

LASALLE COUNTY STATION UNIT 1
STRUCTURAL BOLTING TIGHTNESS INSPECTION PROGRAM
FOR CONTAINMENT VALVES

I N S P E C T I O N R E S U L T S
(Inspection Performed July 1, 2, 6, & 7, 1982)

REPORTED BY: E. E. Falb
E. E. FALB
Project Construction Department

REVIEWED BY: D. L. Shamblin
D. L. SHAMBLIN
Site Project Superintendent

LASALLE COUNTY STATION UNIT 1
STRUCTURAL BOLTING TIGHTNESS INSPECTION RESULTS
FOR CONTAINMENT VALVES

MOTOR OPERATED VALVES

NO. OF TIGHTNESS DISCREPANCIES

YOKE/BONNET BOLTING	2
OPERATOR/YOKE BOLTING	2
ESSENTIAL OPERATOR ASSEMBLY BOLTING	1

All discrepancies found (when considered on an individual basis) appear non-significant in respect to satisfactory operation of the valve. All problem bolted connections were at least 75% of specified torque.

At least one bolt was checked with a torque wrench on each bolted connection. If the use of hand tools was required on the other bolts, the torqued bolt was loosened with a hand wrench and then retightened to the same position to give the workman an accurate sense of the amount of force required to properly tighten the bolts with hand tools. This procedure is an improvement over the one outlined in the original inspection program.

SPECIFIC DISCREPANCIES FOUND ON MOTOR OPERATED VALVES

YOKE/BONNET BOLTING:

1E12-FO09 1 of the 4 bolts was found to be marginally under the lowest allowable torque value for proper bolt preload*; 40 ft-lbs. instead of 50 ft-lbs. specified. This equals 95% of the lowest allowable torque value for the total bolted connection.

* value based on a previously determined wrench accuracy within $\pm 5\%$.

1E51-FO63 1 of the 4 bolts was found to be hand tight. This equals 75% of the specified torque value for the total bolted connection.

OPERATOR/YOKE BOLTING:

1B21-FO05 1 of the 4 bolts was found to be hand tight. This equals 75% of the specified torque value for the total bolted connection.

1B21-FO16 1 of the 4 bolts was found to be hand tight. This equals 75% of the specified torque value for the total bolted connection.

ESSENTIAL OPERATOR ASSEMBLY BOLTING:

1WR180 1 of the 4 motor mounting bolts was found to be hand tight. This equals 75% of the specified torque value for the total motor to operator bolted connection.

MAIN STEAM ISOLATION VALVES

All actuator bolts were visually inspected to assure they were tight against their lockwashers. No discrepancies were found.

All tie-rod nuts were checked for proper torque. No discrepancies were found.

MAIN STEAM RELIEF VALVES

The bonnet and actuator bolt locking devices were inspected on all 18 valves. Discrepancies with locking devices were found in the following areas: (all associated bolting was found to be tightened to the proper torque value)

1. Air cylinder tie-rod nut tab washers were bent out of the proper position (average of 2 to 3 washers out of 8 on 12 valves).
2. Solenoid valve mounting bolt tab washers were positioned improperly (average of 2 to 3 washers out of 12 on 16 valves).
3. On 6 of the 18 valves the tamper seal cable was detached on the threaded plug that covers the relief pressure adjustment screw. The adjustment screws were inspected and found undisturbed.
4. On one valve 2 lockwires were found damaged on the bonnet/body bolting.

All of the above discrepancies were resolved under the direction of the Crosby Valve Company service representative.

REACTOR RECIRC FLOW CONTROL VALVES

All actuator bolt locking devices were inspected. Three pairs of actuator position indicator mounting bolts were missing lockwires on the 1B33-F060A valve. These lockwires have been replaced.

In addition to the bolt locking device inspection outlined in the original program, essential yoke to bonnet bolting and actuator rod coupling bolting were inspected to torque valves specified in the vendor instruction manual. No discrepancies were found.

July 9, 1982 .

Mr. Warren Vanle:

Subject: LaSalle County Station Unit 1
Structural Bolting Tightness Inspection Results
for Containment Valves

I have reviewed the subject document which you telecopied to me on July 9, 1982. I concur with the disposition and assessment you have made in that report. This concurrence is based on the work that was done to develop the information transmitted in Sargent & Lundy's June 28, 1982 letter. Although they are clearly undesirable, none of the items identified in your transmittal if left uncorrected would have presented a safety problem.

In the case of the connection with one hand tight bolt, we believe that the required load would be carried. This statement is based on the fact that the load is carried when the bolt is in place. The torque values on the remaining bolts would maintain the proper contact on the mating surfaces.

With respect to the locking devices not being properly placed, we again believe the load would be carried since the bolts were properly torqued. The locking devices provide additional assurance that the bolted connect will not turn and then loosen.

Your corrective action to restore the bolting to our specified requirements constitutes adequate corrective action.

B. R. Shelton 7/9

B.R. Shelton

BRS/dmd/1779L

cc: B.B. Stephenson
T.E. Watts
D.C. Haan (S&L)

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1B21-F001 SERIAL NUMBER A1785

MANUFACTURER ANDERSON-GREENWOOD/LIMITORQUE

YOKE/BONNET BOLTING

(Use space below to diagram bolts not tightened to spec.)

SIZE N/A SPEC. TORQUE N/A

NO. OF BOLTS N/A

YOKE & BONNET ARE AN INTEGRAL CASTING

N/A CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. N/A

OWNED BY N/A

OPERATOR/YOKE BOLTING (SMB-000)

(Use space below to diagram bolts not tightened to spec.)

SIZE 5/8" SPEC. TORQUE 75 ± 10 *

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398

OWNED BY CONAM INSP. CO.

INSPECTED 2 BOLTS W/ BOX WRENCH

OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN NONE

PERFORMED BY E. Fall
CECo. Project Const.

WITNESS [Signature] 7-1-82
CECo. Q.C. Dept.

* INSTRUCTION MANUAL REQY. E.E.A. 7/19/82

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1B21-F002 SERIAL NUMBER A1787

MANUFACTURER ANDERSON-GREENWOOD/LIMITORQUE

YOKE/BONNET BOLTING

SIZE N/A SPEC. TORQUE N/A

NO. OF BOLTS N/A

N/A CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. N/A

OWNED BY N/A

(Use space below to diagram bolts not tightened to spec.)

YOKE & BONNET ARE AN INTEGRAL CASTING

OPERATOR/YOKE BOLTING (SMB-000)

SIZE 5/8" SPEC. TORQUE 75 ± 10*

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398

OWNED BY CONAM INSP. CO.

INSPECTED 2 BOLTS W/ BOX WRENCH

OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN ONE BOLT MISSING ON SWITCH HOUSING COVER - REPLACED

(Use space below to diagram bolts not tightened to spec.)

PERFORMED BY G. Falk
CECo. Project Const.

WITNESS David Campbell 7-1-82
CECo. Q.C. Dept.

* INSTRUCTION MANUAL REQ'T. E.E.A. 7/19/82

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1B21-F005 SERIAL NUMBER A1786

MANUFACTURER ANDERSON-GREENWOOD/LIMITORQUE

YOKE/BONNET BOLTING

SIZE N/A SPEC. TORQUE N/A

NO. OF BOLTS N/A

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. N/A

OWNED BY N/A

(Use space below to diagram bolts not tightened to spec.)

YOKE & BONNET ARE AN INTEGRAL CASTING

OPERATOR/YOKE BOLTING (SMB-000)

SIZE 5/8" SPEC. TORQUE 75±10*

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. A1-398

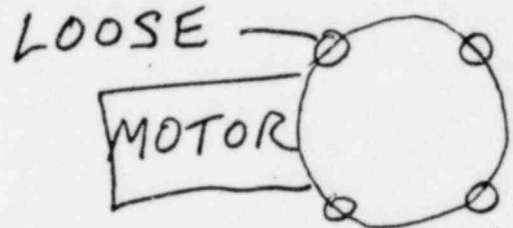
OWNED BY CONAM INSP. CO.

INSPECTED/TIGHTENED 3 BOLTS W/ BOX WRENCH

OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN ONE BOLT MISSING ON SWITCH HOUSING COVER - REPLACED

(Use space below to diagram bolts not tightened to spec.)



PERFORMED BY E. Falk
CECo. Project Const.

WITNESS [Signature] 7-1-82
CECo. Q.C. Dept.

* INSTRUCTION MANUAL REQY. CEA. 7/19/82

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1B21-F016 SERIAL NUMBER 1N-245*

MANUFACTURER ANCHOR-DARLING/LIMITORQUE

YOKE/BONNET BOLTING

(Use space below to diagram bolts not tightened to spec.)

SIZE 1/2" SPEC. TORQUE 47

NO. OF BOLTS 2

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398

OWNED BY CONAM INSP. CO.

OPERATOR/YOKE BOLTING (SMB-000)

(Use space below to diagram bolts not tightened to spec.)

SIZE 5/8" SPEC. TORQUE 72**

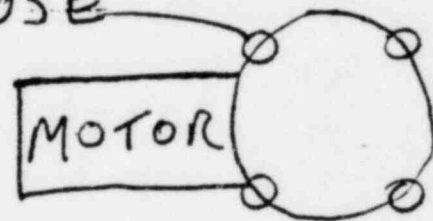
NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398

OWNED BY CONAM INSP. CO.

LOOSE



OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN 2 BOLTS LOOSE
ON SWITCH HOUSING COVER - TIGHTENED

PERFORMED BY E. Falk
CECo. Project Const.

WITNESS [Signature] 7-6-82
CECo. Q.C. Dept.

**SMB-00 (5/8" ϕ BOLT)
MTG. FLANGE USED -5-
E.E.F. 7/19/82

* FORMERLY VALVE
NO. 2B21-F019

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1B33-F023A SERIAL NUMBER 1-205

MANUFACTURER ATWOOD-MORRILL/LIMITORQUE

YOKE/BONNET BOLTING (7/2/82)
SIZE 1 3/4" SPEC. TORQUE 1000
NO. OF BOLTS 4

(Use space below to diagram bolts not tightened to spec.)

MULTIPLIER I.D.
NO. 2538 OWNED BY
MORRISON CONST. CO.

CHECK HERE IF NO PROBLEMS WERE FOUND.
WRENCH I.D. NO. AI-398

OWNED BY CONAM INSP. CO.

VISUAL INSP. OF 1 BOLT - INACCESSABLE DUE TO HANGER CLAMP
(Use space below to diagram bolts not tightened to spec.)

OPERATOR/YOKE BOLTING
SIZE 3/4" SPEC. TORQUE 110
NO. OF BOLTS 8



WRENCH NO 3082
MULTI N# 9540

bolt was verified to be
torqued to 1000#

CHECK HERE IF NO PROBLEMS WERE FOUND.
WRENCH I.D. NO. AI-361

OWNED BY CONAM INSP. CO.

INSPECTED 2 BOLTS W/ BOX WRENCH 7/1/82
OPERATOR ASSEMBLY J. Morley
QC 7-17-82

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN 2 GEARBOX COVER
BOLTS LOOSE - TIGHTENED

BROKEN FLEX CONDUIT

PERFORMED BY G. Falk
CECo. Project Const.

WITNESS David Hamblett 7-2-82
CECo. Q.C. Dept.

WORK REQUEST

No. 217109

EQUIPMENT NAME Pacific Flow Control Valve	UNIT 1	LOCATION Cr. Well 745-175	EPN 1033-FO23A	SYSTEM 401RR-FO23A-M20-
PROBLEM/WORK REQUESTED Loose electrical cable protector on top of valve repair/replace				

REQUESTED BY Campbell	/DATE 7-6-82	TEST REQUIRED: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	BY: OP <input type="checkbox"/> TS <input type="checkbox"/> MM <input type="checkbox"/> EM <input type="checkbox"/> IM <input type="checkbox"/>
DEPT. ASSIGNED MM IM (EM) OTHER			

SHIFT SUP. APPR. W. H. H. 7/8/82	/DATE 7/8/82	TECH. SPEC REQ: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> 3.4.1.1	
PRIORITY B1	LOAD REDUCTION YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	UNIT OUTAGE SHORT REFUEL <input type="checkbox"/> HOT COLD <input checked="" type="checkbox"/>	SPECIAL <input type="checkbox"/>
SAFETY RELATED YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	RELIABILITY RELATED YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	MODIFICATION YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	CODE WORK YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>

OPER. ENGR. APPR. W. H. H. 7/8/82	/DATE 7/8/82	
MAINT. DEPT. W. H. H. 7/8/82	/DATE 7/8/82	CAT 5

WORK INSTRUCTIONS: ROUTINE MAINT. CRAFT CAPABILITY

Repair or replace metal sealrite as needed.

WORK ANALYST Pelerson	CODE	PARTS CHECKED AND FOUND AVAILABLE <input type="checkbox"/>	PARTS ASSEMBLED IN STOREROOM UNDER THIS W.R. NO. <input type="checkbox"/>	JOB CODE	W.O. OR FUNCTION NO. 100121A-850	SUBDIVISION
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MAINT. APPR. W. H. H. 7-8-82	/DATE 7-8-82	ATTACHED DOCUMENTATION REQUIREMENTS OTHER	WORK TO BE CONTRACTED PORTION <input type="checkbox"/> ALL <input type="checkbox"/> P.O. NO. _____
Q.C. REVIEW W. H. H. 7-8-82	/DATE 7-8-82	TRAVELER YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	CONTRACTOR _____
Q.A. VERIFY W. H. H. 7-8-82	/DATE 7-8-82	PROCEDURE YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	REASON FOR CONTRACTING
WORK ASSIGNED TO:		RED TAGS <input checked="" type="checkbox"/> <i>if req'd</i>	LOWER COST <input type="checkbox"/> EXPOSURE LEVELING <input type="checkbox"/>
MAINT. FOREMAN—	CODE	DOC. CHK. LIST. <input type="checkbox"/>	MNPWR <input type="checkbox"/> EXPOSURE <input type="checkbox"/>
MAINT. FOREMAN—	CODE		SP. EQUIP. REQ'D <input type="checkbox"/>
SCHEDULED START DATE	MO DA YR		SP. SKILLS REQ'D <input type="checkbox"/>

SHIFT AUTHORIZATION TO START WORK	/DATE	SPECIAL PART NO'S AND TOOLS USED	EST ACT
Q.C. RELEASE	/DATE		CREW SIZE 2
MAINT. FOREMAN COMP.	/DATE		TOTAL MNHRS 4

TESTS COMP.	/DATE	WORK PERFORMED <i>Repair work 7/12/82 completed 7/20/82 being processed</i>
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APPROVED COMPLETION /DATE	WORK REQUEST PACKAGE COMPLETE
Q.C. ENGR. /DATE	Q.A. ENGR. OR INSP. /DATE

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1B33-F023B SERIAL NUMBER 2-205

MANUFACTURER ATWOOD-MORRELL / LIMITORQUE

YOKE/BONNET BOLTING (7/2/82)
SIZE 1 3/4" SPEC. TORQUE 1000
NO. OF BOLTS 4

(Use space below to diagram bolts not tightened to spec.)
MULTIPLIER I.D.
NO. 2538 OWNED BY
MORRISON CONST. CO.

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398

OWNED BY CONAM INSP. CO.

VISUAL INSP. OF 1 BOLT -

INACCESSABLE DUE TO HANGER CLAMP
(Use space below to diagram bolts not tightened to spec.)

OPERATOR/YOKE BOLTING
SIZE 3/4" SPEC. TORQUE 110

NO. OF BOLTS 8

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-361

OWNED BY CONAM INSP. CO.

INSPECTED 2 BOLTS W/ BOX WRENCH.

WRENCH N# 3082 CALIB 7/4
MULT N# 9540
Bolt was verified to be tightened to 1000#
J. Morley
QC 7-17-82

OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN NONE

PERFORMED BY E. Fall
CECo. Project Const.

WITNESS David Campbell 7-2-82
CECo. Q.C. Dept.

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1B33-F067A SERIAL NUMBER 3-205

MANUFACTURER ATWOOD-MORRELL / LIMITORQUE

YOKE/BONNET BOLTING

(Use space below to diagram bolts not tightened to spec.)

SIZE 1 3/4" SPEC. TORQUE 1000

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398

MULT. I.D. NO. 2538

OWNED BY CONAM INSP. CO.

OWNED BY MORR. CONST. CO.

VISUAL INSP. OF 2 BOLTS - INACCESSABLE DUE TO HANGER CLAMPS

(Use space below to diagram bolts not tightened to spec.)

OPERATOR/YOKE BOLTING

SIZE 3/4" SPEC. TORQUE 110

NO. OF BOLTS 8

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398

OWNED BY CONAM INSP. CO.

WRENCH NO 3082
CALIB 7-16 N



MULT ID NO 9540

Both bolts were verified to be torqued to 1000# WV/DB 7/16/82

OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN

1 BOLT MISSING 7-17-82

ON SWITCH HOUSING COVER HINGE

REPLACED

PERFORMED BY

E. Falk
CECo. Project Const.

WITNESS

A. L. Campbell 7-2-82
CECo. Q.C. Dept.

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1B33 - F067B SERIAL NUMBER 4-205

MANUFACTURER ATWOOD-MORRILL / LIMETORQUE

YOKE/BONNET BOLTING

(Use space below to diagram bolts not tightened to spec.)

SIZE 1 3/4" SPEC. TORQUE 1000

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398

MULT. I.D. NO. 2538
OWNED BY MORR. CONST. CO.

OWNED BY CONAM INSP. CO.

VISUAL INSP. OF 2 BOLTS - INACCESSABLE DUE TO HANGER CLAMPS

(Use space below to diagram bolts not tightened to spec.) ↑ N


OPERATOR/YOKE BOLTING

SIZE 3/4" SPEC. TORQUE 110

NO. OF BOLTS 8

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398


WRENCH NO. 3082 CALIB 7/16
MULT ID NO. 9540

OWNED BY CONAM INSP. CO.

Both bolts were verified to be torqued to 1000# 7/17/82
L. Morey OC 7-17-82 7/17/82

OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN NONE

PERFORMED BY E. Fall
CECo. Project Const.

WITNESS Paul Campbell 7-2-82
CECo. Q.C. Dept.

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1E12-F009 SERIAL NUMBER E5875-16-1

MANUFACTURER ANCHOR-DARLING / LIMITORQUE

YOKE/BONNET BOLTING

SIZE 5/8" SPEC. TORQUE 94

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-361

OWNED BY CONAM INSP. CO.

VALVE HOT - LOWER BOLTS

OPERATOR/YOKE BOLTING (SMB-0)*

SIZE 7/8" SPEC. TORQUE 270

NO. OF BOLTS 8

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AE-361

OWNED BY CONAM INSP. CO.

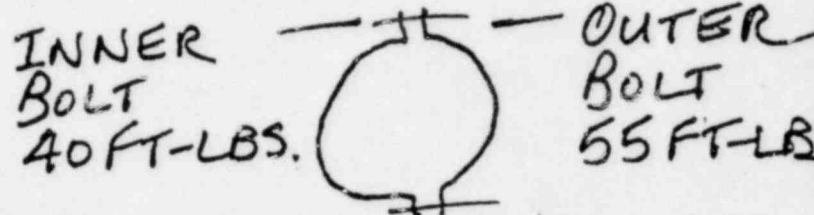
*STEEL OPERATOR MTG. FLANGE

OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN 1 BOLT MISSING ON SWITCH HOUSING COVER HINGE - REPLACED.

(Use space below to diagram bolts not tightened to spec.)

TOP OF VALVE



BOLTS OK. POSSIBLY - DUE TO TIGHTENING UPPER BOLTS

(Use space below to diagram bolts not tightened to spec.)

NOTE: UNIVERSAL JOINT USED @ APPROX. 20° ANGLE TO CLEAR YOKE

PERFORMED BY E. Fall
CECo. Project Const.

WITNESS David Campbell 7-2-82
CECo. Q.C. Dept.

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1E12-F099A SERIAL NUMBER A1826

MANUFACTURER ANDERSON-GREENWOOD / LIMITORQUE

YOKE/BONNET BOLTING

SIZE N/A SPEC. TORQUE N/A

NO. OF BOLTS N/A

N/A CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. N/A

OWNED BY N/A

(Use space below to diagram bolts not tightened to spec.)

YOKE & BONNET ARE AN INTEGRAL CASTING

OPERATOR/YOKE BOLTING (SMB-000)

SIZE 5/8" SPEC. TORQUE 75 ± 10 **

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398

OWNED BY CONAM INSP. CO.

(Use space below to diagram bolts not tightened to spec.)

NOTE: 6" WRENCH USED ON END OF 18 1/2" TORQUE WRENCH = .71 CORRECTION FACTOR *

OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN NONE

PERFORMED BY G. Fall
CECo. Project Const.

WITNESS David Campbell 7-2-82
CECo. Q.C. Dept.

** INSTRUCTION MANUAL REQ'T. E.E.F. 7/19/82

* SHOULD BE .76 CORRECTION FACTOR E.E.F. 7/19/82

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1E12-F099B SERIAL NUMBER A1825

MANUFACTURER ANDERSON-GREENWOOD/LIMITORQUE

YOKE/BONNET BOLTING

SIZE N/A SPEC. TORQUE N/A

NO. OF BOLTS N/A

N/A CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. N/A

OWNED BY N/A

(Use space below to diagram bolts not tightened to spec.)

YOKE & BONNET ARE AN INTEGRAL CASTING

OPERATOR/YOKE BOLTING (SMB-000)

SIZE 5/8" SPEC. TORQUE 75 ± 10**

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AE-398

OWNED BY CONAM INSP. CO.

INSPECTED 1 BOLT W/ BOX WRENCH

OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN NONE

(Use space below to diagram bolts not tightened to spec.)

NOTE: 6" WRENCH USED ON END OF 18 1/2" TORQUE WRENCH = .71 CORRECTION FACTOR*

PERFORMED BY E. Falk
CECo. Project Const.

WITNESS David L. Campbell 7-2-82
CECo. Q.C. Dept.

**INSTRUCTION MANUAL REQ'T. E.E.T. 7/19/82 -5-

*SHOULD BE .76. CORRECTION FACTOR E.E.T. 7/19/82

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1ES1-F063 SERIAL NUMBER E5875-7-1

MANUFACTURER ANCHOR-DARLING / LIMITORQUE

YOKE/BONNET BOLTING

SIZE 1/2" SPEC. TORQUE 47

NO. OF BOLTS 4

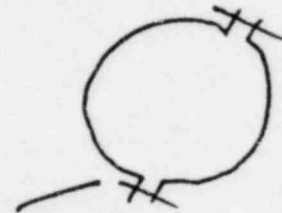
CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398

OWNED BY CONAM INSP. CO.

(Use space below to diagram bolts not tightened to spec.)

TOP OF VALVE



INNER BOLT LOOSE

(Use space below to diagram bolts not tightened to spec.)

OPERATOR/YOKE BOLTING (SMB-1)

SIZE 5/8" SPEC. TORQUE 72

NO. OF BOLTS 8

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398

OWNED BY CONAM INSP. CO.

OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN 1 BOLT MISSING
ON SWITCH HOUSING COVER HINGE -
REPLACED

PERFORMED BY E. Fall
CECo. Project Const.

WITNESS David L. ... 7-1-82
CECo. Q.C. Dept.

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1E51-F076 SERIAL NUMBER A1760

MANUFACTURER ANDERSON - GREENWOOD / LIMITORQUE

(Use space below to diagram bolts not tightened to spec.)

YOKE & BONNET ARE AN INTEGRAL CASTING

YOKE/BONNET BOLTING

SIZE N/A SPEC. TORQUE N/A

NO. OF BOLTS N/A

N/A CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. N/A

OWNED BY N/A

(Use space below to diagram bolts not tightened to spec.)

OPERATOR/YOKE BOLTING

SIZE 1/4" SPEC. TORQUE 150 ± 10 (IN.-LBS.) *

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. MFH-004

OWNED BY MORRISON CONST. CO.

INSPECTED 3 BOLTS W/ BOX WRENCH
OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN NONE

PERFORMED BY G. Fall
CECo. Project Const.

WITNESS D. H. Campbell 7-2-82
CECo. Q.C. Dept.

* INSTRUCTION MANUAL REQ'T. 247. 7/19/82

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1433-F001 SERIAL NUMBER E5875-5-1

MANUFACTURER ANCHOR-DARLING / LIMITORQUE

YOKE/BONNET BOLTING
SIZE 3/4" SPEC. TORQUE 167
NO. OF BOLTS 2

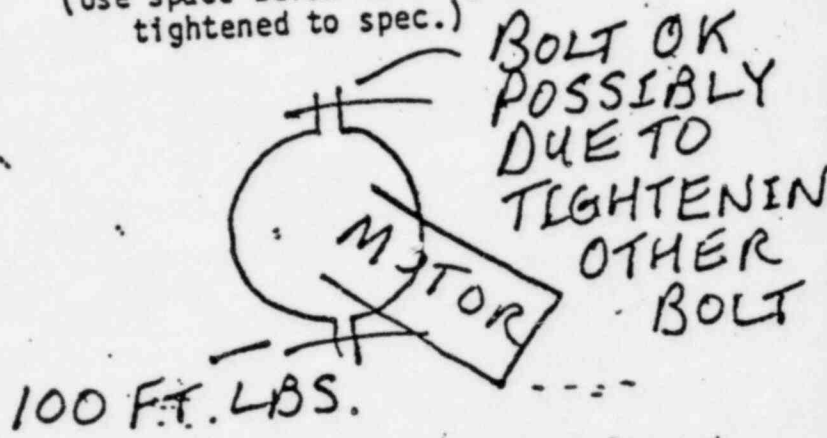
CHECK HERE IF NO PROBLEMS WERE FOUND.
WRENCH I.D. NO. AI-398
OWNED BY CONAM INSP. CO.

OPERATOR/YOKE BOLTING (SMB-000)
SIZE 5/8" SPEC. TORQUE 72*
NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.
WRENCH I.D. NO. AI-398
OWNED BY CONAM INSP. CO.

OPERATOR ASSEMBLY
PROBLEMS FOUND/CORRECTIVE ACTION TAKEN NONE

(Use space below to diagram bolts not tightened to spec.)



(Use space below to diagram bolts not tightened to spec.)

PERFORMED BY E. Fall
CECo. Project Const.

WITNESS [Signature] 7-2-82
CECo. Q.C. Dept.

*SMB-00 5/8" ϕ TAPPED MTG. HOLES USED
E.E.A. 7/19/82

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1G33-F100 SERIAL NUMBER E5875-76-1

MANUFACTURER ANCHOR-DARLING/LIMITORQUE

YOKE/BONNET BOLTING

(Use space below to diagram bolts not tightened to spec.)

SIZE 5/8" SPEC. TORQUE 94

NO. OF BOLTS 2

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398

OWNED BY CONAM INSP. CO.

OPERATOR/YOKE BOLTING (SMB-000)

(Use space below to diagram bolts not tightened to spec.)

SIZE 5/8" SPEC. TORQUE 72*

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398

OWNED BY CONAM INSP. CO.

OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN NONE

PERFORMED BY E. Falls
CECo. Project Const.

WITNESS David Campbell 7682
CECo. Q.C. Dept.

*SMB-00 (5/8" ϕ BOLT) MTG. FLANGE USED.

E.E.F. 7/19/82

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1G33-F101 SERIAL NUMBER E5875-76-3

MANUFACTURER ANCHOR-DARLING/LIMITORQUE

YOKE/BONNET BOLTING

(Use space below to diagram bolts not tightened to spec.)

SIZE 1/2" SPEC. TORQUE 47

NO. OF BOLTS 2

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398

OWNED BY CONAM INSP. CO.

OPERATOR/YOKE BOLTING (SMB-000)

(Use space below to diagram bolts not tightened to spec.)

SIZE 5/8" SPEC. TORQUE 72*

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398

OWNED BY CONAM INSP. CO.

OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN 2 GEARBOX COVER

BOLTS MISSING - REPLACED

PERFORMED BY E. Falk
CECo. Project Const.

WITNESS David L. Campbell 7.2.82
CECo. Q.C. Dept.

*SMB-00 (5/8" ϕ BOLT) MTG. FLANGE USED ..

E.E.A. 7/19/82

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1G33-F102 SERIAL NUMBER PSMB-29

MANUFACTURER ROCKWELL / LIMITORQUE

YOKE/BONNET BOLTING

SIZE 5/8" SPEC. TORQUE 94

NO. OF BOLTS 2

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398

OWNED BY CONAM INSP. CO.

(Use space below to diagram bolts not tightened to spec.)

OPERATOR/YOKE BOLTING (SMB-000)

SIZE 5/8" SPEC. TORQUE 72*

NO. OF BOLTS 8

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398

OWNED BY CONAM INSP. CO.

(Use space below to diagram bolts not tightened to spec.)

OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN SWITCH HOUSING COVER HINGES MISSING - LEAVE AS IS

PERFORMED BY E. Fall
CECo. Project Const.

WITNESS [Signature] 7-2-82
CECo. Q.C. Dept.

*SMB-00 5/8" φ MTG. STUDS USED.

9.27. 7/19/82

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1G33-F106 SERIAL NUMBER E5875-76-5

MANUFACTURER ANCHOR-DARLING / LIMITORQUE

YOKE/BONNET BOLTING

(Use space below to diagram bolts not tightened to spec.)

SIZE 5/8" SPEC. TORQUE 94

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI 361

OWNED BY CenAm Insp Co.

OPERATOR/YOKE BOLTING (SMB-000)

(Use space below to diagram bolts not tightened to spec.)

SIZE 5/8" SPEC. TORQUE 72*

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI 361

OWNED BY CenAm Insp Co.

Inspected 3 with Box Wrench
OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN NONE

PERFORMED BY E. Fall
CECo. Project Const.

WITNESS [Signature] 7/1/82
CECo. Q.C. Dept.

* SMB-00 (5/8" ϕ BOLT) MTG. FLANGE USED..

E. E. F. 7/19/82

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1VP113A SERIAL NUMBER 262136

MANUFACTURER FISHER CONTROLS / LLMITORQUE

YOKE/BONNET BOLTING

SIZE N/A SPEC. TORQUE N/A

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. N/A

OWNED BY N/A

(Use space below to diagram bolts not tightened to spec.)

**FACTORY LOCKWIRES
SECURE**

OPERATOR/YOKE BOLTING

SIZE N/A SPEC. TORQUE N/A

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. N/A

OWNED BY N/A

(Use space below to diagram bolts not tightened to spec.)

**FACTORY LOCKWIRES
SECURE**

OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN NONE

PERFORMED BY E. Fall
CECo. Project Const.

WITNESS [Signature] 7-2-82
CECo. Q.C. Dept.

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1VP113B SERIAL NUMBER 262137

MANUFACTURER FISHER CONTROLS / LIMETORQUE

YOKE/BONNET BOLTING

SIZE N/A SPEC. TORQUE N/A

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. N/A

OWNED BY N/A

(Use space below to diagram bolts not tightened to spec.)

**FACTORY LOCKWIRES
SECURE**

OPERATOR/YOKE BOLTING

SIZE N/A SPEC. TORQUE N/A

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. N/A

OWNED BY N/A

(Use space below to diagram bolts not tightened to spec.)

**FACTORY LOCKWIRES
SECURE**

OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN NONE

PERFORMED BY

E. Fall
CECo. Project Const.

WITNESS

David Campbell 7-6-82
CECo. Q.C. Dept.

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1VP114A SERIAL NUMBER 262138

MANUFACTURER FLSHER CONTROLS/LIMITORQUE

YOKE/BONNET BOLTING

SIZE N/A SPEC. TORQUE N/A

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. N/A

OWNED BY N/A

(Use space below to diagram bolts not tightened to spec.)

**FACTORY LOCKWIRES
SECURE**

OPERATOR/YOKE BOLTING

SIZE N/A SPEC. TORQUE N/A

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. N/A

OWNED BY N/A

(Use space below to diagram bolts not tightened to spec.)

**FACTORY LOCKWIRES
SECURE**

OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN NONE

PERFORMED BY E. Falk
CECo. Project Const.

WITNESS [Signature] 7-2-82
CECo. Q.C. Dept.

MOTOR OPERATED VALVE-STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1VP114B SERIAL NUMBER 262139

MANUFACTURER FISHER CONTROLS / LIMTORQUE

YOKE/BONNET BOLTING

SIZE N/A SPEC. TORQUE N/A

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. N/A

OWNED BY N/A

(Use space below to diagram bolts not tightened to spec.)

**FACTORY LOCKWIRES
SECURE**

OPERATOR/YOKE BOLTING

SIZE N/A SPEC. TORQUE N/A

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. N/A

OWNED BY N/A

(Use space below to diagram bolts not tightened to spec.)

**FACTORY LOCKWIRES
SECURE**

OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN NONE

PERFORMED BY

G. Fall
CECo. Project Const.

WITNESS

David L. Campbell 7-2-82
CECo. Q.C. Dept.

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1WR179 SERIAL NUMBER E 5875-84-2

MANUFACTURER ANCHOR-DARLING / LIMITORQUE

YOKE/BONNET BOLTING

SIZE 5/8" SPEC. TORQUE 94

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AE-398

OWNED BY CONAM INSP. CO.

OPERATOR/YOKE BOLTING (SMB-000)

SIZE 5/8" SPEC. TORQUE 72 ***

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AE-398

OWNED BY CONAM INSP. CO.

OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN NONE

PERFORMED BY S. Fall
CECo. Project Const.

WITNESS David L. Campbell 7-2-82
CECo. Q.C. Dept.

(Use space below to diagram bolts not tightened to spec.)

NOTE: 6" WRENCH USED ON END OF 18 1/2" TORQUE WRENCH = .71 CORRECTION FACTOR*

(Use space below to diagram bolts not tightened to spec.)

NOTE: 6" WRENCH USED ON END OF 18 1/2" TORQUE WRENCH = .71 CORRECTION FACTOR*

*** SMB-00 (5/8" ϕ BOLT) MTG. FLANGE USED -5-
S.E.F. 7/19/82

* SHOULD BE .76 CORRECTION FACTOR
S.E.F. 7/19/82

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER 1WR180 SERIAL NUMBER E5875-84-4

MANUFACTURER ANCHOR-DARLING / LIMITORQUE

YOKE/BONNET BOLTING

SIZE 5/8" SPEC. TORQUE 94

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398

OWNED BY CONAM INSP. CO.

INSPECTED 3 BOLTS

OPERATOR/YOKE BOLTING (SMB-000)

SIZE 5/8" SPEC. TORQUE 72**

NO. OF BOLTS 4

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. AI-398

OWNED BY CONAM INSP. CO.

VISUAL INSP. OF 1 BOLT - INACCESSABLE DUE TO 2" ϕ CONDUIT

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN 1 MOTOR MOUNTING BOLT LOOSE - TIGHTENED.

(Use space below to diagram bolts not tightened to spec.)

NOTE: 6 1/2" WRENCH USED ON END OF 18 1/2" TORQUE WRENCH = .74 CORRECTION FACTOR

W/ BOX WRENCH

(Use space below to diagram bolts not tightened to spec.)

NOTE: 6" WRENCH USED ON END OF 18 1/2" TORQUE WRENCH = .71 CORRECTION FACTOR*

PERFORMED BY E. Falk
CECo. Project Const.

WITNESS [Signature] 7-82
CECo. Q.C. Dept.

**SMB-00 (5/8" ϕ BOLT) MTG. FLANGE USED - 5- 9 9 1. 7/19/82

*SHOULD BE .76 CORRECTION FACTOR E.E.A. 7/19/82

MAIN STEAM ISOLATION VALVE ACTUATOR
BOLT LOCKING HARDWARE AND HYDRAULIC
CYLINDER TIE ROD TIGHTNESS INSPECTION

VALVE NUMBER 1B21-F022 A SERIAL NUMBER KA-9

MANUFACTURER Rockwell Manufacturing Company

SUPPLIER General Electric Company

HYDRAULIC CYLINDER TIE ROD BOLTING

(Use diagram below to identify bolts not tightened to spec.)

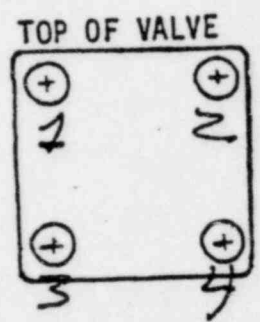
SPEC. TORQUE 340 ft-lbs. NO. OF BOLTS 4

TORQUE SEQUENCE cross corner

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. M 5090 Cali. Date 4-82

OWNED BY CECO



ACTUATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

- ① applied 340 FT/LBS ^{torque} to bolts and found no movement. No physical defects found on tie rods. No physical conditions appear sound.
- ② all actuator bolting was found acceptable

WRENCH I.D. NO. M 5090 OWNED BY CECO M&M DEPT

PERFORMED BY [Signature] 7-7-82 WITNESS [Signature]
CECo. Project Const. CECo. Q.C. Dept.

MAIN STEAM ISOLATION VALVE ACTUATOR
BOLT LOCKING HARDWARE AND HYDRAULIC
CYLINDER TIE ROD TIGHTNESS INSPECTION

VALVE NUMBER 1B21 F022 B SERIAL NUMBER KA-5

MANUFACTURER Rockwell Manufacturing Company

SUPPLIER General Electric Company

HYDRAULIC CYLINDER TIE ROD BOLTING

(Use diagram below to identify bolts not tightened to spec.)

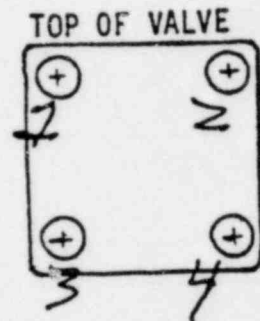
SPEC. TORQUE 340 ft-lbs. NO. OF BOLTS 4

TORQUE SEQUENCE cross corner

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. M 5090 Cali. Date 4-82

OWNED BY CECO



ACTUATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective Bolt locking hardware.)

- ① applied 340 FT/LBS to nuts on Bolts and found no movement. No physical defects found on tie rods. Nuts physical condition appear sound.
- ② actuator assembly bolting was found acceptable

WRENCH I.D. NO. M 5090 OWNED BY CECO MM DEPT

PERFORMED BY Bill Riley 7-7-82 WITNESS W. Lightsey 7-7-82
CECo. Project Const. CECO. Q.C. Dept.

MAIN STEAM ISOLATION VALVE ACTUATOR
BOLT LOCKING HARDWARE AND HYDRAULIC
CYLINDER TIE ROD TIGHTNESS INSPECTION

VALVE NUMBER 1B21-F022C SERIAL NUMBER KA-64

MANUFACTURER Rockwell Manufacturing Company

SUPPLIER General Electric Company

HYDRAULIC CYLINDER TIE ROD BOLTING

(Use diagram below to identify bolts not tightened to spec.)

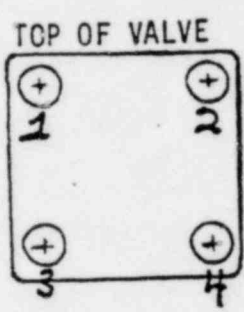
SPEC. TORQUE 340 ft-lbs. NO. OF BOLTS 4

TORQUE SEQUENCE cross corner

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. M5090 Col. date 4/82

OWNED BY CECO



ACTUATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

① applied torque 340 FT/LBS to ^{main} Bolts and found no movement. no physical defects found on Tie Rods. But physical condition appears sound.

② All actuator bolting acceptable.

WRENCH I.D. NO. M5090 OWNED BY CECO MM DEPT

PERFORMED BY [Signature] Rudy 7-7-82 WITNESS [Signature] Lantry 7-7-82
CECo. Project Const. CECo. Q.C. Dept.

MAIN STEAM ISOLATION VALVE ACTUATOR
BOLT LOCKING HARDWARE AND HYDRAULIC
CYLINDER TIE ROD TIGHTNESS INSPECTION

VALVE NUMBER 1B21-F022D SERIAL NUMBER JZ-67

MANUFACTURER Rockwell Manufacturing Company

SUPPLIER General Electric Company

HYDRAULIC CYLINDER TIE ROD BOLTING

(Use diagram below to identify bolts not tightened to spec.)

SPEC. TORQUE 340 ft-lbs. NO. OF BOLTS 4

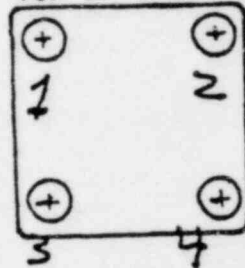
TORQUE SEQUENCE cross corner

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. M5090 Cali. Date 4-82

OWNED BY Ceco

TOP OF VALVE



ACTUATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

① applied torque 340 FT/LBS to ^{nuts on} Bolts and found
no movement. no physical defects found
on tie Rods. nuts physical conditions appear
sound.

② all actuator assembly bolting was acceptable.

WRENCH I.D. NO. M5090 OWNED BY CECO M.M. DEPT

PERFORMED BY [Signature] 7-7-82
CECo. Project Const.

WITNESS [Signature] 7-7-82
CECO. Q.C. Dept.

BOLT LOCKING HARDWARE INSPECTION FOR MAIN STEAM RELIEF VALVES

@ 3350

VALVE NUMBER

1-B21-FOL3A

SERIAL NUMBER

N 63790-00-0068

MANUFACTURER

Crosby Valve & Gage Company

SUPPLIER

General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

① Set-screw lock WIRE Replaced.

Inspection of locking showed it to be undisturbed.

② Tab. washers on air cylinder were acceptable.

③ Tab. Washers on Solenoids were loosened as required and Retorqued to 10-ft-lbs

④ All other hardware was found acceptable.

* Lock wire on position indication switch requires replacement

W/TH POSITIVER TORQUE CHECKED 50 FT/LBS ^{W. Reilly} W/ WIRE ^{LICK} accept

WRENCH I.D. NO. M 5092 9652 WER OWNED BY

PERFORMED BY Walter Conway Jr.
Crosby Valve & Gage Company

WITNESS [Signature] 7-7-82
CECo. Q.C. Dept.

BOLT LOCKING HARDWARE INSPECTION FOR MAIN STEAM RELIEF VALVES

VALVE NUMBER 1-B21-F013B^{030°} SERIAL NUMBER N 63790-000-0080

MANUFACTURER Crosby Valve & Gage Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

- ① Sat screws accepted.
- ② Tol washers on Air cylinder were acceptable.
- ③ Tol washers on Solenoids were repositioned as required, and retorqued ^{*} as required.
- ④ All other hardware was found acceptable.

Will Reidy

NOTE: POSITIONER TORQUE CHECKED 50 FT/LBS
WLL
W LOCK WIRED ACCEPT 7-7-82

* Retorquing done to 10 ft-lbs
WER 7/19/82
WOL 7-11-82
CECO AC

WRENCH I.D. NO. 5092 WER OWNED BY CECO MM DEPT
M 9052

PERFORMED BY Walter Conway, Jr. WITNESS W. Lightsey 7-7-82
Crosby Valve & Gage Company CECO P.C. Depy.

BOLT LOCKING HARDWARE INSPECTION FOR MAIN STEAM RELIEF VALVES

VALVE NUMBER 1-B21-F013C SERIAL NUMBER N63740-00-0063

MANUFACTURER Crosby Valve & Gage Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

① Resealed set SCREWS

② Reposition of tab washers for Air cylinder & Solenoid components.

Concure with inspection W.C. Cego W. Reidy 7/2/82
Complete 7-2-82 W.C. Cego

* Tab. WASHERS REPOSITIONED and re-torqued* on 7-7-82 using wrench IM 5092

W.E. Reidy

NOTE: POSITIONER TORQUE CHECKED 50 FT/LBS @ LOCK WIRED ACCEPT W.C. 7-7-82

* Retorqued to 10-ft-lbs W.C. C-19-82

WRENCH I.D. NO. NA-7-2-82 OWNED BY _____

PERFORMED BY Walter Conway, Jr.
Crosby Valve & Gage Company

WITNESS W. Reidy 7-7-82
CECo. Q.C. Dept.

BOLT LOCKING HARDWARE INSPECTION FOR MAIN STEAM RELIEF VALVES

@ 45°

VALVE NUMBER 1-B21-F0130 SERIAL NUMBER N 63796-00-00-77

MANUFACTURER Crosby Valve & Gage Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

- 1. SET SCREW acceptable.
- ① 1. Tol. washer on air cylinder was repositioned
- ② 1. Tol. washer on solenoid was replaced, several others were repositioned. All tightening was retorqued to 10 ft-lbs.
- ③ All other loads were found acceptable with the exception of .2.0000s of lock wire in body to connect solenoid.

WAD CECO QC

Concern with inspection complete 7-2-82 W. Leidy

NOTE: POSITIONER TORQUE CHECKED 50 FT/LBS & LOCK W/ WIRE PLANT 7-7-82

WRENCH I.D. NO. 5692 M 4052 WR, OWNED BY CECO MM DEPT

PERFORMED BY Walter Conroy, Jr.
Crosby Valve & Gage Company

WITNESS W. Leidy 7-7-82
CECO, Q.C. Dept.

BOLT LOCKING HARDWARE INSPECTION FOR MAIN STEAM RELIEF VALVES

Q 295°

VALVE NUMBER 1-B21-F013E SERIAL NUMBER N63790 - CO-0074

MANUFACTURER Crosby Valve & Gage Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

1. Set screw acceptable.

2. Repositioning of Tab washer incomplete @ this time -
in Air cyl & solenoid.

WCH CECO QC 7-19-82

Consensus with inspection complete 7-2-82 -- W Reidy 7/2/82

NOTE: POSITIONER TORQUE CHECKED 50 FT/LBS & LOCK

WIRETY accept WCH 7-7-82

* Tab. washer retorgued* after being repositioned on 7/7/82 utilizing WRENCH M5092

W.E. Reidy 7/7/82

* Retorgued to 10-ft-lbs WER. 7-19-82

WRENCH I.D. NO. 1/A - 7-2-82 OWNED BY _____

PERFORMED BY Walter Conway, Jr.
Crosby Valve & Gage Company

WITNESS W Reidy 7-7-82
CECO. Q.C. Dept.

BOLT LOCKING HARDWARE INSPECTION FOR MAIN STEAM RELIEF VALVES

065°

VALVE NUMBER 1-B21-F013F SERIAL NUMBER N 6379-00-0071

MANUFACTURER Crosby Valve & Gage Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

- ① SR screws were found acceptable.
- ② Tab washers on air cylinder were straightened as required and found acceptable.
- ③ Tab washers on cylinder side of SRV were replaced. Others which were incorrectly installed were straightened, the locking in all cases was returned to 10-1/4 lbs.

W. Reedy

NOTE: POSITIONER TORQUE CHECKED 50 FT/LBS & LOCKED WIRED. ^{WCL} 7-7-32 *reapt*

WRENCH I.D. NO. M 5092 OWNED BY CECO MM DEPT

PERFORMED BY Walter Conroy, Jr. WITNESS W. Reedy 7-7-32
Crosby Valve & Gage Company. CECO. Q.C. Dept.

BOLT LOCKING HARDWARE INSPECTION FOR MAIN STEAM RELIEF VALVES

VALVE NUMBER NB21 F013G SERIAL NUMBER N63790-00-100/10

MANUFACTURER Crosby Valve & Gage Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

Re sealed Set Screws
Inspection of ball screw areas showed
no evidence of movement.

Tol washers in position in air cyl
E. Solomando @ this time. *

CECO QC wcl 7-19-82
Concur with 7-2-82 inspection W. Reidy 7/2/82

NOTE: POSITIONER TORQUE CHECKED 50 FT/LBS & LOCK
WIRED accept 7-7-82
wcl

TOL. WASHERS- Repositioned and
retorqued as required to 10ft-lbs
using m5092.
W. Reidy 7/7/82

WRENCH I.D. NO. NA-9-2-82 OWNED BY _____

PERFORMED BY Walter Conway Jr. WITNESS W. Reidy 7-7-82
Crosby Valve & Gage Company CECO Q.C. Dept.

BOLT LOCKING HARDWARE INSPECTION FOR MAIN STEAM RELIEF VALVES

Q 320°

VALVE NUMBER 1-B21-F013H SERIAL NUMBER N 63790-00-00-69

MANUFACTURER Crosby Valve & Gage Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware)

① ^{Top tag containing shape, size, style, NO-NP and Class Stamp - one hand missing} N-Stamp. TAG. for N-V and class missing.

we HAVE S-N & N.B# and class I-N-V-Stamp

② set screw band missing. Inspection of set screws showed pins had not been moved. resealed.

③ Repositioning of AIR cylinder set screws not done at the time

④ Repositioning of solid tabs not done at the time *

WOL CECO QC
concern with 7-2-82 inspection 7-19-82 W. Reidy 7/2/82

NOTE: POSITIONER TORQUE CHECKED 50 FT/LBS LOCK

WIRED accept ^{WOL} 7-7-82

* Repositioning and retorquing **
complete on 7/7/82 WOL CECO
M 5092

** Retorquing done to 10-ft-lbs W.E. Reidy
W.E.R. 7-19-82

WRENCH I.D. NO. WA-7-2-82 OWNED BY W

PERFORMED BY Walter Conway, Jr.
Crosby Valve & Gage Company

WITNESS W. Lightner 7-7-82
CECO. Q.C. Dept.

BOLT LOCKING HARDWARE INSPECTION FOR MAIN STEAM RELIEF VALVES

VALVE NUMBER 1-1321-F013-J SERIAL NUMBER N C3790-00 - 0065

MANUFACTURER Crosby Valve & Gage Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

- ① 5-T. SCREWS. Accept
- ② One tal. washer on Air cyl. replaced
- ③ Screwed. Tol. OK
- ④ All other hardware acceptable

W. Ruddy

NOTE POSITIONER TORQUE CHECKED 50 FT/LBS & LOCKED
WIRED. ^{WLL} 7-7-82 ^{OK} Accept

WRENCH I.D. NO. M 5092 OWNED BY CECO mm DEPT

PERFORMED BY Walter Conway Jr. WITNESS W. Ruddy 7-7-82
Crosby Valve & Gage Company CECO. Q.V. Dept.

BOLT LOCKING HARDWARE INSPECTION FOR MAIN STEAM RELIEF VALVES

Q 70°

VALVE NUMBER 1-B21-F013K SERIAL NUMBER N 63790-00-0073

MANUFACTURER Crosby Valve & Gage Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

1. SA SCREWS acceptable.

2. Top WASHERS were found acceptable in the air column.

3. Top washers found mis-installed on SPCU salmonid were repaired - and the setting returned to 11-ft-lbs.

4. all other hardware was found acceptable.

W. Reidy

NOTE: POSITIONER TORQUE CHECKED 50 FT/LBS & LOCK

WIRED w/ht recpt 7-7-82

WRENCH I.D. NO. 5092 WR OWNED BY CECO MM DEPT

PERFORMED BY Walter Conway L.
Crosby Valve & Gage Company

WITNESS W. Lightsey 7-7-82
CECO Q.C. Dept.

BOLT LOCKING HARDWARE INSPECTION FOR MAIN STEAM RELIEF VALVES

VALVE NUMBER 1B21-F013L SERIAL NUMBER N63790-00-0107

MANUFACTURER Crosby Valve & Gage Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

① Set. screw Acceptable.

② Tab. washer not repositioned at the time *

③ all other hardware was found acceptable.

WOL 6660 QC 7-19-82

CONCUR WITH INSPECTION 7-2-82

W. E. Reidy 7/2/82

NOTE: POSITIONER TORQUE CHECKED 50 FT/LBS TO LOCK

W/REP accept 7-7-82

* Tab. repositioned and retorqued to 10 ft-lbs. (WRENCH .m. 5892) on.

July 7 1982

W. E. Reidy

WRENCH I.D. NO. N/A - 72-F2 OWNED BY CECO

PERFORMED BY Walter Conway, Jr.
Crosby Valve & Gage Company

WITNESS W. E. Reidy 7-7-82
CECO Q.C. Dept.

BOLT LOCKING HARDWARE INSPECTION FOR MAIN STEAM RELIEF VALVES

VALVE NUMBER 1-B31-F013M SERIAL NUMBER N 63 790-00-00-79

MANUFACTURER Crosby Valve & Gage Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

- (1) - 50T SCREWS for ring acceptable
- (2) - 5. TAB WASHERS for 15/16 with Air cylinder were found slightly low were ~~was~~ found acceptable re draped and found acceptable
- (3) 4 (9/16") TAB WASHERS on top of Air cyl. acceptable
- (4) TAB WASHERS on air solenoids were INCORRECTLY installed in some cases. The bolting was removed, a new tab washer installed and the bolt retorqued to 10. ft-lbs
- (5) all other hardware was found acceptable

W. Reidy

NOTE: POSITIONER TORQUE CHECKED 50 FT/LBS & LOCK WIRED ACCEPT ^{WAL} 7-7-82

WRENCH I.D. NO. 0-175-(E-165) M 5092 - cal 5/82 OWNED BY MM DEPT Commonwealth Edison Co

PERFORMED BY Walter Conner Jr. WITNESS W. Lightsey 7-7-82
Crosby Valve & Gage Company CECO Q.C. Dept.

BOLT LOCKING HARDWARE INSPECTION FOR MAIN STEAM RELIEF VALVES

VALVE NUMBER 1-821-F013N SERIAL NUMBER N63790-00-0066

MANUFACTURER Crosby Valve & Gage Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

(1) 5/16" SCREW Tab MISSING
AREA was inspected on
evidence of tapping was found
5/16" screws were resealed.

(2) Repositioning of Tab washers on
Air cyl and solenoid was
not completed at the time. *

(3) all other hardware was found ^{QC}
acceptable. Inspected with inspection ^{7-2-82 7-19-82}
W. Reidy 7/2/82

NOTE: POSITIONER TORQUE CHECKED 50FT/LBS ^{W. Reidy 7/2/82}
W. Reidy 7-2-82
CECO QC

LOCK WIRED ACCEPT ^{W. Reidy 7-7-82}

* Repositioning and retorquing ^{**}
completed
on 7/7/82. WRENCH # M5092

Retorquing was done to
1040-1/4" WSP. 7-19-82
W.E. Reidy 7/7/82

WRENCH I.D. NO. NA-7-2-82 OWNED BY CE

PERFORMED BY Walter Conway Jr. WITNESS W. Reidy 7-7-82
Crosby Valve & Gage Company CECO Q.C. Dept.

BOLT LOCKING HARDWARE INSPECTION FOR MAIN STEAM RELIEF VALVES

VALVE NUMBER 1-B21-F013PO 53⁰ SERIAL NUMBER N63790-00-0075

MANUFACTURER Crosby Valve & Gage Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

- ① set screw acceptable
- ② straighten one tab washer on air cylinder
- ③ Reposition tab washer if SRV and re-torque as required. and the locking was re-tightened to 10.001-165.
- ④ All other ~~tests~~ found were found acceptable

W.E. Rudy 7-1-82

NOTE: POSITIONER LOCK WIRED & TORQUE CHECKED 50FT/LBS PER FIG 9 CECO AG FIELD INSPECTED ^{WCL} 7-7-82-accept

WRENCH I.D. NO. M. 5092 OWNED BY CECO MM DEPT

PERFORMED BY Walter Ramsey, Jr. WITNESS W. Lattner 7-7-82
Crosby Valve & Gage Company CECO. Q.I.C. Dept.

7/2/82

BOLT LOCKING HARDWARE INSPECTION FOR MAIN STEAM RELIEF VALVES

VALVE NUMBER 1B21-F013R SERIAL NUMBER N 63 790-0000-72

MANUFACTURER Crosby Valve & Gage Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

① set screw locking ^{seal} tape broken.
APFA inspected and showed no evidence of taping. Seal Replaced

Tab. WASHERS for Air column and Solenoid not repositioned at this time. ^{w.c. RC} ₇₋₁₉₋₈₂

NOTE: POSITIONER TORQUE CHECKED ^{w.c.} ₇₋₁₉₋₈₂
50 FT/LBS LOCK WIRED ^{w.c.} ₇₋₁₉₋₈₂

Tab. washers repositioned and torqued to 10 ft-lbs with CECO Wrench M 5092 on 7/17/82
W.S. Reidy 7/17/82

WRENCH I.D. NO. NA-7-2-82 OWNED BY _____

PERFORMED BY Walter Conroy, Jr.
Crosby Valve & Gage Company

WITNESS W. Lightsey 7-7-82
CECO Q.C. Dept.

BOLT LOCKING HARDWARE INSPECTION FOR MAIN STEAM RELIEF VALVES

280

VALVE NUMBER 1-B-21-F0135 SERIAL NUMBER 63790-00-0076

MANUFACTURER Crosby Valve & Gage Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

① S.T. SCREWS acceptable.

② 3 of 8 - 5/16-bolting Tab washers were found mis-chopped. These were straightened and found to be acceptable.

③ Tab washers on SR11. Solenoid. were replaced and bolting was retorqued. as required. to 10 ft-lbs

④ All other hardware was found acceptable.

A. Perry

DATE POSITIONER TORQUE CHECKED 50 FT/LBS & LOCK WIPED ^{with} 7-7-82

WRENCH I.D. NO. M-5092 OWNED BY CECO MM DEPT

PERFORMED BY Walter Conway Jr. WITNESS W. Lightner 7-7-82
Crosby Valve & Gage Company CECO V.Q.C. Dept.

BOLT LOCKING HARDWARE INSPECTION FOR MAIN STEAM RELIEF VALVES

VALVE NUMBER 1B21-F013U SERIAL NUMBER N63790-00-0064

MANUFACTURER Crosby Valve & Gage Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

(1) Set screws seal OK

(2) Repositioning of Tdbi washers for air cylinder #8 Solovids in complete at the time *

concern with inspection 7-2-82 ^{W.C. QC} 7-4-82 W. Reidy 7/2/82

NOTE: POSITIONER TORQUE CHECKED - 50 FT/LBS & LOCK

WIRED accept ^{W.C.} 7-7-82

* Repositioning and retorquing** was completed on 7/7/82 using wrench M5092

W. Reidy

*4: Retorquing done to 104-165 over 7/19/82

WRENCH I.D. NO. NA-7-2-82 OWNED BY _____

PERFORMED BY Walter Conroy, Jr.
Crosby Valve & Gage Company

WITNESS W. Lightsey 7-7-82
CECo. Q.V. Dept.

BOLT LOCKING HARDWARE INSPECTION FOR MAIN STEAM RELIEF VALVES

VALVE NUMBER 1B21-F013V SERIAL NUMBER N 63790-00-0070

MANUFACTURER Crosby Valve & Gage Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

- ① set screw seal broken, inspected ring and found acceptable... Resealed.
- ② DTal washer in ring end is straight and retighten.
- ③ 5 Bolts required in row.
- ④ all other hardware was found acceptable.

w R. dy

NOTE: POSITIVE TORQUE CHECKED 50 FT/LBS Y LOCK
WIRED accept ^{w/} 7-7-82

WRENCH I.D. NO. m 5092WER OWNED BY CECO MM DEPT

PERFORMED BY W. C. Conner
Crosby Valve & Gage Company

WITNESS W Lightly 7-7-82
CECO. V.Q.C. Dept.

BOLT LOCKING HARDWARE INSPECTION FOR REACTOR RECIRC FLOW CONTROL VALVES

VALVE NUMBER 1B33-F060A SERIAL NUMBER 71-2001-001A

MANUFACTURER Hammel Dahl Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

YOKE/BONNET BOLTING - 10 INSP. @ 566 FT-LBS., 3 INSP. W/ BOX WRENCH; NO PROBLEMS FOUND

ACTUATOR/YOKE BOLTING - 4 INSP. @ 300 FT-LBS., 4 INSP. W/ BOX WRENCH; NO PROBLEMS FOUND

ACTUATOR ROD COUPLING BOLTING - ALL INSP. @ 150 FT-LBS.; NO PROBLEMS FOUND

ACTUATOR BOLTING - 3 PAIRS OF POSITION INDICATOR BOLTS MISSING LOCKWIRES; REPLACED.*

TORQUE VALUE REF. - VENDOR INSTR. MANUAL

WRENCH I.D. NO. AI-361 & 398 OWNED BY CONAM INSP. CO.

PERFORMED BY E. Fall WITNESS Paul Smith 7/6/82
CECo. Project Const. CECo. Q.C. Dept.

*BOLT TIGHTNESS CHECKED W/HAND WRENCHES (2-3/8" ϕ & 4-1/4" ϕ -8- BOLTS) E.E.F. 7/19/82

BOLT LOCKING HARDWARE INSPECTION FOR
REACTOR RECIRC FLOW CONTROL VALVES

VALVE NUMBER 1B33-F060B SERIAL NUMBER 71-2001-002A

MANUFACTURER Hammel Dahl Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

YOKE/BONNET BOLTING - 10 INSP. @
566 FT-LBS. 3 INSP. W/ BOX WRENCH;
NO PROBLEMS FOUND.

ACTUATOR/YOKE BOLTING - 4 INSP. @
300 FT-LBS. 4 INSP. W/ BOX WRENCH;
NO PROBLEMS FOUND

ACTUATOR ROD COUPLING BOLTING - ALL
INSP. @ 150 FT-LBS.; NO PROBLEMS FOUND

ACTUATOR BOLTING - ALL LOCKWIRES
SECURE.

TORQUE VALUE REF. - VENDOR INSTR. MANUAL

WRENCH I.D. NO. AI-361 & 398 OWNED BY CONAM INSP. CO.

PERFORMED BY E. Falk WITNESS [Signature]
CECo. Project Const. CECo. Q.C. Dept.

LASALLE COUNTY STATION UNIT 1
STRUCTURAL BOLTING TIGHTNESS INSPECTION PROGRAM
FOR CONTAINMENT VALVES

PREPARED BY: E. E. Palb
E. E. PALB
Project Construction Department

REVIEWED BY: Daniel L. Shamblin
D. L. SHAMBLIN
Site Project Superintendent

APPROVED BY: Daniel L. Shamblin for
B. B. STEPHENSON
Site Project Manager

LASALLE COUNTY STATION UNIT 1
STRUCTURAL BOLTING TIGHTNESS INSPECTION PROGRAM
FOR CONTAINMENT VALVES

SCOPE

This inspection program will be limited to safety-related valves inside Containment and will consist of the inspection (and correction if required) of:

1. proper tightness, or
2. proper installation and condition of bolt locking devices (where required).

for valve structural bolting essential for the valve function relative to safe plant shutdown and containment isolation.

Valve pressure boundary (bonnet and packing gland) bolting is not included in this inspection program.

The containment valves involved in this inspection program are separated by valve function as follows:

1. Manual
2. Motor Operated
3. Air Operated
4. Testable Check
5. Main Steam Isolation
6. Main Steam Relief
7. Reactor Recirc. Flow Control

For the valves included in this inspection program, mounting hardware for external valve position indicator switches will be visually inspected to assure bolting is tight against lockwashers or mounting bracket; loose bolts will be noted on the inspection form and tightened with ordinary hand tools.

GUIDELINES FOR BOLT TIGHTNESS INSPECTION

Manufacturer's recommendations will be used for spec. torque value. Where a manufacturer recommends "wrench tight", the following target torque values should be verified:

<u>BOLT DIAM. (in.)</u>	<u>TARGET TORQUE (ft.-lbs.)</u>
5/16	11
1/2	47
5/8	94
3/4	167
7/8	270
1 1/4	808

(Reference: 6/28/82 B. F. Pandit letter Attachment "A", Page 2, for \pm 15% torque wrench accuracy.)

Above target torque values are for ASTM A193 B-7 material. If "wrench tight" is specified for a different bolt material, CECO. Project Construction Engineer will request applicable values from CECO. Project Engineering and document this information on the inspection form.

Limiter torque operator mounting bolt torque should be verified in accordance with the above requirements or the following values, whichever is less:

<u>LIMITORQUE OPERATOR SIZE</u>	<u>MAX. VALVE ATTACHMENT BOLT TORQUE (ft.-lbs.)</u>
SMB - 000*	16 - 15%* = 13
00	85 - 15% = 72.
0	140 - 15% = 119
1	85 - 15% = 72
2	140 - 15% = 119
3	224 - 15% = 190
4	700 - 15% = 595
5	740 - 15% = 629

Where bolt access prevents use of a torque wrench, the bolt will be inspected (or tightened) with the use of ordinary hand tools by the same person who used the torque wrench on the other bolts. This procedure will be followed without interruption to assure the workman has an accurate sense of the amount of force he has to apply to the hand tool to properly tighten the bolt. Use of hand tools should be noted on the inspection forms.

*max wrench error factor

MANUAL VALVES

Valve yoke/bonnet bolting for manual valves is only safety significant for valves required to be closed for primary containment isolation; none are located inside containment. All manual valves in containment are provided for maintenance or test purposes. A yoke failure on these valves would only allow the disc to back seat and cause no significant problem. Therefore, inspection of the operator structural bolting will not be required.

INSPECTION DOCUMENTATION: none

MOTOR OPERATED VALVES (24 valves total)

The following motor operated valve structural bolting will be inspected for tightness:

1. yoke/bonnet bolting
2. operator/yoke bolting
3. operator assembly bolting essential to the function of the motor operator assembly - visual inspection to assure bolting is tight against lockwashers; loose bolts will be noted on the inspection form and tightened with ordinary hand tools.

INSPECTION DOCUMENTATION: FORM # MOV

AIR OPERATED VALVES

Yoke/bonnet connections are of a single casting and, therefore, inspection is not applicable. Some of the valve designs utilize a bonnet extension piece, which is part of the valve pressure boundary and, therefore, outside the scope of this structural bolting inspection. Operator/yoke bolting is blind inside the valve diaphragm housing and, therefore, inaccessible for this inspection.

INSPECTION DOCUMENTATION: none

TESTABLE CHECK VALVES

The air cylinder actuator is provided for test purposes only, and should not affect the operation of the check valve if it becomes loose or jammed. Therefore, inspection of the actuator bolting will not be required.

INSPECTION DOCUMENTATION: none

MAIN STEAM ISOLATION VALVES (4 valves total)

All actuator bolts have lockwashers, with the exception of hydraulic cylinder tie-rod nuts. The actuator bolts will be visually inspected to assure they are tight against their lockwashers. The tie-rod nut torque will be checked in accordance with instruction manual requirements.

INSPECTION DOCUMENTATION: FORM # MSIV

MAIN STEAM RELIEF VALVES (18 valves total)

All bonnet & actuator bolting (including air cylinder bolting & solenoid valve mounting bolts) are either lockwired in pairs or have tab washers. The actuator arm bolts have lockwashers. All of these bolt locking devices will be inspected to assure they are installed, installed properly, and are not damaged. This inspection will be directed by the valve manufacturer's representative. Bolt tightness will be checked as directed by the manufacturer's representative, for only those bolts with missing or improperly installed locking hardware. All other bolts with locking hardware installed in acceptable condition can be assumed to be factory tight since the valves have not been subjected to operating vibration loads.

INSPECTION DOCUMENTATION: FORM # SRV

REACTOR RECIRC. FLOW CONTROL VALVES (2 valves total)

All actuator bolting significant to the operation of the valve are either castle lock nuts or lockwired. These locking devices will be inspected for proper installation and condition.

INSPECTION DOCUMENTATION: FORM # FCV

MOTOR OPERATED VALVE STRUCTURAL BOLT TIGHTNESS INSPECTION

VALVE NUMBER _____ SERIAL NUMBER _____

MANUFACTURER _____

YOKE/BONNET BOLTING

(Use space below to diagram bolts not tightened to spec.)

SIZE _____ SPEC. TORQUE _____

NO. OF BOLTS _____

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. _____

OWNED BY _____

OPERATOR/YOKE BOLTING

(Use space below to diagram bolts not tightened to spec.)

SIZE _____ SPEC. TORQUE _____

NO. OF BOLTS _____

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. _____

OWNED BY _____

OPERATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN _____

PERFORMED BY _____ WITNESS _____

CECo. Project Const.

CECo. Q.C. Dept.

MAIN STEAM ISOLATION VALVE ACTUATOR
BOLT LOCKING HARDWARE AND HYDRAULIC
CYLINDER TIE ROD TIGHTNESS INSPECTION

VALVE NUMBER _____ SERIAL NUMBER _____

MANUFACTURER Rockwell Manufacturing Company

SUPPLIER General Electric Company

HYDRAULIC CYLINDER TIE ROD BOLTING

(Use diagram below to identify bolts not tightened to spec.)

SPEC. TORQUE 340 ft-lbs. NO. OF BOLTS 4

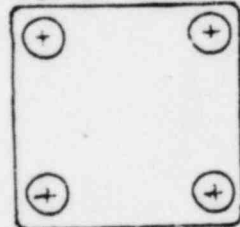
TORQUE SEQUENCE cross corner

CHECK HERE IF NO PROBLEMS WERE FOUND.

WRENCH I.D. NO. _____

OWNED BY _____

TOP OF VALVE



ACTUATOR ASSEMBLY

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

WRENCH I.D. NO. _____ OWNED BY _____

PERFORMED BY CECo. Project Const. WITNESS CECo. Q.C. Dept.

BOLT LOCKING HARDWARE INSPECTION FOR MAIN STEAM RELIEF VALVES

VALVE NUMBER _____ SERIAL NUMBER _____

MANUFACTURER Crosby Valve & Gage Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

WRENCH I.D. NO. _____ OWNED BY _____

PERFORMED BY Crosby Valve & Gage Company WITNESS CECo. Q.C. Dept.

BOLT LOCKING HARDWARE INSPECTION FOR
REACTOR RECIRC FLOW CONTROL VALVES

VALVE NUMBER _____ SERIAL NUMBER _____

MANUFACTURER Hammel Dahl Company

SUPPLIER General Electric Company

PROBLEMS FOUND/CORRECTIVE ACTION TAKEN: (If bolt tightening is required, list torque value used and reference. Identify missing or defective bolt locking hardware.)

WRENCH I.D. NO. _____ OWNED BY _____

PERFORMED BY CECo. Project Const. WITNESS CECo. Q.C. Dept.