

## **46ESS-33: Engine Performance Testing – Industrial**

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*Industrial gas turbines have been widely used as power plants and mechanical drivers in power generation, oil & gas and other industries. Performance analysis has significant implications for both the gas turbine manufacturers and users, as it not only assesses the overall engine performance but the condition of major components. For new gas turbines, performance acceptance tests are required to verify gas turbine performance, which include power output, efficiency (or heat rate), exhaust flow, exhaust temperature and exhaust energy etc. These tests are often essential as pre-requisites of contractual guarantees from manufacturer to user. For old gas turbines, performance tests could be conducted to acquire data for the purpose of health monitoring, degradation diagnosis or maintenance/overhaul/update planning. This paper aims to provide a general review on the issues, procedures and techniques for industrial gas turbine performance testing based on industrial test standards (ASME test codes and ISO standards). It includes planning of the tests, measurement requirements, execution of the tests, computation of results and test reports.*