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TRAINING OF SKILLED AND SEMI-SKILLED PERSONNEL BY
ELECTRIC POWER ENTERPRISES

Addendum

Note by the Federation of Rhodesia and Nyasaland

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TRAINING OF SKILLED AND SEMI-SKILLED PERSONNEL BY
ELECTRIC POWER ENTERPRISES

1. It will have been noted from earlier information supplied that in Northern and Southern Rhodesia there are a number of different electricity undertakings which are responsible for their own staffing policies and training programmes. The Federal Ministry of Power has recognized the need for some co-ordinated programme of training in order to meet the needs of the Federation's growing electricity industry. In 1961 the Minister of Power asked a consultative committee of the Federal Power Board, comprised of engineers employed in undertakings interconnected with the Kariba Grid System to investigate training requirements. When that committee's report was submitted to the Ministry of Power electricity undertakings throughout the Federation received a copy, and their general agreement was obtained to measures recommended in the report for implementing technical training for the industry as a whole.

2. That report distinguished between the type of training required for professional engineers and that needed for producing technicians, and it considered that less emphasis needed to be placed on forms of distinction which stem directly from the initial training received by the groups concerned. The report recognized that the modern technician is becoming increasingly important in a modern community, and as various routine processes in the electricity industry become more specialized, properly trained technicians are capable of replacing engineers by performing work which at one time was only allocated to qualified engineers.

3. At the present time there are annual vacancies available within the industry as a whole for approximately 5 - 10 professionally qualified engineers. Concurrent with this annual expansion, 20 - 25 technicians are trained to perform standards of work which were formerly only expected from professionally qualified engineers. An annual intake of 10 - 15 technicians is also absorbed by the industry for the purpose of carrying out routine operational duties.

4. As a result of this report the Salisbury and Bulawayo Polytechnics drew up syllabuses which were designed to provide the training necessary to implement the recommendations contained in the report. In the case of the Bulawayo Polytechnic, a "sandwich" course is offered. The Salisbury Polytechnic, however, offers the following course of study, which is designed to lead to Graduate Membership of the Institution of Electrical Engineers:

"E. E.1: Institution of Electrical Engineers"

consists of three years full-time or six years part-time leading to graduate membership of the Institution of Electrical Engineers, an internationally recognized engineering qualification. Entry qualifications: G.C.E. "O" level passes, or Cambridge School Certificate with credits in English, Mathematics and either two science subjects or one science subject and one foreign language.

Subjects

First Year. Mathematics, Engineering Drawing, Principles of Electricity, Heat, Light and Sound, Mechanics.

Second Year. Mathematics, Electrical Engineering and Physics or Thermodynamics.

Third Year. Mathematics, Advanced Electrical Engineering and two specialized subjects."

A Faculty of Engineering has not yet been established at the University College of Rhodesia and Nyasaland in Salisbury, and therefore the industry still has to rely on external Universities for training young engineers who desire to take up a full-time course of study. It will be noted, however, from the above prospectus that Graduate Membership of the Institution of Electrical Engineers can be obtained in three years from the Salisbury Polytechnic on a basis of full-time study.

5. The Federal Power Board's technical consultative committee in its report envisaged that technicians would have to be trained in large undertakings, where two training programmes might have to be instituted:

- (a) to provide training for the specialized needs of such undertakings, and
- (b) training which is normally provided for apprentices to cover the intake of personnel into the industry at the entry level of technicians.

6. The report recommended that bursaries should be made available to students who wished to take a full-time University course outside the Federation which would lead to the acquisition of a Degree in Electrical Engineering. Various undertakings throughout the Federation offered sums of money annually for this purpose. It was envisaged that when a Faculty of Engineering is established at the University College of Rhodesia and Nyasaland trainees might attend the University after a year's employment in electricity undertakings as junior engineers, and that this employment could be continued during the long vacations normally enjoyed by University students. In this way it was hoped that an Engineering Degree in Electrical Engineering awarded by the University College could be obtained by the students concerned, who would doubtless also be required to work and study intensively while being gainfully employed by the electricity industry to the benefit of all concerned. Sponsored schemes of this nature were not intended, of course, to preclude young engineers from entering the industry after having undergone full-time tuition at the University College of Rhodesia and Nyasaland or at Universities outside the Federation.

7. Apprenticeship training is provided by various electricity undertakings and tuition can be obtained at technical colleges such as Salisbury and Bulawayo Polytechnics.