Owner-Furnished Equipment: Savings or Potential Claims?

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1. Introduction

Owner-furnished equipment is a common practice on large private and public works projects where an owner purchases process equipment directly from a supplier and provides them as „owner-furnished equipment (OFE)" to be installed by the contractor. This practice can result in measurable savings since public works owners are exempt form paying sales taxes on equipment purchases. Advantages also include allowing owners to negotiate lower prices directly with suppliers, thus avoiding paying additional overhead and profits if the contractor provides the equipment. Despite the perceived advantages of OFE, this practice carries technical and contractual risks and can result in disputes and construction claims. Risks include poor integration of the OFE with the contract, limited coordination by the contractor, inadequate warranty, and performance risks. These risks are often the source of delay claims, extended overhead claims, different site condition (DSC) claims, impact claims, change orders, and litigation. The costs of settling these claims often exceed and offset the derived savings of OFE procurement.

2. Background

The use of OFE in public works projects arises from two necessities: (1) to acquire equipment with a long lead delivery time, and (2) to avoid the pitfalls of specifying and approving „or equal" products. Conventional construction specifications for process equipment are often „performance" specifications that list design parameters and performance limits for the desired products. The clarity and intent of this type of specification often results in poor communication of the requirements by the engineer, and misunderstanding by contractors and suppliers. This has often led to disputes, claims, and prolonged litigation between contractors and owners.
Performance specifications, combined with a highly competitive construction market, pressure the contractor to substitute cheaper alternatives under the „or equal" provisions. This substitution often results in disputes with the owner over the „equivalency" merit of the submitted products, the installation of less qualified alternatives with frequent failures and high operating and maintenance (O&M) costs. These disputes consume time, require resources, and often lead to schedule slippage, cost overruns, and delay claims.

Public owners have also recognized that there are clear logistical and financial benefits in pre-purchasing major equipment and systems. First, the purchases are tax-exempt, resulting in considerable savings. Second, owners can purchase equipment much earlier than the general contractor, who is selected at a much later stage of the process. Consequently, problems associated with the fabrication and delivery of such equipment can be minimized. To alleviate problems associated with lower-quality equipment, and to address delivery of long lead items, public owners are using OFE procurement.

3. OFE procurement

OFE, as the term indicates, is a contractual arrangement whereby the owner contracts directly with one or multiple vendors/suppliers/fabricators to purchase major components and process equipment from that entity. The purchased equipment is then made available to the contractor and subcontractors for installation under the construction contract. OFE procurement is most often used in the water and wastewater industry, which utilizes process equipment, electrical, and instrumentation and control (I&C) systems that require long lead time for delivery. Examples of OFE include pumps, aeration systems, blowers, conveyors, scrubbers, electrical motors, variable frequency drives VFD), and programmable logic controls (PLC). Private owners have used OFE contracting for the procurement of chillers, lighting systems, and electrical controls. Public utilities also utilize OFE for procuring large turbines used in hydroelectric generation projects. The oil and gas industry uses this method for acquiring pumping, electrical, and instrumentation controls systems used in drilling, production, and refining. Process equipment in a typical sewage construction project, account for up to 25% of the construction budget. This can translate into a large sum of money on a large complex project. Public: owners have discovered that considerable cost savings can be reaped if they purchase equipment directly from suppliers and vendors. There are advantages and disadvantages of OFE procurement.

Advantages

The perceived advantages of OFE procurement are:

– Cost savings due to sales tax exemption status (up 12%);
– Elimination of the contractor's markups on equipment prices;
– Reduction of the overall construction schedule due to phasing of activities;

– Owners exercise control over the selection, procurement, start-up, and testing;
– Selection of equipment that meets the owner's specific need;
– Matching OFE with existing inventory for ease of operation and maintenance;
– Owner's ability to control operating performances.

Disadvantages
The perceived disadvantages of OFE procurement are:
– Increase the need for owner's coordination and supervision;
– Require additional coordination with the general construction contract;
– Increase liability and property insurance due to OFE storage;
– Increase warranty risks;
– Require additional design, engineering, and coordination time;
– Increase construction management costs and/or consultants' fees.

Most often, the owner's decision to provide OFE is normally based on the following criteria:
– Legitimate significant price advantages (money);
– A compressed construction schedule by acquiring long lead items (time).

4. OFE legal and contractual environment

OFE procurement is a legal contract between two or more parties to acquire goods and services for a consideration. 'To that effect, it is enforceable by courts and is subject to interpretation, and may lead to disputes, claims, and litigations. In its basic form, an OFE contract can be a purchase order (PO) from a municipality to a vendor. Simply stated, a purchase order is a legally binding contract. There are several forms of OFE contract agreements commonly used in the public works market today. The basic difference lies in the time when the responsibility of the OFE is transferred from the owner to the contractor (i.e., the possession). This milestone defines the risks and liabilities of each party involved in the process. Based on the above premise, there are two basic types of OFE contracts.
– Type A: the contractor assumes the responsibility for the OFE upon installation;

– Type B: the contractor assumes the responsibility for the OFE upon signing of the general construction contract. This is accomplished by including an equipment purchase order in that contract.

Under a type A contract, the owner must coordinate the purchasing, expediting, delivery, and storage of equipment until it is handed over to the contractor. 'This can result in added risks to the owner. The major difference between the two arrangements is that under a type B contract, the contractor assumes the responsibilities for the equipment after the date the contract is signed. As a result, risks associated with equipment delivery and storage are transferred to the contractor, who is accustomed to handling and storing equipment. The price of the OFE may or may not be included in the contractor's bid, depending on how much financial leverage the owner wants to retain over manufacturers and vendors. The allocation of risks and liabilities among parties thus becomes purely based on the physical possession of the OFE. However, this concept becomes unclear during the start-up and testing phase of the project (see Figure 1).

In acquiring goods and services, public entities are bound by governing regulations and state statutes. These statutes define the legal framework and regulatory guidelines to ensure a competitive environment in the acquisition process. Procurement laws and statutes may set an upper limit (for example $50,000) above which a municipality must award OFE contracts using competitive bidding. Purchases for amounts below $50,000 can he made directly via a purchase order without competitive bidding. Although OFE contracts are often „stand-alone" contracts between owners and vendors, they are not completely independent. Typically, an OFE contract interacts, directly or indirectly, with other ongoing contracts that the owner carries with other entities. Generally, these contracts include:

– Design contract: (owner with an architect/engineer);
– Construction contract: (owner with contractors and subcontractors);
– Other OFE contract(s): (owner with OFE vendors);
– CM contract: (owner with a construction manager).

Of all the above contractual arrangements, the most critical impact is the one between the OFE contract and the general construction contract. 'This is because the delivery date of an OFE can be on the critical path on the general construction contract, As a result, a fail-

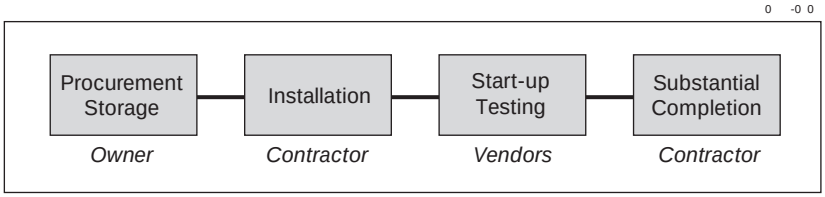

Figure 1.

ure in the timely delivery of the equipment will directly impact the construction contract end date.

An OFE contract agreement can be drafted in-house by the owner's organization to meet his or her specific needs, or may follow standard model forms of agreements available commercially. These include model agreements by the American Institute of Architects (AIA) [1] , the Engineers Joint Construction Documents Committee (EJCDC) [3], and the Associated General Contractors (AGC:). Regardless of the contract documents signed, there are many parties that influence the journey of an OFE from its inception to its final installation. These parties include architects, engineers, designers, fabricators, contractors, subcontractors, construction Managers, and owners. Depending on the agreement signed, some of these entities do not have privity of contract with the others.

Privity of contract

The concept of „privity of a contract" is a theoretical device of the English Common Law that recognizes limitation of liability commensurate with compensation for contractual acceptance of risk. Typically in a construction contract, the contractual relationship between the participants is one of privity between the owner and the design professional, and between the owner and the contractor. There is no privity of a contract between the design professional and the contractor.

In an OFE contract, the contractual relationship is a privity relation between the owner and the vendor. Where multiple OFE contracts exist, there is no privity of contract between the various vendors. To summarize, there is no privity of contract between vendors and engineers, and between vendors and contractors. This lack of privity (no-privity rule) between various parties that influence and control the OFE is the pivotal point, and a major source of disputes and claims in OFE procurement (see Figure 2).

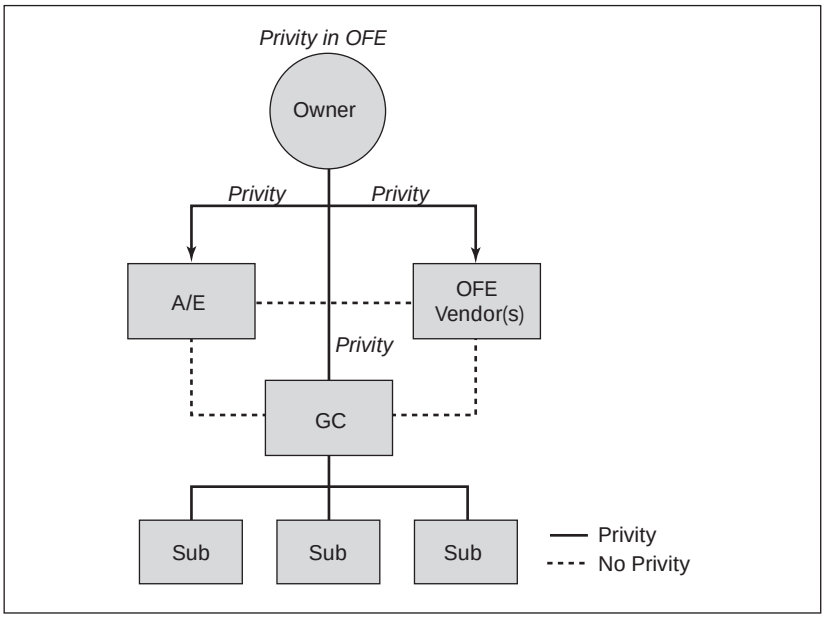

Figure 2.

5. Potential risks in OFE

„There is no doubt that the risks associated with OFE procurement can be significant if the delivery is delayed and the testing/start-up phase encounters any problems. The allocation of risks and liabilities depends largely on the privity (or lack of privity) of contracts between the parties. Public owners must evaluate their risks prior to agreeing to furnish any materials for any construction project. Normally, the risks that the owner assumes in furnishing materials and equipment can be identified. However, the costs associated with these risks are often difficult to estimate accurately even for the experienced contractor, let alone the owner. Figure 3 shows the financial rewards and risk level for the various parties in OFE procurement. OFE risks include:

– Procurements risks;
– Schedule risks;
– Design risks;
– Coordination/integration risks;
– Storage and liability risks;
– Start-up and testing risks;
– Warranty/maintenance risks.

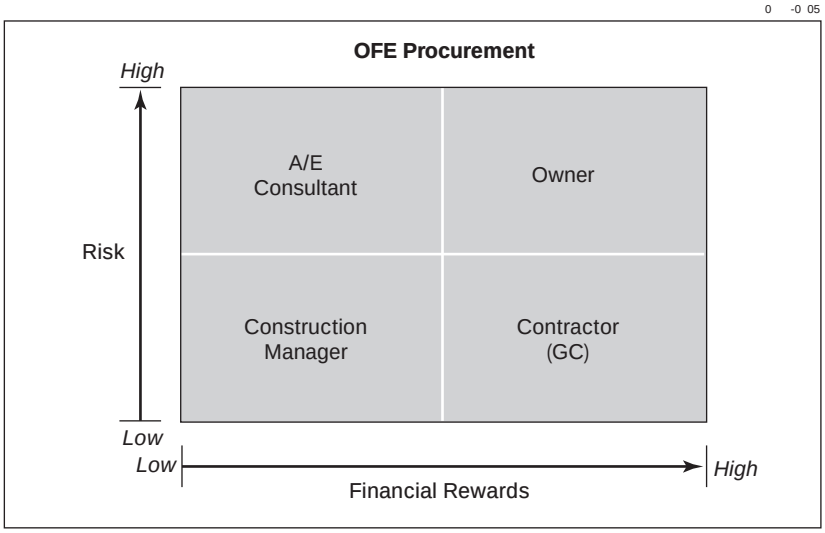

Figure 3.

Procurement risks

Procurement risks are those risks associated with preparing the procurement package for vendors. This package may be as simple as a purchase order, or may be a complicated full proposal that includes technical specifications, performance criteria, and legal agreements. Owners often rely on a design engineer to prepare the technical package, and delegate drafting of the legal agreements) to their purchasing department and attorneys, These agreements (front-end documents) enumerate contract terms such as price, delivery, storage, warranties, performances, notices, payment, termination, and insurance. A procurement package must also conform to the accounting standards of the municipality. Every step of this process is laden with risks. Clearly, this process requires qualified purchasing agents, experienced attorneys, and savvy accountants capable off identifying potential risk areas, and to mitigate those risks. Although one of the primary advantages of OFE procurement is the potential savings due to sales tax exemption, there have been instances when public owners have handled the procurement contract as a „routine" contract, and paid sales taxes on the purchases.

Scheduler risks

The delivery date and the time of performance of OFE vendors are paramount. An OFE supplied by a vendor may be on the critical path of the construction contract. As a result, failure to supply an

OFE in a timely fashion will result in a slippage of the construction contract end date, and will subject the owner to delay claims and extended overhead claims by those who are affected. Due to a potential for delay claims, monitoring the status of delivery of an OFE by the owner is critical. Effective monitoring is accomplished by creating a purchasing control and tracking system (PCTS), capable of updating the status of an OFE, and communicating the information to all parities. Since the owner retains payment leverage over vendors, he/she could exercise this control to ensure the delivery of equipment on time.

Design risks
Specifying of an OFE is normally delegated by the owner to a design engineer. Early in the process, the engineer may be asked to design for several possible equipment configurations, anchorages, and connections, before the owner decides on the final selection. This will require close coordination with multiple vendors to provide a viable design to accommodate all cases. Naturally, design engineers prefer to design for one piece of equipment because they can control the design process and limit their liability and exposure to risks. Some design engineers have criticized OFE procurement simply because it requires from them additional time, coordination, resources, and commitment. Design engineers usually feel that they are not adequately compensated for multiple designs during the design phase. or for their added coordination during the construction phase.

Coordination/Integration risks
OFE procurement will require additional coordination efforts from the owner and the engineer to ensure timely delivery of equipment, storage, efficient installation, and integration with the construction contract. Owners must control many of the variables that affect this process to avoid any schedule delays. This includes controlling shop drawing review and approval by the engineer, and controlling redesign efforts during installation due to misalignment and connections with the construction contract. Examples of these mishaps include equipment anchor bolt locations, and fiber optics terminations at PLC. Some designers believe that the contractor may be better „equipped" to handle the ordering and storage of equipment, and are better suited to absorb any risks associated with that burden.

Storage and Liability risks
Owners must be aware of all direct and indirect costs associated with furnishing equipment. This could include hidden unanticipated costs to the owner. When an owner retains possession of the OFE from the time of delivery to the time of installation, he/she assumes the risks and liabilities for storing the equipment, as well as for the storage facility. In order to limit their exposure, it is highly recommend that owners purchase an additional property and liability (P&L) insurance policy (fire theft, building) to cover OFE storage. 'Even when the owner provides the insurance, the contractor may elect to guard against uninsured perils and purchase additional coverage to broaden the owner-furnished coverage. This is an extra cost added to the project [2].

Start-up and testing risks
The start-up and testing phase is a major source of risks for OFE projects because the roles and responsibilities of all parties can be muddled during this stage. During this phase, the contractor installs the OFE, and the vendor performs the start up and testing. Contractually, the contractor has no control over the vendor due to the lack of privity of contract (no-privity rule). Normally, the start-up and testing activity precedes substantial completion and closeout of the project, and it triggers the release of retainage. As a result, the contractor cannot declare substantial completion of the construction contract until the OFE vendor completes this activity successfully. An unsuccessful start-up by the OFE vendors will delay the completion of the overall construction contract, and subject the contractor to liquidated damages (LD), and exposes the owner for potential delay claims, and extended overhead claims.

Warranty/Maintenance risks
Under the OFE contract, the vendor provides a warranty for the performance of the equipment. This warranty may cover the delivery, storage, and performance of the equipment. Warranty coverage could start from (1) the delivery date, (2) the installation date, (3) the successful start-up and testing date, or from (4) the substantial completion date. Similarly, the construction contract provides material and installation warranty for the entire project, which includes „brick and mortar," as well as equipment and piping. The terms, coverage, and exclusions of these two warranties may be in conflict. The maintenance of an OFE is another source of risk due to overlapping of jurisdiction. Who will perform the repair work? Is the repair work covered by the installation warranty (GC) or by the

equipment performance warranty (vendor)? To limit operating and maintenance costs, owners often purchase extended maintenance agreements from vendors. Work covered in these agreements is not included in the construction contract, and repairs are performed by vendors long after the contractor has left the site. In either situation, owners must be aware of all risks associated with maintenance agreements and warranty.

6. Potential claims in OFE

OFE Contract (Separate)
OFE contracts are fairly simple. They include general conditions, supplemental conditions, and an agreement. The main contractual issues include delivery date, prices, storage, bond, performances, and warranty, Any changes in scope of work after the contract is signed warrant a change order and extra payment. To that effect, claims related to changes (constructive or otherwise), suspension of work, interference by the owner, delays (excusable and inexcusable), accelerations, and terminations can be made in the same manner as in a regular construction contract. Different site condition (changes conditions) claims are harder to make because there is no site work involved with furnishing an OFE. The owner may wave damages if the vendor misses the target delivery date due to force majeure, strikes, and material shortages. On the other hand, the owner may draft the force majeure provisions more stringently if he knows that the OFE is on the critical path of the construction contract.

OFE and the Construction Contract
The net effect of an OFE contract on the construction contract can be considerable. As stated, OFE; contracts are often „stand-alone" contracts; however, they impact other ongoing contracts that an owner carries with third parties. The author studied this impact and compared risk allocation, liability, potential for claims, and entitlement of the various parties involved with both the OFE, contract and the general construction contract. Six contract areas (clauses) in both the OFE contract and the general construction contract were examined separately, as well as concurrently to determine the impact of the OFE contract on the construction contract. From the study, it is clear that owner's risk and exposure to claims increase dramatically using OFE contracting. A summary of findings is shown in table 1.

Claim (Type)	*Owner*	*Contractor*	*Vendor*	*A/E*
Delays	++	–	+	+
DSC's	++	0	+	+
Extended Overhead	++	–		+
Changes	++	0		–
Force Majeure		+	+	0
Warranty / Maintenance	++	++	+	0

+ = Increase, – = Decrease, 0 = Neutral

Table 1. Claims Potential in OFE.

Delay claims

The construction contract has a baseline schedule that incorporates the delivery date and the possession of an OFE as a milestone. Any slippage in that milestone will result in a delay claim. Delay in OFE delivery is considered a delay caused by the owner; therefore, it is a compensable delay entitling the contractor to equitable adjustment [4]. Delay claims may not be automatic, especially if the OFE is not on the critical path, and if it does not cause schedule slippage due to float. Theoretically, the owner „owns" the float in the construction schedule. Concurrent delays involving one or multiple OFE delivery delays (owner caused) and construction delays (contractor-caused) must be examined closely. The use of schedule analysis is critical to determining the aggregate effect of OFE delivery on the construction schedule.

Warranty/Maintenance claims

Warranty clauses in OFE contracts differ from those in construction contracts. When dealing with equipment vendors, contractors can readily compare their own warranty exposure under the construction contract to the provision of the OFE contract, and manufacturer's standard warranty, and decide whether to accept or seek additional extended warranty provisions. Claims related to warranty are due to the differences in the clauses covering warranty durations, warranty coverage, start date, and warranty during storage. Maintenance-related claims are due to overlapping jurisdiction of the contractors and vendors during normal maintenance and extended maintenance contracts.

Extended overhead claims

Any slippage in the construction contract schedule due to an untimely delivery of an OFE will be accompanied by an extended over-

head claim. Trends in the last ten years show a sharp increase in these types of claims. Contractors discovered that they can make more money by advancing soft-dollar cost claims such as extended overhead, loss of productivity, and impact, rather than hard-dollar costs claims. Most often, these soft-dollar claims are unique to the contractor and are hard to verify by the owners due to lack of standardization in the accounting procedures. In comparison, hard-dollar, tangible claims resulting from change orders and variation in quantities (extra concrete, steel, bolts, etc.) are easy to calculate, and will generate limited revenues since unit prices are known in comparison with soft-costs claims.

Different site condition (USC) claims
The contractor may advance different site condition (DSC) claims if there are major problems with connecting an OFE with the piping and infrastructure supports. Although unlikely, the OFE configuration may change during fabrication due to technological innovations or shortage of materials, thus triggering a possible DSC claim by the contractor.

Force majeure claims
Force majeure includes act of God that are beyond the control of vendors, owners, and contractors. Clearly, they result in time delay and delay claims. The paradoxical question becomes, does a force majeure claim under the OFE contract automatically trigger a force majeure claim under the construction contract?

Calculation of damages
Damages include direct costs, indirect costs, and impact costs [4]. Liquidated damages stipulated in contracts are based on an aggregate summation of these costs. Courts have turned down claims with excessive unsubstantiated liquidated damages that serve to punish the contractor. Calculating direct and indirect costs in an OFE contract is fairly simple. However, assessing impact damages is a complex process especially if the OFE is on the critical path of the construction contract. A delay in OFE will delay the completion of the construction contract and subjects the contractor to liquidated damages, and the owner to delay claims. The question becomes, can the owner include the construction contract's liquidated damages as impact damages in the OFE contract? Will this practice become legal? Will this be considered a punishment to OFE vendors for untimely performance?

7. Practical considerations

There are some practical considerations that an owner must examine when choosing OFE procurement. The use of OFE is most practical:

1. When an owner desires to have equipment that require long-lead delivery time;
2. When the equipment must meet specific performance benchmarks, without major variation in performance;
3. When an owner must meet a compressed schedule (e.g., EPA regulatory deadline);
4. When there are few vendors that control the supply market (no competition).

OFE procurement may not be feasible nor practical if:

1. The owner is purchasing standard off-the-shelf items;
2. The contractor can acquire the equipment faster;
3. The contractor can get better prices for the equipment;
4. The owner is choosing OFE just for the tax exemption.

There is a debate whether or not an owner will get the „best price" or the „lowest price" in OFE procurement. Opponents believe that prices provided by vendors to ail owner, whether the OFE is negotiated, bid, or quoted, are higher than the prices normally provided to a contractor. This is simply because a contractor is a repeat customer, whereby an owner is likely a one-time purchaser.

OFE procurement has its benefits and risks. Before agreeing to provide any materials or equipment for a construction project, owners must evaluate their risks and benefits to factor into the procurement decisions. Unfortunately, while the initial monetary benefits of using owner-furnished equipment are easily ascertained, the risks are difficult to quantify. Consequently, owners often take on considerable added liability in return for small immediate monetary gains. In deciding the feasibility of using OFE procurement, owners must evaluate the expertise of their purchasing management and staff. This group must have a clear understanding of the engineering, performance, and physical characteristics of the equipment to be purchased, as well as have the capability to develop an effective controls system to track the manufacturing, delivery, storage, and installation of the equipment. If those „must-haves" are not realized, owners are exposed to potential claims. The costs of settling these

claims often exceed and offset the reaped monetary savings of using OFE.

8. References

[l.] American Institute of Architects (’AIA), Washington, DC. Form A171-1990, *Standard Form of Agreement between Owner and Contractor-Stipulated Sum, for Furniture, Furnishings and Equipment (FF E)*, and Form A271-1990, *General Conditions of the Contract for Furniture, Furnishings and Equipment*.

[2.] Associated General Contractor (ACC)-Houston Chapter-*AIA/AGC Recommended Practices. 1997, Chapter 4.03, Construction Project Property Insurance.*

[3.] Engineers Joint Contract Documents Committee (EJCDC), National Society of Professional Engineers (NSPE), Alexandria, VA. Form P-520, *Suggested Form of Agreement Between Buyer & Seller for Procurement Contracts* and Form P-700, *Standard General Conditions for Procurement Contracts.*

[4.] Leiby, Larry R., *Florida Construction Law Manual.* Chapter 13, Third ed. March 1995, Shepard’s/McGraw-Hill, Inc., Colorado Springs, CO.