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CANADA'S NATIONAL LABORATORY
FOR PARTICLE AND NUCLEAR PHYSICS

OPERATED AS A JOINT VENTURE

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UNDER A CONTRIBUTION FROM THE
NATIONAL RESEARCH COUNCIL OF CANADA

OCTOBER 2001

The contributions on individual experiments in this report are outlines intended to demonstrate the extent of scientific activity at TRIUMF during the past year. The outlines are not publications and often contain preliminary results not intended, or not yet ready, for publication. Material from these reports should not be reproduced or quoted without permission from the authors.

ADMINISTRATION DIVISION

INTRODUCTION

The Administration Division is made up of Human Resources and Administration, Accounting and Materials Control, Administrative Computing, and Safety. The manager of each group reports to the Director. A summary of Division activities in included in this report.

HUMAN RESOURCES AND ADMINISTRATION

Another year of Performance Planning and Review was completed, whereby all employee performance was evaluated and measured site wide. A number of Personnel Policies and Procedures, applicable to all employee groups, were approved by the TRIUMF Board of Management for implementation.

The insurance program was renewed with no increase in premium from the previous year and third party liability coverage remains at $50 M. All buildings operated by TRIUMF are owned by the University of British Columbia and insurance coverage for these buildings and contents is provided by the Canadian Universities Reciprocal Insurance Exchange (CURIE).

Carleton University became a full member of the Joint Venture. The Joint Venture Agreement was modified to reflect the inclusion of Carleton, and each member university now has two voting members on the Board of Management. Two additional voting members are appointed by the Board from the private sector. The associate members each retain one non-voting member on the Board.

A review of the system for keeping track of both short term and long term visitors was initiated and the revised system will be implemented during 2001. All visitors will be recorded in a database which will keep track of data such as their home institution, length of stay, contact person at TRIUMF, radiation badge, and keys issued.

Site security is being reviewed, and it is expected that motion detectors with cameras will be installed by the end of 2001. An ID card system for access behind the security fence is also being considered.

Negotiations with UBC for the construction of the ISAC-II building began, and approval was received from the UBC Board of Governors to proceed with this project. Construction of the building is expected to commence in the spring of 2001.

OPERATIONAL SAFETY

AECB/CNSC Licensing

In May the Canadian Nuclear Safety Act came into force. This act retired the Atomic Energy Control Board (AECB) and created a new agency called the Canadian Nuclear Safety Commission (CNSC). The Commission put into effect a new set of regulations that had been under discussion for a number of years. The new regulations codify many of the practices that the AECB had instituted over the years and also brought the dose limits in line with the recommendations of the International Commission on Radiological Protection (ICRP 60).

As a consequence, the operating licences granted by the AECB will no longer be valid and TRIUMF has had to apply to the CNSC for new licences. Licence applications were prepared for both the TRIUMF facility and ISAC, and were submitted by late October. These submissions included completely revised Safety Reports for both facilities. The ISAC licence submission included an upgrade to bombard the ISAC production targets with proton beam currents of up to 100 μA and also to operate the ion beam accelerator system. No formal reply to these requests had been received from the CNSC by the end of the year.

Training

Because of the increasing demand for training in all areas of safety as well as operational procedures, TRIUMF hired a training coordinator within the Safety Department. The first task was to bring the Radiation Safety Training in line with the CNSC guidelines. These require a systematic approach to training (SAT) that proceeds from an analysis of the training needs and the setting of training objectives, to a program design stage. Finally, it requires that there be an evaluation to see whether the objectives have been met. The process was well under way by the end of the year and the new Radiation Safety training program should be ready for implementation in the spring of 2001.

Occupational Health and Safety also organized a number of training sessions this year. Table XXXI lists the training modules and the number of people who successfully completed the training.

Table XXXI. Occupational Health and Safety training.

Module	No. Trained
Asbestos Awareness and Abatement	5
Fire Extinguisher Use	25
Level I First Aid	10
Level II First Aid	3
Powder Actuated Tools Certification	16
Lock-Out Procedures	10

Occupational Health and Safety

New fire wardens were appointed in preparation for the Vancouver Fire Department (VFD) inspections which now include two scheduled fire drills per year. TRIUMF scored high in fire safety awareness during the most recent fire drill witnessed by the VFD. The Workers' Compensation Board of B.C. made two unannounced visits to the TRIUMF site this year. They issued a total of five orders, all of which have been satisfied. Mike Adam retired as chair of the TRIUMF Accident Prevention Committee (TAPC) after many years of service. The TAPC now has a number of new faces and an additional member at large to help maintain a quorum at the monthly meetings.

Interlocks and Monitoring

ISAC continued to occupy much of the time of the Safety Systems group. In addition, the effort to upgrade the reliability of systems that protect against the prompt radiation hazard continued. These systems were scrutinized by CNSC staff and by an expert panel assembled by the CNSC. In response to their findings the neutron monitoring system, which is entirely independent from the beam loss monitoring system, was upgraded so as to shut off the 500 MeV cyclotron whenever levels greater than 1 mSv h^{-1} are detected outside the shielding. With the implementation of this function the beam shut-off systems can now achieve the required reliability.

Much progress was achieved in improving the quality assurance and change control for the design, construction and maintenance of the TRIUMF safety systems.

Personnel Dosimetry

The collective dose for TRIUMF personnel for the year 2000 was 338 mSv as measured by the direct reading dosimeter service. This dose is approximately 10% higher than the previous year and likely reflects the influence of the start of operation of the ISAC facility with significant proton beam currents. Table XXXII shows the breakdown of the collective dose by various work groups.

Table XXXII. Collective dose for TRIUMF personnel by group.

Group	Dose (mSv)	Fraction of Total (%)	Median (mSv)
Applied Technology	115.0	34.5	7.0
Life Sciences	33.5	10.0	0.8
Remote Handling	24.4	7.3	1.8
500 MeV Operations	17.7	5.3	1.0
Safety Group	17.5	5.2	0.5
Vacuum Group	15.1	4.5	1.7
Plant Group	13.8	4.1	0.3
ISAC Operations	11.8	3.5	1.0
Tech Support	11.7	3.5	1.6
Beam Lines/Probes	11.5	3.4	0.7
Outside Contractors	10.7	3.2	0.2
RF Group	5.1	1.5	0.1
ISIS	4.3	1.3	0.2
Others	42.6	12.8	-.-
Total	333.7	100.0	0.3

ADMINISTRATION COMPUTING

Data Processing

The year 2000 started, of course, with the "Y2K event". As at most computing facilities, this ended up being a non-event, since no significant (and very few insignificant) problems arose as a result of dates changing year from 1999 to 2000. The smoothness of the transition was a result of the hardware and software review that had been completed in 1998. It is important to note that many software changes were made during that review; had this not been done, many significant problems would have occurred.

New development in data processing was concentrated in two areas: human resources and Web serving. The review and redesign of the HR database and applications, started in 1999, was delayed in order to accommodate an HR requirement to change employee vacation calculations from employee anniversary years to calendar years. The overall HR review and redesign will continue in 2001.

The administration Web server was also enhanced significantly during the year. The largest amount of new document "content" was provided by the HR department. New Web server capabilities were implemented towards the end of the year, including a site search tool and the ability for users to log in to the server to obtain customized personal information as well as internal-only documents. The site document repository was greatly enlarged, to become a centralized electronic source for forms from many TRIUMF departments.

Word Processing

Word processing systems saw only incremental changes in 2000. Towards the end of the year, a small number of users moved to the Windows 2000 platform. It is expected that most word processing system users will be migrated to that platform in 2001.

Telephones

Year 2000 was an extremely uneventful one for the site telephone system. This was most welcome after 1999, which included a number of severe and lengthy outages. This change in system reliability appears to confirm the assumption made in 1999 that most problems in prior years were caused by improper line voltage, and not by hardware, software, or maintenance problems.

The central switch continued to operate at or near full capacity for the entire year. Towards the end of the year, orders were placed to enlarge the switch, and to update it to a current software release level, with the installation date being early in 2001.