



DOCUMENTS

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State Preliminary

Responses to Recommendations from the 11th t-TAC Meeting

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Topic/TAC Recommendation	Target Project Response to TAC Recommendation
<p>Are the new design developments for the following systems sound and do they represent a reasonable balance between system performance and other parameters, e.g. manufacturability, operability, maintainability, cost, schedule and flexibility?</p>	
<p>A simple version of the Twister concept is a reasonable approach. Failure-mode studies for the bearings should be continued (beam losses at the proton beam feed-through need to be carefully studied).</p>	<p>Failure mode analysis has been initiated and will be completed in the next few months. Several design improvements have been made to reduce the risk and consequence for a rotation problem. An analysis comparing the force needed to break a cold-welded roller bearing versus a cold-welded sliding bearing has been uploaded to the TAC-12 Indico site.</p>
<p>Are the new design developments for the following systems sound and do they represent a reasonable balance between system performance and other parameters, e.g. manufacturability, operability, maintainability, cost, schedule, and flexibility?</p>	
<p>The alignment strategy for n-beam inserts should be elaborated upon. For example, consider re-aligning a guide 10 years after initial operation (and thus activation of surrounding components)</p>	<p>The approach for integrating and aligning neutron optics within the monolith will be elaborated as part of the presentation addressing Target/Instrument interfaces at the TAC-12 meeting.</p>
<p>Shielding around The light shutters appears inadequate. Additional work should be considered (by Science Division?)</p>	<p>The Science Directorate is redesigning the bunker shielding. Once the new bunker design is mature enough, Target Division will evaluate the impact of the closed shutter on the biological dose at the outer surface of the monolith on top of the bunker and will work with the Science Directorate to evaluate the impact of the closed shutter on the background of the neutron scattering instruments.</p>
<p>Are the new design developments for the following systems sound and do they represent a reasonable balance between system performance and other parameters, e.g. manufacturability, operability, maintainability, cost, schedule, and flexibility?</p>	
<p>He purification - Proceed with a system design that handles gases mixed between the target and vessel environments</p>	<p>The present design has separate He purification streams for the Target Cooling and the Monolith Atmosphere. This implies two separate He purification systems. The Target Cooling purification system will be similar in size and scope to the one presented at TAC-11, while the Monolith Atmosphere purification system will mainly handle the removal of water expected from leakages within the monolith shielding.</p>
<p>Are the proposed safety classification and TSS approaches sensible and likely to define a path towards safe operation of the ESS Target Station?</p>	

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<p>Continue rigorously along the current path. Identification of component safety classification has begun. TAC recommends this process proceed ASAP</p>	<p>Established a mechanical quality classification process that provides a path forward for ensuring radiation safety compliance for mechanical systems. Progress and plans for accident analyses will be presented at TAC-12.</p>
<p>Comments on progress towards completion of Preliminary and Final Designs in all areas</p>	
<p>Present an update on target design efforts at the next TAC</p>	<p>Presentations on the Target Wheel by our In-Kind Partner for this work will be included in the TAC-12 meeting.</p>
<p>Some estimate should be made of the shielding required outside the monolith for the space reserved for the n-nbar experiment. The opening is large, and even the temporary shielding required may be expensive for an experiment that may or may not be funded.</p>	<p>Extra shielding will not be needed until the n-nbar experiment is built because the monolith will have a removable plug with the same shielding efficiency as other beamlines, so the cost for temporary shielding for this region will be the same as for any of the other un-instrumented beamlines. The beamlines neighboring the potential n-nbar beamline are being held in reserve for the moment so as to accommodate the floor space needed to shield the n-nbar beamline should it be funded in the future. Costs for n-nbar beamline shielding will be borne by the n-nbar experiment.</p>
<p>The TAC would like to see a presentation on the design of the cryogenic system at the next meeting</p>	<p>Information on the design of the liquid hydrogen and helium cryoplant systems will be provided in the TAC-12 meeting as part of the Moderator and Reflector Systems presentation.</p>