

EDF

Reducing the vibrations of a coal breaker

An expert's analysis of concrete pads and transmission elements was performed at the Bouchain thermal power plant in order to reduce the recurring vibrations of a coal breaker. Thanks to the repairs performed, the magnitude of vibrations could be reduced from 500 to 70 μm .



©DR

OUR CLIENT

Corporate name:
EDF, Bouchain thermal power plant (59)

Activity
The power plant uses the coal as fuel to produce steam that drives the turbines connected to alternators

Workforce
90 persons

The EDF coal-driven thermal plant of Bouchain (59) is subject to recurring vibration problems on one of its coal breakers.

As a correction and in order to make its operation reliable, the managers of the company called the Cetim. The engine and the transmission that drive this breaker contain very large mechanical elements.

The central part is a single-piece horizontal cylindrical vessel made of steel and that rotates on itself. It is fitted with internal armours. During the rotation, metallic balls break the coal into dust. The raw coal enters by one side of the

breaker through a hollow axis and goes out in the form of powder. The hollow feeding and exit axes are located on bearings and they support the breaker vessel during its rotation.

A turned round gear

The expert's analysis and the non destructive tests lasted three weeks. The investigations confirmed the correct condition of the concrete pad and the anchorages. However, the latter were tightened so as to ensure correct support of the equipment. Although it is the centre of vibrations, the reduction gear itself does not present any damage at the

teeth and bearings. However, a problem was highlighted at the bearing housing.

The solution that was imagined consisted in simply turning round the drive pinion that drives the toothed wheel. This manoeuvre was made possible thanks to the very design of the pinion and the fact that the wear of the toothed wheel was acceptable.

The Cetim adjusted the meshing and performed a complete alignment of the mechanical assemblies.

"The recommendations from the expert's analysis of the Cetim were quickly implemented," says Denis Auvinet, engineer and case manager. *"The results from maintenance activities allowed us to reduce the magnitude of vibrations from 500 to 70 μm ."*

Getim's strong point



The expertise of the Cetim in terms of high power mechanical

transmission helped provide accurate information as regards the condition of the breaker components and play a supporting role for main contracting during the repairs.