

TENNESSEE VALLEY AUTHORITY
SEQUOYAH NUCLEAR PLANT

SURVEILLANCE INSTRUCTION

SI-606

BALANCE OF PLANT TEMPERATURE MONITORING SYSTEM

Units 1 and 2

Revision 14

PREPARED BY: Ben Lake
RESPONSIBLE SECTION: Operations
REVISED BY: Rick O'Rear
SUBMITTED BY: J. R. Walker
for For Responsible Section Supervisor
PORC REVIEW DATE: AUG 24 1987
APPROVED BY: [Signature]
Plant Manager
DATE APPROVED: AUG 24 1987

Reason for revision (include all Instruction Change Form Nos.):

Revised in accordance with ICF 87-1286, PORC reviewed and approved

08/03/87.

The last page of this instruction is number: 9

8808240166 880815
PDR ADOCK 05000327
PNU

Attachment No. 30 Sheet 1 of 6
Loop #/Identifier 1-LS-87-21

SEQUOYAH NUCLEAR PLANT
PLANT INSTRUCTION REVISION LOG

SURVEILLANCE INSTRUCTION

SI-606

REVISION LEVEL	Date Approved	Pages Affected	REASON FOR REVISION (INCLUDE COMMITMENTS AND ALL ICF FORM NUMBERS)
0	10/17/79	A11	
1	08/26/80	1,2,5, Add 2A	
2	10/29/80	3,4,5	
3	01/13/81	5	
4	08/11/81	A11	
5	11/16/81	1,5	
6	12/30/81	5,6	
7	05/26/82	3,6	
8	07/29/82	6	
9	09/22/82	All, Title Change	
10	12/03/82	3,6	
11	01/25/83	6	
12	05/11/87	A11	Revised to correct data package cover sheet to comply with SI-1, Appendix F, requirements. Rearranged and redesigned data sheet for clarity. The Appendix F constitutes a biennial review.
13	07/20/87	1,2,7, Added 9	Revised to add data sheet to take discharge pressure readings from MCR and Elec. Bd. Rm. AHU A & B. TACF O-87-0010-67. WP 12509
14	AUG 24 1987	2,9	Revised in accordance with ICF 87-1286, PORC reviewed and approved 08/03/87.

Attachment No. 30 Sheet 2 of 6
Loop #/Identifier 1-49-87-21

BALANCE OF PLANT TEMPERATURE MONITORING PROGRAM

1.0 SCOPE

1.1 This test consists of verifying the temperature of specific areas in auxiliary building, diesel generator building, ERCW pumping station, and main control room and to record condenser discharge pressure on the operating MCR and EBR chiller packages.

1.2 Requirements

- 1.2.1 Purpose - To verify the temperature at specific areas by visually reading and recording dry bulb air temperatures are within limits as indicated on the data sheets. This is to collect data for history of area temperatures where ESF equipment is located.
- 1.2.2 Purpose - To record condenser discharge pressure on the operating MCR and EBR chiller packages once a shift.
- 1.2.3 Tech Specs - None
- 1.2.4 Mode operability requirement - N/A
- 1.2.5 Performance Mode (s) - All
- 1.2.6 Scheduling - No concurrent SI's
- 1.2.7 Frequency - Once per shift.
- 1.2.8 Additional Manpower Requirements - 1 AUO (= 11/2 hrs per shift)

2.0 PRECAUTIONS

2.1 AUO should wait at each location until the temperature indication has stabilized before recording the temperature.

3.0 REFERENCES

- 3.1 Memo from R. H. Dunham to H. S. Fox dated April 20, 1979 (MEB 790423 383).
- 3.2 Memo from M. N. Sprouse to J. R. Calhoun dated July 9, 1980 (NEB 800709 264).
- 3.3 Letter from M. Seano of Westinghouse to D. R. Patterson on UHI system dated June 20, 1978.
- 3.4 Westinghouse scoping document TVA/TEN SU-5.6.2 dated August 1978, Rev. 1.
- 3.5 Memo from M. N. Sprouse to H. J. Green dated May 19, 1982 (NEB 820519 277).
- 3.6 TACF O-87-0010-67 and WP 12509.

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4.0 - INSTRUCTIONS

- 4.1 Record on data sheet 1 the temperature at the locations listed on location sheet-1. Use a digital temperature indicator or thermometer to measure temperatures.
- 4.2 If any local temperature exceeds its limit as listed on data sheet -1, page 1, record out of limit temperature every hour on data sheet -1, page 2 until temperatures are within limits. Record time and temperature reading each hour. Notify the Shift Engineer the first time the reading is determined to be out of limits, and notify the SE again when the temperature is determined to be within limits.

NOTE: Should any local temperature exceed its limit, attempt to restore temperature to normal. High temperature may be indication of failed ventilation and cooling systems.

- 4.3 Inspect the Main Control Room and Electrical Board Room Chiller packages once per shift. Log compressor condenser discharge pressure and adjust this pressure to 160 psig to 240 psig by adjustment of the ERCW manual discharge TCVs at each chiller package. Opening the TCV will decrease pressure; closing the TCV will increase pressure. These TCVs will normally be throttled according to operating pressure requirements of the chiller package.

Notify the Unit one SRO if any chiller package cannot be adjusted to within limits.

O-TCV-67-197	MCR Chiller Package "A" manual TCV
O-TCV-67-204	MCR Chiller Package "B" manual TCV
O-TCV-67-195	EBR Chiller Package "A" manual TCV
O-TCV-67-199	EBR Chiller Package "B" manual TCV

Attachment No. 30 Sheet 4 of 6
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LOCATION OF TEMPERATURE INDICATOR
Page 2 of 3

<u>Location Number</u>	<u>Location</u>
TI-15	Aux Bldg, Elevation 749 Unit 2 side next to 6.9KV-480V shutdown transformer 2A2-A
TI-16	Auxiliary Building, Elevation 749, Unit 2 side next to 6.9KV-480V shutdown transformer 2b2-B
TI-17	Auxiliary Building, Elevation 749, Unit 2 north end 480V Rx mov. bd. 2B2-B
TI-18	Auxiliary Building, Elevation 734, Unit 2 side behind stairs col. S-A13
TI-19	Auxiliary Building, Elevation 763, Unit 1 B Mech. Equip. Room
TI-20	Auxiliary Building, Elevation 763, Unit 2 B Mech. Equip. Room
TI-21	Main Control - across from panel 1-M-9
TI-22	D/G Building 722, 2B-B D.G. Room, next to 480V transfer switch for 125V DC D.G. batt. charger 2B-B
TI-23	D/G Building 740, south end 480V diesel aux. bd 2B1-B
TI-24	U1 Additional equipment bldg Elevation 706 on column between UH1 accumulators
TI-25	U2 Additional Equipment Bldg. Elev. 706 on column between UH1 accumulators
TI-26	ERCW pumping station, Elev. 704, column between 1A-A ERCW-MCC transformer and board
TI-27	ERCW pumping station, Elev. 704, column between "B" train ERCW-MCC transformers and boards
TI-28	ERCW pumping station, Elev. 704, column between 2A-A ERCW-MCC transformers and board
TI-29	Process Computer Room, elevation 685, center of room near column

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Data Sheet 1
Page 1 of 2

BALANCE OF PLANT TEMPERATURE MONITORING PROGRAM

Date _____

REF.	INSTRU. NO.	NOTE	LIMITS	2300 0700	0700 1500	1500 2300	REMARKS
4.1	TI-1	1	≤104°F				
	TI-2	1	≤104°F				
	TI-3	1	≤104°F				
	TI-4	1	≤104°F				
	TI-5	1	≤104°F				
	TI-6	1	≤104°F				
	TI-7	1	≤104°F				
	TI-8	1	≤104°F				
	TI-9	1	≤104°F				
	TI-10	1	≤104°F				
	TI-11	1	≤104°F				
	TI-12	1	≤104°F				
	TI-13	1	≤104°F				
	TI-14	1	≤104°F				
	TI-15	1	≤104°F				
	TI-16	1	≤104°F				
	TI-17	1	≤104°F				
	TI-18	1	≤104°F				
	TI-19	1	≤104°F				
	TI-20	1	≤104°F				
	TI-21	1	≤104°F				
	TI-22	1	≤120°F				
	TI-23	1	≤120°F				
	TI-24	1, 3	>75°F<85°F				
	TI-25	1, 3	>75°F<85°F				
	TI-26	1	≤120°F				
	TI-27	1	≤120°F				
	TI-28	1	≤120°F				
	TI-29	2	≥65°F≤75°F				
	TI-30	4.5	≥80°F≤120°F				
	TI-31	4.5	≥80°F≤120°F				
	TI-32	4.5	≥80°F≤120°F				
	TI-33	4.5	≥80°F≤120°F				
	TI-34	4.5	≥80°F≤120°F				
	TI-35	4.5	≥80°F≤120°F				
	TI-36	4.5	≥80°F≤120°F				
	TI-37	4.5	≥80°F≤120°F				
Operator's Initials:							

Acceptance Criteria: Temperatures are within limits as indicated.
IF not notify the S/E.

0159z/dar

Attachment No 30 Sheet 6 of 6
L.C.P. #/Identifier /-LS-27-21

ATTACHMENT 1
PAGE 1 OF 5

CHANGE REVIEW CHECKLIST FOR
ELECTRICAL CALCULATIONS

SECTION I

Change Document No. (ECN/DCN/FCR/PMP/Drawing and Rev.) DCR # 2545 Unit 1,2

Change Description REPLACE EXISTING LEVEL SWITCHES 1,2-LS-87-21, 22, 23, 24 WITH SQR MODEL # 103HS-BB502-NX-JITT X6

Does this change involve a safety-related system? Yes ☒ No ☐

Calculations Required: Yes ☒ No ☐
(Mark yes if any item in section II is marked "A")

Revision 0:

Change Review Preparer (CRP) Navin P. Shah Date 4/22/88

Change Review Checker (CRC) Larry M. Bagley Date 4/22/88

Project Principal Electrical Engineer (PPEE) J.E. TORIKRA Date 4/22/88

Electrical Calculations Manager (ECM) _____ Date _____

R1 R2 R3 R4 R5 R6 R7

FCR NO.:

CRP

CRC

PPEE

ECM

Justification for no Calculation Involvement (If Applicable):

Attachment 1 of 5
1-LS-87-21

Justification Preparer _____ Date _____

Justification Preparer _____ Date _____

ECN/DCN/FCR/PMP/Drawing and Rev. DCR 2545 Unit 1, 2

SECTION II

Answer all questions in the checklist: N/A (Mark "N/A") indicates the question does not apply to an electrical change requiring corresponding calculations to support the design change; APPLICABLE (Mark "A") indicates question applies to an electrical change that requires a corresponding calculation to support the design change. References to the FSAR, technical specifications, and/or design criteria should be written after each APPLICABLE item. If information is obtained from another discipline, indicate initials of the individual providing the input in the coordination column. Detailed explanations should be provided on attachments as determined by the Change Review Preparer.

ELECTRICAL POWER EVALUATION

	APPLICABLE	N/A	COORDINATION/ REFERENCE
1. Cable involvement?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
a. Cable(s) added and/or deleted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
b. Cable(s) size changed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c. Cable(s) length changed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Electrical load involvement?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
a. Load(s) added and/or deleted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b. Load(s) size changed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c. Load(s) demand changed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d. Load efficiency (as related to heat loss)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Circuit protection involvement?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
a. Circuit breaker(s) setting changed (long time, short time, or instantaneous)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b. Overload heater(s) size changed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c. Fuse size(s) changed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d. Manufacturer(s) or type(s) changed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
e. Other: _____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4. Electrical containment penetration involved?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
5. Electrical parameter(s) involved?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
a. Nominal, maximum or minimum equipment rating(s) changed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

ECN/DCN/FCR/FMP/Drawing and Rev. DCR 2345 Unit 1, 2.

SECTION II (Continued)

	APPLICABLE	N/A	COORDINATION/ REFERENCE
6. Operating mode(s) involved?	_____	✓	_____
a. Load SI actuated?	_____	✓	_____
b. Load process controlled?	_____	✓	_____
c. Load manually operated?	_____	✓	_____
d. Time delay setting change?	_____	✓	_____
e. Will load auto reset after loss of offsite power?	_____	✓	_____
7. Submerged equipment involved?	_____	✓	_____
8. Electrical separation involvement?	_____	✓	_____
a. Are non-IE cables routed with IE cables?	_____	✓	_____
b. Is circuit power supply located in a harsh environment?	_____	✓	_____
c. Non-IE load(s) supplied from IE boards?	_____	✓	_____
9. Appendix B circuit involved?	✓	_____	_____
10. Vendor-supplied data <u>revised</u> or required?	✓	_____	_____

INSTRUMENTATION AND CONTROL EVALUATION

11. Is any instrument in the loop being replaced with an instrument of different manufacturer or model number?	✓	_____	_____
12. Is any instrument being added to the loop?	_____	✓	_____
13. Is the loop being reconfigured either electrically or mechanically? Including:			
a. Instrument relocation (Primary elements and sensors only, transmitters, RTDs, etc. This does not include AUX INST RM, MCR, or ACR devices.)			
(1) Has room location changed?	_____	✓	_____
(2) Has instrument elevation changed?	_____	✓	_____

Attached to 31 3.1.5
 Loop 2-4S-87-21

ECN/DCN/FCR/PMP/Drawing and Rev. DCR 2545 Unit 1, 2

SECTION II (Continued)

	APPLICABLE	N/A	COORDINATION/ REFERENCE
b. Sense lines			
(1) Has sense line routing changed?	_____	✓	_____
(2) Have tap elevations changed?	_____	✓	_____
(3) Has fill fluid changed?	_____	_____	_____
c. Cables			
(1) If device is inside containment, has cable length been changed?	_____	✓	_____
14. Has set point changed?	_____	✓	_____
15. Does the change affect process parameters including safety or operating limits, temperature, pressure, flow, level, etc.?	_____	✓	_____
16. Does the change affect environmental drawings?	_____	✓	_____
17. Has loop function, category or operating time changed?	_____	✓	_____
18. Has seismic spectrum changed?	_____	✓	_____
19. Other than listed above, will the change affect output of any instrument in the loop? (Includes calibration procedures, rescaling of instruments, etc.)	_____	_____	_____

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20. Other Remarks

LEVEL
REF. CARR SQP 871644, THE PRESENT SP SWITCHES
ARE BEING REPLACED BY SOR MODEL # 103AS-BB502-NX-
JITXA (SAME SET POINT OF 87.1 IN H₂O ± 5.6 IN H₂O)
ECN-L6359.

ECN/DCN/FCR/PMP/Drawing and Rev. DCR 2545 Unit 1, 2

SECTION II (Continued)

21. List design documents that will be affected by this change:
47B601-87 SERIES, WIRING, SCHEMATIC DWGS
47W600-276

22. List any new design documents that will be created as a result of this change.
NONE

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ELEVATIONS FOR UHI (WATER ACCUMULATOR & 1-LS-87-21, 22, 23, & 24)

Distance between floor & condensate pots is 29'.
" " " & bottom tap elevations is 76".

Elevations for 1-LS-87-21, 22, 23, & 24 can be seen below:
(distances are between the floor and center line of LS)

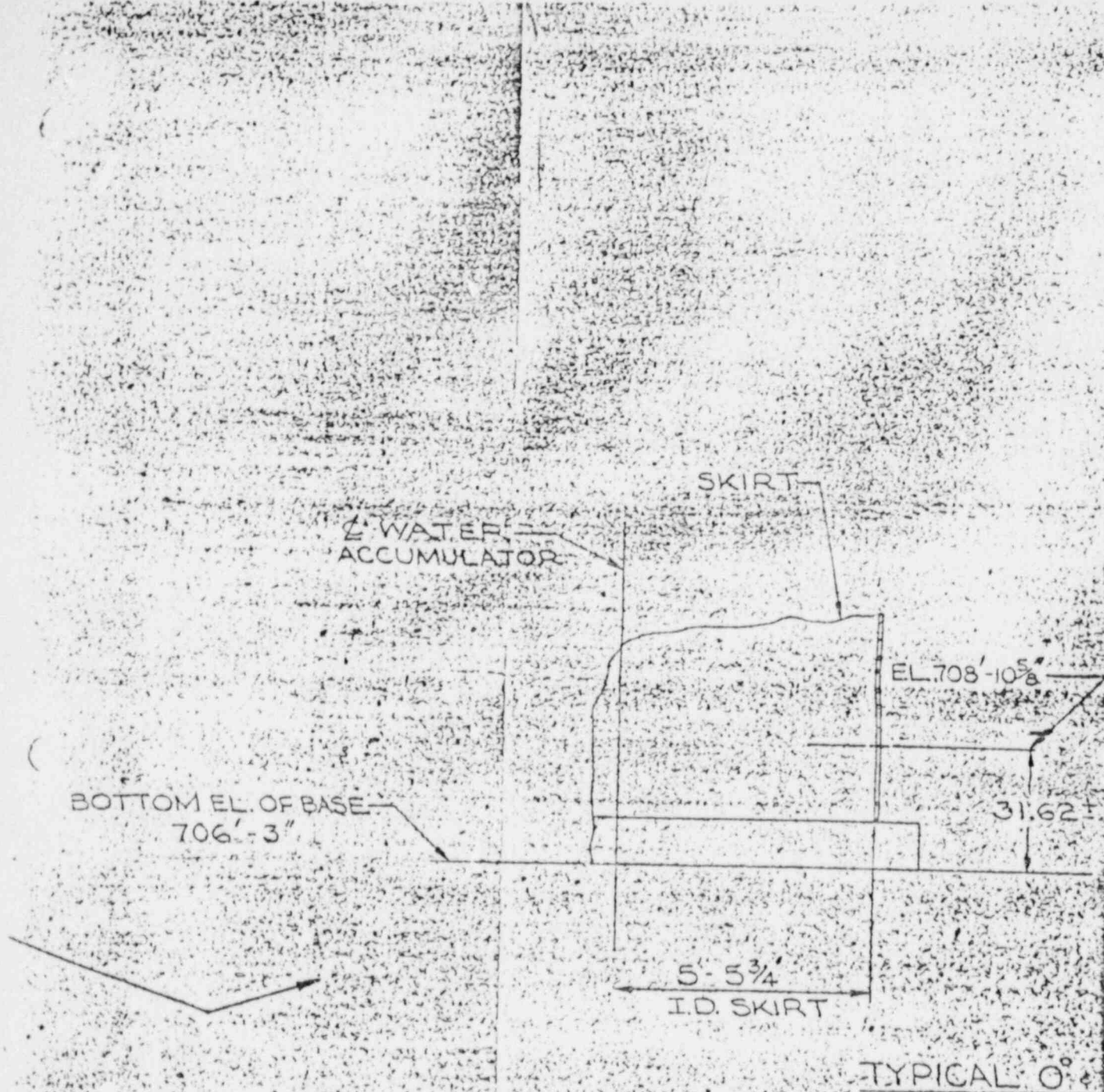
LS	DISTANCE
21	52"
22	61"
23	46"
24	58"

Floor elevation is 706'.

PREPARED BY Per M. [Signature] 5/5/88

CHECKED BY Navin S. Shah 5/5/88

Attachment 1: 32 Sheet 1 of 1
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UHI SCALING
ATTACHMENT 33
BP/ID: 1-LS-87-21
S.A. of 1

ATTACH 33, SH. 1 OF 1
1-LS-87-21

FROM WESTINGHOUSE DRAWING
1461F93

u1

ENCLOSURE 3

PROPOSED TECHNICAL SPECIFICATION CHANGE

SEQUOYAH NUCLEAR PLANT UNIT 1

DOCKET NO. 50-327

(TVA-SQN-TS-88-20)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS

ENCLOSURE 3

Significant Hazards Evaluation

TVA has evaluated the proposed technical specification 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 SQN in accordance with the proposed amendment will not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated. The UHI system is designed to supply additional inventory to the reactor core during the blowdown phase of a LOCA. UHI flow to the core is terminated by automatic hydraulic isolation valves. These valves are actuated by level switches on the UHI water accumulator. The proposed change reflects a new actuation setpoint and the associated instrument tolerances for the level switches. As such, the change does not increase the probability of a previously evaluated accident. The new setpoint and tolerances were calculated based on a new level switch accuracy characteristic and a broadened UHI-delivered water volume band. Broadening the delivered water volume band did result in increased PCTs for the limiting cases. In all cases, however, the PCT remained below the 10 CFR 50.46 limit of 2,200 degrees F. This in turn ensures that offsite doses remain bounded by the analyses of FSAR section 15.5. Because the proposed setpoint ensures that the delivered water volume remains bounded by the new analytical limits, the proposed change does not increase the consequences of any previously evaluated accident.
- (2) Create the possibility of a new or different kind of accident from any previously analyzed. The proposed change to the actuation setpoint and tolerances represents no modification to the UHI design or operation, which could create a new accident. The change only affects the performance of UHI for accident scenarios in which it is already assumed to function.
- (3) Involve a significant reduction in a margin of safety. The proposed change to SR 4.5.1.2.c.1 represents a new setpoint and accuracies for the combination of new level switches and a broadened delivered water volume band. The setpoint ensures that the delivered water volume remains between 850 and 1,130.5 cubic feet. Westinghouse analyses have indicated that delivered water volumes between these limits ensure that PCT remains below 2,200 degrees F. Therefore, the margin of safety is not reduced by this proposed change.