

NTPC

Rapid analyses on a hydroelectric power plant

For the first technical inspection on one of the turbines at its power plant, the Laotian company tasked Matcor with carrying out metallurgical analyses that needed to be rapidly organised and performed.



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OUR CUSTOMER

Corporate name

Nam Theun 2 Power Company (NTPC)

Workforce

270 people

Business activity

Nam Theun 2 Power Company is a Joint Venture between the national company Lao Holding State Enterprise (LHSE), EDF and Electricity Generating Public Company Limited (EGCO). It was created to build and operate the Nam Theun 2 hydroelectric power plant project, in the centre of Laos, until 2035. This power plant has a generating capacity of over 1,000 MW and supplies electricity to mainly Thai and Laotian customers.

The Nam Theun 2 hydroelectric power plant began operation in 2010 and has a generation capacity of more than 1,000 MW. The plant operates 6,000 hours per year, notably through use of 4 Francis turbines and 2 Pelton turbines. As a result, the operator Nam Theun 2 Power Company places the greatest importance in guaranteeing a maximum availability factor.

In early January 2020, during the first comprehensive inspection of “group 4”, where it was completely stripped

down, “visual examinations and penetrant testing of the brake track revealed linear indications. We therefore decided to carry out further investigations”, stated Laurent Jupin, Deputy Head of the power plant’s maintenance department.

On each turbine, at the end of the deceleration phase, a pneumatic system presses 16 pads against a circular brake track that is 6 meters in diameter. The 550 metric tonne mobile unit rotates at 10% of its nominal speed, i.e. 33 rpm. With approximately 250 starts and stops each year, the efficient operation of this braking system is vital.

Service provided within a few days

NTPC engaged the services of Matcor with a view to understanding the root causes of the defects. “I was familiar

with Cetim through my time spent at EDF in France. Once in Laos, I therefore contacted its subsidiary in South-East Asia”, explained Laurent Jupin. In just a few days, the engineers at Matcor organised a trip on site in order to create metallurgical replicas of the track by taking impressions and then sent them to Singapore for analysis in their laboratory.

The examinations revealed the presence of laps and microcracks due to heating, which did not require a replacement of the components. As a result, group 4 can resume risk-free operation. “In our industry, this type of work calls for a high level of responsiveness and in this case everything was done quickly. In addition, this first operation helped to increase the skills of our local colleagues”, added Laurent Jupin.

Cetim's asset



Matcor is a specialist in the Field of Failure Analysis, Forensic Engineering and Assets Integrity Management and can operate investigations all over Pacific Asia area.

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