land contracted to erect a power station on the banks of the Waikato River near its source at the north end of Lake Taupo, a cooling pump house in the river, and five 20-inch steam pipes to bring the steam from about a mile away.

Originally the £6-million project was to produce not only electricity but also heavy water for the British Atomic Energy Authority, but the authority withdrew from the scheme in 1955 for reasons which have not been made public. Nevertheless, the New Zealand Government has proceeded and expects to feed 69,000 kilowatts of electricity into the North Island power grid by the winter (June, July, and August) of 1958. In the meantime, a firm of London consulting engineers has submitted a report indicating that the plant can be expanded easily to produce 82,000 kilowatts and, if wet steam and hot water converted to steam prove to be practical, can develop a maximum of 250,000 kilowatts. The total cost of this expanded scheme is expected to run to somewhere in the neighborhood of £22 million to £25 million.

It is hardly likely that such a combination of natural and economic circumstances exists anywhere else in the world, and probably the New Zealand experiment cannot be repeated. Nevertheless, it is being watched with interest from many quarters as the first large-scale use of an entirely new source of energy.

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U.S. Mission to the U.S.S.R.

L. L. Newman, assistant chief coal technologist for the U.S. Bureau of Mines, was one of five American specialists in peat who recently visited the U.S.S.R. Five Soviet mining engineers and peat specialists have, in turn, toured Minnesota peat and iron mining sites in an unusual exchange between the state of Minnesota—not the United States Government—and the Soviet Union. Minnesota has an estimated 6 billion tons of peat reserves.

Newman reports as follows: "Impressive machinery of unique and advanced design used in the production of peat in Russia and the warm friendly and cordial reception accorded our mission were beyond all my expectations." The Russians were "not only friendly but eager" to show the American mission their peat production operations around Moscow and Leningrad. The Soviet Union is an acknowledged leader in the chemical aspects of peat use.

There were no restrictions on photographing plant sites or equipment. Newman himself exposed 22 rolls of colored film and four rolls of black and white. In addition, Soviet officials supplied the American mission with four reels of movies about peat operations. Photographs, blueprints, specifications, and brochures were supplied "on any item in which the [group] expressed an interest."

The American visitors were surprised to learn that the chemical aspects of peat use comprise only about 1.5 percent of the Soviet peat program. Eighty percent of the 56 million tons of peat processed each year in the U.S.S.R. goes for power production, and 18 percent is used for fertilizer and soil conditioning.

Newman also reported that in the U.S.S.R. the entire production process is mechanized, with huge, intricate machines preparing the peat bogs and removing the peat. Trees are cut, stumps removed, drainage ditches dug, and the peat itself placed in railroad cars without a human hand touching it.

High-School Teachers Attend M.I.T.

High-school science and mathematics teachers from New England, the Middle Atlantic States, and the South worked for 8 weeks this summer with the research staff at Massachusetts Institute of Technology's School of Science under a $20,000 general assistance program of the Westinghouse Educational Foundation, which is supported by the Westinghouse Electric Corporation. In a new type of program offered for the first time this year, teachers were able to choose research projects in biology, chemistry, food technology, geology and geophysics, mathematics, meteorology, and physics. The program, which has been sponsored by the Westinghouse Educational Foundation for 9 years, provides for grants of $800 for each participating teacher.

In the past, summer activities for science teachers centered around special lectures and laboratory exercises by members of the M.I.T. faculty. These activities were designed to review fundamental science projects and to survey recent developments. However, this year's program allowed teachers to participate directly in the institute's regular research work.

Whitney Opportunity Fellowships

The John Hay Whitney Foundation has announced its Opportunity Fellowships for 1958–59. These awards are open to any citizen of the United States (including residents of territories) who has given evidence of special ability and who has not had full opportunity to develop his talents because of arbitrary barriers, such as racial or cultural background or region of residence. Awards have been made to the following groups: Negroes, Spanish-Americans, Chinese- and Japanese-Americans, American Indians, residents of the Virgin Islands, Puerto Rico, Hawaii, Guam, Alaska, Samoa, and the Appalachian Mountain area.

Candidates are expected to be mature enough to have given positive evidence of superior promise, yet young enough to have their careers before them; in general, they should be between 22 and 35 years old and should have completed their undergraduate college education. Candidates under 35 are given decided preference.

The fellowships are open not only for academic study (graduate) but for any kind of training or experience (journalism, industry, labor, the arts, and so forth) that may be most useful in developing varied talents and varied forms of leadership. Applicants for apprenticeships in such areas as agriculture, industry, and labor will be welcomed. Persons interested in programs of this type should write to the foundation for additional information.

Awards are expected usually to range from $1000 to $3000, depending on the nature of the proposed project and the financial need of the candidate. Applications may be obtained from the John Hay Whitney Foundation, 630 Fifth Ave., New York 20, N.Y. Completed forms must be filed *not later than 30 Nov.*

U.S. Student Enrollment

The U.S. Office of Education reports that for the 13th consecutive year the nation's total school and college enrollment will increase, reaching a new all-time peak of approximately 43,135,000 in 1957–58. Enrollment will be about 1,796,000 higher than the previous record enrollment of 41,366,000 last school year. One of every four persons in the United States will attend school or college.

Public and private school enrollment in kindergarten through grade 8 is expected to total about 30,670,000, nearly 1 million over last year's elementary-school enrollment of 29,711,000. High-school (grades 9 through 12) enrollment for 1957–58 is expected to be 8,424,000, a gain of 604,000 over last year's 7,820,000. For every 100 persons aged 14–17 years, 83 will be enrolled in high school; 10 years ago 74 in 100 were enrolled.

Colleges and universities will enroll about 206,000 more students during the coming academic year than they did in 1956–57—3,450,000 this year compared with 3,244,000 last year. Colleges and

universities, with about 90 percent of the total higher education enrollment, have reported that they expect to spend $3.6 billion on new facilities during the 5-year period 1956–60. This amount would be double the sum spent during the previous 5 years.

Because of increased enrollments in public and nonpublic elementary and secondary schools, about 55,000 more teachers will be needed in 1957–58 than last year. As schools open this fall, there will be a shortage of about 135,000 qualified elementary- and high-school teachers, despite the fact that 81,400 men and women will enter the teaching profession for the first time. The shortage last year was about 120,700.

The continuing teacher shortage will result, as in previous years, in larger classes and the hiring of teachers who do not meet minimum certification standards. About 89,400 such teachers were employed in 1956–57.

The cost of education in public elementary and secondary schools last year, including capital outlay, was $400 per pupil. The total for the country was about $12 billion. A study by the Office of Education shows that 58 percent of the income (excluding receipts from loans and bond issues) for public elementary and secondary education is obtained from local property taxes. State taxes on income, sales, and other business activity provide 38 percent and the Federal Government, 4 percent.

NSTA Aids

Elementary-School Science

The National Science Teachers Association, a department of the National Education Association, is increasing its service to elementary-school teachers in three ways: (i) its present publication, the *Elementary School Science Bulletin,* will be twice as large and be issued eight times a year; (ii) a part-time specialist in elementary science has joined the staff as a consultant and editor; and (iii) NSTA's three conferences for the coming year will emphasize science in the grade schools.

The revised *NSTA Elementary School Science Bulletin* will be off the press in October as a two-color, eight-page publication. It will appear monthly through May, with subscriptions priced at $1 annually per individual and 50 cents each for school groups of five or more persons.

Dorothy Alfke has joined NSTA headquarters staff on a part-time basis and will serve as a field consultant and as coeditor of the new bulletin with Robert H. Carleton, executive secretary. Miss Alfke is a professor at the College of Education at Pennsylvania State University; she received her doctorate from Cornell University in elementary science and nature education.

Science in the elementary grades will come in for major discussion at two NSTA regional meetings, scheduled in Hartford, Conn., 18–19 Oct., and in Indianapolis, Ind., 27–30 Dec., during the AAAS meeting. The national convention in Denver, Colo., 26–29 Mar., will be preceded by a 1-day conference for elementary supervisors.

Italian Nuclear Power Study

The Government of Italy and the World Bank have announced that they have agreed to cooperate in sponsoring a study that will lead to the construction of a large nuclear power station in southern Italy. Previously, Italy had announced that a nuclear power station would be built in the south by the Societa Elettronucleare Nazionale. The Societa is a company whose principal shareholders consist of all the major electric power companies in southern Italy, together with a number of government-controlled metallurgical and engineering corporations.

The study will be known as Project E.N.S.I. (Energia Nucleare Sud Italia), and will include the following steps: (i) the selection of a site for a nuclear power station; (ii) the preparation of invitations to qualified manufacturers, on an international basis, to offer proposals for a nuclear plant of approximately 150,000 kilowatts electric capacity at the proposed site; and (iii) a review of the proposals submitted and the preparation of an evaluation of them, particularly with regard to comparative cost and performance.

The executive responsibility for Italian participation in the project has been given to the Comitato Nazionale per le Ricerche Nucleari, the official institution responsible for nuclear research and development in Italy. The general secretary of the Comitato, Felice Ippolito, and Corbin Allardice, adviser on atomic energy to the World Bank, will together make up the steering committee that will be responsible for over-all direction of the project. The U.K. Atomic Energy Authority and the U.S. Atomic Energy Commission have agreed to provide nuclear engineering consultation.

The World Bank will set up an international panel of specialists to provide general guidance and also to review the proposals and the reports on them provided by the U.K. Authority, the A.E.C., and the project staff. The panel will have a Canadian as chairman and will also include one French representative, one Italian, two U.K. nationals, and two Americans. The panel will transmit its reports to Societa Elettronucleare Nazionale, which will select the most suitable proposal for the construction of the power station.

NSF Survey of Science Faculty

A survey of faculty engaged in scientific research activities in United States academic institutions that was released recently by the National Science Foundation indicates that 70,000 scientists and engineers were employed in 1953–54 by colleges and universities; about half of these people were performing research on a full- or part-time basis. The survey covered 1120 institutions capable of performing research in the natural and social sciences. Other academic institutions in the country are primarily teachers' colleges or are oriented toward education in the liberal arts.

The NSF figures are based on data returned by 987 responding institutions. These institutions reported 62,000 faculty members in the natural and social sciences, and an estimate of 8000 was made for nonrespondents. Of the respondents, 180 were large institutions—that is, primarily those having graduate schools in the scientific professions. These accounted for 46,500 of the total scientific faculty and for 95 percent of the total research time reported.

The reported faculty members included both full- and part-time scientists and engineers engaged in any or all of the usual duties of a faculty member—teaching, research, and community service. Translating part time and full time into full-time equivalents, about 30 percent of the total time was devoted to research activities.

The foundation's report presents the number of faculty in these institutions and the percentage engaged in research in six different types of organizations within the universities: arts and sciences; engineering; public health, medicine, and dentistry; agriculture; research organizations; and other professional schools. About 75 percent of the total faculty employed were in the arts and sciences, engineering, and medical schools.

Scientific fields being investigated by these faculty members are also shown in the report. Approximately one-third of those performing research were in the physical sciences, such as engineering, chemistry, physics, and mathematics; one-third, in the life sciences (biological and clinical); and the other one-third pursue investigations in the agricultural and social sciences.

The supporting research personnel reported by the large (180) institutions