Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381

APR 2 1 1995

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

Gentlemen:

In the Matter of the Application of	)	Docket Nos. 50-390
Tennessee Valley Authority	)	50-391

WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2 - REGULATORY GUIDE (RG) 1.97, REVISION 2, POSTACCIDENT MONITORING SYSTEM (PAM) - SUPPLEMENTAL RESPONSE (TAC NOS. M77550 AND M77551)

This letter provides a revision to Deviation 20, associated with Variable 18, and Deviation 33, associated with Variable 95, identified in TVA's letters dated August 31, 1990 and May 9, 1994, concerning conformance to RG 1.97, Revision 2 for WBN. This letter also provides minor revisions to Variables 96 and 103 to be consistent with the WBN design criteria. These revisions do not deviate from the requirements of RG 1.97, Revision 2.

Enclosure 1 identifies the revisions for the affected variables and provides the detail and justification for those revisions. Enclosure 2 provides a revised variables table. Enclosure 3 provides the revisions to Deviations 20 and 33.

If you should have any questions concerning this matter, please telephone John Vorees at (615) 365-8819.

Sincerely,

Paul Baron

Raul R. Baron
Nuclear Assurance
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Watts Bar Nuclear Plant

Enclosures
cc: See page 2

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Enclosures
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ENCLOSURE 1

WATTS BAR NUCLEAR PLANT

REGULATORY GUIDE 1.97, REVISION 2
LIST OF CORRECTIONS

(FROM MAY 9, 1994 AND AUGUST 31, 1990 LETTERS)

ENCLOSURE 1

WATTS BAR NUCLEAR PLANT
REGULATORY GUIDE 1.97, REVISION 2
LIST OF CORRECTIONS

The following revisions have been found to be necessary to TVA's letters to NRC dated August 31, 1990 and May 9, 1994. Revisions incorporated will be denoted with revision bars. For each revision, the variable, change and justification are provided.

VARIABLE/ DEVIATION	CHANGE DESCRIPTION	JUSTIFICATION
Variable 18/ Deviation 20	Added justification for not monitoring the position of safety relief valves which are also Containment Isolation Valves (CIVs).	Safety relief valves will not be monitored for position because these valves are in the normal containment isolation position. These valves are not currently covered by a deviation.
Variable 95/ Deviation 33	Revised required range and its basis.	Revisions to supporting calculations required these changes.
Variable 96	Revised required range.	Revisions to supporting radiation calculations as a result of 10 CFR 20 revisions.
Variable 103	Revised "1 channel" under redundant channels to "portable."	Revision made to be consistant with the design criteria.

Enclosure 2

Regulatory Guide 1.97
Postaccident Monitoring Table Of Variables

Var Num	Variable Name	RG 1.97 Type/Category	Watts Bar Type/Category	Redundant Channels	RG 1.97 Range From	RG 1.97 Range To	Minimum Watts Bar Range From	Minimum Watts Bar Range to	Range Units	Display Location	Sensor Location	EQ	SE	QA	Power Supply	Notes
1	Auxiliary Feedwater Flow	D2	A1 D2	P1 P2 2 Channels Per Loop	0	110% Design	0	700	GPM	MCR	AB	YES	YES	YES	1E	(See Note 1)
2	Containment Lower Comp Atm Temperature	D2	A1 D2	P1 P2 2 Channels	40 Deg F	400 Deg F	0	350	Deg F	MCR	RB	YES	YES	YES	1E	Deviation #8
3	Containment Pressure (Narrow Range)	B1 C1	A1 B1 C1 D2	4 Channels	10 Psia	Design Pressure	-2	15	PSIG	MCR	RB	YES	YES	YES	1E	Deviation #24
4	Containment Radiation	C3 E1	A1 C3 E1	P1 P2 2 Upper 2 Lower	1	1.0E7	1	1.0E7	R/hr	MCR	RB	YES	YES	YES	1E	Deviation #36
5	Containment Sump Level (Wide Range)	B1 C1	A1 B1 C1 D2	P1 P2	Bottom Of Contmnt	600k Gal. Equivalent	0	20	Ft	MCR	RB	YES	YES	YES	1E	Deviation #32
6	Core Exit Temperature	B3 C1	A1 B1 C1 D2	P1 P2 8 PAM 1 8 PAM 2	200	2300	200	2300	Deg F	MCR	RB	YES	YES	YES	1E	Minimum Of 16 Operable Thermo Couples. 4 From Each Quadrant (See Note 1) Deviation #30 and # 37
7	Main Steam Line Radiation	C2 E2	C2 E2	1 Channel Per Steam Gen	1.0E-1	1.0E3	1.0E-1	1.0E3	uCi/cc	MCR	RB	YES	NO	YES	NON-1E	
8	Nuclear Inst. (Source Range)		A1 B1 D2	P1 P2	NA	NA	1	1.0E6	CPS	MCR	RB	YES	YES	YES	1E	
9	RCS Pressurizer Level	D1	A1 D1	P1 P2 P3	Bottom	Top	0	100	%	MCR	RB	YES	YES	YES	1E	(See Note 9)
10	RCS Pressure Wide Range	B1 C1	A1 B1 C1 D2	P1 P2 P3	0	3000	0	3000	PSIG	MCR	AB	YES	YES	YES	1E	(See Note 9)
11	RCS Temperature T Cold	B1	A1 B1 C1 D2	4 Channels 1 Per Loop	50	750	50	700	Deg F	MCR	RB	YES	YES	YES	1E	(See Note 1) Deviation #1
12	RCS Temperature T Hot	B1	A1 D2	4 Channels 1 Per Loop	50	750	50	700	Deg F	MCR	RB	YES	YES	YES	1E	(See Note 1) Deviation #1

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Regulatory Guide 1.97
Postaccident Monitoring Table Of Variables

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13	Refueling Water Storage Tank Level	D2	A1 D2	P1 P2	Top	Bottom	100	0	%	MCR	YD	YES	YES	YES	1E	
14	Steam Generator Level (Narrow Range)		A1 B1	P1 P2 P3 3 Channels Per SG	NA	NA	0	100	%	MCR	RB	YES	YES	YES	1E	(See Note 1 & 9)
15	Steam Generator Pressure	D2	A1 B1 D2	P1 P2 2 Channels Per SG	Atmos. pressure	20% Of Safety	0	1300	PSIG	MCR	AB	YES	YES	YES	1E	Deviation #3
16	Subcooling Margin Monitor	B2	A1 B2 C1 D2	P1 P2	200*	35*	200*	35*	Deg F	MCR	RB	YES	YES	YES	1E	*200 Deg Subcooling To 35 Deg Superheat
17	Auxiliary Building Passive Sump Level		B1 C1	P1 P2	NA	NA	12.5	72.5	Inches	MCR	AB	YES	NO	YES	NON-1E	
18	Containment Isolation Valve Position Indication	B1	B1 D2	1 Per Valve	Closed	Not Closed	Closed	Not Closed		MCR	RB/AB	YES	YES	YES	1E	Deviation #20
19	Containment Hydrogen Concentration	C1	B1 C1 D2	P1 P2	0	30	0	10	%	MCR	RB	YES	YES	YES	1E	Deviation #2
20	Control Rod Position	B3	D3	1 Channel Per Bank	Full In	Not Full In	0	235	Steps	MCR	RB	NO	NO	NO	NON-1E	Deviation #35
21	Nuclear Inst (Intermediate Range)	B1	B1 D2	P1 P2	1.0E-6%	100% Pwr	1.0E-8%	200%	Power	MCR	RB	YES	YES	YES	1E	
22	REACTOR VESSEL LEVEL	B1	B1 C1 D2	P1 P2 Plasma Display	Bottom Of Core	Top Of Vessel						YES	YES	YES	1E	(See Note 5)
22a	Static Mode (Pumps Not Running)						0	100	%	MCR	RB					0% Represents Reactor Vessel Empty
22b	Dynamic Mode (Pumps Running)						20	100	%	MCR	RB					100% Represents Reactor Vessel F
23	Containment Pressure (Wide Range)	B1 C1	C1	P1 P2	0	4x Design Pressure	-5	60	PSIG	MCR	RB	YES	YES	YES	1E	
24	Shield Building Vent (Noble Gas Activity)	C2 E2	C2 E2	1 Channel	1.0E-6	1.0E4	1.0E-6	1.0E4	uCi/cc	MCR	AB	YES	NO	YES	NON-1E	

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Regulatory Guide 1.97
Postaccident Monitoring Table Of Variables

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25	ABGTS High Pressure Alarm		D2	1 Channel Per Fan	NA	NA	NA	-0.2	In. H2O	MCR	AB	YES	NO	YES	NON-1E	
26	ACAS Pressure	D2	D2	1 Channel Per Train	Plant	Specific	0	150	PSIG	MCR	AB	YES	NO	YES	NON-1E	
27	AFW Valve Status		D1	1 Channel Per Valve	NA	NA	Open	Closed	NA	MCR	AB	YES	YES	YES	1E	
28	Accumulator Flow Isolation Valve Status	D2	D3	1 Channel Per Valve	Open	Closed	Open	Closed	NA	MCR	AB	NO	NO	NO	NON-1E	Deviation #16
29	Accumulator Tank Level	D2	D3	1 Channel Per Tank	10%	90%	7632	8264	GAL	MCR	RB	NO	NO	NO	NON-1E	Deviation #15
30	Accumulator Tank Pressure	D2	D3	1 Channel Per Tank	0 psig	750 psig	0	700	PSIG	MCR	RB	NO	NO	NO	NON-1E	Deviation #6
31	Annulus Pressure		D2	1 Channel	NA	NA	-10	0	In. H2O	MCR	RB	YES	NO	YES	NON-1E	
32	Aux. Feed Pump Turbine Steam Supply Isolation Valve Status		D3	1 Channel Per Valve	NA	NA	Open	Closed	NA	MCR	AB	NO	NO	NO	NON-1E	
33	Battery Current (125V dc Vital)	D2	D2	1 Channel Per Battery	Plant	Specific	-200	+600	AMPS	MCR	AB	YES	NO	YES	N/A	
34	Bus Voltage (125V dc Vital)	D2	D2	1 Channel Per Battery	Plant	Specific	75	150	VOLTS	MCR	AB	YES	NO	YES	N/A	
35	Bus Voltage (480V Shutdown)	D2	D2	1 Channel Per Train	Plant	Specific	0	600	VOLTS	MCR	AB	YES	NO	YES	N/A	
36	Bus Voltage (6.9kv Shutdown)	D2	D2	1 Channel Per Train	Plant	Specific	6400	7400	VOLTS	MCR	AB	YES	NO	YES	N/A	Analog Scales and Digital Display
37	CCS Surge Tank Level Abnormal		D3	1 Channel Per Train	NA	NA	0	100	%	MCR	AB	NO	NO	NO	NON-1E	
38	Centrifugal Charging Pump Total Flow	D2	D2	1 Channel	0	110% Design	0	1000	GPM	MCR	AB	YES	NO	YES	NON-1E	

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Regulatory Guide 1.97
Postaccident Monitoring Table Of Variables

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39	Charging Header Flow	D2	D3	1 Channel	0	110% Design	0	110	GPM	MCR	AB	NO	NO	NO	NON-1E	Deviation #17
40	Component Cooling Water To ESF Flow	D2	D2	1 Channel Per HX	0	110% Design	0	5561	GPM	MCR	AB	YES	NO	YES	NON-1E	
41	Component Cooling Water Supply Temperature	D2	D2	1 Channel Per Train	32 Deg F	200 Deg F	50	150	Deg F	MCR	AB	YES	NO	YES	NON-1E	Deviation #7
42	Condensate Storage Tank Water Level	D1	D3	1 Channel Per Tank	Plant	Specific	0	385,000	GAL	MCR	AB	NO	NO	NO	NON-1E	Not Primary Source of Aux. Feed Water. See Varible 27
43	Containment Air Return Fan Status	D2	D2	1 Channel Per Fan	Plant	Specific	On	Off	NA	MCR	RB	YES	NO	YES	NON-1E	(Breaker Status)
44	Containment Cooling Valve Status		D3	1 Channel Per Valve	NA	NA	Open	Closed	NA	MCR	AB	NO	NO	NO	NON-1E	
45	Containment Spray Flow	D2	D2	1 Channel Per Train	0	110% Design	0	4400	GPM	MCR	AB	YES	NO	YES	NON-1E	
46	Containment Spray HX Outlet Temperature		D2	1 Channel Per HX	NA	NA	0	200	Deg F	MCR	AB	YES	NO	YES	NON-1E	
47	Containment Sump Water Level (Narrow Range)	B2 C2	D3	1 Channel	Botton Of Sump	Top Of Sump	2	66	Inches	MCR	RB	NO	NO	NO	NON-1E	Deviation #12
48	Containment Sump Water Temperature	D2	D2	1 Channel	50 Deg F	250 Deg F	50	400	Deg F	MCR	AB	YES	NO	YES	NON-1E	Used RHR Inlet Temperature Loop which is qualified
49	Diesel Generator Power	D2	D2	1 Channel Per DG	Plant	Specific	0	4.8	MWATTS	MCR	AB	YES	NO	YES	N/A	
50	Diesel Generator Volts	D2	D2	1 Channel Per DG	Plant	Specific	0	6900	VOLTS	MCR	AB	YES	NO	YES	N/A	
51	ECCS Valve Status		D2	1 Channel Per Valve	NA	NA	Open	Closed	NA	MCR	AB	YES	NO	YES	NON-1E	
52	ERCW Header Flow		D2	1 Channel Per Header	NA	NA	0	20,000	GPM	MCR	*	YES	NO	YES	NON-1E	* See Note 8

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Regulatory Guide 1.97
Postaccident Monitoring Table Of Variables

Var Num	Variable Name	RG 1.97 Type/Category	Watts Bar Type/Category	Redundant Channels	RG 1.97 Range From	RG 1.97 Range To	Minimum Watts Bar Range From	Minimum Watts Bar Range to	Range Units	Display Location	Sensor Location	EQ	SE	QA	Power Supply	Notes
53	ERCW Supply Temperature		D2	1 Channel Per Header	NA	NA	32	200	Deg F	MCR	AB	YES	NO	YES	NON-1E	
54	Emergency Gas Treatment Damper Position	D2	D2	1 Channel Per Damper	Open	Closed	Open	Closed	NA	MCR	AB	YES	NO	YES	NON-1E	
55	Emergency Ventilation Damper Status	D2	D2	1 Channel Per Damper	Open	Closed	Open	Closed	NA	MCR	AB	YES	NO	YES	NON-1E	
56	Hydrogen Recombiner Status		D3	1 Channel Per Recombiner	NA	NA	On	Off	NA	MCR	RB	NO	NO	NO	NON-1E	
57	Igniter Group Status		D3	1 Channel Per Group	NA	NA	On	Off	NA	MCR	RB	NO	NO	NO	NON-1E	
58	Inverter Current (120V ac Vital)	D2	D2	1 Channel Per Inverter	Plant	Specific	0	167	AMPS	AB	AB	YES	NO	YES	N/A	Local Indication
59	Inverter Voltage (120V ac Vital)	D2	D2	1 Channel	Plant	Specific	115	125	VOLTS	AB	AB	YES	NO	YES	N/A	Local Indication
60	Letdown Flow	D2	D3	1 Channel	0	110% Design	0	144	GPM	MCR	AB	NO	NO	NO	NON-1E	Deviation #18
61	MCR Pressure		D3	1 Channel	NA	NA	0	0.50	In. H2O	MCR	CB	NO	NO	NO	NON-1E	
62	MCR Radiation Level		D2	1 Channel	1.0E-1	1.0E4	1.0E-1	1.0E4	mR/hr	MCR	MCR	YES	NO	NO	NON-1E	
63	Main Feedwater Flow	D3	D3	1 Channel Per Loop	0	110% Design	0	4,372,700	lb/hr	MCR	AB	NO	NO	NO	NON-1E	
64	Normal Emergency Boration Flow	D2	D2	1 Channel	0	110% Design	0	150	GPM	MCR	AB	NO	NO	YES	NON-1E	Deviation #4
65	THIS LINE INTENTIONALLY LEFT BLANK															
66	Pressurizer Heater Status (Electric Current)	D2	D2	1 Channel Per Group	Plant	Specific	0	50.5	AMPS	MCR	AB	YES	NO	YES	NON-1E	(See Note 3)

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Regulatory Guide 1.97
Postaccident Monitoring Table Of Variables

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67	Pressurizer Pressure Relief Valve Pos. (PORV, Block & Code)	D2	D2	1 Channel Per Valve	Closed	Not Closed	Closed	Not Closed		MCR	RB	YES	NO	YES	NON-1E	
68	Pressurizer Relief Tank Level	D3	D3	1 Channel	Top	Bottom	0	100	%	MCR	RB	NO	NO	NO	NON-1E	
69	Pressurizer Relief Tank Pressure	D3	D3	1 Channel	0	Design Pressure	0	100	PSIG	MCR	RB	NO	NO	NO	NON-1E	
70	Pressurizer Relief Tank Temperature	D3	D3	1 Channel	50 Deg F	750 Deg F	50	400	Deg F	MCR	RB	NO	NO	NO	NON-1E	Deviation #11
71	RCP Seal Injection Flow		D3	1 Ch Per RCP	NA	NA	0	13.2	GPM	MCR	AB	NO	NO	NO	NON-1E	
72	RCS Head Vent Valve Status		D2	1 Channel Per Valve	NA	NA	Closed	Not Closed	NA	MCR	RB	YES	NO	YES	NON-1E	
73	RHR Heat Exchanger Outlet Temperature	D2	D2	1 Channel Per HX	32 Deg F	350 Deg F	50	400	Deg F	MCR	AB	YES	NO	YES	NON-1E	Deviation #9
74	RHR Pump Flow (RHR System Flow)	D2	D2	1 Channel Per Pump	0	110% Design	0	5500	GPM	MCR	AB	YES	NO	YES	NON-1E	
75	RHR Valve Status		D3	1 Channel Per Valve	NA	NA	Open	Closed	NA	MCR	AB	NO	NO	NO	NON-1E	
76	Reactor Coolant Pump Status (Motor Current)	D3	D3	1 Channel Per Pump	Plant	Specific	0	712	AMPS	MCR	AB	NO	NO	NO	NON-1E	
77	Safety Injection Pump Flow	D2	D2	1 Channel Per Pump	0	110% Design	0	715	GPM	MCR	AB	YES	NO	YES	NON-1E	
78	Safety Injection System Valve Status		D3	1 Channel Per Valve	NA	NA	Open	Closed	NA	MCR	AB	NO	NO	NO	NON-1E	
79	Spent Fuel Pool Level Alarm		D2	1 Channel	NA	NA	748ft 11-1/2in	749ft 2-1/2in	ft,in	MCR	AB	YES	NO	YES	NON-1E	Range Reflects and High Alarm Setpoints
80	Spent Fuel Pool Temperature Alarm		D2	1 Channel	NA	NA		127	Deg F	MCR	AB	YES	NO	YES	NON-1E	Upper Range Is Alarm Set point

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Regulatory Guide 1.97
Postaccident Monitoring Table Of Variables

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81	Steam Generator Blowdown Isolation Valve Status		D2	1 Channel Per Valve	NA	NA	Closed	Not Closed	NA	MCR	RB	YES	NO	YES	NON-1E	
82	Steam Generator Level (Wide Range)	D1	D1	4 Channels 1 Per SG	Tube Sheet	Separators	0	100	%	MCR	RB	YES	YES	YES	1E	Deviation #10
83	Main Steam Flow	D2	D2	1 Channel Per S/G	NA	NA	0	4,500,000	lbs/hr	MCR	AB	YES	NO	YES	NON-1E	
84	Tritiated Drain Collector Tank Level	D3	D3	1 Channel Per Train	Top	Bottom	4	96	%	MCR	AB	NO	NO	NO	NON-1E	Local Indication Deviation #25
85	Volume Control Tank Level	D2	D3	1 Channel	Top	Bottom	0	100	%	MCR	AB	NO	NO	NO	NON-1E	Deviation #19
86	Waste Gas Decay Tank Pressure	D3	D3	1 Channel Per Tank	0	150% Design	0	150	PSIG	MCR	AB	NO	NO	NO	NON-1E	Local Indication Deviation #23
87	Radiation Exposure Meters	E3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Deviation #22
88	Airborne Radiohalogens And Particulates	E3	E3	Portable	1.0E-9	1.0E-3	1.0E-9	1.0E-3	uCi/cc	ANALYSIS	SAMPLE	NO	NO	NO	NA	Airborne I-131 and particulates
89	Plant And Environs Radiation	E3	E3	Portable	1.0E-3	1.0E4	1.0E-3	1.0E4	RAD/hr	PORTABLE	PORTABLE	NO	NO	NO	NA	
90	Plant and Environs Radioactivity (portable instr.)	E3	E3	PORTABLE	NA	NA	NA	NA	NA	ANALYSIS	SAMPLE	NO	NO	NO	NA	Multi Channel Gamma Ray Spectrometer
91	Auxiliary Building Vent (Noble Gas)	E2	E2	1 Channel	1.0E-6	1.0E3	1.0E-6	1.0E-2	uCi/cc	MCR	AB	YES	NO	YES	NON-1E	Deviation #13
92	Auxiliary Building Vent (Flow Rate)	E2	E2	1 Channel	0	110% Design	0	250,800	CFM	MCR	AB	YES	NO	YES	NON-1E	
93	Auxiliary Building Vent (Part & Halogens)	E3	E3	1 Channel	1.0E-3	1.0E2	1.0E-3	1.0E-2	uCi/cc	ANALYSIS	SAMPLE	NO	NO	NO	NON-1E	Sampling With Onsite Analysis Capability
94	Condenser Vacuum Exhaust Vent (Flow Rate)	E2	E2	1 Channel	0	110% Design	0	45	SCFM	MCR	TB	YES	NO	YES	NON-1E	

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Regulatory Guide 1.97
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95	Condenser Vacuum Pump Exhaust Vent (Noble Gas)	C3	E2	C3	E2	1 Channel	1.0E-6	1.0E5	2.4E-7	2.4E3	uCi/cc	MCR	TB	YES	NO	YES	NON-1E	Deviation #33
96	ERCW Radiation Monitors				E2	1 Channel Per Discharge Point	NA	NA	3.3E-4	1.65E-2	uCi/cc	MCR	AB	YES	NO	YES	NON-1E	
97	POST ACCIDENT SAMPLE SYSTEM		E3		E3	1 System						GRAB	PASF	NO	NO	NO	NON-1E	
97a	Reactor Coolant Chloride Concentration		E3		E3		0	20	1	20	ppm	NA	SAMPLE					Deviation #29
97b	Reactor Coolant Dissolved Hydrogen		E3		E3		0	2000	10	2000	cc/kg (STP)	NA	SAMPLE					Deviation #21
97c	Reactor Coolant Disolved Oxygen		E3		E3		0	20	1	20	ppm	NA	SAMPLE					Deviation #34
97d	Reactor Coolant Total Dissolved Gas		E3		E3		0	2000	100	2000	cc/kg (STP)	NA	SAMPLE					Deviation #34
97e	Reactor Coolant Boron	B3	E3		E3		0	6000	50	6000	ppm	NA	SAMPLE					Deviation #26
97f	Reactor Coolant PH		E3		E3		1	13	1	13	pH	NA	SAMPLE					
97g	Reactor Coolant Sample Activity	C1	E3	C3	E3		10uCi/ml	10Ci/ml	10uCi/ml	10Ci/ml	Ci/ml	NA	SAMPLE					Deviation #5
97h	Reactor Coolant Gamma Spectrum		E3		E3		NA	NA	NA	NA	NA	ANALYSIS	SAMPLE	NA	NA	NA	NA	Isotopic Analysis
98	CONTAINMENT AIR																	
98a	Containment Air H2		E3		E3		0%	30%	0%	10%	By Vol	ANALYSIS	SAMPLE	NA	NA	NA	NA	Also Measured by Hydrogen Analyzer Deviation #2

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98b	Oxygen Content	E3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Deviation #27
98c	Gamma Spectrum Sample	E3	E3	NA	NA	NA	NA	NA	NA	ANALYSIS	SAMPLE	NA	NA	NA	NA	Isotopic Analysis
99	Shield Building Vent Flow	E2	E2	1 Channel Per Unit	0	110% Design	0	30,800	CFM	MCR	AB	YES	NO	YES	NON-1E	
100	Shield Building Vent Monitor (Particulate And Iodine)	E3	E3	1 Channel Per Unit	1.0E-3	1.0E2	1.0E-3	1.0E2	uCi/cc	NA	SAMPLE	NO	NO	NO	NON-1E	Sampling With Onsite Analysis Capability
101	Steam Generator Discharge Vent (Flow Rate and Noble Gas)	E2	E2	1 Channel Per Release Point	1.0E-1	1.0E3	NOTE 4	NOTE 4		MCR	AB	YES	NO	YES	NON-1E	
102	METEOROLOGY															
102a	Vertical Temperature Difference	E3	E3	1 Channel	-9	+18	-9	+18	Deg F	MCR	YD	NO	NO	NO	NON-1E	
102b	Wind Direction	E3	E3	1 Channel	0	360	0	360	Deg	MCR	YD	NO	NO	NO	NON-1E	
102c	Wind Speed	E3	E3	1 Channel	0	67	0	50	MPH	MCR	YD	NO	NO	NO	NON-1E	Deviation #28
103	Radiation Exposure Rate	E2	E3	Portable	1.0E-1	1.0E4	1.0E-3	1.0E4	R/hr	NA	NA	NO	NO	NO	NA	Deviation #31

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Notes:

1. The following parameters are identified as diverse.

Parameter	Diverse Parameter
T (Hot)	Core Exit Temperature
Core Exit Temperature	T (Hot)
T (Cold)	SG Pressure
Auxiliary Feedwater Flow	SG NR/WR Level

2. Deleted

3. Pressurizer Heater Status required only for safety-related heater banks (backup heater 1A-A and 1B-B).

4. Recorder shall be provided for duration of release from all discharge points.

Noble Gas Activity	1.0E-1 to 1.0E3μCi/cc
Steam Flow Rate	0 to 4945200 lb/hr to PORV and Safety Valves
	0 to 63375 lb/hr to Aux. Feedwater Pump Turbine

5. The vessel level on plasma display is compensated actual vessel level derived from microprocessor algorithm using the upper range, lower range, dynamic range differential pressure, wide range temperature, and wide range pressure.

6. Deleted.

7. Deleted.

8. Transmitters are located in the ERCW pipe tunnel underneath the yard between the Auxiliary Building and the refueling water storage tank.

9. The requirements for Category I variables which require a third independent channel to resolve ambiguity resulting when redundant displays disagree are being implemented at WBN as follows:

The loop instrumentation for each channel is assigned to a redundant protection set (I, II, III, and IV) and electrical independence is maintained from sensor to display. Physical separation is maintained from the sensor to the isolator in the Auxiliary Instrument Room. From the isolator to the indicator in the Main Control Room, third channel (PAM 3) cables may be routed with either PAM 1 or PAM 2 cables (but not both) depending on its associated protection set.

ENCLOSURE 3

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DEVIATION 20

VARIABLE 18

Containment Isolation Valve (CIV) Position

DEVIATION FROM RG 1.97 GUIDANCE

RG 1.97, Revision 2, recommends that the CIV position indication should meet the requirements of a B1 variable (which encompasses position indication for the duration of the event). WBN's reactor coolant system (RCS) letdown CIVs flow control valves (FCV)-62-72, -73, -74, and -76 will be submerged postaccident inside containment. These valves' limit switches are not qualified for operation during post submergence.

In addition, safety relief valves which are also designated as CIVs are not monitored for position.

JUSTIFICATION

The RCS letdown CIVs close on an SI signal, Phase A signal, or a low pressurizer level signal. The valves and associated position indication limit switches are qualified to perform their intended safety functions prior to being submerged. The limit switch for the valve position indication is located on the valve and hence subject to submergence. The limit switch is not qualifiable for submergence. The limit switch performs its intended safety function well before submergence. Valve positions are indicated both in the Main Control Room and the Technical Support Center.

Once the limit switches are flooded, it must be assumed that the control circuit fuses will be blown and position indication will be lost. This indication circuit, however, is isolated from the other CIV indication circuits.

The solenoids for these valves are included in WBN's environmental qualification (E) program and will vent to automatically close the FCVs as required under accident conditions. An analysis in WBN's E binder demonstrates that once closed, a submergence failure of the solenoid will not cause the FCV to change position. Hence the valves are considered closed and no further indication is required.

For safety relief valves, position indication is not necessary since these valves are constantly in their containment isolation position (i.e., closed). Verification that these valves have accomplished their containment isolation function is not necessary since they do not change position to provide this function.

ENCLOSURE 3

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DEVIATION 33

VARIABLE 95

Condenser Vacuum Pump Exhaust Vent (Noble Gas)

DEVIATION FROM RG 1.97 GUIDANCE

The RG 1.97, Revision 2 required range for the condenser vacuum pump exhaust monitors is 1.0E-6 to 1.0E+5 μCi/cc .

JUSTIFICATION

TVA has determined the total gas required range of the condenser vacuum pump exhaust monitors to be less than the 1.0E-6 value in RG for the low end of the range and 2.4E+3 μCi/cc at the upper end of the range.

The steam generator tube rupture (SGTR) is the only credible accident monitored by the condenser vacuum pump exhaust monitor. NUREG-0800, Revision 2 requires that the SGTR accident be analyzed using the highest isotope concentrations allowed by the Watts Bar Technical Specifications. The specific activity of the reactor coolant is limited to:

a) Less than or equal to 1 microcurie per gram dose equivalent Iodine-131, and

b) Less than or equal to $100/\bar{E}$ μCi/gm

The dose equivalent I-131 is more than 4 times more restrictive than the $100/\bar{E}$ limit. The $100/\bar{E}$ is more conservative and is selected to demonstrate that the monitor will remain on scale during the most severe accident. The highest concentration of mixed noble gas isotopes that can be present under the $100/\bar{E}$ limit is 1.45E+3 μCi/cc as determined in TVA calculation WBNAPS3-048. For the SGTR source spectrum, the maximum measurable concentration for the condenser vacuum pump exhaust monitors is 3.53E+4. Therefore, the Watts Bar required range for the condenser vacuum pump exhaust monitors meets the intent of RG 1.97, Revision 2 based on either the mixed gas or the SGTR specific source spectrum.