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## **Rebecca Leaf - (Barus Awardee 1997)**

### **Author(s)**

Malvern Benjamin

### **Description**

Rebecca Leaf received the Carl Barus Award for Outstanding Service in the Public Interest "in recognition of her work, under particularly dangerous conditions, in directing a project to make electricity available to people in a remote rural area of Nicaragua, and to educate local people in the rudiments of technology."

Following the work of Benjamin Linder, Rebecca Leaf built a hydroelectric power plant in a dangerous and remote area of Nicaragua. Her story is recounted in the following article.

### **Body**

## **IEEE-SSIT Presents Outstanding Service Award to Rebecca Leaf**

The Society on Social Implications of Technology (SSIT) of the Institute of Electrical and Electronics Engineers (IEEE) has presented the Carl Barus Award for Outstanding Service in the Public Interest this year to Rebecca Leaf, an M.I.T. graduate from Boston, MA. Leaf built a hydroelectric plant, under daunting conditions, in a remote region of Nicaragua.

The award was presented in Columbus, OH, on May 13, 1997 at the 20th International Conference on Power Industry Computer Applications sponsored by the Power Engineering Society of the IEEE. Wallace S. Read, IEEE past-president, presented the award to Leaf at a luncheon ceremony.

The Barus Award is presented on occasion to an engineer who has placed him/herself at considerable risk to follow the dictates of conscience in the pursuit of his/her profession.

The story of Rebecca Leaf begins with the equally remarkable story of Benjamin Linder, whose vision, single-minded dedication, and hard work produced the first hydroelectric plant in El Cuá, Nicaragua. For his work, he received a posthumous award from SSIT in 1988. Linder's award was presented posthumously because on April 28, 1987, he was killed in an ambush by a Contra force, while building a weir in San José de Bocay, several miles from the site of the El Cuá plant. Bocay, an area of northern Nicaragua even more remote than El Cuá, was also without electricity, and was a site chosen for continuation of the electrification project.

Shortly after Linder's death, Leaf took upon herself the responsibility of designing and building a 230-kW minihydroelectric facility by the stream where Linder had been killed. Since then, she has received only a tiny stipend from a private foundation for her work in Bocay.

Though hydroelectric projects were new to Leaf, in May 1994, water flowed through the locally constructed turbine and electricity was generated without a hitch.

Leaf emphatically calls attention to the contributions of Nicaraguan workers, both skilled and unskilled. But her determination, engineering ability, and leadership were clearly crucial to the successful completion of the project. Work on the hydroelectric plant progressed despite a devastating hurricane that destroyed roads and many bridges to Bocay; Contra bands who blocked roads, looted vehicles, and raided towns; a major change in government; and, not least, threats to her life.

When the initial plant was built in 1987, the electrical power demand of El Cuá was a modest 17 kW. The demand has now risen to 110 kW. But maintenance, distribution, and other problems have arisen. Last year, under Leaf's aegis, the El Cuá plant was completely renovated, along with the electric distribution system. A new turbine was also manufactured in the project's machine shop.

The social outreach of this activity is equally impressive. From the beginning, an important aim of these projects has been to educate and empower local residents. A large and knowledgeable workforce was created. The members of the local workforce have performed much of the unskilled, semi-skilled, and even skilled work required on the project. Last year, 10 acres of land in the watershed of Bocay were replanted with trees to protect eroded areas and increase filtration of rain into the subsoil as part of an effort to protect the water source of the hydro plant. This work was carried out by a commission of local residents of Bocay who run the electric service, with participation of local school children. Perhaps the ultimate in appreciation has come from the "re-Contras" themselves, who gained such respect for the work that they procured a tractor to clear the access road to the damsite.

Rebecca Leaf's work and her life are indeed noteworthy.

*-M. Benjamin*

*Chair, SSIT Awards Committee*

## **Citation for Rebecca Leaf - May 13, 1997**

You are a generator. You have generated a force for good from a raw force of nature. You have brought light to the houses, to the minds, and to the spirits of a remote people - remote to us, but no longer remote to you. Your life and work reminds us to temper engineering with caring.

### **Notes**

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