

**Inspection of Calandria Reactor Surface of Wolsung Nuclear Power Plant using Thermal Infrared
Camera mounted on the Mobile Robot KAEROT/m2**

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Abstract:

Thermal infrared imaging is a highly promising technology for condition monitoring and predictive maintenance of electronic, electrical and mechanical elements in nuclear power plants. However, conventional low-cost infrared imaging systems suffer from poor spatial resolution compared to commercial CCD cameras. This paper describes an approach to enhance inspection performances for calandria reactor area of Wolsung nuclear power plant through the technique of superimposing thermal infrared image into real CCD image. In the occurrence of thermal abnormalities on observation points and areas of calandria reactor area, unusual hot image taken from thermal infrared camera is mapped upon real CCD image. The performance of the technique has been evaluated in the experiment carried out at Wolsung nuclear power plant in the overhaul period. The results show that localizations of thermal abnormalities on calandria reactor face can be estimated accurately.



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