

Texas A&M cyclotron radiation effects facility
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The activity of the Radiation Effects Facility (REF) increased for record setting usage compared to any previous reporting year. In this reporting period, the facility was used for 3,982 hours, which is an 8.25% increase over the 3,678 hours used in the 2018-2019 reporting period. Users of the facility (and hours used) over the past year were: RTS (274), Boeing Corp (269.5), MDA Corp (242), NASA JPL (214), Texas Instruments (194.5), Infineon (178), Renesas (148.5), NAVSEA (118.25), AFRL (113), Microchip (101), Sandia National Laboratory (99), SEAKR (96), Northrop Grumman (95), Blue Origin

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 (%)
2019-2020	3,982	2,862 (72%)	1,120 (28%)
2018-2019	3,678	2,939(80%)	739(20%)
2017-2018	3,681	2,622 (71%)	1,059 (29%)
2016-2017	3,355	2,501 (75%)	854 (25%)
2015-2016	3,042	2,326 (76%)	716 (24%)
2014-2015	3,024	1,975 (65%)	1,049 (35%)
2013-2014	2,399	1,517 (63%)	882 (37%)
2012-2013	2,626	1,856 (71%)	770 (29%)
2011-2012	2,673	1,630 (61%)	1,043 (39%)
2010-2011	3,042	1,922 (63%)	1,121 (37%)
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%)

(92), Troxel Engineering (91), Lockheed Martin (87.5), Johns Hopkins (87), Raytheon (87), Analog Devices (83), NASA GSFC (68.5), BAE Systems (65), Honeywell (64), VPT Inc (64), COSMIAC (48), Freebird Semiconductor (48), Thales Alenia Space (48), Space X (46.5), Intel Corp (41), ReflexPhotonics (41), Howard University (40), Cobham (40), Teledyne DALSA (38.5), SMU (32), JD Instruments (32), Microsemi (32), Signal Analysis (32), Space Micro (32), STEE-SATSYS (32), UltraComm (31.5), GSI Technology (31), Rugged (30.5), Naval Post Graduate (30), Ryoei (28), Draper Labs (24), Millennium (24), Harris (21.5), Astranis (20), Amazon (18), Los Alamos (16), Criteria Labs (16), Cubic Aerospace (16), L3Harris (16), Nucltudes (16), Data Device Corp (15), Crane AE (14), General Dynamics (11.5), SWRI (11.5), U of Arkansas (8), Ball Aerospace (8), iSpace (8), Aria Labs (8), KAIST (8), OnSemi Conductor (8), Raitek (8), T2 Research (8), TRAD (8), and TAMU Physics (4). New users included Reflex Photonics, Howard University, SMU, Rugged, Naval Post Graduate, Amazon, U of Arkansas, and Raitek.

Table I compares the facility usage by commercial and government customers. While commercial hours still dominate, the ratio from this reporting year (72% to 28%) is similar to usage from previous reporting periods (see Fig 1). Commercial usage decreased slightly by 3% but was the second highest commercial usage ever. Government usage increased by 52% and was the second highest usage ever. The large increase in government hours was due to the work by Missile Defense Agency (242 hours). 15 MeV/u ions were the most utilized and especially 15 MeV/u Au. No new beams were added to

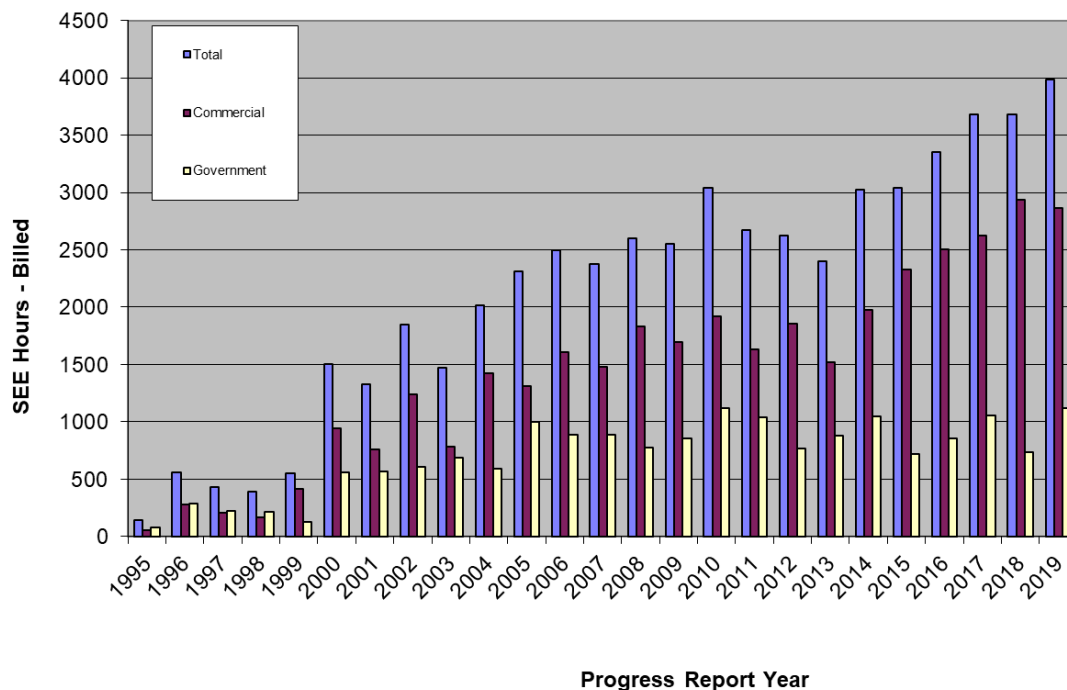


FIG. 1. Radiation Effects Facility usage by commercial and government customers for this and previous reporting years. While commercial hours still dominate, the ratio from this reporting year (72% to 28%) is similar compared to usage from prior reporting period. Almost 11% (316 hours) of the commercial hours were for foreign agencies from Canada, Japan, South Korea, France, and Singapore.

SEELine users list. Much of the testing conducted at the facility continues to be for defense systems by both government and commercial agencies. Almost 11% (316 hours) of the commercial hours were for foreign agencies from Canada, Japan, South Korea, France, and Singapore. It is expected that the facility will continue to be as active in future years.