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Performance testing regime

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Introduction

The prime goal of a Project Company in relation to the design, engineering, procurement and construction of a plant is to receive a plant on time and on budget that operates to specification. Central to achieving this goal is the existence of a clear and workable performance testing regime that is consistent across all project agreements.

The drafting of a performance testing regime is a complex task and is usually the subject of detailed negotiations between the Project Company, the Contractor and the Lenders. This paper provides an overview of the key features of a performance testing regime.

Types of tests

Performance tests may cover a range of areas. Three of the most common are:

- **Functional tests:** These test the functionality of certain parts of the plant. For example, pumps, conveyors, pressure vessels etc. They are usually discrete tests which do not test the plant as a whole. No liquidated damages normally attach to these tests. Instead, they are absolute obligations that must be complied with. If they are not complied with, the plant will not reach the next stage of completion (for example, mechanical completion or provisional acceptance)

- **Emissions tests:** These test compliance against environmental requirements. Again, these are normally absolute obligations because the consequences of failure can be as severe as being forced to shut down the plant. These tests should ensure that the most stringent obligations imposed on the Project Company, whether by government regulations or by Lenders, are met. Emissions tests occur at various times, including during and after guarantee tests

- **Guarantee tests:** These test the ability of the plant to meet the performance criteria specified in the contract. There are often minimum and maximum levels of performance specified and providing the minimum levels are met the consequence of failure is normally the payment of performance liquidated damages (PLDs). Satisfaction of the minimum performance guarantees is normally an absolute obligation. In some projects, the guarantee tests occur after handover of the plant to the Project Company. This means the Contractor no longer has any liability for delay liquidated damages during performance testing. In our view, it is preferable, especially in project financed projects, for handover to occur after completion of performance testing. This means the Contractor continues to be liable for delay liquidated damages until either the plant operates at the guaranteed level or the Contractor pays PLDs where the plant does not operate at the guaranteed level.

Performance liquidated damages

As stated above, PLDs are payable if the guaranteed levels are not met. The guaranteed levels relate to those aspects of the operation of the plant which will have an economic impact on the project. They will differ depending on the project, however, the most common are linked to:

- **Output:** The rate of production of the plant

- **Efficiency:** The efficiency of the plant in producing the required level of output

- **Availability:** The reliability of the plant.

The guaranteed levels and the associated PLDs will be a key issue for the Lenders. PLDs should be calculated as the present value of the revenue forgone over the design life of the project as a result of the failure of the plant to operate at the guaranteed levels.

For further discussion regarding PLDs, refer to our paper entitled "Liquidated Damages – Delay and Performance".

Technical issues

Ideally, the technical testing procedures should be set out in the contract. However, it is often left to be agreed by the Contractor, the Project Company's representative or engineer and, if relevant, the Lenders' engineer, during construction. If the testing procedures are left to be agreed during construction (which we do not recommend), the contract must, at a minimum, set out general guidelines.

Regardless of when it is agreed, the testing procedures must, as a minimum, set out details of:

- **Testing methodology:** Reference is often made to standard methodologies, for example, the American Society of Mechanical Engineers methodology
- **Testing equipment:** Who is to provide it, where it is to be located, how sensitive must it be
- **Tolerances:** What is the margin of error
- **Ambient conditions:** What atmospheric conditions are assumed to be the base case (testing results will need to be adjusted to take into account any variance from these ambient conditions)

In addition, for multi-unit plants the testing procedures must state those tests to be carried out on a per unit basis and those on an entire plant basis.

Provision of consumables and fuel

The responsibility for the provision of consumables and fuel, required to carry out the performance tests, must be clearly set out in the contract. In general, the Project Company will be responsible for the provision of those consumables.

As the proper interpretation of the Project Company's obligation to supply consumables is often a matter of dispute between the Project Company and Contractor, it is important for the contract to precisely identify the quality and quantity of consumables to be provided as well as the time for provision of those consumables (which should be linked to the progress of the works rather than a specific date). The responsibility for the cost of providing consumables and fuel must also be clearly identified.

Provision of necessary associated infrastructure

The responsibility for the provision and availability of the associated infrastructure required for the performance of the performance tests must be clearly set out in the contract. In general, the Project Company will be responsible for the provision and availability of associated infrastructure. For example, the provision of transmission facilities and responsibility for grid access is a key obligation of the Project Company in the context of the testing and commissioning of a power station.

For further discussion regarding the provision of grid access, refer to our paper entitled "Offtake and Construction Interface Issues".

It is important for the contract to precisely identify the extent of the Project Company's obligations and the timing for commencement and completion of those obligations.

Performance of tests

The contract must clearly specify the arrangements for reperformance of tests where the performance guarantees have not been achieved. It is common practice to have an extended testing period which gives the Contractor additional time to achieve the performance guarantees after the minimum performance guarantees have been met. An extended testing period is preferable to termination or immediately requiring the payment of PLDs because the Contractor is often best placed to be able to rectify any problems with the plant to increase performance. The Contractor is also likely to be liable for delay liquidated damages during this extended testing period (subject to our comments above). The Project Company should not suffer financially by giving the Contractor an opportunity to retest.

Consequences of failing to achieve performance guarantees

There are a number of options which may be included in the contract if the plant fails to achieve the performance guarantees. These are:

- payment of PLDs by the Contractor (consider whether this should be at the direction of the Project Company or the election of the Contractor or both)
- termination of the contract
- rejection of the plant.

The contract must clearly specify the time when each of these remedies may be exercised. For example, the contract could specify that the Project Company's right to direct the Contractor to stop reperformance of tests and to pay PLDs may not be exercised by the Project Company until after the expiry of the extended testing regime.

Consistency across the project agreements

It is important to ensure back-to-back performance testing arrangements under each of the project agreements, in particular, the EPC Contract and the offtake agreement. This will result in smoother progress of the testing and commissioning of the plant and will facilitate necessary supervision and certification under various project agreements.

For further discussion regarding the interface of testing regimes, refer to our paper entitled "Offtake and Construction Interface Issues".

The specific nature of a performance testing regime will depend on the type of plant and will differ from project to project as it is a matter for negotiation between the parties. However, we recommend that for a performance testing regime to be effective it must, as a minimum, appropriately deal with the key issues outlined in this paper.

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