT	ALLOWABLE VALUES
b. RCS Loop ΔT Equivalent to Power > 50% RTP		
Coincident with Steam Generator Water Level--Low-Low(Adverse) and	≥ 15.0% of narrow range instrument span	≥ 14.4% of narrow range instrument span
Containment Pressure (EAM)	≤ 0.5 psig	≤ 0.6 psig
or		
Steam Generator Water Level--Low-Low (EAM)	≥ 10.7% of narrow range instrument span	≥ 10.1% of narrow range instrument span
14. Deleted		
15. Undervoltage-Reactor Coolant Pumps	≥ 5022 volts-each bus	≥ 4739 volts - each bus
16. Underfrequency-Reactor Coolant Pumps	≥ 56 Hz - each bus	≥ 55.9 Hz - each bus
17. Turbine Trip		
A. Low Trip System Pressure	≥ 45 psig	≥ 43 psig
B. Turbine Stop Valve Closure	≥ 1% open	> 1% open
18. Safety Injection Input from ESF	Not Applicable	Not Applicable