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1.0  PURPOSE AND SCOPE

1.1 Purpose

This procedure provides a safe, uniform way to perform preventive maintenance/inspection and minor maintenance/adjustments of overhead doors.

1.2 Scope

This procedure applies to the overhead doors located at the 227S, 218A, and 2750E buildings.

2.0  INFORMATION

NONE

3.0  PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

**WARNING** - Stored energy found in overhead door springs and the weight of the overhead door can cause the door to move creating pinch points and the potential for personnel injury.

3.1.1 Comply with DOE-0336, Hanford Site Lockout/Tagout Procedure.

3.2 Equipment Safety

**CAUTION** - Lubricating motor is not required. Motor bearing are rated for continuous operation.

3.3 Radiation and Contamination Control

3.3.1 Work in radiological areas will be performed using a RWP following review by Radiological Control per ALARA Work Planning procedure, TFC-ESHQ-RP_RWP-C-03.

3.4 Environmental Protection

NONE

3.5 Limits

NONE
4.0 PREREQUISITES

4.1 Special Tools, Equipment, and Supplies

The following may be required to perform this test:

- SAE 30 Oil (GHS-SDS and/or MSDS #20613 or equivalent)
- Slip Plate graphite lubricant or equivalent (for use on rails only) (GHS-SDS and/or MSDS #014484E or equivalent)
- Scissor Lift
- Wiping towels
- Other tools, equipment and supplies as identified by Shift Manager/OE/FWS/User.

4.2 Performance Documents

The following documents may be needed to perform this procedure:

- DOE-0336, Hanford Site Lockout/Tagout Program
- Cornell Installation Instructions and Operation Manual
- Overhead Door RSX Installation and Maintenance Manual
- H-2-834240 Sheet 1 Rev. 2

4.3 Field Preparation

4.3.1 Obtain release from Operations management prior to beginning performance of this procedure.
5.0 PROCEDURE

Special Instructions

During performance of this procedure, record any deficiencies on the PM Data Sheet.

5.1 General Inspection of Roll-Up Doors

5.1.1 VISUALLY INSPECT doors for signs of damage on all brackets, braces, bolts, etc.

5.1.2 LUBRICATE overhead door rails using graphite lubricant AND VISUALLY INSPECT rails for damage or misalignment.

Limit Switches

5.1.3 OPERATE door electrically to confirm operability of limit switches AND ENSURE both open and close limits are set correctly.

5.1.4 IF limit switch adjustment is required, PROCEED to Section 5.2 - Limit Switch Adjustment.

Photo Electric Sensors

5.1.5 CHECK that green indicator lights are illuminated steady green on both sensors.

5.1.6 IF the green indicator lights are flashing rapidly (and invisible light beam path is not obstructed), Proceed to Section 5.2 - Limit Switch Adjustment.

5.1.7 INSPECT photoelectric sensors for proper operation by performing the following:

5.1.7.1 PRESS the open button to open overhead door.

5.1.7.2 PLACE an obstruction in the path of the photoelectric sensors (the receiving sensor green indicator light will turn off).

5.1.7.3 PRESS AND HOLD close button (door should not close).

5.1.7.4 REMOVE the obstruction.

5.1.7.5 PRESS AND HOLD the close button (overhead door should close).
5.1 General Inspection of Roll-Up Doors (Cont.)

5.1.8 IF overhead door travels in close direction while sensors were obstructed, PROCEED to Section 5.3 - Photoelectric Sensor Adjustment.

Lower Sensing Edge

NOTE: Overhead Doors located in 227S and 2750E have 2 wire monitored sensing edge switches. Overhead Door located in 218A has a Pneumatic Air Switch.

5.1.9 INSPECT lower sensing edge for proper operation by performing the following:

5.1.9.1 PLACE an obstruction in the path of the leading edge.

5.1.9.2 CLOSE door until it contacts the obstruction. (The switch assembly will stop the door and reverse directions).

5.1.9.3 IF the switch on Liftmaster and RSX Series overhead doors DO NOT STOP door or DO NOT FUNCTION properly, DOCUMENT the problem on the Data Sheet.

5.1.9.4 IF the switch on Cornell SG Series overhead doors DO NOT STOP door or DO NOT FUNCTION properly, PROCEED to Section 5.4 - Pneumatic Air Switch Adjustment.

Inspection of Clutch

5.1.10 OPERATE door electrically to confirm proper clutch action AND ENSURE clutch is not slipping.

5.1.11 IF clutch adjustment is required, PERFORM the following:

NOTE: Turning adjustment castle nut counter-clockwise decreases compression, clockwise increases compression.

5.1.11.1 REMOVE cotter pin from castle nut on clutch shaft. (Figure 5)

5.1.11.2 DECREASE compression on clutch until operator will not lift door.

5.1.11.3 GRADUALLY INCREASE compression until operator will perform a complete open and close cycle without clutch slippage.
5.1 General Inspection of Roll-Up Doors (Cont.)

5.1.11.4 INSERT cotter pin through adjustment castle nut AND
BEND cotter pin leg to hold in place.

Inspection of Chain and Drive Sprockets

5.1.12 INSTALL Lockout/Tagout in accordance with DOE-0336, Hanford Site
Lockout/Tagout Procedure.

**WARNING**

Stored energy found in overhead door springs and the weight of the
overhead door can cause door movement creating pinch points and the
potential for personnel injury.

5.1.13 WHEN working on drive chain and sprockets, CLOSE door completely.

**Special Instructions**

Chain tension between drive and driven sprockets should have no more than \( \frac{1}{4} \) inch
deflection (slack) from a straight line.

5.1.14 INSPECT drive chain for wear AND
ADJUST drive chain keeping slack to minimum.

**CAUTION**

Lubricating motor is not required. Motor bearing are rated for
continuous operation

5.1.15 DO NOT LUBRICATE motor.

NOTE - Only use SAE 30 Oil, never use grease or silicone spray.

5.1.16 LUBRICATE drive chain using SAE 30 Oil.

5.1.17 LUBRICATE bearings and shafts AND
VISUALLY INSPECT bearings and shafts for wear.

5.1.18 ENSURE set screws on sprockets are tight.

5.1.19 ENSURE all fasteners are tight.
5.1 General Inspection of Roll-Up Doors (Cont.)

**Manual Disconnect Inspection**

5.1.20 **INSPECT** the following to ensure operability:
- Disconnect chain (sash chain)
- Chain keeper (mounted on the vertical door rail)
- Hoist chain
- Hoist chain wheel.

5.1.21 **PULL** the disconnect chain to engage the hoist mechanism.

5.1.22 **SECURE** the disconnect chain in the chain keeper.

5.1.23 **OPERATE** the door in the desired direction by pulling on one side or the other of the continuous loop hoist chain.

5.1.24 **RELEASE** the disconnect chain from the chain keeper to disengage the hoist mechanism **AND**

**ALLOW** the door to be operated electrically again.
5.2 Limit Switch Adjustment

**Liftmaster**

5.2.1 MOVE door to fully close position

5.2.2 INSTALL Lockout/Tagout in accordance with DOE-0336, Hanford Site Lockout/Tagout Procedure.

5.2.3 DEPRESS the retaining plate (1) in Figure 1 AND

MOVE the limit nut to the CLOSE limits (2) in Figure 1.

5.2.4 RELEASE retaining plate AND,

ENSURE that retaining plate is fully seated with the notches of the limit nuts.

5.2.5 REMOVE Lock Out, in accordance with DOE-0336, Hanford Site Lockout/Tagout Procedure.

5.2.6 MOVE the door to the fully open position.

5.2.7 INSTALL Lockout/Tagout in accordance with DOE-0336, Hanford Site Lockout/Tagout Procedure.

5.2.8 DEPRESS the retaining plate (1) in Figure 1 AND

MOVE the limit nut to the OPEN limit (3) in Figure 1.

5.2.9 RELEASE retaining plate is AND,

ENSURE that retaining plate is fully seated with the notches of the limit nuts.

5.2.10 REMOVE Lock Out, in accordance with DOE-0336, Hanford Site Lockout/Tagout Procedure.

5.2.11 OPERATE door electrically AND

ENSURE both open and close limits are set correctly.
5.2 Limit Switch Adjustment (Cont.)

**Cornell SGH Series**

NOTE: Limit cams must be positioned between the limit switch actuators before making adjustments.

5.2.12 **REMOVE** control panel cover

5.2.13 **OPEN OR CLOSE** door to determine moving direction of limit switch cams

5.2.14 **OPEN OR CLOSE** door to desired position.

5.2.15 **INSTALL** Lockout/Tagout in accordance with DOE-0336, Hanford Site Lockout/Tagout Procedure.

5.2.16 **PRESS AND HOLD** spring loaded lever (G), which hold limit switch cams in place. (Figure 2)

NOTE: “C” is usually the opening side and “D” is usually the closing side.

5.2.17 **ADJUST** limit switch cam (E or F) until micro switch (C or D) clicking sound is heard. (Figure 2)

5.2.18 **IF** limit switch cannot be rotated to desired position, **RELEASE** lever AND **REMOVE** Lock Out, in accordance with DOE-0336, Hanford Site Lockout/Tagout Procedure.

5.2.19 **MOVE** door away from desired position AND **INSTALL** Lockout/Tagout in accordance with DOE-0336, Hanford Site Lockout/Tagout Procedure.

5.2.20 **ADJUST** limit switch cam to desired position.

5.2.21 **REPEAT** steps 5.2.14 to 5.2.20 for opposite position.

5.2.22 **ADJUST** “CLOSE” limit switch so actuator is engaged as door fully seats on floor.

5.2.23 **OPERATE** door electrically AND **ENSURE** both open and close limits are set correctly.
5.2 Limit Switch Adjustment (Cont.)

**Overhead Door RSX Series**

NOTE the recommended set point for the DOWN travel limit is normally at approximately 2 inches off the floor. The final distance will be covered by the Limit Overrun Function to establish a more accurate seal.

5.2.24 **MOVE** door to fully close position

5.2.25 **IF** operator is in RUN mode, **PRESS** CAL/RUN to enter calibration mode.

5.2.26 **PRESS** SCROLL (up or down) until display reads “UP LIMIT>CLR” (Figure 3-A).

5.2.27 **OPEN** door using the OPEN key to the desired height.

5.2.28 **PRESS** SET/CLEAR key to switch display to “UP LIMIT>SET” LIMIT>SET” (Figure 3-B).

5.2.29 **PRESS** SCROLL (Up or Down) to shift to a new function and lock limit setting.

5.2.30 **PRESS** SCROLL (up or down) until display reads “DOWN LIMIT CLEAR” (Figure 3-C).

5.2.31 **CLOSE** door using the CLOSE key to fully close position.

5.2.32 **PRESS** SET/CLEAR key to switch display to “DOWN LIMIT>SET” (Figure 3-D).

5.2.33 **PRESS** SCROLL (Up or Down) to shift to a new function and lock limit setting.

5.2.34 **PRESS** CAL/RUN to return to run mode.
5.3 Photoelectric Sensor Adjustment

5.3.1 CHECK the green indicator lights are illuminated steady green on both sensors.

5.3.2 IF the green indicator lights are flashing rapidly (and the invisible light beam path is not obstructed), ALIGN the sensors as follows:

5.3.2.1 LOOSEN the receiving sensor wing nut to allow slight rotation of the sensor.

5.3.2.2 ADJUST sensor vertically and/or horizontally until the green indicator light glows steadily.

5.3.2.3 WHEN the indicator lights are glowing steadily in both sensors, TIGHTEN the receiving sensor wing nut.

5.3.3 PRESS the OPEN button to open the overhead door.

5.3.4 PLACE an obstruction in the path of the photoelectric sensors (the receiving sensor green indicator light will turn off).

5.3.5 PRESS AND HOLD the close button (the overhead should not close).

5.3.6 IF overhead door did travel in close direction while sensors were obstructed, CHECK photoelectric sensors.

5.3.7 REMOVE the obstruction.

5.3.8 PRESS AND HOLD the close button (overhead door should close).
5.4 Pneumatic Air Switch Adjustment

**Special Instructions**

When making adjustments to switch make adjustments in 1/8 turn increments testing sensitivity after each adjustment.

NOTE: Adjusting switch to be too sensitive may cause normal vibration of operation to reverse the door without contacting an obstruction.

5.4.1 **IF** sensitivity of the switch must be adjusted, **TURN** the plastic screw on topside of switch (Figure 4) in the flowing manner:

5.4.1.1 To increase sensitivity, **TURN** switch in a CLOCKWISE direction. (Closes gap between switch contacts making the edge more sensitive)

5.4.1.2 To decrease sensitivity, **TURN** switch in a COUNTERCLOCKWISE direction. (Opens gap between switch contacts making edge less sensitive)

5.4.1.3 **PLACE** an obstruction in the path of the pneumatic leading edge.

5.4.1.4 **CLOSE** door until it contacts the obstruction. (The switch assembly will stop the door and reverse directions).

5.4.1.5 **REPEAT** Steps 5.4.1.1 thru 5.4.1.4 until switch is adjusted properly.
5.5 Restoration

5.5.1 **REMOVE** Lock Out, in accordance with DOE-0336, Hanford Site Lockout/Tagout Procedure.

5.5.2 **CYCLE** several times (manually and electrically) to **ENSURE** door operates as designed.

5.5.3 **IF** further work is required, **PERFORM** the following:

5.5.3.1 **PLACE** door in the desired position **AND**

**INSTALL** Lockout, in accordance with the DOE-336, Hanford Site Lockout/Tagout Procedure.

5.5.3.2 **GO TO** Section 5.1 - General Inspection of Roll-Up Doors.

5.5.3.3 **IF** no further adjustments are required, **RE-PERFORM** Steps 5.5.1 and 5.5.2 **AND**

**PROCEED** to Step 5.5.4.

5.5.4 **COMPLETE AND SIGN** PM Data Sheet.

5.5.5 **REPORT** any deficiencies and/or potential cause of early failure to the FWS for corrective action.

5.5.6 **RETURN** Data Sheet to FWS.
5.6 Acceptance Criteria

Comparison and verification of data in applicable steps of the procedure with limits of Data Sheet steps satisfies Acceptance Criteria for this procedure.

5.7 Review

5.7.1 **INFORM** FWS test is complete.

5.7.2 FWS must **REVIEW AND ENSURE** the following:

- Completed Data Sheets meet acceptance criteria.
- Comments sections are filled out appropriately.
- Work requests needed as a result of this procedure are identified and generated.
- As applicable, work request number(s) of any work documents generated as a result of this procedure, are recorded in Comments/Remarks Section of Data Sheet.

5.8 Records

This procedure is performed within a work package, as such, the procedure in its entirety will be maintained as a record per the Work Control process.

The record custodian identified in the Company-level Records Inventory and Disposition Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.
Figure 1 – Lift Master Limit Switches
Inspection of Overhead Doors in 227S, 218A and 2750E

Figure 2 – Cornwell SGH Series Limit Switches
Inspection of Overhead Doors in 227S, 218A and 2750E

Figure 3 – Overhead Door RSX Series Limit Switches

Figure 3-A

Figure 3-B

Figure 3-C

Figure 3-D
Inspection of Overhead Doors in 227S, 218A and 2750E

Figure 4 – Cornwell SGH Series Pneumatic Air Switch

Adjustment Switch
Figure 5 – Clutch Adjustment