

**Texas A&M cyclotron radiation effects facility**  
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The activity of the Radiation Effects Facility (REF) decreased slightly over the previous reporting year. In this reporting period, the facility was used for 2,551.5 hours, which is a ~2% decrease over the 2,600 (record) hours used in the 2008-2009 reporting period. Users of the facility (and hours used) over the past year were: NASA GSFC (314), Xilinx Corporation (249.5), BAE Systems (210.5), Boeing Seattle (209.5), NAVSEA (150.75), NASA JPL (138.75), International Rectifier (130.75), Sandia National Laboratory (122), SEAKR (111), Aeroflex (103.25), Intersil (96), Ball Aerospace (91), Actel Corporation (51), Southwest Research Institute (48), General Dynamics (43.5), ASTRUM (40), University of Colorado (38), Silicon Space Technology (32), Micro RDC (29.5), Johns Hopkins University (29), Lockheed Martin Corporation (27.5), VPT Inc (23), Los Alamos National Laboratory (22), MDA Corporation (21.75), SOREQ (19), Cisco Systems (17.5), AMTEC Corporation (16), Data Devices (16), JD Instruments (16), Naval Research Laboratories (16), Star Vision (16), Sun Tronics (16), Vanderbilt University (12.75), Broadcom Communications (12), Northrop Grumman (12), ITT Communications (10), Harris Corporation (8), NASA JSC (8), Peregrine Semiconductor (8), Radiation Assured Devices (8) and University of Idaho (8). New users included Broadcom Communications, Data Devices and Star Vision.

Table I compares the facility usage by commercial and government customers. The ratio from this reporting year (66% to 34%) is similar to the trend seen in previous reporting periods and commercial hours still dominate. Commercial hours decreased by 7% and government hours increased by

**TABLE I.** Radiation Effects Facility usage by commercial and government customers for this and previous reporting years.

Reporting Year	Total Hours	Commercial Hours (%)	Government Hours (%)
2009-2010	2,551	1,692 (66%)	859 (34%)
2008-2009	2,600	1,828 (70%)	772 (30%)
2007-2008	2,373	1,482 (62%)	891 (38%)
2006-2007	2,498	1,608 (64%)	890 (36%)
2005-2006	2,314	1,314 (57%)	1,000 (43%)
2004-2005	2,012	1,421 (71%)	591 (29%)
2003-2004	1,474	785 (53%)	689 (47%)
2002-2003	1,851	1,242 (67%)	609 (33%)
2001-2002	1,327	757 (57%)	570 (43%)
2000-2001	1,500	941 (63%)	559 (37%)
1999-2000	548	418 (76%)	131 (24%)
1998-1999	389	171 (44%)	218 (56%)
1997-1998	434	210 (48%)	224 (52%)
1996-1997	560	276 (49%)	284 (51%)
1995-1996	141	58 (41%)	83 (59%)

11% over hours from 2008-2009. Much of the testing conducted at the facility continues to be for defense systems by both government and commercial agencies. It is expected that the facility will continue to be as active in future years.

Table II lists the beams used this year and the number of times each was requested. In total, 546 beams were run this year which is identical to the previous year. 15 and 25 MeV/u Kr and Xe were most utilized as well as 15 MeV/u Au. No new beams were added to SEELine users list.

**TABLE II.** Beams used and the number of times requested for this reporting year and previous years. 546 beams were run this year.

Particle Type	A MeV	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
<sup>4</sup> He	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	3
<sup>14</sup> N	“	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	4
<sup>20</sup> Ne	“	1	13	19	15	23	36	39	37	41	39
<sup>40</sup> Ar	“	4	24	43	46	51	56	60	57	63	60
<sup>63</sup> Cu	“	N/A	N/A	5	14	22	23	25	24	19	22
<sup>84</sup> Kr	“	6	26	55	47	49	75	81	77	63	73
<sup>109</sup> Ag	“	N/A	N/A	6	18	15	26	28	28	34	30
<sup>129</sup> Xe	“	5	18	43	51	50	78	84	84	48	72
<sup>141</sup> Pr	“	N/A	N/A	2	2	1	4	4	4	4	4
<sup>165</sup> Ho	“	3	11	17	7	8	22	24	24	13	20
<sup>181</sup> Ta	“	4	5	4	3	5	3	3	3	3	3
<sup>197</sup> Au	“	12	9	23	34	34	46	50	49	44	47
<sup>4</sup> He	25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	4
<sup>14</sup> N	“	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	5
<sup>22</sup> Ne	“	27	13	19	6	15	21	23	20	21	21
<sup>40</sup> Ar	“	31	20	32	16	25	31	33	35	28	32
<sup>84</sup> Kr	“	32	20	35	26	33	40	43	45	47	45
<sup>129</sup> Xe	“	25	18	24	15	25	34	37	40	37	38
H-D	40	1	8	10	4	7	4	4	5	2	3
<sup>3</sup> He	“	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	3
<sup>14</sup> N	“	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	2	5
<sup>20</sup> Ne	“	5	3	5	6	11	2	2	3	4	3
<sup>40</sup> Ar	“	12	8	10	7	13	7	8	9	6	7
<sup>78</sup> Kr	“	13	9	6	5	10	3	3	3	2	3
Total		192	207	360	324	399	511	552	550	485	546