



White Paper 2017-10

How to Maintain Sufficient Control of EPC Contractors on Projects

One of the most frequent failure modes we observe is insufficient, or poorly structured oversight of EPC Contractors. It is not because the contract is a turn-key EPC contract given to a reputed and professional contractor that the Project should not devote sufficient attention and oversight. In reality, EPC contracts are as susceptible to failure and commercial issues as other setups, and both direct and indirect consequences can be massive. This White Paper focuses on how to properly organize Project Control of an EPC Contractor.

The recommendations of this White Paper apply inasmuch that the contractual approach allows it (for example, lump sum contracts will typically allow a much less onerous Project Control setup but at the same time lead potentially to less control). However it is always important to maintain sufficient oversight and in particular if it is a lump sum contract, through targeted reporting and data gathering.

Key interfaces to be established with the EPC Contractor for Project Control

Key interface issues to be established at the Project Control side include:

- Requiring a detailed, high quality schedule from the EPC Contractor (properly weighted and resourced when needed, according to a pre-agreed WBS subset) that is baselined and then subsequently updated regularly,
- Requiring comprehensive cost reports according to the CBS subset (the format will vary from very detailed for reimbursable contracts to a low detail for lump sums),
- Requiring substantial periodic reporting on all areas of engineering, procurement and construction,
- Approving the relevant contractor's cost, schedule and progress monitoring, risk and contract management procedures, and checking subsequently by audits that they are implemented fully,
- Requiring risk analysis to be performed and the risk profile of the Project to be reported (refer to our Risk Handbook) in the form of:
 - a comprehensive risk register including impact assessment, rating, mitigation action definition and status reporting,
 - a schedule risk analysis, when needed,
- Requiring communication of any potential Change Order as soon as it arises.

Best practice contractual conditions to be included in the contract and enforced by Project Control include:

- Together with an effective Change Order management process, a time-bar for the identification and communication of potential Change Orders to ensure early identification and avoid Change Orders related to past events and submitted in hindsight, ,

- The possibility to audit the contractor's records in their office, which needs to be used at relevant points during Project execution. While this possibility is included in most EPC contracts, we find that it is not used frequently enough as part of delivery assurance.

The Importance of a sufficiently strong Project oversight team for EPC Contractors

One of the most common issues we encounter when it comes to EPC contractors that have to deliver a sizeable part of the Project is a relative weakness of the supervisory organization. Projects or Owners too often underestimate the amount of control required to obtain a smooth delivery. In addition, they fail to understand that the relatively limited supervisory investment required is key to avoiding later major issues that may have consequences several orders of magnitude larger.

We are not favouring here the excessive addition of technical experts as part of this oversight, which sometimes have the opposite effect of affecting significantly the progress of the contractor and its ability to propose alternate solutions. We are focusing mainly on contract and control personnel.

Delegation is not incompatible with control, and even with lump-sum EPC contracts, it is essential to maintain substantial control in the interest of the Project. The issue of proper supervision by the Project is applicable in particular to lump-sum contracts. Contrary to common belief, in reality lump-sum EPC contracts often prove to be more risky for the Project due to the lack of detailed visibility on the actual progress, and because any change or interface issue from the side of the Project will be translated immediately into a Change Order. In a number of circumstances, it is more appropriate to use other contractual approaches. In any case, sufficient supervision remains required on the Project side even in the case of lump-sum EPC contracts. Key guidance for the establishment of this supervision include:

- In terms of governance:
 - Designation of Scope Owners accountable for all aspects of each contractor's delivery, including the commercial aspect,
 - Involvement of the Project Manager as the sponsor of the EPC contract (it is therefore recommended that the Scope Owner be a different person to allow escalation of issues),

It is essential to maintain proper oversight of EPC Contractors even on lump sum contracts

- and designation of a sponsor at the highest management levels of the EPC contractor,
- Proper support in terms of control (cost, schedule, risk, contract management) adapted to the size and complexity of the contract, that also ensure consistency with the overall Project control framework,
- Definition and implementation of an independent audit plan to check the accuracy of the contractor's reports,
- Availability of a very limited amount of suitably experienced technical experts (engineering, procurement, construction, quality, HSE) that are knowledgeable with the contractor's scope and can exercise effective and independent technical supervision,
- Provision of Project representatives on all contractor's worksites, either continuous or periodic as required, plus definition of suitable checkpoints (Inspection and Test Plans, participation to Acceptance Tests etc.).

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- Operability and performance of the final facility, where most of the time, knowledge and experience lies within the Owner or the Project,
 - Early inclusion of the future operator of the facility at the engineering, procurement and construction stages. The interface to take into account operational improvements (from ergonomics to maintainability) needs to be carefully managed because it might create changes,
- Involvement of the facility operators in the commissioning stage in parallel with their training.

Conclusion

Proper supervision of EPC contractors is essential to the success of any Project and the required level of effort is too often underestimated. This is the case in particular in the field of Project Control, and not so much in the field of technical expertise.

This White Paper gives some pointers as to the required setup and areas of focus. Professional supervision of EPC contractors is a must.

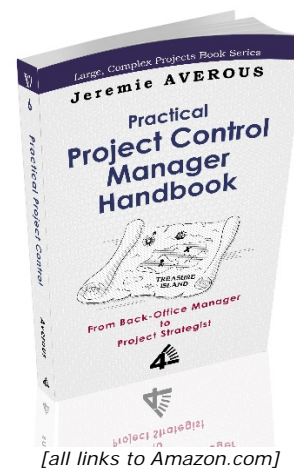
Managing interfaces at facility level and between several EPC Contractors

Supervision is ever more important if several contractors are involved on the Project, as complexity has the potential to increase exponentially with the number of interrelated contracts. The main issues include:

- Schedule interface management, whereby the risk is that a coordination failure will create substantial stand-by of another contractor or of an expensive asset because contractors do not deliver on time,
- Physical interface management (site access, direct and indirect work interference, shared resources, definition of physical interfaces between deliverables, delivery of free-issued material between contractors),
- Technical interface management, where all interface clarification requests from one contractor are promptly addressed to avoid commercial issues,
- Quality of the deliverables and conformance to the specifications (in particular for lump-sum or rate-based work, where the contractor might fall to the temptation of cutting corners to reduce cost),
- Interface with the supplier of the process license/supplier of the basic design if applicable, which might be a contractor, the Owner or a Third Party,

Find all these principles of Project Control Management exposed in a comprehensive manner in our new Handbook, Practical Project Control Manager Handbook

(now published, available in [Paperback](#) and [Kindle](#) versions!)



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