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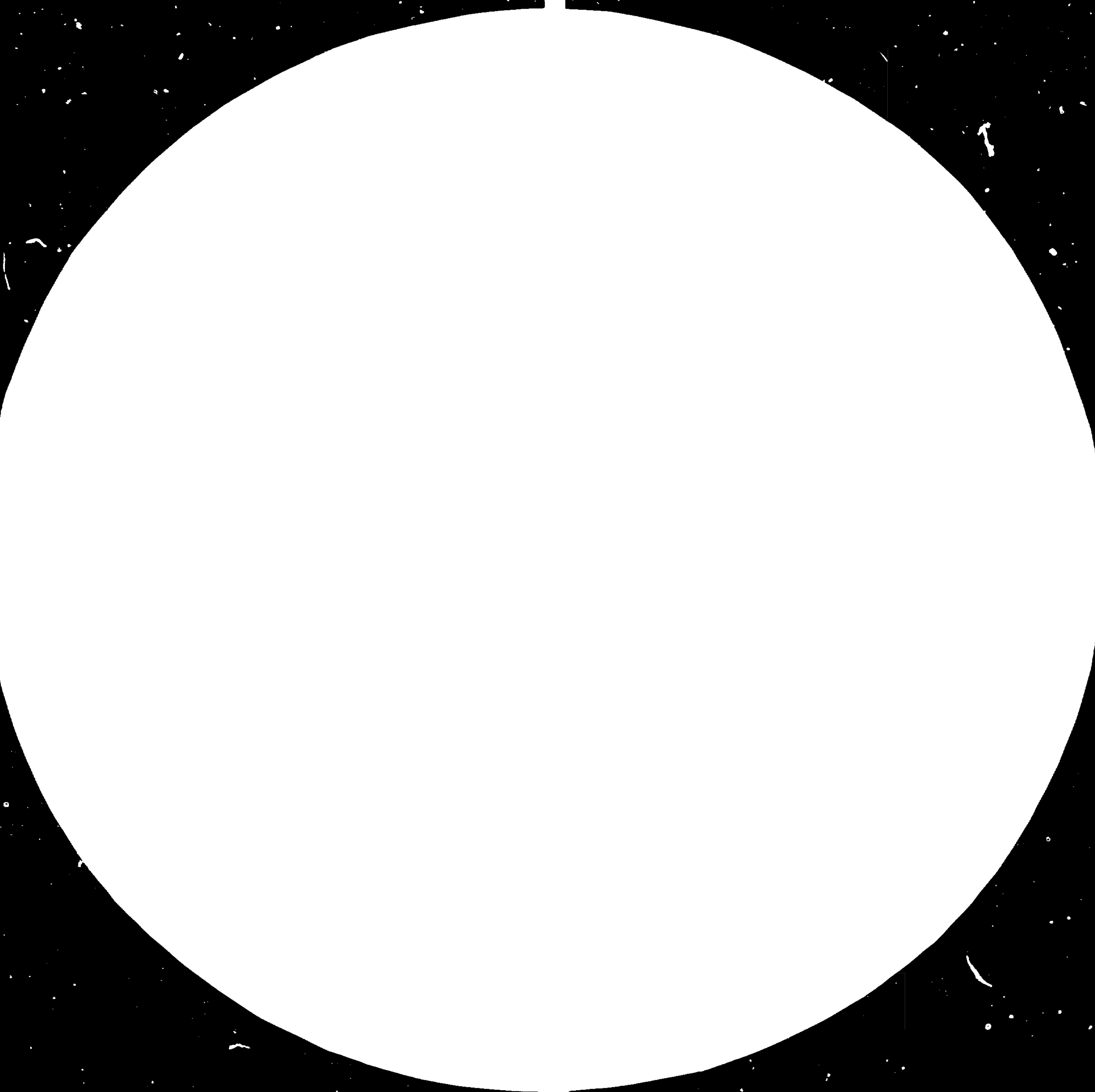

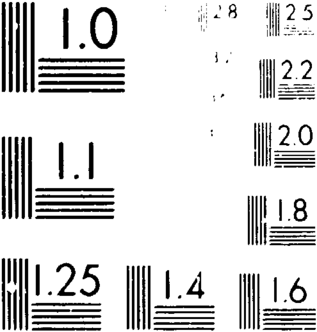
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MINI-HYDRO DEVELOPMENT IN LIBERIA*

by

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MINI-HYDRO DEVELOPMENT IN LIBERIA

The purpose of this paper is to give a pictorial view on plans of Mini-Hydro Generation (MHG) development in Liberia w with specific emphasis on rural industrialization and industrial development.

Hydro power developed in Liberia dating back in the late 40's by a private rubber industry (Firestone) about 4MW unit to supply electricity to residential quarters and rubber treatment plants. Public Utilities Authority now Liberia Electricity Corporation obtained a loan of 27 million dollars early 1964 to develop Hydro and water treatment plants. Two hydro units of 15MW each were originally constructed. The consultant engineer was Stanley Engineering of West Africa; the management support team was Sanderson & Porter of New York City, USA; the civil works was done by Raymond Concrete Pile International; the mechanical works was done by Allis-Chalmess, and the electrical works was done by General Electric Company.

In the late 70's an additional two 17MW hydro units were installed with a provision for another two. The consultant engineer was Motor-Columbus; the civil works was done by Bilfinger & Burger; the mechanical works was done by Allis Chalmess, the electrical works was done by Brown Boveri & Cie, Badon, Switzerland; and the management support team was by the World Bank.

A US Peace Corp Volunteer assigned to the Ministry of Local Government went up to the western province in Loffa County to work with the rural masses. He observed that agricultural produ productions could double if modern machineries were utilized by means to electricity supply. He carefully studied the characteristic of the yando stream and concluded that the stream has the potential for Hydro development. He then proposed a Mini-Hydro Power Project in 1979. The project was approved by both the United States Aid for International Development (USAID) and the Government of Liberia (GOL).

The consultant for civil works will be Glen W. Smith of Ammerman Butler & Thomas, Inc. Oklahoma City; the generating unit's design and sizing as well as recommendations on the best manufacturer will be by John Volkman of the National Center for Appropriate Technology of Butte, Montana; Liberia Electricity Corporation (LEC) will help to build and test the electrical network.

The communities consisting of Yandehuna and Dungalahum towns will be the sole owner of this Mini-Hydro Plant. The size of the plant will be about 30KW. The completion of this plant will bring about various development in the area with a total population of 1,301. Development and industrialization shall be in the following manner: the hydro will provide continuous supply of electricity, manual work time will be saved by modern mechanization of agricultural processing, increase children schooling and provide adult education at night due to less manual task, time for food and cash crop cultivation could double, health condition will definitely improve due to clean water filteration pump and flush toilet system, the village crafts including fish traps, baskets, country cloth, mats, and hammocks production will increase, will create light industry such as woodworkshop for cabinet making and tailoring.

The management will be done by a committee set up by the communities. The financing was done in the following manner: The total of the project is $87,035.00 of which the USAID (international rural technology) provided 75% which is $50,000.00; the GOL provided 15% which is $20,000.00; and the local community provided 10% which is $17,035.00.

The clearing of the dam site and the earth works have been completed. The construction of the dam has begun. This Mini-Hydro Project when completed, it will be the first Mini-Hydro generation in the whole of West Africa. Therefore the survival and active operation of this project is vital and very crucial to Liberia and West Africa as a whole.

The Liberia Electricity Corporation (LEC), the sole authorized supplier of electricity throughout Liberia had plans of installing several Mini-Hydro plants to meet her goal of total electrification for the rural masses of Liberia. In fact LEC had acquired a loan from KFW in the amount of $500,000.00 for Mini-Hydro feasibility studies and geared toward some implementation after the conclusion of the study. By 1985 I am sure that MHG will be the sole answer to rural development and industrialization.