



@



TRIUMF

Advanced Rare Isotope
Laboratory (ARIEL)

Integration

Stephanie Diana Rädcl

Accelerator Division

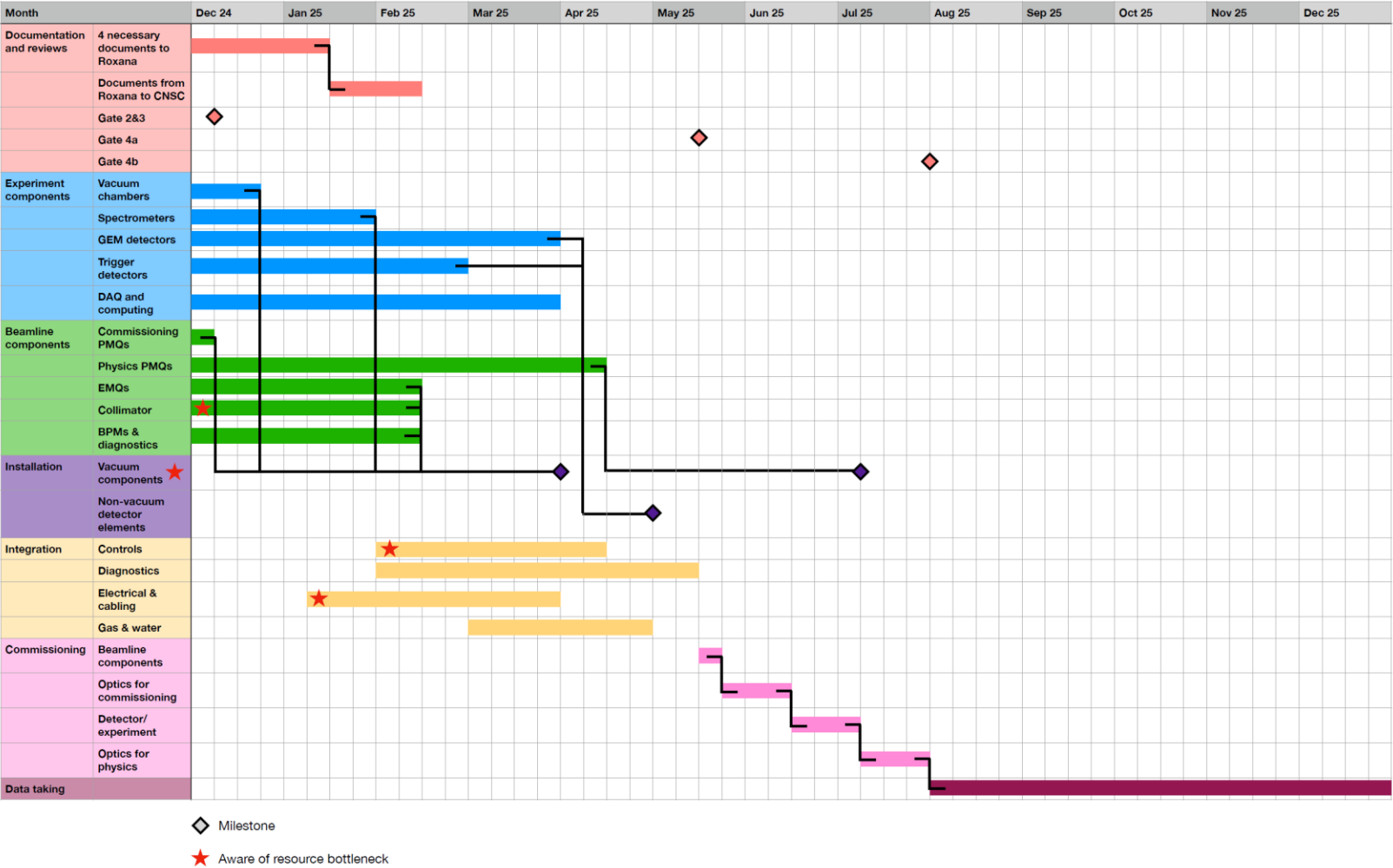
2025-01-16



Discovery,
accelerated



Timeline

DarkLight 30 MeV experiment timeline



Gate review overview

- Gate 1 review on February 15th 2022 (Document-218766)

 Gate 2 and 3 review on  December 11th 2024

- Necessary for installation

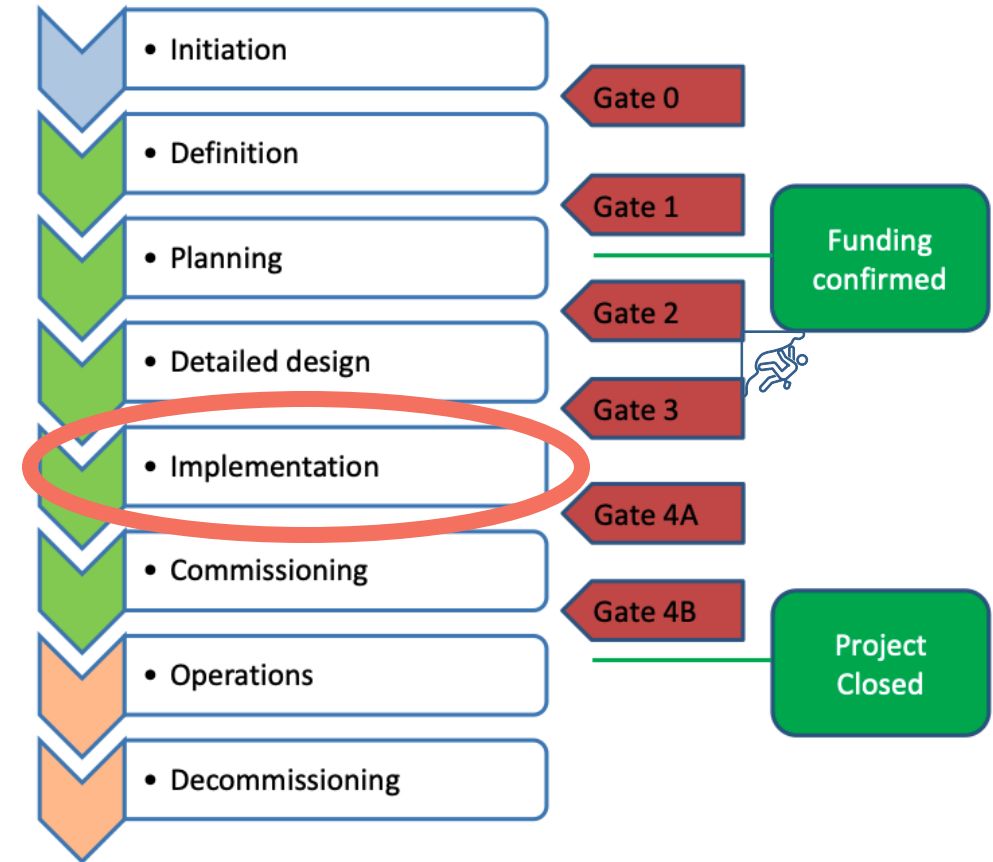



Figure 1: TRIUMF Project Management Gate Process.

Document package for CNSC

- DarkLight “SAR” written and approved on Dec 12th
- DarkLight Commissioning Plan written and approved on Nov 12th
- ARIEL SAR written and in approval process
- e-Linac Commissioning Plan written and in approval process

Document-242966

DarkLight Experiment Facility Hazard Analysis and Safety Review

Document Type: Facility Safety Analysis Report


Release: 1 Release Date: 2024-12-16

Author: K. Pachal, E. Cline

Authors:	Name:	Signature:
	K. Pachal	
	E. Cline	
	R. Caballero-Felich	
	R. Rales	
	M. Vogel	
	T. Planche	
Reviewed By:	J. Aski	
	G. Hackman	
	V. Radchenko	
	I. Bylinaki	
	F. Ames	
Approved By:	O. Kester	

Note: Before using a copy (electronic or printed) of this document you must ensure that your copy is identical to the released document, which is stored on TRIUMF's document server.

Page 1 of 32

Document-244078

DarkLight Commissioning Plan

Document Type: Commissioning Plan


Release: 1 Release Date: 2024-10-21

Author: K. Pachal

Author:	Name:	Signature:
	K. Pachal	
Reviewed By:	L. Miller	
	T. Planche	
	S.D. Ridel	
	M. Hasinoff	
Approved By:	R. Lardet	
	B. Noakes	

Note: Before using a copy (electronic or printed) of this document you must ensure that your copy is identical to the released document, which is stored on TRIUMF's document server.

Page 1 of 8


Document-51332

ARIEL Facility Safety Analysis Report

Document Type: Facility Safety Analysis Report


Release: 5 Release Date: 2025-01-15

Author: S. D. Ridel



Note: Before using a copy (electronic or printed) of this document you must ensure that your copy is identical to the released document, which is stored on TRIUMF's document server.

Page 1 of 96

Document-108335

e-Linac Commissioning Plan

Document Type: Commissioning Plan

Release: 6 Release Date: 2025-01-15

Author: Stephanie D. Ridel

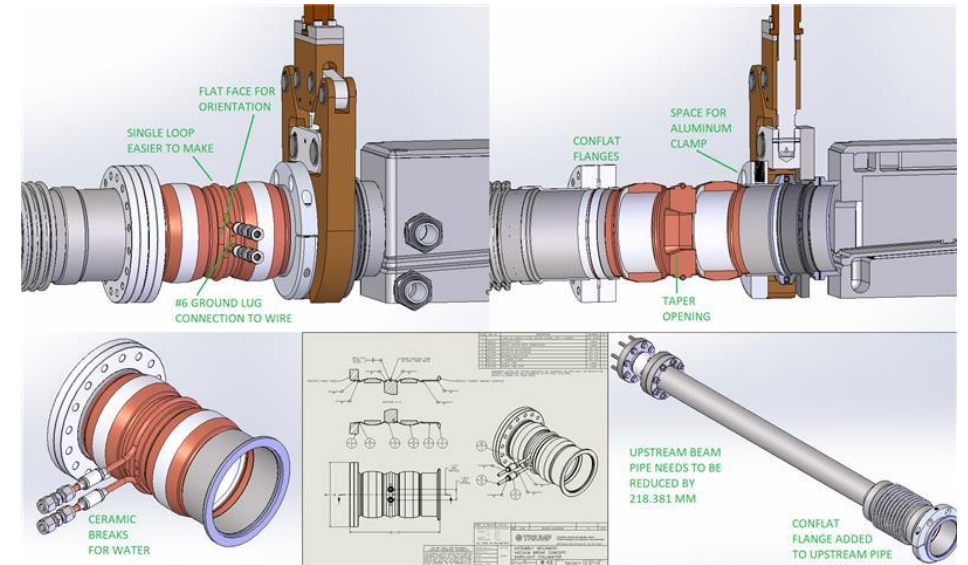
Author:	Name:	Signature:
	Stephanie D. Ridel	
	Thomas Planche	
	Brandon Humphries	
Reviewed By:	Jonathan Aski	
	Bradley Noakes	
	Robert Lardet	
Approved By:	Oliver Kester	

Note: Before using a copy (electronic or printed) of this document you must ensure that your copy is identical to the released document, which is stored on TRIUMF's document server.

Page 1 of 75

Collimator

- Design review December 2023
- Parts were purchased
- Ceramic break was delivered as standard (stainless steel 304)
- Building process started (We thought)
 - ❑ Interlock specification document for controls
 - ✅ Work request for beamlines (#7002)
 - ✅ Work request for controls (#6948)
 - ❑ Interface
 - ❑ Realistic thermal analysis
 - ❑ Collimator cannot be done in TRIUMF shop, but maybe ATG



PMQs

- Shaquielle made a PMQ nu metal holder
- Tested if shielding is sufficient to counter magnetic field)
- ✅ Measure the PMQ magnetic field with shielding wrapped around
- ✅ Order PMQs when optics, FLUKA results and magnetic field measurements are fine
- ✅ Need to arrange clamps for holding PMQs in place



PMQ nu metal holder



Spool piece with PMQs

Experiment installation

8

- ☐ Controls:
 - ☒ Collect missing information (specifics of the lead screw/thread pitch & specifics of motor)
 - ☐ integrate pump controllers into EPICS
 - ☒ Make model of numbers of pumps
 - ☒ submit work request #6948
- ☐ Power supplies:
 - ☐ Jan handle controls: got an update yesterday
 - ☐ Get permission/information on where to plug in power supplies on the roof
 - ☐ Get specs for cables from power supplies to magnets *Needs to go to ES and BL*
 - ☐ Make cables
 - ☒ Check with Dimo that he is OK with this choice of pumps

Experiment installation

- ❑ Gas lines:
 - ❑ get it installed
 - ❑ Set up camera and existing flow meters
- ❑ Electrical services:
 - ✅ Write work request to make all electrical connections to each possible device
 - ✅ EQMs
 - ✅ Pumps
 - ✅ Collimator
- Beamlines:
 - Finish work request #7002

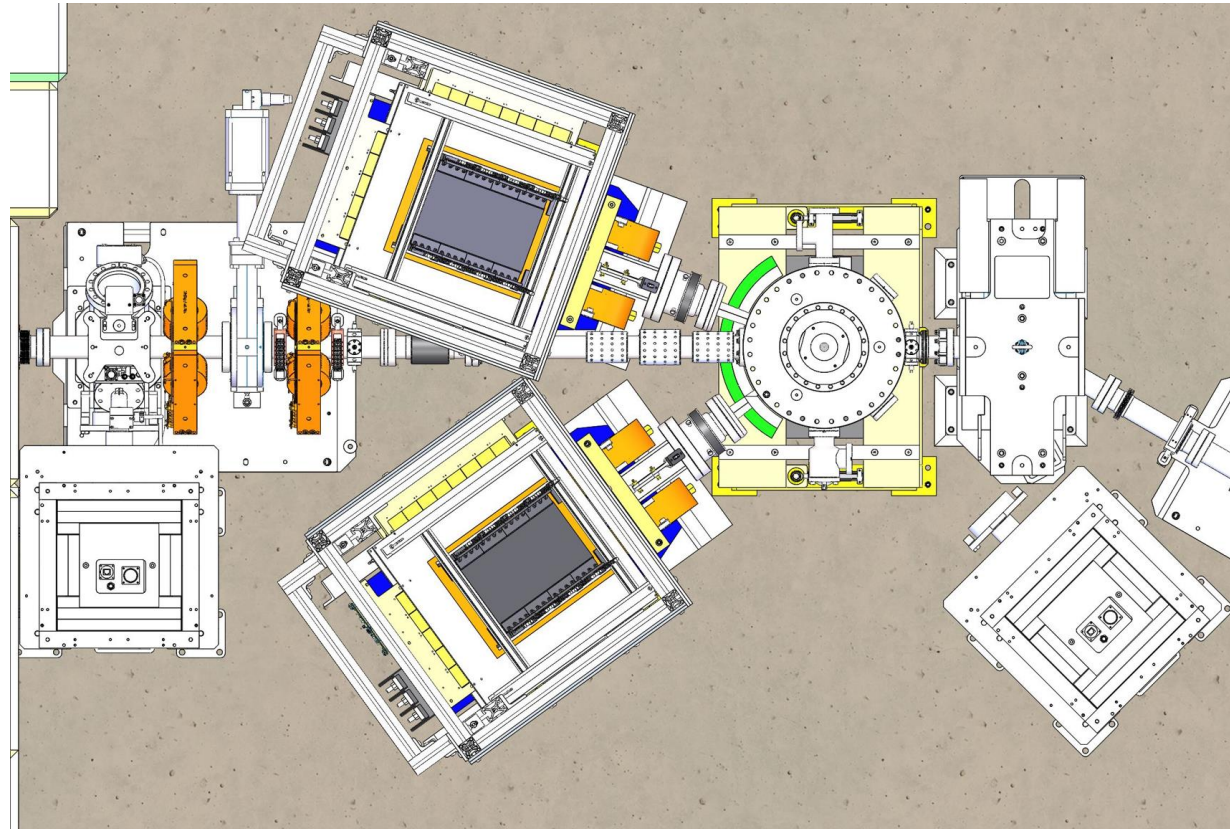
work request #7103
work request #7102
Meeting with Norman Mueller today

- ☐ Create installation model (for the actual installation of the beam line for beamlines group)
- ☐ ~~Communicate with Victor on another BPM antenna~~
 - we can only use the amount of BPMs we already have we might be able to salvage one from ELBD
- ☒ The borated polyethylen shielding “left overs” need to be given back to beamlines/diagnostics (Anthony and Paul already contacted me) and thus being replaced, if needed, with what Kate and I scavenged
- ☐ Track down EM quads and get them out of storage
- ☐ Start to prepare Gate 4A
- ☐ Communicate with space committee

Meeting with them tomorrow

Model of setup, beamline and dump

11

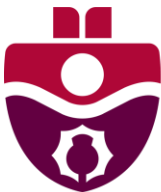


- ❑ Use this model to create the installation model
- ❑ Jim's talk yesterday showed also status for shipping vacuum components

Final Spurt!

Endspurt!

Thank you
Merci



www.triumf.ca

Follow us @TRIUMFLab

