

Case study on plant condition and life assessment

Plant integrity expertise improves long term profits

Like many countries throughout the world, the Philippines is in the process of privatising its national power generation facilities. Power stations currently approaching the end of their engineering design life expectancy are being offered to private companies in large 'rehabilitate, operate, maintain and manage' contracts. When the Malaya power station was sold by NAPOCOR of the Philippines in a first step in the privatisation programme, the main problem for the new owner was establishing the condition and life expectancy of various components of the plant.

Which components needed to be replaced to allow long term, profitable and safe operation? What could be retained, minimising capital outlay?

The new owners wanted to utilise the best independent plant integrity expertise in the world and they naturally turned to ERA Technology.

The project, the largest ever undertaken by ERA's plant evaluation engineers, was executed on behalf of Kephilco, the operating arm of KEPCO the Korean utility. ERA's role was to perform the condition and life assessment of two Babcock Hitachi boilers, all steam pipework, a Siemens 300 MW and Hitachi 350 MW steam turbo-generators, and a number of other electrical items including transformers and switchgear.

The work was carried out over an eighteen-month period by ERA personnel and involved three separate periods working on the site. The ERA team used local labour wherever possible and a number of specialist tasks were sub-contracted to expert companies in order to complete the project on time.

The far-away location and diverse group of workers involved many logistical difficulties, but all were overcome through flexible working arrangements and the application of project management techniques developed and refined in the course of fulfilling many similar overseas contracts in recent years.

It is always satisfying to learn that a project has been of maximum benefit to a client and, in this particular case, the staff involved were delighted when Kephilco's project manager Mr Yeon Woo Lee wrote a letter of thanks and congratulations saying "...most of ERA's recommendations for the improvement of our plant's efficiency were followed due to the conclusive reports and inspection performed".

The reports convinced Kephilco of the need for the acquisition of new equipment. He went on, "These acquisitions at first increases rehabilitation cost but will save the company more in the long run, minimising unscheduled shutdown due to equipment failure."

This project is just one of many undertaken in South East Asia, where ERA's plant integrity expertise allows equipment to continue safe and efficient operation, way beyond intended design life, in a market hungry for power.