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C-A OPERATIONS PROCEDURES MANUAL

7.1.48 Shutdown of the Warm Turbine Oil Skids

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Hand Processed Changes

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Approved: _____ *Signature on File* _____
Collider-Accelerator Department Chairman Date

D. Lederle

7.1.48 Shutdown of the Warm Turbine Oil Skids

1. Purpose

To provide instruction on the shutdown of the warm turbine oil skids. This will need to be completed when shutting down one or both turbine trains.

2. Responsibilities

- 2.1 The Shift Supervisor or an operator designated by the Shift Supervisor is responsible for conducting the procedure and providing documentation in the cryogenic control room log.
- 2.2 Should a problem arise in the process of this procedure, the Shift Supervisor shall report to the technical supervisor for instructions before continuing.

3. Prerequisites

- 3.1 Associated turbine train not running.

4. Precautions

- 4.1 If there is liquid helium in the refrigerator pots, all personnel entering the refrigeration wing of Bldg. 1005R must be ODH 1 qualified, have a Personal Oxygen Monitor (POM) and carry an escape pack.

5. Procedure

- 5.1 Shutdown of turbines 1A/2A and 3A/4A.

_____ 5.1.1 Date _____.

_____ 5.1.2 Stop oil to expanders 1A and 2A by placing the "Lube Oil Selector" switch to "Off."

_____ 5.1.3 Stop oil to expanders 3A and 4A by placing the "Lube Oil Selector" switch to "Off."

_____ 5.1.4 Allow oil to drain back to sump.

_____ 5.1.5 Isolate seal gas supply by closing valve H10518M_____ for turbine 1A/2A and valve H10648M_____ for turbine 3A/4A.

_____ 5.1.6 Close the following valves located near turbine 1A/2A pod:

E699M_____	E710M_____
E701M_____	E711M_____
E704M_____	E893M_____
E705M_____	H1210M_____
E706M_____	

_____ 5.1.7 Close the following valves located near turbine 3A/4A pod:

E799M_____	E806M_____
E801M_____	E859M_____
E804M_____	E891M_____
E805M_____	H1230M_____

_____ 5.1.8 Install mechanical brake assemblies on turbines 1A, 2A, 3A and 4A as per OPM 7.1.26, "Expander Brake System Installation and Removal."

_____ 5.1.9 If the skids are to be fully shut down ("A" and "B" trains), complete section 5.3.

5.2 Shutdown of turbines 1B/2B and 3B/4B.

_____ 5.2.1 Date_____.

_____ 5.2.2 Stop oil to expanders 1B and 2B by placing "Lube Oil selector" switch to "Off."

_____ 5.2.3 Stop oil to expanders 3B and 4B by placing "Lube Oil Selector" switch to "Off."

_____ 5.2.4 Allow oil to drain back to sump.

_____ 5.2.5 Isolate seal gas supply by closing valve H10519M_____ for turbine 1B/2B and valve H10649M_____ for turbine 3B/4B.

_____ 5.2.6 Close the following valves located near turbine 1B/2B pod:

E793M_____	E779M_____
E794M_____	E788M_____
E786M_____	E787M_____
E785M_____	H1211M_____

_____ 5.2.7 Close the following valves located near turbine 3B/4B pod:

E984M_____	E884M_____
E879M_____	E872M_____
E987M_____	E887M_____
E883M_____	H1231M_____

_____ 5.2.8 Install mechanical brake assemblies on turbines 1B, 2B, 3B and 4B per OPM 7.1.26, Expander Brake system Installation and Removal.”

_____ 5.2.9 If the skids are to be fully shut down (“A” and “B” trains), complete section 5.3.

5.3 Shutdown of skids.

Caution:

Do not isolate the oil sump from the seal gas compressor or stop oil pumps unless both turbine trains (“A” and “B”) are shut down.

_____ 5.3.1 Stop turbine 1/2 oil pump by placing “Pump Select” switch to “Off.”

_____ 5.3.2 Stop turbine 3/4 oil pump by placing “Pump Select” switch to “Off.”

_____ 5.3.3 For turbine 1/2 skid, close the following valves:

H1202M_____	H1205M_____
H1203M_____	H1201M_____
H1204M_____	

_____ 5.3.4 For turbine 3/4 skid, close the following valves:

H1222M_____	H1225M_____
H1223M_____	H1221M_____
H1224M_____	

6. Documentation

6.1 The check-off lines on the procedure are for place keeping only. The procedure is not to be initialed or signed, it is not a record.

6.2 The Shift Supervisor, or designee, shall document the completion of the procedure in the Cryogenics Control Room Log.

7. References

7.1 Drawing 3A995074, Warm Expanders 1 through 4 Schematic

7.2 C-A-OPM 7.1.26, “Expander Brake System Installation and Removal”

8. Attachments

None