

CreepImage

Inspecting Creep Damage in Critical Power Plant Components

The ever increasing demand for low-cost energy is forcing many of our power stations to run well beyond their original design life. In the past, ill-informed decisions have resulted in failures of superheated steam pipes with serious consequences such as power cuts, financial losses and risks to human life.

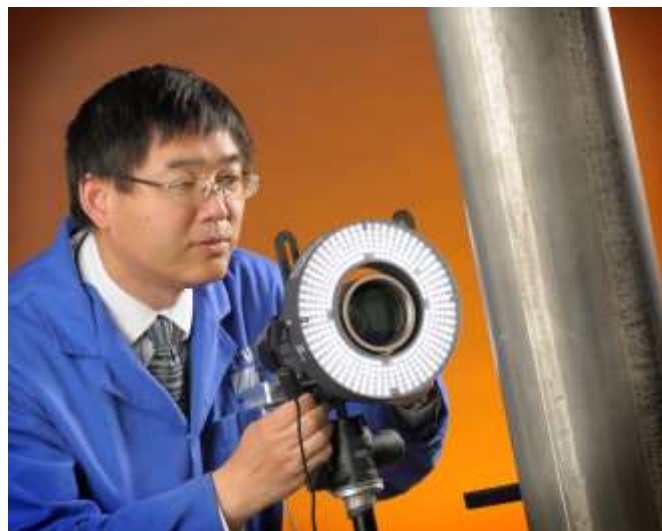
The safe extension of a power station's operating life requires new inspection techniques which must accurately detect creep damage and predict the remaining life of a component. CreepImage, a project run by a group of European companies and funded by the Research Executive Agency of the European Commission, is developing an optical inspection technique for long-term monitoring of creep deformation in engineering structures.

The inspection process is particularly suited to the harsh operating conditions of a power station, where high temperatures and radiation often prevent the use of routine inspection methods.

In this non-contact, non-intrusive approach a high-temperature resistant

grid pattern is superimposed on the surface of the component under test, and a high-definition digital camera captures images of the grid over a period of time.

The research leading to these results has received funding from the European Union's Seventh Framework Programme managed by REA Research Executive Agency <http://ec.europa.eu/research/rea> ([FP7/2007-2013] [FP7/2007-2011]) under grant agreement no 284986.



Computer software then analyses the changes in the digital images to calculate the creep deformation. Finally, creep-life prognosis software predicts the remaining life of the component.

CreepImage will potentially help power plant operators to:

- Reduce risk, by providing enhanced safety assurance.
- Increase revenue, by improving the availability of power plant.
- Optimise inspection scheduling, thereby reducing costs.

To learn more about CreepImage, visit the project website at www.creepimage.eu or contact the Project Coordinator, Dr Jinaxin Gao (jinaxin.gao@twi.co.uk).

Project Partners:

