

Requirements Issues

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Preface

- It is imperative that design requirements be well defined and understood in order to proceed effectively and efficiently into conceptual design
- The purpose of this document is to track open issues related to requirements
- General requirements were reviewed by Neilson, Zarnstorff, and Reiersen on October 17 and subsequently updated.
- The current plan is to review subsystem level requirements with WBS managers prior to December 21

General requirements issues

Reviewed at October 17 meeting

1. Implement change control
 - What constitutes the technical, cost, and schedule baseline is undefined
 - No process in place for controlling changes to those yet undefined entities
 - **Action: Reiersen to present proposal**
2. Finalize initial diagnostic and heating complement consistent with initial experimental objectives
 - Identified as issue at PVR (II-5, IV-8), tracked at project level
 - **Action: Neilson to finalize initial diagnostic and heating requirements**
3. Define constraints derived from re-using PBX test cell
 - Includes door size, floor loading, lift height, lift weights, etc.
 - **Action: Chrzanowski**
4. Re-define reference scenarios (if necessary) as motivated by simulations, review of volt second requirements, need for controlled rampdown, etc.
 - **Action: Zarnstorff**

General requirements issues (2)

5. Providing coil constraints to physics for scenario and flexibility modeling
 - Action: Nelson
6. Refining requirements for flexibility (and maximum plasma current) based on assessment of design impacts
 - Present plans are to design the machine for the reference scenarios and to assess the capability to meet the flexibility requirements. This is the motivation for Item 5 above. Flexibility studies will be completed by mid-February at which time we will know what flexibility we can provide
7. Adding more dimensions to flexibility space as required to fulfill NCSX experimental objectives (currently only 3 dimensions)
 - Action: Zarnstorff
8. Flexibility requirements for PFCs and ancillary systems are TBD
 - The PFCs are presently being designed around the reference scenario. Initial flexibility studies featured plasma shapes that did not conform well to the geometry of the PFCs. It is unclear how this should be handled.
 - Action: Neilson