Consumers Power Company

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Operating Reactors Branch No 5
Nuclear Reactor Regulation
US Nuclear Regulatory Commission
Washington, DC 20555

DOCKET 50-155 - LICENSE DPR-6 -
BIG ROCK POINT PLANT - SEP TOPIC VI-4,
CONTAINMENT ISOLATION SYSTEM

NRC letter dated June 11, 1982 submitted the staff's draft Safety Evaluation Report (SER) on SEP Topic VI-4, "Containment Isolation System", for the Big Rock Point Plant. Consumers Power Company letter dated July 20, 1982 which responded to a portion of the NRC's June 11, 1982 letter, addressed the staff's concerns about the adequacy of isolation provisions on selected piping penetrations. Consumers Power Company July 20, 1982 letter also indicated that our review of the SER would generate extensive comments and corrections. This letter provides these comments and corrections, as well as our response to questions raised in the June 11, 1982 letter.

Enclosure 1 provides our response to the remaining outstanding issues in the June 11, 1982 letter. Of particular importance, note that all test, vent and drain valves which are located between an inside and outside containment isolation valve, or between an inside valve and the containment, will be closed and under administrative control. In addition, the vent line root valve on treated waste return line will be identified with valve number, sealed or lock-closed, and administratively controlled.

Enclosure 2 provides specific Consumers Power Company comments on the NRC's evaluation of the Containment Isolation System (CIS) of Big Rock Point. The attached Tables 1 and 2 have also been modified. Table 1 contains complete

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information on the CIS review items. Table 2, entitled CIS SEP Review Findings, has been modified to correct certain inaccuracies which appeared in the SER.

David J VandeWalle
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CC Administrator, Region III, USNRC
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Attachment - 21 pages

ENCLOSURE 1

CONSUMERS POWER COMPANY

RESPONSE TO CONTAINMENT SYSTEMS BRANCH (CSB) EVALUATION
REPORT ON SEP TOPIC VI-4, CONTAINMENT ISOLATION
SYSTEM FOR THE BIG ROCK POINT PLANT

The evaluation by the CSB contained numerous items which are not consistent with the plant valving configurations or the defined containment isolation valves. These differences have been identified in the response. The CSB review concluded:

1) Test, vent, and drain lines on many systems have inadequate isolation provisions and are not under administrative control.

2) There are no isolation or leak detection provisions on ECCS Subsystems.

3) There are no isolation provisions on instrument lines connected to the reactor coolant pressure boundary or the containment atmosphere.

4) Those systems designated as closed systems inside containment have no insolation provisions outside containment.

Because the defined containment isolation valves in each system are different from those assumed by the CSB the basis for assuring isolation of test, vent and drain lines will be the following and will not necessarily include all the subject valves identified in Table 1. The defined containment isolation valves have been designated as such in Table 1. Test, vent and drain valves which are located between an inside and outside containment isolation valve or between an inside containment isolation and the containment will be closed and under administrative control.

Leak detection provisions on the ECCS have been reviewed in CPCo's response to NUREG-0737, dated December 19, 1980. This response on Item II.D.1.1 on integrity of systems outside containment, likely to contain radioactive material, identified licensee action to perform tests to identify leakage detection during each refueling outage. Isolation of ECCS is done manually when the switch-over to recirculation is made. Other isolation provisions are not required or advisable as the ECCS failure probability and probability of core damage would only be increased with the addition of remotely operated isolation valves.

Instrument lines connected to the primary coolant pressure boundary or the containment atmosphere, do indeed, have manual isolation valves both at the branch connection and at the local device. The branch connection root valves except for those in the Main Steam System have been identified in Table 1. The original plant design specifications described the instrument piping including valve types and size.

Enclosure 1 (Continued)

Closed systems inside containment without isolation provisions outside containment will meet the intent of the applicable GDC' if the systems are protected from missiles and pipe whip. The systems meet the intent of the remaining criteria excluding seismic. Reviews of these concerns will be included in the other applicable SEP topics. The emergency condenser vent, also identified in this category by the CSB, can be isolated via closure of the emergency condenser inlet and outlet valves.

The staff also requested Consumers Power Company to review the reactor feedwater isolation since they identified the control valves outside containment as isolation valves. The feedwater system containment isolation valves are identified for the staff in Table 1 as check valves VFW-9 and VFW-304. Present plans, depending on procurement, are to install another check valve nearer the containment boundary during the next refueling outage.

An item by item response to the CSB evaluation follows.

ENCLOSURE 2

CONSUMERS POWER COMPANY

GENERAL COMMENTS CONCERNING THE DRAFT SER ON
SEP TOPIC VI-4, CONTAINMENT ISOLATION SYSTEM
FOR THE BIG ROCK POINT PLANT

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The containment isolation provision for the lines penetrating the primary reactor containment of Big Rock Point are listed in Table 1. This information was obtained from the documents and piping and instrumentation drawings referenced in Section VII. There was insufficient information to complete certain elements of Table 1, therefore, the licensee is requested to provide the missing information and make any necessary corrections.

Response

Additions and corrections to Table 1 are included and are attached. In addition, corrections were made to Table 2 and are also attached.

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Test, Vent and Drain Lines

All test, vent, drain and sampling lines between the inboard and outboard isolation valves shall be sealed closed barriers, which may be used in place of automatic isolation valves in accordance with SRP 6.2.4.II.6.f. Sealed closed barriers include blind flanges and sealed closed isolation valves which may be closed manually, closed remote manual valves, and closed automatic valves which remain closed after a loss-of-coolant accident (LOCA). However, with respect to the test, vent, drain and sampling lines, pipe caps are not suitable isolation barriers; two locked closed isolation valves in series should be provided for these lines. In any case, sealed closed isolation valves should be under administrative control to assure that they cannot be advertently opened. Administrative control includes mechanical devices to seal or lock the valve closed, or prevent power from being supplied to the valve operator.

Response

Standard design practice for containment penetrations is to design the piping and valves to RG 1.26 Quality Group B (ASME Class 2) Standards. This is also stated in Paragraph II.6.p.1 of SRP 6.2.4. According to the ASME Boiler and Pressure Vessel Code, Section III, Subsection NC, threaded or compression fitting as well as flanged connections are allowed in ASME Class 2 piping. There appears, therefore, to be no basis for the staff's contention

that threaded pipe caps and blank flanges are unacceptable isolation barriers. Pipe caps and blank flanges comply with ASME requirements, and are, therefore, acceptable under the SRP.

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The following list of test, vent, drain and sampling lines at Big Rock Point deviate from the explicity requirements of GDC 55 and 56 from the standpoint of valve type. These lines should be provided with two isolation valves in series under administrative control as specified in SRP Section 6.2.4.II.6.f. This list was compiled using the available piping and instrumentation drawings as well as Reference 5. These references indicate that many of the valves on the test, vent, drain and sampling lines are normally closed; however, there is no indication that they are under administrative control.

Lines Required To Have
Series Isolation Valves Under
Administrative Control

Penetration No	Valve Identification
H-11	VFW-138
H-11	VFW-171
H-17	Ref 8e
H-22	Ref 8e
H-29	VPI-101
H-36	Ref 8i

Response

The test, vent, drain and sampling lines identified above are not considered containment isolation valves. Valves VFW-138 and VFW-171 in the feedwater system will, however, be administratively controlled to provide consistency in the system operation (presently, other vent and drain valves are locked closed). Due to present plant operation restrictions, the vent line indicated on P&ID 0740G40108 Penetration H-17, has not been investigated to determine its existence. Upon review, appropriate controls and updates will be completed as required. For Penetration H-22 on the Reactor and Fuel Pit Drain Line only a test plug presently exists on the before seat drain for CV-4117 outside containment. No other vent or drain valves are located between the isolation valves. VPI-101 for Penetration H-29 is not considered a containment isolation valve, since this loop is open to the containment atmosphere at the suction strainers. The Post-Incident Penetration H-36 has a single isolation valve VPI-302 as does the Backup Post-Incident Line with

VPI-301. The drain valves on these lines will, however, be administratively controlled (two valves in series) to ensure the full availability of core spray flow.

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The staff requests that the licensee review all the piping and instrumentation diagrams listed in Reference 8, in order to assure that all of the test, vent and drain lines which are in place at the plant are included in these figures and in the above table.

Response

New system valve line-up diagrams to be used in conjunction with valve check sheets are presently being developed and will fulfill the intent of this request. The P&IDs do not show the detail of the new diagrams and will not be revised to give this added detail. Corrections to the P&IDs will be made as required.

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Isolation Provision on Instrument Lines

SRP Sectior 6.2.4.II.6 identifies containment isolation provisions that differ from the ex licit requirements of GDC 55 and 56, but which are acceptable on some other defined basis.

Regulatory Guide 1.11 describes acceptable containment isolation provisions for instrument lines on various systems. Instrument lines which penetrate the primary containment from the reactor coolant pressure boundary are to be equipped with a restricting orifice located inside the drywell and an excess flow check valve located outside as close as practicable to the primary containment. Those instrument lines which do not connect to the reactor coolant pressure boundary are to be equipped with isolation valves whose status is indicated in the control room. In addition, the Regulatory Guide states that instrument lines that are closed both inside and outside containment and which are designed to withstand dynamic effects are acceptable without isolation valves.

The following instrument lines at Big Rock Point which connect to the reactor coolant pressure boundary or the containment atmosphere appear to have none of the isolation provisions as recommended in Regulatory Guide 1.11. These lines differ from the explicit requirements of the GDC from the standpoint of valve location and type; to be in conformance with GDC they should be provided with isolation capability.

Instrument Lines Without Isolation Provisions

Penetration No	Instrument Line Identification	Penetration Boundary
H-10	Main Steam Initial Pressure Regulator	(Reactor Pressure Boundary)
H-10	PT/151	"
H-10	PT/175	"
H-10	PT/176	"
H-36	PS/7069B	(Reactor Pressure Boundary Essential System)
H-27	PS/7069A	"
H-98	PS/636	(Containment Atmosphere)
H-98	PS/665	"
H-98	PS/667	"
H-98	PT/174	"
H-99	PS/637	"
H-99	PS/664	"
H-99	PS/666	"
H-89	PS/7064A	"

Response

The instrument lines associated with the main steam line Penetration H-10 are not considered containment penetration barriers. The main steam line is equipped with one containment isolation valve inside containment, the MSIV MO-7050. The original plant design did not provide for further automatic isolation provisions of the main steam line. Penetrations H-27 and H-36 with Instruments PS/7069A&B are isolated by two closed valves as they are spare instruments. Penetrations H-89, -90, -98 and -99 for containment pressure instruments have sealed open manual valves. The instruments themselves serve as the isolation barriers and are designed to withstand the post-accident environment in the area they are in.

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Local Manual Isolation Valves on Engineered Safety Feature Systems

The staff does not believe that the use of locked-open local manual valves

is a justifiable alternative to the provisions of GDC 55 and 56 and SRP-6.2.4.II.6. Therefore, these systems, in order to be in conformance with the GDC, should be isolated by remote manual means and provided with leak detection capability.

The following list presents those engineered safety feature systems in which the use of locked-open local manual valves deviates from the explicit requirements of the GDC from the standpoint of valve type in use. These systems also have no leak detection capability at the present time.

Engineered Safety Feature Systems With Locked-Open Local Manual Valves and No Leak Detection Capability

System	Penetration No	Valve Number
Post-Incident and Fire Supply	H-36	VFP-29
Post-Incident Backup	H-27	VFP-30
Core Spray Pump Discharge	H-113	VPI-4
Core Spray Pump Return	H-29	VPI-1
	H-29	VPI-2
	H-29	VPI-3
	H-108	VPI-9
Core Spray Pump Vent	H-112	VPI-108

Response

These valves in the emergency core cooling system are kept in a locked-open position to assure the availability of the system. Penetrations H-27 and H-36 are isolated by a check valve inside containment and are also isolated from the primary system by two remotely operable valves and a check valve. The core spray pumps and piping outside containment are part of the containment boundary. Only a passive failure of this piping outside containment would result in degraded containment integrity.

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Local Manual Isolation Valves

The containment isolation provisions that differ from the explicit requirements of GDC 55 and 56 may be acceptable on some other defined basis if the basis for that difference is justified. For example, Regulatory Guide 1.11

describes acceptable containment isolation provisions for instrument lines. The staff does not believe that the use of local manual valves is a justifiable alternative to the provisions of GDC 55 and 56 and, therefore, in order to be in conformance with the GDC, these systems should have the capability for automatic isolation.

The following list presents those non-essential systems in which the use of a local manual valve outside containment deviates from the explicit requirements of the GDC from the standpoint of type of valve in use.

Non-Essential Systems With Local Manual Valves Outside Containment

System	Penetration No	Valve Number
Main Steam Line Drains	H-10	Ref 8c
Clean-up Demin Resin Sluice	H-23	VCU-13
Treated Waste Return to Fuel Pool	H-17	VRW-52
Instrument Air	H-20	VA-14
Service Air	H-25	VA-7

Response

None of the above listed manual valves are considered containment isolation valves and as such none are leak tested for that purpose. The MSIV is the sole containment isolation valve for Penetration No. H-23, isolation valves are CV-4091, CV-4092 and CV-4093 inside containment, these valves along with VCU-13 are normally maintained closed. The treated waste line, Penetration H-17, isolation valves are CV-4049 and its associated check valve VRW-313, both inside containment. Instrument Air; Penetration H-20 and Service Air; Penetration H-25 are closed systems inside containment which would require passive failures to result in loss of containment isolation. Check valves are provided in both air system lines.

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Diversity of Containment Isolation Signal

To improve the reliability of the isolation function, which is addressed in GDC 54, Item II.E.4.2 of NUREG-0737, and SRP 6.2.4.II.6.1, there should be diversity in the parameters sensed for the initiation of containment isolation.

The following list presents those systems in which there is a lack of diversity of signals and which, therefore, deviates from the requirements of the GDC from the standpoint of valve actuation.

Systems With Lack of
Containment Isolation Signal Diversity

System	Penetration No	Valve Number
Main Steam Branch Line	H-10	CV-4104
Main Steam Branch Line	H-10	CV-4106
Main Steam Drain	H-37	CV-4107
Main Steam Branch Line	H-10	CV-4014

Response

Although these valves have a lack of diversity in their isolation signals they do not exist as containment isolation valves and were not designed to close on containment isolation signals. The single main steam isolation valve MO-7050 and main steam drain isolation valve MO-7065 serve as the containment isolation barriers.

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Closed Systems with no Isolation Valves Outside of Containment

GDC 57 as it relates to lines that penetrate the primary containment boundary and are neither part of the reactor coolant pressure boundary nor connected directly to the containment atmosphere should be provided with at least one locked closed, remote-manual, or automatic isolation valve outside containment.

Since a closed system inside containment is used as one of the two containment isolation barriers, it shall meet the criteria that follow: (1) The system does not communicate either the primary coolant or the containment atmosphere; (2) The system is protected against missiles and pipe whip; (3) The system is classified Safety Class 2; (4) The system is designed to withstand temperature at least equal to the containment design temperature; (5) The system is designed to withstand the external pressure from the containment structural acceptance test; (6) The system is designed to withstand the loss-of-coolant accident transient and environment; and (7) The system is designated seismic Category I. The licensee should provide assurance that the closed system inside containment meets the preceding criteria; otherwise, GDC 55 and 56 will apply for isolation of these systems. The following list presents those closed systems in which there are no isolation provisions and as such deviate from the explicit requirements of the GDC from the standpoint of the

number and location of isolation valves. These systems should be provided with at least one locked closed, remote-manual or automatic isolation valve outside of containment in order to be in conformance with the GDC.

Closed Systems With No
Isolation Valves Outside Containment

System	Penetration No	Valve Number
Heating Steam	H-14	None
Heating Condensate	H-19	None
Service Water Supply	H-13	None
Service Water Return	H-12	None
Emergency Condenser Vent	H-9	None

Response

In CPCo's letter dated 2/13/76, RBSewell to Director of NRR, it was stated that, for the above lines excluding the emergency condenser vent, neither the FHSR nor Appendix J to 10CFR50 required that leak testing of these penetrations be required. Furthermore, it was stated, manual or check valves were not provided during initial plant construction and the lines are not liable to fail in the event of a LOCA. During the HELB (SEP Topic III-5.A) review, using effects oriented methodology, a branch of the service water line was identified as a potential target of jet impingement. The emergency condenser vent which provides containment boundary, it is also a target in the HELB analysis. Disposition of these potential problems will be conducted under the HELB topic. Releases to the atmosphere from the emergency condenser vent can only occur through a passive failure in the vent stack disregarding HELB or failure of the condenser tubing. The condenser vent radiation monitors provide ample warning to the operator so a primary system leak can be isolated.

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Remote Manual Isolation Valves

The use of remote manual valves as containment isolation valves deviates from the explicit requirements of GDC 55 and 56; however, it is permitted on engineered safety-feature systems or safety-related systems, and on systems needed for the safe shutdown of the plant, or on a closed system outside of containment.

The staff believes that the use of remote manual valves on the systems listed below deviates from the explicit requirements of the GDC, since these are nonessential systems using remote manual valve actuation outside containment. In order to be in conformance with the GDC these valves should be automatically isolated and be as close to the containment as practical.

Non-Essential Systems With
Remote Manual Valves
Outside Containment

System	Penetration No	Valve Number
Reactor Feed*	H-11	CV-4000
Reactor Feed	H-11	CV-4012
Demineralized Water	H-18	CV-4105

Response

Valves CV-4000 and CV-4012 are not considered containment isolation valves. In the feedwater system check valve VFW-304 and stop check valve VFW-9 are the isolation valves. CV-4105, although not an automatic valve, is tested as a containment isolation valve. The primary containment isolation valve for this line is check valve VMU-300. Leakage external to containment could result from an active failure of both check valves in the feedwater system and/or in the demineralizer water system. Because water is likely to remain in these piping systems at a pressure equal to or greater than maximum containment pressure during a pipe rupture event, it would also require a passive failure of the piping system in addition to the active failure of the check valves for a release to occur.

* It should be noted that the reactor feed isolation valves CV-4000 and CV-4012 are located outside containment after the feedwater high pressure heat exchanger: thus, the heat exchanger is between the containment wall and the isolation valves. As such, the heat exchanger will be subject to the local leak rate test program and must meet the criteria for an engineered safety feature system. The isolation valve would be more appropriately located between the containment and the high pressure heat exchanger, thus placing the valve as close as practical to the containment.

SEP TOPIC VI-4 CONTAINMENT ISOLATION SYSTEM REVIEW ITEMS

PLANT Big Rock Point

Item No	System Name or Service	Pene No	Valve Ident Number	Valve Type or Description	Location		Position				Essential	Actuation	Remarks
					OC	IC	Normal	Shut Dn	Post LOCA	Pwr Fail			
1	Ventilation Exhaust	H-8	CV-4094	Air Oper Check	√		O	O	C	C	No	A/RM	Containment Isolation Valve (CIV)**
	Ventilation Exhaust	H-8	CV-4095	Air Oper Butterfly	√		O	O	C	C	No	A/RM 1*	CIV
2	Ventilation Supply	H-7	CV-4096	Air Oper Check	√		O	O	C	C	No	A/RM	CIV
	Ventilation Supply	H-7	CV-4097	Air Oper Butterfly	√		O	O	C	C	No	A/RM 1	CIV
3	Ventilation Probe	H-97	SV-9155	Solenoid	√		O	O	C	C	No	A/RM 1	CIV
	Ventilation Probe	H-97	SV-9156	Solenoid	√		O	O	C	C	No	A/RM 1	CIV
4	Clean Sump Pump Discharge	H-21	CV-4031	Globe		√	O	O	C	C	No	A/RM 3	CIV
	Clean Sump Pump Discharge	H-21	CV-4102	Globe	√		O	O	C	C	No	A/RM 3	CIV
5	Dirty Sump Pump Discharge	H-15	CV-4025	Globe		√	O	O	C	C	No	A/RM 3	CIV
	Dirty Sump Pump Discharge	H-15	CV-4103	Globe	√		O	O	C	C	No	A/RM 3	CIV
	Emergency Cond Overflow	H-15	VEC-301	Check		√	C	C	C	C	No	RF	CIV
6	Instrument Air	H-20	VA-14	Gate	√		O	O	O	C	No	M	No Auto Isolation Valve on Non-ESF System
	Instrument Air	H-20	VA-305	Check		√	O	O	O	C	No	RF	
7	Service Air	H-25	VA-7	Gate	√		O	O	O	C	No	M	No Auto Isolation Valve on Non-ESF System
	Service Air	H-25	VA-300	Check		√	O	O	O	C	No	RF	

*Isolation Code (Not defined by NRC).

**CIV - Indicates these valves determined to be isolation valves by CP Co.

SEP TOPIC VI-4 CONTAINMENT ISOLATION SYSTEM REVIEW ITEMS

PLANT Big Rock Point

Item No	System Name or Service	Pene No	Valve Ident Number	Valve Type or Description	Location		Position				Essential	Actuation	Remarks
					OC	IC	Normal	Shut Dn	Post LOCA	Pwr Fail			
8	Demin Water	H-18	CV-4105	Globe	√		O	O	C	C	No	RM	RM Valve on Non-ESF System
	Demin Water	H-18	VMU-300	Check		√	C	C	C	C	No	RM	
9	Main Steam	H-10	MO-7050	Gate		√	O	C	C	C	No	A/RM 3	CIV
	Main Steam	H-10	CV-4104	Globe	√		O	C	C	C	No	A/RM 8	No Diversity of Signal
	Main Steam	H-10	CV-4106	Globe	√		O	C	C	C	No	A/RM 8	No Diversity of Signal
	Condenser Dump Valve	H-10	MO-7067	Globe	√		O	C	C	C	No	A/RM 3	
	Main Steam Stop	H-10	CV-4200	Globe	√		O	C	C	C	No	A/18	
	Main Steam Drain Lines	H-10	No ID	Globe	√		O	O	O	O	No	M	No Auto Isolation Valve on Non-ESF System
	Main Steam Initial Pressure	H-10	No ID	Globe	√		O	O	O	O	No	M	No Auto Isolation Valve on Non-ESF System
	Pressure Transmitter	H-10	Root Vlv for PT-151	Globe	√		O	O	O	O	No	M	No Auto Isolation Valve on Non-ESF System
	Pressure Transmitter	H-10	Root Vlv for PT-175	Globe	√		O	O	O	O	No	M	No Auto Isolation Valve on Non-ESF System
	Pressure Transmitter	H-10	Root Vlv for PT-176	Globe	√		O	O	O	O	No	M	No Auto Isolation Valve on Non-ESF System
10	Main Steam Drain	H-37	MO-7065	Gate		√	C	C	C	C	No	LC 19	CIV
	Main Steam Drain	H-37	CV-4107	Globe	√		O	C	C	C	No	A/RM 8	No Diversity of Signal

SEP TOPIC VI-4 CONTAINMENT ISOLATION SYSTEM REVIEW ITEMS

PLANT Big Rock Point

Item No	System Name or Service	Pene No	Valve Ident Number	Valve Type or Description	Location		Position				Essential	Actuation	Remarks
					OC	IC	Normal	Shut Dn	Post LOCA	Pwr Fail			
11	Reactor Feed	H-11	VFW-9	Stop Check		√	O	C	C	C	No	RF	CIV
	Reactor Feed	H-11	VFW-304	Check		√	O	C	C	C	No	RF	CIV
	Reactor Feed	H-11	CV-4000	Globe	√		O	C	C	C	No	RM	)RM Valve on Non-ESF System)HP Heat Exchanger Located
	Reactor Feed	H-11	CV-4012	Globe	√		O	C	C	C	No	RM	)Between Containment and)Isolation Valves
	Reactor Feed	H-11	VFW-138	Gate		√	C	C	C	C	No	None	Valve To Be Seated Closed
	Vent Line	H-11	VFW-171	Gate	√		C	C	C	C	No	None	Valve To Be Seated Closed
12	Control Rod Drive Hyd System	H-35	CV-4016	Globe	√		O	O	O	C	No	A/13	
	Control Rod Drive Hyd System	H-35	CV-4090	Ball	√		O	O	O	C	No	A/RM 14	
	Control Rod Drive Hyd System		VRD-310 VRD-311	Check	√		O	O	O	C	No	RF	CIV
	Control Rod Drive Hyd System		Poppet Valve	Check		√	O	O	O	C	No	RF	CIV
13	Post-Incident and Fire Supply	H-36	VFP-29	Gate	√		O	O	O	O	Yes	M (LO)	No Auto or RM Valve on ESF System
	Post-Incident and Fire Supply	H-36	VFI-302	Check		√	O	O	O/C	O	Yes	RF	
	Drain Line	H-36	VFP-167 VFP-168 VFP-169	Globe	√		C	C	C	C	Yes	M	Valve To Be Sealed Closed
	Pressure Switch PS7069B	H-36	VPI-137 VPI-157	Globe	√		C	C	C	C	Yes	M	Valve To Be Sealed Closed Spare Pressure Switch
14	Clean-Up Demin Resin Sluice	H-23	CV-4091 CV-4092 CV-4093	Ball		√	C	C	C	C	No	A/RM 15	CIV
		H-23	VCV-13	Ball	√		C	C	C	C	No	M	No Auto Isolation Valve on Non-ESF System

SEP TOPIC VI-4 CONTAINMENT ISOLATION SYSTEM REVIEW ITEMS

PLANT Big Rock Point

Item No	System Name or Service	Pene No	Valve Ident Number	Valve Type or Description	Location		Position				Essential	Actuation	Remarks
					OC	IC	Normal	Shut Dn	Post LOCA	Pwr Fail			
15	Treated Waste Return to Fuel Pool	H-17	VRW-313	Check		√	O	C	C	C	No	A/RM	CIV
		H-17	VFW-52	Gate	√		C	C	C	C	No	M	No Auto Isolation Valve on Non-ESF System
	Vent Line	H-17	No ID	Globe		√	C	C	C	C	No	M	Valve To Be Sealed Closed
		H-17	CV-4049	Globe		√	O	O	O	C	No	RM	
16	Reactor Fuel Pit Drain	H-22	CV-4027	Globe		√	C	C	C	C	No	A/RM 3	CIV
	Reactor Fuel Pit Drain	H-22	CV-4117	Globe	√		C	C	C	C	No	A/RM 3	CIV
17	Post-Incident Backup	H-27	VFP-30	Gate	√		O	O	O	O	Yes	M (LO)	No Auto or RM Valve on ESF System
	Post-Incident Backup	H-27	VFP-301	Check		√	O	O	O/C	O	Yes	RF	
	Pressure Switch PS-7069A	H-27	VPI-156 VPI-136	Globe	√		C	C	C	C	Yes	M	Valve To Be Sealed Closed Spare Pressure Switch
	Drain Line	H-27	VFP-170	Globe	√		C	C	C	C	Yes	M	Valve To Be Sealed Line Capped
18	Heating Steam	H-14	None								No		No Isolation Valves Inside or Outside Containment
19	Heating Conden	H-17	None								No		No Isolation Valves Inside or Outside Containment
20	Vent Vacuum Bkr Sensing Line PT-173	H-96	VCI-15	Globe			C	C	C	C	Yes	M	
21	Service Water Supply	H-13	None								No		No Isolation Valve Inside or Outside Containment
22	Service Water Return	H-12	None								No		No Isolation Valve Inside or Outside Containment

SEP TOPIC VI-4 CONTAINMENT ISOLATION SYSTEM REVIEW ITEMS

PLANT Big Rock Point

Item No	System Name or Service	Pene No	Valve Ident Number	Valve Type or Description	Location		Position				Essential	Actuation	Remarks
					OC	IC	Normal	Shut Dn	Post LOCA	Pwr Fail			
23	Core Spray Pump Discharge	H-113	VPI-300	Check		√	O	O	O	O	Yes	RF	
	Core Spray Pump Discharge	H-113	VPI-4	Globe	√		O	O	O	C	Yes	M (LO)	No Auto or RM on ESF System
	Core Spray Pump Discharge	H-113	MO-7072	Globe	√		C	C	O/C	C	Yes	RM 9	
24	Core Spray Pump Return	H-28	VPI-1	Globe		√	O	O	O	O	Yes	M (LO)	No Auto Isolation Valve on ESF System
	Core Spray Pump Return	H-29	VPI-2	Globe		√	O	O	O	O	Yes	M (LO)	No Auto Isolation Valve on ESF System
	Core Spray Pump Return	H-29	VPI-3	Globe	√		O	O	O	O	Yes	M (LO)	No Auto or RM Isolation Valve on ESF System
	Core Spray Pump Return	H-29	VPI-9	Globe		√	C	C	C	C	Yes	M (LO)	No Auto Isolation Valve on ESF System
	Drain Line	H-29	VPI-101	Gate		√	C	C	C	C	No	M	
25	Core Spray Pump Vent	H-112	VPI-305	Check		√	O	O	O	O	Yes	CF	
	Core Spray Pump Vent	H-112	VPI-108	Globe	√		O	O	O	O	Yes	M (LO)	No Auto or RM Isolation Valve on ESF System
26	Emergency Cond Vent	H-9	None								No		No Isolation Valve Inside or Outside Containment
27	Enclosure Press PS-636	H-98	RP-12.2	Globe	√		O	O	O	O	Yes	M	Sealed Open
	Enclosure Press PS-665	H-98	RP-12.2	Globe	√		O	O	O	O	Yes	M	Sealed Open
	Enclosure Press PS-667	H-98	RP-12.2	Globe	√		O	O	O	O	Yes	M	Sealed Open
	Enclosure Press PT-174	H-98	RP-12.2	Globe	√		O	O	O	O	Yes	M	Sealed Open
	Enclosure Press PT-187	H-98	RP-12.2	Globe	√		O	O	O	O	Yes	M	Sealed Open

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PLANT Big Rock Point

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					OC	IC	Normal	Shut Dn	Post LOCA	Pwr Fail			
28	Enclosure Press PS-637	H-99	RP-12.1	Globe	√		O	O	O	O	Yes	M	Sealed Open
	Enclosure Press PS-664	H-99	RP-12.1	Globe	√		O	O	O	O	Yes	M	Sealed Open
	Enclosure Press PS-666	H-99	RP-12.1	Globe	√		O	O	O	O	Yes	M	Sealed Open
29	Enclosure Press PS-7064A	H-89	RP-12.3	Globe	√		O	O	O	O	Yes	M	Sealed Open
30	Enclosure Press PS-7064B	H-90	RP-12.4	Globe	√		O	O	O	O	Yes	M	Sealed Open

TABLE 2

CONTAINMENT ISOLATION SYSTEM SEP REVIEW FINDINGS
PLANT Big Rock Point

Item No	Penetration No	Line Service	Applicable GDC	Exceptions			Valve No	Reviewer's Comments
				Location	Type	Actuation		
6	H-20	Instrument Air	56		X		VA-14	Use of Local Manual Valve Outside Containment as Isolation Valve
7	H-25	Service Air	56		X		VA-7	Use of Local Manual Valve Outside Containment as Isolation Valve
8	H-18	Demin Water	56		X		CV-4105	Use of RM Valve Outside Containment on Non-ESF System as Isolation Valve
9	H-10	Main Steam	55			X	CV-4104	Lack of Signal Diversity
9	H-10	Main Steam	55			X	CV-4106	Lack of Signal Diversity
9	H-10	Main Steam Line Drains	55		X	X	Not Ident	Use of Local Manual Valve Outside Containment as Isolation Valve
9	H-10	Main Steam Initial Pres Reg	1.11		X		Not Ident	
9	H-10	Pressure Transmitter	1.11		X		Root Valve for PT-151	
9	H-10	Pressure Transmitter	1.11		X		Root Valve for PT-175	
9	H-10	Pressure Transmitter	1.11		X		Root Valve for PT-176	
10	H-37	Main Steam Drain	55			X	CV-4107	Lack of Signal Diversity

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Item No	Penetration No	Line Service	Applicable GDC	Exceptions			Valve No	Reviewer's Comments
				Location	Type	Actuation		
11	H-11	Reactor Feed	55		X		VFW-138	Valves Not Permitted as Isolation Valves Unless Sealed Closed
11	H-11	Vent Line	55		X		VFW-171	Valves Not Permitted as Isolation Valves Unless Sealed Closed
11	H-11	Reactor Feed	55	X	X		CV-4000	)Use of RM Valve Outside)of Containment on Non-)ESF System After HP
11	H-11	Reactor Feed	55	X	X		CV-4012	)Heat Exchanger as Containment)Isolation Valve
13	H-36	Post-Incident and Fire Supply	55		X		VFP-29	Use of Local Manual Valve Outside Containment as Isolation Valve
13	H-36	Drain Line	55		X		VFP-167 VFP-168 VFP-169	Valve Not Permitted as Isolation Valve Unless Sealed Closed
14	H-23	Clean-Up Demin Resin Sluice	55		X		VCU-13	Use of Local Manual Valve Outside Containment as Isolation Valve
15	H-17	Treated Waste Return to Fuel Pool	56		X		VRW-52	Use of Local Manual Valve Outside Containment as Isolation Valve
15	H-17	Vent Line	56		X		Not Ident See Fig M-108	Valve Not Permitted as Isolation Valve Unless Sealed Closed
17	H-27	Post-Incident Backup	55		X		VFP-30	Use of Local Manual Valve Outside Containment as Isolation Valve
18	H-14	Heating Steam	57	X	X		None	No Isolation Provisions Inside or Outside Containment

TABLE 2

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Item No	Penetration No	Line Service	Applicable GDC	Exceptions			Valve No	Reviewer's Comments
				Location	Type	Actuation		
19	H-19	Heating Cond	57	X	X		None	No Isolation Provisions Inside or Outside Containment
21	H-13	Service Water Supply	57	X	X		None	No Isolation Valve Inside or Outside Containment
22	H-12	Service Water Return	57	X	X		None	No Isolation Valve Inside or Outside Containment
23	H-113	Core Spray Pump Discharge	55		X		VPI-4	Use of Local Manual Valve Outside Containment as Isolation Valve
24	H-28	Core Spray Pump Return	56		X		VPI-1	Use of Local Manual Valve Inside Containment as Isolation Valve
24	H-28	Core Spray Pump Return	56		X		VPI-2	Use of Local Manual Valve Inside Containment as Isolation Valve
24	H-28	Core Spray Pump Return	56		X		VPI-3	Use of Local Manual Valve Outside Containment as Isolation Valve
24	H-28	Core Spray Pump Return	56		X		VPI-9	Use of Local Manual Valve Inside Containment as Isolation Valve
25	H-112	Core Spray Pump Vent	56		X		VPI-108	Use of Local Manual Valve Outside Containment as Isolation Valve
26	H-9	Emergency Cond Vent	57	X	X		None	No Isolation Valves Inside or Outside Containment
27	H-98	Root Valve to Pressure Switches	1.11	X	X		RP-12.2	

TABLE 2

CONTAINMENT ISOLATION SYSTEM SEP REVIEW FINDINGS
PLANT Big Rock Point

Item No	Penetration No	Line Service	Applicable GDC	Exceptions			Valve No	Reviewer's Comments
				Location	Type	Actuation		
28	H-99	Root Valve to Pressure Switches	1.11	X	X		RP-12.1	
29	H-89	Root Valve to Pressure Switch PS-17064A	1.11	X	X		RP-12.3	
30	H-90	Root Valve to Pressure Switch PS-17064B	1.11	X	X		RP-12.4	
20	H-96	Root Valve to PT-173	1.11	X	X		VCI-15	
24	H-29	Core Spray Pump Return; Vent Line	56		X		VPI-101	Valve Not Permitted as Isolation Valve Unless Sealed Closed