

**The Engineering Aspects of Gas Turbine Acceptance Testing**  
**Texas Board of Professional Engineers**  
**February 25, 2010**

**Background:** Agency staff received a request that the Texas Board of Professional Engineers (Board) consider the engineering aspects of gas turbine acceptance testing. The requestor sent in a Request for Proposal (RFP) issued by a public entity to provide gas turbine testing and acceptance services that complied with the American Society of Mechanical Engineers (ASME) Performance Test Code 22-2005 (PTC 22-2005). The test code is a detailed procedure to affix test equipment, gather data, and calculate performance data points on an installed, stationary gas turbine engine. The output of the test procedure is a set of performance curves that are to be used to compare the current performance of the engine with a specified or ideal performance. This testing is performed immediately after installation of a new gas turbine and is performed as part of a routine maintenance program to detect any change in the gas turbine's performance. The performance of the test on a new installation verifies the manufacturer's guaranteed specifications and insures the unit has no shipping damage or installation problems. Performing the test on a regular basis thereafter insures that regular maintenance programs are adequate to maintain the gas turbine at a peak performance standard.

**Discussion:** The Board has issued a policy advisory based on a similar situation, *Policy Advisory Opinion Regarding Construction Materials Engineering* and the associated *Frequently Asked Questions* section (EAOR 7 revised August 2009). In that policy advisory, under strictly defined circumstances, the material testing can be performed for a public entity by a testing company without a licensed engineer, but the decision to accept the results of the testing must be done by a licensed engineer competent in material testing.

In the case of gas turbine acceptance testing, a technician (not licensed as a professional engineer) or a firm (with no licensed professional engineers) could be hired by the public entity to perform the testing according to ASME PTC 22-2005 and issue a report with the test results. Interpretation of the test and a subsequent decision to accept or reject the performance of the gas turbine must be made by a licensed professional engineer with competence in gas turbine acceptance testing.

If the public entity wishes to hire a firm to perform the testing and provide a report recommending acceptance or rejection of the gas turbine's performance, then the firm must employ at least one full-time, licensed professional engineer competent in gas turbine acceptance testing. If the public entity wishes to hire a technician to perform the testing and provide a report recommending acceptance or rejection of the gas turbine's performance, then the technician must be a licensed professional engineer competent in gas turbine acceptance testing, or if not a licensed engineer, then the technician must be directly supervised by a licensed professional engineer competent in gas turbine acceptance testing. In all cases, the public entity, the firm, and the technician must comply with all statutory requirements regarding qualification based selection of professional services and engineering firm registration.