

Central File

WISCONSIN PUBLIC SERVICE CORPORATION



P.O. Box 1200, Green Bay, Wisconsin 54305

September 12, 1979

U. S. Nuclear Regulatory Commission
Office of Inspection & Enforcement
Washington, D. C. 20555

Attention Director, Division of
Reactor Construction Inspection

Gentlemen:

Docket 50-305
Operating License DPR-43
IE Bulletin 79-15

The above referenced bulletin concerns deep draft pump deficiencies.

Kewaunee Nuclear Power Plant utilizes pumps similar to those described in Bulletin 79-15 in its service water system. There are four pumps installed in the system and one spare pump kept on site. These are the only pumps of this type utilized in safety related applications at Kewaunee.

These pumps were manufactured by Worthington Corporation, model number 14 QL-18. They are wet pit, single stage, double suction, vertical shaft centrifugal pumps with a design capacity of 6400 gallons per minute.

The pump shafts have a total length of thirty feet, not including the motor. The pump shaft is enclosed in a shaft tube, 3 1/2" diameter, which in turn is enclosed by a 14" diameter column discharge pipe. The impeller is enclosed by a bowl assembly.

One design modification was made during pre-operational testing to the service water pumps. This was the placement of a shaft stabilizer on the pumps to prevent the long shafts and shaft enclosing tubes from wobbling. Since this modification, these pumps have not had the problems indicated in the bulletin, other than normal wear.

An unrelated problem that we have experienced was caused by manufacturing deficiencies. This caused undercutting of the threads at the lower end of the shaft enclosing tube near the bowl assembly, which resulted in the failure of the shaft enclosing tube and increased pump vibration.

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Initial startup and testing of the pumps was satisfactory, although some problems occurred with the motors. One operational problem that Kewaunee has had with the service water pumps is the accumulation of dirt and sludge in the lines and bearings. This has resulted in the need to replace or repair bearings, seals, and stuffing box O-rings on several occasions. Furthermore, we have instituted a program of cleaning and flushing the lube water piping every 12 months. We also are instituting a modification which will furnish the system with cleaner lubrication water.

Since Kewaunee has five pumps and only uses four at any one time, we have instituted a program to replace one pump and rebuild the "spare" each year. Furthermore, it is our policy to alternate the pumps in service. Normally only two pumps are needed for operation; every two weeks the pumps are switched so that they do not have running intervals longer than two weeks. The pumps are always run at full capacity. Kewaunee does not keep specific records of pump running time or cycles of operation; hence, it is difficult to accumulate data regarding this.

Because of our conservative operational policy and aggressive preventative maintenance program, we have not had any significant problems with the service water pumps.

Yours very truly,

E. R. Mathews

E. R. Mathews, Vice President
Power Supply & Engineering

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cc - Mr. J. G. Keppler, Reg Dir
US NRC