SUSQUEHANNA STEAM ELECTRIC STATION

UNIT 2

INSERVICE INSPECTION PROGRAM PLAN

FOR

PUMP AND VALVE OPERATIONAL TESTING

Rev.	Description	Prepared by:	Approved by:	Date
4	Compliance with NRC Generic Letter 89-04	Signatures on File		
5	Responses to NRC Comments	Signatures on File		
6	Addition of Water Level Backfill Valves	Signatures on File		
7	10 Year ASME Code Update	Signatures on File		
8	Corrections to Valve Tables	Signatures on File		
9	Addition of Fuel Pool Cooling Valves	Signatures on File		
10	Responses to NRC Comments and Additional Changes	Signatures on File		
11	Response to NRC Comments on RR#23 Excess Flow Check Valves	Becky Mattern	J R Bumgardner	5/10/96

	Revision	Dated
Page 2RR18-2	10	04/96
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RELIEF REQUEST NUMBER 23

SYSTEM	P&ID	VALVE	SYSTEM	P&ID	VALVE
RPV	M-2141	XV-241F009	RPV (continued)		XV-242F059B
Main Steam	M-2141	XV-241F070A			XV-242F059C
		XV-241F070B			XV-242F059D
		XV-241F070C			XV-242F059E
		XV-241F070D			XV-242F059F
		XV-241F071A			XV-242F059G
		XV-241F071B			XV-242F059H
		XV-241F071C			XV-242F059L
		XV-241F071D			XV-242F059M
		XV-241F072A			XV-242F059N
		XV-241F072B			XV-242F059P
		XV-241F072C			XV-242F059R
		XV-241F072D			XV-242F059S
		XV-241F073A			XV-242F059T
		XV-241F073B			XV-242F059U
		XV-241F073C			XV-242F061
		XV-241F073D	RXR	M-2143	XV-243F003A
RPV	M-2142	XV-242F051C			XV-243F003B
		XV-242F051D			XV-243F004A
		XV-242F053A			XV-243F004B
		XV-242F053B			XV-243F009A
		XV-242F053C			
		XV-242F053D			
		XV-242F057			
		XV-242F059A			

RELIEF REQUEST NUMBER 23 (Cont'd.)

SYSTEM	P&ID	VALVE	SYSTEM	P&ID	VALVE
RXR (continued)	M-2143	XV-243F009B	RCIC	M-1249	XV-249F044A
		XV-243F009C			XV-249F044B
		XV-243F009D			XV-249F044C
		XV-243F010A			XV-249F044D
		XV-243F010B	HPCI	M-2155	XV-255F024A
		XV-243F010C			XV-255F024B
		XV-243F010D			XV-255F024C
		XV-243F011A			XV-255F024D
		XV-243F011B	RHR	M-2151	XV-25109C
		XV-243F011C			XV-25109D
		XV-243F011D			
		XV-243F012A			
		XV-243F012B			
		XV-243F012C			
		XV-243F012D			
		XV-243F040A			
		XV-243F040B			
		XV-243F040C			
		XV-243F040D			
		XV-243F057A			
		XV-243F057B			
RWCU	M-2144	XV-24411A			
		XV-24411B			
		XV-24411C			
		XV-24411D			
		XV-244F046			

RELIEF REQUEST NUMBER 23 (Cont'd.)

Category: C

Class: 1

Function: Containment Isolation

Impractical Test Requirement: Exercise test valve once per 92 days.

Basis for Deferment: Excess flow check valves are installed on instrument lines penetrating containment in accordance with Regulatory Guide 1.11. The lines are sized and/or orificed such that off-site doses will be substantially below 10CFR100 limits in the event of a rupture. Therefore, individual leak rate testing of these valves is not required for conformance with 10CFR50, Appendix J requirements.

Functional testing of valves to verify closure can be accomplished by the process of venting the instrument side of the valve while the process side is under pressure. Such testing is required by Technical Specification 4.6.3.4 at least once per 18 months. Systems design does not include test taps upstream of the Excess Flow Check Valves. For this reason, the EFCV's cannot be isolated and tested using a pressure source other than reactor pressure. Testing on a frequency greater than once per 18 months is not prudent for several reasons. The testing described above requires the removal of the associated instrument or instruments from service. Since these instruments are in use during plant operation, removal of any of these instruments from service may cause a spurious signal which could result in a plant trip or an unnecessary challenge to safety systems. Additionally, process liquid will be contaminated to some degree, requiring special measures to collect flow from the vented instrument side and also will contribute to an increase in personnel radiation exposure. Testing on a quarterly basis is deemed impractical since the risk of performing the test quarterly outweighs the benefit achieved with a quarterly test and will also increase personnel exposure.

RELIEF REQUEST NUMBER 23 (Cont'd.)

Testing on a Cold Shutdown frequency is also impractical considering the large number of valves to be tested and the condition that reactor pressure >500 psig is needed for testing. NUREG-1482 allows test deferrals to refueling outages if it is impractical to test quarterly or during cold shutdowns. In this instance, considering the large number of valves to be tested and the conditions required for testing (Reactor pressure), it is also a hardship to test all these valves during refueling outages. Recent improvements in Refueling Outage schedules (i.e. shorter outages) minimized the time that is planned for Refueling and testing activities during the outages. The appropriate time for performing these excess flow check valve tests during refueling outages is in conjunction with vessel hydrostatic testing. As a result of shorter outages, decay heat levels during hydrostatic tests are higher than in the past. If the hydrostatic test was extended to test all EFCV's, the vessel could require depressurization several times to avoid exceeding the maximum bulk coolant temperature limit.
This is an evolution which challenges the reactor operators and thermally cycles the reactor vessel and should be avoided if possible. Also, based on past experience, excess flow check valve testing during hydrostatic testing becomes the outage critical path and could possibly extend the outage by 2 days if all EFCV's were to be tested during this time frame.

A review of the maintenance history for EFCV's has shown that they have been extremely reliable over the life of the plant showing <1% failure rate associated with testing of these valves. Examples of causes for the failures included alarm problems, indication (limit switch adjustments), blown fuses, and dirt in the instrument lines. Only half of the failures required replacements of the valves. This review of the surveillance test history shows no evidence of time based failure mechanisms or common mode failures associated with the excess flow check valves.

RELIEF REQUEST NUMBER 23 (Cont'd.)

A proposed alternative to testing during the refueling outage would be to test certain excess flow check valves immediately preceding the refueling outage while the reactor is at power, while also instituting the appropriate administrative and scheduling controls. This provides the appropriate conditions for testing (Reactor pressure >500 psig), while also providing an acceptable level of quality and safety. Performance of the excess flow check valve testing prior to the outage will be scheduled such that, in the event of a failure, the resulting action statement and limiting condition of operation will encompass the planned shutdown for the refueling outage. Using this strategy, unplanned, unnecessary plant shutdowns as a result of excess flow check valve testing will be avoided.

In summary, considering the extremely low failure rate, personnel and plant safety concerns, and the hardship of testing during refueling outages, EFCV testing at a frequency greater than once per operating cycle and exclusively during refueling outages is impractical and results in a hardship without a compensating increase in the level of safety.

Alternative Testing:

Functional testing with verification that flow is checked will be performed at least once per 18 months per Technical Specification 4.6.3.4, immediately preceeding a planned Refueling Outage and with the appropriate administrative and scheduling controls established.