SITE PROBLEM

REPORT TRANSMITTAL

**** CLEARED ****

GPU EXHIBIT 491 FOR IDENT.
3/23/82 H. A. RUDOLPH

FILE: 13-14-3B6
CONTRACT NO: 620-00 14
SPR 386
TITLE Electrostatic Relief Valve Modification
DATE: 3/27/78
STATUS CODE C

TO: Change Control For Distribution
S. H. Klein - Quality Assurance
Central Engineering Files
O. Putzbruker - Task Engineer
J. Lauer - Project Manager

_____ L. C. Rogers - MET. ED.
_____ F. R. Faist - TOLEDO
_____ J. R. Bohart - Intl. Support
_____ J. L. Donnell - OPR
_____ B. A. Karrasch - Plant Integration

4/27/78

Attached is one copy of Site Problem Report No. 386 which was processed on Contract 620-00 14. Future contracts have been reviewed for the potential of a similar problem. This problem is/is not considered applicable to other contracts _____.

REMARKS: _____

B. H. Klein
NUCLEAR SERVICE SUPPORT ENGINEER

CLEARED

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SITE PROBLEM REPORT — BABCOCK & WILCOX — SPR #386

CUSTOMER: Toledo Edison Company	ORIGINATOR / DATE: F.R.Faist 11/2/77	DOC. ID. CONT. NO.: 13 - 620-0014 — SPR NO.: 386 — REV. NO.: 0
VENDOR: Crosby	P.A. NO.: 023 090 LS	PART NO./TAG NO.: 28/041/005 — GROUP NO. — SEQ. NO.
TITLE (MAX 30 CHARACTERS): Electromatic Relief Valve Modification		PROBLEM CONTACT: J. E. Anderson

PROBLEM IDENTIFICATION

DESCRIPTION OF PROBLEM:

See attached sheet.

STATUS-ACTION TO DATE, INCLUDING PERSONS CONTACTED: Lynb. Engineering is aware of this problem. S. A. Lamanna, Lynb., and J. A. Lauer, Proj. Mgm. know of this problem. T. D. Murray and B. R. Beyer, TECo, are also aware of the problem.

FURTHER ACTION RECOMMENDED BY SITE PERSONNEL: 1. Lynb. Engineering should review Crosby installation, operating and maintenance instructions No. I - 1115, Sect. 4.2 with the Crosby vendor to determine if these instructions will give the proper pilot valve stem adjustment when actuated. 2. Engineering to provide additional recommendation and concurrence with action taken.

RESOLUTION

RESOLUTION: Engineering Organization with recommended changes per conversations with Mr. Dick Hohenbaken. The instruction manual section 4.2 will be revised by Crosby. A letter under Bill will be given copies of the revised pages for the I.M. Steve Lamanna.

PREPARED BY	DATE	APPROVED BY	DATE
Doug Halstead	11-4-77	J. A. Lauer	11-7-77
F. Pattan & K. Edison	11-7-77		

COST CATEGORY	FIELD CHANGE REQ	F.C.A. NO.	SIGNIF. DEFICIENCY
☐ NORM ☒ OTHER	☐ YES ☒ NO	08- N/A	☐ YES ☒ NO

COMPLETION

SITE COMPLETION REPORT: SOM Letter #352, copy attached was written to TECo. Instruction manual is correct and will not be revised. Additional adjustment check provided. Eng. concurred with Crosby/TECo actions.

DEVIATIONS: ☒ NONE — SPR REV NO. ☐

DATE COMPLETED: 3/21/78

COMPLETED BY: F. R. Faist — DATE: 3/21/78

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F. R. Faist — DATE: 3/21/78

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Babcock & Wilcox

SPR #386
620-0014
11/2/77

Description of Problem:

On 10/13/77, the electromatic relief valve was tested after the completion of repairs as outlined in SPR #369. The valve was cycled six times successfully. On the seventh test cycle the pilot valve did not close. The ERV was isolated and permitted to cool down while waiting for Crosby representatives.

Crosby rep., Walt Conroy, arrived and the pilot valve assembly was removed from the main valve. Disassembly of the pilot valve revealed that the pilot valve stem had stuck open due to the close tolerance causing a binding condition between the O.D. of the stem and the I. D. of the pilot valve nozzle. Also, a small metal particle was found in the pilot stem/nozzle area. Subsequent cleaning of the inlet piping to the ERV revealed this same type of metal particles.

The Crosby representative furnished a detailed drawing of the pilot valve stem requiring a diameter of $\frac{.374}{.373}$. This was changed to read $\frac{.373}{.372}$ diameter by the Crosby rep., and the stem was modified accordingly by TECo Maintenance under the direction of the Crosby rep. This modification resulted in opening the clearance between the stem and the nozzle thus eliminating the binding. The nozzle was also reamed out with a reamer the same size, no material was removed.

All parts were cleaned and assembled. The solenoid linkage was adjusted to drop the adjustment bolt more squarely on the disc actuator. In addition, the adjustment bolt was positioned to move the pilot valve stem off the seat a maximum of .125". It had been moving off the seat some .375".

The pilot valve was tested without pressure by actuating the solenoid three times. The valve was tested again twice with 5 or 6 seconds between tests. This was followed by testing the valve five more times assuring actuation each time by a one minute delay between tests. The valve was tested with a pressure of 1100 psig on the second and third occasion.

JEA:nlf

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ERV MODIFICATION.

TITLE O

AH Recktree SI
20 SPR #386
620-0014

Suggested test sequence
Leave block valve closed RC11
Test electrical solenoid circuit 3 times

Open ~~[illegible]~~ RC11
~~Follow~~ twice for 5-6 seconds of ~~[illegible]~~ take it
RCS + P.T. on
Do not go below 600 psi on RCS if
Press should be as near 1500 psi as possible
Will test at 1150 because of heat trace
limitations -

Stroke 5 times assuming actuation ~~[illegible]~~ -1 min
closing each time - drain ~~[illegible]~~
in between stroke to some closing
~~[illegible]~~
Stroke 5 times again same as above

NRC wants one cycle at temp + press

~~835 ... CONFIDENTIAL COUN...~~
~~315 082 ...~~

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Crosby - Balt. Conway
Exit Interview

10-15-77

Accomplished things planned and discussed on 10-14-77.

Walt will include in his report recommendation to revise method of adjusting solenoid to get ≈ 0.100 pilot valve stroke.

Crosby ~~[illegible]~~ Engineering will submit letter on change on pilot valve stem diameter.

[illegible]
10/15/77

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NUCLEAR POWER STATION
MAINTENANCE WORK ORDER

Continuation sheet for No. 3 and No. 14 ...

FUNCTIONAL ACCOUNT NO.	EQUIPMENT FILE NO.	MWO NO.
3 5 8 3 3 0 0 5		77-2120

1. EQUIPMENT/INSTRUMENT NAME AND NO.: PRZR ELECTROMAGNETIC RELIEF VALVE RC2A ☐ MWO NO. ☐ OTHER

2. MWO INITIATED BY: ☐ WRI ☐ AIR NO. ☐ NCR No.

3. DESCRIPTION OF PROBLEM/MALFUNCTION:
RC2A STUCK OPEN. TROUBLESHOOT AND REPAIR AS NEEDED. WORK WITH SERVICEMAN ON REPAIRS

4. WORK CLASSIFICATION: ☒ Normal ☐ Immediate ☐ Emergency ☐ Outage ☐ Preventive Maintenance Frequency Scheduled For
☐ Routine ☐ Non-Routine ☒ Nuclear Safety Related/ASME ☐ Non-Nuclear Safety Related

5. REP REQUIRED: ☒ Yes ☐ No
6. CLEANLINESS INSPECTION REQUIRED: ☐ Yes ☒ No
7. NPRD REQUIRED: ☐ Yes ☒ No

8. PROCEDURE/INSTRUCTION: Number MEC-1 Revision
9. APPROVED BY MAINTENANCE/I&C ENGINEER: [signature] DATE 9/26/77

10. REVIEWED BY QUALITY CONTROL: [signature] for [illegible] — DESIGNATED INSPECTOR (Name): Rhodes / Q.C. Section — MIN. LEVEL: [illegible]
SPECIAL INSTRUCTIONS: Notify Q.C. prior to starting work.

11. ASSIGNED RESPONSIBILITY: Hassell / Mrosselhech
12. PERMISSION TO COMMENCE WORK: [signature] DATE 9/27/77

13. DESCRIPTION OF WORK PERFORMED:
Disassembled valves replaced parts & gaskets. Tested valves - was not able to cycle valve due to no [illegible] Ratt & Vr.H.H. When valve was cycled with pressure pilot valve stuck again on the 5th blow.

14. TEST EQUIPMENT I.D. NO.: [illegible] — CALIBRATION DUE DATE: [illegible] 3-21-78
15. SPARE PARTS REQUIRED: ☒ Yes ☐ No (List MIT or P.O. on [illegible])

16. MAINTENANCE COMPLETED AND INSPECTED PER REQUIREMENTS OF AD 1544.00
DESIGNATED INSPECTOR: [signature] DATE 10/17/77 — RESPONSIBLE FOREMAN: [signature] DATE 10-17-77

17. TESTING COMPLETED & RETURNED TO SHIFT FOREMAN/FOREMAN CONTROL
TEST NO. — SHIFT FOREMAN/FOREMAN: [signature] DATE [illegible]

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18. ACTION ITEMS/FOLLOW UP
☐ NPRD Form Completed (If required) ☒ None Required
☒ Initiated Followup MWO NO. 77-2256 ☐ Other
☐ Initiated AIR/DVR NO.

19. MWO REVIEWED AND APPROVED
MAINTENANCE/I&C ENGINEER: [signature] DATE 10/14/77

COPIES: WHITE - Routed to be completed/procedure; GREEN - Shift Foreman

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FUNCTIONAL ACCOUNT NO.

EQUIPMENT FILE NO.

MWO NO. 77-2256

1. EQUIPMENT/INSTRUMENT NAME AND NO.: Pressurizer Electromatic Relief Valve

2. MWO INITIATED BY: ☐ WRI ____ ☐ AIR NO. ____ ☐ NCR No. ____ ☐ MWO NO. ☒ OTHER B. [illegible]

3. DESCRIPTION OF PROBLEM/MALFUNCTION

Remove [illegible] Electromatic Relief Valve [illegible] and [illegible] to [illegible] [illegible] pilot valve. Further [illegible] as instructed by [illegible] Engr. [illegible] Repair as required & Reassemble when instructed.

4. WORK CLASSIFICATION: ☐ Normal ☐ Immediate ☐ Emergency ☒ Outage ☐ Preventive Maintenance Frequency ____ Scheduled For 10/12/77

☒ Routine ☐ Non-Routine ☒ Nuclear Safety Related/ASME ☐ Non-Nuclear Safety Related

5. REP REQUIRED ☒ Yes ☐ No

6. CLEANLINESS INSPECTION REQUIRED ☐ Yes ☒ No

7. NPRD REQUIRED ☐ Yes ☒ No

8. PROCEDURE/INSTRUCTION Number MP1410.02 Revision 0

9. APPROVED BY MAINTENANCE/I&C ENGINEER B. [illegible] DATE 10/12/77

10. REVIEWED BY QUALITY CONTROL [illegible] C. [illegible] DESIGNATED INSPECTOR (Name) Schultz / QC Section MIN. LEVEL E-M II

SPECIAL INSTRUCTIONS Notify [illegible] Prior to Starting Work

11. ASSIGNED RESPONSIBILITY Saunders

12. PERMISSION TO COMMENCE WORK V [illegible] DATE 10/13/77

13. DESCRIPTION OF WORK PERFORMED

Pilot Valve was removed & [illegible] found to be sticking open about 1/16". Stem was cleaned & [illegible] to 0.372 which gives 0.003" clearance in the guide. Seat and disc were lapped. The main disc was checked [illegible] to be free and seating. The inlet line was cleaned to the [illegible] valve. The actuator was adjusted to [illegible] the pilot valve [illegible] opening.

14. TEST EQUIPMENT I.D. NO. MM4.1 CALIBRATION DUE DATE 3-3-78

15. SPARE PARTS REQUIRED ☒ Yes ☐ No (List MIT or P.O. or [illegible])

MAINTENANCE COMPLETED AND INSPECTED PER REQUIREMENTS OF AC 1844 CC

16. DESIGNATED INSPECTOR J. M. [illegible] DATE 10/13/77 RESPONSIBLE FOREMAN [illegible] DATE 10-15-77

TESTING COMPLETED & RETURNED TO SHIFT FOREMAN/FOREMAN CONTROL

17. TEST NO. SHIFT FOREMAN/FOREMAN [illegible] DATE 10/17/77

ACTION ITEMS/FOLLOW UP

18. ☐ NPRD Form Completed (If required) ☒ None Required ☐ Initiated Followup MWO NO. ____ ☐ Other ____ ☐ Initiated AIR/DVR NO. ____

MWO REVIEWED AND APPROVED

19. MAINTENANCE/I&C ENGINEER R. B. 10/18/77

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OPIES: WHITE - Routed to be completed/procedure; BLUE - Maintenance/I&C Office; GREEN - Shift Foreman; YELLOW - Quotations Engineer

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DAVIS-BESSE NUCLEAR POWER STATION
MAINTENANCE WORK ORDER - CONTINUATION SHEET

WO NO.

PAGE 2 of 3

Pilot Weston measurement is 0.372 by micrometer

Disk measurement is 0.375

Valve was tested at 1100 psi 10 times and closed satisfactorily with no leakage noted.

Valve was also tested one time at 2150 psi and closed satisfactorily with no leakage noted.

Valve was also closed and closed once and held the 2150 psi for 5 second blow at 1100 psi 10 times above

BCS
10/14/77

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COPIES:
WHITE - Found to be completed/or needed
BLUE - Shift Foreman
GREEN - Maint. C Office
YELLOW - Operations Engineer
PINK - Operations QA Engineer

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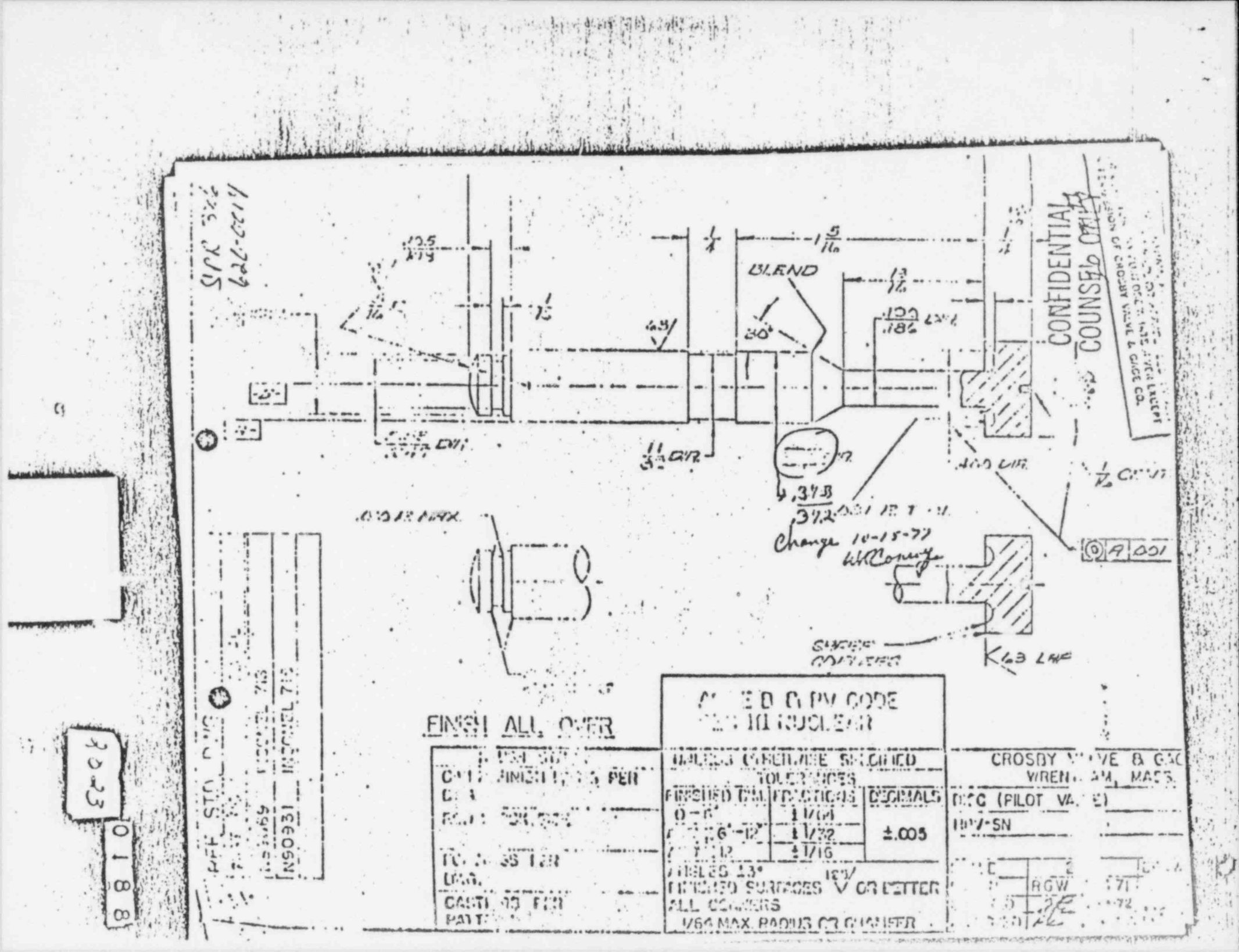
CONFIDENTIAL
BLEND
Change 10-15-77
FINISH ALL OVER
MACHINED SURFACES
TOLERANCES
DECIMALS
±.005
CROSBY VALVE & GAGE
WREN
0188

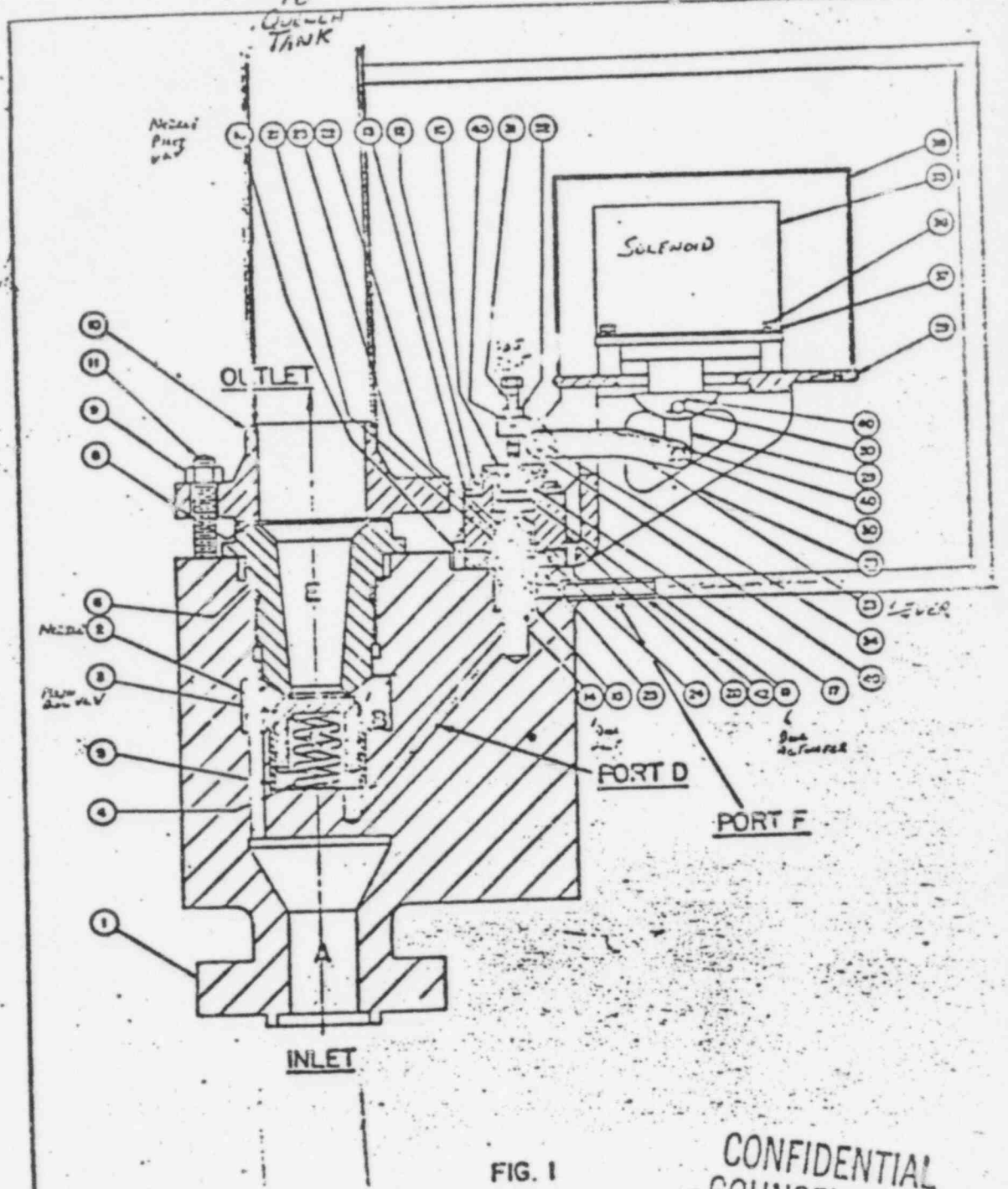

FIG. 1
ASSEMBLY OF PRESSURMATIC VALVE STYLE HPV-SN

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