

**From:** Medvedev, Dmitri  
**Sent:** Monday, March 07, 2016 5:41 PM  
**To:** Beavis, Dana; Hoffman, Caitlin  
**Cc:** Cutler, Cathy; DeGraffenreid, Anthon; Evers Jr., Louis; Nalepa, Jason; Mausner, Leonard  
**Subject:** Tgt\_15\_11 canning record attachment

Dana,

We'd like to carry out irradiation of the GaAs target in brass holder on March 18, 2016. The canning record for this target has been reviewed (Tgt\_15\_11) and approved. The proposed target array is below.

The differences from the approved canning record are as follows (proposed vs. approved):

- incident energy on the target (84.7 MeV vs 24.5 MeV)
- energy deposition (1.55 MeV vs 3.9 MeV)
- dedicated array (no RbCl vs behind RbCl)

Since energy deposition is lower than in the approved case we believe that thermal analysis of the target under proposed conditions is not required. The proposed target array was verified independently.

Please let us know if you have any questions or if you need any additional information.  
Caitlin, could you please add this as an attachment to Tgt\_15\_11?

Thanks,

Dmitri

The BLIP Target Stack - GaAs - 2016							
g/cm <sup>2</sup> running sum					vary water gap(mm)	2.692	
Material in Beam	density(g/cm <sup>3</sup> )	thickness (inches)	thickness (mm)	KE (MeV in)	Range(mm)	KE (MeV out) 116.5	Delta E (MeV)
Beryllium	1.85	0.012	0.305	116.500	66.780	116.190	0.31
AlBeMet	2.10	0.012	0.305	116.190	59.670	115.850	0.34
Stainless Steel window	7.99	0.031	0.787	115.850	18.180	112.930	2.92
Water	1.00	0.106	2.692	112.930	94.800	111.100	1.83
Stainless Steel window	7.99	0.020	0.508	111.100	16.910	109.190	1.91
Water	1.00	0.090	2.286	109.190	89.310	107.600	1.59
Water	1.00	0.115	2.921	107.600	87.010	105.540	2.06
Aluminum Monitor Foil	2.70	0.002	0.051	105.540	40.590	105.400	0.14
Aluminum Holding Foil	2.70	0.015	0.381	105.400	40.517	104.800	0.60
Aluminum	2.70	0.344	8.733	104.800	40.111	91.180	13.62
Water Front	1.00	0.200	5.080	91.180	64.800	87.100	4.08
Brass CDA-360 Alloy	8.50	0.020	0.508	87.100	10.960	84.700	2.40
Gallium Arsenide	5.32	0.021	0.533	84.700	17.270	83.150	1.55
Copper Back	8.96	0.119	3.023	83.150	9.585	66.900	16.25
Water Back	1.00	0.200	5.080	66.900	37.210	61.650	5.25
Aluminum Shaped Degrader	2.7	0.311	7.899	61.650	15.683	41.590	20.06
Water	1.00	0.100	2.540	41.590	15.790	37.730	3.86
Aluminum Degrader	2.70	0.863	21.921	37.730	6.546	#N/A	37.73
Water	1.00	0.200	5.080	#N/A	#N/A	#N/A	#N/A
Copper Spacer	8.96	0.220	5.588	#N/A	#N/A	#N/A	#N/A