

# CeC PoP Experiment

May 24, 2016

# Project Progress

- The previously installed cathode showed remarkable longevity – over two weeks of operation with 60-100 pC bunch charge
- We received approval to start commissioning
- We can generate train of the electron bunches
- RF group performed a great job of synchronizing of all three cavities and laser



Department of Energy

Brookhaven Site Office  
P.O. Box 5000  
Upton, New York 11973

MAY 20 2016

Ms. Gail Mattson  
Brookhaven Science Associates, LLC  
Brookhaven National Laboratory  
Upton, New York 11973

Dear Ms. Mattson:

SUBJECT: APPROVAL OF THE REQUEST FOR THE COHERENT ELECTRON COOLING  
COMMISSIONING AND OPERATION AT FULL-POWER

Reference: Letter, from G. Mattson, BSA, to F. Crescenzo, SC-BHSO, Subject: Request  
Approval for Coherent Electron Cooling (CeC) Proof of Principle (PoP)  
Full-Power Commissioning and Operation

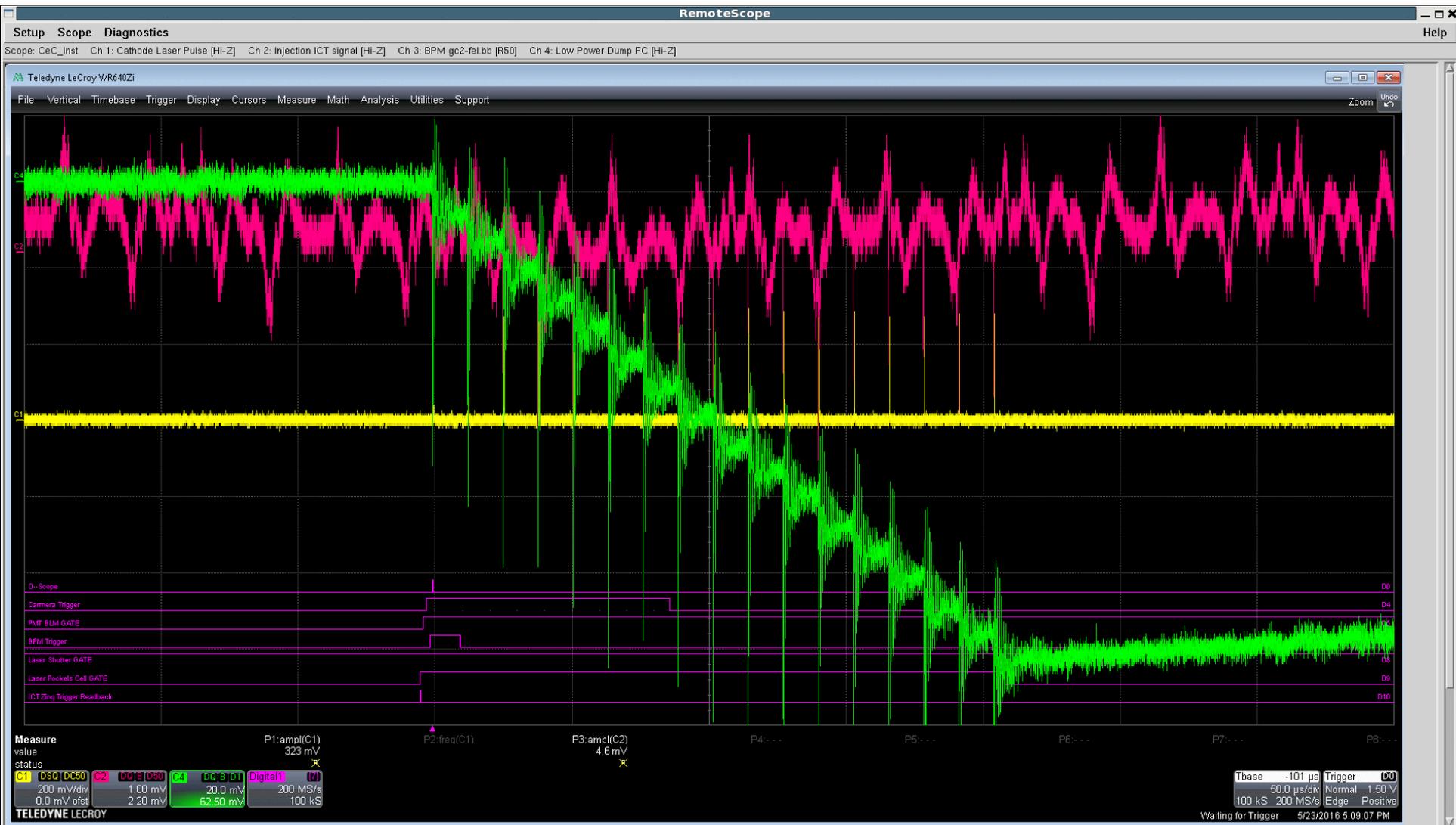
The Department of Energy (DOE) Brookhaven Site Office (BHSO) has reviewed your request to begin the commissioning and operation of the CeC PoP Experiment at full-power. Based on our review and the subsequent verification of all required pre-start actions by the Accelerator Readiness Review (ARR) team, which performed their review as a single commissioning and operation ARR, full power commissioning and operation of the CeC is approved. If you have any questions, please contact Patrick Sullivan, of my staff, at extension 4092.

Sincerely,

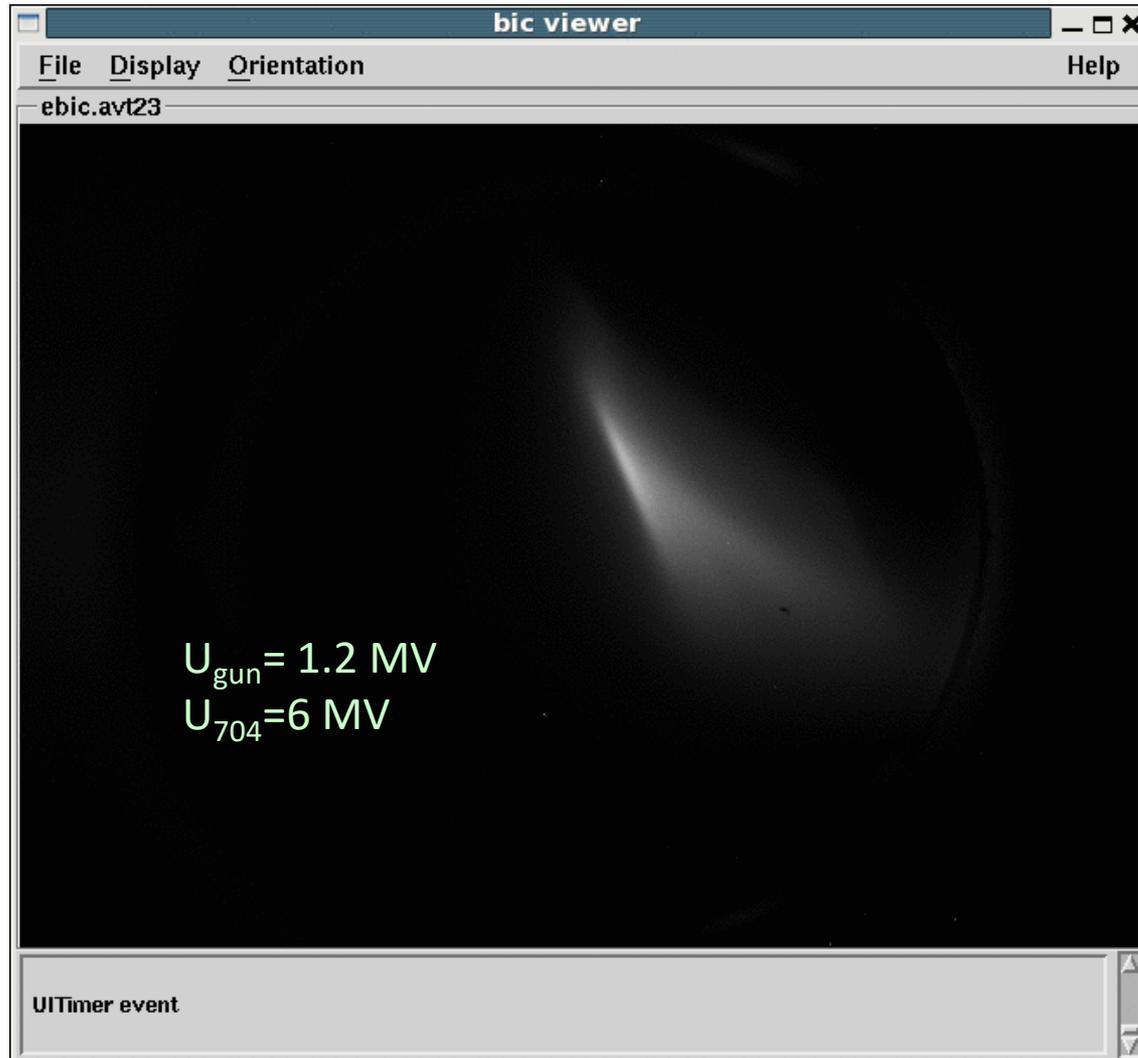
Frank J. Crescenzo  
Site Manager

cc: M. Dikeakos, SC-BHSO  
R. Gordon, SC-BHSO  
P. Sullivan, SC-BHSO  
I. Ben-Zvi, BSA  
E. Lessard, BSA  
V. Litvinenko, BSA  
D. Passarello, BSA  
T. Roser, BSA  
C. Schaefer, BSA

# Train of the Electron Bunches



# Bunched, Compressed and Accelerated Beam



# What's Next

- We have two good cathodes prepared. Garage will be swapped on May 27<sup>th</sup>. New cathode in the gun on May 30<sup>th</sup>.
- Develop operational set-up (fixed optics and energy)
- We will try to propagate beam to the high power dump