

Hall: **A****RADIATION BUDGET FORM**

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Exp. # **GMn**rev: **0**run dates: **2019**name of liaison: **Eric Fuchey****E12-09-016**

| setup number | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | | |
|--|----------------------|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|
| beam | energy | GeV | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 6.6 | 6.6 | 6.6 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | | |
| | current | uA(CW) | 19.2 | 52.4 | 30.9 | 19.2 | 39.0 | 30.9 | 24.0 | 58.1 | 24.0 | 24.0 | 52.5 | 22.5 | 30.0 | 52.5 | 30.0 | 30.0 | 53.3 | |
| radiator | element | | | | | | | | | | | | | | | | | | | |
| | thickness | mg/cm2 | | | | | | | | | | | | | | | | | | |
| | dist. to pivot | m | | | | | | | | | | | | | | | | | | |
| | Z | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | A | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| exp't target | element | | D | H | Al | D | H | Al | D | H | Al | D | H | Al | D | H | Al | D | H | |
| | thickness | mg/cm2 | 2435 | 1062 | 935 | 2435 | 1062 | 935 | 2435 | 1062 | 935 | 2435 | 1062 | 935 | 2435 | 1062 | 935 | 2435 | 1062 | |
| | 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 | 13 | 1 | 1 | 13 | 1 | 1 | 13 | 1 | 1 | 13 | 1 | 1 | 13 | 1 | 1 | |
| | A | | 2 | 1 | 27 | 2 | 1 | 27 | 2 | 1 | 27 | 2 | 1 | 27 | 2 | 1 | 27 | 2 | 1 | |
| cryo tgt window | element | | Al | Al | | Al | Al | | Al | Al | | Al | Al | | Al | Al | | Al | Al | |
| | thickness | mg/cm2 | 83 | 83 | | 83 | 83 | | 83 | 83 | | 83 | 83 | | 83 | 83 | | 83 | 83 | |
| | 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 | |
| | Z | | 13 | 13 | 0 | 13 | 13 | 0 | 13 | 13 | 0 | 13 | 13 | 0 | 13 | 13 | 0 | 13 | 13 | |
| | A | | 27 | 27 | 0 | 27 | 27 | 0 | 27 | 27 | 0 | 27 | 27 | 0 | 27 | 27 | 0 | 27 | 27 | |
| critical window | radius | cm | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | |
| | dist. to pivot | m | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 | 5.10 | |
| 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 (100% eff.) | hours | 30 | 69 | 7 | 30 | 24 | 7 | 30 | 32 | 6 | 30 | 8 | 4 | 24 | 8 | 3 | 48 | 9 | |
| | | days | 1.3 | 2.9 | 0.3 | 1.3 | 1.0 | 0.3 | 1.3 | 1.3 | 0.3 | 1.3 | 0.3 | 0.2 | 1.0 | 0.3 | 0.1 | 2.0 | 0.4 | |
| | 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 | 0.0 |
| dose rate at the fence post (run time) | method 1 | urem/hr | 0.97 | 0.53 | 1.35 | 0.97 | 0.39 | 1.35 | 1.21 | 0.59 | 1.05 | 1.37 | 0.53 | 1.10 | 1.87 | 0.55 | 1.58 | 1.87 | 0.56 | |
| | method 2 | urem/hr | | | | | | | | | | | | | | | | | | |
| | conservative | urem/hr | 0.97 | 0.53 | 1.35 | 0.97 | 0.39 | 1.35 | 1.21 | 0.59 | 1.05 | 1.37 | 0.53 | 1.10 | 1.87 | 0.55 | 1.58 | 1.87 | 0.56 | |
| dose per setup | | urem | 29 | 36 | 9 | 29 | 9 | 9 | 36 | 19 | 6 | 41 | 4 | 4 | 45 | 4 | 5 | 90 | 5 | |
| % of annual dose budget | | % | 0.3 | 0.4 | 0.1 | 0.3 | 0.1 | 0.1 | 0.4 | 0.2 | 0.1 | 0.4 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.9 | 0.1 | |

date form issued:

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authors: P.Degtiarenko