NSP

NORTHERN STATES POWER COMPANY

MINNEAPOLIS, MINNESOTA 55401

October 9, 1973

Mr. J. G. Keppler, Director
Directorate of Regulatory Operations
Region III
United States Atomic Energy Commission
799 Roosevelt Road
Glen Ellyn, Illinois 61037

Dear Mr. Keppler:

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

Hydraulic Shock Suppressors and Restraints

Reinspection of hydraulic shock suppressors at the Monticello Nuclear Generating Plant was completed during a scheduled outage September 28 through October 5, 1973. Inspection results, corrective measures, and other information requested in the Directorate of Regulatory Operations Bulletin 73-4 are contained in this report.

There are fifty-nine Bergin-Patterson hydraulic shock suppressors installed in plant systems. Thirty-four are located within the containment drywell, and twenty-five are located outside primary containment.

All units located outside primary containment have been inspected on a weekly basis since the date of our last report; no loss of oil or loss of operability has been observed for these units during this period.

At this outage an external inspection was completed September 29, 1973, on all hydraulic shock suppressors located within the drywell. This inspection identified five units which had slight oil loss as observed by minor changes in relative positions of main piston rod and accumulator position indicator rod, and external oil leakage indications. None of these five units had sufficient oil loss to render the unit inoperable.

A total of ten hydraulic shock suppressors were removed from the drywell for disassembly and general inspection this outage. This ten included the five which were identified as having slight oil loss, and five additional units. The five units with slight oil loss were comprised of three units rebuilt in August 1973 and two units not previously rebuilt. The five additional units selected for detailed inspection included two more suppressors rebuilt in August 1973, and the remaining three units not previously rebuilt.

The three rebuilt units with oil loss identification each had slight leakage from the oil-addition fitting and one of these had a crimped accumulator tube-seal o-ring. With these exceptions these five units were in excellent condition with no indications of seal deterioration. Each of these units had been rebuilt in August 1973 using vendor supplied parts and refilled using hydraulic fluid type GE SF1154, as recommended by the vendor.

The five units not previously rebuilt had general o-ring seal deterioration similar to that previously reported. These seals were deformed, gummy and susceptible to thinning and resultant breakage. The u-cup seals used for main piston rod and accumulator piston seals were in good condition. The metal parts of these five units were all in general good condition with the exception of pitting in one accumulator cylinder tube.

The ten units disassembled for internal inspection this outage were cleaned, reassembled using vendor supplied or equivalent parts, and refilled with General Electric type SF1154 hydraulic fluid as recommended by the vendor. These units were stroke tested to verify proper snubbing action and seal integrity prior to reinstallation. A summary of inspection of these units is listed in the attached Table 1 - Shock Suppressor Inspection Results.

Cooperative test programs conducted by General Electric, the manufacturer of Bergin-Patterson hydraulic units, and seal suppliers are in process to determine recommendations for the preferred seal materials and fluids for long term application in this service. When those recommendations and the related test program basis become available, Northern States Power Company intends to implement those recommendations on a responsible and timely schedule.

The corrective actions implemented in August 1973 and this outage, along with the results of surveillance inspections accomplished to date, are believed to provide a reasonable basis for continued operation to the 1974 spring refueling outage.

The surveillance inspection of units located outside the primary containment will be continued on a bi-weekly basis during this interim period. All shock suppressor units located within the drywell will be inspected during the 1974 spring refueling outage,. During this interim period of operation the units located within the drywell will be inspected during any scheduled or unscheduled outage for which drywell entry may be required for other purposes.

We anticipate that final recommendations as to preferred seal materials and fluid will be available prior to commencement of the 1974 spring refueling outage. In that event it would be our intention to implement those recommendations as final corrective action during the refuleing outage. Long term surveillance plans will be influenced by surveillance results from this interim period and by final corrective action measures.

Very truly yours,

L. J. Wachter

L J Wachter, Vice President
Power Production & System Operation

LJW/dm

cc: J. F. O'Leary
G. Charnoff
Minnesota Pollution Control Agency
Attn: Ken Dzugan

Table 1 - Shock Suppressor Inspection Results

Identification	Model	Location	Date of Last Maintenance	Failure Mode
SS-2	HSSA-10	DRYWELL-MAIN STEAM	August, 1973	Leaking Grease Fitting
SS-2BR	HSMR-30	DRYWELL-RECIRC	August, 1973	Leaking Grease Fitting and Crimped Accumulator Cylinder O-Ring
SS-6AR	HSMR-20	DRYWELL-RECIRC	August, 1973	Leaking Grease Fitting
SS-12	HSSA-10	DRYWELL-FEEDWATER	Original Installation	General Seal Deterioration
SS-6BR	HSMR-20	DRYWELL-RECIRC	Original Installation	General Seal Deterioration and Pitted Accumulator Cylinder
SS-7AR	HSSA-30	DRYWELL-RECIRC	Original Installation	General Seal Deterioration
SS-7BR	HSSA-30	DRYWELL-RECIRC	Original Installation	General Seal Deterioration
SS-8AR	HSMR-20	DRYWELL-RECIRC	Original Installation	General Seal Deterioration
SS-18R	HSMR-30	DRYWELL-RECIRC	August, 1973	No Failure. Seals in Good Condition
SS-19	HSSA-10	DRYWELL-RHR	August, 1973	No Failure. Seals in Good Condition