

Proposed CFS Discussion Questions for e+ Source Daresbury Review - Feb 10-11, 2011

Civil

1. What is the planned operation for the Aux. Source. Will the heat be constant with respect to the BDS. Will the positron consume power at the same time as the Aux Source.

Operationally the Auxiliary Source and the Regular e+ Source will not run at the same time. The Transition between operational schemes will require several (?) shifts to stabilize the temperature in the tunnel.

2. Will we be developing requirements for the remote handling of the Target(s). What is the purpose of the shaft above the target pile. Is shielding required above this shaft.

Norbert's slide 12, everything including collimator, target, QWT and Standing Wave Accelerator components as well as the shielding above this equipment will be lifted out of the tunnel through the shaft above to the surface storage building and replaced with another complete module. Module is about 5m in length. Shaft will not be subject to irradiation – Ewan.

3. In order to maintain timing what is the relationship of the injection from Positron Source to a 3 ring Damping Ring. At the same time should understand the extraction from the Positron Damping Rings to the RTML.

Needs to be reviewed and decision made (maybe after TDR)

Mechanical

4. Is there any understanding of what equipment that is in the Service Tunnel? Largest size of equipment in place and in transport. Penetrations between Service Tunnel and Beam Tunnel, wave guides, cables....

Once the actual component layout in the beam line is frozen, then the support equipment can be identified although resources are not available to do this

5. What's the typical water pressure drop to use for power supplies?

This is more of a general question. Positron power supplies are not unique.

6. Please confirm if there is any info on typical Magnet water pressure drop. For now we're using the 100 psid from RDR magnet group.

We will use 100 psid

7. How stable are the positron heat loads in the tunnel, considering the BDS requires tight air stability? Current assumption is that they are all stable.

No different from the BDS. Assume heat load for the e+ Source is constant.

8. What are ventilation requirements for airborne radiation?

Dehumidification within the target enclosure will be required. (tritium)

9. Are there any other cooling requirements for any e+ sections (such as the Target section) that are not currently shown?

Probably a RAW water system will require alcove space in the tunnel area adjacent to the target area.

Electrical

10. Are there any special power quality requirements for the positron equipment?

There is pulsed RF and the Flux Concentrator which will be pulsed. Need to supply the power requirements for the flux concentrator which will be cooled by liquid nitrogen.

11. What is the optimum utilization voltage?

E+ Source will have DC magnets and flux concentrator. Assume normal distribution voltage for now, unless some future development provides a new requirement.

12. What are the operating power characteristics KW, KVA, PF?

Normally assume an 85% power factor. Use this but discuss again at the CFS Workshop