

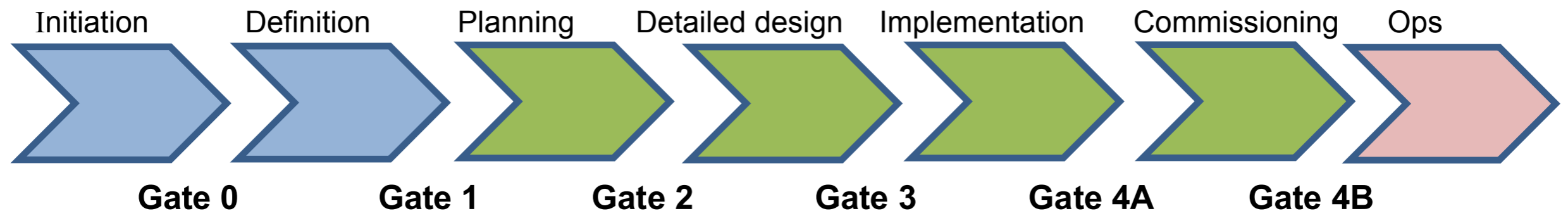
Milestones, reviews, and approvals

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Technical design reviews

- Since last collaboration meeting, we have been holding technical design reviews for individual systems that needed TRIUMF approval and assistance
- Purpose: make sure everything we build can be installed, maintained, powered, etc
- Reviews held so far:
 - Magnets (March 21) - all TODO items complete except getting final drawings to the lab
 - Vacuum components (May 2) - TODOs announced this week; mostly quite light
 - GEMs (May 29??) - TODOs to follow shortly
- Still to come:
 - Triggers, maybe? Though these are designed largely by TRIUMF personnel ...
 - Shielding?
- Trying to accumulate as much documentation as possible through the summaries of these reviews. Please make sure schematics, manuals, specs, etc all get to us.

Reminder: TRIUMF gate approvals



- Project entered “planning” stage (passed Gate 1) in spring 2022
- Before we can technically put anything into the beam line, we need to have passed Gate 4A
- Therefore we should get through 2 & 3 as soon as we can. These are not the only things that affect our schedule, but they will be part of it, and help guide the rest of our tasks
- Recall we are moving forward with 30 MeV experiment ONLY for now and will hold separate gate approvals for the 50 MeV upgrade if we get the funding

Gate 2 needs - basically no update since December

Gate 2 review checklist Gate 2 = End of Planning / Ready for Detailed Design	Yes	No
Actions from previous review addressed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
All released documents up-to-date?	<input type="checkbox"/>	<input type="checkbox"/>
Budget finalized, by fiscal year, ready to be baselined? Note 1: Cost estimates should include considerations for inflation, currency fluctuations, taxes, shipping, customs. Note 2: The budget should also include contingency based on analyzing similar projects (size/complexity) or based on an assessment of the risks (impact/likelihood)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Has external funding for this project (to Gate 4B) been confirmed with granting agency/partner?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Has TRIUMF funding for this project (to Gate 4B) been confirmed by ALD and/or Finance?	<input type="checkbox"/>	<input type="checkbox"/>
Account(s) created, including clarifying spending rules for TRIUMF cost centres?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Has the technical concept been reviewed by experts and stakeholders? See note below for more details	<input checked="" type="checkbox"/>	<input type="checkbox"/>

None

No update to requirements; need design review document

Yes - our budget for 30 MeV is well defined

Yes

TBC (personnel)

Yes

Yes - we are doing this right now with reviews

Gate 2 needs - basically no update since December

Yes - done
for Gate 1

Hazard analysis done?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Microsoft Project resource-loaded schedule, using TRIUMF project template and resource pool? Note: For projects that are managed by a vendor (for example, a major construction project or a major software project), has the vendor produced an acceptable equivalent?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the schedule critical path understood?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Do you have major items (>\$50k), with long lead time, that should be procured before Gate 3? If so, do you have your project sponsor's authorization to do so?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Does your project have one or engineering designs that requires professional engineer sign-off, per TSOP-06?	<input type="checkbox"/>	<input type="checkbox"/>
Will your project result in a change to TRIUMF's physical security? If so, have you notified Facilities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is there a risk to TRUMF's cyber-security? If so, have you notified IS&T?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Can make the case this isn't needed here; show existing schedule

Yes

Easy to get permission

Yes, but Chris is qualified to sign them off. Just need to communicate it.

No; and Rick is aware of what we're doing

No risk

Gate 3 needs

Gate 3 review checklist Gate 3 = End of Detailed Design / Ready for Implementation	Yes	No
Actions from previous review addressed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Did you receive a letter from the Director/CEO in support of your project, after your successful Gate 2? Note: This is applicable for projects who received Gate 2 after November 2021	<input checked="" type="checkbox"/>	<input type="checkbox"/>
All released documents <u>up-to-date</u> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Commissioning plan <u>drafted</u> ? Note: Different types of projects have different criteria and terminology for 'commissioning'	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Drawings, <u>diagrams</u> or schematics released by ECO?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
All Requirements Specification documents released to Docushare?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schedule critical path understood?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Yes - done

Not done but easy

We are finally close here, but still need to: finish beam optics report, release technical drawings and finalise shielding plan

Gate 3 needs

Budget by fiscal year is updated and remaining funds enough to cover projected costs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Have you sent to the Procurement Department a list of all major items (>\$50k) to be purchased, with a timeframe, and agree with them on a procurement strategy for each?	<input type="checkbox"/>	<input type="checkbox"/>
Top risks identified, with credible mitigation actions?	<input type="checkbox"/>	<input type="checkbox"/>
Will any installation work happen during a shutdown? If so, have you notified the SAS team (sas@lists.triumf.ca)?	<input type="checkbox"/>	<input type="checkbox"/>
<i>Optional, for more complex projects</i>	Yes	No
De-commissioning plan drafted? Proponent should ensure that all hazardous materials have a plan for disposal, plus check with EH&S to determine if decommissioning for the facility or equipment is already covered in the site Preliminary Decommissioning Plan (Document-8810) or whether the PDP will need to be updated	<input type="checkbox"/>	<input type="checkbox"/>
Controls (EPICS, data acquisition, MPS, etc...) specified?	<input type="checkbox"/>	<input type="checkbox"/>

Yes - done

Not done but easy

These might also be required. Not a bad idea to work out controls specifications now anyway.

Gates summary

- Groups often do Gate 2 and 3 simultaneously - I think the advantage is it means one less meeting to coordinate a review panel for, but we could also do them separately
- At last meeting we decided that we might as well do them together, so we are waiting
- Basically all Gate 2 requirements are now done
- For Gate 3, still need final engineering drawings, approved beam optics note, shielding plan (?)

Status of the CNSC license and the safety analysis report

- Unrelated to TRIUMF approvals: we have the issue of our operating license.
 - Stephi will/did give more detail but: we need to write an entire new safety analysis report for the e-hall, not just update the existing one. This is a big project.
 - Ethan's FLUKA results will be the core meat of this report, since we now cannot review the safety of the e-linac independent of DarkLight: the two are physically merged and so merged in the eyes of CNSC too
 - This CNSC license update, where we will include DarkLight, is also the license that will let us go from commissioning (no experiments allowed) to operations
- Timeline: the current e-linac commissioning license expires on October 31. Want to have the new one ready to go Nov 1. This also sets the timeline of when we can begin installation: nothing goes on the floor until we get the new license in hand.
- Result: we should plan on installation in November and December

Milestones (reviews + large timeline items)

- Roughly in order, though several things can happen in parallel
 - Start construction of magnets
 - Complete collimator requirements and start design/construction
 - Complete shielding design. Start on new SAR draft
 - Merged gate 2&3
 - Continue GEM testing, trigger construction, etc. Ship everything to TRIUMF.
 - Receive updated CNSC license
 - Gate 4a -> ready to begin installation

Discussion?