



Pump Division
Byron Jackson Pumps
DURCO Pumps
IDP Pumps
Pacific Pumps
Worthington Pumps

March 2, 2001

Wisconsin Electric
Point Beach Nuclear Station
6610 Nuclear Road
Two Rivers, WI 54141
Attn: John P. Schroeder

Subject: Aux. Feed Water Pumps
Minimum Flow Analysis
S/N 681-S-1028/29 Turbine Driven
S/N 681-S-1030/31 Motor Driven

Dear John:

This letter is being sent in regards to our past conversations in regards to the minimum flow requirements for the subject pumps.

We have re-evaluated the flow conditions that were given to Wisconsin Electric in a 7 August 1989 letter directed to Mr. J P. Austin. The information listed below will supercede these previously supplied minimum flow guidelines.

Calculating minimum flow is a complex evaluation taking into account factors such as NPSHr vs. NPSHa, fluid thermodynamic properties, velocities, piping configuration, etc. The calculated values below encompass these factors.

S/N 681-S-1028/29 1P-29 / 2P-29

75 GPM: The pump can operate at this flow rate for up to 60 hours of total accumulated hours. The pump should then be scheduled for inspection. After inspection, the amount of wear, the recorded vibration levels and performance deterioration can be reviewed to determine if the hour limitation can be modified.

130 GPM: The pump can operate at this flow rate for up to 1500 hours of total accumulated hours. The pump should then be scheduled for inspection. After inspection, the amount of wear, the recorded vibration levels and performance deterioration can be reviewed to determine if the hour limitation can be modified.

210 GPM: The pump can operate at this flow rate for an unlimited amount of time. This will be the continuous minimum flow rate for the pumps.

Flowserve Corporation
Pump Division

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REC'D MAY 08 2002



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S/N 681-S-1030/31:

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50 GPM: The pump can operate at this flow rate for up to 60 hours of total accumulated hours. The pump should then be scheduled for inspection. After inspection, the amount of wear, the recorded vibration levels and performance deterioration can be reviewed to determine if the hour limitation can be modified.

75 GPM: The pump can operate at this flow rate for up to 1500 hours of total accumulated hours. The pump should then be scheduled for inspection. After inspection, the amount of wear, the recorded vibration levels and performance deterioration can be reviewed to determine if the hour limitation can be modified.

105 GPM: The pump can operate at this flow rate for an unlimited amount of time. This will be the continuous minimum flow rate for the pumps.

In any potential minimum flow condition, high vibration limits may restrict your flow condition to a value that is higher than those indicated. Overall pump performance needs to be taken into account when establishing your minimum flow conditions.

Having a program in which the pumps are monitored for vibrations will greatly assist in determining action requirements for these pumps. We have an experienced team of vibration and engineering professionals that can support Wisconsin Electric in the long-term maintenance of your Aux. Feed water pumps.

If you have any questions in regards to the information listed in this letter, please feel free to contact me at your convenience

Regards,

Patrick W. Prom
Nuclear Specialist