date: August 22, 2019

to: Kin Yip, RSC Chair

subject: Evaluation of Ozone Generation in LEReC High Power Dump

from: P. Cirnigliaro

Reference:

RSC Memo from A. Drees, LEReC 2 MeV Pulsed beam and CW beam between 1 and 18 ma loss and fault studies, dated July 3, 2019.

In referencing the above RSC Memo, on July 3, 2019 LEReC delivered about 16-18 mA CW beam at 2 MeV (i.e. 34-36kW) to the high-power dump for approximately 3 hours. A properly calibrated continuous ozone monitor recorded ozone levels in the RHIC tunnel adjacent to the high powered dump during this event. The results of this monitoring indicated that the levels of ozone created would be approximately 0.03% of the ACGIH Time Weighted Average. The ACGIH is the regulatory driver for ozone exposure levels to employees. This level of ozone is insignificant and would not result in any health hazard from ozone exposure to workers in the RHIC tunnel. Ozone monitoring at LEReC will continue through Run 20. Administrative controls currently in use, delay entry into IR-2 when beam has been stopped in the high-powered dump. This procedure is Temporary Procedure C-A TPL 19-01, Delaying Access to IR2 during RHIC Run 19. This Temporary Procedure shall be up-dated to include run 20 where higher energies may be deposited in the high-powered dump. Additional ozone monitoring and analysis will take place during run 20.

1American Conference of Governmental Industrial Hygiene (ACGIH), 2019 TLVs and BEIs. Time Weighted Average (TWA) for ozone exposure for Heavy Work = 0.05ppm.

CC: A. Drees
    W. Fischer
    G. Marr
    A. Fedotov
    D. Kayran
    P. Ingrassia