

2-22-03

4256491

lift Adjustment

Operation 140

CNS OPERATIONS MANUAL MAINTENANCE PROCEDURE 7.2.45 SW PUMP LIFT ADJUSTMENT	USE: REFERENCE Ⓢ EFFECTIVE: 10/8/02 APPROVAL: SORC OWNER: J. A. NICHOLS DEPARTMENT: MNT
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1. PURPOSE	1
2. PRECAUTIONS AND LIMITATIONS	1
3. REQUIREMENTS	2
4. INSTRUCTIONS	2
5. RESTORATION	4
6. ACCEPTANCE CRITERIA	4
ATTACHMENT 1 SIGN-OFF AND REVIEW SHEET	5
ATTACHMENT 2 INFORMATION SHEET	7

REVISION VERIFICATION:
 (initial use + every 7 days) *B. A. H.* 2-22-03

REV.	DATE	CHANGES
8	5/10/01	Incorporated EBS terminology.
9	see above	Deleted Step 2.2. Added Step 3.5, revised Steps 4.5, 4.7, and 6.1

1. PURPOSE

- 1.1 This procedure provides Maintenance personnel with instructions for adjusting impeller lift of a service water pump (CICs: SW-P-A, SW-P-B, SW-P-C, and SW-P-D).
- 1.2 This procedure also provides for recording AS FOUND and AS LEFT impeller lift settings for reference.

Qualifications Verified

Ken Spallard
J. Proterak

2. PRECAUTIONS AND LIMITATIONS

- 2.1 The pump motor shall not be run when disconnected from pump without being absolutely certain sufficient clearance exists to prevent contact with the pump lift adjusting ring.
- 2.2 Ensure any steps marked N/A are recorded as discrepancies. Steps within the procedure that clearly indicate they are N/A if specified conditions are met are exempt from this requirement.
- 2.3 At least one performer shall have the ability, skill, training, or experience required for the general scope of work in which they are involved.
- 2.4 Certified measuring and mechanical gauging/test equipment shall be calibrated and data recorded on Attachment 1.

J-18

S	Order	Type	Bac start	Short text	FunctLoc.	Basic fin.
	4291739	CM	01/25/2003	SWP GLAND WATER FLOW LOOS UNPLANNED LCO	CNS-2-SW-P-B	01/26/2003
	4260040	PM	01/05/2003	SET IMPELLER LIFT PER 7.2.45 SEE NOTE	CNS-2-SW-P-B	01/29/2003
	4256491	CM	02/21/2003	OVERHAUL "B" SERVICE WATER PUMP	CNS-2-SW-P-B	02/22/2003
	4300025	CM	03/13/2003	LOW GLAND WATER FLOW SW PUMP B	CNS-2-SW-P-B	03/14/2003
	1004604	LCO	02/13/2003	WEEK 03 08 "B" SERVICE WATER PUMP LCO	CNS-2-SW-P-B	03/21/2003
	4296807	CM	03/25/2003	RETORQUE FOUNDATION BOLTING ON SW-P-B	CNS-2-SW-P-B	03/25/2003
	4300276	CM	04/17/2003	FLUSH SW-P-B GLAND SEAL LINE	CNS-2-SW-P-B	04/17/2003
	4309765	CM	05/19/2003	SW-P-B HAS EXCESSIVE GLAND LEAKAGE	CNS-2-SW-P-B	05/19/2003
	4321864	CM	09/16/2003	"B" SERVICE WATER PUMP GLAND LEAKAGE	CNS-2-SW-P-B	09/16/2003
	1003354	LCO	08/26/2003	SW P B	CNS-2-SW-P-B	09/26/2003
	4333507	CM	11/10/2003	SW-P-B PACKING HAS NO ADJUSTMENT LEFT	CNS-2-SW-P-B	11/10/2003
	1007000	LCO	10/30/2003	WK SW P B REPACK	CNS-2-SW-P-B	12/05/2003
	4361757	CM	02/05/2004	SW PUMP B NEEDS PACKING ADJUSTED	CNS-2-SW-P-B	02/11/2004
	4254610	SWO	01/15/2004	EVALUATE NOTIFICATION 10143503	CNS-2-SW-P-B	02/25/2004
	4366506	CM	03/01/2004	EXCESSIVE PACKING LEAKAGE FROM SW PUMP B	CNS-2-SW-P-B	03/02/2004
	4375384	CM	06/10/2004	SW-P-B IS OUT OF PACKING ADJUSTMENT	CNS-2-SW-P-B	06/11/2004
	4382673	PM	06/10/2004	SET IMPELLER LIFT PER 7.2.45	CNS-2-SW-P-B	06/11/2004

Overhaul
low gland H₂O flow

overhaul
flush gland H₂O
repacking
packing

pack

packing

packing

packing
lift

Sw-P-B

2.5 QC inspections shall be performed by personnel QC certified for the specific QC function.

2.6 Discrepancies shall be recorded on a Discrepancy Sheet.

3. REQUIREMENTS

3.1 Ensure following equipment and materials are available, as needed:

3.1.1 Common hand tools.

3.1.2 Feeler gauge.

3.1.3 Calibrated 0" to 1" micrometer.

3.1.4 Calibrated torque wrench capable of torquing to 80 ft-lbs.

3.1.5 Nickel Never-Seeze, thread lubricant (Q-94-484).

3.2 If performing initial pump lift adjustment, have Operations run pump for at least 1 hour just prior to setting lift to wash the pump clear of sand.

3.3 Record Approved Work Order/Maintenance Plan Number: 4256491

3.4 Record CIC: SW-P-B

3.5 SW System Engineer to determine approximate AS LEFT pump lift setting.

Approximate Impeller Lift Setting: .080

4. INSTRUCTIONS

4.1 Except for two diagonally opposite bolts, loosen and remove all bolts from coupling.

4.2 Evenly loosen the two remaining bolts, allowing pump shaft to lower, and then remove bolts.

4.3 Using strap or pipe wrench on pump shaft, shake and attempt to rotate pump shaft to ensure impeller is resting on the bottom.

NOTE - If AS FOUND measurement in Step 4.4 is within the limits stated in Step 4.7, adjustment is not required.

4.4 (QC Witness) Using a feeler gauge, measure and record AS FOUND impeller lift by measuring gap between adjusting plate face and drive half coupling face and record reading.

AS FOUND Impeller Lift: 0.116 inch

Performed By: JMB

QC Signature/Date: Ken Sullward 2-21-03

4.5 Adjust pump lift to the approximate impeller lift setting from Step 3.5 by holding pump half coupling against turning and rotating adjusting plate.

4.6 Turn adjusting plate down until bolt holes will line up with nearest bolt holes in pump half coupling.

4.7 **AC** (QC Witness) Using a feeler gauge, measure and record AS LEFT pump lift. The AS LEFT pump lift shall be close to the approximate impeller lift setting from Step 3.5 and between 0.040" and 0.080".

AS LEFT Impeller Lift: 0.073 inch

Performed By: JMB

QC Signature/Date: Ken Sullward 2-21-03

4.8 Rotate driver shaft to align bolt holes of drive half coupling with adjusting plate.

4.9 (QC Hold) Inspect pump components as follows, recording any discrepancies found:

4.9.1 Pump coupling for damage, erosion, corrosion, and wear.

SAT; [] UNSAT

4.9.2 Coupling bolts for damage, wear, galled, or stripped threads.

SAT; [] UNSAT

QC Signature/Date: Ken Sullward 2-21-03

4.10 If any discrepancies are recorded, they shall be resolved.

- [] 4.11 Apply thread lubricant to coupling bolts.
- [] 4.12 Replace two coupling bolts and tighten progressively until secure; thereby closing gap above adjusting plate and raising impellers to the running position.
- [] 4.13 (QC Witness) Install remaining coupling bolts and torque all bolts to 80 ft-lbs.

Performed By: JMB

QC Signature/Date: Kim Bullard 2-21-03

- [] 4.14 Manually rotate shaft to be certain shaft is free to turn.

5. RESTORATION

- [] 5.1 Sign in Clearance Order and release pump to Operations for testing.

6. ACCEPTANCE CRITERIA

- [] 6.1 AS LEFT pump lift is between 0.040" to 0.080".

ATTACHMENT 1 SIGN-OFF AND REVIEW SHEET

STEP NUMBER	IDENTIFICATION NUMBER	DESCRIPTION	CALIBRATION DUE DATE
4.4/4.7	FS 6496	O-1 Mic	12-24-03
4.13	9505	Torque Wrench	1-14-04

<u>Initials</u>	<u>Printed Name</u>	<u>Initials</u>	<u>Printed Name</u>
/		KA	Kim Sullwald
/		/	
/		/	
/		JMB	JEFFREY M. BRATERSOVSKY

Acceptance Criteria Satisfied: [] YES; [] NO

Discrepancies Recorded: [] YES; [] NO

If YES, all discrepancies are resolved.

Mechanical Maintenance

Supervision Review: J. Bratersovsky Date: 2/22/03

System Engineer Review: DJW Date: 3/4/03

RECORDS

Entire procedure is included with a Work Order for CNS Records (quality record upon TECO).

ATTACHMENT 1 SIGN-OFF AND REVIEW SHEET

Initial/date by each discrepancy or resolution listed.

#	DISCREPANCIES	#	RESOLUTIONS
	NONE Kim Sullwold 2-21-03		NONE

ATTACHMENT 2 INFORMATION SHEET

1. DISCUSSION

- 1.1 Service water pumps are electric driven, single-stage, vertical turbine pumps.
- 1.2 Service water pumps provide cooling water for the Turbine Equipment Cooling System (TEC), Reactor Equipment Cooling System (REC), Residual Heat Removal System (RHR), and Diesel Generator Cooling Systems (DGJW and DGLO) heat exchangers. The system also provides suction for the screen wash and sparger pumps.
- 1.3 The four pumps are located in the Intake Structure Service Water Pump Room. The pumps are numbered 1A, 1C, 1B, and 1D starting from the north.

2. REFERENCES

2.1 VENDOR MANUALS

- 2.1.1 CNS Number 0180, Service Water Pumps.