Jefferson Lab

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HALL D PROCEDURE NO.:
D00000-04-02-P004 Rev A

TITLE: Solenoid Vacuum System Controls Check Procedure

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REV.	DESCRIPTION	BY	CHK.	APP.	APP.	DATE
A	Revised for Coil Turbo Manifold reconfiguration.	GB	TC	TW		23Jun14

Instructions
Perform the items below. Upon Completion, scan and insert into the Solenoid Test Log.
Checkout of vacuum system operation

Item	Checked by:	Date
Do Pirani (Convectron) Gauges read on their Controllers? Manifold Coil 2 Coil 1 Coil 3 Coil 4 Distribution Box		
Do Chimney Cold Cathode Gauges read correctly on their Controllers and on the Vacuum Control screen? Manifold Coil 2 Coil 1 Coil 3 Coil 4 Distribution Box		
Are Chimney Bellows and Convectron Gauges Armored?		
Verify that the pneumatic valve opens when the key switch is set to "OPEN" position and closes when the key switch is set to "CLOSE". At the same time, verify Pumped Coils/ Non-Pumped Coils shown correctly on the vacuum control screen Coil 2 Coil 1 Coil 3 Coil 4 Distribution Box		
For the following tests, we assume the Solenoid and distribution box are not cold. All coils will be temporarily switched to "Pumped" status by setting the key switches to AUTOMATIC. The vacuum chassis low vacuum limits (refer to Vacuum Narrative) may have to be set to worse vacuums than exist in the coils for the valves to remain open. **Do not attempt these tests on a cold magnet.**		

When key switch is in AUTOMATIC, change the low vacuum limit in the Cold Cathode Gauge Controller of each item below to better vacuum than the present vacuum state (1) Does the Gate Valve close? (protecting other pumped coil's vacuums) (2) Does a PLC Fast Dump start? (3) Is an alarm sent to the operations pager? **Change limits back to original state as each item is checked.** With the key switches in AUTOMATIC. The valve should remain closed. Does the AUTOMATIC Reset Button on the Vacuum Chassis open the gate valve. (Turbo pumps have to be up to speed.) Coil 2 Coil 1 Coil 3 Coil 4 Distribution Box**.**		
With the key switch is in AUTOMATIC, (1) does the PLC screen show the correct Turbo Pump Speed? (2) Pull the communications plug from the turbo pump on the manifold and the Distribution box (simulating the pump speed is zero. Does a PLC Turbo Speed Low appear on the Vacuum Control Screen? Coil 2 Coil 1 Coil 3 Coil 4 Distribution Box		
With the key switch is in AUTOMATIC, Plug communications plugs back in. Does the gate valve remain closed until the AUTOMATIC Reset Button on the Vacuum Chassis is pushed. Coil 2 Coil 1 Coil 3 Coil 4 Distribution Box		
With the key switch is in AUTOMATIC, disconnect the Power Plug on the air control valves of the Pneumatic Gate Valves (1) Does the Gate Valve close?		

Coil 2 Coil 1 Coil 3 Coil 4 Distribution Box		
With resumption of power, do the valves remain closed with opening only accomplished with the respective relay unlatch by pressing AUTOMATIC Reset Button on the Vacuum Chassis? Coil 2 Coil 1 Coil 3 Coil 4 Distribution Box		
It is at this point that the key switches may be returned to their original setting before the test started.		
If the best vacuum limit on the Cold Cathode Gauge Controller is lowered below the existing vacuum, does (1) the PLC issue a Faulty Vacuum Gauge, screen alarm and (2) an alarm sent to the operations pager? Coil 2 Coil 1 Coil 3 Coil 4 Distribution Box **Re-adjust Limits to original High limit**		
On all vacuum volumes, change the "alarm" marginal vacuum limit set point in the PLC software to better vacuum than is present. Does the PLC issue a "Vacuum Marginal" screen alarm and an alarm page to the Operations Pager? Manifold Coil 2 Coil 1 Coil 3 Coil 4 Distribution Box **Change PLC marginal vacuum limits back to original state**		