



Cẩm Phả, Vietnam

Facility Summary

Pulverized Coal

AES Mong Duong II Pulverized Coal Project



*Air Heater Leakage and
Thermal Performance Testing*



Coal Mill Finesse Testing

AES VIETNAM — MONG DUONG II PULVERIZED COAL PLANT

McHale provided Independent Expert services to AES Mong Duong II, Pulverized Coal Project for Boiler performance plus Overall Unit Capacity and Heat Rate and major equipment commissioning evaluations, in Vietnam in 2014-2015. McHale provided Independent Expert Services to support commissioning, fuel sampling and analysis, operation tuning, failure analysis, PTC 46 performance testing, and Commissioning guarantee testing for Units 1 & 2. McHale was the Owner's Consultant and Expert Test Witness responsible for technical review and comment on EPC supplied test procedures that included code-level tests in accordance with PTC 4, 4.3, 12.2, 12.3, 36, 40, 46 tests; plus capability tests on every major plant and unit subsystem. McHale was responsible for helping the Owner manage the 103 different test procedures and their related testing drawing on EPA standards OSHA, International Noise, ASTM, IEEE, and NFPA. As well as acting as an Expert Witness to the tests conducted along with technical review, independent test calculations and reporting, and formal written comments on the EPC supplied test reports.

McHale Contracted Tasks

McHale was selected on the basis of demonstrated proficiency with certificates of good execution issued by previous customers and a listing of thirty (30) previous coal-fired testing projects. Further McHale is distinguished within the performance testing community as its senior members have participated for over twenty (20) years in the ASME performance test code governing committees, in developing and writing the testing codes, and continue to participate on over twenty (20) of the current test code governing committees.

Problem Resolution

McHale assisted all parties involved in the commissioning and performance testing to gain agreement on the key technical points to avoid contentious disagreements afterward. This provided a quicker conversion of financing and quicker payment for the contractor and manufacturers. Ultimately, McHale's role was to assist in determining if AES, the owner operator and its investors were getting what was promised and paid for and to help achieve technical and fiscal goals.

The McHale approach was designed to bring value to the AES project through the consultancy of our highly experienced performance engineers and commissioning test experts. McHale reviewed the test procedures developed by Doosan the EPC and others, provided comments relative to each procedures' conformity to the requirements of the contract. Comments additionally addressed each procedures' agreement with applicable ASME test code guidance and best industry practices. The McHale approach was designed to bring value to the Mong Duong II project through the consultancy of our highly experienced performance test engineers and commissioning experts.

McHale's Independent Experts in commissioning and acceptance testing assisted with and witnessed the test activities at the project site in order to certify that the tests were carried out in accordance with the approved test procedures and the requirements of the contract.



Mong Duong II Power Block

AES VIETNAM—MONG DUONG II PULVERIZED COAL PLANT... *cont'd*

Problem Resolution... *cont'd*

McHale's Independent Expert was augmented by additional field support personnel with specific expertise in the conduct and supervision of the various testing scopes as required for each particular test with such personnel including Coal Handling and Mechanical Experts. McHale's Independent Expert personally possessed significant expertise in performance testing and coal boiler commissioning and leverage his own expertise in these areas for the success of the various missions .

Work Outcome

McHale mobilized its experts to the site. McHale's Independent Expert, with assistance from our team of commissioning test experts, checked the measuring equipment calibration certificates presented by Doosan and checked the software used for collecting and processing data to ensure all testing requirements were satisfied before the trials were begun. McHale provided guidance and assistance onsite during the preparation for testing, which were conducted by others, and assisted the conducting party as needed during each test. Following each test McHale generated independent calculations and reports certifying the completion of each successful test in accordance with the project contract requirements. McHale's Independent Expert provided written notification to AES in the case of a concern that the test requirements or guarantees were not being satisfied successfully; in such a case, McHale provided recommendations regarding suggested improvements or alternate remedies to help advance the project to achieve safe, efficient, reliable, and environmentally sound plant operation.