If you are using a printed copy of this procedure, and not the on-screen version, then you MUST make sure the dates at the bottom of the printed copy and the on-screen version match.
The on-screen version of the Collider-Accelerator Department Procedure is the Official Version.
Hard copies of all signed, official, C-A Operating Procedures are kept on file in the C-A ESHQ Training Office, Bldg. 911A.

C-A OPERATIONS PROCEDURES MANUAL

7.1.21 Regeneration of Adsorber Bed A

Text Pages 2 through 4

Hand Processed Changes

HPC No.	Date	Page Nos.	Initials

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

D. Lederle

7.1.21 Regeneration of Adsorber Bed A

1. Purpose

This procedure provides instructions for regenerating adsorber bed A on the RHIC 25 kW Helium Refrigerator. This procedure shall be performed when adsorber bed A is contaminated and has been taken offline. The steps necessary to take adsorber bed A offline are not covered under this procedure, please reference C-A OPM 7.1.20.

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 regenerating the adsorber bed, the Shift Supervisor shall report to the Technical Supervisor for instructions before continuing.

3. Prerequisites

3.1 Operator shall be familiar with the refrigerator P&ID drawing 3A995009, the physical location of components on the refrigerator, and the refrigerator control pages found on the CRISP control system.

3.2 The regeneration skid must be available for use.

4. Precautions

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

5. Procedure

_____ 5.1 Date _____

_____ 5.2 Ensure the following valves are CLOSED:

Process Valves:

H362A_____ H371A_____

Valves Used for Regeneration/Pure Helium:

H417M_____ H9118M_____

Valves to atmosphere, relief valve header, sample taps or vacuum:

H366M_____ H9089M_____
H367M_____ H9090M_____
H368M_____ H9119M_____
H897M_____ H9170M_____
H899M_____ V263M_____

_____ 5.3 Start the regeneration (regen) skid per C-A-OPM 7.1.36, "Regeneration System Normal Operation".

_____ 5.4 Open the following valves:

H9088M_____ H418M_____
H419M_____ H163M_____
H9167M_____

_____ 5.5 Close regen manifold bypass valve H9100M.

_____ 5.6 Turn on regen skid pre-heater.

_____ 5.7 When there is no frost on the regen return line, continue to regenerate for at least 1 hour. Hygrometer reading must be -30°C to -40°C and improving less than 0.5°C/hr.

_____ 5.8 Turn off regen skid preheater.

_____ 5.9 Open valve H9100M.

_____ 5.10 Close the following valves:

H163M_____ H9088M_____
H418M_____ H419M_____
H9167M_____

_____ 5.11 Secure the regeneration skid per C-A-OPM 7.1.36.

_____ 5.12 Set up to purge adsorber bed "A" by opening H9118M_____ and H9089M_____.

_____ 5.13 Crack open valves H417M_____ and H9090M_____ until an audible purge is heard.

_____ 5.14 Align oxygen monitor to sample valve H368M.

_____ 5.15 Allow adsorber bed "A" to purge for approximately 3 hours at an audible level. Oxygen monitor reading must be less than 10 ppm.

_____ 5.16 Close valves H9090M_____ and H9089M_____.

_____ 5.17 When PI445H reaches approximately 250 PSIA, close valves H417M_____ and H9118M_____.

_____ 5.18 Open inlet valve H362A as a sign that adsorber bed "A" has been regenerated and is ready for service.

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 3A995009, 25KW Helium Refrigerator P&ID.

7.2 C-A-OPM 7.1.20, "Adsorber Bed "B" Online and Adsorber Bed "A" Offline.

7.3 C-A-OPM 7.1.36, "Regeneration System Normal Operation".

7. Attachments

None