



Verification of ECT Signals in Tubesheet Weld End Region

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Recently, a lot of tube defects were found in steam generators of several Korean power plants, and the steam generators were replaced prematurely in some plants. These events resulted in the magnification of negative public opinion and loss of credit on the safety of nuclear power plants. The root causes of event were attributed to the tube material (Alloy 600) susceptible to corrosion and moreover, the lack of engineering based objective judgement on the progress of tube degradation and cracking in the eddy current inspections performed in the plant fields.

In practice of field eddy current inspection, highly reliable analysis technique based on the engineering verification of the abnormal signals, should be developed and applied. That is to say, new techniques are required that can discriminate the presence of defect and also type of degradation quickly and precisely, based upon the engineering and objective evidences when suspicious signals are encountered in the field eddy current inspection of steam generator tubes in power plants.

The purpose of this research is to develop the technology for the interpretation and verification of suspicious signals, especially in tube sheet weld end region, encountered in the field eddy current inspection of steam generator tubes and to supply the technology for timely and precise identification of the degradation status based upon the engineering evidence. The research product will contribute to the enhancement of safety and the recovery of public acceptance for the nuclear power plants.