MEMO ROUTE SLIP

Form AEC-93 (Rev. May 14, 1947) AECM 0240

See me about this.	For concur[illegible]	For action.
Note and return.	For signatu[illegible]	For information.

TO (Name and unit)	INITIALS / DATE	REMARKS
IE Chief, FS&EB IE:HQ(4) Licensing(4) DR Central Files J. Rizzo, OMIPC		Northern States Power Company Monticello Nuclear Plant 50-263 [redacted]
TO (Name and unit)	**INITIALS / DATE**	**REMARKS**
A/D for Info. Processing Region I Region II PDR Local PDR		
TO (Name and unit)	**INITIALS / DATE**	**REMARKS**
NSIC TIC A. Roisman OGC, Beth, P-506A		
FROM (Name and unit)		**REMARKS**
G. Fiorelli IE:III		Attached is a copy of licensee's reply dated May 15, 1975 to IE Bulletin 75-05.
PHONE NO.	**DATE**	
	05-20-75	

USE OTHER SIDE FOR ADDITIONAL REMARKS

GPO : 1971 O - 445-459

AO

NSP

NORTHERN STATES POWER COMPANY

MINNEAPOLIS, MINNESOTA 55401

May 15, 1975

Mr J G Keppler, Regional Director
Office of Inspection & Enforcement
Region III
United States Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Mr Keppler:

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

The following information is hereby reported in response to IE Bulletin No. 75-05:

Bechtel Power Corporation is the original purchaser of all hydraulic shock suppressors installed at Monticello. Bechtel has supplied Northern States Power Company with the following information in regard to items 1.a. and 1.b. of the subject IE Bulletin.

a) Only one supplier of pipe line suppressors was used for Monticello, namely Bergen-Patterson who supplied their "Hydraulic Shock and Sway Arrestor (HSSA)" standard units for this service.

The hydraulic suppressors are selected to allow necessary thermal motions and to restrain velocities in excess of thermal motions. The hydraulic suppressors are set to allow unrestrained thermal growth rates of 10 inches per minute on all lines. Further, if these velocities are encountered and the hydraulic suppressors actuate (lock), provision is built into the unit to allow continued thermal expansion at a rate of 4 to 6 inches/minute at rated load to avoid excessive thermal stresses. The anticipated seismic/dynamic velocities will always be sufficiently higher than the 10 inch per minute hydraulic suppressor setpoint to ensure that snubber actuation (locking) due to the anticipated seismic/dynamic event will occur.

The minimum standard size hydraulic suppressor is generally selected for each application. The rated load for each standard size unit is approximately three quarters the maximum load allowed by a relief device before it operates to bypass fluid and prevent damage to the snubber. Accordingly, the safety margin for each unit is 1.3 and in many cases where the minimum standard size is greater than the required load, the safety margin is larger.

b) Testing of the hydraulic suppressors includes the following:

(1) Current Testing Procedure (applicable to all units tested after October, 1972 - Serial Numbers F84806 through F98991 G12039 and up). The assembly and testing procedure for each individual unit is covered by Rexnord Spec. Nos. 3831 and 3832. Briefly described, using this procedure, the operational characteristics are established by physical test of each fully assembled unit. As part of the final assembly of major components operation, the cylinder is set horizontally in a calibrated test stand. The cap end of the cylinder is bracketed to the test stand base and the piston rod is coupled in line to the piston rod of a power driven 8-inch bore hydraulic cylinder which is used to stroke the test unit. The velocity of the 8-inch bore unit can be varied by manually controlling the volume of fluid pumped for each direction of stroke. A fluid pressure gauge for each direction of stroke is calibrated to read directly in pounds force and piston rod velocity is taken as a direct reading from a velocity instrument package incorporated in the test stand.

The first check made is for piston rod alignment and binding. Prior to the cylinder being charged with fluid, the unit is stroked using an automatic "bind test" controlled drive setting on the test stand for the particular size unit being tested. Excessive resistance to movement would be indicated by the opening of a relief valve and the shutting down of the pump motor.

The cylinder is then charged during an extensive stroke of the piston and the valve manifold attached and filled by a pouring operation. A temporary test fitting is attached to the valve and 4500 psi fluid pressure is applied for a 20-second period during which fluid containment is visually checked.

The accumulator is then mounted and fluid filling is performed under pressure through the normal field filling alemite fitting. The unit is now in its fully assembled and filled condition.

After random stroking of the unit, the poppet valve closure test is conducted for each direction of stroke by slowly increasing the piston velocity and noting the velocity at the time of an instantaneous increase in fluid pressure denoting valve closures.

The bypass rate of flow in each direction is then checked by first applying a high velocity rate to close the valve and then establishing the rated force capacity of the unit. As the unit is stroked thru under the rated force condition, the velocity is checked and noted.

The unit is then cleaned off and allowed to stand for a period of time on clean paper and then checked for evidence of leakage.

(2) Former Testing Procedure (applicable to all units tested prior to October, 1972 - Serial Numbers - All six-digit numbers without prefix letter and F60635 through F81302). The operational characteristics of the assembled unit is established by determining the control valve fluid flow characteristics at the various phases of operation. This is done by setting up each individual control valve in a fluid test stand and physically capturing and measuring the fluid flow volume over a specific time period and comparing the results to establish minimum-maximum flow rates at the test pressure that are equivalent to flow rates at actual design rated pressure. These values were originally determined by calculations and then by physical experiment using valves from units whose fully assembled characteristics had been established as being within the piston velocity tolerance ranges for the various phases of operation, such as valve closure and bypass rates. The cylinder is filled with fluid prior to mounting of valve using a piston stroking operation and the valve is then mounted and filled using a pouring operation. The fluid containment integrity of the cylinders with valve body attached is established by applying 3500 psi fluid pressure through the valve port to which the accumulator is normally attached and visually checking for leaks over a specific time period. The accumulator is then attached and charged with fluid, the unit is cleaned and allowed to stand for a period of time and then checked visually for leakage.

In addition to the above described testing procedures performed on each individual unit, dynamic testing has been performed on some selected units to demonstrate operational characteristics during shock loading and vibration conditions.

In regard to Item 1.c. of the subject IE Bulletin, Northern States Power Company has previously described the hydraulic shock suppressor surveillance program at Monticello in a letter from Mr L O Mayer to Mr J F O'Leary dated October 1, 1974. In addition, it is noted that the maintenance procedure used for snubber overhaul calls for stroking the reassembled snubber and verifying that the snubber will lock up.

Yours very truly,

L J Wachter

L J Wachter, Vice President
Power Production & System Operation

LJW/ma

cc: A Giambusso
G Charnoff
Minnesota Pollution Control Agency
Attn: E A Pryzina
Asst Director for Construction & Operations