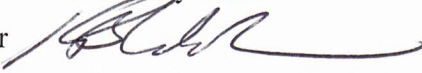


MEMO

To: Mike McCaughan, UITF Facility Manager
Matt Poelker, Beam Reproducibility Lead
Camille Ginsburg, Director of Accelerator Operations
Gianluigi Ciovati, SRF Staff Scientist
Harry Fanning, Accelerator Division Safety Officer

From: Keith Welch, RCD Manager 

cc: David Hamlette, Field Operations Manager

Date: July 16, 2021

Subject: Radiological Safety Analysis Document (RSAD) for Wastewater Irradiation Experiment

The purpose of this memo is to document the final shielding requirements and application of the *Nominal RSAD for UITF Operations* ("standing RSAD") for the upcoming wastewater irradiation experiment.

The wastewater experiment will use 100 nA beam. The standing RSAD allows routine operations of the UITF at this power level under the condition that any modification to beam termination points is reviewed by the Radiation Control Department Manager (RCM). This review was completed, and shielding for the target area was specified and approved in March of this year, using our formal, internal process for shielding review.

The standing RSAD was written based on the assumption that all structural shielding improvements identified during the last run period would be complete. The specified shielding around the wastewater targets was based on the standing RSAD requirements under that assumption. Since these improvements have not yet been installed, I am specifying additional shielding for the target area and for Faraday Cups (FC) 3 and 4. These requirements have been communicated to UITF engineering support, and the design is complete. The change consists of doubling the local lead thickness requirement in the westward direction at the target to 4", increasing the height to 16", and extending the north-south extent of the shield to also address the radiation field from FC4. A similar arrangement was specified at FC3.

With these additions to the shielding in place, the standing RSAD is appropriate for use during the wastewater irradiation experiment. The RSAD is attached.

Upon installation, the shielding configurations will be inspected, labeled, and documented in our shielding database. We will conduct verification surveys upon startup of the UITF. A beam test plan has been submitted for this activity.

Questions regarding the subject of this memo should be directed to welch@jlab.org.