ATTACHMENT A-1

Beaver Valley Power Station, Unit No. 1
Proposed Technical Specification Change No. 225

The following is a list of the affected pages:

Affected Pages: XI
3/4 6-14
B 3/4 6-10

INDEX

BASES

(11)

(Proposed Wording)

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (continued)

d. ~~At least once per 18 months during shutdown, verify that on recirculation flow, each pump develops the required differential pressure and flow rate as shown below when tested pursuant to Specification 4.0.5:~~

~~RS-P-1A and RS-P-1B ≥ 127 psid at ≥ 2000 gpm~~
~~RS-P-2A and RS-P-2B ≥ 132 psid at ≥ 2000 gpm~~

e. At least once per 18 months during shutdown, by:

1. Cycling each power operated (excluding automatic) valve in the flow path not testable during plant operation, through at least one complete cycle of full travel.

2. Verifying that each automatic valve in the flow path actuates to its correct position on a test signal.

3. Initiating flow through each River Water subsystem and its two associated recirculation spray heat exchangers, and verifying a flow rate of at least 8000 gpm.

f. At least once per 5 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

Verify, at the frequency specified in the Inservice Testing Program, that each recirculation spray pump's developed head at the flow test point is greater than or equal to the required developed head as specified in the Inservice Testing Program and the Containment Integrity Safety Analysis.

(Proposed Wording)

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

3/4.6.2.1 and 3/4.6.2.2 CONTAINMENT QUENCH AND RECIRCULATION SPRAY SYSTEMS

The OPERABILITY of the containment spray systems ensures that containment depressurization and subsequent return to subatmospheric pressure will occur in the event of a LOCA. The pressure reduction and resultant termination of containment leakage are consistent with the assumptions used in the accident analyses.

The recirculation spray system consists of four 50 percent capacity subsystems each composed of a spray pump, associated heat exchanger and flow path. Two of the recirculation spray pumps and motors are located outside containment (RS-P-2A and RS-P-2B) and two pumps and motors are located inside containment (RS-P-1A and RS-P-1B). The flow path from each pump is piped to an individual 180° recirculation spray header inside containment. Train "A" electrical power and river water is supplied to the subsystems containing recirculation spray pumps RS-P-1A and RS-P-2A. Train "B" electrical power and river water is supplied to the subsystems containing recirculation spray pumps RS-P-1B and RS-P-2B.

ADD INSERT "A"

3/4.6.2.3 CHEMICAL ADDITION SYSTEM

The OPERABILITY of the chemical addition system ensures that sufficient NaOH is added to the containment spray in the event of a LOCA. The limits on NaOH minimum volume and concentration, ensure that 1) the iodine removal efficiency of the spray water is maintained because of the increase in pH value, and 2) corrosion effects on components within containment are minimized. These assumptions are consistent with the iodine removal efficiency assumed in the accident analyses.

3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment. Containment isolation within the time limits specified ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analysis for a LOCA.

Attachment to Bases for 3/4.6.2.1 and 3/4.6.2.2

INSERT A

Verifying that each recirculation spray system pump's developed head at the flow test point is greater than or equal to the required developed head ensures that recirculation spray system pump performance has not degraded during the cycle. The term "required developed head" refers to the value that is assumed in the Containment Integrity Safety Analysis for the recirculation spray pump's developed head at a specific flow point. This value for the required developed head at a flow point is defined as the Minimum Operating Point (MOP) in the Inservice Testing Program. Flow and differential head are normal test parameters of centrifugal pump performance required by Section XI of the ASME Code. Since the recirculation spray system pumps cannot be tested with flow through the spray headers, they are tested on bypass flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such inservice tests confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance.

ATTACHMENT A-2

Beaver Valley Power Station, Unit No. 2
Proposed Technical Specification Change No. 96

The following is a list of the affected pages:

Affected Pages: XI
B 3/4 6-10

INDEX

BASES

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

3/4.6.2.1 and 3/4.6.2.2 CONTAINMENT QUENCH AND RECIRCULATION SPRAY SYSTEMS

The OPERABILITY of the containment spray systems ensures that containment depressurization and subsequent return to subatmospheric pressure will occur in the event of a LOCA. The pressure reduction and resultant termination of containment leakage are consistent with the assumptions used in the accident analyses.

The recirculation spray system consists of four 50 percent capacity subsystems each composed of a spray pump, associated heat exchanger and flow path. All recirculation spray pumps and motors are located outside containment and supply flow to two 360° recirculation spray ring headers located in containment. One spray ring is supplied by the "A" train subsystem containing recirculation spray pump 2RSS-P21A and the "B" train subsystem containing recirculation spray pump 2RSS-P21D with the other spray ring being supplied by the "A" train subsystem containing recirculation spray pump 2RSS-P21C and the "B" train subsystem containing recirculation spray pump 2RSS-P21B. When the water in the refueling water storage tank has reached a predetermined extreme low level, the C and D subsystems are automatically switched to the cold leg recirculation mode of emergency core cooling system operation.

ADD INSERT "B"

3/4.6.2.3 CHEMICAL ADDITION SYSTEM

The OPERABILITY of the chemical addition system ensures that sufficient NaOH is added to the containment spray in the event of a LOCA. The limits on NaOH minimum volume and concentration, ensure that 1) the iodine removal efficiency of the spray water is maintained because of the increase in pH value, and 2) corrosion effects on components within containment are minimized. These assumptions are consistent with the iodine removal efficiency assumed in the accident analyses.

3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment. Containment isolation within the time limits specified ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for both a LOCA and major secondary system breaks.

Attachment to Bases for 3/4.6.2.1 and 3/4.6.2.2

INSERT B

Verifying that each recirculation spray system pump's developed head at the flow test point is greater than or equal to the required developed head ensures that recirculation spray system pump performance has not degraded during the cycle. The term "required developed head" refers to the value that is assumed in the Containment Integrity Safety Analysis for the recirculation spray pump's developed head at a specific flow point. This value for the required developed head at a flow point is defined as the Minimum Operating Point (MOP) in the Inservice Testing Program. Flow and differential head are normal test parameters of centrifugal pump performance required by Section XI of the ASME Code. Since the recirculation spray system pumps cannot be tested with flow through the spray headers, they are tested on bypass flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such inservice tests confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance.

ATTACHMENT B

Beaver Valley Power Station, Unit Nos. 1 and 2
Proposed Technical Specification Change Nos. 225 and 96
REVISION OF SURVEILLANCE REQUIREMENT 4.6.2.2.d AND ASSOCIATED BASES

A. DESCRIPTION OF AMENDMENT REQUEST

The proposed change would revise Surveillance Requirement (SR) 4.6.2.2.d of Limiting Condition For Operation (LCO) 3.6.2.2 titled "Containment Recirculation Spray System" for Beaver Valley Power Station (BVPS) Unit No. 1 only. SR 4.6.2.2.d would be revised to state the following: "Verify, at the frequency specified in the Inservice Testing Program, that each recirculation spray pump's developed head at the flow test point is greater than or equal to the required developed head as specified in the Inservice Testing Program and the Containment Integrity Safety Analysis." The Bases section for Specification 3/4.6.2.2 for BVPS Unit Nos. 1 and 2 would be revised by adding words which describe the intent of periodically flow testing the recirculation spray pumps. In addition, the proposed change to this Bases would include words which define the term "required developed head" in the flow testing surveillance requirement. Index pages would be revised to reflect the shifting of text due to the addition of wording to the Bases sections.

B. BACKGROUND

The Recirculation Spray System (RSS), for BVPS Unit No. 1 only, consists of four spray pumps, associated heat exchanger and flow path. Two of the four RSS pumps (designated as RS-P-2A and 2B) are located outside of containment, while the other two (designated as RS-P-1A and 1B) are located inside containment. All four associated heat exchangers are located inside of containment.

The function of the RSS pumps is to take suction from the containment sump and discharge to the spray rings located in the containment dome during a Design Basis Accident (DBA). This provides cooling inside containment and will maintain a subatmospheric containment following a DBA. The containment is initially brought to a subatmospheric condition utilizing the quench spray system and the recirculation spray system. The RSS maintains the containment subatmospheric in the long term following depletion of the water inventory in the refueling water storage tank.

C. JUSTIFICATION

The proposed change to SR 4.6.2.2.d, for BVPS Unit No. 1 only, would delete the reference to the specific test acceptance criteria requirement to demonstrate pump operability. The

proposed wording allows the RSS pumps to be tested at the specific reference value required by the Inservice Testing (IST) Program. The individual Minimum Operating Point (MOP) curve, required to meet the safety analysis, for each RSS pump will be contained in the IST Program and controlled in accordance with program requirements. Attachment C contains the individual MOP curves for each RSS pump which will be incorporated into the IST Program. It should be noted that these curves may be revised during the eleventh refueling outage depending on maintenance activity work scope. Any future changes to these MOPs will be made as necessary through the 10 CFR 50.59 process and will be sent to the NRC as part of 10 CFR 50.59 reporting requirements and selected updates to the IST Program. This will reduce the need to submit a request for technical specification change on this surveillance requirement due to changes in plant analyses or changes in pump performance characteristics due to pump overhaul. This change is consistent with the Improved Standard Technical Specifications for Westinghouse Plants (ISTS) contained in NUREG-1431 Revision 0. It should be noted that this same concept of not specifying a test point in the surveillance requirement is consistent with what was previously approved for BVPS Unit No. 2 RSS pump testing by Amendment No. 68 (TAC No. M92003).

The proposed addition of wording to the BVPS Unit Nos. 1 and 2 Bases sections for Specification 3/4.6.2.2 will ensure that the words "required developed head" are clearly defined. In addition, the proposed wording in the Bases section will state that the IST Program contains the current value assumed in the Containment Integrity Safety Analysis for "required developed head." Therefore, the proposed change to the Bases section will ensure that safety assumptions for assumed pump performance continue to be met by clearly defining the words "required developed head" and also providing guidance on where these values are documented.

The proposed deletion of the reference to the 18 month test frequency, for BVPS Unit No. 1 only, is consistent with the ISTS. The IST Program requires a refueling frequency for flow testing of the RSS pumps. The NRC has found this frequency acceptable for demonstrating pump operability (reference Pump Relief Requests Numbers 6 and 7 of the BVPS Unit No. 1 IST Program).

The proposed revision to the Index pages are editorial in nature and are necessary due to changes in the Bases wording.

D. SAFETY ANALYSIS

The proposed change to SR 4.6.2.2.d, for BVPS Unit No. 1 only, will continue to ensure that the RSS pumps are tested in a manner which will demonstrate that they will deliver sufficient flow to meet the accident analysis assumptions. The IST Program will

contain MOP curves for each RSS pump which reflect the required pump performance level assumed in the safety analysis. Allowable pump degradation will continue to be limited by the ASME Boiler and Pressure Vessel Code Section XI requirements or the pump MOP which is based on accident analysis assumptions, whichever is more limiting. Future changes to the RSS pump head and flow requirements will be made under the 10 CFR 50.59 process and controlled under the IST Program administrative requirements. Therefore, future changes to these specific pump parameters will be controlled under a process which will continue to ensure safe plant operation.

The proposed revision, for BVPS Unit No. 1 only, of specific testing frequency of 18 months to a frequency specified in the IST Program (refueling) does not significantly affect plant safety. The NRC has determined that flow testing the RSS pumps on a refueling frequency is acceptable, in lieu of quarterly or a cold shutdown frequency as required by ASME Section XI, due to the design of the recirculation spray system. Therefore, the proposed revision to the test frequency will not change the RSS pump flow test frequency which has been previously found to be acceptable for demonstrating pump operability.

The proposed change to the Bases section, for BVPS Unit Nos. 1 and 2, will ensure that safety analysis assumptions for assumed pump performance continue to be met. The words "required developed head" will be clearly defined to reflect that they refer to the value assumed in the safety analysis for the recirculation spray pump's developed head at a specific point. The proposed changes in Index pages are editorial in nature and do not affect plant safety.

Therefore, this change is considered safe based on the fact that SR 4.6.2.2.d will continue to require that each RSS pump be tested in a manner which will demonstrate the pump's ability to perform as assumed in accident analyses. Since this proposed change does not lower the RSS pump performance acceptance criteria for developed head and flow, the containment depressurization system will continue to meet its design basis requirements. The proposed change will not impose additional challenges to the containment structure in terms of peak pressure. The calculated offsite dose consequences of a DBA will remain unchanged since the one hour release duration remains unchanged.

Future changes to the RSS pump head and flow requirements will be made under the 10 CFR 50.59 process to ensure that the containment performance requirements continue to be met.

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 change does not result in a modification to plant equipment nor does it affect the manner in which the plant is operated. The Recirculation Spray System (RSS) pumps are normally in a standby condition and only operate during accident mitigation. Since the physical plant equipment and operating practices are not changed, as noted above, there is no change in the probability of an accident previously evaluated.

   The proposed change, for Beaver Valley Power Station (BVPS) Unit No. 1 only, will not lower the pump performance operability criteria for the RSS pumps. The required values for developed pump head and flow will continue to satisfy accident mitigation requirements and will be maintained and controlled in the BVPS Unit No. 1 Inservice Testing (IST) Program.

   Since the proposed change does not lower the RSS pump performance acceptance criteria, the containment depressurization system will continue to meet its design basis requirements. The proposed change will not impose additional challenges to the containment structure in terms of peak pressure. The calculated offsite dose consequences

of a design basis accident (DBA) will remain unchanged since the one hour release duration remains unchanged. Future changes to the RSS pump head and flow requirements will be made under the 10 CFR 50.59 process to ensure that the containment performance requirements continue to be met.

The proposed change in the RSS pump surveillance interval from 18 months to every refueling, will not affect the ability of the pumps to perform as assumed in the Safety Analyses. The proposed change to the Bases section, for BVPS Unit Nos. 1 and 2, will ensure that safety analyses assumptions for assumed pump performance continue to be met. The words "required developed head" will be clearly defined to reflect that they refer to the value assumed in the safety analysis for the recirculation spray pump's developed head at a specific point. The proposed changes to the Index pages are administrative in nature and do not affect plant safety. Therefore, the proposed change does not involve a significant increase in the 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 change does not alter the method of operating the plant. The recirculation spray system is an accident mitigation system and is normally in standby. System operation would be initiated following a containment pressure increase resulting from a DBA. The RSS pumps will continue to provide sufficient flow to mitigate the consequences of a DBA. RSS operation continues to fulfill the safety function for which it was designed and no changes to plant equipment will occur. As a result, an accident which is new or 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 surveillance requirements for demonstrating that the RSS pumps are operable will continue to assure the ability of the

system to satisfy its design function. Therefore, the proposed change will not affect the ability of the RSS to perform its safety function.

The containment spray system design requirement to restore the containment to subatmospheric condition within one hour will continue to be satisfied. This proposed change does not have any affect on the containment peak pressure since the containment peak pressure occurs prior to the initiation of any of the two containment spray systems. There is no resultant change in dose consequences since the containment will continue to reach a subatmospheric pressure within the first hour following a DBA.

The RSS pumps' performance requirements will continue to be controlled in a manner to ensure safety analysis assumptions are met.

Therefore, based on the above discussion, it can be concluded that the 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 satisfies the no significant hazards consideration standards of 10 CFR 50.92(c) and, accordingly, a no significant hazards consideration finding is justified.

ATTACHMENT C

Beaver Valley Power Station, Unit No. 1
Proposed Technical Specification Change No. 225

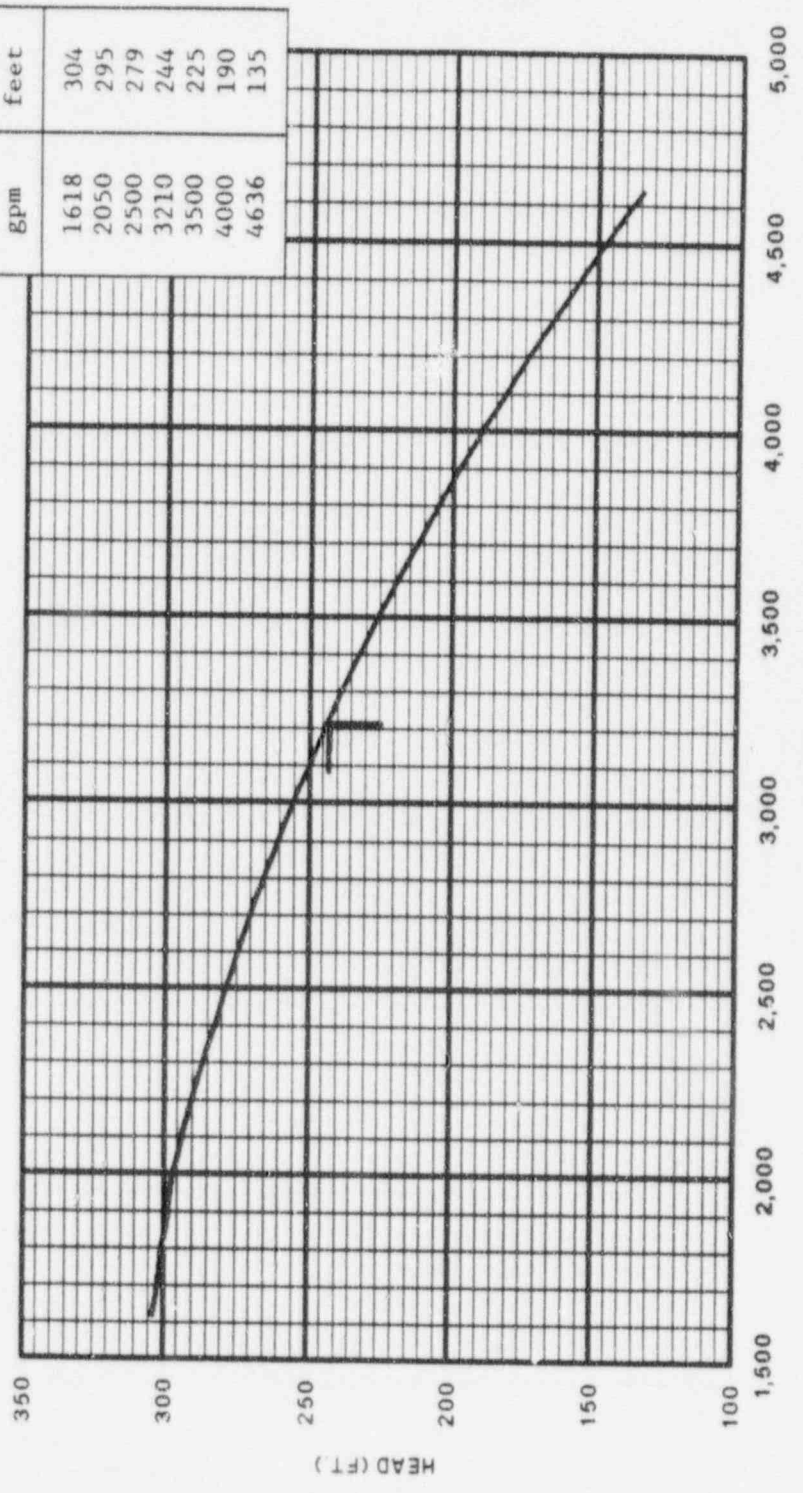
Proposed Revisions To The Inservice Testing Program
For Pumps And Valves

Pump Name: 1A Inside Recirculation Spray Pump

Pump Number: [1RS-P-1A]

[1RS-P-1A]
MOP CURVE

Flow gpm	Head feet
1618	304
2050	295
2500	279
3210	244
3500	225
4000	190
4636	135



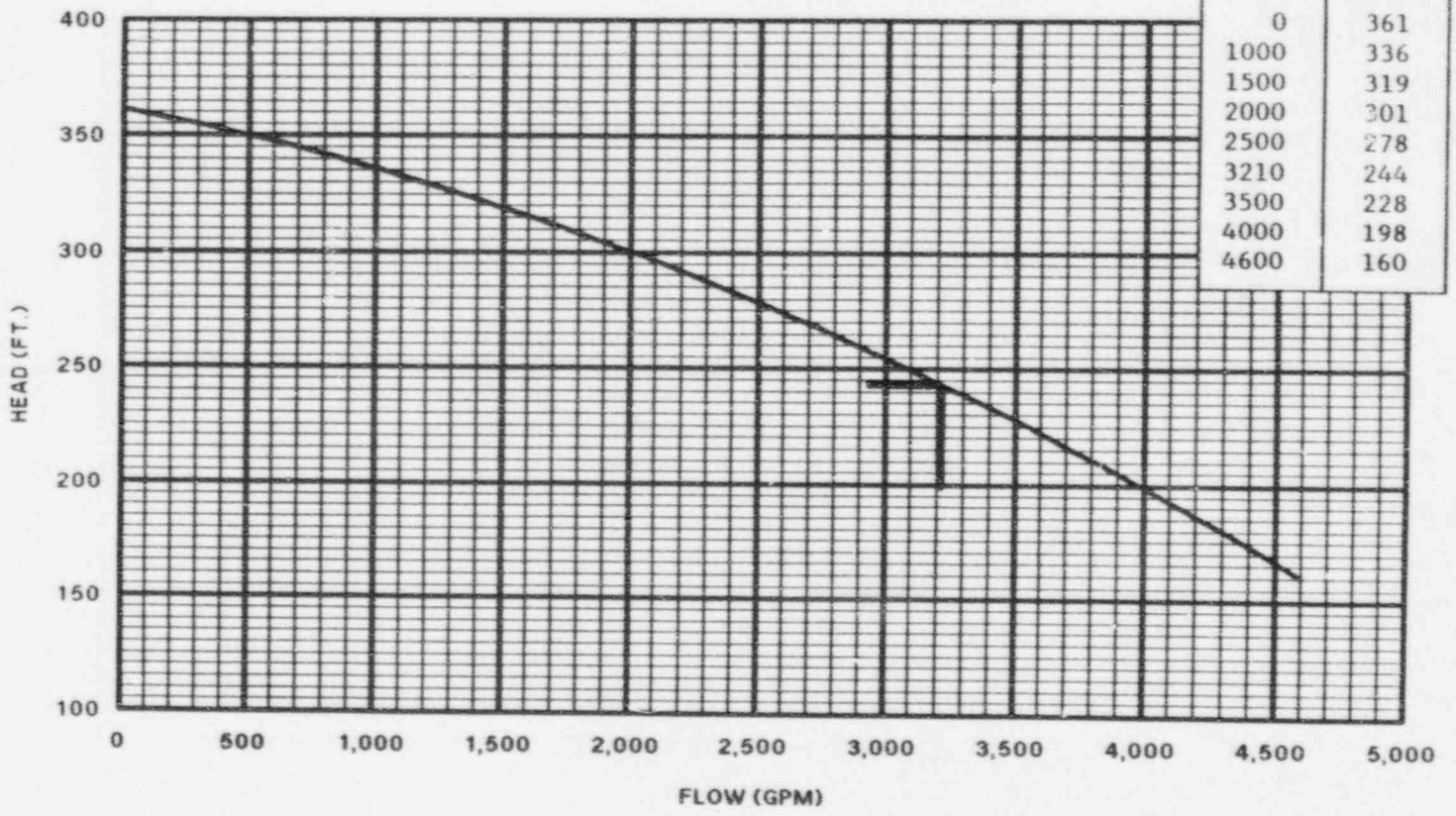
JULY 21, 1995

THE MOP VALUE IS 244 FT AT 3210 GPM,
EM 106323

Pump Name: 1B Inside Recirculation Spray Pump Pump Number: [1RS-P-1B]

[1RS-P-1B]
MOP CURVE

Flow gpm	Head feet
0	361
1000	336
1500	319
2000	301
2500	278
3210	244
3500	228
4000	198
4600	160



THE MOP VALUE IS 244 FT AT 3210 GPM,
EM 110602.

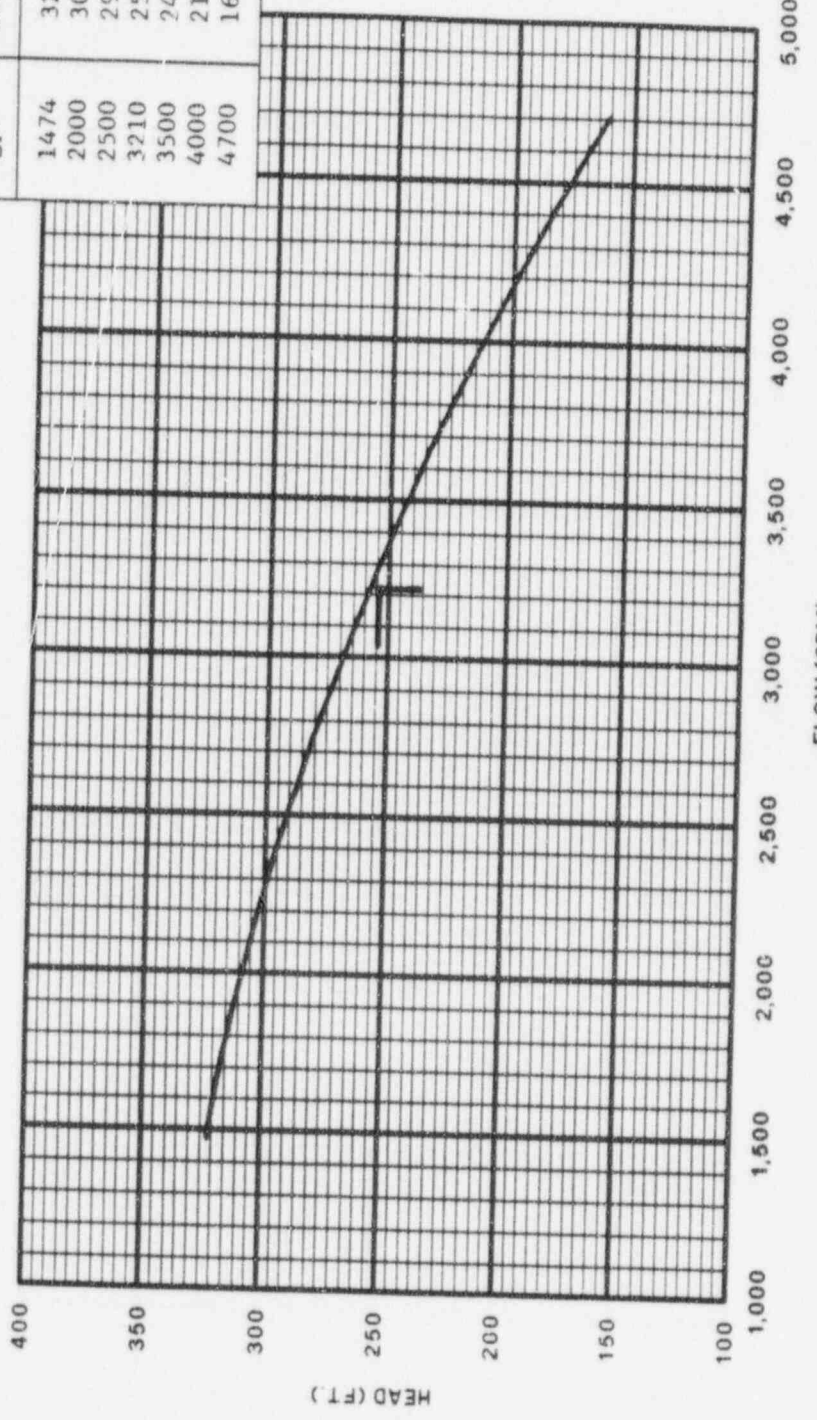
AUGUST 3, 1995

Pump Name: 2A Outside Recirculation Spray Pump

Pump Number: [1RS-P-2A]

[1RS-P-2A]
MOP CURVE

Flow gpm	Head feet
1474	322
2000	309
2500	290
3210	255
3500	242
4000	212
4700	161



JULY 21, 1995

THE MOP VALUE IS 255 FT AT 3210 GPM,
EM 106323

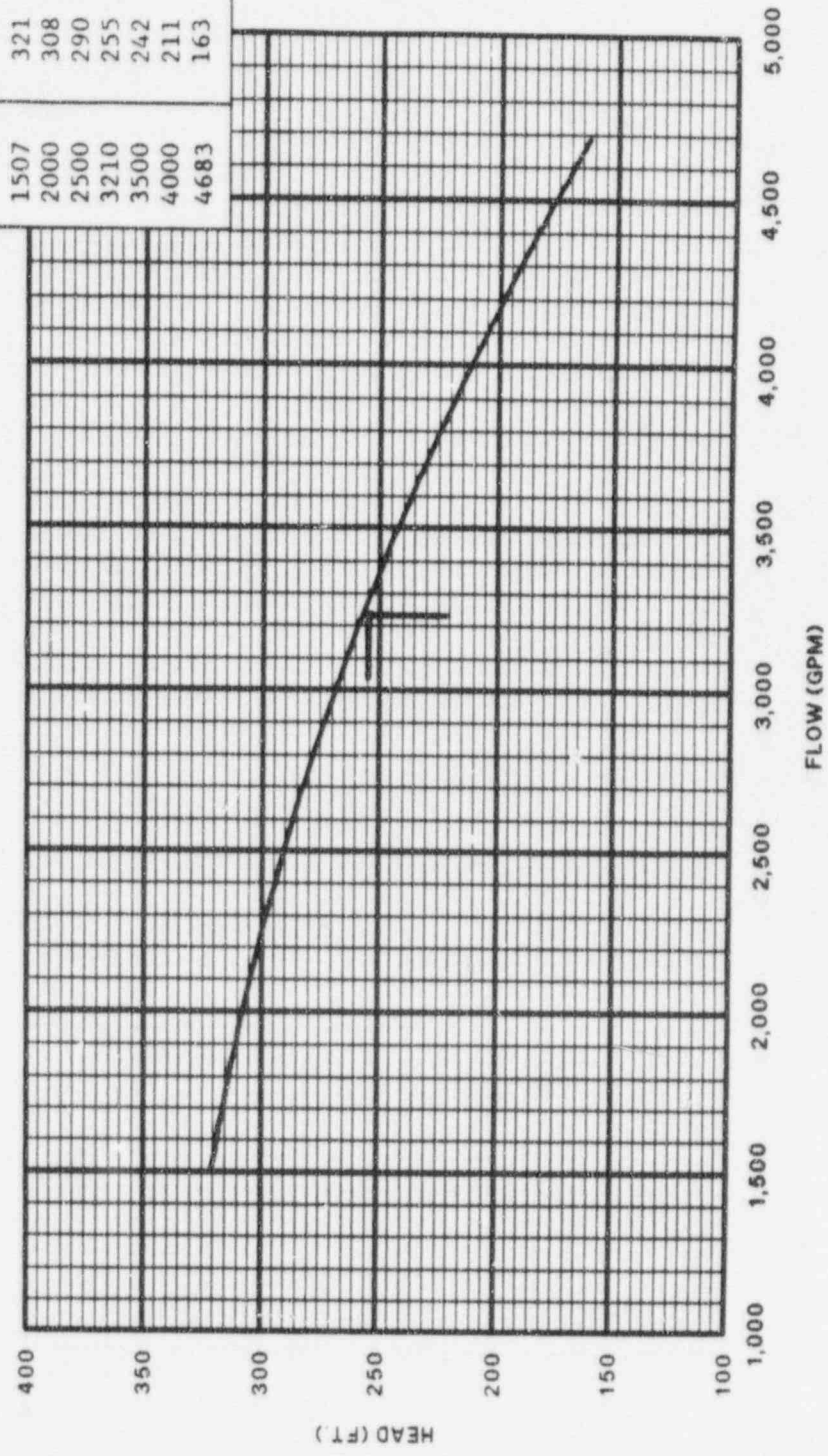
Pump Name: 2B Outside Recirculation Spray Pump

Pump Number: [1RS-P-2B]

Flow gpm	Head feet
1507	321
2000	308
2500	290
3210	255
3500	242
4000	211
4683	163

[1RS-P-2B]
MOP CURVE

AUGUST 3, 1995



THE MOP VALUE IS 255 FT AT 3210 GPM,
PER EM 110602.