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Procedure and Form Change Request

(Sheet 1 of 1)

Section 1: Change Initiation Information

Document No.: MP 724.2 Revision No. 5 Change No. 2

Title: Reactor Feed Pump Coupling Replacement and Alignment

Initiated By: T. McNerney Change Type: Intent Non Intent

Reason:

To provide the correct heating temperature for installing the motor coupling hub. To provide recommended coupling lubricant quantity. To add requirement to add non-hardening sealant to shaft keys and keyways.

One Time Change? YES NO
OTC requires expiration date or condition

Expiration Date or Condition:

Removed Date:

Section 2: Instructions for Entering Change

Replace pages 6, 17, 20, and 25.

Section 3: Non-Intent Change Interim Approval

Section 3a. Approved by SORC or PORC Member or First Line Supervisor

Signature: _____ Date: _____

Interim Approval

Section 3b. Approved by Shift Manager or SRO Licensed on Unit

Signature: _____ Date: _____

Section 4: Reviews

QA Reviewer Signature: (if required) _____ Date: _____

Independent Reviewer Signature: [Signature] Date: 6/17/97

No comments Attachment 10 from DC 3 not required

→ Safety Evaluation Required? YES NO] If either question is answered "YES,"
→ Environmental Review Required? YES NO] PORC or SORC review is required.

Section 5: Review and Approval

PORC or SORC Review Required? YES NO

Department Head or Responsible Individual Signature: [Signature] Date: 6/17/97

(Common Department Procedures require each affected Department Head's signatures) _____ Date: _____

_____ Date: _____

Section 6: APPROVAL

(PORC) or SORC Meeting Number: 1-97097
Chairperson Signature: [Signature] Approval Date: 6-23-97

Effective Date: 6-23-97

DC1, Att 6, Rev. 5, (06-03-97)
Station Admin Procedures Group OSCAR Report

Ch 1

2.4.4 Consumables

- Approved antiseize compound, such as Never Seeze
- Approved cleaning solvent, such as HydraFoam 2020
- Approved degreasing solution, such as PT Degreaser
- Approved non-hardening sealant such as Permatex Form-a-Gasket No. 2
- Approved marking dye, such as Dykem
- Approved O-ring lubricant (for coupling sleeve O-rings), such as Dow Corning
- Clean rags
- Heat-resistant gloves for installing heated coupling hubs
- Herculite
- ~~Mobilux EP 111~~ Grease (for coupling hub and coupling sleeve gear teeth)
- Scotch-Brite pads

1ch
2

1ch
1

3. PRECAUTIONS

- 3.1 All consumables used in or on power plant components must be controlled in accordance with CC-1, "Control of Chemical Consumable Products."
- 3.2 Ensure all combustible materials, flammable liquids, compressed gasses, and ignition sources are used in accordance with WC-7, "Fire Protection Program."

Level of Use
General

STOP

THINK

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NOTE

The reactor feed pump shaft is tapered. To ensure a proper coupling hub fit, the coupling hub is installed in two phases; a cold-fit installation phase and a hot-fit installation phase. During the cold-fit installation, the pump coupling hub is installed snug to provide a reference point for measuring the 0.037-inch coupling hub drift that takes place when the coupling hub is heated and installed.

4.4.2 Refer To Attachment 1 and PERFORM cold-fit installation of pump coupling hub as follows:

- a. *Using an approved non-hardening sealant, COAT shaft key and keyway.*
- a.a INSTALL shaft key into shaft keyway.
- b. ALIGN coupling hub with shaft key and PUSH hub onto shaft as far as possible.
- c. Using a spanner wrench, INSTALL and TIGHTEN coupling nut until snug.

Ch
2

NOTE

The pump coupling hub face may extend beyond the end of the shaft, or the shaft may extend beyond the face of the pump coupling hub.

- d. IF pump coupling hub face extends beyond end of shaft, Refer To Attachment 3 and PERFORM the following:
- 1) ALIGN holes in strap with threaded holes in face of coupling hub.
 - 2) INSTALL and TIGHTEN bolt securing strap to coupling hub.
 - 3) FABRICATE shims with a thickness of 0.037 inch (0.035 to 0.039 inch).
 - 4) INSTALL jamnut onto locator bolt and THREAD jamnut up to bolt head.
 - 5) INSTALL, but do *not* tighten, locator bolt and jamnut into threaded hole in strap.

Level of Use
General

STOP

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4.4.7 Refer To Attachment 1 and INSTALL motor coupling sleeve and coupling hub as follows:

- a. Using an approved ^{O-ring} Lubricant, LUBRICATE coupling sleeve O-ring. | ch 1
- b. INSTALL coupling sleeve O-ring into mating recess in coupling sleeve.
- c. With O-ring end of coupling sleeve facing motor, INSTALL sleeve onto motor shaft and POSITION sleeve toward motor as far as possible.
- c.a Using an approved non-hardening sealant, COAT shaft key and keyway. | ch 2
- d. INSTALL shaft key into shaft keyway and ENSURE shaft key fits tightly in shaft keyway.

NOTE

- 1. Motor coupling hub and motor shaft have an interference fit of approximately 0.003 inch. Coupling hub must be heated to approximately ~~210°F~~ 350°F in order to achieve a proper fit. | ch 2
- 2. Motor coupling hub can be heated using an oven or an induction bearing heater. Heating with an oven is the preferred method.
- 3. Coupling hub installation must be performed as quickly as possible to ensure coupling hub is positioned properly before it cools.

- e. ~~Using an oven, HEAT coupling hub to 210°F~~ and ENSURE temperature does *not* exceed ~~220°F~~ 350°F. | ch 2
- f. PUSH coupling hub onto shaft until hub face is flush with end of motor shaft and HOLD hub securely until hub cools.

4.4.8 Refer To MP 720.4, "Reactor Feed Pump Repair (Ingersoll-Rand 12 x 17 RFD-3)" and INSTALL upper-half inboard bearing.

Level of Use
General

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NOTE

1. "Dimension I" is the required button length on pump end of spacer piece.
2. Button length can be reduced by machining spacer piece button end. Button length can be increased by welding additional material onto spacer piece button end.

m. PERFORM applicable action:

- MACHINE spacer piece button until button length equals "Dimension I."

NOTE

Spacer piece button material is AISI 1045 carbon steel.

- Refer To Weld Plan and WELD material onto spacer piece button until button length is equal to "Dimension I."

4.5.3 Refer To Attachment 1 and COUPLE pump and motor as follows:

NOTE
The coupling manufacturer recommends 3.6 lbs or 2 quarts of coupling grease.

- Refer To MP 791.0 (Att), "Feedwater (316)" and*
- a. ~~Using Mobilux EP-111 grease,~~ thoroughly LUBRICATE coupling hub teeth and coupling sleeve teeth.
 - b. APPLY approved thread sealant to coupling sleeve lubrication plugs.
 - c. INSTALL and TIGHTEN coupling sleeve lubrication plugs.
 - d. INSTALL pump coupling sleeve-to-spacer piece gasket.
 - e. INSTALL motor coupling sleeve-to-spacer piece gasket.
 - f. RELEASE motor from locked magnetic center position.

Level of Use
General

STOP

THINK

ACT

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