



**To:** Safety Quality Management Review Committee

**Date:** 2019-02-22

**From:** Greg Hackman

**File:**

/Users/hackman/Documents/Admin -- TRIUMF/DSO/SQMR/SQMR-PSD-2018-Q4-R4.docx

**Re:** PSD Safety Committee report for 2018 Q4

This report spans the first calendar quarter of 2018, that is, 2018-10-01 to 2018-12-31.

KPI #	Physical Sciences Performance Indicators and Targets	2018 Target	2018 Performance					Reporting Quarter Status
			Q1	Q2	Q3	Q4	YTD	
<b>Safety</b>								
	% of Safety Review Completion Documents completed by start of scheduled beamtime	100%	0/0	26/26	54/54	40/40	120/120	
	# of Safety Reviews performed		0	0	0	1		
<b>Training</b>								
2.2.4.1	# incomplete training requirements at the start of quarter	0 – GREEN >0 – RED			58 /1143	56 /1145		
<b>QMS</b>								
2.2.4.5	# corrective actions returned in the reporting quarter by the due date			0	0	0		
	# corrective actions returned in the reporting quarter late			0	0	0		
	# corrective actions that are incomplete (past the due date)			0	0	0		
	Average days past due for CAs returned late	0 – GREEN ≤ 14 – YELLOW		n/a	n/a	n/a		

		> 14 – RED						
	<b>Science Operation (annual reports only)</b>							
2.2.2.1	Subscription rate – SAP -RIB, HP experiments	>2.2				2.4		
2.2.2.2	Subscription rate – SAP - other	1				n/a		n/a
2.2.2.3	Subscription rate – MMS - (not needed)					n/a		
2.2.2.4	Subscription rate – MMS – MuSR	>1.5				1.5		
2.2.2.5	Subscription rate – MMS – other	>1.5				2.1		
2.2.2.7	Backlog – SAP – RIB (9 & 6 months running)	<2				2.5		
2.2.2.8	Backlog – MMS - betaNMR	<2				2		
2.2.2.9	Backlog – MMS - MuSR	<0.6				0.9		
2.2.2.10	Experiments hosted – SAP – RIB	No target				38		
2.2.2.11	Experiments hosted – SAP - other	No target				3		
2.2.2.12	Experiments hosted – MMS - MuSR	No target				42		
2.2.2.13	Experiments hosted – MMS – bNMR	No target				11 +1 development		
2.2.3.1	User satisfaction ISAC (15 responses, scale to 5)	No target				3.5		

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**Highlights of Safety Reviews for Facilities or Experiments** (emphasis on areas where engineered safety systems have been installed and/or training and procedures have been implemented to mitigate hazards and ensure personnel safety)

EXPERIMENT SAFETY REVIEWS: Forty experiments were reviewed and approved for beam delivery. All of them used apparatus that had been previously reviewed and approved. Of note:

S1668: This experiment uses active targets. The experimenters for S1668 had previously run with a prototype setup and above-atmosphere methane as the active target material. That configuration had been carefully reviewed and approved for an earlier experiment. In the proposal for S1668 the proponents indicated that, while they were working on a new setup, they would run with their old one. The experiment

was scheduled under the incorrect assumption that they were indeed going to use the previously approved configuration (detector and gas). The experimenters advised TRIUMF staff only a few weeks prior to the experiment that they were intending to use a new active-target detection apparatus with sub-atmospheric isobutane gas as the active volume. This change of configuration was a surprise and annoyance to the safety committee. The experimenters were instructed to submit a safety report on the new configuration, which they did. An ad-hoc committee was struck to review it on October 12. The review made 10 recommendations to be addressed in a revised safety report that would have to be reviewed again prior to approving beam delivery to the experiment. One of the main findings from the report was that the experiment did not have an interlock on the detector HV supply, which was deemed to be a probable ignition source both during detector preparation (filling with gas) and in the event of a failure of the vacuum vessel enclosing the detector (something breaks, air goes in). The committee asserted that a hardware interlock to allow HV on only when the detector is in well-defined normal operating parameters for gas pressure and flow, was a bare minimum expectation to avoid combustion and possible explosion. The minutes from this meeting, including recommendations, may be found in Document-162171. In the end, the experiment was cancelled due to the site power incident.

S1845: Unlike S1668, the experimenters for S1845 \*did\* use an identical setup with identical operating parameters to one which had been previously approved as safe. No ad-hoc review was deemed necessary. The experiment was executed successfully without incident.

#### FACILITY SAFETY REVIEWS:

None.

#### **Status of corrective actions assigned to Science Division: returned during this quarter or still open as of this quarter** (particular focus on ones requiring additional resources for timely completion)

CA1503: NCR 10254: Instruct experimental groups to prepare facility group manuals.

- On Dec. 14 2018, the DSO officially instructed PSD facility coordinators to prepare facility group manuals by March 31 2019. Examples have been provided.

#### **Other activities**

There were three PSD SC regular monthly meetings. Minutes can be found on Docushare Collection 19943.