UITF Wastewater Irradation Experiment

Experimental Readiness Review

Charge for the Review Committee

1. Introduction

The purpose of this review is the evaluation of the first stage of a TJNAF Laboratory-Directed Research and Development (LDRD) project for the examination of the Accelerator-driven treatment of wastewater. (Principal Investigators: Fay Hannon / Gianluigi Ciovati) This initial study will examine the treatment of water samples with varying quantities of a compound of interest – 1,4-dioxane – with an electron beam of not more than 10 MeV and 200 nA subject to appropriate shielding. Success in this first stage of experimentation is dictated by the attenuation of the concentration of the trial compound in vitro to the irradiated target sample.

1. 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:

* What is the present status of the UITF, and is it conducive both in facility and schedule to the operation of this experiment? (Specifically, with respect to shielding, SRF, and cryogenics...)
* Does the material presented herein provide sufficient information to evaluate the safe execution of the planned experiment?
* What are the goals of the experiment, and what defines success?
* Is the run plan sufficiently detailed for safe and effective operation?
* Are the roles and responsibilities of the JLab staff, specifically Accelerator and Engineering divisions, clearly defined for this beam run?
* Will all work be documented and planned out within the framework of Jefferson Lab's work planning and applicable safety documentation?
* Will this beam run be documented, planned, and executed in accordance with the UITF Operations Directives (UOD)?
* Will the target and associated diagnostics be ready to receive an electron beam of the scale described?
* Is the materials handling plan appropriate, and does it adhere to both ALARA principals and JLAB environmental expectations?
* What is the status of the COO, ESAD, and OSPs documents, and are the specific procedures and documentation in place and adequate to operate the experiment safely and efficiently?
* Have lessons learned from earlier UITF experiments been sufficiently addressed and applied to the execution of this experiment?
* Are special emergency response guidelines needed for this beam run? If so, are the plans to train laboratory staff on these new guidelines adequate?

A presentation of the essential conclusions of the review is requested at the closeout of the ERR, with the committee requested to deliver a written report within two weeks following its completion.

1. Committee

The following persons have agreed to serve as members of the ERR committee for the purpose of the execution of this review:

* Harry Fanning (Accelerator Division Safety Officer) – ERR Chairperson
* Joe Grames (Center for Injectors & Sources)
* Alicia Hofler (Accelerator Injector Group)
* Mikhail Kostin (Radiation Control Group)
* Bob May (Environmental Health, Safety, & Quality Division)
* Daniel Moser (Accelerator Operations)
* Dave Meekins (Physics Division: Target Group)
* Yves Roblin (Center for the Advanced Study of Accelerators)
* Mark Wiseman (Engineering Division)

1. Enclosure to Committee Members in Advance of the Review

* ES&H Manual Section 3130
* UITF Operations Directive (UOD)
* FSAD/ASE
* Conduct of Operations (COO) document for the experiment
* Experimental Safety Assessment Document (ESAD)
* Radiation Safety Assessment Document (RSAD)
* Risk Mitigation Document