

# **Development of Demonstration Technic of Simulation(VR Mock up, Meta Model) based power plant PAUT**

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It is critical to ensure the reliability of structures through non-destructive testing (NDT) to maintain the safety and soundness of power generation equipment. In the realm of non-destructive testing, one widely used method for evaluating the overall reliability of inspection systems is the Round Robin Test. Techniques for evaluating the reliability through Round Robin Test include probability of detection (POD), false call probability (FCP), and root-mean-square error (RMSE) for size measurement. However, Demonstration through Round Robin Test is based on experiments and its expansion and application to various industrial fields is subject to limitations due to time and financial costs such as test specimen production and infrastructure construction. On the other hand, in the case of the European ENIQ (European Network for Inspection & Qualification), demonstration is performed using simulation in cases where it is difficult to construct test specimens for complex and diverse industrial facilities. In this study, the ENIQ-based demonstration system is analyzed and thermal power generation We would like to introduce ways to utilize simulation modeling technology in the development of a PAUT demonstration system for equipment. The study was supported by the Korea Institute of Energy Technology Evaluation(No.20217410100100) and Planning(KETEP) and the National Research Foundation of Korea(No.2021M2E6A1084980).