

and better equipment. Ontario Hydro is thus enabled both to improve the performance of the power system and to effect economies. Members of the staff maintain close contact with research organizations and other power utilities, and participate in the committee work of major technical societies and of standards associations.

Electrical investigations explore methods of generating, transmitting, distributing and utilizing power, and seek improvement in equipment for these purposes. Some of the main fields of study are transmission at extra-high voltage; electrical insulation; system operation and control, and system protection against lightning; communications and telemetering; illumination; and power metering. Attention is given to the performance and efficiency of power equipment, to improved measuring techniques, and to means of minimizing the hazards of electric shock.

Structural and mechanical studies include the following: soil mechanics as related to foundations, roads, and earth dams and dykes; the physical properties of structural components and of numerous items such as conductor joints and line hardware; the mechanical performance and safety features of equipment and various types of machines; metals and metallurgy; welding materials, techniques and applications; atmospheric and underground corrosion of metals; stresses in materials and structures; noise and vibration conditions; and a variety of problems associated with the design, construction and maintenance of concrete structures, the application of masonry materials, and the production, placement and quality control of all concrete used.

In addition to chemical analyses and tests performed on a wide range of materials and products purchased, chemical research work is conducted with regard to such subjects as wood preservation, plastics applications, protective coatings, both vegetation and insect pest control, lubrication, liquid and gaseous electrical insulants, thermal insulation, air pollution, corrosion prevention and water treatment. Other studies contributory and supplementary to the main branches of work are carried on in the fields of physics, biology, petrology and mathematics. Operations research studies are used in determining optimum policies and procedures in vehicle replacement, inventory control, reserve transformer capacity, economic power dispatch, and schedules for pumped-storage operation.

In the summer of 1961, the Commission's research and testing activities were transferred to a new building, known as the Ontario Hydro W. P. Dobson Research Laboratory, which was designed and constructed for these purposes and provides considerably more space and better facilities than the building formerly occupied. A separate high-voltage test laboratory adjacent to the new building was completed in early 1962.

Subsection 3.—Medical Research*

Support for research in the medical sciences is provided by the federal and provincial governments, by private foundations, by voluntary agencies and by universities and hospitals. These sources assist in establishing research fellowships for training, in providing salaries to established investigators or in the awarding of grants in aid of research in the various disciplines of the medical sciences.

The Departments of National Health and Welfare and of National Defence maintain well-equipped laboratories in which research is carried out by highly qualified personnel. The Department of Veterans Affairs also encourages its staff to carry out investigations in its own hospitals, mainly in the fields of chronic illness, such as arthritis, atherosclerosis, and metabolic, nutritional, neurological and mental disorders.

A great variety of medical problems are studied in medical school laboratories, hospitals and other medical institutes. In this field, funds from the federal treasury are provided through the Medical Research Council, the Department of National Health and Welfare and the Defence Research Board. The Medical Research Council has an interest in the broad field of the medical sciences; it has recently established its policies with respect to

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