

Shi-qian Hu, Liang-liang Jia

## Shao-ji Luo: a Brief Biography

**Shao-ji Luo**

**Professor-Engineer**

Guangzhou Pumped Storage Power Generation Limited Company

Professor Shao-ji Luo was born in Guangzhou County of Guangdong Province in December 1933. He graduated in 1955 from Tsinghua University, where he majored in waterpower utilization. After many years of hard work, he was elected as a member of the Chinese Academy of Engineering (CAE) in 1999.



Professor Luo is an expert in the field of hydropower engineering, and once worked as chief engineer and chairman of Central South Investigation and Design Institute of Ministry Electric Power, office director of South China Power Grid, vice chairman of Power Authority of Guangdong Province, and president of Guangzhou Pumped Storage Power Generation Limited Company. He is now honorary president of the Chinese Society for Hydropower Engineering, and member of the Quality Inspection Group of the Three Gorges Project.

Professor Luo has been devoting himself, for more 50 years, to construction and management of hydropower projects of China. In the 1970s, he became the chief engineer to design and construction of Fengtan Hydropower Station in Hunan. After countless days and nights of hard work, Fengtan Hydropower Station, with installed capacity of 400,000 kW which expanded into 800,000 kW later, came into operation in 1978. As China's first 112.5 m high and hollow arch gravity power dam at that time, the innovation of the hydropower station solved the contradiction between the layout of power dam in the narrow valley and the large amount of flood discharge, and saved a great deal of engineering investment. Fengtan Hydropower Station in Hunan has been working safely for nearly 40 years and its accumulative amount of generated energy is about  $60 \times 10^{10}$  kWh.

In 1985, Professor Luo returned to Guangdong and faced a greater challenge—Guangzhou Pumped Storage Power Station, which was, then, expected to be the largest pumped storage power station in the world. Rich work experience made him realize that advanced mode of management and sustainable development concerning environment are as important as independent innovation of construction. After careful and meticulous research, the Pumped Storage Power Station was started in 1989. In the long and difficult period of construction, Professor Luo devoted himself to technological development and systematic reform for the Station. After 11 years of hard work, the project of the Guangzhou Pumped Storage Power Station with the installed capacity of 2,400 MW was completed and put into operation in March 2000. It is the largest pumped storage station in installed capacity in the world at present.

Professor Luo initiated reform of construction management concerning the Guangzhou Pumped Storage Power Plant,

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including management system, construction management, operation management, and business management. He successfully advocated and carried out the juristic person responsibility system, which integrated construction and management into one system, with a variety of components as the bidding and tendering system, the construction supervision system and the scientific contract management. He took efforts to set up the modes of operation, management and business at international levels, promoting the realization of the unattended operation so that the operators and managerial staffs could be reduced to 6 per MW. Due to his successful efforts to management reform, the construction of the Station gained the achievements of low investment, high speed, high quality, good benefit, and beautiful environment, with CNY 2,236/kW of its investment.

As a pioneer of the pumped storage technology, Professor Luo sticks to his post and works hard all the time. He has presided and participated in many water conservancy projects, with his footprints impressed all over the country. In engineering construction, institutional reform, and project management, he made great achievements and contributions to China, which won him many prizes, including two second prizes of the National Scientific and Technological Progress Award, and many honours including the National Model Worker (in 1995).

Professor Luo authored many papers, the major ones of which include: *The successful practice of the reform in the management system of hydropower construction*; *Successful practice in management reform—an analysis of experiences with Guangzhou Pumped Storage Power Station*; *Design and preliminary practice of higher-and-lower bucket energy dissipater of Fengtan Arch Dam*; *Discussion on the operation indexes of pumped-storage power plant*; *Economic evaluation for pumped-storage power plant*.

Professor Luo, with efforts and achievements, proved what responsibility, sense of mission and spirit of innovation are.