ATTACHMENT A-1

Beaver Valley Power Station, Unit No. 1
Proposed Technical Specification Change No. 226

The following is a list of the affected pages:

Affected Pages:

3/4 3-18
3/4 5-8
B 3/4 5-3
B 3/4 5-5

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

	FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
4.	STEAM LINE ISOLATION					
	a. Manual	2/steam line	1/steam line	2/operating steam line	1, 2, 3	18
	b. Automatic Actuation Logic	2	1	2	1, 2, 3	13
	c. Containment Pressure Intermediate-High-High	3	2	~~3~~ ← (2)	1, 2, 3	14
	d. Low Steamline Pressure	3/loop	2/loop any loop	2/loop any loop	1, 2, 3(1)	14
	e. High Steam Pressure Rate	3/loop	2/loop any loop	2/operating loop	3(2)	14

(Proposed Wording)

EMERGENCY CORE COOLING SYSTEMS

3/4.5.5 SEAL INJECTION FLOW

LIMITING CONDITION FOR OPERATION

3.5.5 Reactor coolant pump seal injection flow shall be less than or equal to 28 gpm with the charging pump discharge pressure greater than or equal to ~~2311~~ 2397 psig and the seal injection flow control valve full open.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

a. With the seal injection flow not within the limit, adjust manual seal injection throttle valves to give a flow within the limit with the charging pump discharge pressure greater than or equal to 2397 ~~2311~~ psig and the seal injection flow control valve full open within 4 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 12 hours.

SURVEILLANCE REQUIREMENTS

4.5.5 Verify at least once per 31 days that the valves are adjusted to give a flow within the limit with the charging pump discharge at greater than or equal to ~~2311~~ 2397 psig and the seal injection flow control valve full open.(1)

(1) Not required to be performed until 4 hours after the Reactor Coolant System pressure stabilizes at greater than or equal to 2210 psig and less than or equal to 2250 psig.

(Proposed Wording)

3/4.5.5 SEAL INJECTION FLOW

BACKGROUND

The function of the seal injection throttle valves during an accident is similar to the function of the Emergency Core Cooling Systems (ECCS) throttle valves in that each restricts flow from the charging pump header to the Reactor Coolant Systems (RCS).

The restriction on reactor coolant pump (RCP) seal injection flow limits the amount of ECCS flow that would be diverted from the injection path following an accident. This limit is based on safety analysis assumptions that are required because RCP seal injection flow is not isolated during SI.

APPLICABLE SAFETY ANALYSES

All ECCS subsystems are taken credit for in the large break loss of coolant accident (LOCA) at full power. The LOCA analysis establishes the minimum flow for the ECCS pumps. The charging pumps are also credited in the small beak LOCA analysis. This analysis establishes the flow and discharge head at the design point for the charging pumps. The steam generator tube rupture and main steam line break event analyses also credit the charging pumps, but are not limiting in their design. Reference to these analyses is made in assessing changes to the Seal Injection System for evaluation of their effects in relation to the acceptance limits in these analyses.

(2397)

This LCO ensures that seal injection flow of less than or equal to 28 gpm, with charging pump discharge pressure greater than or equal to ~~2211~~ psig and seal injection flow control valve full open, will be sufficient for RCP seal integrity but limited so that the ECCS trains will be capable of delivering sufficient water to match boiloff rates soon enough to minimize uncovering of the core following a large LOCA. It also ensures that the charging pumps will deliver sufficient water for a small LOCA and sufficient boron to maintain the core subcritical. For smaller LOCAs, the charging pumps alone deliver sufficient fluid to overcome the loss and maintain RCS inventory.

3/4.5.5 SEAL INJECTION FLOW (Continued)

ACTIONS

a. With seal injection flow exceeding its limit, the amount of charging flow available to the RCS may be reduced. Under this condition, action must be taken to restore the flow to below its limit. The operator has 4 hours from the time the flow is known to be above the limit to correctly position the manual valves and thus be in compliance with the accident analysis. The completion time minimizes the potential exposure of the plant to a LOCA with insufficient injection flow and ensures that seal injection flow is restored to or below its limit. This time is conservative with respect to the completion times of other ECCS LCOs; it is based on operating experience and is sufficient for taking corrective actions by operations personnel.

The allowed completion times are reasonable,

When the required actions cannot be completed within the required completion time, a controlled shutdown must be initiated. ~~The Completion Time of 6 hours for reaching MODE 3 from MODE 1 is a reasonable time for a controlled shutdown,~~ based on operating experience and normal cooldown rates, and does not challenge plant safety systems or operators. ~~Continuing the plant shutdown begun in this Required Action, an additional 6 hours is a reasonable time, based on operating experience and normal cooldown rates, to reach MODE 4, where this LCO is no longer applicable.~~

DELETE

The plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within the following 12 hours.

SURVEILLANCE REQUIREMENTS (SR)

SR 3.5.5.1

Verification every 31 days that the manual seal injection throttle valves are adjusted to give a flow within the limit ensures that proper manual seal injection throttle valve position, and hence, proper seal injection flow, is maintained. The Frequency of 31 days is based on engineering judgment and is consistent with other ECCS valve Surveillance Frequencies. The Frequency has proven to be acceptable through operating experience.

As noted, the Surveillance is not required to be performed until 4 hours after the RCS pressure has stabilized within a ± 20 psig range of normal operating pressure. The RCS pressure requirement is specified since this configuration will produce the required pressure conditions necessary to assure that the manual valves are set correctly. The exception is limited to 4 hours to ensure that the Surveillance is timely.

(Proposed Wording)

ATTACHMENT A-2

Beaver Valley Power Station, Unit No. 2
Proposed Technical Specification Change No. 98

The following is a list of the affected pages:

Affected Pages: B 3/4 5-4

3/4.5.4 SEAL INJECTION FLOW (Continued)

ACTIONS

a. With seal injection flow exceeding its limit, the amount of charging flow available to the RCS may be reduced. Under this condition, action must be taken to restore the flow to below its limit. The operator has 4 hours from the time the flow is known to be above the limit to correctly position the manual valves and thus be i.. compliance with the accident analysis. The completion time minimizes the potential exposure of the plant to a LOCA with insufficient injection flow and ensures that seal injection flow is restored to or below its limit. This time is conservative with respect to the completion times of other ECCS LCOs; it is based on operating experience and is sufficient for taking corrective actions by operations personnel.

The allowed completion times are reasonable,

When the required actions cannot be completed within the required completion time, a controlled shutdown must be initiated. ~~The Completion Time of 6 hours for reaching MODE 3 from MODE 1 is a reasonable time for a controlled shutdown,~~ based on operating experience and normal cooldown rates, and does not challenge plant safety systems or operators. ~~Continuing the plant shutdown begun in this Required Action, an additional 6 hours is a reasonable time, based on operating experience and normal cooldown rates, to reach MODE 4, where this LCO is no longer applicable.~~

DELETE

The plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within the following 12 hours.

SURVEILLANCE REQUIREMENTS (SR)

SR 3.5.4.1

Verification every 31 days that the manual seal injection throttle valves are adjusted to give a flow within the limit ensures that proper manual seal injection throttle valve position, and hence, proper seal injection flow, is maintained. The Frequency of 31 days is based on engineering judgment and is consistent with other ECCS valve Surveillance Frequencies. The Frequency has proven to be acceptable through operating experience.

As noted, the Surveillance is not required to be performed until 4 hours after the RCS pressure has stabilized within a ± 20 psig range of normal operating pressure. The RCS pressure requirement is specified since this configuration will produce the required pressure conditions necessary to assure that the manual valves are set correctly. The exception is limited to 4 hours to ensure that the Surveillance is timely.

ATTACHMENT B

Beaver Valley Power Station, Unit Nos. 1 and 2
Proposed Technical Specification Change No. 226 and 98
Revision of Table 3.3-3 titled "Engineered Safety Feature Actuation System Instrumentation," Specification 3.5.5 titled "Seal Injection Flow" and associated Bases, AND Bases Section 3/4.5.4 titled "Seal Injection Flow"

A. DESCRIPTION OF AMENDMENT REQUEST

For Beaver Valley Power Station (BVPS) Unit No. 1 only, Table 3.3-3 Functional Unit 4.c would be revised by changing the minimum channels operable from three to two. Specification 3/4.5.5 would be revised to reflect a required charging pump discharge pressure of greater than or equal to 2397 psig instead of the current value of 2311 psig. The Bases for Specification 3/4.5.5 would also be revised to reflect the 2397 psig value. In addition, minor editorial changes would be made to the action statement Bases section which includes revising the wording to better reflect the intent of the action statement in terms of the time required to reach MODE 4.

For BVPS Unit No. 2 only, the Bases for Specification 3/4.5.4 would be revised to include minor editorial changes to the action statement Bases section. These changes include modifying the wording to better reflect the intent of the action statement in terms of the time required to reach MODE 4.

B. BACKGROUND

The restriction on reactor coolant pump (RCP) seal injection flow limits the amount of emergency core cooling system (ECCS) flow that would be diverted from the safety injection flow path following an accident. This limit is based on safety analysis assumptions that are required because reactor coolant pump (RCP) seal injection flow is not isolated during safety injection.

The function of containment pressure intermediate-high-high is to initiate a steam line isolation when containment internal pressure reaches 3 psig. This function protects against a loss of coolant accident (LOCA) or a steam line break (SLB) inside containment in order to maintain at least one unfaulted steam generator (SG) as a heat sink for the reactor and to limit the mass and energy release to containment. The transmitters (d/p cells) are located outside containment with the sensing line(s) located inside containment. This function provides no input to any control functions. Thus, three operable channels are sufficient to satisfy protective requirements with two-out-of-three logic.

C. JUSTIFICATION

The proposed change to the minimum channels operable from three to two will continue to ensure that the containment pressure intermediate-high-high function will initiate a steam line isolation. The number of channels to trip is two. While in the condition with one channel inoperable, the remaining two channels will continue to provide the protective function on a two-out-of-two logic. With one channel inoperable, Action Statement 14 requires that the inoperable channel be placed in the tripped condition within 6 hours. This action restores the function to meet single failure criteria on a one-out-of-two logic basis. Therefore, by reducing the minimum channels operable to two, the ability to initiate steam line isolation will not be degraded to the point where it would fail to function upon reaching the containment pressure trip setpoint. This change is consistent with the current BVPS Unit No. 2 Technical Specification Table 3.3-3 item 4.c wording and the minimum number of channels specified in Table 3.3-3 item 4.c of NUREG 0452 Draft Revision 5 titled "Standard Technical Specifications for Westinghouse Pressurized Water Reactors."

The proposed revision to the charging pump discharge pressure stated in Specification 3.5.5 will ensure that safety analysis assumptions are met. The current value of 2311 psig is non-conservative and could result in the manual seal injection throttle valves being adjusted further open than is required to establish the proper flow line resistance. With the proposed value of 2397 psig, the minimum ΔP between the charging pump discharge and the reactor coolant system (RCS) will be higher (145 psid vs 61 psid) which results in the throttle valves being closed further to meet the 28 gpm flow limit, thus increasing the flow line resistance. The proposed value of 2397 psig for charging pump discharge pressure has been determined by calculation in conjunction with the RCS pressure limits and the seal injection flow limit to establish the proper flow line resistance. With the proper flow line resistance, seal injection flow will be sufficiently restricted to ensure proper flow through the ECCS subsystems to the RCS as assumed in the safety analysis.

The proposed changes to Bases for 3/4.5.5 (BVPS Unit No. 1) and 3/4.5.4 (BVPS Unit No. 2) are editorial in nature. For BVPS Unit No. 1 only, the Bases is being revised to reflect the change in charging pump discharge pressure as previously described. The remaining changes, which apply to both units, will better reflect the action statement wording in terms of the time required to reach MODE 4. Capitalization changes are also included.

D. SAFETY ANALYSIS

The proposed change to minimum channels operable will not affect the ability of the containment pressure intermediate-high-high function to initiate steam line isolation. No physical changes to the plant configuration or trip setpoints will occur as a result of this proposed change. With one channel inoperable, this function will continue to provide protection against a LOCA or SLB inside containment in order to maintain at least one unfaulted SG as a heat sink for the reactor and to limit the mass and energy release to containment. The action statement will continue to require the inoperable channel to be placed in the trip condition within 6 hours. This action restores the function to be able to meet single failure criteria on a one-out-of-two logic basis.

The proposed change to the charging pump discharge pressure stated in Specification 3.5.5 will ensure that safety analysis assumptions are met. This will ensure that seal injection flow is adequately limited and thus ensure sufficient flow to the reactor core during accident conditions. The proposed change does not alter plant configuration or method of operating the plant. The normal charging pump discharge pressure during verification of seal injection flow is normally greater than or equal to approximately 2440 psig.

The proposed changes to the Bases for seal injection flow are editorial in nature and do not affect plant safety.

Therefore, this change is considered safe, based on the continued ability of the containment pressure intermediate-high-high function to initiate steam line isolation. The seal injection flow will continue to be sufficiently restricted in order to ensure adequate flow to the reactor core during accident conditions.

E. NO SIGNIFICANT HAZARDS EVALUATION

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:

> 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 amendment does not add or modify any existing plant equipment. Since normal charging pump discharge pressure is greater than or equal to approximately 2440 psig, no additional plant configuration changes or modifications will be required to comply with this revised charging pump discharge pressure value. The proposed amendment does not change the design or function of the containment pressure intermediate-high-high channels.

   The consequences of an accident previously evaluated are not significantly increased. The ability of the containment pressure intermediate-high-high function to initiate steam line isolation will not be affected. Since steam line isolation will continue to occur at the same required trip setpoint, the amount of mass and energy released to containment along with the ability to maintain at least one unfaulted steam generator (SG) as a heat sink for the reactor remains unchanged. The amount of seal injection flow will continue to be adequately limited to ensure sufficient flow to the reactor core during accident conditions. The Bases changes are editorial in nature and do not involve a change to probability or consequences of an accident previously evaluated.

   Based on the above discussion, it is concluded that this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

   The proposed amendment does not change the plant configuration in a way which introduces a new potential hazard to the plant. Since design requirements continue to be met and the integrity of the reactor coolant system pressure boundary is not challenged, no new failure mode has been created. As a result, an accident which is different than any already evaluated in the Updated Final Safety Analysis Report will not be created due to this change.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The margin of safety is not significantly reduced by this proposed change. The trip setpoint for the containment pressure intermediate-high-high function remains unchanged. With one channel inoperable, the remaining two channels will continue to initiate the protective function on a two-out-of-two logic. The action statement limits this condition to 6 hours after which time the inoperable channel must be placed in the trip condition. This action restores the function to be able to meet single failure criteria on a one-out-of-two logic basis.

The proposed revision to the charging pump discharge pressure will not change the flow limit on seal injection. The specification will continue to ensure that seal injection flow is limited. This will ensure that sufficient flow to the reactor core is provided during accident conditions.

The proposed changes to the Bases for seal injection flow are editorial in nature and do not affect the margin of safety.

Therefore, this proposed change does 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 satisfy the no significant hazards consideration standards of 10 CFR 50.92(c) and, accordingly, a no significant hazards consideration finding is justified.