a-TAC17 Recommendations and replies

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| Jira | Recommendation | Responsible |
| ARR-159 | 1. The ESS project re-baselining requires sufficient in depth information from all in-kind partners. The regular update is a “must”. Established project management tools for early warnings should be used and respected. |  |
| Answer | It is certainly agreed that up-to-date schedule information, as well as technical status, from all collaboration partners are of crucial importance for the accelerator project. The accelerator management has since 2013 collected monthly status reports from all collaboration partners, and most work packages have weekly skype meetings or video conferences with all their partners. Since 2016 the division head has bi-weekly management meetings by phone with representatives for selected in-kind partners, and bi-weekly visits to one of the partners started. We are now starting regular scheduled visits to one more partner, whose contribution is on the critical path, in order to follow progress closely. Regular phone meetings and visits to additional partners can be introduced if needed. | Håkan Danared |
| ARR-161 | 2. Revising the baseline design to power the entire installed SRF linac with the same modulator and the same klystrons throughout will yield simplifications, schedule benefits, interchangeability and some immediate cost reduction. |  |
| Answer | The baseline is now klystrons with ESS standard modulators. | Mats Lindroos |
| ARR-166 | 3. Without under-mining existing management structures, introduce a “head of commissioning” for each accelerator section. This person should be ultimately responsible for the successful commissioning and operation of that portion. |  |
| Answer | We already have two persons responsible for planning/coordination of hardware testing and beam commissioning, respectively.  They are coordinating activities within their specific area, and are working within the schedule boundaries set by the overall project plan.    Each system installed has an owner who is responsible for the actual testing and commissioning activities of that subsystem. The section leader for operation at AD is in charge of the equipment that is in operation, in particular the PSS system, and runs a daily operations meeting where the plan of the day for (system testing and) commissioning is discussed and agreed. Installation is also represented at this meeting. The plan of the week (and longer term) is coordinated with installation, and presented at a weekly joint installation/testing/ commissioning meeting.    We are proposing to complement this with the appointment of a head of testing and commissioning (HOTC) for accelerator and ICS with the responsibility to coordinate all testing and commissioning activities and the authority to change the testing and commissioning schedule and decide on start and stop of different system activities. This is driven by the need to more tightly coordinate activities between divisions, as well as between testing and commissioning phase, and eventual transition to initial operation.    The HOTC would report to both ICS and AD project leaders, and work closely with the installation managers of the respective projects. The existing planner/coordinators for testing and beam commissioning would report to the HOTC. | Mats Lindroos |
| ARR-163 | 4. Perform beam readiness reviews for all accelerator sections. |  |
| Answer | This is underway. The first Safety Readiness Review (for the Ion source and LEBT) was successfully completed in July 2018. This resulted in a beam permit being issued by ESS Management.  Future SRRs are planned for the rest of the warm linac and for the complete linac ( which includes the SRF cryomodules)  Thus all linac components will undergo SRRs prior to RBOT | John Weisend |
| ARR-165 | 5. Enforce use of administrative tools for commissioning: e-log and e-faults |  |
| Answer | The use of operations log-book is actively exercised from mid September, from when the control room and an assigned shift leader is in charge of the PSS0 (personnel safety system) system operation. 8:30 am daily meetings are introduced to discuss the plan of the day, which is then transferred in the log-book. Study leader, shift leader and system experts are all encouraged to enter as much information, as possible, in the log-book, during the day, to capture the major happenings during the commissioning and how these were addressed.  The operation log book is available at <https://logbook.esss.lu.se/Operation/>  We have no e-fault system, but we have created a Jira project and we are using it to issue tickets and request fix from the expert groups. The Jira project link is <https://jira.esss.lu.se/projects/NSOI/issues/NSOI-8?filter=allopenissues>. | Lali Tchelidze |
| ARR-160 | 6. Clarify the plan of how the three loss detection mechanisms will be progressively used to ensure the <1W/m loss rate will be achieved. |  |
| Answer | "The (differential) current monitors are primarily used for to protect from large beam losses, as they do not have the sensitivity to detect distributed continuous losses at the 1W/m level. Neutron monitors and ionization chambers will be used both to protect from large localized losses, but also to assess the distributed continuous losses. Neutron monitors are the primary detectors in the normal conducting linac, and ionization monitors in the superconducting linac, with some overlap for crossreferencing." | Andreas Jansson |
| ARR-164 | 7. A procedure should be identified to review the scope of MPS interlocks as they apply to damage that can be caused by the proton beam. |  |
| Answer | The list of active interlocks and associated thresholds for each commissioning phase will be determined in advance, and reviewed as part of the SRR. A documented process exists (ESS-0379239) for how to act when an interlock occurs, and how to modify (e.g. mask) interlocks in operation, if and when needed. | Andreas Jansson |
| ARR-162 | 8. The activities of Linde Kryotechnik to fix the cold compressor issues should be carefully followed and observed. |  |
| Answer | This is already an ongoing effort and will be continued. Communications with both Linde and DESY on this topic well established | John Weisend |

Caroline Prabert 9 October 2018