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September 6, 1979

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2-099-3

Mr. K. V. Seyfrit, Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Comm.
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Subject: Arkansas Nuclear One - Units 1 and 2
Docket Nos. 50-313 and 50-368
License Nos. DPR-51 and NPF-6
IE Bulletin No. 79-15
(Files: 1510.1 and 2-1510.1)

Gentlemen:

The following information is provided to you in response to IE Bulletin No. 79-15.

Item 1: Number of deep draft pumps...utilized in safety-related applications in each facility.

Response: There are three of the above described pumps in use on ANO Unit One and three on Unit Two.

Item 2: Manufacturer, model, capacity, and plant application.

Response: Pumps on Unit One are manufactured by Fairbank Morse, model No. 28HC, 6315 gpm @ 170 ft. TDH, used as Service Water pumps.

Pumps on Unit Two are manufactured by Fairbanks Morse, model No. 34HC, 12,000 gpm @ 205 ft. TDH, used as Service Water pumps.

Item 3: Overall dimensions of pumps.

Response: Overall dimensions are shown on the following drawings:

Unit One pumps - Attachment A - Fairbanks Morse drawing No. SK2T2070027.

Unit Two pumps - Attachment B - Fairbanks Morse drawing No. SK2R2070020.

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Item 4 and 5: Summary of startup, testing and routine maintenance history. Operational problems and major repair efforts.

Response: The Unit One Service Water pumps failed to deliver rated flow during the initial startup testing program. One additional stage was added to the bottom of the pumps and motor horsepower was increased from 250 hp to 350 hp. Satisfactory performance was achieved after these modifications were completed. A modification was made to more rapidly vent air from pump column when starting; pump shaft packing and rubber bearings in upper portions of the pump were not receiving adequate lubrication water until air was vented from the pump column when starting.

All three Unit One pumps exhibited high vibration on occasion during early years of operation. Bearings have been replaced in motors and numerous checks have been made to assure that pump and motor shafts were in correct alignment. Motors were removed and shipped off-site for balancing. During the summer of 1974, pumps were inspected under vendor supervision. Satisfactory performance was achieved in subsequent operation. Major overhauls were performed on the A&C pumps during the second refueling in early 1978. An equivalent overhaul was performed on the B pump in April, 1979.

The Unit One Service Water pumps were placed in service in September, 1971 and have been in almost continuous service since that date.

Startup and testing of Unit Two Service Water pumps was routine. No major problems were encountered and the pumps continue to perform with only periodic adjustments to packing leak-off being necessary. The pumps were initially placed in service in September, 1977 and have been in almost continuous service since that date.

Item 6: The longest interval that each pump has been available for operation with corrective maintenance. Identify the number of cycles of operation during this interval, the duration of each cycle and the operating mode(s) (recirculation, rated flow, etc.). Identify the longest continuous operation at or near rated flow conditions for each pump and the status of the pump operability at the end of the run.

Response: The longest interval that each pump has been in serviceable condition without major maintenance:

P4A - Approximately four years (October, 1974 to December, 1978). Pump was out only for packing adjustments during this interval. Numerous pump components were replaced at end of this interval: wear rings, sand cap, pump bearings, retainer cap, shaft bearings, impeller wedge blocks, lock nuts, spider bearing units.

P4B - Approximately 2 1/2 years (October, 1974 to March, 1977). Pump was out only for packing adjustments during this interval. Pump and motor found to be in good shape at end of interval; upper and lower motor bearings were replaced.

P4C - Approximately 3 years (October, 1974 to February, 1976). Service interval terminated by excessive motor vibration. Replaced lower motor bearing.

2P4A, 2P4B, & 2P4C - Service Water pumps on Unit Two were initially placed in service in September, 1977 and have been in almost continuous service since that date. Only shaft packing adjustments have been made on these pumps---they have not been disassembled for inspection of internal parts.

The number of cycles of operation and duration of each cycle during the above service intervals is unavailable.

In addition to the above information, we have accumulated and will make available for inspection the following information on Arkansas Nuclear One's deep draft pumps.

1. Drawings, sectional assemblies and parts list
2. Detailed history of pump maintenance, including bearing wear data, replacement frequency and a comparison with the manufacturers rated life for wearing surfaces
3. Quality assurance and reliability testing requirements
4. Design specifications
5. Results of tests performed during operation or prior to licensing

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6. Details of the procedures used to align the pump column

Very truly yours,

David C. Trimble

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Manager, Licensing

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Attachments (2)

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