

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

PHONE: 402-426-4011

NAC USE ONLY

LER 78-037
Omaha Public Power District
Port Calhoun Station Unit No. 1
Docket No. 05000285

Attachment No. 1

Valves Referenced in Section 27

1.	HCV-311	HPSI Loop Isolation Valve
2.	HCV-312	HPSI Loop Isolation Valve
3.	HCV-314	HPSI Loop Isolation Valve
4.	HCV-315	HPSI Loop Isolation Valve
5.	HCV-317	HPSI Loop Isolation Valve
6.	HCV-318	HPSI Loop Isolation Valve
7.	HCV-320	HPSI Loop Isolation Valve
8.	HCV-321	HPSI Loop Isolation Valve
9.	HCV-327	LPSI Loop Isolation Valve
10.	HCV-329	LPSI Loop Isolation Valve
11.	HCV-331	LPSI Loop Isolation Valve
12.	HCV-333	LPSI Loop Isolation Valve
13.	HCV-347	SI Shutdown Cooling Valve
14.	HCV-348	SI Shutdown Cooling Valve
15.	HCV-2914	SI Tank Isolation Valve
16.	HCV-2934	SI Tank Isolation Valve
17.	HCV-2954	SI Tank Isolation Valve
18.	HCV-2974	SI Tank Isolation Valve
19.	HCV-150	PORV Isolation Valve
20.	HCV-151	PORV Isolation Valve
21.	LCV-218-2	CVCS VCT
22.	LCV-218-3	CVCS SIRWT
23.	HCV-258	Emergency Boration Valve
24.	HCV-265	Emergency Boration Valve
25.	HCV-268	Emergency Boration Valve
26.	HCV-308	Charging to Safety Injection
27.	HCV-1384	Aux. Feedwater Valve
28.	HCV-1042C	Main Steam Control Valve Bypass
29.	MOV-S1	Motor Operated Drain Valve on Main Steam
30.	RCV-97B	Turb. 4th Stage Ext.

Al Anderson

LER 78-037
Omaha Public Power District
Fort Calhoun Station Unit No. 1
Docket No. 05000285

Attachment No. 2

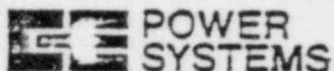
Safety Analysis

The problem of non-staked or improperly staked Limitorque valve operators was identified to the Fort Calhoun Station by the NSSS Vendor Combustion Engineering. Combustion Engineering informed OPPD that if an operator had an improperly staked lock nut, the operator stem nut could back out and loss of valve operation could occur. During the scheduled refueling outage all Limitorque valve operators were inspected and 30 operators were found not to be staked. The immediate corrective action was to insure the lock nut was tight and the nut was staked in accordance with the manufacturers recommendations for staking.

The conditions found at the Fort Calhoun Station were that the lock nuts on several valves were slightly loose, but in no instances was the stem nut backed out which would have jeopardized the operation of the valve. Should an operator as identified on Attachment 1 have failed, the safety of the plant would not have been affected since redundant systems are available and each failure would have to be an isolated event.

Periodic surveillance testing and/or operation of these valves has proven the valves to be operable. Reference Combustion Engineering letter attached for further detailed information.

Al Andrews



July 28, 1978
CE-18074-436

Mr. T.E. Short
Omaha Public Power District
Jones Street Station
4th. & Jones Street
Omaha, Nebraska 68102

Omaha Public Power District
Unit #1 - Fort Calhoun Station
Engineering Services Agreement
C-E Contract 2177

Subject: Improperly Staked Motor Valve Operators

Enclosures: (1) Section Sketch of Valve Drive Elements (Limitorque Operations)
(2) C-E Supplied Motor Operated Valves

Dear Mr. Short:

This is to inform you of a problem with improperly staked or non-staked Limitorque operators on motor operated valves. This problem could cause the operator stem nut to back out, resulting in a loss of valve operator action. It occurred at one plant and subsequently was brought to the attention of ANO-2 (Arkansas) where the Limitorque operators were inspected and several were found to lack staking.

During normal operation, the Limitorque operator opens or closes valves by rotation of the valve stem within the operator stem nut (see Enclosure 1). The internal portion of the stem nut is made to match the valve stem. The external portion has axial splines and matches the Limitorque drive sleeve. To keep the "stem nut" captured, a locking nut is screwed into the drive sleeve. This locking nut requires staking or crimping to keep it from backing off.

the locking nut has been improperly staked, it can back out, which in turn would allow the stem nut to move axially and to become disengaged from the splines. A loss of drive to the valve stem results. No torque is applied to the locking nut during operation; however, it appears that vibration could loosen an unstaked locking nut.

It is recommended that you inspect the Limitorque motor operated valves at Fort Calhoun as defined in Enclosure (2). The operators should be inspected for unstaked locking nuts and the nuts staked as necessary.

Very truly yours,

A handwritten signature in cursive script, reading 'A.G. Schoenbrunn'.

A.G. Schoenbrunn
Manager, Engineering Services
Fort Calhoun-1

AGS:SB:jm

Encl. w/1 cy.

cc: R. Andrews, OPPD, (1); w/1 cy.
K. Morris, OPPD, (1); w/1 cy.
R. Chatfield, OPPD, (1); w/1 cy.
W.C. Novick, CEKC
R. Erlacher, CEKC
S.A. Dunn, CE-135

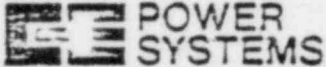
L. Kesselman, CE-Windsor
A. Stathoplos, CE-Windsor

C-E Supplied Motor
Operated Valves
Fort Calhoun

<u>Valve Tag No.</u>	<u>Description</u>	<u>Vendor</u>
HCV-348	12" - 1500# Gate	Velan
HCV-347	10" - 1500# Gate	Velan
HCV-2914, 2934, 2954, 2974	12" - 300# Gate	Darling
HCV-327, 329, 331, 333	6" - 300# Globe	Calmer
HCV-311, 312, 314, 315, 317, 318, 320, 321	2" - 1500# Globe	Velan
• HCV-268	3" - 150# Gate	Velan
• LCV-218-2	4" - 150# Gate	Velan

C-E Power Systems
Combustion Engineering, Inc.
1000 Prospect Hill Road
Windsor, Connecticut 06095

Tel. 203/688-1911
Telex: 99297



July 31, 1978
NFS-OPPD-78-40

Mr. T. E. Short
Omaha Public Power District
Jones Street Station
4th & Jones Street
Omaha, Nebraska 68102

Subject: Improperly Staked Motor Valve Operators

Enclosure: (LA) C-E Letter CE-18074-436, dated July 28, 1978
Subject - Improperly Staked Motor Valve Operators

(1) Section Sketch of Valve Drive Elements
(Limitorque Operators)

(2) C-E Supplied Motor Operated Valves

Dear Mr. Short:

Enclosure LA through 2 are provided for your information concerning improperly staked or non-staked limitorque operators on motor operated valves.

Should you have any questions please do not hesitate to contact me.

Very truly yours,

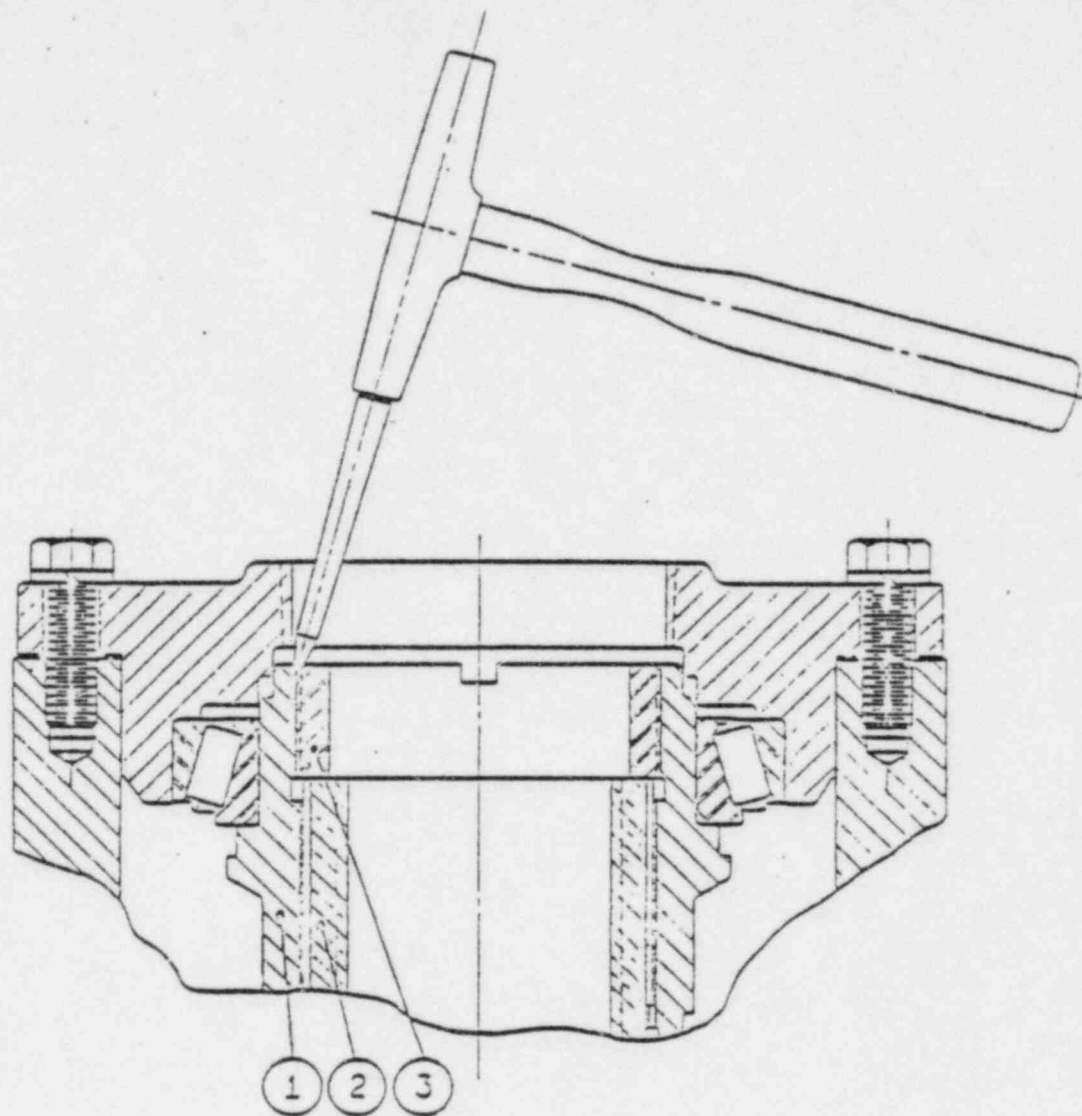
COMBUSTION ENGINEERING, INC.

A handwritten signature in cursive script, reading 'Russell H. Kesselman for'.

L. F. Kesselman
Nuclear Service Site Manager

LFK:fd
Enc.

cc: R. Andrews, OPPD ← THIS COPY FOR
K. Morris, OPPD
R. Chatfield, OPPD
W. C. Novick, CEKC
R. Erlacher, CEKC
S. A. Dunn, CE-135
A. Stathopoulos, CE Windsor
A. Schoenbrunn, CE Windsor

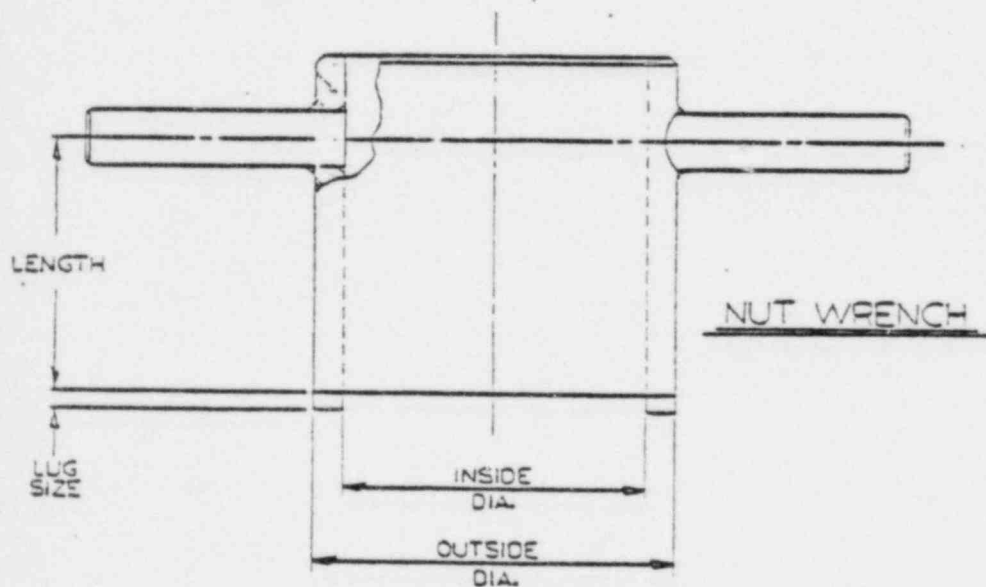


NUT WRENCH DIMENSION TABLE

UNIT SIZE	LENGTH	OUTSIDE DIA.	INSIDE DIA.	LUG SIZE	
				DEPTH	WIDTH
SMB IMB — 000	4 1/2	1 3/4	1 7/16	3/16	1 1/2
SMB IMB — 00	6 1/2	2 1/8	1 7/8	3/16	1 5/8
SMB IMB — 0	4 1/2	2 1/8	2 7/16	5/16	1 5/8
SMB IMB — 1		3 1/8	3	5/16	1 5/8
SMB IMB — 2		4 1/8	3 9/16	5/16	1 5/8
SMB IMB — 3	5	5	5 1/8	5/16	1 5/8
SMB IMB — 4	5 1/2	5 1/2	5 1/4	5/16	1 5/8

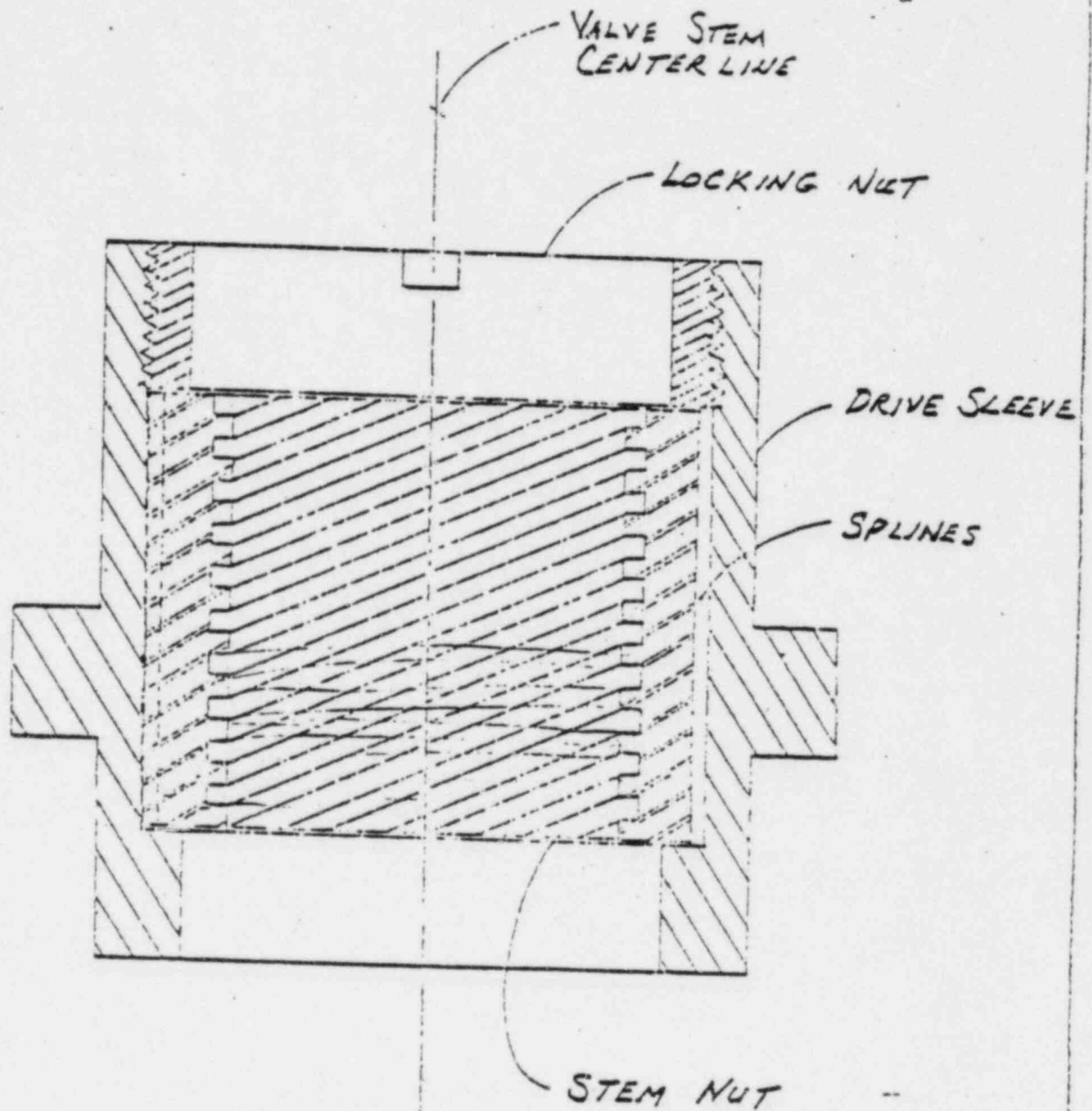
STEM NUT REPLACEMENT & LOCKING INSTRUCTIONS

- 1-SPOT DRILL STAKES PRIOR TO LOCKNUT REMOVAL.
- 2-REMOVE LOCKNUT (3) FROM DRIVE SLEEVE (1) THRU OPENING OF HOUSING COVER A SPECIAL WRENCH SUCH AS SHOWN BELOW WILL FACILITATE REMOVAL BUT IS NOT REQUIRED FOR SAME, REMOVE OLD STEM NUT (2).
- 3-DROP NEW STEM NUT (2) INTO DRIVE SLEEVE (1) THRU SPLINES. TAP NUT SLIGHTLY TO MAKE SURE IT IS BOTTOMED IN THE DRIVE SLEEVE.
- 4-SCREW IN LOCKNUT (3) UNTIL THE TOP IS FLUSH (APPROX.) WITH TOP OF DRIVE SLEEVE (1) AND TIGHTEN WITH WRENCH.
- 5-THEN STAKE LOCKNUT IN PLACE AT TWO POINTS, 180° APART, USING STAKING TOOL AS SHOWN.



<div style="display: flex; justify-content: space-between;"> REV. 1 REV. 2 </div>		DATE 3 9 75	SCALE 1/2" = 1"	SHEET 1 OF 1	REV. A	Dwg. No. 21-497-0009-3
		TITLE LOCKING NUT ASSEMBLING INSTRUCTION				
REVISIONS 1. REVISION 2. REVISION		DESIGNED BY D. J.				
		CHECKED BY J. H.				
APPROVED BY J. H.		DATE 3 9 75				
		SCALE 1/2" = 1"				
PART NAME LOCKING NUT		MATERIAL 316 STAINLESS STEEL				
		FINISH POLISHED				

ORIGINAL DWG NO. 21-497-0009-3



SECTION SKETCH OF VALVE DRIVE ELEMENTS
(LIMITORQUE OPERATOR)