WATERFORD 3 SES
PLANT OPERATING MANUAL

LOUISIANA POWER & LIGHT
MIDDLE SOUTH UTILITIES SYSTEM

POM VOLUME 10
POM SECTION 4

ME-4-701
REVISION 5
APPROVAL DATE: November 11, 1982
EFFECTIVE DATE:

MAINTENANCE PROCEDURE

GREASING ELECTRICAL EQUIPMENT

PORC Meeting No. 82-374

Reviewed: _____
PORC Chairman

Approved: _____ for D. Lester
Plant Manager-
Nuclear

DEPARTMENTAL PROCEDURE

CHANGE/REVISION/DELETION REQUEST

PROCEDURE NO. ME-4-701 TITLE Greasing Electrical Equipment

EFFECTIVE DATE _____
(if different from Group Head approval date)

PROCEDURE STATUS

A. Change No. 1

B. Revision No. 0

C. Deletion N/A

REASON FOR CHANGE, REVISION, OR DELETION

Revise method on estimating amount of grease to add. Change Data Record Form to match.

REVIEW SIGNATURES

Originator David Dolotl Date 8-23-83

Technical Review Dave Dillon Date 8/23/83

PROCEDURE EVALUATION - Does this change, revision, or deletion:

	YES	NO
1. Change the facility as described in the FSAR?	____	✓
2. Change the procedures as described in the FSAR?	____	✓
3. Conduct tests/experiments not described in the FSAR?	____	✓
4. Create a condition or conduct an operation which exceeds or could result in exceeding, the limits in Technical Specification?	____	✓

If the answer to any of the above is yes, complete and attach a 10 CFR 50.59 Safety Evaluation checklist.

PROCEDURE EVALUATION Dave Dillon Date 8/23/83

Q.C. Review L. L. Skinner Date 8-23-83

Department Head Milton D Grant Date 8-23-83

TEMPORARY APPROVAL SIGNATURES *

NOS _____ Date _____

Maint. Super (or Group/Dept. Head) _____ Date _____

*Temporary approval must be followed by QC Review, Department Head Review and Group Head Approval within 14 days.

PERMANENT APPROVAL SIGNATURE (Changes/Deletions Only - For Revisions, see Title Page)

Group Head Jefferson Simon Date 9/29/83

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1.0 PURPOSE

This procedure provides specific instructions for the greasing of electric motors.

2.0 REFERENCES

2.1 Plant Lubrication Manual, RAN 457001150

2.2 Centrifugal Fan Instruction Manual, Section B, RAN 457000111

2.3 SAP-08, Condition Identification and Corrective Action

2.4 MM-4-001, Lubrication Procedure

3.0 PREREQUISITES

3.1 The Nuclear Operations Supervisor (NOS) has granted permission to perform this procedure for installed permanent plant motors.

3.2 Health Physics has issued a Radiation Work Permit (RWP) for maintenance to be performed on the motors in radiation areas.

4.0 PRECAUTIONS AND LIMITATIONS

4.1 PRECAUTIONS

4.1.1 When greasing running motors or motors that may be started, ensure that movable assemblies (shaft, coupling, fan, etc.) are clear of obstructions to prevent personal injury or equipment damage.

4.1.2 Whenever a motor is started, if excessive vibration or current is evident, shut off the motor and investigate for a cause.

4.1.3 Be very observant when inserting grease since overgreasing is a major cause of bearing and motor failure.

4.2 LIMITATIONS

4.2.1 Step completion shall be signified by initialing or entering data in the appropriate space on Attachment 10.1. If for some reason a step is not completed, an explanation shall be entered in the

"Remarks" section of Attachment 10.1 or "N/A" recorded in the appropriate data space.

4.2.2 If any discrepancies are encountered that are not within the scope of this procedure, submit a CIWA in accordance with SAP-08 to initiate further corrective action.

4.2.3 Replace any damaged or missing identification labels on the electrical equipment.

4.2.4 Record correctable deficiencies together with the remedial action taken in the "Remarks" section of Attachment 10.1 as a guide to trend analysis.

4.2.5 Hand-packed bearings will be packed in accordance with MM-4-001, Lubrication Procedure.

4.2.6 Greasing of electrical components other than bearings will be addressed in the individual procedures for those components or as directed by the Electrical Assistant Superintendent.

5.0 INITIAL CONDITIONS

The plant may be in any operational mode when this procedure is performed, as determined by the NOS on a case-by-case basis.

6.0 MATERIAL AND TEST EQUIPMENT

6.1 MATERIAL

6.1.1 Low pressure hand grease gun

6.1.2 SHC-32 or equivalent approved grease

6.1.3 Clean cloths or towels

6.1.4 Assorted TY-RAP's or equivalent hard plastic material

6.2 TEST EQUIPMENT

NONE

7.0 ACCEPTANCE CRITERIA

The proper amount of grease has been inserted into the motor (step 8.2.4).

8.0 PROCEDURE

8.1 PREPARATION

8.1.1 Ensure that all of the prerequisites have been completed.

8.1.2 Obtain a low pressure hand grease gun from the tool room or the hot tool storage area, as applicable.

8.1.2.1 Ensure that the gun is marked for SHC-32 (or equivalent approved grease).

8.1.3 If the gun needs to be filled, go to the lubricant storage area and fill the gun with clean SHC-32 or equivalent approved grease.

8.1.4 Wipe any grease and/or foreign material from the exterior of the gun.

8.1.5 Remove the protective cover from the tip of the gun.

8.1.6 Eject 1 shot of grease from the gun.

8.1.6.1 Thoroughly clean the tip of the gun of all grease.

8.1.7 Replace the protective cover over the tip of the gun.

8.2 GREASING MOTOR BEARINGS

8.2.1 Wipe the lubrication fittings clean of all grease and/or foreign material.

NOTE

On motors with long grease pipes, pipes should be cleaned thoroughly (if the grease has hardened) by removing the pipe from the motor and forcing the grease from the pipe, using the grease gun or other method as directed by the Electrical Assistant Superintendent.

8.2.2 Remove the grease relief plug and remove (using a TY-RAP or other hard plastic material) any hardened grease from the relief hole.

8.2.3 Remove the protective cover from the tip of the gun.

CAUTION

1. Overgreasing is a major cause of bearing and motor failure.
2. Ensure that movable assemblies (shaft, coupling, fan, etc.) are clear of obstructions to prevent personal injury or equipment damage.

NOTE

The "Volume Reference Table" on Attachment 10.1 may be used as a guide. However, experience in greasing electrical equipment will determine amount of grease to apply in each case, depending on motor duty, past history, temperature, location, etc.

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8.2.4 Add grease to each motor bearing slowly. Indicate amount used on Attachment 10.1.

8.2.5 Wipe excess grease from the tip of the gun and the grease fitting.

8.2.6 Replace the protective cover over the tip of the gun.

8.2.7 If the motor is running, allow it to run for approximately 10 minutes and then replace the relief plug.

8.2.8 If the motor is not running, have Operations (if possible) run the motor for approximately 10 minutes.

8.2.9 Inform the NOS that greasing of the motor has been completed (for permanently installed plant motors).

9.0 SETPOINTS

NONE

10.0 ATTACHMENTS

10.1 Greasing Electrical Equipment Data Record Form

11.0 COMMITMENTS AND REFERENCES

RT L12.06 GREASING ELECTRICAL EQUIPMENT

DATA RECORD FORM

EQUIPMENT DATA

Motor Serial No.		Motor UNID No.	

PREPARATION

STEP NO.		INITIALS/DATE
8.1.1	Prerequisites completed.	/
8.1.2	Drew correct type grease gun.	/
8.1.4/ 8.1.6	Cleaned gun and tip.	/

GREASING

8.2.1	Cleaned fitting.	/
8.2.2	Removed relief plug and cleaned hole.	/
8.2.4	Added grease Inboard _____Shots Outboard___Shots 1 Shot = 1 Complete pump of the gun handle.	/

VOLUME REFERENCE TABLE	
SHAFT DIAMETER	AMOUNT OF GREASE TO ADD
3/4 to 1¾ inch	0.1 ounces = 1 to 2 Shots
1¾ to 1 7/8 inch	0.2 ounces = 2 to 4 Shots
1 7/8 to 2 3/8 inch	0.6 ounces = 4 to 12 Shots
2 3/8 to 3 3/8 inch	1.6 ounces =12 to 32 Shots
3 3/8 to 4 3/8 inch	2.5 ounces =32 to 50 Shots
Above 4 3/8 inch	3.0 ounces =50 to 60 Shots

8.2.5	Cleaned gun tip and fitting.	/
8.2.7	Let motor run 10 minutes and replaced plug.	/
8.2.8	Ran motor 10 minutes (if possible) and replaced plug.	/
8.2.9	Informed NOS of completion.	/

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REMARKS: _____

PERFORMED BY: _____ DATE: _____

REVIEWED BY: _____ DATE: _____