

# NAM CHIANE HYDRO POWER PLANT: 104 MW

## (JAN 2019 - MAR 2020 for O&M Service)

### PROJECT OVERVIEW

**N**am Chiane 1 Hydropower Project is located at upper reaches of Nam Chiane River which is located at central Laos. The project area is located at the southern slope of Xieng Khouang Plateau, with terrain high in the north and low in the south. The elevation of the damsite zone is generally 900m~1300m, and changes to 500m~450m to the plant site in the south. Nam Chiane River is a tributary of Nam Ngiep River, flowing from the south to the north. The powerhouse is on the left bank of Nam Chiane River, being located at the contact zone where canyon is transiting to alluvial plain. The gross head of the hydropower project is about 600m. Headrace development is employed for the hydropower project, and the project area is located in Xieng Khouang Province.

The main task of the Project is power generation, and the power is consumed mainly in Xieng Khouang Province. The electric energy generated by Nam Chiane 1 Hydropower Project will be transmitted to the proposed Thavieng Substation, and then to the 230kV national power grid.

On August 2012, China Gezhouba (Group) Corporation (CGGC) submitted to Electricite du Laos (EDL) Feasibility Study Report of Nam Chiane 1 Hydropower Project in Laos (hereinafter referred as Feasibility Study Report) . After the report was approved by EDL and Lao Ministry of Energy and Mines, CGGC signed general contract (EPC) of Nam Chiane 1 Hydropower Project with Laos Government on December 2012.

### LIST OF ENGINEERING CHARACTERISTICS

#### I. Hydrological conditions

Watershed area

- Watershed area upstream the north dam site of Nam Chiane river: 281 km<sup>2</sup>
- Watershed area upstream the south dam site of Nam Tong Sai river: 41 km<sup>2</sup>

- Whole watershed: 322 km<sup>2</sup>

Reservoir inflow

Representative flow

Sediment

## II. Reservoir

Reservoir water level

Reservoir Capacity

Storage capacity factor

Regulating performance

- Incomplete annual regulation

## III. Engineering performance indicators

Installed Capacity

Annual energy output

Turbine

Generator

- Type: Model: SF55-14/4850 (2 sets)
- Rate Power: 52 MW
- Rated capacity: 57.78 MVA
- Generator power factor (lagging): 0.9
- Rated voltage: 10.5 kV

Main Transformer

## IV. Main structures and equipments

Water Retaining Structure

- Type: Rockfill dam with clay core (RCC)
- Foundation characteristics: Granite (Plinth foundation)
- Bedrock peak acceleration: 1.08 m/s<sup>2</sup> (10% probability of exceedance during 50 years)
- Crest elevation/ breast wall top elevation: 1064.80/1066 m
- Maximum dam height: 93.00 m
- Dam crest length: 294.50 m

Water releasing structure

Power generation design diversion flow