

PART 21 IDENTIFICATION NO. 87-387-001 COMPANY NAME PP&J

DATE OF LETTER 3/11/81 DOCKET NO. 87-387-001

DATE DISTRIBUTED \_\_\_\_\_ ORIGINAL REPORT  SUPPLEMENTARY

DISTRIBUTION:

REACTOR (R)

IE FILES  
EES - *mills*

REGIONS I, II, III, IV, V

VENDOR BR. R-IV

LOEB / MPA MNB 5715

AEOD \_\_\_\_\_ MNB 7602

NRR/DOE

NRR/DSI

NRR/DST

NRR/DOL

ASLBP E/W 450

CENTRAL FILES 016  
CENTRAL FILES (CHRON)  
PDR  
~~LPDR~~  
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FUEL CYCLE &

MATERIALS (M)

IE FILES

AD/FFYSI

REGIONS I, II, III, IV, V

VENDOR BR. R-IV

NMSS / FCMS SS-396

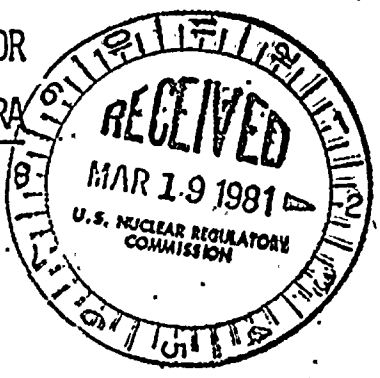
LOEB / MPA MNB 5715

AEOD MNB 7602

ASLBP E/W 450

SAP/SP MNB-7210A

CENTRAL FILES 016  
CENTRAL FILES (CHRON)  
PDR  
LPDR  
TERA



SAFEGUARDS (S)

IE FILES

AD/SG

AD/ROI

REGIONS I, II, III, IV, V

VENDOR BR. R-IV

NRR/DOL

NMSS / SG SS-881

LOEB / MPA MNB 5715

AEOD MNB 7602

ASLBP E/W 450

CENTRAL FILES 016  
CENTRAL FILES (CHRON)  
CENTRAL FILES SS-396  
PDR  
LPDR  
TERA

ACTION:

PRELIMINARY EVALUATION OF THE ATTACHED REPORT INDICATES LEAD RESPONSIBILITY FOR FOLLOWUP AS SHOWN BELOW:

IE

NRR

NMSS

OTHER

EES

8103231091  
S

MA  
1



1952

NORMAN W. CURTIS  
Vice President-Engineering & Construction-Nuclear  
770-5381

March 11, 1981

Mr. Boyce H. Grier  
Director, Region I  
U. S. Nuclear Regulatory Commission  
.631 Park Avenue  
King of Prussia, PA 19406

SUSQUEHANNA STEAM ELECTRIC STATION  
INTERIM REPORT OF A DEFICIENCY RELATING TO  
PACIFIC SWING CHECK VALVE FAILURES  
ERs 100450/100508      FILES 840-4/900-10  
PLA-654

Dear Mr. Grier:

This letter serves to confirm information provided by A. R. Sabol in a telephone conversation with NRC Region I, Reactor Inspector, Mr. L. Narrow, on January 19, 1981. During that conversation, Mr. Narrow was advised that the subject condition was under evaluation for reportability under the provisions of 10 CFR 50.55(e).

The deficiency involves excessive wear at the hinge arm/disc stud interface of Mark Controls Corporation (MCC)/Pacific Valve Swing Check valves. A description of the problem, its cause, safety implications and the corrective action taken and planned is attached and is submitted as an interim report of the deficiency pursuant to the provisions of 10 CFR 50.55(e).

Since the details of this report provide information relevant to the reporting requirements of 10 CFR 21, this correspondence is considered to also discharge any formal responsibility PP&L may have for reporting in compliance thereto.

We expect to provide our final report for this condition in May, 1981. We trust the Commission will find the information contained herein to be satisfactory.

Very truly yours,



N. W. Curtis  
Vice President-Engineering & Construction-Nuclear

Mr. Boyce H. Grier

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March 11, 1981

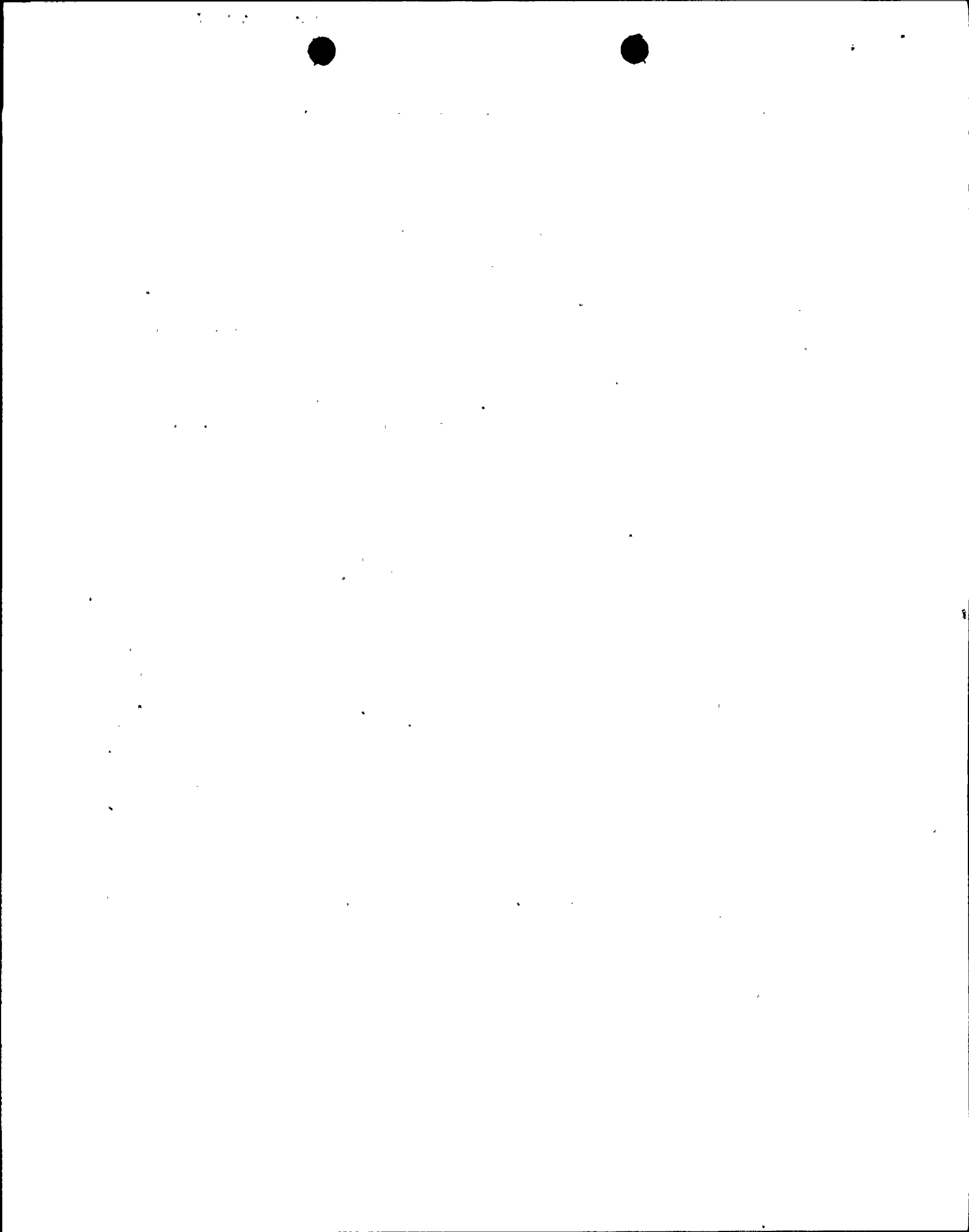
FLW:sab

Attachment

cc: Mr. Victor Stello (15)  
Director-Office of Inspection & Enforcement  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Mr. G. McDonald, Director (1)  
Office of Management Information & Program Control  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Mr. Robert M. Gallo  
U. S. Nuclear Regulatory Commission  
P.O. Box 52  
Shickshinny, PA 18655



SUBJECT

Excessive wear at hinge arm/disc stud interface on MCC/Pacific Swing Check valves.

DESCRIPTION OF PROBLEM

Swing check valves manufactured by MCC/Pacific Valves have discs with two stubs, each on either side of the hinge arm, used to prevent the disc from spinning during service (see Figure 1). However, excessive wear at the valve hinge arm/disc stud interface has been noted which allows the disc to have sufficient play for the stubs to jam behind the hinge arm, thus preventing the valve from closing completely. Furthermore, this wear could also render the disc off center, thereby causing a leak path by the seat.

This condition was originally documented on Bechtel NCR-6791 dated 11/3/80. The NCR was based on an inspection of four 10 inch check valves in a Non "Q" system but was written against 94 physically identical valves supplied for use in "Q" systems.

CAUSE OF DEFICIENCY

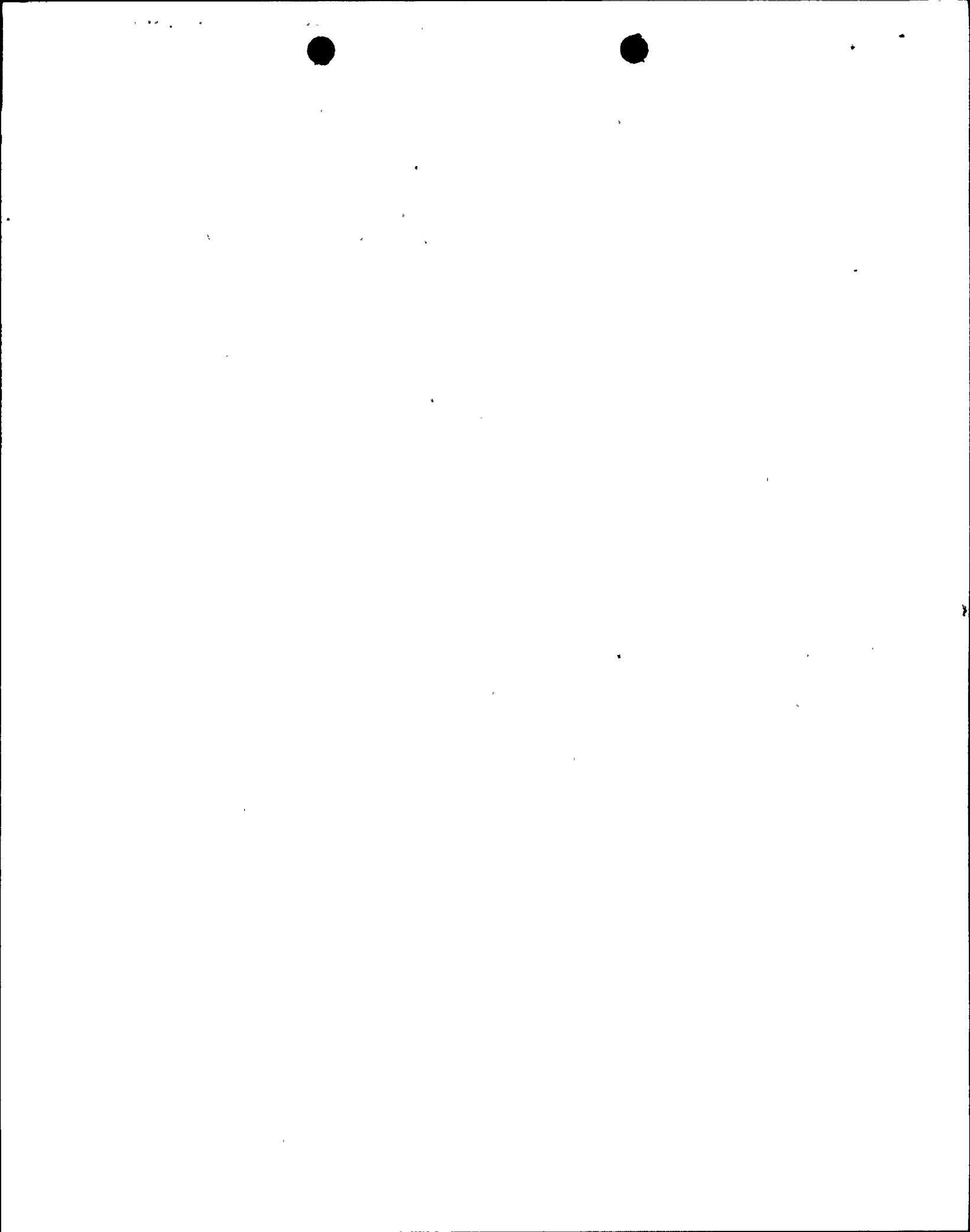
MCC/Pacific Valves' assessment indicates that the Non "Q" valves inspected are subject to abnormally high flow-induced loads which substantially result from dynamic effects which accompany turbulence and/or vorticity. These loads may have contributed to the check valve failures.

ANALYSIS OF SAFETY IMPLICATION

Although a complete safety evaluation of each Pacific Q-listed check valve has not yet been performed, the potential leak path and failure of a check valve to close completely is considered to be a failure to perform an intended safety function. These valves are used in such "Q" systems as High Pressure Coolant Injection, Reactor Core Isolation Cooling, Emergency Service Water, Residual Heat Removal and Core Spray Systems. The condition involves significant damage to a component. Extensive repairs may be required to establish the adequacy of the component to perform its intended safety function. Therefore, the condition is considered reportable under 10 CFR 50.55(e).

CORRECTIVE ACTION

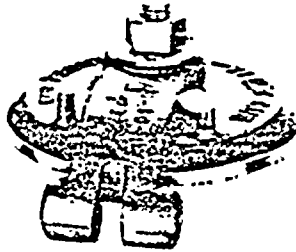
The immediate corrective action taken involved the placement of hold tags on the 94 valves identified in NCR-6791. A review of Pacific check valves in "Q" installations has been initiated. It is MCC/Pacific Valves' opinion that accelerated wear and premature failure can be minimized by installing check valves at a distance of several pipe diameters of straight pipe downstream of pump discharge, short radius elbows, reducers or expanders.



Bechtel is currently reviewing the layout of the inspected Non "Q" check valves to determine the validity of MCC/Pacific Valves' assertion. Bechtel Field Engineering will inspect other similar "Q" and Non "Q" Pacific check valve installations to determine whether a generic valve design problem exists.

The corrective action for the valves identified as being defective will be documented in our final report which we expect to issue in May, 1981.





Two lugs integrally cast on the disc on either side of the hanger prevent the disc from spinning in service. This exclusive feature helps extend valve life in difficult services by eliminating disc spinning.