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done by JWS

USAID/BRAZIL

LOAN COMPLETION REVIEW AND REPORT

(Per M.O. 1264.1 Section IV)

Loan No: 512-L-085

Date: February, 1977

Borrower: ELETROBRÁS

Guarantor: GOB

Date Loan Authorized: March 12, 1971

Date Loan Agreement: October 29, 1971

Amount of Loan: \$2,094,385 (\$405,615 of undisbursed loan funds
deobligated on July 6, 1976)

Terminal Disbursement Date: June 30, 1976

Disbursement Status: June 30, 1976: \$2,094,385

I. Purpose of Loan

The purpose of this loan was to assist ELETROBRÁS to finance the foreign exchange costs of a technical assistance and training program for the Brazilian power sector. Specifically, the loan, as designed was to (1) develop the capabilities of Brazilian Universities to provide graduate level training in power system engineering and electric utility management; (2) provide training in the U.S. in utilities management and various technical specialities; and (3) provide direct U.S. technical assistance to upgrade the engineering and management capability of the Brazilian power industry. As ELETROBRÁS is the holding company for all subsidiary power companies throughout Brazil, candidates for these programs were selected by ELETROBRÁS. After completion of training, candidates returned to their individual companies.

II. Covenants

The Borrower has complied with all the covenants.

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III. Reports

All reporting requirements set forth in the Loan Agreement and Implementation Letters have been complied with. Implementation Letter N° 12 dated September 28, 1976 requires the Borrower to continue to submit the Annual Financial Report (along with a statement from the independent auditors concerning ELETRORAS compliance or non-compliance with the covenants and warranties contained in the Loan Agreement) until the loan is fully repaid.

IV. Monitoring Responsibilities

All training and technical assistance activities under the loan were completed on June 30, 1976. The only remaining monitoring responsibility is to review the Borrower's annual audited financial statements.

V. Recommended Actions

No further action regarding this loan is required except as noted in item IV - Monitoring Responsibilities.

VI. Project Evaluation

During the four years of disbursement under this loan, the project suffered various delays which eventually resulted in a deobligation at the Terminal Disbursement Date of \$405,615. These delays were due to several factors, such as: (1) difficulty in hiring US professors for long-term assignments in Brazil; (2) the tightening of Brazilian regulations which restricted the importation of foreign technical assistance; (3) difficulties were encountered in seeking proper authorizations for departure of participants during the last 18 to 24 months of project implementation; and (4) ELETRORAS administration of the program suffered from gaps in planning due, in part, to changes in its middle and upper level administrative staff.

Nevertheless, those activities which were carried out were successfully implemented. The positive results of the loan on EFEE (Federal School of Engineering at Itajubá) and on the GVF (Getúlio Vargas Foundation) management courses were substantial. The training of a sizeable number of technicians, mostly electrical engineers, responded positively to the loan's objective of upgrading management and engineering staff of the Brazilian power industry. U.S. management and electrical engineering consultants assisted ELETRORAS and some associated companies in their effort toward a more efficient and better organized management structure to meet the industry's increased responsibilities.

According to the original project budget contained in Annex II of the Loan Agreement, the training of 210 ELETRORAS technicians and professors from

the academic community was planned. By the end of the project, 230 participants received training in the U.S. (131 in training programs of less than 90 days duration and 99 in programs of more than 90 days). These people received training at various U.S. institutions including Rensselaer Polytechnic Institute, Georgia Institute of Technology, University of Michigan and Power Technologies Inc. among others. Training was also provided by U.S. corporations such as General Electric and Westinghouse.

With regard to technical assistance to be rendered by U.S. professors at Brazilian institutions, a total of 18 man years was programmed in the original implementation plan. However, due to the delays mentioned above, only 5.3 man years of service were rendered at the following Brazilian institutions:

- A. Federal Engineering School of Itajubá
- B. Mackenzie University of Engineering, São Paulo
- C. Federal University of Rio de Janeiro
- D. Getúlio Vargas Foundation

In addition to the services of individual U.S. professors, additional technical assistance was rendered by the Institute of Electrical and Electronics Engineers in the area of protection and grounding of distribution systems, Don White Consultants Inc. in the area of design and measurement for control of electrostatic interference, Eozz Allen & Hamilton working with ELETROBRÁS on management reorganization, and Power Technologies Inc. working with the São Paulo Light Company in the area of electrical systems.

Even though project goals for technical assistance were not met in total man years of service, the Borrower considers the loan program to have been of great benefit to Brazil's continued development of the electric power industry.

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