Muon Campus Power Outage Response

Reviewed by _____

If the Muon Campus area (F27, AP0, AP10, AP30, or AP50) **or power supplies are affected by a power outage, use the guidance below to aid in the investigation and recovery. Steps don't need to be done in the order they're written. Some can be done simultaneously and some can be skipped depending on the situation. As always, the major objective during any power outage is to ensure the safety of personnel and equipment, and to restore power.**

Contact Personnel as Necessary:

- Duty Electrician
- Muon Campus Machine Coordinator
- Mechanical Support Department Head
- Operations Specialist for Muon Campus
- Operations Department Head

Muon 95 LCW:

Reminder: the Muon 95 LCW system runs at CUB, so a Muon Campus power outage doesn't necessarily mean the LCW system is off.

The F27 closed-loop LCW system is located at F27 and could be affected by a Muon Campus power outage.

Remnant LCW System:

A power outage can cause the Remnant LCW system to become misconfigured and at risk of cavitation. Verify the following:

- Remnant LCW system is on and not cavitating.
- T:CW50 is open.
- One LCW pump at each house from A1 through F4 is on.
- One pond pump at each house from F1 through F4 is on.

If all of the above conditions cannot be met, run the Remnant LCW Off NOW sequencer.

Scout:

If personnel are available, a field team can try to ascertain the extent of the outage.

- Bring a flashlight and tour the Muon Campus service buildings and make note of the areas that are without power.
- Make note of any other issues found such as strange odors and water on the floor.

Monitor:

If the Controls System is running, it can be used to monitor the following:

- Supply and Return pressures and temperatures for the Muon 95, F27, and Remnant LCW systems.
- Muon 95 make-up flow.
- Status of Muon Campus power supplies and RF.
- Status of Muon Campus interlocks.

Actions

If you discover signs of trouble with any Muon Campus system, take reasonable action to protect associated equipment.

- For LCW system issues, turn off associated Muon Campus power supplies. This can be done via the Controls System, or it can be expediently done by disabling the relevant enclosure ESS.
- If LCW leaks are discovered, the leak can be valved out.

Follow all guidance given by the experts who are contacted. They may have additional instructions.

When Power Returns

- Inform everyone who has already been contacted.
- Validate alarms to ensure everything that should be monitored is being monitored.
- Continue to monitor Muon Campus LCW systems pressures, temperatures, and levels.
- Tour the Muon Campus service buildings as time and personnel availability permit. Look for any signs of lingering complications.
- Work with experts to begin recovering affected systems (vacuum, RF, magnet power supplies, etc.)
- Verify that all Muon Campus Nodes are responding to the node poll.
- Restore all Muon Campus CAMAC crates to a recent good running file via D2.

Make sure to document all steps taken in the MCR e-log.

***A word file for this document is kept on the BD/Operations Staff Sharepoint.**

NOTES: Please use this area to note any problems encountered during recovery.