

# PIRRIS

Costa Rica

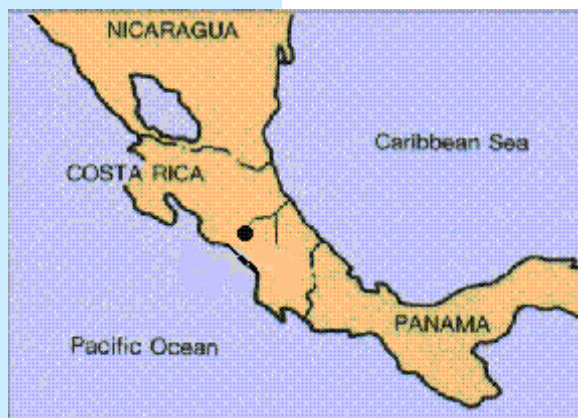


Project Site

## DESCRIPTION

The PIRRIS Hydropower Project is located on the PIRRIS River basin (Pacific Slope) in the area of San Marcos de Tarrazú, in the province of San José. The powerhouse is located in the area of Bijagual village in Aserri. The Project has an install capacity of 128 MW and an annual average generation of 561 GWh. It consists of a dam of Rolling Compacted Concrete.

(RCC) of 113 m high forming a reservoir of 30 Mm<sup>3</sup>. A 11 km tunnel allows the exploitation of a gross head of 884 m. The powerhouse has two Pelton turbines of 64 MW each. The energy produced by the Project is transferred through 230 kV transmission line to a substation that connects to the Central Pacific with the rest of National Power System, which is part of the interconnecting works of the SIEPAC.



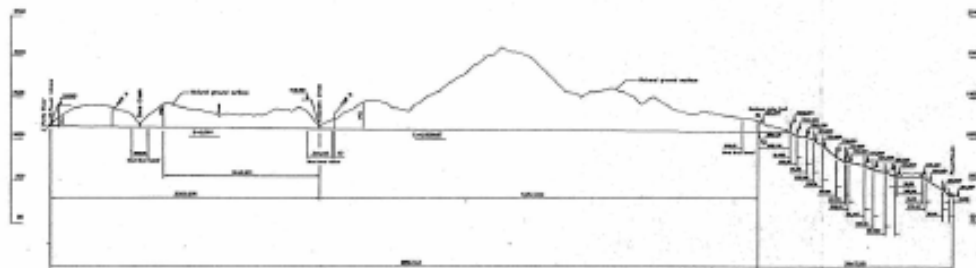
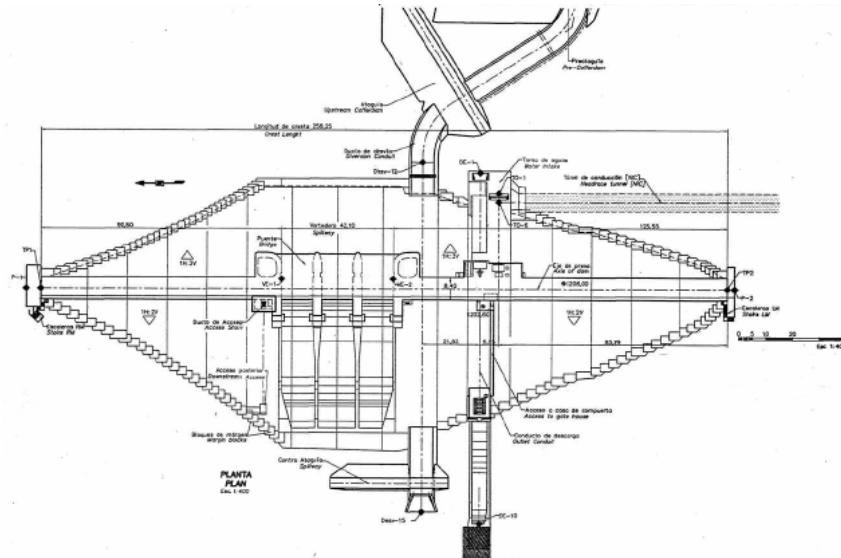
## NAME OF CLIENT:

Japan International Cooperation Agency (JICA), F/S  
Instituto Costarricense de Electricidad (ICE), BD,D/D  
S/V

## CAPACITY: 128MW

## SERVICES:

Feasibility Study (November 1989 - September 1992)  
Bid Document (April 1997 - April 2000)  
Construction Supervision (March 2003 - February 2009 on going)



### Principal Characteristics of Project

<b>Catchment Area</b>		248.5 km <sup>2</sup>
<b>Reservoir</b>	Normal high water level	EL 1,205m
	Low water level	EL 1160m
	Available drawdown	43 m
	Effective Storage Capacity	30.0 x 10 <sup>6</sup> m <sup>3</sup>
	Design flood	2,350 m <sup>3</sup> /s
<b>Dam</b>	Type	Roller compacted concrete (RCC)
	Height	113m
	Crest length	270m
	Volume	710,000 m <sup>3</sup>
<b>Headrace Tunnel</b>	Number	1 lane
	Inner diameter	3.2 m and 3.4m (concrete lined)
		2.3 m (steel lined)
	Length	8,000 m (concrete lined)
2,500 m (steel lined)		
<b>Penstock</b>	Inner diameter x Length	2.10 m - 1.35 m x 740
<b>Power House</b>	Type	Semi-underground
<b>Tailrace</b>	Inner diameter x Length	3.3 m x 260 m
<b>Generator</b>	Number of unit	2 units
	Rated capacity	76 MVA
<b>Turbine</b>	Number of unit	2 units
	Type	Pelton
<b>Main transformer</b>	Type	3-phase, forced oil, air
	Number of unit	3 units
	Capacity	73 MVA
	Voltage	13.3 / 230
<b>Power generation</b>	Maximum power discharge	9 m <sup>3</sup> /sec
	Effective head	829 m
	Installed capacity	64 MW

Pirris

