

Developing capacities in non-destructive testing (NDT) to support stable energy supply in Vietnam

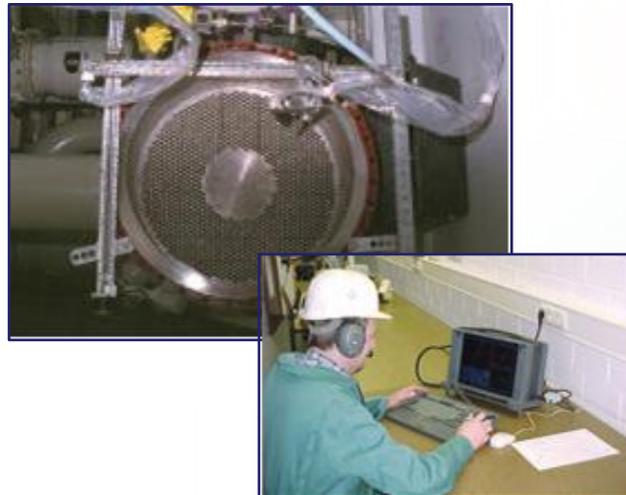
The challenge...

Thermal power plants provide more than 50% of the total annual electricity production in Vietnam. This rate is increasing rapidly, with a series of thermal power plants under construction. To ensure that the existing power plants operate reliably and effectively, it is necessary to pay great attention to maintenance, especially when it comes to the heat exchanger system. The heat exchanger system is a sensitive part of the power plant, and damages or failures could lead to the loss of operation of the entire plant. Unintentional plant shutdowns cause economic losses for the plant and major inconvenience for end users.

The most effective way to examine heat exchanger systems to keep power plants operating safely is with a multiple technology method, using both conventional and advanced techniques that include non-destructive testing (NDT) inspections. To develop an adequate infrastructure for NDT services for controlling power plants, the country needed to develop regulations and codes for NDT applications. Better technological and human resource capacities were also required for conducting comprehensive examinations and ensuring the reliable operation of power plants.

The project...

Through this technical cooperation project, the IAEA provided assistance in the establishment of advanced NDT techniques for inspections of heat exchangers in thermal power plants, and supported up to date programmes for training and qualification of NDT personnel. The project supported a number of fellowships and expert missions, providing theoretical and practical training in NDT technique and its applications. In addition, the project provided software and equipment needed for NDT inspections.



Inspecting non-ferromagnetic and ferromagnetic tubing in petrochemical, chemical and power generation plants.

The impact...

The project served to strengthen the reliability of Vietnam's existing thermal power plants. Workers at power plants are now able to use advanced NDT techniques to monitor different types of damage and better control the quality of inspections. The increased number of qualified workers on the maintenance staff has enhanced the country's capability to ensure safe and efficient operation of thermal power plants. This, in turn, eliminates the risk of unplanned shutdowns and ensures improved stability of the power supply grid.

Looking to the future, enhanced maintenance capabilities will also benefit the introduction of Vietnam's new nuclear power programme, which is planned for 2020.