


Memorandum

To: Patrizia Rossi
From: David Meekins 
cc: R. Ent, R. Suleiman
Date: 26 April 2018
Re: Argonne Bubble Chamber Experiment Test Run

The purpose of this memorandum is to address the issues associated with the Physics ERR process and the alterations of the ANL Bubble Chamber (BC) pressure system. The Argonne Bubble Chamber Experiment would like to perform a test run in the injector test area. This installation and test would be performed in the time period of 7 May 2018 to 19 May 2018.

There have been slight alterations to the pressure system:

1. The bubble chamber contained in the pressure vessel used mercury as a buffer fluid. There is no longer a buffer fluid.
2. With the absence of the buffer fluid the remaining space will be occupied by C3F8. The total possible volume of C3F8 in the system will then be elevated to 150 ml.

Note that the operating pressures and temperatures shall not be altered and no new fluid shall be introduced to the system. The impact of alteration 1 will be that the hazards and risks associated with the mercury have been removed and no longer apply.

The impact of alteration 2 is that there is more C3F8 in the injector area. The permissible exposure limit (PEL) for C3F8 is not listed therefore a standard limit for refrigerants of 1000 ppm has been assumed. The estimated worst case concentration (full release) of C3F8 in the injector area is given in calculation TGT-CALC-18-005 which is filed in the JLAB Document Repository. In summary, the worst case concentration would be 5% of the PEL.

These slight alterations shall be summarized in the pressure system folder PS-TGT-14-002. All documentation associated with the alteration shall be filed here as well in compliance with JLAB policies. Also in compliance with JLAB policies:

1. The COO for the test has been updated and included as part of the TOSP
2. The Bubble Chamber TOSP has been updated and resubmitted for review by appropriate SMEs.

Given the fact that the planned alterations actually reduce the risk and hazards associated with the ANL BC system, it is requested that an additional formal review of the system/alteration be omitted in lieu of an informal review of the updated documentation listed above.