

Hall D K-Long Facility E12-19-001
Experiment Readiness Review Phase I
Jefferson Lab August 2nd, 2023

Charge

1. Is there any R&D needed to be done prior to start the construction of the K-Long Facility?
2. What is the status of the Compact Photon Source (CPS)? Specifically:
 - a) the conceptual design
 - b) the evaluation of the produced radiation. In particular, the following points should be discussed:
 - A. the approximations made in the Monte Carlo simulations and which code has been used;
 - B. the energy deposition and the absorber temperature;
 - C. the prompt dose and activation around the CPS and the Tagger Hall;
 - D. the magnet performance and its coils lifetime;
 - E. the water-cooling system and possible contaminations.
3. Will civil constructions be needed to contain the radiation in the Tagger Hall?
4. What will the photon beam quality be?
5. What is the status of the Kaon Production Target (KPT)? Specifically:
 - a) the conceptual design
 - b) the evaluation of the produced radiation. In particular, the following points should be discussed:
 - A. the approximations made in the Monte Carlo simulations and which code has been used;
 - B. the energy deposition and the temperature in the KPT;
 - C. the prompt dose and activation around the KPT and the Cave;
 - D. the water cooling system and possible contaminations.
6. Will civil constructions be needed in the Cave to contain the radiation?
7. What is the estimated annual boundary dose when running the E12-19-001 experiment?
8. What is the status of the conceptual design of the Flux Monitor? If more than one option is considered, please discuss each of them.
9. What is the bunch space required to run the E12-19-001 experiment?

10. What are the requirements of the electron beam on the CPS?
11. Would the existing lasers work to run the E12-19-001 experiment, and if not, what is the solution?
12. What is the decommissioning plans for the K-Long Facility (CPS, KPT,...) and the activated components? A brief outline is sufficient.
13. What are the cost and schedule estimates for the construction of the K-Long Facility? Have the resources been identified?