

ACCIDENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.8 - The accident monitoring instrumentation channels shown in Table 3.3A11 shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

- a. With the number of OPERABLE accident monitoring instrumentation channels less than the Total Number of Channels shown in Table 3.3A11, either restore the inoperable channel(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours (follow Specification 3.4.11 when determining ACTIONS for Items 4, 5, and 6). *Initial CNP Only*
- DELETE* → b. With the number of OPERABLE accident monitoring instrumentation channels less than the MINIMUM CHANNELS OPERABLE requirements of Table 3.3A11, either restore the inoperable channel(s) to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours. *DELETE* → (follow Specification 3.4.11 when determining ACTIONS for Item 4).
- c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.8 Each accident monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-7.

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TABLE 3.3-11

ACCIDENT MONITORING INSTRUMENTATION

	TOTAL NO. OF CHANNELS	MINIMUM CHANNELS OPERABLE
1. Pressurizer Water Level	3	2
2. Auxiliary Feedwater Flow Rate	1 per steam generator	1 per steam generator
3. Reactor Coolant System Subcooling Margin Monitor	1	1
4. PORV Acoustical Detector Position Indicator	2/valve*	1/valve
5. PORV Limit Switch Position Indicator	1/valve	0/valve
6. PORV Block Valve Limit Switch Position Indicator	1/valve	0/valve
7. Safety Valve Acoustical Detector Position Indicator	2/valve*	1/valve
8. Safety Valve Temperature Detector Position Indicator	1/valve	0/valve
9. Containment Sump Wide Range Water Level	2	1
10. Containment Wide-Range Pressure	2	0
11. In-Core Thermocouples (Core-Exit Thermocouples)	4/core quadrant	2/core quadrant
12. Reactor Vessel Level Indicating System	1	1

REPLACE WITH "DELETED"

REPLACE WITH "DELETED"

\* One Detector Active, Second Detector Passive

TABLE 4.3-7

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ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

		CHANNEL CHECK	CHANNEL CALIBRATION
1. Pressurizer Water Level		M	R
2. Auxiliary Feedwater Flow Rate		S/U <sup>(1)</sup>	R
3. Reactor Coolant System Subcooling Margin		M	R
4. PORV Acoustical Detector Position Indicator		M	R
5. PORV Limit Switch Position Indicator		M	R
6. PORV Block Valve Limit Switch Position Indicator		M	R
7. Safety Valve Acoustical Detector Position Indicator		M	R
8. Safety Valve Temperature Detector Position Indicator		M	R
9. Deleted			
10. Containment Sump Wide-Range Water Level		M	R
11. Containment Wide-Range Pressure		N/A	R
12. In-Core Thermocouples (Core-Exit Thermocouples)		M	R
13. Reactor Vessel Level Indicating System		M	R

REPLACE  
WITH  
"DELETED"

REPLACE  
WITH  
"DELETED"

(1) Channel check to be performed in conjunction with Surveillance Requirement 4.7.1.2.c following an extended plant outage.

ATTACHMENT A-2

Beaver Valley Power Station, Unit No. 2  
Proposed Technical Specification Change No. 100

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The following is a list of the affected pages:

Affected Pages:      3/4 3-58  
                             3/4 3-59

TABLE 3.3-11

ACCIDENT MONITORING INSTRUMENTATION

	<u>INSTRUMENT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>ACTION</u>
1.	Pressurizer Water Level	3	2	a, b
2.	Auxiliary Feedwater Flow Rate	2 per steam generator	1 per steam generator	a, b
3.	Reactor Coolant System Subcooling Margin Monitor	2	1	c
4.	PORV Limit Switch Position Indicator	1/valve	0/valve	a, b
5.	PORV Block Valve Limit Switch Position Indicator	1/valve	0/valve	a, b
6.	Safety Valve Position Indicator	1/valve	0/valve	a, b
7.	Safety Valve Temperature Detector	1/valve	0/valve	a, b
8.	Containment Sump Wide Range Water Level	2	1	a, b
9.	Containment Wide-Range Pressure	2	1	a, b
10.	Reactor Vessel Level Indication System	2	1	a, b
11.	Core Exit Thermocouples	4/core quadrant	2/core quadrant	a, b

REPLACE WITH "DELETED"

TABLE 4.3-7

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. Pressurizer Water Level	M	R
2. Auxiliary Feedwater Flow Rate	S/U*	R
3. Reactor Coolant System Subcooling Margin Monitor	M	R
4. PORV Limit Switch Position Indicator	M	R
5. PORV Block Valve Limit Switch Position Indicator	M	R
6. Safety Valve Position Indicator	M	R
7. Safety Valve Temperature Detector	M	R
8. Containment Sump Wide-Range Water Level	M	R
9. Containment Wide-Range Pressure	N/A	R
10. Reactor Vessel Level Indication System	M	R
11. Core Exit Thermocouples	M	R

*Replace  
WITH  
"DELETED"*

\*Channel check to be performed in conjunction with Surveillance Requirement 4.7.1.2.b following an extended plant outage.

## ATTACHMENT B

### Beaver Valley Power Station, Unit Nos. 1 and 2 Proposed Technical Specification Change No. 230 and 100 REVISED PORV AND SV POSITION INDICATION

#### A. DESCRIPTION OF AMENDMENT REQUEST

Operability of the accident monitoring instrumentation is required by Technical Specification 3.3.3.8. The basis for this specification requires a capability consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation For Light-Water-Cooled Nuclear Plants to Assess Plant and Environs Conditions During and Following an Accident," December 1975, NUREG 0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations," and NUREG 0737, "Clarification of TMI Action Plan Requirements," November 1980. Beaver Valley Power Station Unit No. 1 (BV-1) Technical Specification 3.3.3.8 presently requires operability of both redundant power operated relief valve (PORV) and both redundant safety valve (SV) position indication systems. Beaver Valley Power Station Unit No. 2 (BV-2) Technical Specification 3.3.3.8 presently requires operability of the primary and backup safety valve (SV) position indication systems. Inoperability of any one of these redundant systems is not a safety concern as the other valve position indication system for the same valve is available to meet technical specification operability requirements. Only when no valve position indication systems are operable should the appropriate action statements be entered.

The proposed amendment would modify BV-1 and BV-2 Specification 3.3.3.8 Tables 3.3-11 and 4.3-7 such that only one valve position indication system for the PORVs and SVs is required to be operable. This is consistent with the Improved Standard Technical Specifications (ISTS) NUREG 1431, Revision 1, and meets the guidance of Regulatory Guide 1.97, NUREG 0578, and NUREG 0737.

#### B. BACKGROUND

TMI Short-Term Recommendations (NUREG 0578) Item 2.1.3.a requires licensees to provide in the control room either a reliable, direct-position indication for the PORVs and SVs, or reliable flow indication devices downstream of these valves. The "Clarification of TMI Action Plan Requirements," NUREG 0737 incorporated and expanded the NUREG 0578 guidance. Specifically, Item II.D.3 "Direct Indication of Relief and Safety Valve Position" delineates the details including seismic and environmental qualification and specifies that "If the position indication is not safety grade, ...backup methods of determining valve position (must be) available..."

##### Unit No. 1

The pre-TMI design for Unit No. 1 valve position indication was as follows:

Unit No. 1 PORVs - Direct indication (open-shut) from a stem-mounted limit switch. Backup indication of flow was available from a temperature sensor on the common PORV tailpipe discharge line, and by indication and alarm of pressurizer relief tank (PRT) parameters. The limit switch met NUREG 0578 direct indication guidance but the switch and the temperature sensor were not qualified as later identified by NUREG 0737.

Unit No. 1 SVs - No direct valve position indication. Indirect indication was available from individual temperature sensors on each SV tailpipe. Backup flow indication was available by indication and alarm of PRT parameters (level, pressure, and temperature). These were not qualified.

To address direct indication of SV position, an acoustical monitoring system was installed with detectors on the downstream piping of each SV, and although the PORV limit switch system had subsequently been seismically and environmentally qualified, acoustic detectors were also added downstream of each PORV. The PORVs therefore, have two primary fully qualified and redundant direct position indicators, and an independent backup method (temperature sensor) for flow indication. The SVs have the fully qualified acoustical direct position indicator and the backup temperature detector for flow indication. Additionally, a leaking or open PORV or SV will be indicated by the pressurizer relief tank (PRT) parameters which are both indicated and alarmed.

Unit No. 1 Technical Specification 3.3.3.8 presently requires operability of both PORV primary systems (acoustic detectors and limit switches), and both the SV primary (acoustic detector) and backup (tailpipe temperature detector) position indicating systems.

Unit No. 2

The original design for Unit No. 2 valve position indication met all regulatory guidance as indicated in the Unit No. 2 SER Section 7.5.2.3 (NUREG 1057 dated October 1985).

Unit No. 2 PORVs - Direct indication (open-shut) from a qualified limit switch. Backup flow indication is provided by a temperature sensor in the discharge piping and by PRT parameters. Technical Specification 3.3.3.8 requires operability of the limit switch but not the temperature sensor or the PRT parameters.

Unit No. 2 SVs - Direct indication (open-shut) from a qualified reed switch and backup flow indication from a temperature detector located on each SV discharge pipe.



Technical Specification 3.3.3.8 requires operability of the reed switch position indicator and the backup temperature detector.

Unit No. 2 Technical Specification 3.3.3.8 presently requires operability of both the SV primary (reed switch) and the backup (tailpipe temperature detectors) valve position indication systems.

C. JUSTIFICATION

Only one direct indication of PORV and SV position is necessary. A backup indication is not necessary if the position indicating system is safety grade [NUREG 0737, Item II.D.3, clarification (3)]. For the PORVs, direct position indication and alarm is provided in the control room by safety related, seismically and environmentally qualified limit switch position indicators.

For Unit No. 1 this is documented in:

- a) Unit No. 1 submittal "Follow-up Actions Regarding TMI," dated October 22, 1979.
- b) Unit No. 1 submittal "Discussions of Lessons Learned Short Term Requirements," dated June 26, 1980.
- c) NRC SER on TMI Lessons Learned Category "A" items, dated October 9, 1980.
- d) NRC Region I Inspection No. 50-334/80-27, dated June 25, 1981.

Neither the PORV acoustic detectors nor the SV tailpipe temperature sensors are necessary to meet NRC position indication criteria. The position indication guidance of NUREG 0578 Item 2.1.3.a and NUREG 0737 Item II.D.3 for the PORVs on both units is fully met by the limit switch position indicating system. For the Unit No. 1 SVs the acoustic detectors meet the guidance by providing direct indication. Backup indication via the temperature sensors is not necessary per NUREG 0737 as the direct indication is safety grade.

For Unit No. 2, direct position indication is provided on the PORVs by qualified limit switches, and on the SV by qualified reed switches; there are no acoustic monitors installed as valve position indicators. Backup valve position indication is provided on the SVs by temperature sensors downstream of each SV. The limit switches, reed switches, and temperature sensors are all presently required by Technical Specification 3.3.3.8 to be operable; however, the backup indication of SV position provided by the temperature sensors is not necessary per NUREG 0737 as the direct indication provided by the reed switches is fully qualified.

It is proposed that the technical specification requiring operability of the Unit No. 1 PORV acoustic detectors, and the Unit No. 1 and 2 technical specifications requiring operability of the SV tailpipe temperature detectors be deleted.

The Unit No. 1 PORV acoustic detectors may be removed or retired-in-place. The SV tailpipe temperature detectors will remain functional as an operator diagnostic aid, but will have no operability requirements.

D. SAFETY ANALYSIS

PORV and SV position indication is an aid to operator diagnosis of potential events. There are no automatic or control functions associated with the position indicating system. Requiring operability of more than one position indicating system is overly conservative and unnecessarily restrictive as this could force the plant into a shutdown condition despite having an acceptable and operable position indicating system.

The proposed change will eliminate the Unit No. 1 PORV acoustic detector position indicator technical specification, and the Unit No. 1 and 2 SV temperature detector technical specification. It will reduce the potential for plant challenges due to a potential shutdown which should not be necessary due to the restrictive nature of having unnecessary redundant position indication systems in the technical specification.

Technical Specification 3.3.3.8 will continue to require the operability of appropriate accident monitoring instrumentation including the direct indication of PORV and SV position as defined by Regulatory Guide 1.97 and NUREGS 0578 and 0737. PORV and SV position indication is a qualified, direct reading indication to address potential events such as a leaking or stuck open valve. Unambiguous indication will allow accurate diagnosis of the potential for a small break loss of coolant accident, such that immediate action may be taken to mitigate the event. Direct indication is met for the PORVs on both units by qualified limit switches. For the SVs, direct position indication is provided on Unit No. 1 by the acoustic detectors and on Unit No. 2 by a reed switch indicating device. Operability of these devices is required as described in Technical Specification Table 3.3-11. Therefore, these changes have been determined to be safe and will not reduce the safety of the plant. The UFSAR accident analysis was reviewed and the proposed changes remain consistent with the analysis assumptions regarding the operation of the PORVs and the SVs.

The no significant hazard considerations involved with the proposed amendment have been evaluated, focusing on the three standards set forth in 10 CFR 50.92(c) as quoted below:

E. NO SIGNIFICANT HAZARDS EVALUATION

The Commission may make a final determination, pursuant to the procedures in paragraph 50.91, that a proposed amendment to an operating license for a facility licensed under paragraph 50.21(b) or paragraph 50.22 or for a testing facility involves no significant hazards consideration, if operation of the facility in accordance with the proposed amendment would not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- (3) Involve a significant reduction in a margin of safety.

The following evaluation is provided for the no significant hazards consideration standards.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change involves instrumentation which is redundant in monitoring the position of valves and, as such, does not influence the potential for an initiating event involving the power operated relief valves (PORVs) or the safety valves (SVs).

Implementation of these changes will reduce the potential for challenges to the plant due to a potential shutdown which should not be necessary due to the restrictive nature of having unnecessary redundant position indication in the technical specification. By deleting the Unit No. 1 technical specification operability requirements for the PORV acoustic detectors, and by deleting, on both units, the technical specification operability requirements for the SV temperature detector position indicators, the potential for unnecessary shutdowns is reduced. When inoperable, the PORV acoustic detectors and the SV temperature detectors presently invoke an unnecessary action statement as another fully qualified safety-related position indication system exists to provide indication. The proposed change modifies Specification 3.3.3.8 actions and surveillance requirements, but does not affect the BASES.

The remaining instrumentation on these tables will be unaffected. The remaining position indication systems for the PORVs and SVs are fully qualified and satisfy regulatory criteria for post accident monitoring of valve position. These changes do not affect the ability to satisfy analysis

assumptions regarding operation of the PORVs and SVs. They do not affect the ability to continue to meet the guidance of Regulatory Guide 1.97, the post Three Mile Island criteria contained in NUREG 0578 and NUREG 0737, and reflect the guidance provided in NUREG 1431, "Improved Standard Technical Specifications" (ISTS). Therefore, we have concluded that these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated in the Updated Final Safety Analysis Report (UFSAR).

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change will reduce the potential to challenge safety systems due to eliminating the potential for unnecessary plant shutdowns. The proposed changes are limited to PORV and SV position indication and do not involve any physical changes to the PORVs or SVs or their setpoints. These changes do not delete any design basis accident functions previously provided by the PORVs or SVs nor has the probability of inadvertent opening been increased. Accordingly, no new single failure has been identified as a result of these changes. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated in the UFSAR.

3. Does the change involve a significant reduction in a margin of safety?

The proposed changes have been incorporated to eliminate a degree of equipment redundancy and is consistent with the Improved Standard Technical Specifications (ISTS). The Unit No. 1 specification presently requires operability of both redundant PORV position indication systems and the primary and backup SV position indication systems. The Unit No. 2 specification also requires operability of the primary and backup SV position indication systems. These changes will potentially eliminate some challenges and potential unnecessary shutdowns by eliminating equipment determined to be no longer necessary. Only one safety-related position indication system is necessary to satisfy regulatory criteria; therefore, operation of the plant in accordance with the proposed amendment would not involve a significant reduction in a margin of safety.

F. NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

Based on the considerations expressed above, it is concluded that the activities associated with this license amendment request satisfies the no significant hazards consideration standards of 10 CFR 50.92(c) and, accordingly, a no significant hazards consideration finding is justified.