



Carolina Power & Light Company

December 21, 1978

FILE: NG-3514 (B)

SERIAL: GD-78-4354

Mr. T. A. Ippolito, Chief  
Operating Reactors Branch No. 3  
Office of Nuclear Reactor Regulation  
Division of Operating Reactors  
United States Nuclear Regulatory Commission  
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 & 2  
DOCKET NOS. 50-325 & 50-324  
LICENSE NOS. DPR-71 & DPR-62  
IN-SERVICE INSPECTION - PUMP & VALVE TESTING PROGRAM

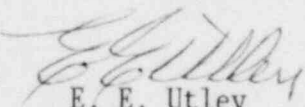
Dear Mr. Ippolito:

On September 5, 1978, Carolina Power & Light Company submitted a revised pump and valve testing program. As a result of continuing analysis, review, and implementation, CP&L has found it necessary to revise that program. The current revision is attached.

Attachment A to this letter summarizes the pump and valve testing program and details the information contained in the attached tables. The pump and valve testing program is being conducted in accordance with Subsections IWP and IWV of Section XI of the 1974 edition of the ASME Boiler and Pressure Vessel Code through the 1975 Addenda, except for specific relief requested in accordance with 10CFR50.55a(g)(5)(iii) which is identified in Attachment B.

The attached program represents the status of the pump and valve testing program at this time. As required additions or changes are identified, we will present the necessary information to you.

Yours very truly,

  
E. E. Utley  
Senior Vice President  
Power Supply

RPR/jnh\*  
Attachments

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Attachment A

ASME SECTION XI PUMP & VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

The pump and valve testing program shall be conducted in accordance with Subsection IWP and IWV of Section XI of the 1974 Edition of the ASME Boiler and Pressure Vessel Code through the Summer, 1975 Addenda, except for specific relief requested in accordance with 10CFR50.55a(g)(5)(iii) which is identified in Attachment B.

The period for which the pump and valve testing program is applicable commenced on March 1, 1978 and expires on November 1, 1979.

The pump and valve testing program was developed employing the classification guidelines contained in 10CFR50.2(V) for Quality Group A and Regulatory Guide 1.26, Revision 2 for Quality Groups B and C. Quality Groups A, B, and C are the same as ASME Class 1, 2, and 3, respectively.

Figure 1 identifies the drawings used to develop the pump and valve testing program.

Figure 2 lists the codes and symbols used throughout the program.

Table 1 lists all safety related\* Class 1, 2, and 3 pumps included in the testing program. The test parameters measured and the testing frequency are also listed.

Table 2 lists all safety related\* Class 1, 2, and 3 valves included in the program. Specifically excluded per IWV-1300 are valves used for operating convenience only, such as manual vent, drains, instrument and test valves, maintenance valves, pressure regulating, thermal reliefs, and valves used for system control. Test methods and frequencies are also listed. Valve stroke times are listed for the valves that have had their initial baseline values established. At the present time, all valves in the program have not been full stroke timed. The times will be supplied at the next revised submittal. Valves which cannot be tested during normal operation have the next acceptable frequency listed as allowed by IWV-3410 and IWV-3520.

Cold shutdown testing has been defined in the following manner:

0 hours	Scram event or scheduled shutdown
0-12 hours	Time necessary to determine the anticipated length of the shutdown
12-36 hours	Time required to cool down, make arrangements for maintenance, and mobilize crews to actually begin ISI testing.
36 hours	Testing will commence and continue until complete or plant is ready to return to power. Completion of all testing will not be a prerequisite to return to power. Any testing not completed at one shutdown will be performed during subsequent shutdowns within the required frequencies.

\*Safety-related - Necessary to safely shutdown the plant and mitigate the consequences of an accident.

ATTACHMENT B

BRUNSWICK STEAM ELECTRIC PLANT  
SPECIFIC REQUESTS FOR RELIEF

Pump Testing Program

1. Specific Relief Requested:

Deviation of Alert Range and Required Action Range for differential pressure values as specified in IWP-3100-2.

Applicable To:

RHR Pumps (4 per unit)

In Lieu of Test:

Upper value for differential pressure in alert range of  $1.08 \Delta P_r$   
Upper value for differential pressure in required action range of  $1.10 \Delta P_r$

Justification:

The relief as requested will allow CP&L to perform ISI testing using installed instrumentation. Presently, to achieve the accuracies required by the code test, instrumentation must be calibrated, installed, and removed for each test. Approximately 20 man-hours per pump is required to perform the test in this fashion. The average exposure to the test personnel is approximately 100 mrem per pump. For the RHR System, this constitutes 1920 man-hours and 9.6 rem per year to the plant staff.

The installed discharge pressure gauge has a required accuracy, per the GE Instrument Data Sheet, of + 12 psig. The required action range of the suction gauge is + 3 psig. Thus, the total maximum error in measuring pump differential pressure can be as large as + 15 psig or 6% at the project reference test pressure, even though the gauge would still be accurate to + 2% of their respective ranges.

Replacing the installed instrumentation with instruments capable of greater accuracy would constitute an undue hardship with no compensating increase in safety. New instruments would cost approximately \$10,000 and would require about 300 man-hours of engineering and administrative time. Additionally, 300 man-hours would be required for installation with a total radiation exposure to plant personnel of 6 rem.

The relief request is made in the conservative direction. Degradation of the pump would be detected in a lowering of differential pressure.

The ISI Test is not the only monitor of RHR pump performance. There are other potential backup methods for ensuring pump operability.

1. Pump performance can be evaluated by observing the running current of the motor at its feeder breaker.
2. There are local and remote flow indicators or alternate flow paths which can be used if questions arise about RHR pump performance.
3. In addition to the monthly ISI testing, CP&L is verifying design pressure and flow of all RHR pumps once per quarter as required by Technical Specifications.

2. Specific Relief Requested:

Deviation of Alert Range and Required Action Range for low rate values as specified in IWP-3100-2.

Applicable To:

RHR Service Water Pumps (4 per unit)

In Lieu of Test:

Upper value for flow rate in alert range of  $1.08 Q_r$

Upper value for flow rate in required action range of  $1.10 Q_r$

Justification:

The relief as requested will allow CP&L to perform ISI testing using installed instrumentation. Presently, to achieve the accuracies required by the code test instrumentation must be calibrated, installed, and removed for each test. Approximately 20 man-hours per pump are required to perform the test in this fashion. The average exposure to the test personnel is approximately 40 mrem per pump. For the RHR Service Water System, this constitutes 1920 man-hours and 3.84 man-rem per year.

The rated accuracies of the installed flow transmitter and indicator are  $\pm 1/2\%$  and  $\pm 2\%$  respectively, of their overall range of 0-12,000 gpm. This corresponds to an error of  $\pm 300$  gpm. At the projected test point of 4,000 gpm, the error is  $\pm 7.5$ .

Replacing the installed instrumentation with instruments capable of greater accuracy would constitute an undue hardship with no compensating increase in safety. The cost would be between five and ten thousand dollars with a resultant radiation dose to installation personnel of about 3 man-rem.

The relief request is made in the conservative direction. Degradation of the pump would be detected in a lessening of flow.

The ISI test is not the only monitor of RHR pump performance. There are other potential backup methods for ensuring pump operability.

1. Pump performance can be evaluated by observing the running current of the drive motor.
2. Suction pressure is monitored at all times by an annunciator in the Control Room.
3. Discharge pressure is monitored by both local and remote (Control Room) indicators.
4. In addition to the monthly ISI testing, CP&L is verifying design pressure and flow of all RHR service water pumps once per quarter as required by Technical Specifications.

3. Specific Relief Requested:

Deviation of Alert Range and Required Action Range for differential pressure valves as specified in IWP-3100-2.

Applicable To:

Core spray pumps (2 per unit)

In Lieu of Test:

Upper value for differential pressure in alert range of  $1.08 \Delta P_r$

Upper range for differential pressure in required action range of  $1.1p \Delta P_r$

Justification:

The relief as requested will allow CP&L to perform ISI testing using installed instrumentation. Presently, to achieve the accuracies required by the Code Test, instrumentation must be calibrated, installed, and removed for each test. Approximately 20 man-hours per pump is required to perform the test in this fashion. The average exposure to the test personnel is approximately 40 mrem per pump. For the core spray system, this constitutes 960 man-hours and 1.92 man-rem per year.

The installed pressure transmitter has a nominal accuracy of 1% of scale (+ 5 psig) and its indicator has a nominal accuracy of 2% (+ 10 psig) for a nominal total possible error of + 15 psig, or about 4.6% of the pump's total developed head at the test point.

Replacing the installed instrumentation with instruments capable of greater accuracies would constitute an undue hardship with no compensating increase in safety. New materials would cost about \$5,000 and would require about 300 man-hours for engineering and administrative time. Additionally 200 man-hours of installation time would constitute 1000 mrem of exposure.

The relief request is made in the conservative direction. Degradation of the pumps would be detected in a lowering of differential pressure.

The ISI test is not the only monitor of core spray pump performance. There are other potential backup methods for assuring pump operability.

1. Pump performance can be evaluated by observing the running current of the motor at its feeder breaker.
  2. There are local gauges monitoring suction and discharge pressure which give further indication of pump performance.
  3. In the (very unlikely) event of the pump producing a much higher (140%) than normal pressure, there is a pressure switch E21-PS-N007 which will alarm in the Control Room.
  4. There are local and remote flow indicators on an alternate flow path which can be used if there are any questions about core spray pump performance.
  5. In addition to ISI testing, CP&L is committed by Technical Specifications to test the core spray pumps every quarter by operating them at design conditions.
4. Specific Relief Requested:

Monthly Flow Rate Test as required by IWP-3400

Applicable To:

SBLC Pump

In Lieu of Test:

Measure flow rate at refueling outage

Justification:

Current design does not permit measuring flow rate without actuating the explosive squib valves. Pump suction is taken from the SBLC test tank and discharged back to the tank for the monthly operability testing. During refueling, the squib valves are actuated and the pump discharges into the vessel, allowing flow rate to be measured. Adequate assurance of pump operability is demonstrated by the monthly test and the full flow test at refueling.

5. Specific Relief Requested:

Monthly flow rate test as required by IWP-3400

Applicable To:

SW lube water pumps

In Lieu of Test:

Monthly start pump and assure discharge pressure is greater than service water pressure. Quarterly tests to measure inlet pressure, differential pressure, and vibration amplitude.

Justification:

Currently instrumentation is not installed to measure flow rate from the pumps. Plant modifications have been developed and the required instrumentation will be installed at the next refueling outage. The in-lieu-of testing as described is adequate to assure pump operability until the modifications are made.

VALVE TESTING PROGRAM

I. Specific Relief Requested:

Seat Leak Testing on Category A Valves as required by IWV-3420

Applicable To:

All Category A valves listed in Table 2

In-lieu -of Test:

Leak testing per the requirements of 10CFR50, Appendix J.

Justification:

The leak rate testing required by Appendix J imposes detailed and restrictive requirements to assure containment integrity. The local Type C testing, as well as the Integrated Leak Rate Testing required by Appendix J are currently being performed under Technical Specifications. No additional level of quality would be gained by duplicating the tests.

II. Specific Relief Requested:

Quarterly exercise testing required by IWV-3410 and IWV-3520

Applicable To:

Valves C11/C12 - 115, CV126, CV127, SV120, SV121, SV122, SV123 for all 137 CRD Hydraulic Units

In-lieu-of Test:

Operation of each valve verified during normal operation every seven days and periodic tests performed every 16 weeks for 10% of the control rods selected on a rotating basis and all rods tested at each refueling outage.

Justification:

The valves for each control rod are contained within the hydraulic unit for that rod. Satisfactory performance of the unit demonstrates operability of the valves. Each rod is moved one notch every seven days that the reactor is operating at greater than 20% power. In addition 10% of the control rods are fully inserted on a rotating basis every 120 days of operation. At refueling all control rods are tested. This testing is felt to exceed the requirements of IWV-3410 and IWV-3520, therefore a higher level of confidence is demonstrated for each valve.



III. Specific Relief Requested:

Quarterly exercise testing required by IWV-3410 and IWV-3520

Applicable To:

RHR valves E11-F075, E11-F078, and E11-F073.

In-lieu-of Test:

None

Justification:

These valves are in the cross connect line between RHR and Service Water Systems. The function of the valves is to open as a very last resort and inject Service Water into the RHR system. No credit was taken in the plant safety analysis for this action, therefore they are not considered as essential valves. Testing of these valves would inject the untreated service water (brackish) into the primary loop. No level of confidence is gained by testing these valves.

IV. Specific Relief Requested:

Action required for inoperable valves per IWV-3410(g) and IWV-3520(c).

Applicable To:

Valves listed on Table 2.

In-lieu-of Test:

Unit startup with an inoperable valve shall be governed by the technical specifications.

Justification:

The ASME Code's authoritative on when an individual valve is inoperable, but whether a unit startup can be performed with an inoperable valve depends on many factors. These limiting conditions for operation have been analyzed and are currently included in the technical specification and should not be superseded by the ASME Code.

FIGURE 1

## BRUNSWICK STEAM ELECTRIC PLANT DRAWING LIST

<u>System</u>	<u>P&amp;ID Number</u>
Service Water	9527-D-20041, Rev. 5
Diesel Generator Service Water and Demineralized Water	9527-D-2274, Rev. 5
Containment Atmosphere Control	9527-D-25015, Rev. 6
Control Rod Drive Hydraulic	9527-D-25016, Rev. 7
Control Rod Drive Hydraulic	9527-D-25017, Rev. 5
Reactor Coolant Recirculation	9527-D-25018, Rev. 10
Nuclear Steam Supply	9527-D-25021, Rev. 4
Nuclear Steam Supply	9527-D-25022, Rev. 9
High Pressure Coolant Injection	9527-D-25023, Rev. 14
Core Spray	9527-D-25024, Rev. 12
Residual Heat Removal	9527-D-25025, Rev. 12
Residual Heat Removal	9527-D-25026, Rev. 9
Reactor Water Cleanup	9527-D-25027, Rev. 10
Reactor Core Isolation Cooling	9527-D-25029, Rev. 17
Service Water	9527-D-25037, Rev. 9
Closed Cooling Water	9527-D-25038, Rev. 9
Service Air	9527-D-25042, Rev. 6
Drywell Drains	9527-D-25045, Rev. 10
Standby Liquid Control	9527-D-25047, Rev. 10
Reactor Coolant Recirculation	9527-D-25048, Rev. 9
Fuel Pool Cooling and Filtering	9527-D-25049, Rev. 7
Containment Atmosphere Control	9527-D-2560, Rev. 4
Torus Drain and Keep Fill Charging	9527-D-26098, Rev. 2
Instrument Air Supply	9527-D-70007, Rev. 5
Instrument Air Supply	9527-D-70029, Rev. 8
Instrument Air Supply System Reactor Building	9527-D-70077, Rev. 4
Containment Atmosphere Monitoring	9527-D-72018, Rev. 7

FIGURE 2

BRUNSWICK STEAM ELECTRIC PLANT  
 CODES AND SYMBOLS USED

Valve Types

BF . . . . . Butterfly  
 CK . . . . . Check  
 DA . . . . . Diaphragm  
 GA . . . . . Gate  
 GL . . . . . Globe  
 ND . . . . . Needle  
 REG . . . . . Regulator  
 RV . . . . . Relief/Safety  
 3W . . . . . 3-Way

Actuator Types

AO . . . . . Air  
 M . . . . . Manual  
 MO . . . . . Motor  
 SA . . . . . Self Actuated  
 SO . . . . . Solenoid

Valve Position

C . . . . . Closed  
 O . . . . . Open  
 LC . . . . . Locked Closed  
 LO . . . . . Locked Open

Valve Test Methods

FS . . . . . Full Stroke  
 FL . . . . . Observe Failure Mode  
 MT . . . . . Measure Time  
 LT . . . . . Leak Test  
 VI . . . . . Verify Remote Indication  
 PV . . . . . Passive Valve (No Test Required)  
 RV . . . . . Relief Valve (Test per IWV-3510)  
 ET . . . . . Category E Valve (Verify locked or sealed)

Test Intervals

M . . . . . Monthly  
 Q . . . . . Quarterly  
 C . . . . . Cold Shutdown  
 R . . . . . Refueling  
 A . . . . . Annual

Misc. Symbols

NA . . . . . Not Applicable  
 NR . . . . . Not Required

TABLE 1

## BRUNSWICK STEAM ELECTRIC PLANT PUMP TEST PROGRAM

Pump	No. Per Unit	Safety Class	Rotative Speed	Inlet Press.	Diff. Press.	Flow Rate	Vibration Amplitude	Bearing Temp.
RHR*	4	2	NR	M	(1) M	NR	M	A
RHR SW Booster	4	3	NR	M	M	M(2)	M	A
HPCI*	1	2	M	M	M	NR	M	A
RCIC*	1	3	M	M	M	NR	M	A
Core Spray*	2	2	NR	M	(3) M	NR	M	A
SBLC	2	2	NR	M	M	(4) R	M	A
Service Water	5	3	NR	M	M	M	M	A
SW Lube Water	2	3	NR	M	M	(5) M	M	A

\*Considered to be fixed resistance system since tested in mini-flow mode ( ) indicates numbers of specific relief requested.

Revised September 1, 1978

TABLE 2 VALVE TEST PROGRAM  
 BRUNSWICK STEAM ELECTRIC PLANT

Diesel Generator Service

SYSTEM NAME Water and Demineralized Water System

P&ID NO. 9527-D-2274

PAGE 1 of 2

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
1-SW-V210	3	E2		X				6	BF	MO	C	N	FS-Q MT-Q			
2-SW-V210	3	E2		X				6	BF	MO	C	N	FS-Q MT-Q			
1-SW-V211	3	E5		X				6	BF	MO	C	N	FS-Q MT-Q			
2-SW-V211	3	E5		X				6	BF	MO	C	N	FS-Q MT-Q			
1-SW-V212	3	E7		X				6	BF	MO	C	N	FS-Q MT-Q			
2-SW-V212	3	E7		X				6	BF	MO	C	N	FS-Q MT-Q			
1-SW-V213	3	E10		X				6	BF	MO	C	N	FS-Q MT-Q			
2-SW-V213	3	E10		X				6	BF	MO	C	N	FS-Q MT-Q			

TABLE 2 VALVE TEST PROGRAM

Diesel Generator Water BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Service & Demineralized Water System

P&ID NO. 9527-D-2274

PAGE 2 of 2

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
1-SW-V272	3	E1			X			6	CK	SA	-	N	FS-Q			
2-SW-V272	3	E1			X			6	CK	SA	-	N	FS-Q			
1-SW-V273	3	E4			X			6	CK	SA	-	N	FS-Q			
2-SW-V273	3	E4			X			6	CK	SA	-	N	FS-Q			
1-SW-V274	3	E7			X			6	CK	SA	-	N	FS-Q			
2-SW-V274	3	E7			X			6	CK	SA	-	N	FS-Q			
1-SW-V275	3	E10			X			6	CK	SA	-	N	FS-Q			
2-SW-V275	3	E10			X			6	CK	SA	-	N	FS-Q			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Containment Atmosphere Control

P&ID NO. 9527-D-2560

PAGE 1 of 1

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
HV15	2	E5						1.5	GA	M	C	N	PV			
PSV1	2	E5			X			0.5	RV	SA	C	N	RV			
PSV2	2	E6			X			0.75	RV	SA	C	N	RV			
PSV3	2	G5			X			1.5	RV	SA	C	N	RV			
PSV4	2	D5			x			0.5	RV	SA	C	N	RV			
PSV5	2	D5			x			0.5	RV	SA	C	N	RV			
2-NP-V2	2	C4					X	1	GL	M	O	N	ET-M			
2-NP-V3	2	C6					X	1	GL	M	O	N	ET-M			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Service Water

P&ID NO. 9527-D-20041

PAGE 1 of 3

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
RV4	3	B6			X			0.75	RV	SA	-	N	RV			
RV5	3	B8			X			0.75	RV	SA	-	N	RV			
RV6	3	B10			X			0.75	RV	SA	-	N	RV			
RV7	3	B2			X			0.75	RV	SA	-	N	RV			
RV8	3	B4			X			0.75	RV	SA	-	N	RV			
RV9	3	C6			X			0.75	RV	SA	-	N	RV			
RV10	3	C8			X			0.75	RV	SA	-	N	RV			
RV11	3	C10			X			0.75	RV	SA	-	N	RV			
RV12	3	C2			X			0.75	RV	SA	-	N	RV			
RV13	3	C4			X			0.75	RV	SA	-	N	RV			
V 13	3	E6		X				20	BF	MO	O	N	FS-Q MT-Q			
V14	3	E7		X				20	BF	MO	C	N	FS-Q MT-Q			
V15	3	E8		X				20	BF	MO	O	N	FS-Q MT-Q			

Revised September 1, 1978



TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Service Water

P&ID NO. 9527-D-20041

PAGE 2 of 3

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
V16	3	E9		X				20	BF	MO	C	N	FS-Q MT-Q			
V17	3	E10		X				20	BF	MO	O	N	FS-Q MT-Q			
V18	3	E11		X				20	BF	MO	C	N	FS-Q MT-Q			
V19	3	E3		X				20	GF	MO	O	N	FS-Q MT-Q			
V20	3	E5		X				20	BF	MO	O	N	FS-Q MT-Q			
V201	3	E2			X			4	CK	SA	-	N	FS-Q			
V202	3	A9			X			4	CK	SA	-	N	FS-Q			
V203	3	A8			X			4	CK	SA	-	N	FS-Q			
V204	3	A9			X			4	CK	SA	-	N	FS-Q			
V205	3	A8			X			4	CK	SA	-	N	FS-Q			
V255	3	E2						18	BF	MO	O	N	PV			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Service Water

P&ID NO. 9527-D-20041

PAGE 3 of 3

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
V21	3	D7			X			20	CK	SA	-	N	FS-Q			V21 & V276 tested only if "A" Conventional pump is operable.
V276	3	C6			X			1.5	CK	SA	-	N	FS-Q			
V22	3	D9			X			20	CK	SA	-	N	FS-Q			V22 & V277 tested only if "B" Conventional pump is operable
V277	3	C8			X			1.5	CK	SA	-	N	FS-Q			
V23	3	D11			X			20	CK	SA	-	N	FS-Q			V23 & V278 tested only if "C" Conventional pump is operable
V278	3	C10			X			1.5	CK	SA	-	N	FS-Q			
V24	3	D3			X			20	CK	SA	-	N	FS-Q			V24 & 279 tested only if "A" Nuclear pump is operable
V279	3	C2			X			1.5	CK	SA	-	N	FS-Q			
V25	3	D5			X			20	CK	SA	-	N	FS-Q			V25 & V280 tested only if "B" Nuclear pump is operable.
V280	3	C4			X			1.5	CK	SA	-	N	FS-Q			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Containment Atmospheric Control P&ID NO. 9527-D-25015 PAGE 1 of 3

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
V4	2	C5	X					8	BF	AO	O	Y	FS-Q FL-Q LT-R	X	APP. J	
V5	2	C6	X					20	BF	AO	C	Y	FS-Q FL-Q LT-R	X	App. J	
V6	2	D7	X					18	BF	AO	C	Y	FS-Q FL-Q LT-R	X	App J	
V7	2	C11		X				20	BF	AO	C	Y	FS-Q FL-Q			
V8	2	C11		X				20	BF	AO	C	Y	FS-Q FL-Q			
V9	2	F10		X				18	BF	AO	C	Y	FS-Q FL-Q VI-R			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Containment Atmospheric Control

P&ID NO. 9527-D-25015

PAGE 2 of 3

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
V10	2	F10		X				18	BF	AO	C	Y	FS-Q FL-Q VI-R			
V15	2	E6	X					24	BF	AO	C	N	FS-Q FL-Q LT-R	X	APP. J	
V22	2	C12		X				2	GA	MO	C	Y	FS-Q MT-Q			
V23	2	F10		X				2	GA	MO	C	Y	FS-Q MT-Q			
V47	2	D6	X					1	GA	AO	O	Y	FS-Q FL-Q LT-R	X	App. J	
V48	2	D8	X					1	GA	AO	O	N	FS-Q FL-Q LT-R	X	App. J	
V49	2	G9		X				4	BF	AO	C	Y	FS-Q FL-Q			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Containment Atmospheric Control

P&ID NO. 9527-D-25015

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VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
V50	2	G9		X				4	BF	AO	C	Y	FS-Q FL-Q VI-R			
V55	2	D6	X					1	GA	AO	C	Y	FS-Q FL-Q LT-R	X	APP. J	
V56	2	D6	X					1	GA	AO	C	Y	FS-Q FL-Q LT-R	X	APP. J	
V59	2	D5			X			0.75	RV	SA	-	Y	RV	X	APP. J	
V74	2	D5						0.75	GL	M	C	Y	PV			
V91	2	E5					X	1	GL	M	C	N	ET-M			
X20A	2	B6	X		X			20	CK	SA	-	N	FS-Q LT-R	X	App. J	
X20B	2	B7	X		X			20	CK	SA	-	Y	FS-Q LT-R	X	App. J	

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Control Rod Drive Hydraulic P&ID NO. 9527-D-25016 PAGE 1 of 2

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F083	1	G2	X		X			3	CK	SA	-	N	FS-R LT-R	X App. J	FR83, F086: SYSTEM IS IN CONTINUOUS OPERATION. TEST AT REFUELING.	
F086	1	G1	X		X			3	CK	SA	-	Y	FS-R LT-R	X App. J		
F087	1	G1						3	GA	M	0	Y	PV			

Revised September 1, 1978  
Revised December 22, 1978

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME

Control Rod Drive Hydraulic

P&ID NO.

9527-D-25017

PAGE 2 of 2

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORM. VAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
115	2	E2			X			0.5	CK	SA	-	N	FS-Q	X	FS-R	
CV126	2	E4		X				0.5	GA	AO	C	N	FS-Q FL-Q	X X	FS-R FL-R	
CV127	2	F4		X				0.75	GA	AO	C	N	FS-Q FL-Q	X X	FS-R FL-R	
SV120	2	E3		X				1	GA	SO	C	N	FS-Q	X	FS-R	
SV121	2	F3		X				0.75	GA	SO	C	N	FS-Q	X	FS-R	
SV122	2	F4		X				0.75	GA	SO	C	N	FS-Q	X	FS-R	
SV123	2	F4		X				1	GA	SO	C	N	FS-Q	X	FS-R	

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Reactor Coolant Recirculation

P&ID NO. 9527-D-25018

PAGE 1 of 1

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS	
			A	B	C	D	E										
F019	1	E7		X				0.75	GL	AO	O	Y	FS-C FL-C VI-R			F019, F020: Failure closed prevents sampling of reactor coolant	
F020	2	F3		X				0.75	GL	AO	O	N	FS-C FL-C VI-R				
F023A	1	B10		X				28	GA	MO	O	Y	FS-C MT-C VI-R				F023A, F031A: Closure of either valve shuts off reactor coolant recirculation flow.
F031A	1	C5		X				28	GA	MO	O	Y	FS-C MT-C VI-R				
F043A	1	G9						22	GA	MO	C	Y	PV				
F044A	1	G9						2	GA	MO	O	Y	PV				
V22	2	F3		X				0.75	GA	MO	O	N	FS-C MT-C				V22, V24: Failure closed shuts off cooling water to recirculation pump.
V24	2	F4			X			0.75	CK	SA	-	Y	FS-C				
F032A	1	B5		X				4	GA	MO	C	Y	FS-C MT-C VI-R				F032A: Locked open by Admin. Procedure during normal operations. Test at cold shutdown.

Revised September 1, 1978  
Revised December 22, 1978



TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME

Nuclear Steam Supply

P&ID NO.

9527-D-25021

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VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
FO10A	1	D11	X		X			18	CK	SA	0	Y	FS-C			FO10A & B: Cycling would cause loss of main feedwater flow.
FO10B	1	B11	X		X			18	CK	SA	0	Y	FS-C LT-R	X	App.J	
FO13A	1	G7			X			6	RV	SA	-	Y	RV	X	App.J	
FO13B	1	G8			X			6	RV	SA	-	Y	RV			
FO13C	1	E7			X			6	RV	SA	-	Y	RV			
FO13D	1	E2			X			6	RV	SA	-	Y	RV			
FO13E	1	E8			X			6	RV	SA	-	Y	RV			
FO13F	1	D7			X			6	RV	SA	-	Y	RV			
FO13G	1	D8			X			6	RV	SA	-	Y	RV			
FO13H	1	B7			X			6	RV	SA	-	Y	RV			
FO13J	1	B8			X			6	RV	SA	-	Y	RV			
FO13K	1	D8			X			6	RV	SA	-	Y	RV			
FO13L	1	E9			X			6	RV	SA	-	Y	RV			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Nuclear Steam Supply

P&ID NO. 9527-D-25021

PAGE 2 of 7

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F016	1	F5	X					3	GA	MO	C	Y	FS-Q MT-Q VI-R LT-R	X	App. J	F022A, B, C, D: Cycling would cause loss of primary steam flow
F019	1	F4	X					3	GA	MO	O	Y	FS-Q MT-Q VI-R LT-R	X	App. J	
F022A	1	G5	X					24	GL	AO	O	Y	FS-C FL-C			
F022B	1	E5	X					24	GL	AO	O	Y	LT-R FS-C FL-C	X	App. J	
F022C	1	D5	X					24	GL	AO	O	Y	LT-R FS-C FL-C	X	App. J	
F022D	1	B-5	X					24	GL	AO	O	Y	LT-R FL-C FL-C LT-R	X	App. J	

Revised September 1, 1978

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Nuclear Steam Supply

P&ID NO. 9527-D-25021

PAGE 3 of 7

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F028A	1	G4	X					24	GL	AO	0	Y	FS-C FL-C LT-R	X	App. J	F028A, B, C, D: Cycling would cause loss of primary steam flow.
F028B	1	E4	X					24	GL	AO	0	Y	FS-C FL-C LT-R	X	App. J	
F028C	1	D4	X					24	GL	AO	0	Y	FS-C FL-C LT-R	X	App. J	
F028D	1	B4	X					24	GL	AO	0	Y	FS-C FL-C LT-R	X	App. J	
F005	1	G10						2	GL	M	0	Y	PV			
F011A	1	D11						18	GA	M	0	Y	PV			
F011B	1	B11						18	GA	M	0	Y	PV			

Revised September 1, 1978  
Revised December 22, 1978

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Nuclear Steam Supply

P&ID NO. 9527-D-25021

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VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F024A	2	G5			X			1	CK	SA	-	Y	FS-C			F024 A, B, C, D & V28 A, B, C, D: Cycling would cause loss of air and closure of main steam valve
F024B	2	F6			X			1	CK	SA	-	Y	FS-C			
F024C	2	D6			X			1	CK	SA	-	Y	FS-C			
F024D	2	C6			X			1	CK	SA	-	Y	FS-C			
V28A	2	G5			X			1	CK	SA	-	Y	FS-C			
V28B	2	F5			X			1	CK	SA	-	Y	FS-C			
V28C	2	D5			X			1	CK	SA	-	Y	FS-C			
V28C	2	C5			X			1	CK	SA	-	Y	FS-C			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Nuclear Steam Supply

P&ID NO. 9527-D-25021

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VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F029A	2	G4			X			1	CK	SA	-	Y	FS-C			F029 A, B, C, D & V29 A, B, C, D: Cycling would cause loss of air & closure of main steam valve.
F029B	2	F4			X			1	CK	SA	-	Y	FS-C			
F029C	2	D4			X			1	CK	SA	-	Y	FS-C			
F029D	2	C4			X			1	CK	SA	-	Y	FS-C			
V29A	2	C4			X			1	CK	SA	-	Y	FS-C			
V29B	2	F4			X			1	CK	SA	-	Y	FS-C			
V29C	2	D4			X			1	CK	SA	-	Y	FS-C			
V29D	2	C4			X			1	CK	SA	-	Y	FS-C			
F032A	1	D11	X					18	GL	MO	0	Y	FS-C MT-C LT-R	X	App. J	F032A & B: Cycling would cause loss of main feedwater flow.
F032B	1	B11	X					18	GL	MO	0	Y	FS-C MT-C LT-R	X	App. J	

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Nuclear Steam Supply

P&ID NO. 9527-D-25021

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VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F036A	2	H7			X			0.75	CK	SA	-	Y	FS-C			Valves this Page: Cycling during normal operation would cause loss of operability of safety relief valve.
F036B	2	H8			X			0.75	CK	SA	-	Y	FS-C			
F036C	2	F7			X			0.75	CK	SA	-	Y	FS-C			
F036D	2	F8			X			0.75	CK	SA	-	Y	FS-C			
F036E	2	F8			X			0.75	CK	SA	-	Y	FS-C			
F036F	2	E7			X			0.75	CK	SA	-	Y	FS-C			
F036G	2	D7			X			0.75	CK	SA	-	Y	FS-C			
F036H	2	C7			X			0.75	CK	SA	-	Y	FS-C			
F036I	2	C8			X			0.75	CK	SA	-	Y	FS-C			
F036K	2	D8			X			.75	CK	SA	-	Y	FS-C			
F036L	2	F9			X			0.75	CK	SA	-	Y	FS-C			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Nuclear Steam Supply

P&ID NO. 9527-D-25021

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VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
V27A	2	H7			X			0.75	CK	SA	-	Y	FS-C			Valves this Page: Cycling during normal operation would cause loss of operability of safety relief valve.
V27B	2	H8			X			0.75	CK	SA	-	Y	FS-C			
V27C	2	F7			X			0.75	CK	SA	-	Y	FS-C			
V27D	2	F8			X			0.75	CK	SA	-	Y	FS-C			
V27E	2	F8			X			0.75	CK	SA	-	Y	FS-C			
V27F	2	D7			X			0.75	CK	SA	-	Y	FS-C			
V27G	2	E8			X			0.75	CK	SA	-	Y	FS-C			
V27H	2	C7			X			0.75	CK	SA	-	Y	FS-C			
V27J	2	C8			X			0.75	CK	SA	-	Y	FS-C			
V27K	2	E8			X			0.75	CK	SA	-	Y	FS-C			
V27L	2	F9			X			0.75	CK	SA	-	Y	FS-C			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME High Pressure Coolant Injection

P&ID NO. 9527-D-25023

PAGE 1 of 3

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F001	2	F3		X				10	GA	MO	C	N	FS-Q MT-Q			
F002	1	G11	X					10	GA	MO	O	Y	FS-C MT-C VI-R LT-R	X	App. J	F002, F003; Cycling during normal operations would cause loss of steam to HPCI turbine.
F003	1	G10	X					10	GA	MO	O	Y	FS-C MT-C VI-R LT-R	X	App. J	
F005	2	E9			X			14	CK	SA	-	N	FS-Q			
F006	1	D10	X					14	GA	MO	C	N	FS-Q MT-Q LT-R	X	App. J	
F007	2	E9		X				14	GA	MO	O	N	FS-Q MT-Q			
F008	2	F8		X				10	GL	MO	C	N	FS-Q MT-Q			Test with F011 closed
F009	2	F8			X			10	CK	SA	-	N	FS-Q			
F011	2	G7		X				10	GA	MO	C	N	FS-Q MT-Q			Test with FC08 closed



TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME High Pressure Coolant Injection

P&ID NO. 9527-D-25023

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VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F012	2	D8		X				4	GL	MO	C	N	FS-Q MT-Q			
F019	2	F5			X			16	CK	SA	-	N	FS-Q			
F021	2	C10			X		X	20	STOP CK	SA	-	N	FS-Q ET-M			F021, F022: FWD. Flow Verification only as safety function is to open.
F022	2	C9			X		X	2	STOP CK	SA	-	N	FS-Q ET-M			
F040	2	C9			X			2	CK	SA	-	N	FS-Q			
F041	2	G6		X				16	GA	MO	C	N	FS-Q MT-Q			
F042	2	B8		X				2	GA	MO	C	N	FS-Q MT-Q			
F048	2	B5			X			2	CK	SA	-	N	FS-Q			
F049	2	C10			X			20	CK	SA	-	N	FS-Q			
F050	3	C6			X			3	RV	SA	-	N	RV			
F053	2	C5		X				0.75	GL	SOL	C	N	FS-Q			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME High Pressure Coolant Injection

P&ID NO. 9527-D-25023

PAGE 3 of 3

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F054	2	E1		X				1	GA	AO	C	N	FS-Q	X	None	
F059	2	D6		X				2	GL	MO	C	N	FS-Q MT-Q			
F045	2				X			16	CK	SA	-	N	FS-Q			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Core Spray

P&ID NO. 9527-D-25024

PAGE 1 of 3

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F001A	2	B10		X				14	GA	MO	O	N	FS-C MT-C			Failure in closed position would cause loss of pump junction
F001B	2	B11		X				14	GA	MO	O	N	FS-C MT-C			Failure in closed position would cause loss of pump junction
F002A	2	B6					X	12	GA	M	C	N	ET-M			
F002B	2	B5					X	0.75	GA	M	C	N	ET-M			
F003A	2	E5			X			12	CK	SA	-	N	FS-Q			
F003B	2	E3			X			12	CK	SA	-	N	FS-Q			
F004A	2	E8		X				10	GA	MO	O	N	FS-Q MT-Q			Test with F005A closed 10 Sec
F004B	2	G8		X				10	GA	MO	O	N	FS-Q MT-Q			Test with F005B closed 9.5 Sec
F005A	1	E9		X				10	GA	MO	C	N	FS-Q MT-Q			Test with F004A closed 10 Sec
F005B	1	G9		X				10	GA	MO	C	N	FS-Q MT-Q			Test with F004B closed 10 Sec

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Core Spray

P&ID NO. 9527-D-25024

PAGE 2 of 3

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F006A	1	E10			X			10	CK	SA	-	Y	FS-C			F006A & B: Test requires injection of Core Spray
F006B	1	G10			X			10	CK	SA	-	Y	FS-C			
F008A	2	C7					X	2	GA	M	C	N	ET-M			
F008B	2	B6					X	2	GA	M	C	N	ET-M			
F015A	2	E7		X				10	GL	MD	C	N	FS-Q MT-Q			46 Sec
F015B	2	F7		X				10	GL	MD	C	N	FS-Q MT-Q			55.6 Sec
F020A	2	E3					X	2	GL	M	C	N	ET-M			
F020B	2	E3					X	2	GL	M	C	N	ET-M			
F031A	2	E4		X				3	GA	MD	O	N	FS-Q MT-Q			15 Sec
F031B	2	E2		X				3	GA	MD	O	N	FS-Q MT-Q			15 Sec

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME

Core Spray

P&ID No.

9527-D-25024

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VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F007A	1	E11					X	10	GA	M	0	Y	ET			
F007B	1	G11					X	10	GA	M	0	Y	ET			
F010A	2	E4					X	3	GL	M	0	N	ET			
F010B	2	E2					X	3	GL	M	0	N	ET			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Residual Heat Removal

P&ID NO. 9527-D-25025

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VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F003A	2	E9					X	16	GA	MO	O	N	ET-M			
F004A	2	C4					X	24	GA	MO	O	N	ET-M			
F004C	2	C4					X	20	GA	MO	O	N	ET-M			
F006A	2	D5					X	20	GA	MO	C	N	ET-M			
F006C	2	D2					X	20	GA	MO	C	N	ET-M			
F008	1	E3		X				20	GA	MO	C	N	FS-C MT-C VI-R			F008, F009: Interlocked with reactor low pressure switches. Test at cold shutdown
F009	1	F3		X				20	GA	MO	C	Y	FS-C MT-C VI-R			
F010	2	D6					X	20	GA	MO	C	N	ET-M			
F015A	1	F5		X				24	GA	MO		N	FS-Q MT-Q			
F016A	2	G5					X	14	GL	MO	C	N	ET-M			
F060A	1	F4						24	GA	M	O	Y	PV			
F067	1	F2						20	GA	M	O	Y	PV			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Residual Heat Removal

P&ID NO. 9527-D-25025

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VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTEPNATIVE TEST	REMARKS
			A	B	C	D	E									
F017A	2	F6						24	GL	MD	O	N	PV			
F018A	2	B5					X	3	GA	M	O	N	ET-M			
F018C	2	B3					X	3	GA	M	O	N	ET-M			
FC20A	2	E4		X				X	24	GA	MD	O	N	ET-M		
F021A	2	G3		X				12	GA	MD	C	N	FS-R MT-R VI-R			Interlocked with containment pressure
F024A	2	F7		X				16	GL	MD	C	N	FS-Q MT-Q			73 Sec
F026A	2	E11						4	GA	MD	C	N	PV			
F027A	2	F6		X				16	GL	MD	C	N	FS-R MT-R VI-P			Interlocked with containment pressure
F028A	2	G6					X	16	GA	MD	C	N	ET-M			
F031A	2	B6			X			16	CK	SA	-	N	FS-Q			
F031C	2	B3			X			16	CK	SA		N	FS-Q			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Residual Heat Removal

P&ID NO. 9527-D-25025

PAGE 3 of 3

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F046A	2	B5			X			3	CK	SA	-	N	FS-Q			
F046C	2	B3			X			3	CK	SA	-	N	FS-Q			
F047A	2	E7					X	16	GA	MO	O	N	ET			
F048A	2	E7		X				20	GL	MO	O	N	FS-Q MT-Q			
F050A	1	F4			X			24	CK	SA	-	Y	FS-C			Testing valve will require injecting RHR into recirc. Loop A.
F052A	2	E11						6	GA	MO	O	N	PV			
F055A	2	E8			X			6	RV	SA	-	N	RV			
F071A	2	B5					X	4	GA	M	C	N	ET-M			
F071C	2	C2					X	4	GA	M	C	N	ET-M			
F072A	2	B6					X	4	GA	M	C	N	ET-M			
F072C	2	B4					X	4	GA	M	C	N	ET-M			
V193	2	G6			X			4	CK	SA	-	N	FS-Q			
F034A	2	B6					X	16	GA	M	O	N	ET-M			
F034C	2	B4					X	16	GA	M	O	N	ET-M			

Revised June 14, 1978  
Revised September 1, 1978  
Revised December 22, 1978



TABLE 2 VALVE TEST PROGRAM  
 BE SWICK STEAM ELECTRIC PLANT

SYSTEM NAME Residual Heat Removal

P&ID NO. 9527-D-25026

PAGE 1 of 4

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F003B	2	E6					X	16	GA	MO	O	N	ET-M			
F004B	2	C10					X	20	GA	MO	O	N	ET-M			
F004D	2	C11					X	20	GA	MO	O	N	ET-M			
F006B	2	D10					X	20	GA	MO	C	N	ET-M			
F006D	2	D11					X	20	GA	MO	C	N	ET-M			
F015B	1	F9		X				24	GA	MO	C	N	FS-Q MT-Q			
F016B	2	G9					X	24	GL	MO	C	N	ET-M			
F017B	2	F9						24	GL	MO	O	N	PV			
F018B	2	B9					X	4	GA	M	O	N	ET-M			
F018D	2	B11					X	3	GA	M	O	N	ET-M			
F020B	2	D11		X			X	20	GA	MO	O	N	ET-M			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Residual Heat Removal

P&ID NO. 9527-D-25026

PAGE 2 of 4

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F024B	2	F8		X				16	GL	MD	C	N	FS-Q MT-Q			76 Sec*
F026B	2	E3		X				4	GA	MD	C	N	PV			
F027B	2	F8		X				16	GL	MD	C	N	FS-R MT-R VI-R			Interlocked with containment pressure
F028B	2	F8					X	16	GA	MD	C	N	ET-M			
F031B	2	B8			X			16	CK	SA	-	N	FS-Q			
F031D	2	B10			X			16	CK	SA	-	N	FS-Q			
F046B	2	B9			X			4	CK	SA	-	N	FS-Q			
F046D	2	B11			X			3	CK	SA	-	N	FS-Q			
F047B	2	D7					X	16	GA	MD	C	N	ET-M			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Residual Heat Removal

P&ID NO. 9527-D-25026

PAGE 3 of 4

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F050B	1	F10			X			24	CK	SA	-	Y	FS-C			
F052B	2	D3						6	GA	MO	O	N	PV			
F055B	2	D6			X			6	RV	SA	-	N	RV			
F070	2	D9						4	GA	M	C	N	PV			
F071B	2	B10					X	4	GA	M	C	N	ET-M			
F071D	2	C12					X	4	GA	M	C	N	ET-M			
F072B	2	B8					X	4	GA	M	C	N	ET-M			
F072D	2	B10					X	4	GA	M	C	N	ET-M			
F075	2	E5		X				16	GA	MO	C	N	FS-Q MT-Q	X X	None None	
F078	2	E5			X			20	CK	SA	-	N	FS-Q	X	None	
F097	2	E3			X			4	RV	SA	-	N	RV			
V39	2	G9		X				8	GA	M	C	N	FS-Q			
V40	2	D10		X				8	GA	M	C	N	FS-Q			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Residual Heat Removal

P&ID NO. 9527-D-25026

PAGE 4 of 4

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F021B	2	G11	X					14	GA	MO	C	N	FS-R MT-R VI-R			Interlocked with containment pressure
F048B	2	E8						20	GL	MO	O	N	PV			
F034B	2	B8					x	16	GA	M	O	N	ET-M			
F034D	2	B10					x	16	GA	M	O	N	ET-M			
F060B	1	F11						24	GA	M	O	Y	PV			

Revised June 14, 1978

Revised September 1, 1978

Revised December 22, 1978

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Reactor Water Clean-Up P&ID NO. 9527-D-25027 PAGE 1 of 1

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F001	1	G11	X					6	GA	MO	0	Y	FS-R MT-R VI-R LT-R	X	App.J	F001, F004, F039: System 26 sec. in continuous operation. Test at refueling.  21 sec.
F004	1	G10	X					6	GA	MO	0	Y	FS-R MT-R LT-R	X	APP.J	
F039	1	H10	X		X			4	CK	SA	-	Y	FS-Q LT-R	X	APP.J	
F042	1	H10	X					4	GL	MO	0	Y	FS-R MT-R LT-R	X	APP.J	

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME

Reactor Core Isolation Cooling

P&ID NO.

9527-D-25029

PAGE

1 of 2

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F001	2	C10			X		X	8	STOP CK	SA	-	N	FS-Q ET-M			F001, F002: FWD. Flow verification only as safety function is to open.
F002	2	C10	X		X		X	2	STOP CK	SA	-	N	FS-Q ET-M			
F007	1	G10	X					3	GA	MO	0	Y	LT-R FS-C MT-C LT-R	X	APP.J	F007, F008: Failure in non-conservative position renders system inoperable. Test at cold shutdown.
F008	1	G9	X					3	GA	MO	0	N	FS-C MT-C LT-R	X	APP.J	
F010	2	G5		X				6	GA	MO	0	N	FS-Q MT-Q			
F011	2	F6			X			6	CK	SA	-	N	FS-Q			
F012	2	E8						4	GA	MO	0	N	PV			
F013	1	E9	X					4	GA	MO	C	N	FS-Q MT-Q LT-R	X	APP.J	
F014	3	E8			X			4	CK	SA	-	N	FS-Q			
F018	3	C6			X			1	RV	SA		N	RV			
F019	2	D8		X				2	GL	MO	C	N	FS-Q MT-Q			6 sec.

Revised June 14, 1978

Revised September 1, 1978

Revised December 22, 1978

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Reactor Core Isolation Cooling P&ID NO. 9527-D-25029 PAGE 2 of 2

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F022	2	F7		X				4	GL	MO	C	N	FS-Q MT-Q			25 sec.
F023	2	G7			X			4	CK	SA	-	N	FS-Q			
F028	2	B2	X		X			2	CK	SA	-	N	FS-Q LT-R	X APP. J		
F029	2	F6		X				6	GA	MO	C	N	FS-Q MT-Q			16 sec.
F030	2	B7			X			6	CK	SA	-	N	FS-Q			
F031	2	B10		X				6	GA	MO	C	N	FS-Q MT-Q			25 Sec.
F040	2	C10			X			8	CK	SA	-	N	FS-Q			
F045	3	E2		X				3	GL	MO	C	N	FS-Q MT-Q			7 sec.
F046	3	D6		X				2	GL	MO	C	N	FS-Q MT-Q			13 sec.
F047	2	B6			X			2	CK	SA	-	N	FS-Q			
V8	3	E3		X				3	GA	MO	0		FS-M			V8, V9: Test for operability with RCIC Turbine Test
V9	3	E4		X				3	GA	MD	0		FS-M			

F016 2 F6 X 6 GA 0 N ET

Revised September 1, 1978  
Revised December 22, 1978

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Service Water

P&ID NO. 9527-D-25037

PAGE 1 of 3

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
V102	3	F7		X				24	BF	MO	C	N	FS-Q MT-Q			
V103	3	F11					X	20	BF	M	O	N	ET-M			
V104	3	F11					X	24	BF	M	O	N	ET-M			
V105	3	F11		X				24	BF	MO	C	N	FS-Q MT-Q			
V106	3	G11		X				20	BF	MO	O	N	FS-C MT-C			Cycling during normal operation would shut off nuclear service water to essential systems
V111	3	D2		X				6	BF	MO	C	N	FS-Q MT-Q			
V114	3	C2					X	6	BF	M	O	N	ET-M			
V115	3	D2					X	2	PLUG	M	O	N	ET-M			
V116	3	D11					X	6	BF	M	O	N	ET-M			
V117	3	D11		X				6	BF	MO	C	N	FS-Q MT-Q			
V118	3	D7						6	BF	MO	O	N	PV			
V120	3	C10					X	6	BF	M	O	N	ET-M			



TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Service Water

P&ID NO. 9527-D-25037

PAGE 2 of 3

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
V122	3	D3						6	BF	M	C	N	PV			
V123	3	D11						2	PLUG	AO	O	N	PV			DRAWING INCORRECT
V128	3	D2						2	PLUG	AO	O	N	PV			DRAWING INCORRECT
V136	3	F5		X				1.5	PLUG	AO	C	N	FS-Q FL-Q			
V137	3	F6		X				1.5	PLUG	AO	C	N	FS-Q FL-Q			
V138	3	F8		X				1.5	PLUG	AO	C	N	FS-Q FL-Q			
V139	3	F9		X				1.5	PLUG	AO	C	N	FS-Q FL-Q			
V150	3	H2			X				RV	SA	-	N	RV			
V153	3	G2			X				RV	SA	-	N	RV			
V156	3	F2			X				RV	SA	-	N	RV			
V193	3	H5					X	20	BF	M	O	N	ET-M			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Service Water

P&ID NO. 9527-D-25037

PAGE 3 of 3

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
E11-F002A	3	D6		X				20	BF	MO	C	N	FS-Q MT-Q			26.9 Sec
E11-F002B	3	D8		X				20	BF	MO	C	N	FS-Q MT-Q			23 Sec
E11-F005A	3	G6			X			12	CK	SA	-	N	FS-Q			
E11-F005B	3	G9			X			12	CK	SA	-	N	FS-Q			
E11-F005C	3	G7			X			12	CK	SA	-	N	FS-Q			
E11-F005D	3	F10			X			12	CK	SA	-	N	FS-Q			
E11-F073	3	E7		X				16	BF	MO	C	N	FS-Q MT-Q	X X	None None	

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Closed Cooling Water

P&ID NO. 9527-D-25038

PAGE 1 of 1

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
V28	2	D7		X				8	GA	MO	0	N	FS-C MT-C		V28, V52: Cycling during normal operations would cause loss of cooling to recirculation pumps  Forward flow only	
V52	2	D6		X				8	GA	MO	0	N	FS-C MT-C			
V53	2	D6			X			8	CK	SA	-	N	FS-Q			
PV1222B	2	E3		X				0.75	GA	AO	0	N	FS-Q FL-Q			
PV1222C	2	E3		X				0.75	GA	AO	0	N	FS-Q FL-Q			

Revised June 14, 1978

Revised December 22, 1978

SYSTEM NAME

Service Air

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

PSID NO. 9527-D-25042

PAGE 1 of 1

VALVE NUMBER	CLASS	DRAWING COORDINATES					VALVE CATEGORY	SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
		A	B	C	D	E										
V448	2	D5					1	GA	M	C	N	ET-M				
V449	2	D6				X	1	GA	M	C	Y	ET-M				

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Drywell Drains

P&ID NO. 9527-D-25045

PAGE 1 of 1

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F003	2	D4		X				3	GA	AO	0	N	FS-Q FL-Q			
F004	2	D4		X				3	GA	AO	0	N	FS-Q FL-Q			
F019	2	D4		X				3	GA	AO	0	N	FS-Q FL-Q			
F020	2	D4		X				3	GA	AO	0	N	FS-Q FL-Q			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Standby Liquid Control

P&ID NO. 9527-D-25047

PAGE 1 of 2

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F001	2	F5					X	3	GA	M	O	N	ET-M			
F002A	2	D8					X	3	GA	M	O	N	ET-M			
F002B	2	C8					X	3	GA	M	O	N	ET-M			
F003A	2	D9					X	1.5	GA	M	O	N	ET-M			
F003B	2	C9					X	1.5	GA	M	O	N	ET-M			
F004A	2	D9				X		1.5	SQUIB	EXPL	C	N	*		*Test-Fire Charges per IWV-3610	
F004B	2	C9				X		1.5	SQUIB	EXPL	C	N	*			
F006	1	C11			X			1.5	CK	SA	-	N	FS-R		Exercising requires shearing explosive activated F004A or B.	
F007	1	C11			X			1.5	CK	SA	-	Y	FS-R		Exercising requires shearing explosive activated F004A or B.	
F014	2	F6					X	1	GL	M	C	N	ET-M			
F029A	2	E8			X			2	RV	SA	-	N	RV			
F029B	2	B7			X			2	RV	SA	-	N	RV			
F031	2	F6					X	3	GA	M	C	N	ET-M			
F033A	2	D9			X			1.5	CK	SA	-	N	FS-Q			
F033B	2	C9			X			1.5	CK	SA	-	N	FS-Q			

Revised September 1, 1978

Revised December 22, 1978

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Standby Liquid Control

P&ID NO. 9527-D-25047

PAGE 2 of 2

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
F005	2	C10					X	1.5	GA	M	O	N	ET			
F008	1	B11					X	1.5	GA	M	O	Y	ET			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME

Reactor Coolant Recirculation

P&ID NO.

9527-D-25048

PAGE

1 of 1

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS	
			A	B	C	D	E										
F023B	1	B3		X				28	GA	MD	O	Y	FS-C MT-C VI-R			F023B, F031B: Closure of either valve shuts off reactor coolant recirculation flow	
F031B	1	C8		X				28	GA	MD	O	Y	FS-C MT-C VI-R				
F043B	1	F4						22	GA	MD	C	Y	PV				
F044B	1	G4						2	GA	MD	C	Y	PV				
V30	2	F10		X				0.75	GL	MD	O	N	FS-C MT-C				V30, V32: Failure closed shuts off cooling water to recirculation pump
V32	2	F9			X			0.75	CK	SA	-	Y	FS-C				
F032B	1	B8		X				4	GA	MD	C	Y	FS-C MT-C VI-R				F032B; Locked open by administrative procedure during normal operations. Test at cold shutdown.

Revised September 1, 1978

Revised December 22, 1978



TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Torus Drain & Keep Fill Charging P&ID NO. 9527-D-26098 PAGE 1 of 1

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (Inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
V4	2	C8	X	X				GA	AO	0	N	FS-Q FL-Q				
V5	2	C8	X					GA	AO	0	N	FS-Q FL-Q				
V2	2	C10					X	GA	M	0	N	ET				

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Instrument Air Supply

P&ID NO. 9527-D-70029

PAGE 1 of 1

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
IAI-V35	2	D11			X			2	CK	SA	-	N	FS-C			System essential to normal operation
IAN-V62	2	D11			X			2	CK	SA	-	N	FS-C			System essential to normal operation
IAN-V63	2	D2			X			2	CK	SA	-	N	FS-C			System essential to normal operation
IA-PV-1204B	2	H6						0.75	GA	AO	C	N	PV			
IA-PV-1204C	2	G6						0.75	GA	AO	C	N	PV			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Instrument Air Supply PSID NO. 9527-D-70077 PAGE 1 of 1

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
V101	2	E6		X				2	GA	MD.	0	N	FS-C MT-C			System essential to normal operations
V103	2	E7		X				2	GA	MD	0	N	FS-C MT-C			System essential to normal operations

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Containment Atmosphere Monitoring P&ID NO. 9527-D-72018 PAGE 1 of 3

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
PV1200B	2	F7	X					1	GL	AO	0	N	FS-Q FL-Q			
PV1205E	2	D9	X					1	GL	AO	0	N	FS-Q FL-Q			
PV1209A	2	E9	X					1	GL	AO	0	N	FS-Q FL-Q			
PV1211E	2	D9	X					1.25	GL	AO	0	N	FS-Q FL-Q			
PV1211F	2	D9	X					1	GL	AO	0	N	FS-Q FL-Q			
PV1215E	2	C10						1	GL	AO	0	N	PV			
PV1225B	2	D6	X					1.25	GL	AO	0	N	FS-Q FL-Q			
PV1227A	2	D6	X					1	GL	AO	0	N	FS-Q FL-Q			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Containment Atmosphere Monitoring

P&ID NO. 9527-D-72018

PAGE 2 of 3

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
PV1227C	2	D7	X					1	GL	AO	0	N	FS-Q FL-Q			
PV1227E	2	E6	X					1	GL	AO	0	N	FS-Q FL-Q			
PV1231B	2	C5						1	GL	AO	0	N	PV			
PV1260	2	E6	X					1	GL	AO	0	N	FS-Q FL-Q			
PV1261	2	F6	X					1	GL	AO	0	N	FS-Q FL-Q			
PV1262	2	D9	X					1	GL	AO	0	N	FS-Q FL-Q			
PV3439	2	D9	X					1.25	GL	AO	0	N	FS-Q FL-Q			
PV3440	2	E6	X					1.25	GL	AO	0	N	FS-Q FL-Q			

TABLE 2 VALVE TEST PROGRAM  
BRUNSWICK STEAM ELECTRIC PLANT

SYSTEM NAME Containment Atmosphere Monitoring P&ID NO. 9527-D-72018 PAGE 3 of 3

VALVE NUMBER	CLASS	DRAWING COORDINATES	VALVE CATEGORY					SIZE (inches)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	HIGH RADIATION AREA	TEST METHOD	RELIEF REQUEST	ALTERNATIVE TEST	REMARKS
			A	B	C	D	E									
PV1227B	2	D7		X					GL	AO	0	N	FS-Q FL-Q			