Date: May 19, 2022

To: Eugene Chudakov, Hall D Leader

From: Patrizia Rossi, Deputy Associate Director for Physics

Subject: Readiness Certificate to run Hall D Experiments E12-13-008 (CPP/NPP) and E12-10-011 (PrimeX-eta) for the period June 8 - November 6, 2022

Enclosed please find the Experiment Readiness Certificate for the Experiments E12-13-008 (CPP/NPP) and E12-10-011 (PrimeX-eta) for the Summer- Fall 2022 run period scheduled for June 8 through November 6, 2022. Hall D is authorized to proceed with the run. As Hall Leader you are responsible for ensuring that all members of the collaboration are aware of the hazards the experiment presents and that they understand and follow the operations procedures outlined in your approved Conduct of Operations (COO), Experiment Safety Assessment Document (ESAD), Radiation Safety Assessment Document (RSAD), Emergency Response Guidelines (ERG) and on the General Access Radiation Work Permit (RWP, SAF801kd). The Physics Division EH&S group and the CEBAF Radiation Control Group are prepared to assist you in any way they can.
As an important part of your responsibility for managing the execution of this run, you must set in place a procedure that will ensure that all users working in Hall D during the run have read and understood the COO, ESAD (and associated OSPs/TOSPs, if any), RSAD, ERG and RWP, and that they have received the standard Hall D safety awareness training (SAF113), which includes a hazard awareness walkthrough of the hall.

Two experiments are scheduled to run in Hall D in Summer and Fall of 2022: 1) the Charged Pion Polarizability (CPP) experiment (E12-13-008) and 2) the final set of measurements for the PRIMEX-Eta experiment (radiative decay width via the Primakoff effect [E12-10-011]). Both experiments will use the Hall D solenoid magnet: CPP will utilize a 0.3 mm-thick lead target (at z = 1 cm in the GlueX coordinate system, compared to the regular target position of z = 65 cm), whereas PRIMEX-Eta will be using a 30 cm-long liquid helium target (at z = 65 cm). The CPP experiment will use the 3.4 mm collimator while the PRIMEX-Eta experiment will use the 5 mm collimator. Both the experiments will use the standard GlueX equipment, with a few modifications. For the CPP experiment, a muon detector consisting of wire chambers separated by absorbers will be installed downstream of the FCAL. For the PRIMEX-Eta experiment, the muon detector will be removed, and the COMCAL will be installed, and a beam pipe between the FCAL and CCAL filled with He will be installed downstream of the FCAL. A lead shielding wall (4" along the beam, 24" in X and 18" in Y) will be installed around the beam pipe in front of the solenoid magnet. Both the experiments plan to use the highest electron beam energy available, 11.57 GeV.

Both experiments scheduled in Hall D Summer-Fall 2022 run are not expected to produce significant levels of radiation at the site boundary that will exceed the integrated maximum boundary dose limit of 10mrem. However, it will be continuously monitored by the Radiation Control Department (RCD) to ensure that the site boundary goal is not exceeded. Activation of targets, collimators and beam line hardware must also be considered. The manipulation and/or handling of targets and beam line hardware (potential radioactive material), the transfer of radioactive material, or modifications to the beam line after the target assembly must be reviewed and approved by the RCD.
If there are any changes to your planned run that may have impact on radiation safety, it is your responsibility to discuss them with the RadCon Group before the modified plan is executed.

Four final items. First, the designated run coordinator is to be accessible to the accelerator division operations staff at all times via the Hall D cellular phone 757 383-5542. Second, the run coordinator or

Experiment Readiness Certificate for Hall D E12-13-008 (CPP/NPP) and E12-10-011 (PrimeX-eta) Summer-Fall 2022 run

Document	Review(s)*	Certification	Signature	Date
Proposal w/ EH&S Hazard Identification Checklist	TAC & PAC	JLAB Director	See PAC report	
Preliminary Experiment Safety Assessment Document (PESAD) (optional)	ER^{2}C	--	N/A	
Radiation Safety Assessment Document (RSAD) (includes planned Experiment Operations Envelope)	RadCon	RadCon	Patricia Ross	5/19/2022
	JLRRP or ad hoc panel review IF recommended by RadCon Officer	Review Chair	N/A	
Experiment Assessment Completion Readiness Review	ER^{2}C	Deputy Associate Director for Physics	Patricia Ross	5/19/2022
Conduct of Operations (COO)	ER^{2}C	Associate Director for Physics	T. Koppel	24 May 2022
Experiment Installation Checklist	Hall Work Coordinator	Hall Leader	E. Chudakov	5/19/22
Issue/Concern Checklist	ER^{2}C	Physics Div. Safety Officer	5/19/22	5/19/22
Hall Leader Signoff on Experiment Readiness	E. Chudakov	n/a	See attached memo	

Experiment Readiness is Certified

24 May 2022

S/ C. Keppel
Date
Associate Director for Physics

*Note: JLRRP = Jefferson Lab Radiation Review Panel
ER^{2}C = Experimental Readiness Review Committee
RadCon = Radiation Control Group
PAC = Program Advisory Committee
TAC = Technical Advisory Committee