

# 1kW beam for isotope production demonstration at LERF

## Experiment and target readiness review

(September 26-27, 2019)

### Charge for the Review Committee

#### 1.1 Introduction

The purpose of this review is to evaluate a demonstration experiment to expose Gallium (Ga) and Zinc (Zn) targets located at the 1X dump in LERF as a milestone leading to isotope production at Jefferson Lab. Beam operations for this exposure should consist of no more than 40 MeV beam at a current no greater than 1 milliamp, with total power on target limited to 1 kilowatt, for a total duration of approximately 34 hours. Successful execution of the experiment will include on-site material handling and preparation of the exposed target for shipping. Successful handling on the receiving end will demonstrate that planning, target preparation and shipping were appropriately executed.

This short beam run will be documented, planned and executed in accordance with Chapter 3130 of the EHS&Q manual.

Possible future isotope experiments at higher beam power will be reviewed separately later.

#### 1.2 Charge

The review committee is requested to review the integration of the various components based on the material prepared and presented. In addition to making comments and recommendations on this broad view, the committee should address the following charge questions:

- Is the run plan sufficiently detailed for effective operation?
- Are the target and associated diagnostics ready to receive 1kW of beam?
- Have the lessons learned from the earlier isotope run in CEBAF been adequately addressed?
- Is the material handling plan appropriate and does it adhere to ALARA principals and JLab environmental expectations?
- Are special emergency response guidelines needed for this beam run? If so are the plans to train laboratory staff on these new guidelines adequate?
- Are the roles and responsibilities of the JLab staff, specifically Accelerator and Engineering divisions, clearly defined for this beam run?

A presentation of the essential conclusions of the review is requested at a closeout following the review. The committee is asked to deliver a written report within one week of completion of the review.

#### 1.3 Committee

Bob May (co-chair, JLab)

Tim Michalski (co-chair, JLab)

Harry Fanning (JLab)

Brian Freeman (JLab)

Dave Meekins (JLab)

John Quintana (ANL)

Yves Roblin (JLab)