

Hall: C

**RADIATION BUDGET FORM**

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Exp. # e-A group

rev:

run dates: 2019

name of liaison: Dave Gaskell

E12-06-105, E12-10-008

setup number		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
beam	energy	GeV	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
	current	uA(CW)	60.0	60.0	60.0	60.0	15.0	15.0	60.0	60.0	60.0	40.0	60.0	60.0	30.0	40.0	60.0	60.0	20.0
exp't target	element		H	D	He-3	He	Li-6	Li-7	Be	B-10	B-11	Al	C	Ca	Ca-48	Ti	Ni-58	Ni-64	Fe-54
	thickness	mg/cm2	723	1670	708	1350	300	300	1304	440	498	525	480	800	800	323	254	254	277
	dist. to pivot	m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Z		1	1	2	2	3	3	4	5	5	13	6	20	20	22	28	28	26
A		1	2	3	4	3	4	9	5	6	27	12	20	28	26	30	36	28	
add'l target 1	element									C	C								
	thickness	mg/cm2								132.0	136.0								
	dist. to pivot	m																	
	Z		0	0	0	0	0	0	0	6	6	0	0	0	0	0	0	0	0
A		0	0	0	0	0	0	0	12	12	0	0	0	0	0	0	0	0	
cryo tgt window	element		Al	Al	Al	Al									Al				
	thickness	mg/cm2	137	137	137	137									68				
	dist. to pivot	m	0.0	0.0	0.0	0.0									0.0				
	Z		13	13	13	13	0	0	0	0	0	0	0	0	13	0	0	0	0
A		27	27	27	27	0	0	0	0	0	0	0	0	27	0	0	0	0	
critical window	radius	cm	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
	dist. to pivot	m	5.57	5.57	5.57	5.57	5.57	5.57	5.57	5.57	5.57	5.57	5.57	5.57	5.57	5.57	5.57	5.57	5.57
scattering weighting factor			0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
time	run time	hours	129.6	194.4	88.8	40.8	28.8	28.8	14.4	74.4	67.2	7.44	381.6	3.84	6	10.08	9.12	9.12	24
	(100% eff.)	days	5.4	8.1	3.7	1.7	1.2	1.2	0.6	3.1	2.8	0.3	15.9	0.2	0.3	0.4	0.4	0.4	1.0
	installation time	hours																	
		days	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
dose rate at the fence post (run time)	method 1	urem/hr	1.43	3.91	3.20	5.57	0.29	0.27	4.87	2.59	2.73	1.60	1.76	7.92	3.37	1.60	2.24	1.97	0.79
	method 2	urem/hr																	
	conservative	urem/hr	1.43	3.91	3.20	5.57	0.29	0.27	4.87	2.59	2.73	1.60	1.76	7.92	3.37	1.60	2.24	1.97	0.79
dose per setup		urem	185	759	284	227	8	8	70	192	183	12	672	30	20	16	20	18	19
% of annual dose budget		%	1.8	7.6	2.8	2.3	0.1	0.1	0.7	1.9	1.8	0.1	6.7	0.3	0.2	0.2	0.2	0.2	0.2

*date form issued:*

May 23, 2017

*authors:* P. Degtiarenko

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Exp. # e-A group rev: 0

run dates: 2019

name of liaison: Dave Gaskell

E12-06-105, E12-10-008

setup number			18	19	20	21	22	23		
beam	energy	GeV	11.0	11.0	11.0	11.0	11.0	11.0	totals:	
	current	uA(CW)	60.0	60.0	35.0	60.0	60.0	40.0		
exp't target	element		Cu	Ag	Sn	Au	Th	Al		
	thickness	mg/cm2	772	538	529	388	364	1100		
	dist. to pivot	m	0.0	0.0	0.0	0.0	0.0	0.0		
	Z			29	47	50	79	90	13	
	A			64	60	70	200	142	27	
add'l target 1	element									
	thickness	mg/cm2								
	dist. to pivot	m								
	Z			0	0	0	0	0	0	
	A			0	0	0	0	0	0	
cryo tgt window	element									
	thickness	mg/cm2								
	dist. to pivot	m								
	Z			0	0	0	0	0	0	
	A			0	0	0	0	0	0	
critical window	radius	cm	3.9	3.9	3.9	3.9	3.9	3.9		
	dist. to pivot	m	5.57	5.57	5.57	5.57	5.57	5.57		
scattering weighting factor			0.50	0.50	0.50	0.50	0.50	0.50		
time	run time (100% eff.)	hours	151.2	5.04	8.88	23.52	8	76.8	1391.8	
		days	6.3	0.2	0.4	1.0	0.3	3.2	58.0	
	installation time	hours							0	
		days	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
dose rate at the fence post (run time)	method 1	urem/hr	5.45	6.96	3.86	3.91	5.82	3.96		
	method 2	urem/hr								
	conservative	urem/hr	5.45	6.96	3.86	3.91	5.82	3.96		
dose per setup		urem	824	35	34	92	47	304	4062	
% of annual dose budget		%	8.2	0.4	0.3	0.9	0.5	3.0	40.62	
% of allowed dose for the total time									255.66	
% of allowed dose for the run time only									255.66	

If &gt; 200%, discuss result with Physics Research EH&amp;S officer

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