PD-ABC-664

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Project Activity Completion Report

for

POWER BARGE "IMPEDANCE" (999-5006)

AND RELATED PROJECT (999-0004)

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Project: Power Barge IMPEDANCE

Date of Authorization: 25 July 1984

AID Project Number: 999-5006

Related Project: 999-0004

Brief Project History

Authorization: Section 607(a) of the Foreign Assistance Act of 1961, as amended.

Goal and Purpose: to make the U.S. Army Power Barge Impedance available to the Government of the Dominican Republic (GODR) to assist in meeting the country's emergency power requirements. Th project was undertaken in response to a 1983 request from the Dominican Government for the loan of a second Army Power Barge -- at the time of the request, the Power Barge Weber had been on loan to the GODR for almost six years.

Agreement: Because the U.S. Army Corps of Engineers (ACOE) is not authorized to enter directly into agreements with foreign governments, parallel agreements were signed between ACOE and AID, and between AID and the GODR acting through the Dominican Electric Corporation (Corporacion Dominicana de Electricidad - CDE). The agreements were to remain in force for one year, with provisions for annual renewal. Subsequently, AID extended or renewed its agreement with ACOE prior to extending the agreement with the GODR.

The agreement between ACOE and AID authorized AID to borrow the U.S. Army Power Barge Impedance (PBI) and in turn, to lend the barge to the GODR. AID and the U.S. Army Corps of Engineers signed their initial agreement on June 7, 1985.

AID's agreement with the GODR authorized the loan of the Impedance to the GODR, acting through CDE. This agreement was signed on October 9, 1985. The PBI had a rated electric power production capacity of 30 megawatts, but was contracted to provide 20 megawatts.

Under the terms of its agreement with AID, CDE would open an initial Irrevocable Letter of Credit (ILOC) for $1,499,233 to be used for preparing the barge for the tow from New Orleans, Louisiana to Santo Domingo, for insuring the barge during the tow by an ACOE contractor, and for other operating expenses. Upon the barge's arrival in the Dominican Republic, the GODR would issue a second ILOC for $934,200 to cover the remainder of the first year's costs. Thereafter, 90 days before each succeeding year of the

barge's operation, the GODR would issue an ILOC in the amount of $1,557,000 to finance operations for the year. The GODR also would provide a mooring facility, power line interconnections, and supplies of fuel and water. The GODR agreed to return the barge to AID in "as received" condition.

There were four amendments to the agreement between AID and CDE:

1 - October 8, 1986 - renewed and extended the agreement to October 8, 1987.

2 - October 9, 1987 - renewed and extended the agreement to October 9, 1988.

3 - October 20, 1988 - renewed and extended the agreement until November 30, 1988, and dated the extension retroactively to October 9, 1988.

4 - April 28, 1989 - renewed and extended the agreement until September 30, 1989, and empowered AID's representatives to manage, direct, and approve all operations of the Impedance by the GODR. These representatives (the ACOE crew assigned to the barge) were authorized to provide technical assistance and take necessary actions to prevent unsafe operations or to shut down the Impedance for maintenance.

Life of Project Amount: Funds for the project were allocated from the ILOCs through two accounts (999-5006 and 999-0004) which are differentiated in the Project Inputs section below. Because the Impedance remains in drydock being overhauled, as of December 1990, funds still are being drawn out of the dollar accounts. All amounts are in U.S. dollars.

Total Obligated: $5,074,724
Total Committed: $3,624,052
Total Disbursed: $2,603,073
Total Unexpended: $2,471,651
Unearmarked Balance: $1,450,672

Funds from two other sources also were used for segments of the Impedance project:

- $2,000,000 RD (from PL-480, Title I) was used to prepare the moorage facilities on the Ozama River in Santo Domingo; and

- $545,860 US (from grant project number 517-0171 aimed at promoting financial stability and economic recovery) to repair the damage from the July 1988 fire in one of the barge's smokestacks.

Project Inputs

The two major inputs for the project were a US dollar account (Project Number 999-5006) and a Dominican peso account (999-0004). The totals for each of these accounts and their budget elements are reported in US dollars.

Power Barge Impedance Dollar Account (999-5006)

- **ACOE Washington Costs**
  Total Obligated: $3,774,735
  Total Committed: $3,083,068
  Total Disbursed: $2,128,017
  Total Unexpended: $1,646,718
  Unearmarked Balance: $691,667

- **ACOE Mission Costs**
  Total Obligated: $852,999
  Total Committed: $408,670
  Total Disbursed: $352,200
  Total Unexpended: $500,799
  Unearmarked Balance: $444,329

- **Termination Costs**
  Total Obligated: $324,999
  Total Committed: $10,323
  Total Disbursed: $865
  Total Unexpended: $324,133
  Unearmarked Balance: $314,676

Power Barge Impedance Peso Account (999-0004)

- **Vehicle and Equipment Procurement**
  Total Obligated: $81,398
  Total Disbursed: $81,398

- **Revolving Fund**
  Total Obligated: $40,593
  Total Disbursed: $40,593

Counterpart Contribution

CDE provided moorage facilities and the interconnection to the country's power grid. CDE also provided personnel to operate and maintain the Impedance, as well as the fuel oil, distilled water, and other supplies necessary for operating the generators.

Project Accomplishments

The Impedance project accomplished its goal of providing assistance to the Dominican Republic to meet its emergency power generating requirements, albeit only partially. When it was operating at full capacity, the Impedance delivered an additional 20-30 megawatts to the Dominican Republic's electrical power system. Unfortunately, a series of problems -- an accident which damaged its hull, a fire in one of its smokestacks, CDE's chronic shortages of fuel and supplies for the barge -- prevented the Impedance from operating at full capacity for much of the time its was in the Dominican Republic.

However, the presence of the Impedance reflected a commitment of the USG to helping the Dominican Government overcome its energy crisis. In this regard, the barge served a vital symbolic purpose.

In addition, the project facilitated the transfer of technical training to the Dominican staff assigned to the Impedance. While CDE "gave up" personnel to operate and maintain the barge, these technicians in fact received training from the ACOE that enhanced their skills and elevated their qualifications as employees of CDE.

Progress Towards Achievement of Project Purpose

The project achieved, albeit partially, its purpose of providing a stopgap to meet the Dominican Republic's emergency power shortage. However, while affording temporary relief, the presence of the Impedance may have allowed CDE and the GODR to postpone dealing with the problem of insufficient electrical generating capacity and the country's long-term electrical power needs.

Project Design Adjustments

At the end of the project, funds remaining under the letter of credit permitted the extension of the agreement for six months beyond the Impedance's originally scheduled departure. In addition, other modifications were made to give the ACOE staff aboard the barge the authority to shut the barge down if necessary. Funds from an economic recovery grant agreement were used to finance repairs on the barge after the July 1988 fire.

Requirement for Continued Monitoring

Until the Impedance -- which is currently being overhauled in drydock in the Philippines -- is returned to ACOE in its "as received" condition, AID will continue to disburse funds from the

project's dollar accounts. AID also should monitor the progress of the overhaul until the barge is turned over to the ACOE.

Summary of Lessons Learned

The Impedance project accomplished, if only nominally, its purpose of temporarily enabling the GODR to provide additional electric power during an energy crisis. During this period, CDE intended to repair old power plants and construct new ones. However, the presence of the Impedance may have allowed the GODR to postpone dealing with the realities of its insufficient capacity to generate electricity. Indeed, the country continues to fall short of meeting its demand for electrical power. What was considered a temporary "crisis" when the Impedance was requested in 1983 has become a chronic condition of life in the Dominican Republic.

The Impedance was built in 1943 and had a rated electrical generating capacity of 30 megawatts of power. The agreement between AID and the GODR called for the barge to provide 20 megawatts of power. Even this more modest goal was difficult to meet given the accidents and funding delays that beset the Impedance project. The barge arrived in Santo Domingo in November 1986, but problems in the construction of the moorage facilities delayed actual operations until April of 1987. In December 1987, the barge was damaged when it was struck by an unmanned boat and broken loose from its moorings. A smokestack fire in July 1988 rendered the barge inoperable until late November of that year when it resumed operations for a short time at one-third capacity. Because operational funds were exhausted and the GODR was unable to obtain another ILOC, the barge was shut down from December 1, 1988 until June 1, 1989. Soon after, preparations began for the barge's departure for drydock in December 1989.

In view of the fact that Impedance was not operating for much of the time it was in the Dominican Republic, its symbolic political importance far exceeded its actual contribution to the Dominican Republic's electrical power grid. Toward the end of the project, for example, the U.S. Ambassador cabled to request that the Impedance not be removed until after the May 1990 elections because the opposition parties were expected to make electrical energy into major election issue.

Specific problems with personnel, financing, and supplies should be noted in the event of future projects of this type. The ACOE crew on the Impedance repeatedly reported that inadequate supervision, training and management of CDE personnel jeopardized the safe operations of the barge. CDE did not assign sufficient numbers of trained personnel to provide adequate technical support. Finding the operation and maintenance arrangements with CDE unsatisfactory, ACOE had proposed to contract privately for these services, but the

proposal was rejected. Private contracts may be advantageous for future projects that require skilled technicians.

Other personnel problems occurred when CDE allowed union members to work on the Impedance. The union's anti-American sentiments and hostility to the project and the U.S. Army Corps of Engineers personnel aboard the barge caused security concerns. In the future, AID may need to assess the likelihood of possible disruptions and security threats from unions and prepare plans to protect American personnel and equipment.

On the issue of financing, CDE was chronically very late in obtaining the Irrevocable Letters of Credit necessary to continue operating the Impedance. To secure the last letter of credit to continue the project, for example, CDE sold some of its accounts receivable to the bank which ultimately granted the ILOC. The problem of unreliable financing for counterpart contributions may well be inherent to governmental institutions that are not economically sound. Recognizing this, future projects may require creative financing arrangements that rely even less on host institutions.

Finally, CDE was unable, on several occasions, to provide the fuel oil and distilled water needed to operate the barge. These shortages interrupted the regular output of electrical power, and often required that the Impedance be shut down. It may have been more efficient to have the Army Corps of Engineers provide a regular flow of these supplies and be reimbursed by CDE/GODR through the AID Controller.