

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

Charge

- Is there any R&D needed to be done prior to start the construction of the K-Long Facility?
- 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:
    1. the approximations made in the Monte Carlo simulations and which code has been used;
    2. the energy deposition and the absorber temperature;
    3. the prompt dose and activation around the CPS and the Tagger Hall;
    4. the magnet performance and its coils lifetime;
    5. the water-cooling system and possible contaminations.
- Will civil constructions be needed to contain the radiation in the Tagger Hall?
- What will the photon beam quality be?
- 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:
    1. the approximations made in the Monte Carlo simulations and which code has been used;
    2. the energy deposition and the temperature in the KPT;
    3. the prompt dose and activation around the KPT and the Cave;
    4. the water cooling system and possible contaminations.
- Will civil constructions be needed in the Cave to contain the radiation?
- What is the estimated annual boundary dose when running the E12-19-001 experiment?
- What is the status of the conceptual design of the Flux Monitor? If more than one option is considered, please discuss each of them.
- What is the bunch space required to run the E12-19-001 experiment?

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