

November 20, 1986

Docket No. 50-410

FACILITY: Nine Mile Point Nuclear Station Unit 2 (NMP-2)
APPLICANT: Niagara Mohawk Power Corporation (NMPC)
SUBJECT: SUMMARY OF OCTOBER 15, 1986, MEETING WITH NMPC ON
MAIN STEAM ISOLATION VALVES FOR NMP-2

On October 15, 1986, the NRC staff met with representatives of Niagara Mohawk Power Corporation (NMPC) and their consultants to discuss concerns related to the main steam isolation valves (MSIVs) for NMP-2. Handouts provided by NMPC at the meeting are included as enclosures 1 and 2.

NMPC presented their conclusions of their investigation of the root cause of recently identified leakage problems of the MSIVs. The root cause was identified as a rocking and friction problem which occurred when the valve was in the partially open position. The spring arrangement in the valve seats would be modified to correct the rocking problem in the partially open position thereby eliminating the resultant galling problem on the valve balls. The galling had resulted in excessive valve leakage. NMPC stated their certainty that this was the root cause. NMPC stated that four MSIV balls would be repaired, installed and leak tested by October 26, 1986. Leak testing, as required by 10 CFR 50, Appendix J, would be performed between the seats with a leakage criteria of 6 SCFH.

NMPC stated the final deficiency reports in accordance with 10 CFR 50.55e would be filed October 22, 1986. Those reports were to include information presented during the meeting.

NRC questioned NMPC on the possibility of vortex shedding of the MSIVs. NMPC stated that this phenomena had not been reviewed and would be difficult to determine.

NMPC stated that 36 days were scheduled between fuel load and the beginning of the power ascension program which was scheduled for early December. All of the MSIV balls would need to be installed by the end of November to not affect the schedule for criticality. Actuator installation and testing was scheduled to take 3 days for each valve. Commercial power is scheduled for June 30, 1987.

The hydraulic cylinders on the modified MSIV actuators are not considered by NMPC to be safety related. Except for the added lip seal the cylinders are the same as those on the original actuator design.

Because of the importance of the prototype testing proposed by NMPC to confirm the adequacy of the NMP-2 MSIVs, the NRC requested NMPC to submit the objectives of the prototype testing, the schedule for the testing and a commitment to submit the results of the testing to the NRC. The NRC stated that these items would be included in a license condition.

In addition, the NRC requested NMPC to commit to perform an additional leak test

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PDR ADOCK 05000410
S PDR

Mr. C. V. Mangan
Niagara Mohawk Power Corporation

Nine Mile Point Nuclear Station
Unit 2

cc:

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1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that this is crucial for the company's financial health and for providing reliable information to stakeholders.

2. The second part of the document outlines the specific procedures for recording transactions. It details the steps from initial entry to final review, ensuring that all necessary information is captured and verified.

3. The third part of the document addresses the role of the accounting department in this process. It highlights the need for clear communication and collaboration between different departments to ensure the accuracy of the records.

4. The fourth part of the document discusses the importance of regular audits and reviews. It explains how these activities help to identify any discrepancies or errors and ensure that the records are up-to-date and accurate.

5. The fifth part of the document provides a summary of the key points discussed and offers some final thoughts on the importance of maintaining accurate records.

6. The sixth part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that this is crucial for the company's financial health and for providing reliable information to stakeholders.

7. The seventh part of the document outlines the specific procedures for recording transactions. It details the steps from initial entry to final review, ensuring that all necessary information is captured and verified.

8. The eighth part of the document addresses the role of the accounting department in this process. It highlights the need for clear communication and collaboration between different departments to ensure the accuracy of the records.

9. The ninth part of the document discusses the importance of regular audits and reviews. It explains how these activities help to identify any discrepancies or errors and ensure that the records are up-to-date and accurate.

10. The tenth part of the document provides a summary of the key points discussed and offers some final thoughts on the importance of maintaining accurate records.

11. The eleventh part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that this is crucial for the company's financial health and for providing reliable information to stakeholders.

12. The twelfth part of the document outlines the specific procedures for recording transactions. It details the steps from initial entry to final review, ensuring that all necessary information is captured and verified.

13. The thirteenth part of the document addresses the role of the accounting department in this process. It highlights the need for clear communication and collaboration between different departments to ensure the accuracy of the records.

14. The fourteenth part of the document discusses the importance of regular audits and reviews. It explains how these activities help to identify any discrepancies or errors and ensure that the records are up-to-date and accurate.


15. The fifteenth part of the document provides a summary of the key points discussed and offers some final thoughts on the importance of maintaining accurate records.


of the MSIVs in accordance with the test and acceptance criteria in 10 CFR 50, Appendix J during the first outage following the 100 hour warranty run or within 30 days following the 100 hour warranty run, whichever is earlier.

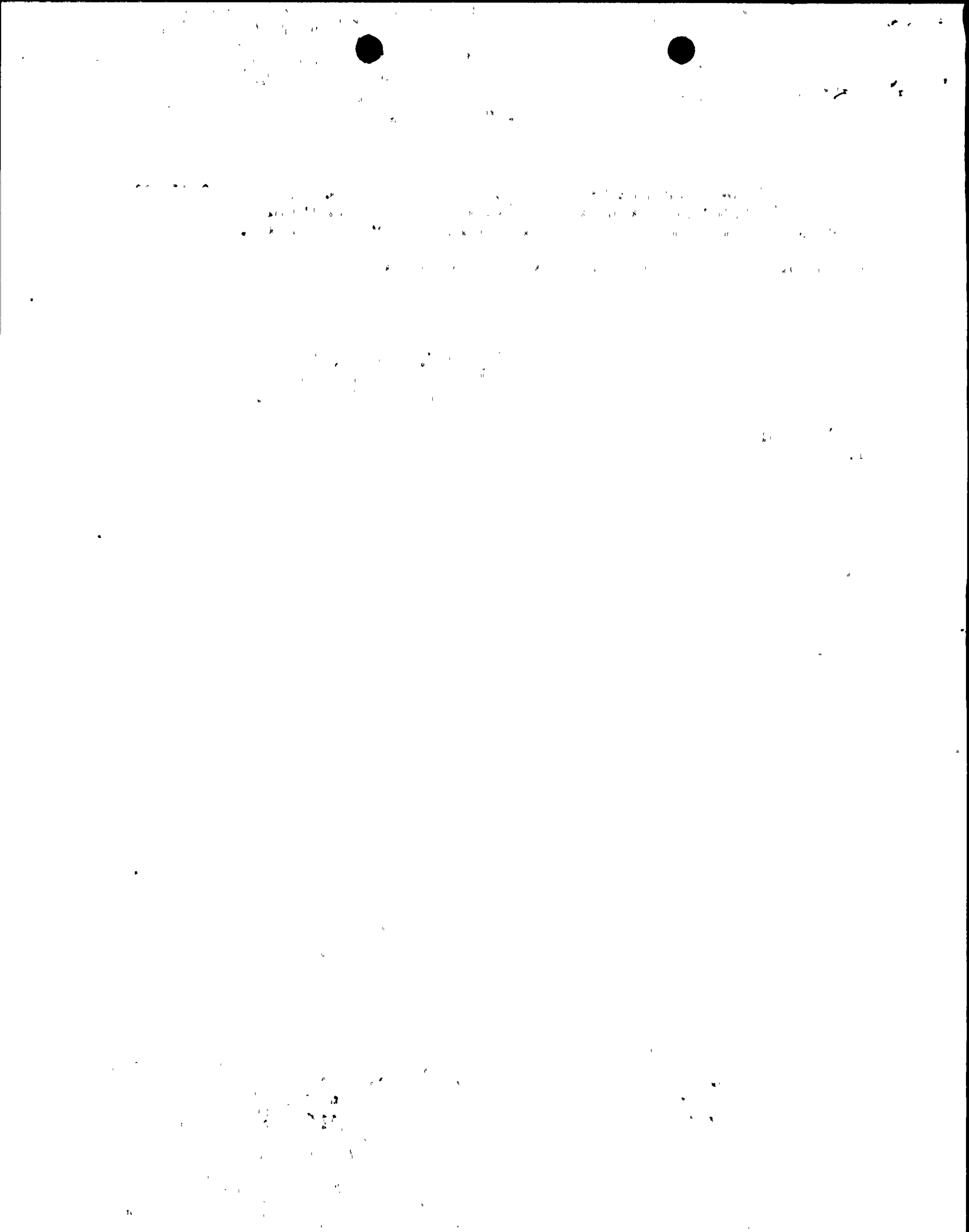
A list of meeting attendees is included as enclosure 3.

Mary F. Haughey, Project Manager
BWR Project Directorate No. 3
Division of BWR Licensing

Enclosures:
cc See next page


BWD-3:DBL
MHaughey/vag
11/19/86


D: BWD-3:DBL
EAdensam
11/20/86



November 20, 1986

MEETING SUMMARY DISTRIBUTION

Docket No(s): 50-410

NRC PDR

Local PDR

BWD #3 r/f

J. Partlow

E. Adensam

Attorney, OGC

E. Jordan

B. Grimes

ACRS (10)

Project Manager M. Haughey

E. Hylton

NRC PARTICIPANTS

M. Haughey

Jack Kudrick

Frank Witt

Wayne Hodges

E. G. Adensam

J. C. Linville

R. A. Hermann

R. G. LaGrange

J. Lombardo

bcc: Applicant & Service List

7

SECRET

1. The first part of the document discusses the general situation in the country and the need for a comprehensive reform of the legal system. It emphasizes the importance of ensuring the independence of the judiciary and the protection of human rights.

2. The second part of the document details the specific measures that have been taken to date, including the establishment of a judicial council and the implementation of a new judicial code. It also outlines the challenges that remain and the steps that will be taken to address them.

3. The third part of the document provides a summary of the key findings and recommendations. It stresses the need for continued vigilance and the implementation of the remaining reforms to ensure the rule of law and the protection of the rights of all citizens.

4. The document concludes with a statement of the government's commitment to the principles of democracy and the rule of law. It expresses confidence that the reforms will be completed in a timely and effective manner, and that the country will be able to achieve a stable and prosperous future.

10/15/86 MEETING-MSIVs

<u>NAME</u>	<u>ORGANIZATION</u>
Mary F. Haughey	NRC - Licensing Project Manager
Jack Kudrick	NRC/DBL/PSB
Frank Witt	NRC/DBL/PSB
Wayne Hodges	NRC/DBL/RSB
E. G. Adensam	NRC/DBL/BWD-3
J. C. Linville	NRC/RI/DRP
R. A. Hermann	NRC/DBL/EB
R. G. LaGrange	NRC/DBL/EB
J. Lombardo	NRC/DBL/EB
T. Wang	Stone & Webster
P. Teperou	Stone & Webster
Warren Wang	Stone & Webster
A. F. Zallnick	NMPC - Licensing
C. E. Crocker	SWEC - Engr.
D. A. Boe	SWEC - Engr.
C. G. Beckham	NMPC
J. P. Thomas	Duquesne Light Co.
A. Fiorente	SWEC - Engr.
T. D. Fay	NMPC - Licensing
R. A. Cushman	NMPC - Licensing
J. C. Hutton	Rochester Gas and Elec.
E. R. Klein	NMPC
R. B. Abbott	NMPC
D. L. Pike	NMPC
John E. Arthur	Rochester Gas and Electric
T. J. Perkins	NMPC
A. E. Kintigh	NYSEG
M. A. Durka	SWEC
W. D. Donlon	NMPC
Wm. R. Schmidt	MPR Associates, Inc

MSIV LONG TERM PROGRAM

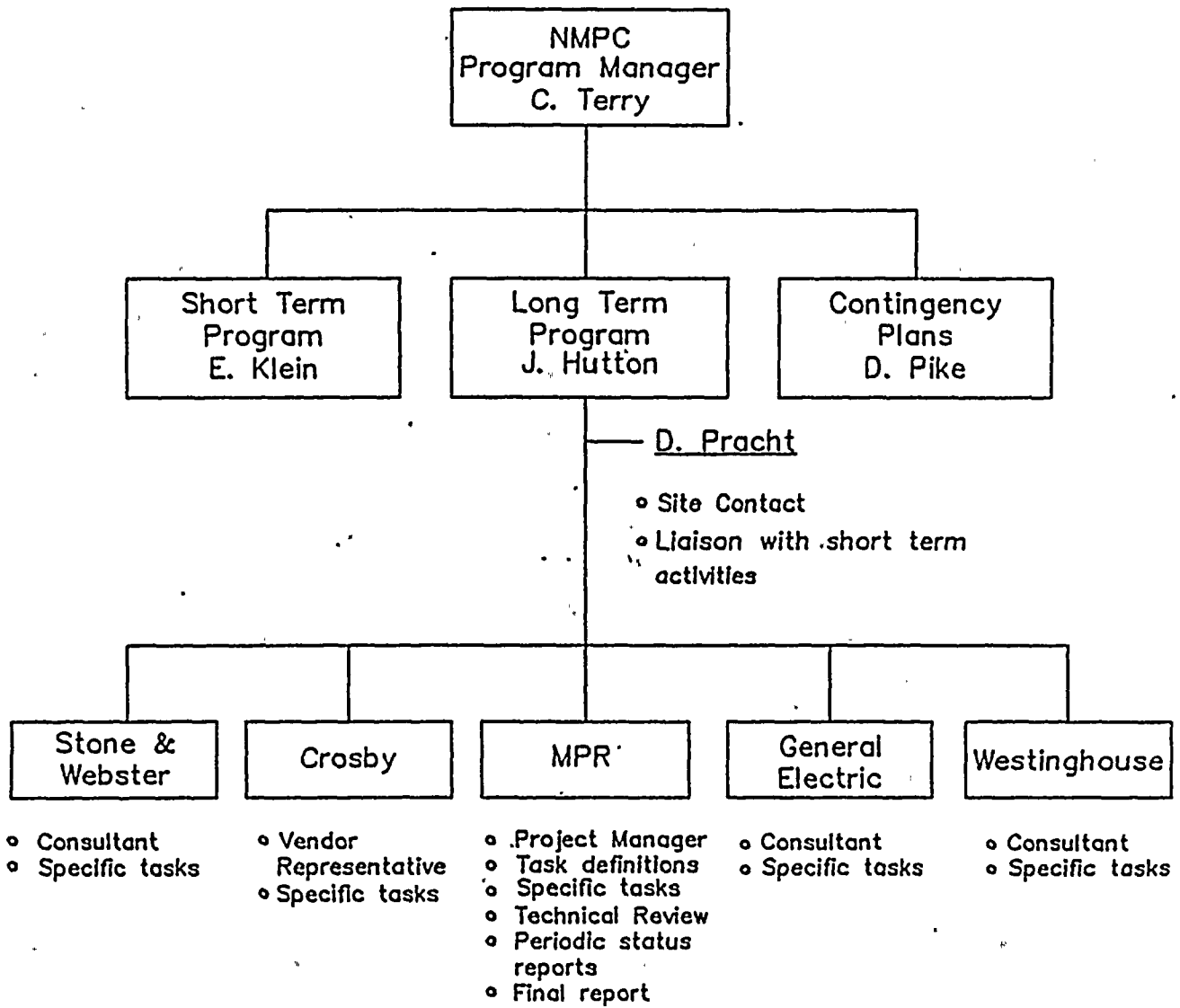
OBJECTIVES

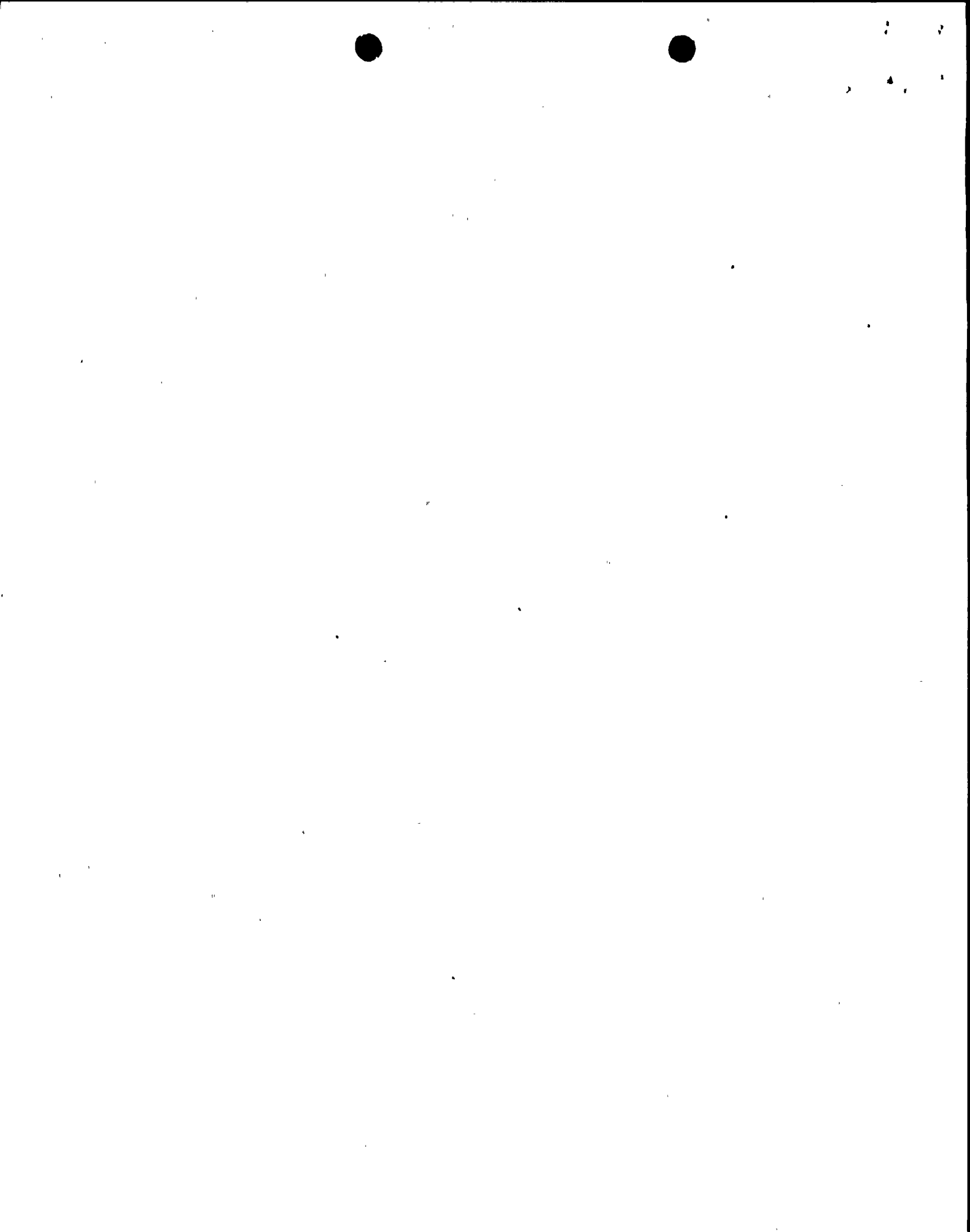
- CONFIRM FAILURE MECHANISMS
- REVIEW EXISTING DESIGN/MATERIALS
- FULL SCALE PROTOTYPE TESTING
- DESIGN/MATERIAL ENHANCEMENTS
- DEMONSTRATE LONG TERM OPERABILITY



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Niagara Mohawk Power Corporation
Nine Mile Point Unit 2
MSIV Program





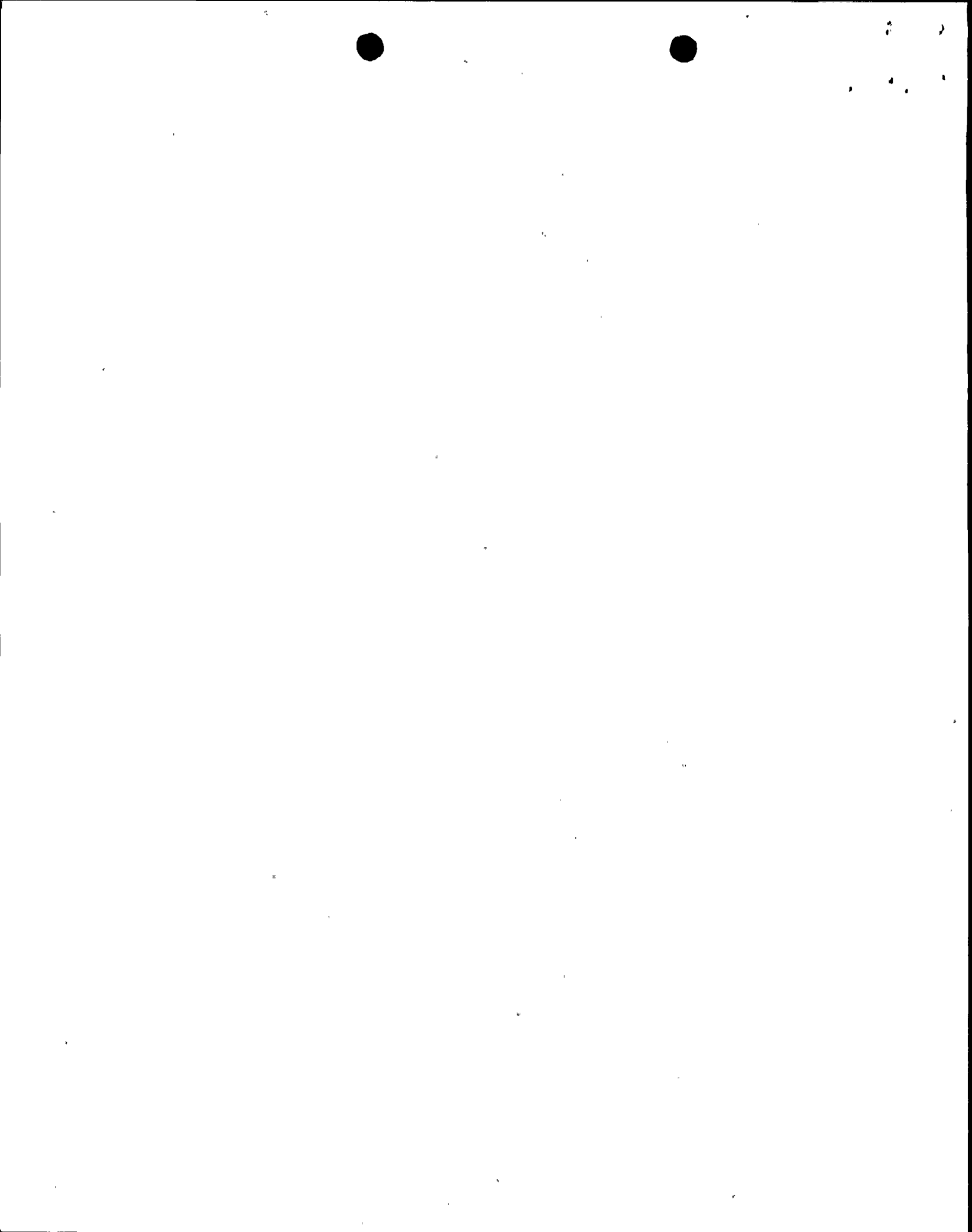
MSIV LONG TERM PROGRAM

GENERAL DESCRIPTION

- PHASE 1
 - FAILURE ANALYSIS
 - OPERATIONAL EXPERIENCE
 - VALVE/ACTUATOR DESIGN REVIEW
 - EVALUATE BALL/SEAT MATERIALS
 - INITIAL PROTOTYPE TESTING

- PHASE 2
 - IDENTIFY DESIGN ENHANCEMENTS
 - SELECT MATERIAL CHANGES
 - PROTOTYPE TESTING

- PHASE 3
 - DETAILED MODIFICATION DESIGN
 - DESIGN VERIFICATION TESTING
 - MATERIAL PROCUREMENT
 - INSTALLATION/PREOP TESTING



MSIV LONG TERM PROGRAM

PRELIMINARY SCHEDULE

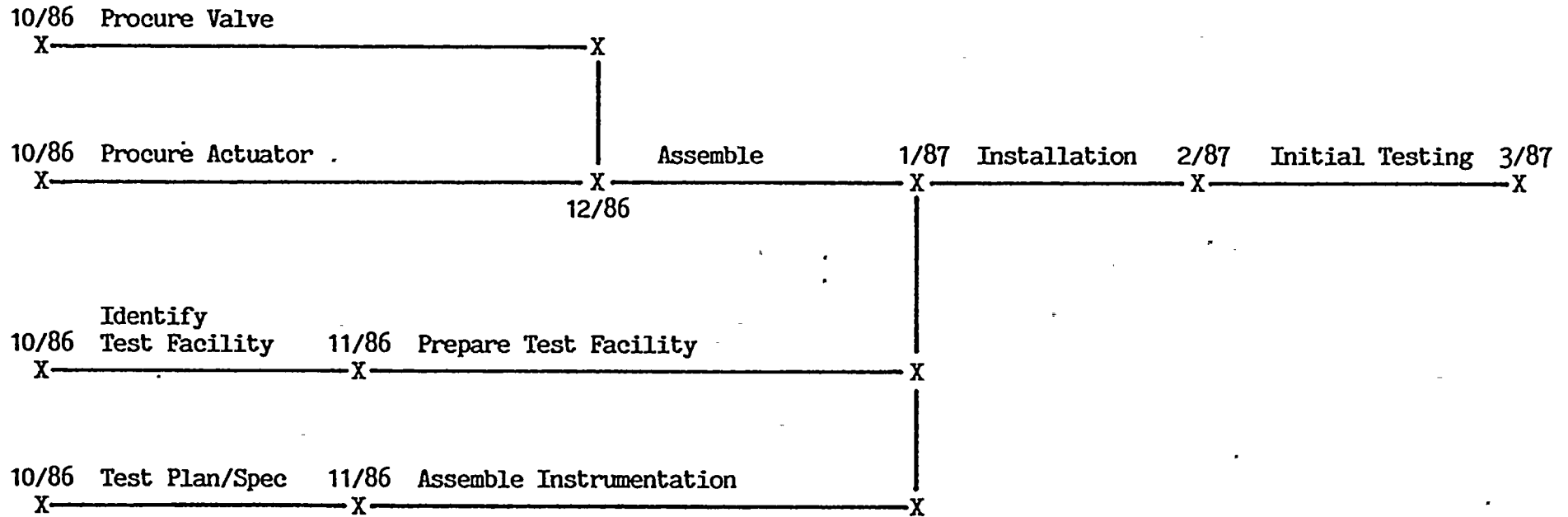
- PHASE 1 REVIEWS OCT '86 - JAN '87
- INITIAL PROTOTYPE TESTING FEB '87 - MAR '87
- SELECT ENHANCEMENTS APR '87 - JUN '87
- TEST ENHANCEMENTS JUL '87 - DEC '87
- FINALIZE DESIGNS JAN '88 - MAR '88
- DESIGN VERIFICATION APR '88 - DEC '88
- PROCURE MATERIALS MAR '88
- REFUELING OUTAGE MAR '89



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MSIV LONG TERM PROGRAM

PROTOTYPE TESTING SCHEDULE





MSIV BALL VALVES
NRC MEETING - OCTOBER 15, 1986
AGENDA

- BACKGROUND C.D. TERRY
- OVERVIEW C.D. TERRY
- RESOLUTION OF LEAKAGE PROBLEMS.... E.R. KLEIN
- ACTUATOR MODIFICATIONS E.R. KLEIN
- LONG RANGE PROGRAMS J. HUTTON
- CONCLUSIONS C.D. TERRY



BACKGROUND

- ACTUATOR PROBLEMS
 - DISCOVERED EARLY AUGUST

- LEAKAGE PROBLEMS
 - DISCOVERED LATE AUGUST

- INTERIM MEETING WITH NRC
 - SEPTEMBER 24

- INTERIM 10CFR50.55(e) REPORT
 - LEAKAGE PROBLEMS – OCTOBER 8



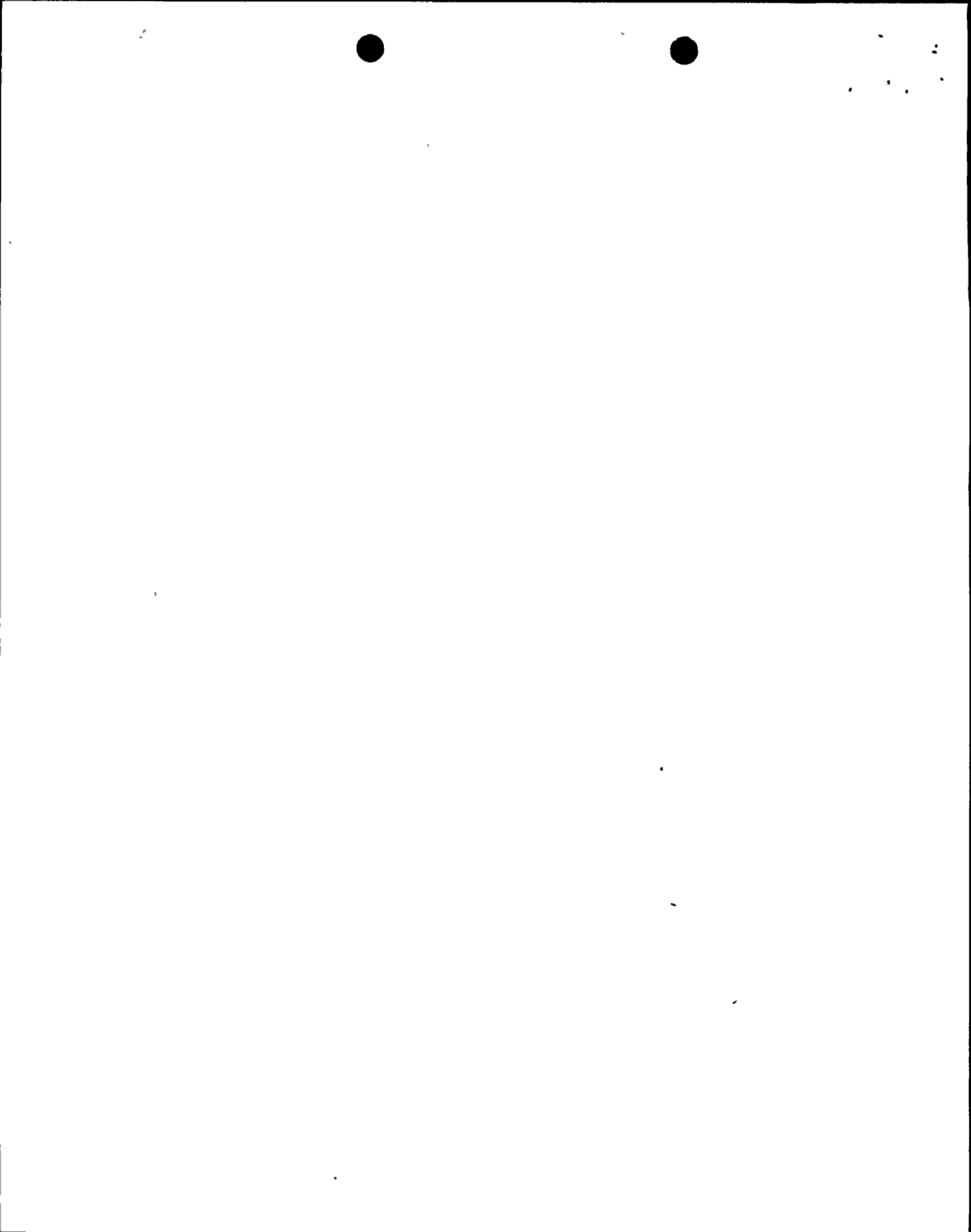
OVERVIEW

- RESOLUTION OF LEAKAGE PROBLEMS
 - TESTING/ANALYSIS OF PROBLEMS
 - ROOT CAUSE DETERMINATION
 - EVALUATION OF OPERATING CONDITIONS
 - STATUS OF REPAIRS

- ACTUATOR MODIFICATIONS
 - DESCRIPTION
 - CONFIRMATORY TESTS
 - SCHEDULE

- LONG RANGE PROGRAMS
 - PROGRAM DESCRIPTION
 - SCHEDULE/STATUS

- CONCLUSION



- RESOLUTION OF LEAKAGE PROBLEMS

- REVIEW OF PREVIOUS DATA

- REVIEW OF IN PLANT TEST DATA

- MATHEMATICAL ANALYSIS

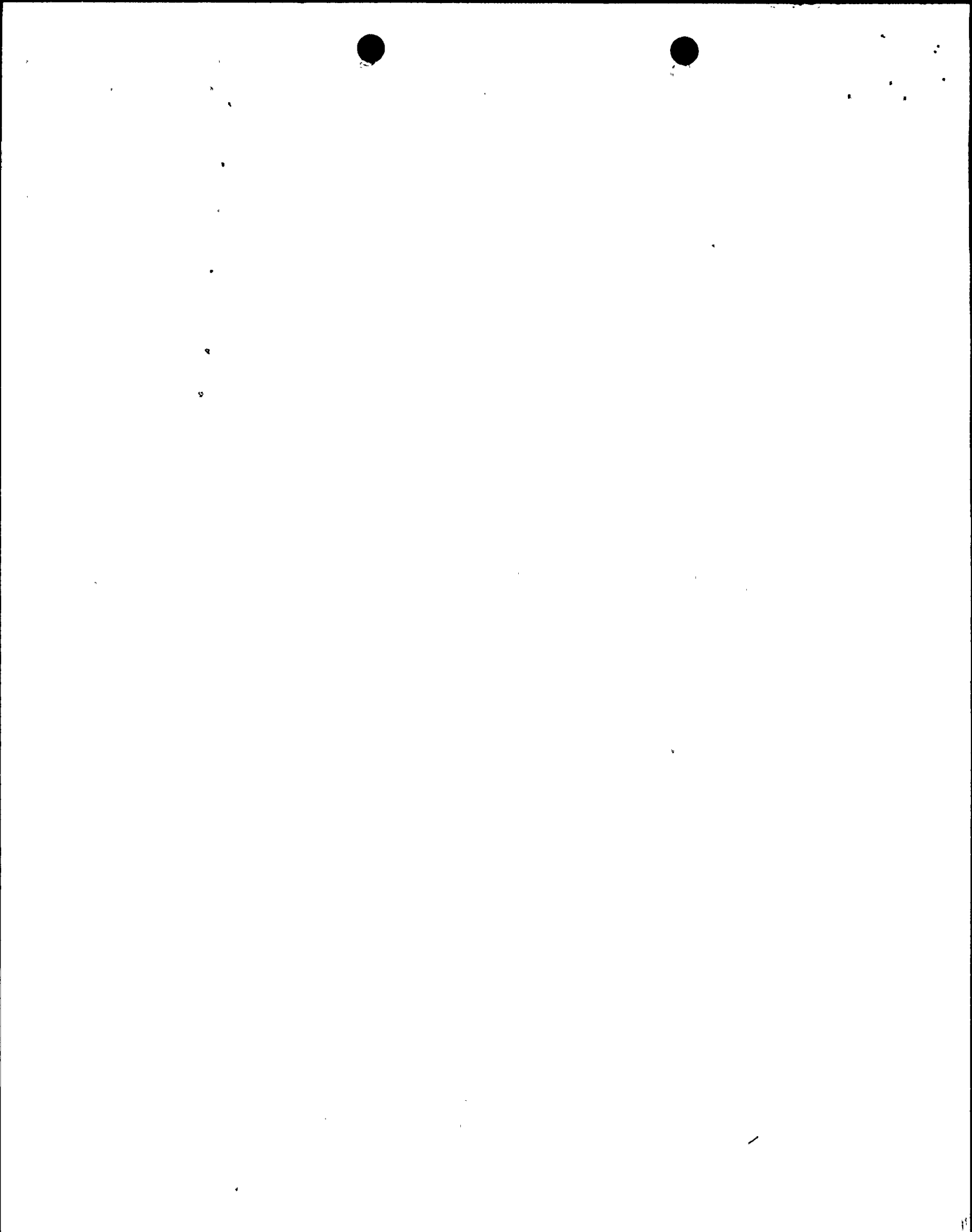
- TESTING

- SITE RESULTS

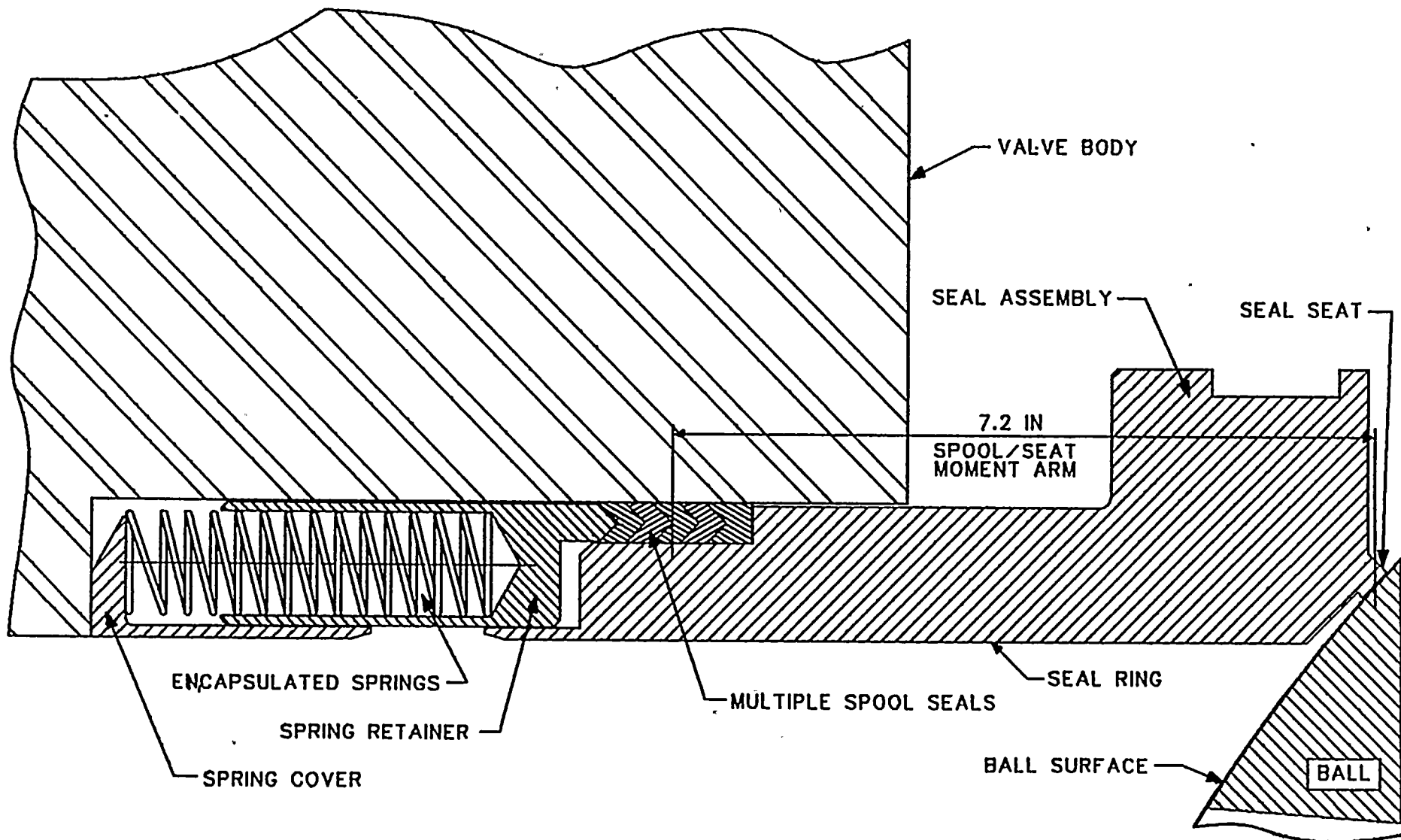
- LABORATORY RESULTS

- METALLURGICAL CONCLUSIONS

- SCHEDULE



MSIV SEAL ARRANGEMENT DETAIL "A"



**BALL & SEAT
ASSEMBLY IN THE
CLOSED POSITION**
FIGURE 4-2



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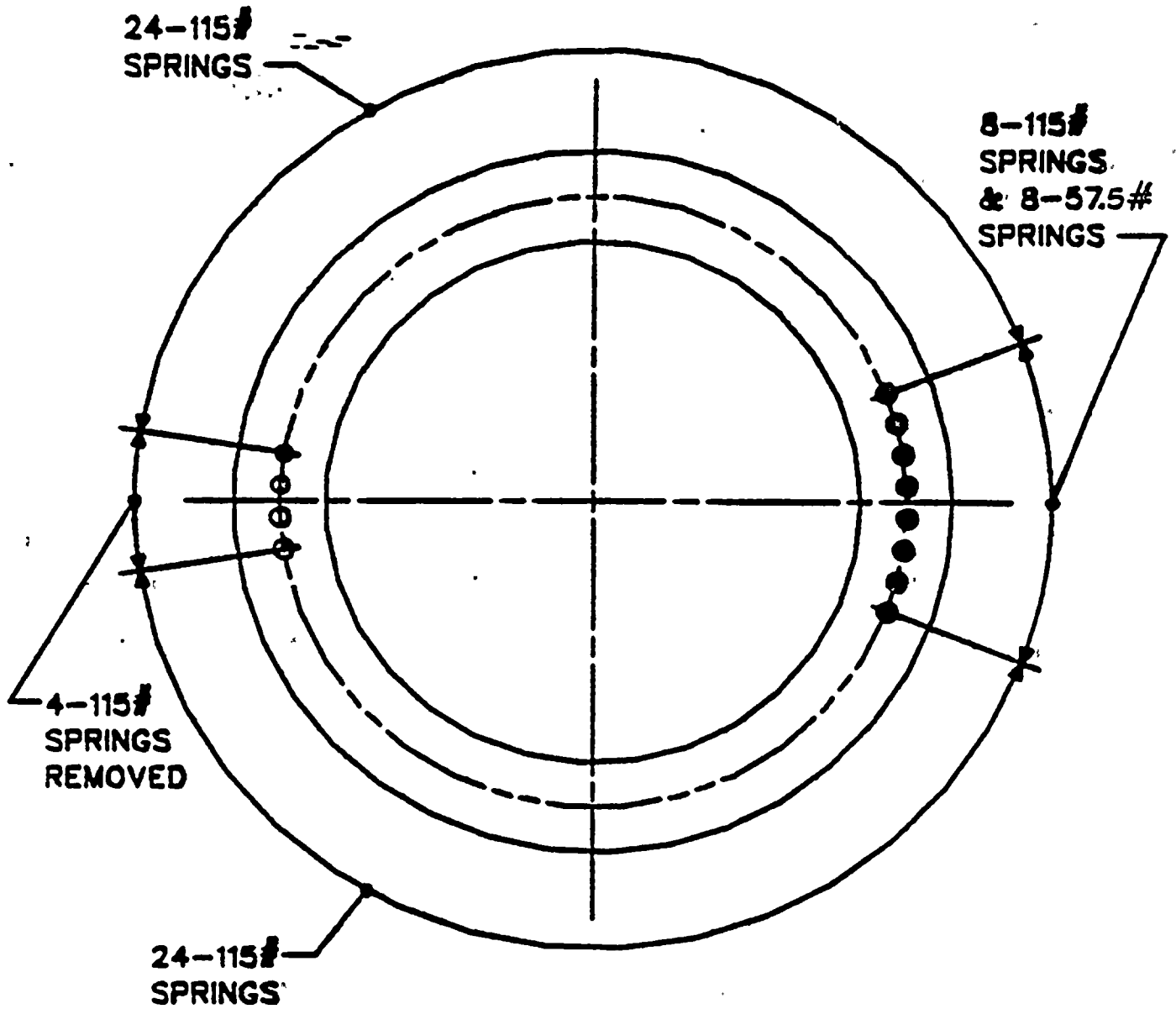
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MODIFIED SPRING CONFIGURATION



TOTAL SPRING LOAD

$$\begin{array}{r} 56 - 115\# \text{ SPRINGS} = 6440\# \\ 8 - 57.5\# \text{ SPRINGS} = \underline{460\#} \\ \hline 6900\# \end{array}$$



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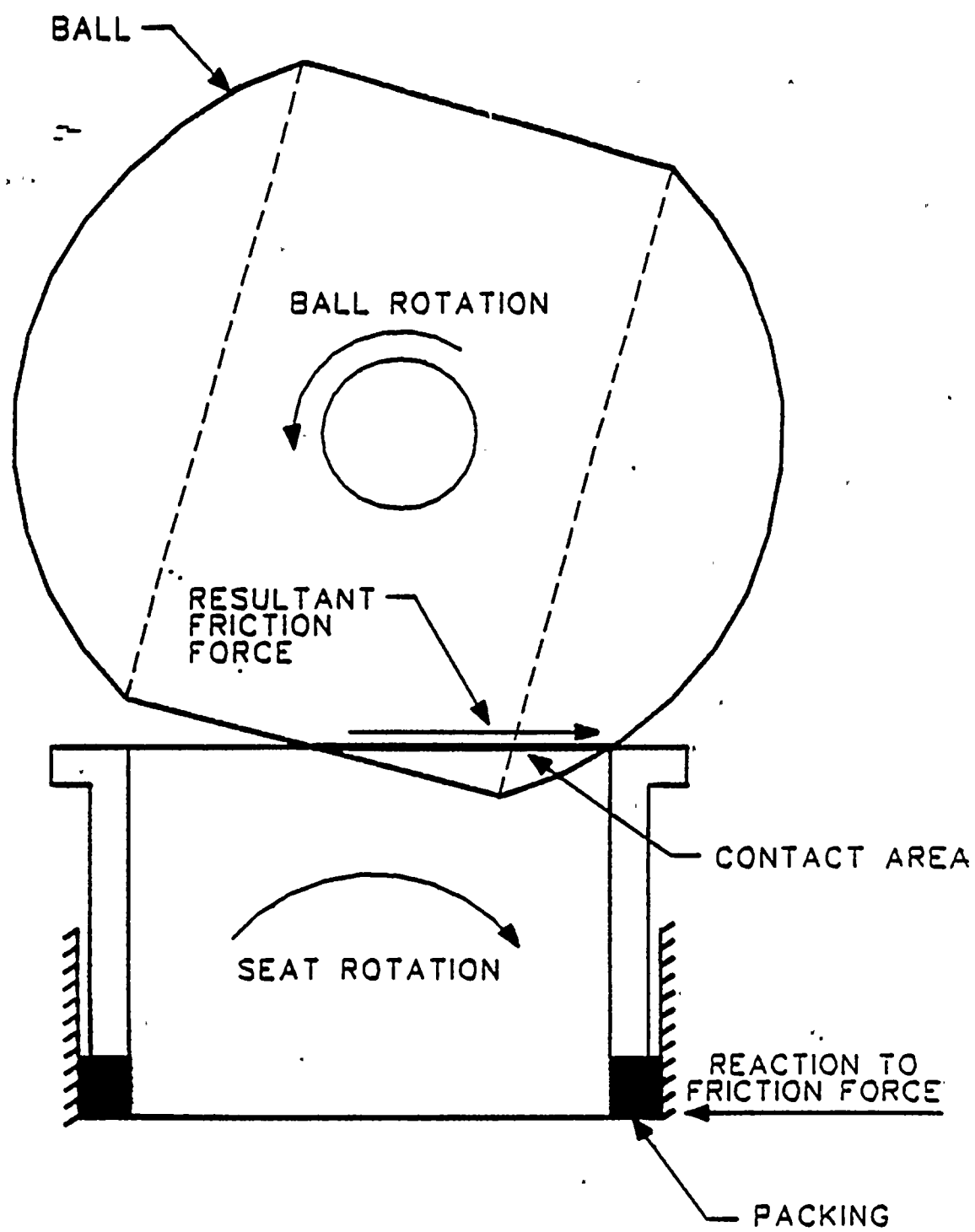
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VALVE OPENING
FRICTION FORCE
& ROTATION



ACCUMULATED CYCLES	NEW BALL		BLENDED BALL		BLENDED BALL	
	MODIFIED SPRINGS		ORIGINAL SPRINGS		MODIFIED SPRINGS	
	BS	TS	BS *	TS**	BS	TS
5	4.8	2.3	11.2	5.1	18.4	***
15	4.9	2.9	51	5.5	59	-
25	4.7	-	132	10.9	100+	-
35	4.4	-	-	-	-	-
45	4.2	-	-	-	-	-
55	4.0	-	-	-	-	-
65	3.9	-	-	-	-	-
75	4.4	3.2	-	-	-	-

NOTES:

* BETWEEN SEATS - SCFH

** THROUGH SEATS - SCFH

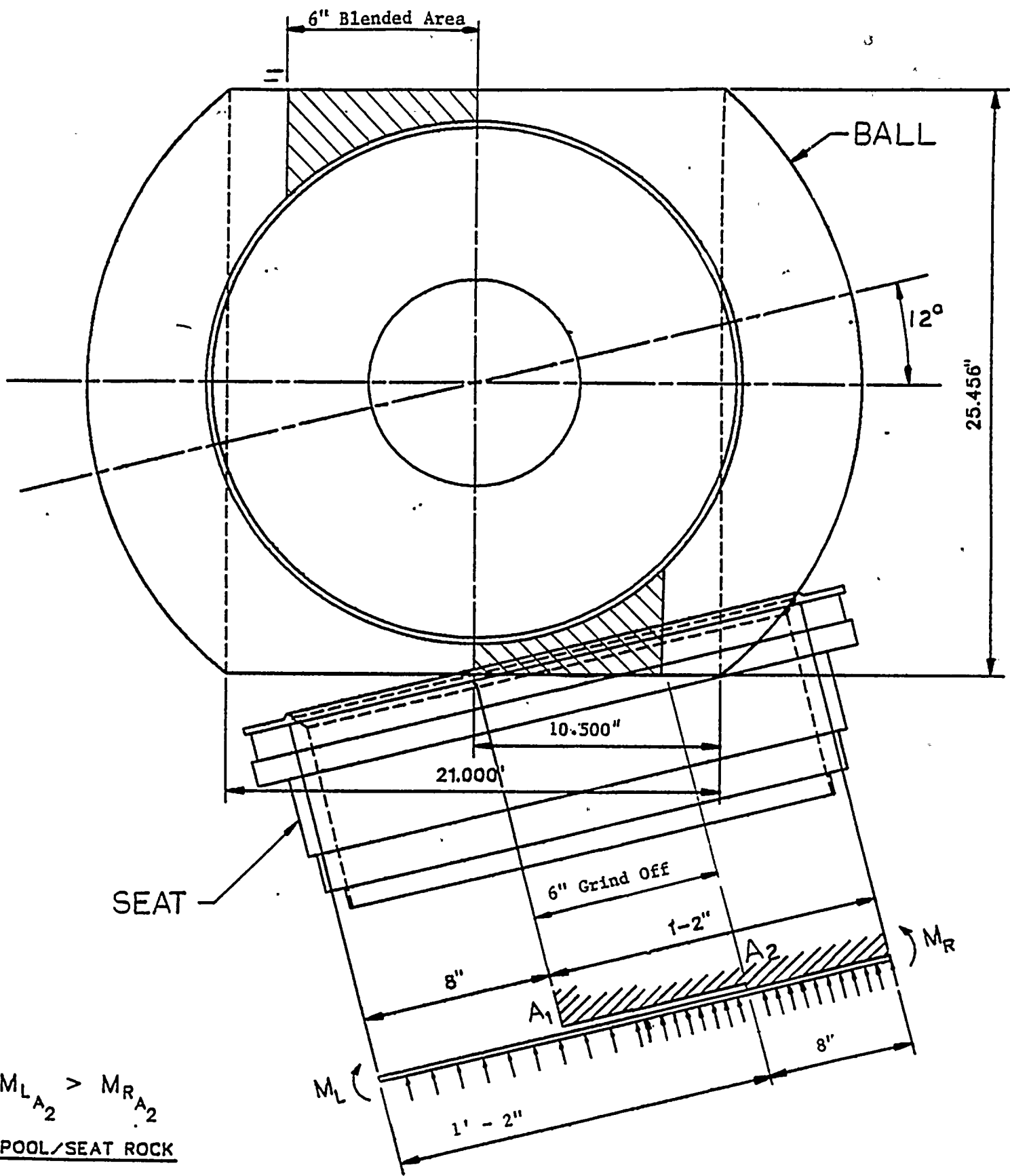
*** THROUGH SEAT TESTING NOT COMPLETED DUE TO POOR INITIAL TYPE "C" BETWEEN SEAT TESTING.

TEST
LEAKAGE
SUMMARY

TABLE 4-3



BLENDED BALL - MODIFIED SPRINGS



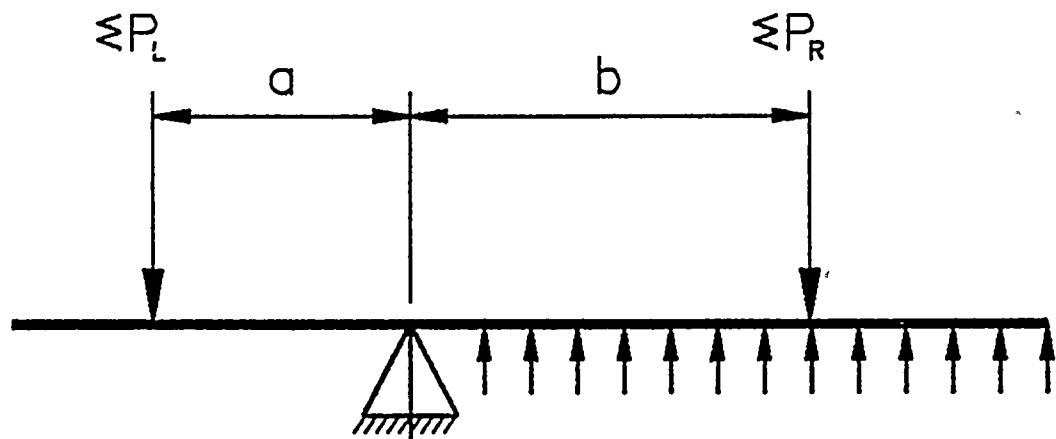
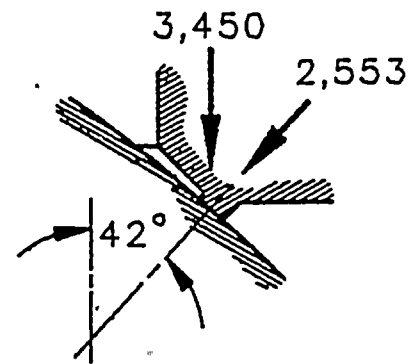
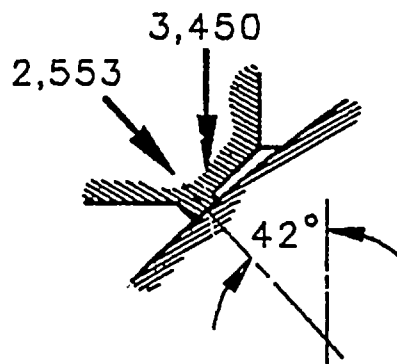
$M_{LA_2} > M_{RA_2}$
SPOOL/SEAT ROCK



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SPOOL / SEAT MODEL - BALANCED SPRINGS



$$\left(\begin{array}{l} \Sigma P_L \times a = M_L \\ \Sigma P_R \times b = M_R \end{array} \right)$$

$$M_R - M_L = 17,066 \text{ (lb-in)}$$

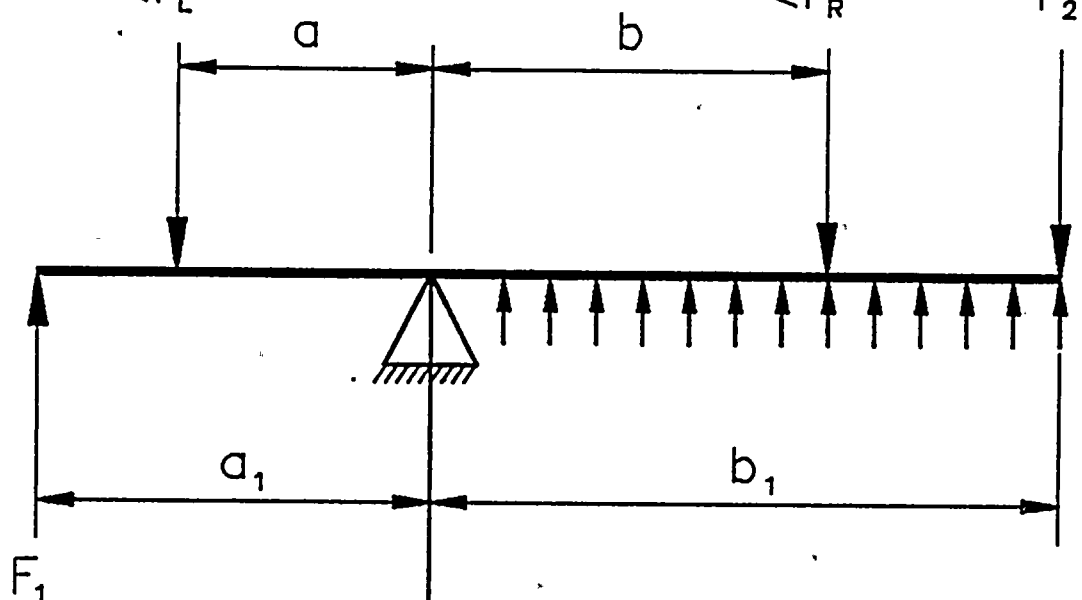
$$F = \frac{17,066}{7.2} = 2,370 \text{ (lb)}$$

$$\mu_{FR} = \frac{2,370}{6,900 \times 0.74} = 0.46$$



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SPOOL / SEAT MODEL - MODIFIED SPRINGS



$$M_L = (\Sigma P_L \times a) - (F_1 \times a_1) \qquad M_R = (\Sigma P_R \times b) + (F_2 \times b_1)$$

$$M_R - M_L = 27,182 \text{ (lb-in)}$$

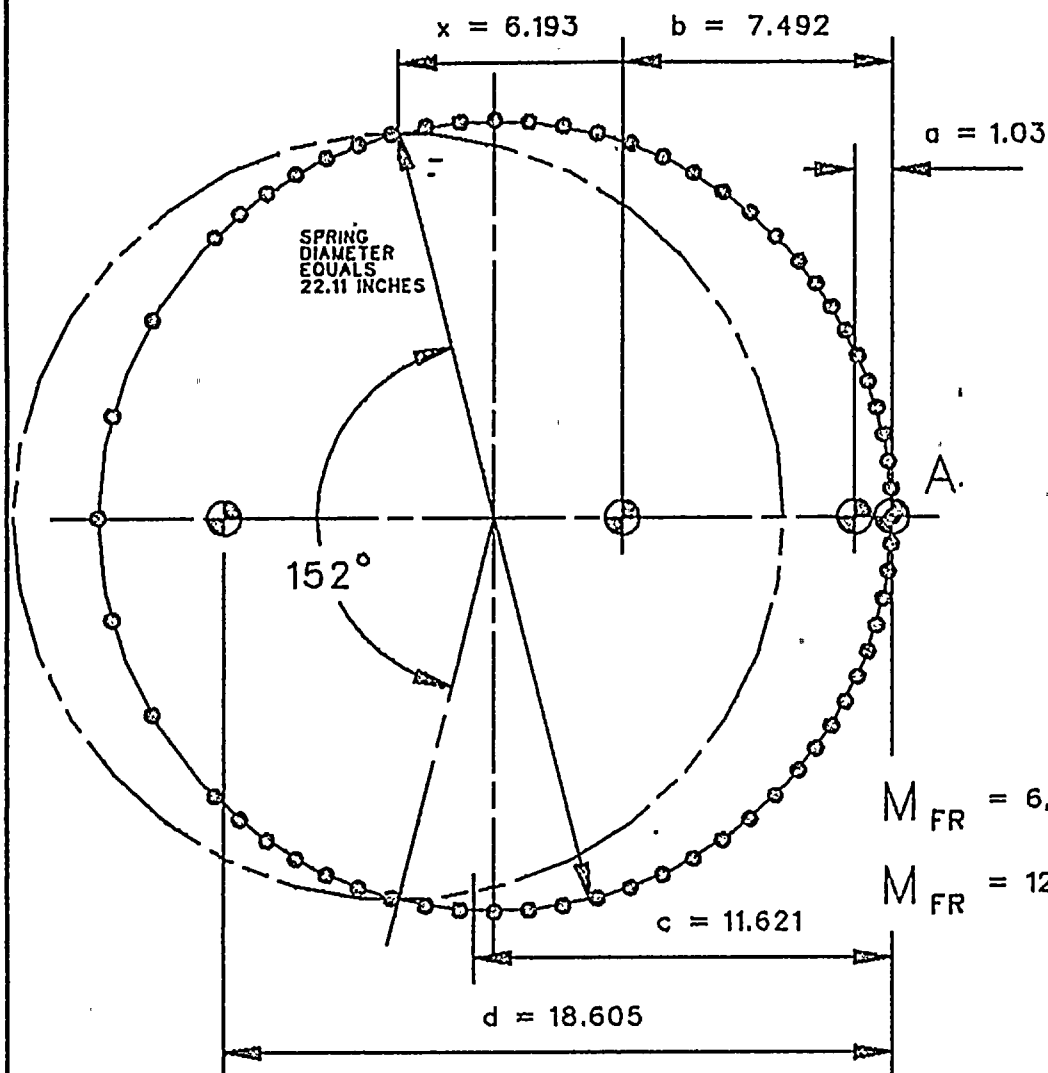
$$F = \frac{27,182}{7.2} = 3,775 \text{ (lb)}$$

$$\mu_{FR} = \frac{3,775}{6,900 \times 0.74} = 0.74$$



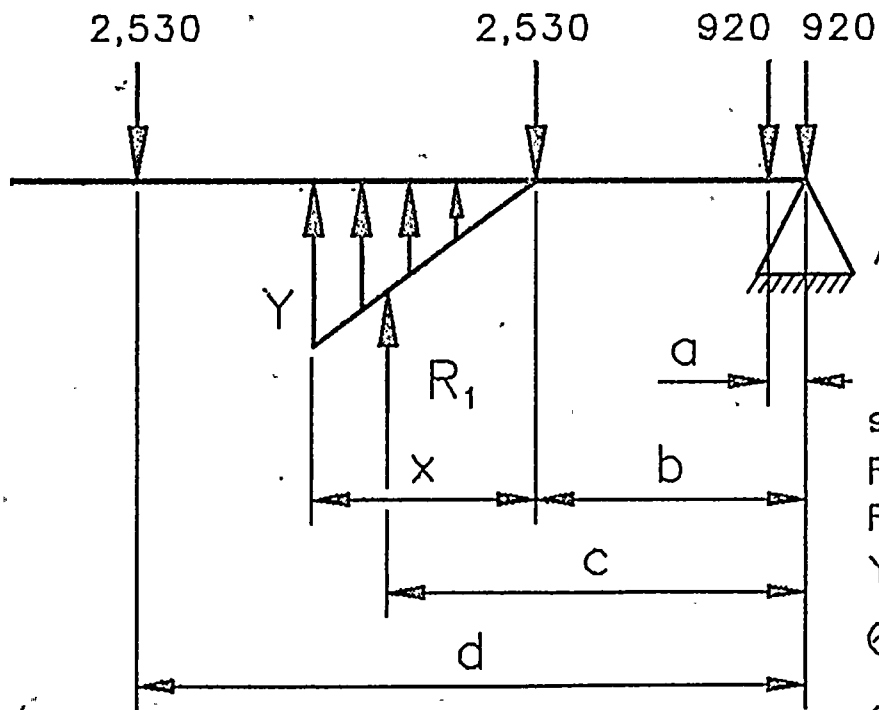
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SPOOL SEAT MODEL - MODIFIED SPRINGS



$$M_{FR} = 6,900 \times \mu \times .74 \times \text{MOMENT ARM}$$

$$M_{FR} = 12,867 \text{ in-lb}$$



$$\sum M_A = 0$$

$$920a + 2,530b + 2,530d + M_{FR} = R_1c$$

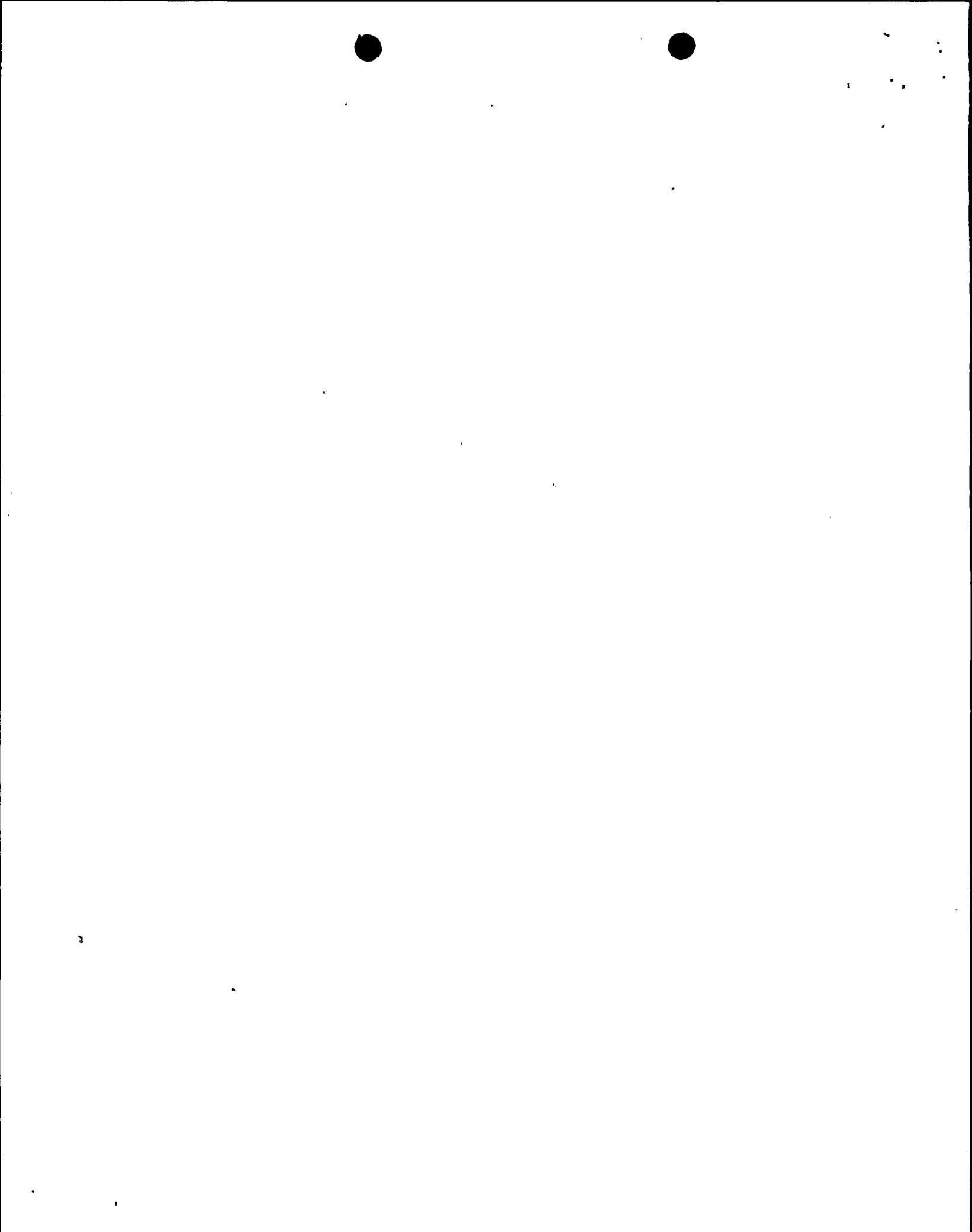
$$R_1 = 6,870 \text{ LB}$$

$$R_1 = \frac{1}{2} YX$$

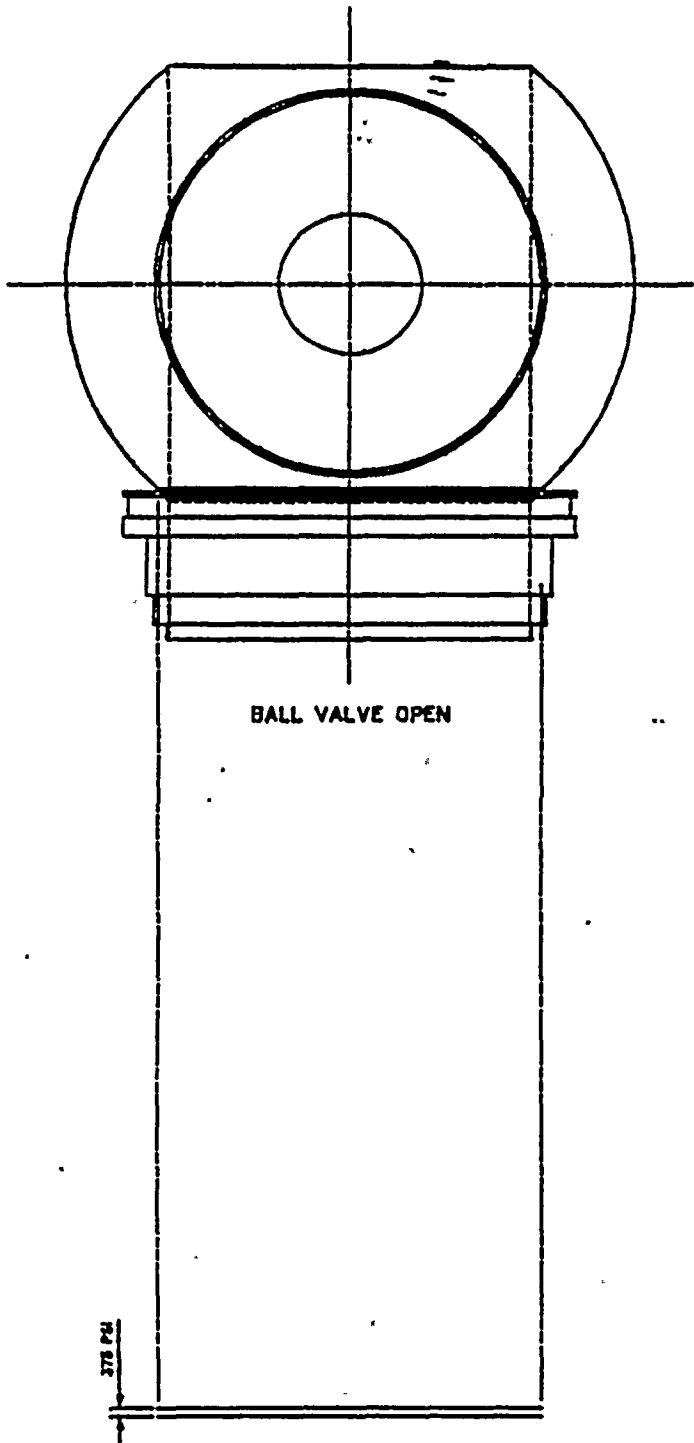
$$Y = 2,219 \frac{\text{in}}{\text{lb}}$$

$$\sigma = \frac{2,219 \times .74}{2 \times .3125}$$

$$\sigma = 2,627 \text{ PSI}$$

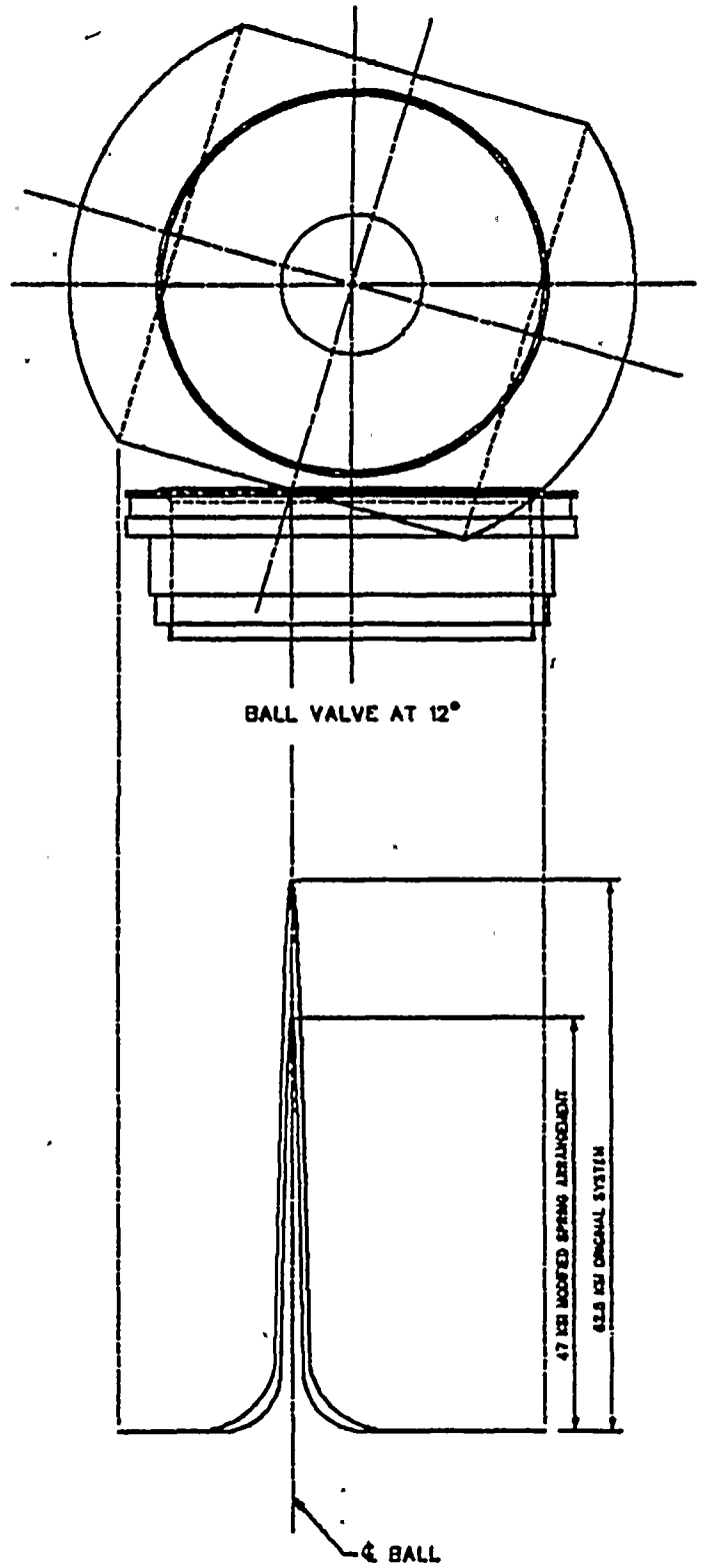


FOOTPRINT STRESS ON BALL



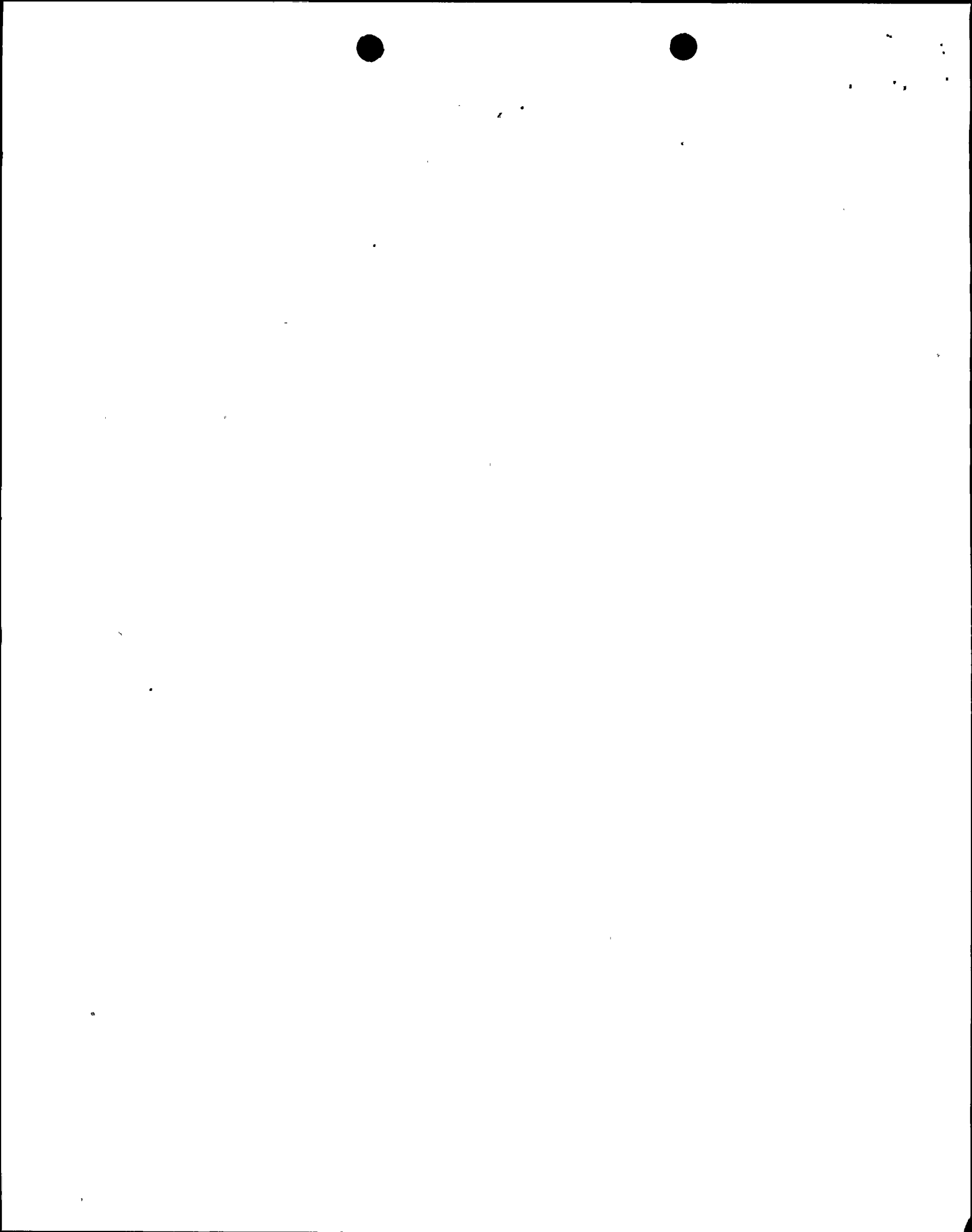
BALL VALVE OPEN

FOOTPRINT STRESS DIAGRAM

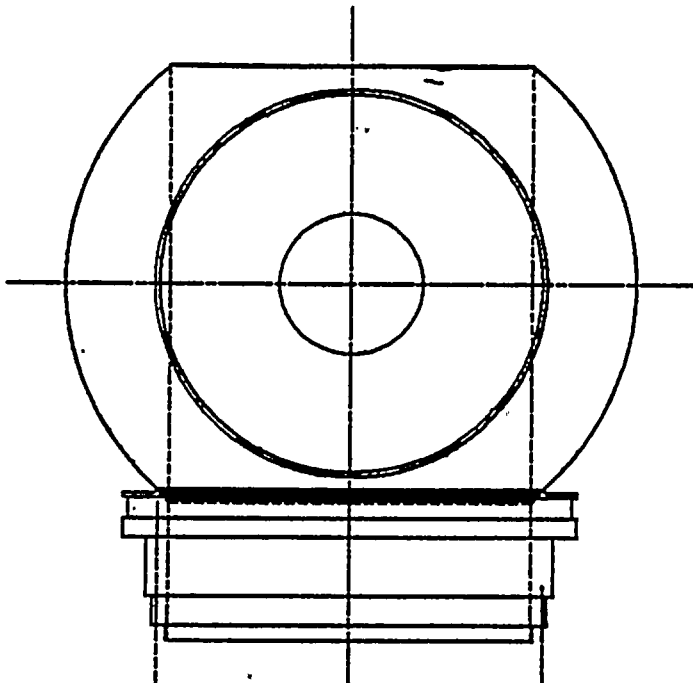


BALL VALVE AT 12°

FOOTPRINT STRESS DIAGRAM



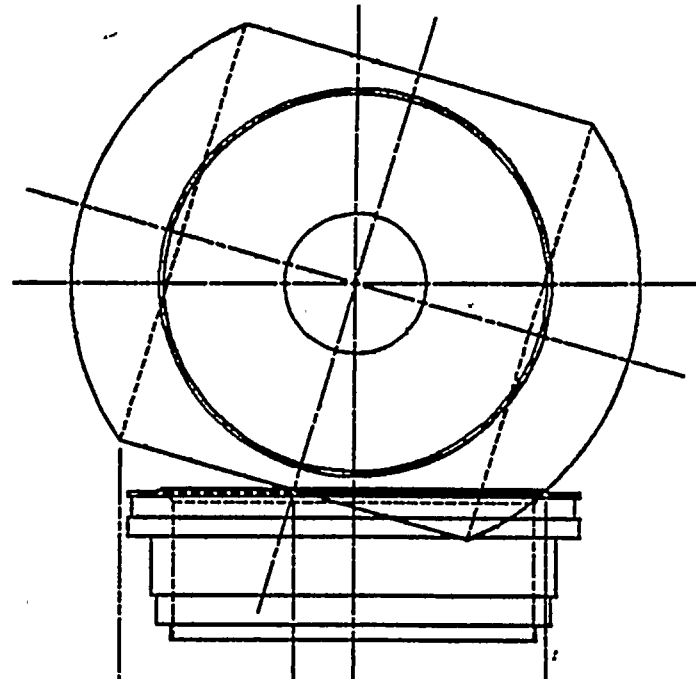
FOOTPRINT STRESS ON BALL



BALL VALVE OPEN

0.24 KSI

FOOTPRINT STRESS DIAGRAM



BALL VALVE AT 12°

46.4 KSI ORIGINAL SYSTEM

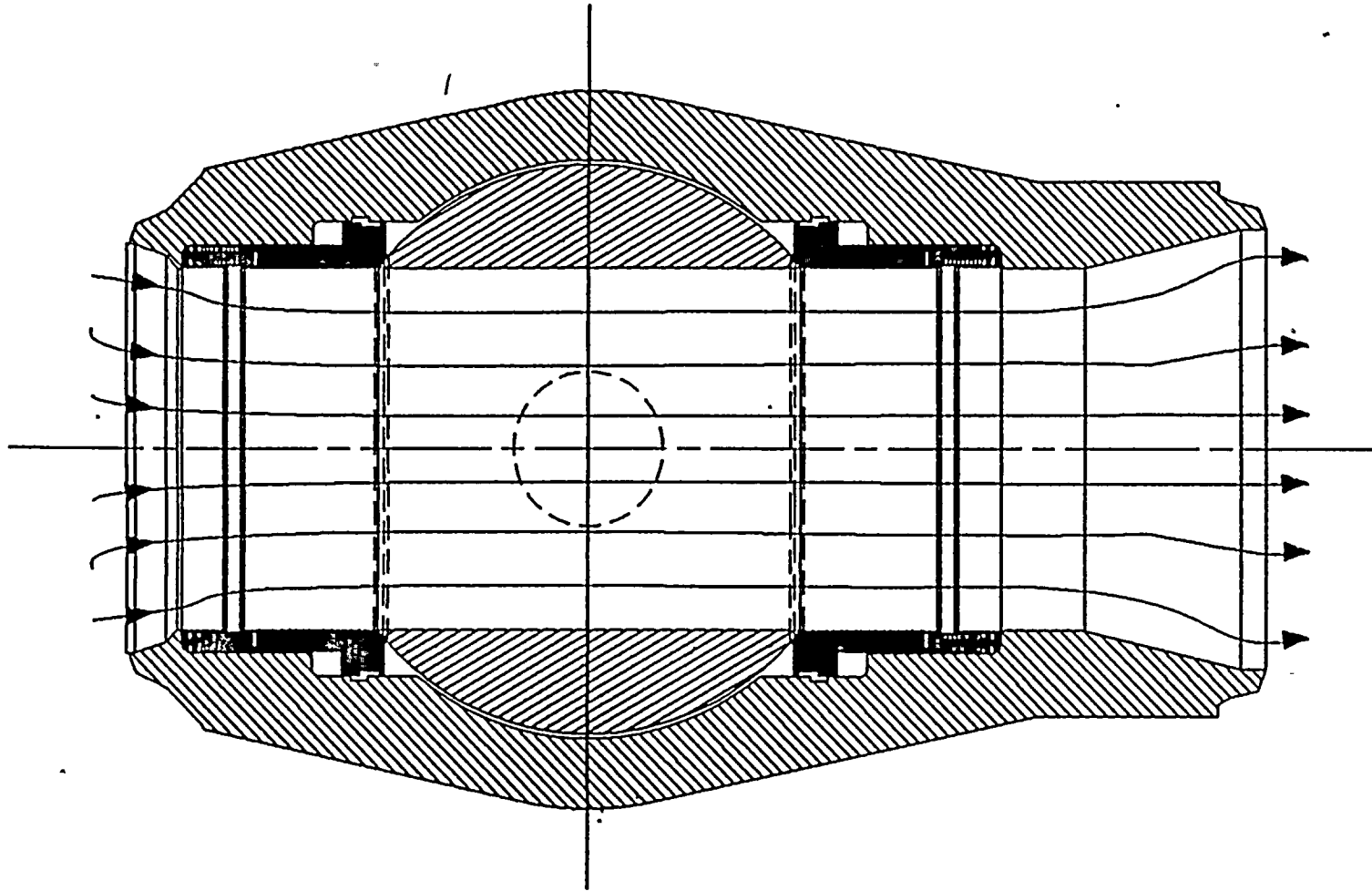
☉ BALL

FOOTPRINT STRESS DIAGRAM

$$\sigma = \frac{6.9 \times .74}{2 \times .055} = 46.4 \text{ Ksi}$$



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STEAM FLOW—
VALVE FULLY
OPEN



VALVE CLOSING DIRECTION

CONTACT STRESS 560 PSI

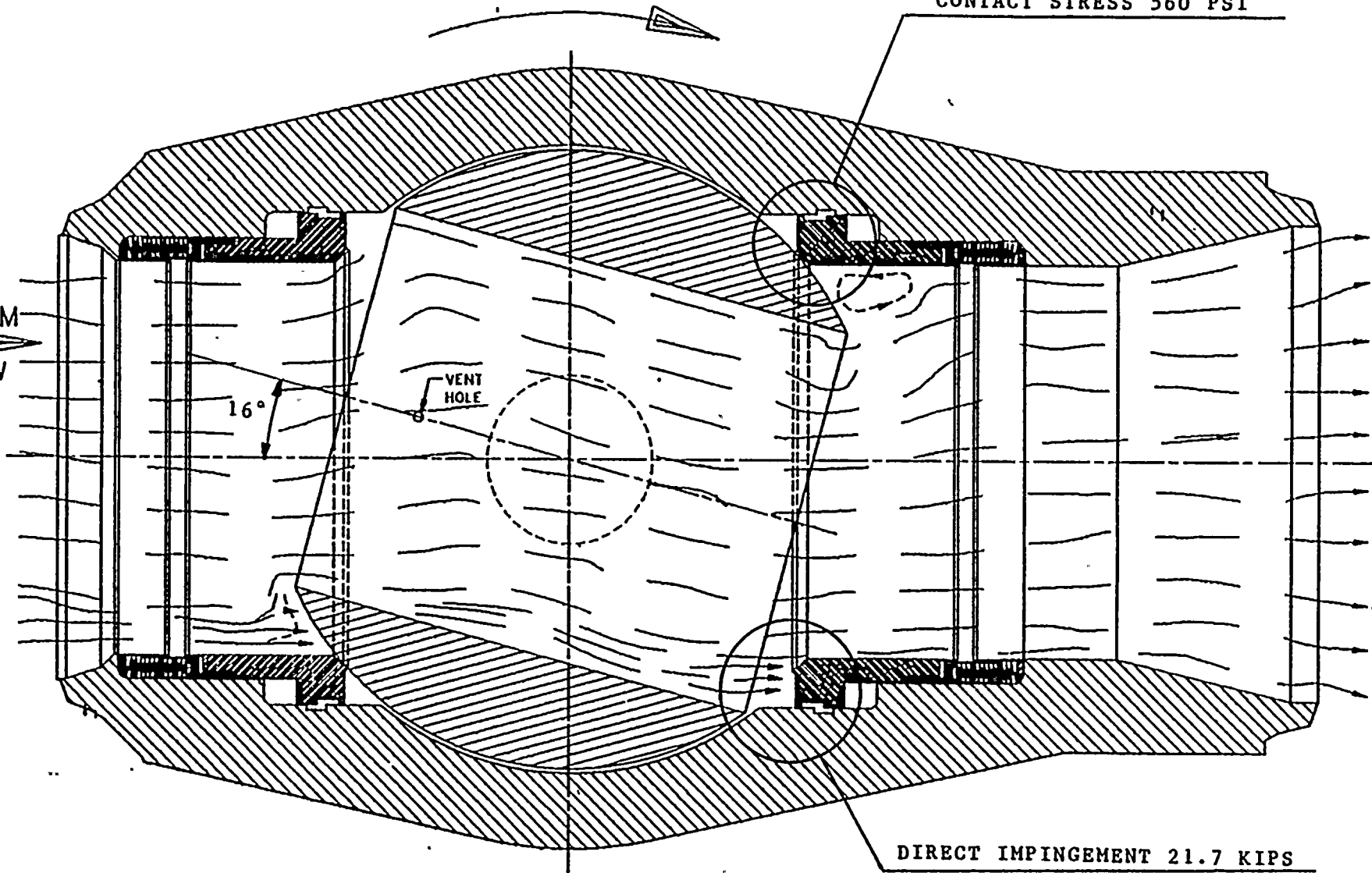
STEAM
FLOW

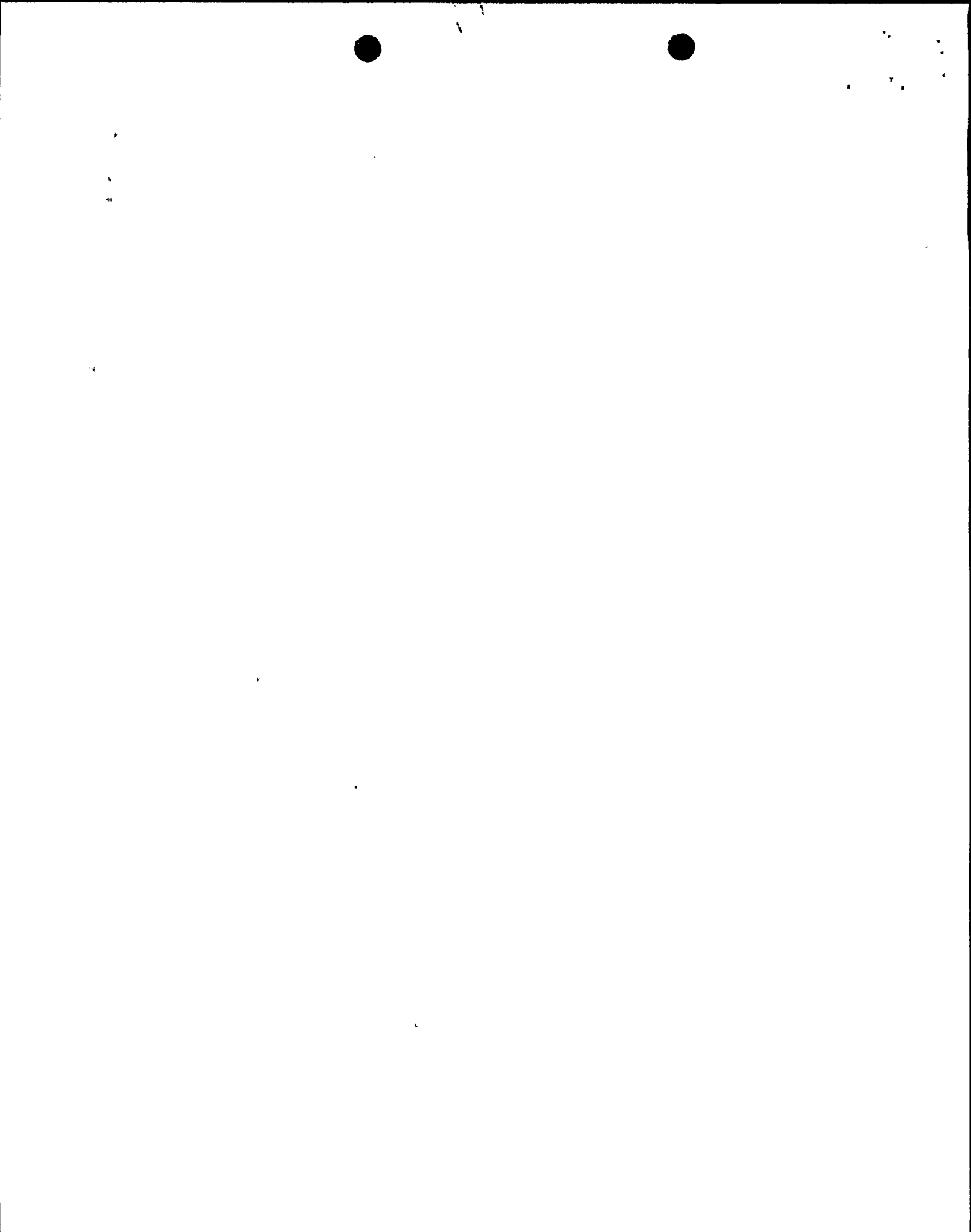
16°

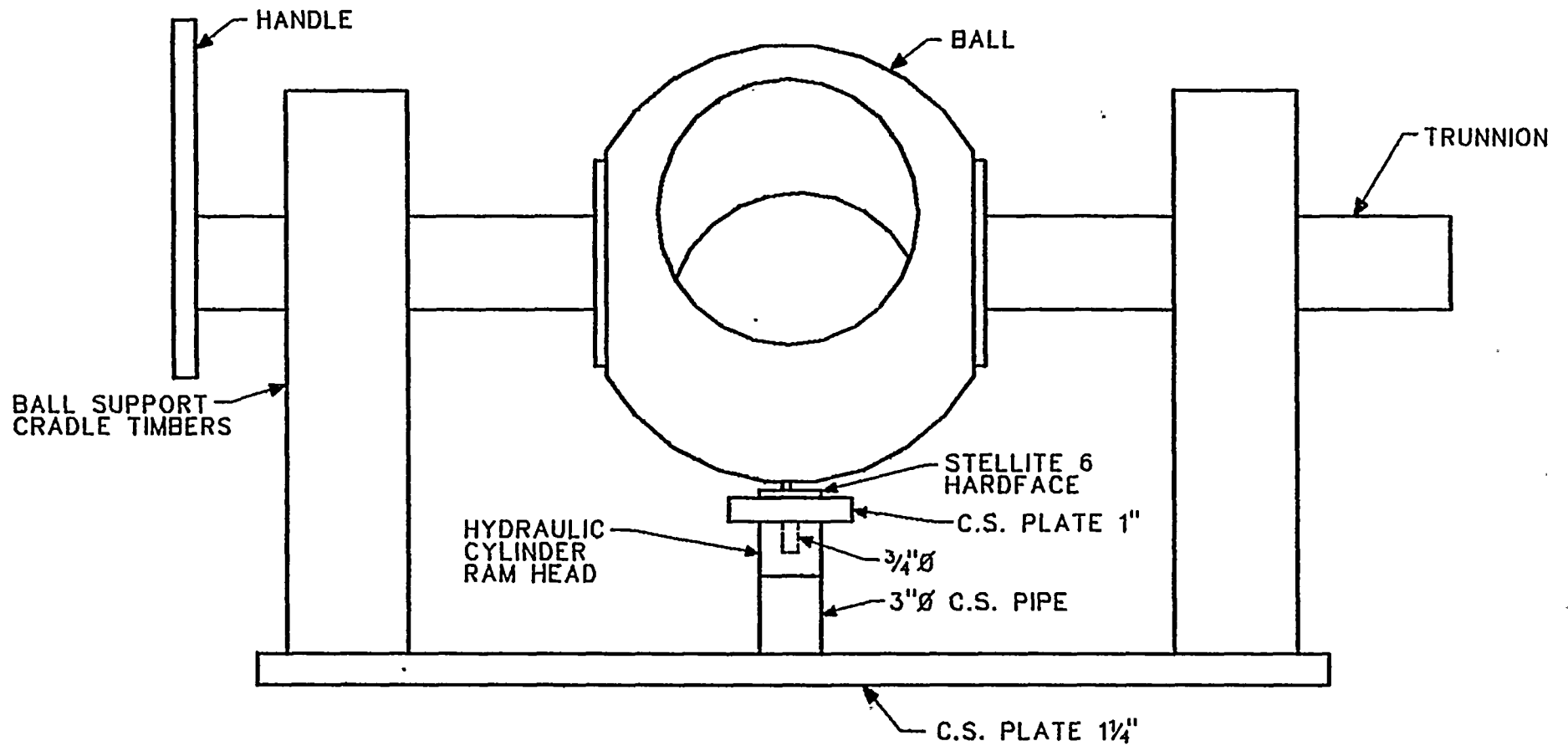
VENT
HOLE

DIRECT IMPINGEMENT 21.7 KIPS

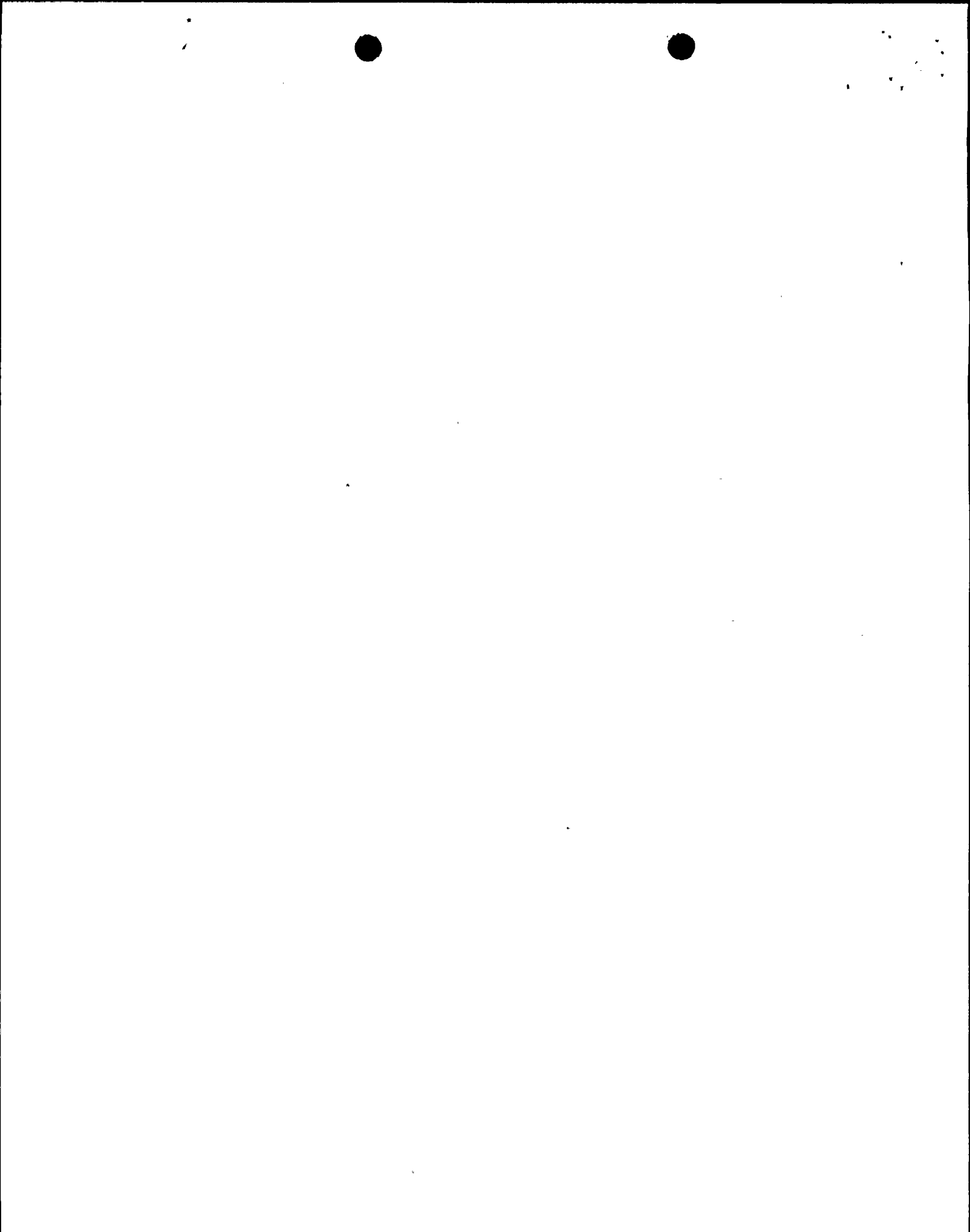
VALVE PARTIALLY CLOSED







MOCK UP
 FRICTION
 TEST



56,000 PSI BALL PRESSURE

SEAT AREA - .06 IN SQ.
TEMPERATURE - 450°F

NUMBER OF STROKES

MSIV BALL SURFACE

SIMULATED SEAT

10

DARKENED CONTACT AREA,
SLIGHT WEAR

POLISHING

20

VISIBLE WEAR, SOME
TRANSFER OF MATERIAL

VISIBLE WEAR

30

SMEARING, POCKMARKS
GRAINY SURFACE APPEARANCE

POCKMARKS
SCRATCHES

40

MORE WEAR, SIGNS OF
FRACTURE CRACKS
ACROSS WEAR SURFACE,
LAYERED TEXTURE TO SURFACE

MORE WEAR
MATERIAL REMOVED

50

WC FAILURE - COATING
FLAKED OFF

MORE WEAR



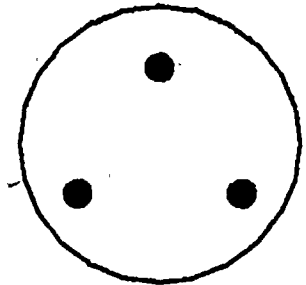
3,500 PSI BALL PRESSURE

SEAT AREA - .06 IN SQ.
TEMPERATURE - 65°F

<u>NUMBER OF STROKES</u>	<u>MSIV BALL SURFACE</u>	<u>SIMULATED SEAT</u>
15	NO WEAR BLACK LINE INDICATING CONTACT AREA	NO WEAR CONTACT AREA POLISHED
45	NO CHANGE	NO CHANGE
75	NO CHANGE	VISIBLE WEAR SCRATCHES & PITTING
125	ROUGHER SURFACE	WEAR HAS INCREASED
175	SHINY AREAS POSSIBLE TRANSFER OF SEAT MATERIAL TO THE BALL	WEAR ON SEAT HAS SLOWED DOWN
225	WEAR RATE HAS SLOWED DOWN - AMOUNT OF WEAR WOULD REQUIRE RELAPPING OF THE WC COATING	SAME AS ABOVE



LOAD APPLIED THROUGH
HYDRAULIC ACTUATION



A-A

ROTATES 90°
50 FPM

VERTICAL
MOVEMENT

FIXED PLATE OF TEST MATERIAL

UNION CARBIDE
WEAR TEST
MACHINE



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SUMMARY - COEFFICIENT OF FRICTION

- REQUIRED TO INITIATE "ROCKING"
BALANCED SPRINGS .4 - .5
- UNION CARBIDE TEST RESULTS .3 - .5
- THEREFORE, "ROCKING" OCCURS - BALANCED
SPRINGS
- REQUIRED TO INITIATE "ROCKING"
MODIFIED SPRINGS .7 - .8
- THEREFORE, "ROCKING" WILL
NOT OCCUR - MODIFIED SPRINGS



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- FAILURE MECHANISM OF TUNGSTEN CARBIDE COATING

- DURING INITIAL BALL CYCLES STELLITE FROM SEAT DEPOSITS ON CARBIDE COATING

- AT HIGH LOADS AND ADDITIONAL CYCLES, STELLITE ON SEAT COLD WELDS TO STELLITE PREVIOUSLY DEPOSITED ON BALL

- WITH CONTINUED CYCLING, TUNGSTEN CARBIDE COATING SPALLS FROM ITS LOCATION ON BALL



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ATTRIBUTE

NEW BALL

RECOATED BALL

BALL MATERIAL

316 SS CASTING
EXTENSIVE WELD REPAIRS
SOL'N ANNEAL AFTER REPAIRS

ORIGINAL CASTING USED
MINOR ADDITIONAL WELD REPAIRS
NO SOL'N ANNEAL AFTER REPAIRS

HARDFACING
MATERIAL

HAYNES 25 BY SAW
WELD REPAIRS BY GTAW
NO HEAT TREATMENT
.080 TO .100 FINAL THICKNESS
FINAL SURFACE GROUND
FINAL PT

ORIGINAL DEPOSIT USED
WELD REPAIRS BY GTAW
NO HEAT TREATMENT
.076 TO .097 FINAL THICKNESS
FINAL SURFACE GROUND
FINAL PT

TUNGSTEN CARBIDE
COATING MATERIAL

APPLIED BY UNION CARBIDE
SURFACE PREP BY BLASTING
APPLIED BY D-GUN
0.010 MIN THICKNESS
FINAL SURFACE GROUND
LAPPED TO SEAT IN SHOP
LAPPED TO SEAT IN FIELD

APPLIED BY UNION CARBIDE
SURFACE PREP BY BLASTING
APPLIED BY D-GUN
0.010 MIN THICKNESS
FINAL SURFACE GROUND
LAPPED TO SEAT IN SHOP

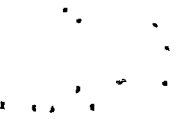


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SCHEDULE OF REPAIRS

<u>SERIAL NUMBER</u>	<u>COATING REMOVED</u>	<u>SURFACE PREPARATION</u>	<u>COATING REAPPLIED</u>	<u>SEAT LAPPING</u>	<u>AT SITE</u>
12	X	X	X	X	10/15(A)
8	X	X	X		10/16(S)
4	X	X			10/20(S)
2	X				10/22(S)
6	X				10/25(S)
7	X				10/29(S)
3	X				10/31(S)
16					10/27(S)



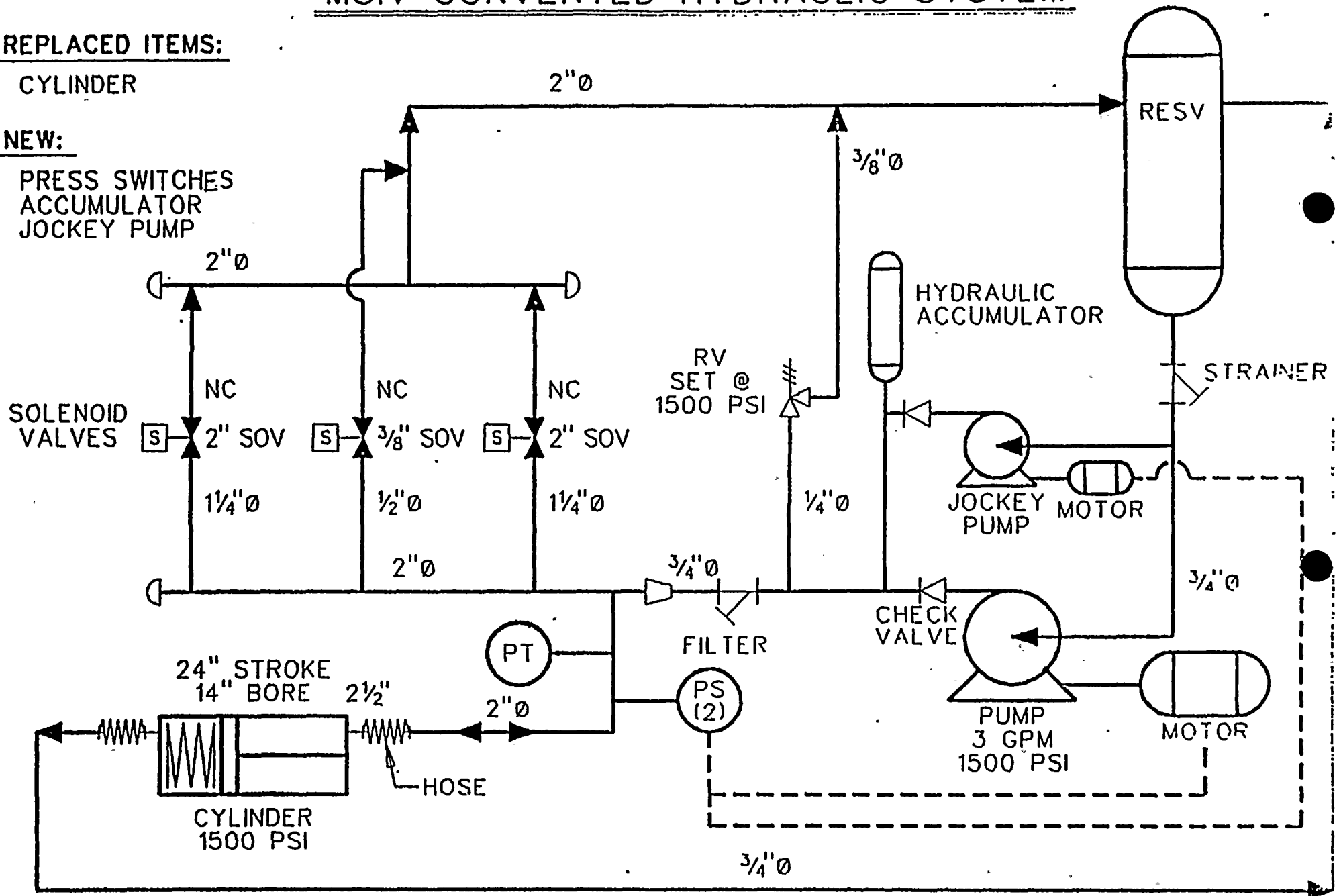
MSIV CONVERTED HYDRAULIC SYSTEM

REPLACED ITEMS:

CYLINDER

NEW:

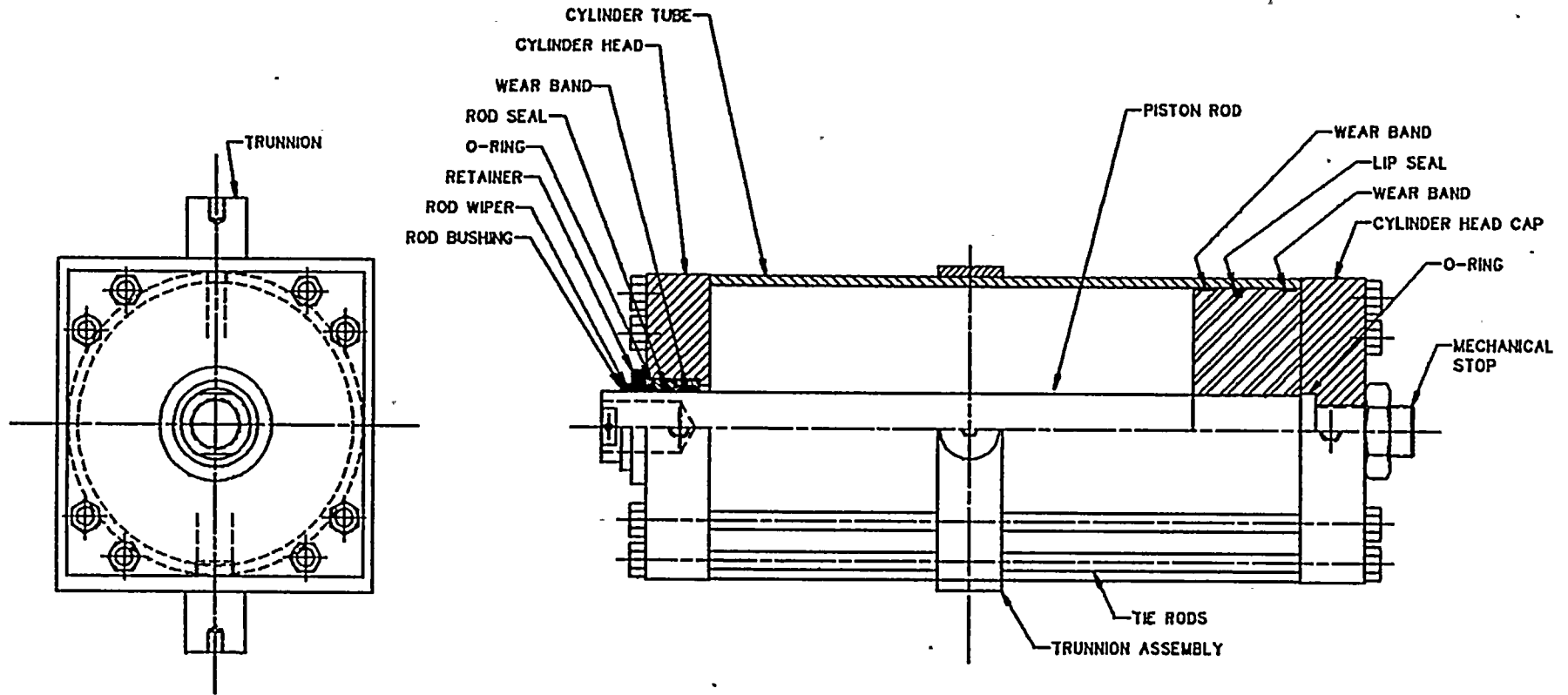
PRESS SWITCHES
ACCUMULATOR
JOCKEY PUMP





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HYDROLINE HYDRAULIC CYLINDER





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HYDRAULIC CYLINDER ENHANCEMENT

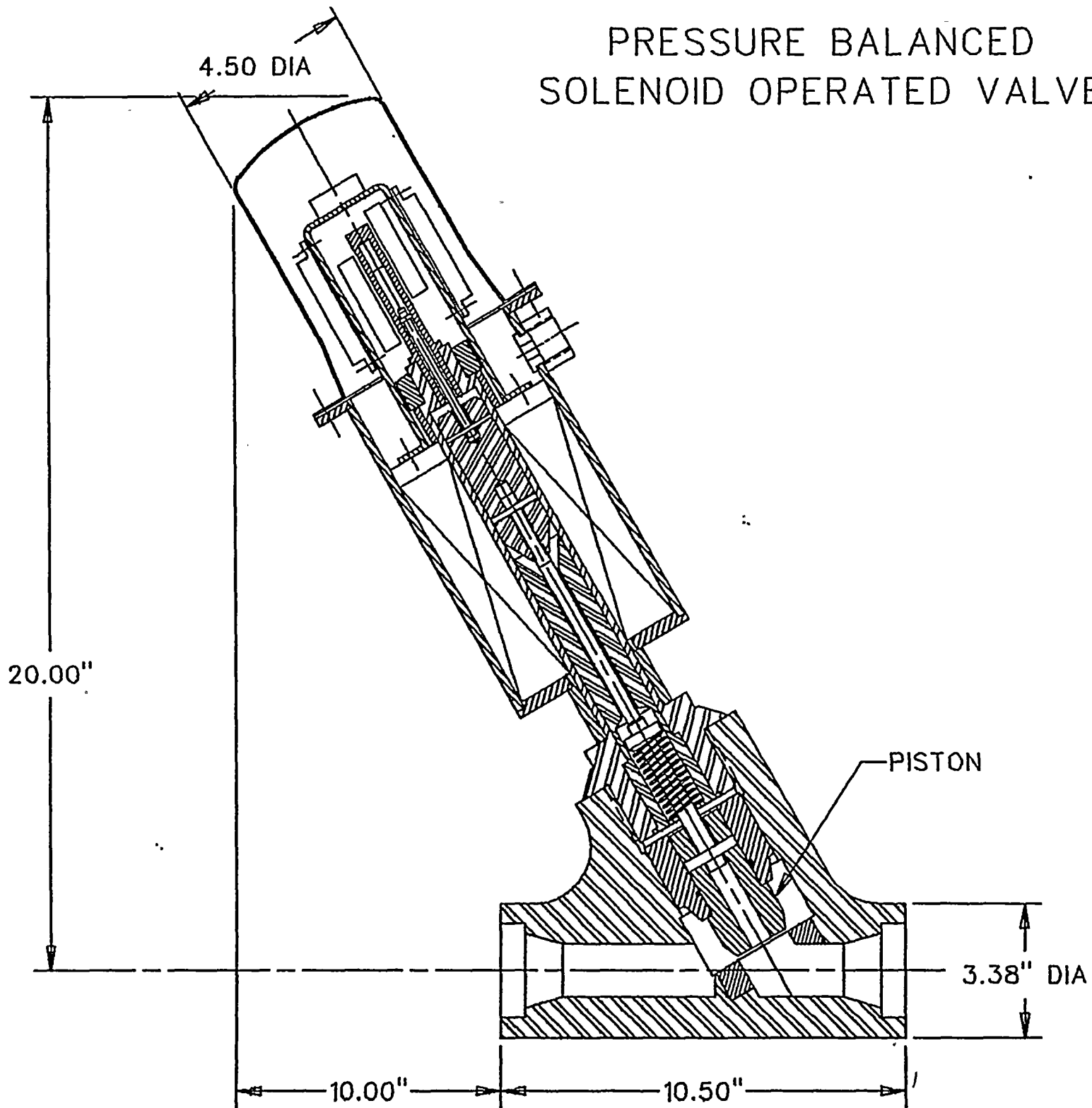
- MODIFY THE EXISTING CYLINDER DESIGN
 - ADDED MECHANICAL STOP TO ESTABLISH FULL OPEN POSITION
 - ADDED LIP SEAL TO PISTON FOR LEAKAGE CONTROL

- PROOF TESTING OF HYDRAULIC CYLINDER
 - HYDRO TEST TO 2250 PSI
 - CYCLE 100 TIMES FOR BREAK-IN
 - CYCLE 5 TIMES UNDER LOAD MAINTAINING 1500 PSI
 - PRESSURIZE CYLINDER AND MEASURE LEAKAGE < 1/2 CUBIC INCH PER MINUTE
 - ISSUE TEST REPORT
 - SWEC POA WITNESS TESTS



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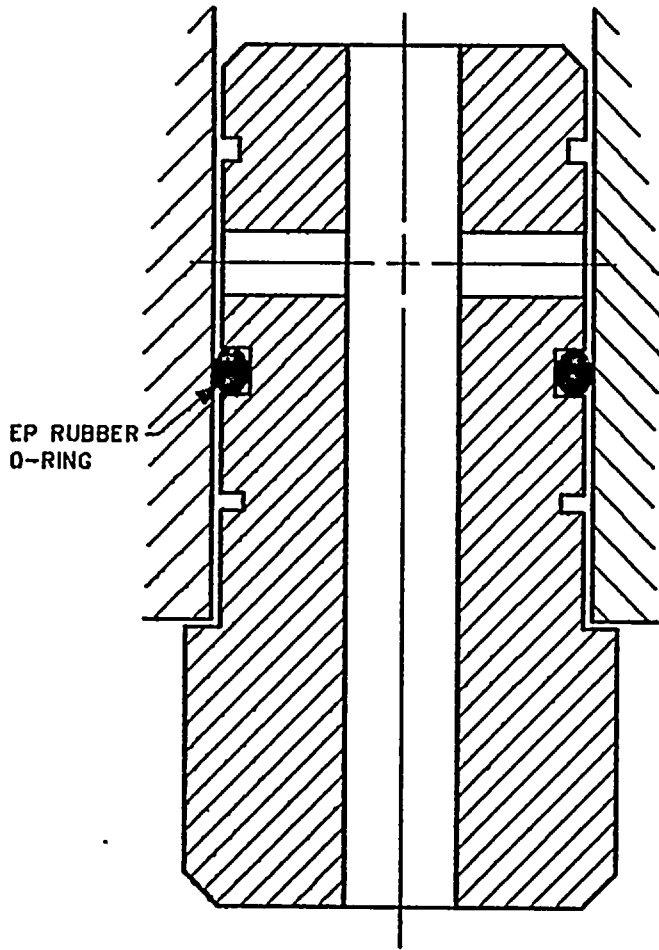
PRESSURE BALANCED SOLENOID OPERATED VALVE



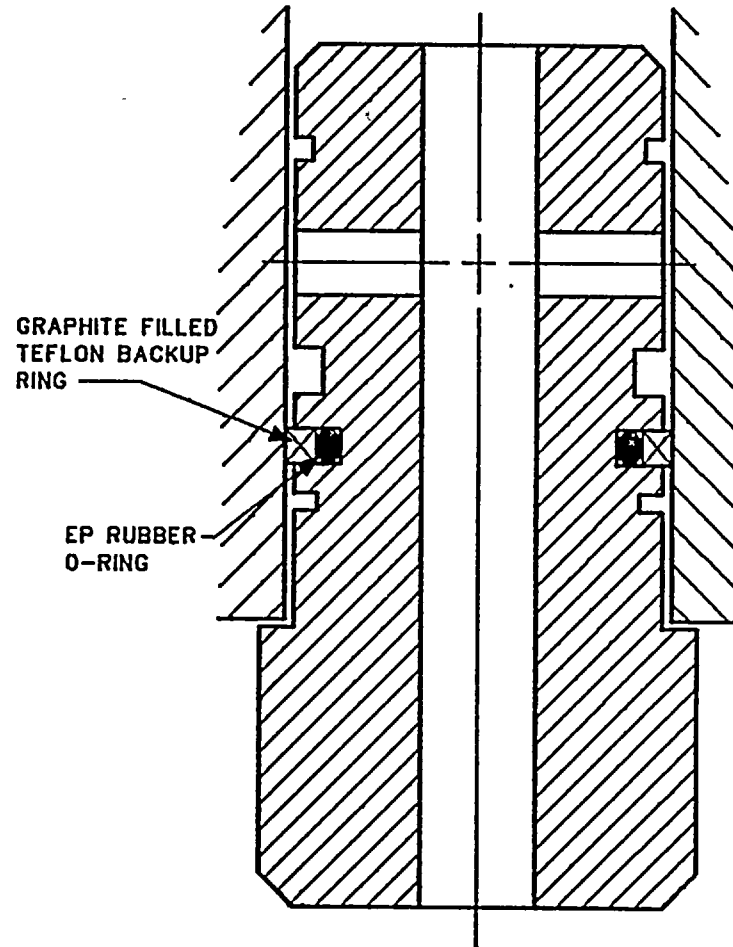


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SOV MODIFICATIONS

- TEST RESULTS INDICATED EXISTING 'O'RING NOT SUITABLE
 - 'O'RING WEDGED AT PRESSURE
 - DELAY IN ACTUATION AT PRESSURE

- ADDITIONAL MATERIALS TESTED
 - TEFLON
 - RADIATION CONCERN
 - MECHANICAL STABILITY CONCERN

 - TEFZEL
 - TOO HIGH COEFFICIENT OF FRICTION

 - GRAPHITE FILLED TEFLON
 - ENVIRONMENTALLY QUALIFIED FOR > 25 YRS
 - NO DELAY IN ACTUATION



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TESTING RESULTS

- CYCLE TIMES

- 20 HOURS

- LEAKAGE

- SOV

- UNDETECTABLE

- HYDRAULIC CYLINDER

- < 1/2 CU. IN. PER MIN.

- RESPONSE TIME

- SOV TRIP WITHIN .5 SEC.

- MSIV CLOSURES WITHIN 3 TO 5 SEC. CLOSURE REQUIREMENT



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TARGET SCHEDULE

ADDITIONAL EQUIPMENT	ON SITE
NEW HYDRAULIC CYLINDER	10/15
NEW SEALS FOR SOV	10/15
INSTALL EQUIPMENT	10/15 - 10/21
TESTING	10/21 - 11/3 -
MSIV'S ACTUATORS COMPLETE	11/5



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CONCLUSION - LEAKAGE PROBLEMS

- SUFFICIENT UNDERSTANDING OF ROOT CAUSE TO DEVELOP FIX FOR OPERATING CYCLE

- ANALYSIS OF OPERATING CONDITIONS
 - DO NOT ADD SIGNIFICANTLY TO SEAT "ROCKING"

 - PROTOTYPE TESTING WILL CONFIRM ANALYSES OR IDENTIFY PROBLEMS EARLY IN OPERATING CYCLE

 - MID-CYCLE "TYPE C" TESTING PROVIDES ADDITIONAL ASSURANCE

- FINAL FIX TO BE THOROUGHLY DEVELOPED AND TESTED BEFORE FIRST REFUELING OUTAGE

- DESIGN AND PROCUREMENT FOR CONTINGENCY PROGRAMS CONTINUES ON AN EXPEDITED BASIS



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CONCLUSION - ACTUATOR MODIFICATIONS

- FIRST CYCLE FIX - MODIFICATION OF HYDRAULIC SYSTEM
 - ACCEPTABLE MATERIALS
 - VERIFICATION TESTING IN SHOP
 - PRELIMINARY AND START-UP TESTING WILL COMPLETELY VERIFY OPERABILITY

- MECHANICAL LATCH BEING DEVELOPED AS PART OF LONG RANGE PROGRAM



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Docket No. 50-410

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Docket No. 50-410
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MHaughey

MEMORANDUM FOR: Elinor G. Adensam, Director
BWR Project Directorate No. 3
Division of BWR Licensing

FROM: Gus Lainas, Assistant Director
Division of BWR Licensing

SUBJECT: NINE MILE POINT UNIT 2 SEQUENCE CHANGE IN
REFURBISHING MSIVS (TAC # 63454)

In Supplement 5 to the SER dated October 1986, we stated that the four main steam isolation valves (MSIVs), with modified seat spring configurations and recoated tungsten carbide balls, used for secondary containment integrity prior to criticality will have deactivated, unmodified actuators. The licensee, in letters dated November 11 and 17, 1986, now proposes to remove the actuators from the MSIVs which are being used to isolate secondary containment, in order to begin modifications to these actuators while secondary containment is still required. Upon completion of the modifications the actuators will be reinstalled on the valve bodies. The MSIVs will remain in the closed position during the entire time that the actuators are being removed, modified, and reinstalled. Also, inadvertent ball movement is not expected while the actuators are not in place because of the high seat spring force on the ball and the large torque required to rotate the ball. The torque needed to rotate the ball is estimated by the licensee to be a minimum of 50,000 in-lb.

We, therefore, have reasonable assurance that the MSIVs will remain in the closed position, thereby maintaining secondary containment integrity during actuator removal, modifications, and reinstallation.

Our SALP is enclosed.

Original
G.

Gus Lainas, Assistant Director
Division of BWR Licensing

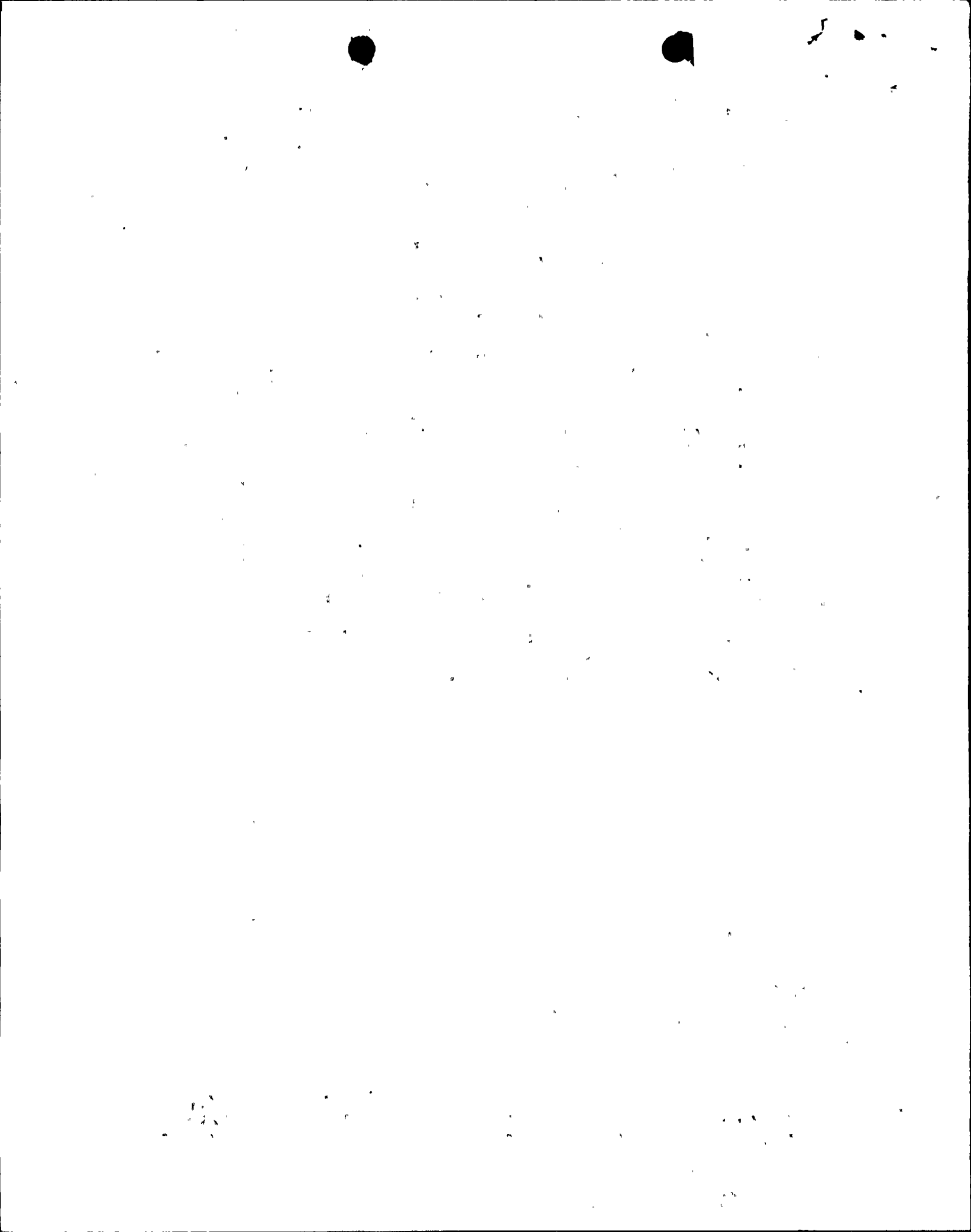
Enclosure: As stated

cc: R. Houston
J. Calvo
J. Mulhoun
R. Bosnak
M. Haughey
T. Collins

Contact:
F. J. Witt, NRR
X29440

PSB *	*SEE PREVIOUS CONCURRENCE PAGE		
FJWitt/hmc	SL:PSB *	BE:PSB	SL:RSB <i>to</i>
11/17/86	JKudrick	LHuiman	TCollins
	11/18/86	11/18/86	11/18/86
			AD/BWR:DBL
			GLainas
			11/19/86

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SALP INPUT FROM THE PLANT SYSTEMS BRANCH FOR NINE MILE POINT, UNIT 2
TAC #63454

A. Licensing Activities

1. Management Involvement in Assuring Quality

During the review process, there was early evidence of valve problems at another plant. Management involvement should have prevented the issue from occurring, or occurring so late in the licensing process by getting involved early to fix the problem.

Rating: 3

2. Approach to Resolution of Technical Issues from a Safety Standpoint

Timely resolution of issues was experienced during conference calls with knowledgeable applicant personnel.

Rating: 2

3. Responsiveness to NRC Initiatives:

Applicant provided technically sound and thorough responses and timely resolution of issues.

Rating: 1

4. Staffing (Including Management)

Rating: N/A

5. Reporting and Analysis of Reportable Events.

Rating: N/A

6. Training and Qualification Effectiveness.

Rating: N/A

7. Overall Rating for Licensing Activity Functional Area.

Rating: 2

