**Outline**

Isotope Production at the Jefferson Lab LERF Facility Lead Responsibility

1. Executive summary Neil

A concise presentation of the key conclusions.

1. Introduction and background
   1. LERF Facility Description Neil

Most of this exists from previous proposals

* 1. Operating Costs Benson (Neil)

This will summarize operating costs under full cost recovery for LERF

* 1. Isotope Market Wells
     1. 67Cu
     2. 225Ac

Updated market estimates projecting need. This is expected to come from existing reports and updated from recent meetings.

1. Isotope Physics and Conversion Rates Degtiarenko
   1. 67Cu
   2. 225Ac

This section will summarizes results from analysis covering production rates of desired isotopes as a function of incident beam power, optimum energy, production of “contaminant” undesired isotopes and any other practical considerations in the optimization of the physics. Most of this will be a text presentation of what we have seen in ppt form already.

1. Separation, Purification Zweit
   1. 67Cu
   2. 225Ac

This covers the separation process required for each isotope, the cost of that process, and (if required) the cost and process for reconstituting and returning the target for the next run. It should also address the issue of purity in the process for contaminant isotopes.

1. Target Design Jordan
   1. 67Cu
   2. 225Ac

This will present the preferred design of each target, and estimated cost to construct such a target, and the procedures for installing the target material, irradiating it, removing the target, and shipping it to VCU for separation.

1. Production Economics and Operation Neil
   1. 67Cu
   2. 225Ac

This will summarize the economics and feasibility of the production of each isotope based on the cost of beam operation, removal and shipping of the target material, purification, and preparation for the next production. It should also cover practical considerations such as expected frequency of runs, compatibility with other programs, etc.

1. Summary and Conclusion Neil

This will wrap up the conclusions of the study summarizing the key points made in each chapter and finishing with an assessment of the viability of such a program.

Appendix A. Description of facilities and capabilities

A.1 Jefferson Lab Low-energy Electron Recirculating Facility Neil

B.1 Virginia Commonwealth University Zweit

C.1 South Dakota School of Mining and Technology Wells