Fermi National Accelerator Laboratory

Fermilab Work Process and Controls

Work Package #30341 Mass Flow Controller Swap Out
Status New
Description We are replacing two faulty mass flow controllers on the QT gas panel.
TM/CC/SC/Work Planner Keller, Dustin (13081V) 630.840.
Performed For PPD — Particle Physics Division
Managed By PPD — Particle Physics Division
Estimated Dates 03-APR-23 — 03-APR-23

Package Location

Type	Name	Building Manager	Org
Floor	KTeV / NM4 I Ground Floor [630]	AFM: (Huey, Steve) TL: (Nelson, Leonard)	PPD

Fermi National Accelerator Laboratory

Work Package # 30341 - Mass Flow Controller Swap Out
Hazard Analysis - Form 2023-22404
Dates 03-APR-2023 — 03-APR-2023
Managed By PPD — Particle Physics Division
Performed On Particle Physics Division
Authorizing Supervisor Tesarek, Rick (12680N) 630.840.8609
Project Name E1039
Prepared By Keller, Dustin (13081V) 630.840.
Job Description We are replacing two faulty mass flow controllers on the QT gas panel.
Workflow Status Approved

Point of Contact _____

Pre-job Briefing Conducted by _____

Package Location

Type	Name	Building Manager	Org
Floor	KTeV / NM4 I Ground Floor [630]	AFM: (Huey, Steve) TL: (Nelson, Leonard)	PPD

Details / Hazards Identified

Additional Details

Prerequisite: No LHe in dewars A, B. No portable dewar attached to the system (ie dewar C).
Tools and Equipment: Need two wrenches (can be crescent). Need two need Mass Flow Controllers to be installed.
Please add wearing safety glasses during the procedure.

Hazard / Mitigation

Step #	Critical Step	Process Step	Hazard Details	Mitigation Details
1	No	Record positions of all 6 valves: SVNA,SVNB, SVVA,SVVB, SVPA,SVPB	NONE	N/A
2	No	Close SVN(A/B) and FC(A/B) from QT-HMI to isolate the incoming flow on the flow controller. Also check that all valves that connect to both controllers are already closed including: SVVA, SVVB, SVPA, SVPB.	NONE	N/A
3	No	Disconnect the communication cable on the old-MFC on the QT Flow Control manifold.	NONE	N/A
4	No	Unmount the old-MFC (HFC-203) from the support frame of the Flow Control manifold.	NONE	N/A
5	No	Check that the pressure on the Quantum Helium Return Manifold (PC1) is above atmosphere but not above 1.5 psi. Disconnect the stainless-steel piping from the outlet of the FC(A/B) and install a Swagelok plug to the piping.	NONE	N/A
6	No	Disconnect inlet of the old-MFC.	NONE	N/A
7	No	Connect the inlet of the new-MFC.	NONE	N/A
8	No	Connect the new-MFC on to the support panel.	NONE	N/A
9	No	Connect the communication cable on the new-MFC.	NONE	N/A
10	No	Open SVN(A/B) then open the new MFC with 2 slm to vent to the hall purging the controller.	NONE	N/A
11	No	Remove the plug on the stainless-steel tube (installed in step 2) and connect that end to the outlet of the MFC while the MFC is flowing 2slm.	NONE	N/A
12	No	Close valve SVN(A/B)	NONE	N/A
13	No	Repeat steps 3 - 11 to replace a second controller.	NONE	N/A
14	No	Return valves SVNA,SVNB, SVVA,SVVB, SVPA,SVPB to the state recorded in step 1.	NONE	N/A
15	No	Check with snoop to make sure the connections are leak-tight.	NONE	N/A

Workflow I State Complete I Outcome Approved

Workflow Tasks

Role	State	Submitted	Responder	Comments	Responded	Outcome
Start Notification	Complete	03-APR-2023 12:12			03-APR-2023 12:12	Notified
Supervisor 12680N	Complete	03-APR-2023 12:12	Tesarek, Rick		05-APR-2023 08:10	Approved
Notify	Complete	05-APR-2023 08:10			05-APR-2023 08:10	Notified

Fermi National Accelerator Laboratory

Fermilab

Work Package # 30341 - Mass Flow Controller Swap Out
Hazard Analysis - Form 2023-22404

Dates 03-APR-2023 — 03-APR-2023
Managed By PPD — Particle Physics Division
Performed On Particle Physics Division
Authorizing Supervisor Tesarek, Rick (12680N) 630.840.8609
Project Name E1039
Prepared By Keller, Dustin (13081V) 630.840.
Job Description We are replacing two faulty mass flow controllers on the QT gas panel.
Workflow Status Approved

Point of Contact _____

Pre-job Briefing Conducted by _____

The tasks have been reviewed in the work area where they will be performed, and the workers on this crew have been through required training.

NAME and ID (Please Print)	Signature	Date