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In brief...

Design-Build for the Water and Wastewater Industry – Part II

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The growth of the design-build delivery system in the public sector has begun to make its impact on water and wastewater projects. This highly regulated market has come to make greater use of design-build since procurement regulations have changed to reflect modern methods of construction.

However, the implementation of an effective procurement, design, construction and operation process can be challenging. In the first part of this two-part CONSTRUCTION BRIEFING, published in the November 2003 issue, we examined the U.S. water and wastewater market and looked at the privatization process. In this issue, we focus on the specifics of using design-build in constructing water and wastewater projects: planning the endeavor, and trouble spots to look out for.

The Project Delivery Decision

A clear and unambiguous scope of work is essential to successful project delivery, regardless of the delivery method. In a traditional design-bid-build delivery, the scope is usually well defined by the designer in advance of soliciting proposals/bids from contractors. In design-build, however, there is no detailed design at the time proposals are solicited — it may be several months after contracts are negotiated before the design-builder finalizes its design. Therefore, it is crucial that the request for proposal documents carefully define the scope of work to ensure that all respondent design-build teams understand the owner's requirements.

Performance specifications as opposed to prescriptive specifications should be used where possible to minimize varying

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interpretations of the desired scope. Performance standards assure the desired result without stifling innovation, which often yields a higher quality product at a lower price. Fortunately, both water and wastewater projects can be largely defined by performance criteria, thus facilitating detailed scope development without the need for complete engineering documents.

Assuming that, after evaluating the various project delivery methods, design-build has been chosen as the project's preferred delivery method, a payment structure for compensating the design-builder must be developed along with a detailed process for selecting a qualified one. As discussed below, consultants can be a valuable resource to assist in these areas as well as a resource for developing the scope, assisting with drafting the RFP documents, providing advice on financing and permitting issues, and providing general counseling throughout the design-build process.

♦ *Establishing a Payment and Price Structure*

One key decision that must be evaluated is the payment and price structure for compensating the design-builder. The shared goal should be to maximize the facility's quality and performance for the lowest total cost, taking into consideration life cycle costs, including operation and maintenance costs as well as the potential for additional capital expenditures. Water treatment and pollution control projects are traditionally bid lump sum when design-build is utilized, but other payment structures are not uncommon in the design-build arena, including: (1) cost reimbursable arrangements (cost plus); (2) cost plus with a guaranteed maximum price (GMP); and (3) unit price payments.

Oftentimes, contracts are drafted utilizing different payment structures for the different components of the work to better allocate financial risks and to take advantage of tax laws that favor governmental entities. Because of the high cost of the specialty pieces of equipment utilized in water and wastewater facilities and the fixed nature of equipment supply contracts, major equipment items are sometimes purchased through the design-builder on a cost-plus basis with the balance of the facility being procured on a lump-sum basis. In exchange for the design-builder's low risk in purchasing special equipment items, the owner is provided with a lower than normal markup or fee for those items. Other times, major and special equipment items are purchased directly by the owner (usually a governmental entity) outside of the design-builder's contractual umbrella to allow the owner to realize tax savings that would be unavailable to a private owner or design-builder.

The payment structure under a DBO contract is typically more complex than the payment structure in which the design-builder does not have long-term operation or maintenance obligations. Under a DBO contract, once the operation portion of the contract commences, there is normally a fixed monthly fee component and a schedule of other payments and deductions based on a series of factors including plant performance and actual influent/effluent quantities during the pay period. The payment arrangement can be quite complex, but is nec-

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essary considering the variable cost of chemicals, power, and third-party contracts for services such as solid waste disposal. Because water and wastewater facilities are required to meet strict effluent and production standards, liquidated damages and incentive payments based on facility performance are common in DBO contracts.

A certain amount of distrust and anxiety is normal when negotiating the contract price or payment structure. Naturally, the owner desires to minimize its costs and often attempts to limit its maximum exposure while the design-builder desires to minimize its risk and maximize profit. These goals are not necessarily mutually exclusive — commonality and acceptable contract language that addresses both parties' concerns can usually be developed if the parties take the time to understand each others' needs. Much of the tension experienced in developing a price and payment structure results directly from uncertainties in the project scope. Thus, open communication is critical so that both sides reasonably understand the other's assumptions, requirements, and expectations.

A design-builder's tendency is to abstain from making a price commitment until the project scope is sufficiently definite that the cost of the work can be estimated with reasonable certainty. Depending on the project and applicable performance criteria, it may be possible to adequately define scope for estimating purposes with a 10% to 15% design. In other situations, a 30% design may not provide enough information for the design-builder reasonably to price the work without large contingencies. Indeed, a well-defined scope is essential to establishing a fair payment structure.

One common way to handle ambiguous scope is to negotiate an allowance for limited items whereby the design-builder includes a fixed amount in its price that will be adjusted upward or downward at a later date when the scope is clarified or based on actual realized costs. Other ambiguous items can be handled through contingencies, which differ from allowances in that there will be no later price adjustment — the parties accept the risk of the ambiguity in consideration for the agreed-upon contingency amount.

Identifying the optimal point on the timeline for establishing the price or for issuing an RFP is both crucial and difficult. The owner has an interest in expediting the procurement process to achieve an operational facility as soon as possible, but it must balance this need against the risks associated with entering a contract prematurely before the scope is adequately defined. A large number of the more serious design-build construction disputes arise from the establishment of a contract and price before the scope is sufficiently defined, as the owner's and design-builder's expectations are not always aligned.

As discussed above, the determination of a price and payment structure for a project must be made with an eye toward the relative completeness of the scope documents. Where the scope remains highly conceptual or schematic, the design-builder will not be in a position to estimate costs with an acceptable level of precision to serve either party's long-term interest. Moreover, under such circumstances the design-builder will be unable to develop a detailed schedule to allow it to guarantee a firm completion date. As the design is refined and sufficient parameters are established, the design-builder can estimate its quantities, anticipated costs, and activity durations with reasonable certainty. The establishment of a GMP or lump sum price prior to such time is often a mistake. The design-builder is exposed to substantial unanticipated costs and the owner may have to accept many contingencies or risk large dollar claims and potential schedule delays.

In addition to open and honest communication between the parties during the contract negotiation stage, one way to keep a project on schedule when the scope is not completely defined is to execute a design-build contract whereby work proceeds in phases, utilizing dif-

ferent price structures for the different phases. For example, contracts are sometimes drafted whereby the design-builder is authorized to commence detailed design on a cost reimbursable basis with the understanding that the contract will be converted to a lump-sum or GMP contract once design reaches an agreed upon level of completeness. This arrangement allows work to proceed while the parties refine the scope and address potential value engineering options. When this arrangement is used, the design-builder must agree to open its books so that the owner can verify the costs and understand which items the design-builder is including in its estimate. The design-builder is sometimes reluctant to provide its complete bid estimate. The design-builder may express concern over disclosing confidential and/or proprietary pricing information that could place it at a competitive disadvantage on other projects. Notwithstanding the design-builder's reluctance to provide detailed estimate information, once the parties have developed the design to the point where the scope is sufficiently defined and the design-builder furnishes a reasonable breakdown of its estimated costs to the owner, then the parties can negotiate a reasonable lump-sum or GMP price. At this point, the book "closes" on the estimate and the owner will no longer have unlimited access to the design-builder's cost records.

In general, the more absolute the price structure, the less control the owner will have over the design-build process and the less transparency there will be to the design-builder's estimate and costs data. Thus, where a lump-sum price is used, the owner will have very little ability to monitor the design-builder's costs and measure them against the estimate. With a GMP project, because the owner's costs may rise to consume the entire GMP, the owner will have access to basic cost information. Finally, where a cost reimbursable pricing structure with no GMP is used, the design-builder is the virtual fiduciary of the owner, and the owner will likely have relatively unrestricted access to the design-builder's cost information. When such cost reimbursable payment structures are utilized, regardless of whether there is a GMP, trust and management capabilities often become issues, as will be discussed below.

• *Selecting the Design-Builder*

The most widely used process for selecting a design-builder for public infrastructure projects such as water and wastewater facilities is the Request for Proposal process. Some owners use a two-step process whereby the field of prospective qualified design-build teams is first narrowed by a Request for Qualification followed by the RFP. The most important function of the RFQ, however, is to ensure that interested design-build teams have the requisite experience and resources required to complete the project in accordance with the owner's requirements. As part of the RFQ, the owner may request that each proposer submit a statement of qualifications containing specified information such as: (1) a description of projects of similar scope completed in recent years; (2) evidence that the firm holds all prerequisite professional licenses and is qualified to do business in the project's locality; (3) financial disclosures evidencing adequate capital and financial resources to fund construction and guarantee completion; (4) identification of key personnel that would be assigned to the project, including specific relevant experience; (5) a statement regarding past litigation or arbitrations with other clients or subcontractors; and (6) a list of references, identifying a contact person with the owner of similar projects completed by the proposer.

The RFQ process can be combined with the RFP process so that only a single solicitation is necessary. Another alternative sometimes utilized is to issue a preliminary RFP, sometimes referred to as a "straw man" RFP, which is circulated to obtain comments and concerns from perspective design-build teams regarding the project's technical feasibility, constructability, and controversial contract provisions. This mechanism can be a valuable tool, especially for the inexperienced.

A common mistake made by some newcomers to the design-build arena is the attempt to shift too much risk to the design-builder by loading the contract with onerous provisions and exculpatory clauses. The inexperienced sometimes believe that they are protecting the owner's interest, but in reality, they have created an unbiddable project, virtually eliminating meaningful competition, or at best they have unknowingly increased the price that the owner must pay. A preliminary RFP should flush out these types of issues so that a reasonable RFP can be issued that promotes fair competition while properly allocating risks.

Regardless of whether a separate RFQ or preliminary RFP is utilized, a final comprehensive and unambiguous RFP is essential to a successful design-build procurement. The RFP is the document that initially defines the scope and allocates the risks that all bidders must consider when making an offer. Accordingly, this is not an area where the owner should skimp on resources or cut corners. Unfortunately, largely because of public oversight and limited funds, public owners often resist investing adequate up-front funds to obtain the necessary advisors, consultants, and attorneys required to prepare comprehensive and unambiguous RFP documents. Given the amount and complexity of information that must be clearly conveyed to design-build proposers, failure to involve consultants can be a costly mistake.

The contents of the RFP typically include: (1) a description of the planned project and any existing facility; (2) a detailed statement of the work, including specifications, performance requirements and guaranties; (3) schedule requirements; (4) a draft contract, including any general and special conditions that may apply to the project; (5) detailed instructions for completing the proposal, including requirements for the technical and cost portions of the proposal; and (6) a detailed description of the evaluation process and the criteria for evaluating the proposals. If the project is federally funded, federal statutes will likely dictate the form and contents of the RFP. For example, the Federal Acquisition Regulation describes procedures for design-build selections.[1]

In addition to the above, honoraria or stipends should be considered for inclusion in the RFP documents for any major design-build project. Design-build proposals with detailed technical proposals often require significant preliminary engineering and proposal preparation costs. Most contractors and engineering firms cannot routinely absorb costs of this magnitude as a "cost of doing business" without a guarantee of a contract award. Thus, to promote reasonable competition, an owner may have to pay a portion of the upfront design effort. The stipulated honorarium, however, should be limited and only made available to a few firms that have been selected based on an RFQ or other qualification assessment process. The owner will want to balance the amount of any honorarium to assure that it is sufficient to compensate the proposers for their substantial design effort, but it should not be high enough to attract firms only interested in making a profit on the honorarium.

The proposal evaluation is the final component of the selection process to determine which design-build team will be invited to enter negotiations for the award of the contract. This can be a difficult and tedious process, which usually involves the establishment of an evaluation committee. The committee or evaluators will be charged with duties that may include: (1) performing a technical and quality review of each proposal; (2) performing a price/cost review and analysis, including life-cycle and present worth analyses; (3) evaluating the proposers' financial and technical resources; (4) evaluating the capabilities of the proposed key engineers and managers; (5) visiting referenced projects; (6) conducting an analysis of historical safety data and environmental compliance data; (7) conducting an evaluation of the proposed schedule and the proposers' demonstrated ability to meet schedules on past projects;

(8) evaluating and comparing the extent of small and disadvantaged business participation planned; and (9) evaluating general past performance, including contacting the references. Objective criteria should be developed in advance so that the various evaluation factors can be properly weighted to give significance to those factors viewed to be most important to the success of the project. If the project involves federal funds, federal statutes require the RFP to include a statement identifying the factors and subfactors that will be considered in evaluating the proposals.[2] Moreover, as a general rule, owners should evaluate final proposals using only the evaluation criteria set forth in the RFP — bias in the selection decision is improper.[3] Nonetheless, owners generally have broad discretion in weighing the evaluation criteria to determine an appropriate balance for cost and non-cost components as long as the decisions are grounded in reason.[4]

An owner's bargaining power can sometimes be strengthened by selecting two finalists and then simultaneously negotiating with each until one emerges as the clear best overall value. Caution should be exercised, however, to avoid "bid shopping" or inappropriately using one proposer to gain an unfair advantage with another. Such discussions when conducted must be meaningful and must not prejudicially mislead offerors.[5]

• *Trust and the Use of Consultants*

Trust is a significant component of successful design-build procurements. As discussed above, not only is there tension between the parties while establishing a price and payment structure, but many trust issues can arise during contract performance, particularly related to an owner's perception that the design-builder is sacrificing quality to save money. Trust is also a common concern in cost reimbursable contracts — the owner sometimes believes that certain costs being passed on by the design-builder are unreasonable or unnecessary expenses. If this problem persists and becomes disruptive to the relationship, the parties should consider converting the contract to a lump-sum arrangement, thus removing the reasonableness of expenditures as a source for disputes. For these types of reasons, it is important that an owner select a design-builder that it trusts — the firm's reputation and proven track record can be a good measuring stick when there has been no prior relationship. If the parties do not trust each other in the beginning, much time will likely be expended questioning motives and decisions throughout the project and the probability of a successful experience will be diminished.

A key factor involving trust is the perceived loss of independent checks and balances that comes with a traditional design-bid-build procurement. In design-build, the engineer does not act solely for the owner as its representative during construction. In fact, the design will likely not be complete when actual construction commences; thus, there may not be a final set of construction documents against which an independent engineer can verify compliance. In contrast, the design-builder is encouraged to be innovative in meeting the owner's requirements and to fast-track the construction process by starting certain work items before follow-on designs have been completed. This, however, does not mean that the design-builder has complete freedom to build without quality control or other appropriate checks. A design-builder should have its own quality control program and the owner retains the right and the ability to perform independent inspections and tests to ensure compliance with the contract requirements and its expectations.

Oftentimes an owner will compensate for the loss of the independent designer by contracting with a third party to act as its design-build consultant throughout the process. This entity is tasked with performing many of the same functions that the architect/engineer would perform under a traditional design-bid-build project. Among other duties, the design-build consultant may: (1) review design submittals; (2) par-

ticipate in value engineering negotiations; (3) review progress and schedule submittals; (4) perform site inspections; (5) participate in project meetings; and (6) evaluate payment applications.

Owners sometimes use contractual security mechanisms to help address certain types of trust issues. Public owners, for example, are normally required by the Miller Act or Little Miller acts to obtain payment and performance bonds to ensure the completion of the design-builder's contractual obligations, including its obligation to pay suppliers and subcontractors.[6] Also, alternative security mechanisms such as corporate guaranties issued by a design-build entity's parent company and irrevocable letters of credit guarantying performance are becoming more common in the design-build industry. Other trust issues regarding work quality and concerns over the impact that the design-builder's design may have on life cycle costs can be mitigated when th ere is a willingness to consider the design-builder for long-term operation and maintenance functions. The reason is obvious: the design-builder has a direct interest and monetary incentive to design and construct an efficient, high-quality facility to minimize its own future operating and maintenance costs.

In addition to the use of general design-build or construction management consultants to monitor the ongoing design and construction process, consultants can be a valuable resource in other areas of the selection process. In the initial stages, consultants are used to assist with scope definition, feasibility studies, regulatory compliance issues, and permitting issues. They can also be used for providing recommendations and guidance on financing issues. During the selection process, consultants can be of assistance in preparing the RFQ/RFP documents and evaluating the proposals, including technical and cost analyses as well as advice on the ramifications of legal and contractual issues. Some public entities and political bodies find it beneficial to use an independent consultant's recommendation to justify a selection. Reliance on an independent consultant minimizes the appearance of impropriety in the selection process, which can be an important factor when contracts are not awarded solely on the basis of the lowest bid price.

Risk Allocation and Key Contractual Provisions

• *General Principles*

Like many complex projects, each water and wastewater treatment plant presents its own unique goals, objectives, and risks. As such, a contract must be drafted to take into account the distinct nature of each project. Nevertheless, common issues and concerns arise in designing, constructing, and operating water and wastewater treatment plants that influence how the parties delegate responsibilities and allocate risks.

Some of the basic reasons why owners outsource water and wastewater-related services to the private sector are to: (1) save costs; (2) take advantage of technical expertise; (3) achieve efficiencies in construction and operation activities; and (4) ensure the quality of water and wastewater services.[7] Generally, these goals can be achieved by clauses that clearly define the performance criteria and standards that the design-builder must meet, and provisions that describe the consequences associated with meeting or failing to meet these criteria and standards.

At the same time, owners (especially public entities) are concerned about advancing the public's interest in environmental protection and stewardship, providing jobs in their service area and addressing the public's concern for customer service and accountability.[8] Therefore, it is important for the parties' contract at the outset to clearly state the project's environmental objectives, the purpose of the activity being outsourced, and any social interests that the owner seeks to preserve during privatization.

Also, to assure the public that accountability for the quality and price of water and wastewater services is not entirely abdicated by the public owner to the design-builder, the parties' contract should contain provisions that address the owner's right to monitor and inspect key activities, with corresponding enforcement and takeover rights in the event of non-compliance by the design-builder.

The interests of the owner, however, must be balanced against the design-builder's financial objectives. In addition to wanting to provide quality and valued services to its clients, a design-builder needs assurances that the business venture will be profitable. This economic interest is equally applicable to the privatization of water and wastewater treatment services. Especially for long-term DBO and DBOOT water and wastewater treatment contracts, a design-builder often must commit significant time and resources before a profit is generated. Therefore, a contract must be drafted in a way that reasonably allocates the performance risks and responsibilities to ensure that the owner is protected while at the same time providing the design-builder with a fair opportunity to realize a profit. This is generally accomplished by assigning a project risk to the party who is in the better position to manage and thereby control the risk.

It should be noted that a contract with a fair allocation of risks and responsibilities will provide benefits even prior to contract award and signing because it will likely increase the number of design-builders willing to submit proposals. In other words, an owner will have a larger pool of qualified firms to choose from, a greater opportunity for innovative proposals and solutions, and pricing that is more competitive.

With these general concepts in mind, a number of key provisions typically found in design-build/DBO contracts for water and wastewater treatment projects should be addressed and negotiated. While many clauses common to all construction contracts are also found in contracts for water and wastewater treatment projects, certain provisions deserve added attention because of the unique nature of these projects. Some of the most important provisions are identified and discussed below.

• *Key Personnel and Labor Issues*

The quality of services is not only dependent on the design-builder's organizational resources and qualifications, but also the personnel actually assigned to the project. Therefore, contracts often contain "key personnel" clauses which, among other things, define the minimum qualifications required for certain key positions and provide the owner with some degree of control over the replacement of the design-builder's personnel. Especially for long-term DBO contracts, the ability to provide input over designated key personnel: (1) prevents a design-builder from surreptitiously replacing personnel who may have been essential reasons for the selection of the design-builder; and (2) ensures continued management expertise throughout the course of performance.

For water and wastewater treatment contracts involving operation services, key positions may include a project or general manager who is responsible for the plant's overall management and a plant operator who is responsible for the plant's day-to-day operations. These individuals should be required to have the applicable training, licenses and certifications to manage and operate similar water and wastewater systems, and to serve for a minimum period of time to ensure the proper implementation of the design-builder's operations plan.

In seeking to replace key personnel, a provision should be included that requires the design-builder to seek the owner's advance authorization and approval, unless the replacement was due to retirement, disability, termination for cause, or resignation. For example, in a DBO contract involving a new water treatment facility for the City of Seattle, the following clause was included to deal with the replacement of key personnel:

> The Company acknowledges that the identity of the key management and supervisory personnel proposed by the Company and its Subcontractors was a material factor in the selection of the Company to perform this Agreement. Such personnel and their project roles are set forth in Schedule 15 hereto. The Company shall utilize such personnel to direct services unless such personnel are unavailable for good cause shown; however, "good cause" for this purpose shall not include performing services on other projects. In the event of any such unavailability for good cause, the Company shall utilize replacement key management and supervisory personnel of equivalent skill, experience and reputation. Any such personnel change shall be proposed to the City for its review, consideration and determination of compliance with this Subsection within a reasonable advance time period. Any individuals proposed for key positions identified in Schedule 15 that have yet to be identified by the Company shall also be proposed to the City for its review, consideration, and determination of compliance with this Subsection and specific qualification requirements set forth in the Articles and Schedules.

A related issue in selecting the design-builder's key personnel is deciding how to deal with public employees who have or will be displaced by privatization. One of the major concerns of public owners is the impact that privatization has on public sector employees.[9] To alleviate these concerns, the parties may elect to include a clause that offers employment or job placement opportunities to displaced employees. For example, the design-builder may be contractually required to: (1) offer immediate employment to displaced public employees at equal or better wages and benefits, (2) give preferential consideration to displaced public employees for vacant positions, or (3) provide retraining and job search assistance. In a water and wastewater facility project for the City of Stockton, California, the City required the design-builder to negotiate with labor unions concerning the subsequent employment of City employees as a precondition to taking over operation and maintenance services. Specifically, the City of Stockton contract contained the following provision:

> The Company shall have (a) entered into successor collective bargaining agreements with the unions representing the City's utility system employees; or (b) entered into transition agreements with the unions guaranteeing (i) union recognition, (ii) offers of employment to all designated employees providing equal or better wages and benefits than those provided by the City as of the Contract Date, and retirement benefits of a value that equal or exceed those provided by the City as of the Contract Date, and (iii) no layoffs or involuntary termination of designated employees, except discipline for cause; or (c) completed the obligation to bargain in good faith after making proposals to the unions that it would provide wages and benefits equal to or better than those provided by the City as of the Contract Date, and retirement benefits of a value that equal or exceed those provided by the City as of the Contract Date.

In any event, it is important for the parties to address at an early stage the potential labor issues associated with privatization, including reaching any agreements with relevant labor unions. Indeed, restrictions imposed by labor laws, regulations, and collective bargaining agreements must be considered even before the decision to outsource a particular activity is made by the public owner.

♦ *Performance Guarantees and Incentives*

One of the essential features of a water and wastewater treatment contract is the performance guarantees provided by the design-builder. Performance guarantees are the primary method for ensuring that the project's technical requirements are met because they present objective criteria for judging whether a design-builder has complied with its contractual obligations. These guarantees typically relate to effluent quality, treated water quality, odor control, storm water collection, air emissions, and other aspects of the project that are critical to the environmental, public health, and financial objectives of the owner.

After identifying the project's environmental and technical requirements, the contract must set forth clear, objective and measurable performance

criteria and standards that correspond with the condition, age and operational capability of the facility. At a minimum, facilities should be required to meet all applicable federal, state and local standards and regulations, including the Clean Water Act and the NPDES permit standards. If the facility is to be transferred to and owned by the design-builder, the facility may be subject to regulation under the Resource Conservation and Recovery Act (RCRA).

For both parties' benefit, the contract must ensure that a well-defined methodology exists for determining whether the design-builder has achieved the performance guarantees. Among other things, the contract should specify: (1) the testing procedures; (2) any acceptable tolerances in the test results; (3) the required approvals and sign-offs and (4) the consequences in the event a test is not successfully completed.

Typically, a failure to meet a particular guarantee will result in a payment to the owner of a predetermined amount for each failure (known as performance liquidated damages). In addition to paying performance liquidated damages, the design-builder may be required to pay any governmental fines and indemnify the owner for third-party losses resulting from a failure to achieve the performance guarantees. However, in determining the appropriate remedy, an owner should recognize that the risks associated with failing to achieve performance guarantees will likely be reflected in the design-builder's pricing. Therefore, an owner should establish guarantees that reflect the project's overall operational objectives.

Compared to the "stick" approach of performance guarantees, performance incentives act as a "carrot" for the design-builder. As mentioned previously, one of the key objectives of owners is to provide customers in their service area with reliable and responsive water service. Performance incentives offer a convenient way to achieve this goal because they are often better suited for rewarding performance that is more subjective in nature. For example, contracts may offer opportunities for the design-builder periodically to receive additional payments for exceptional performance in responding to customer inquiries, effectively communicating with the owner's personnel, and early identification and resolution of potential problems related to design, construction or operation. However, contracts often state that the decision to award performance incentives is at the owner's sole discretion and expressly provide that the design-builder has no right to receive incentive payments, especially when the criteria are primarily subjective.

• *Testing, Monitoring and Auditing*

The issue of yielding control of a plant's operations to a private contractor is often a concern to public owners. Indeed, many of the barriers against privatization result from a fear of losing control over a vital public service.[10] Therefore, testing, monitoring and auditing rights are key provisions in water and wastewater treatment contracts because they provide a public owner and the citizenry with assurances that there will be proper oversight concerning the design-builder's activities.

Similar to performance guarantees, the contract must establish clearly defined procedures related to testing and sampling. Often, these procedures include the owner's right to conduct random tests and samples, and the requirement that all test and sampling data obtained by the design-builder be reported to the owner on a real time basis. Also, data access and reporting requirements extend to operations, process control, and maintenance data that are necessary to verify compliance with performance guarantees and other contract requirements.

As part of the monitoring process, it is common for an owner to require that the plant and the design-builder's personnel be accessible twenty-four hours a day, 365 days a year for inspections and visits. An owner and its em-

ployees, however, should be prepared to comply with operating and safety rules and procedures established by the design-builder in performing any inspections and visits. A typical "access" clause found in water and wastewater DBO contracts reads as follows:

> The City and its representatives shall have (1) at any time during the Term of this Agreement and with notice to the Company, the right of access to the Facility in order to determine compliance by the Company with the terms of this Agreement, and (2) upon prior reasonable notice to the Company and with the consent of the Company (which consent shall not be unreasonably withheld), the right during normal business hours and on a regular basis to take visitors and group tours through such portions of the Facility as are suitable for visitation. Such access to the Facility shall be made available, and such visitation of the Facility shall be conducted, in a manner which does not unduly interfere with the Company's performance of its obligations hereunder. In connection with any visit to the Facility, the City shall comply, and cause its agents, representatives and contractors to comply, with all reasonable rules and regulations adopted by the Company.

An owner's right to monitor and audit a design-builder's performance, however, must not interfere with a design-builder's right to determine the means and methods of performance. One of the advantages of privatization is that it allows the owner to rely on a design-builder's technical expertise and skill. Over-monitoring and over-inspection will negate the benefits of outsourcing because the scope of responsibility and accountability between the parties becomes blurred. Therefore, a contract's testing, monitoring and auditing provisions must achieve the appropriate balance between an owner's interest in overseeing the design-builder's activities and a design-builder's interest in retaining autonomy during contract performance.

• *Hazardous Materials and Waste*

Undoubtedly, water and wastewater treatment projects raise a myriad of environmental issues and concerns during the planning and development stages. During the construction stage, unique issues are also raised that must be addressed in the parties' contract. Specifically, provisions must be drafted to deal with hazardous materials encountered during site excavation, demolition, and renovation. If known hazardous materials exist at the project site, the parties must agree on who is responsible for handling and disposing of these materials during construction, and who should bear the costs and liability in dealing with these materials.

Even if no known hazardous materials exist, the contract should establish procedures outlining what should be done if the design-builder encounters hazardous materials at the site. For example, several standard form construction and design-build contracts require the contractor to stop work immediately upon encountering hazardous materials and notify the owner.[11] After receiving notification, the owner is usually required to take measures to remediate and render harmless the hazardous materials before the contractor is obligated to resume work. However, if the hazardous materials were introduced to the project site by the contractor, the contractor is held liable for the costs and losses arising from the presence of such materials.

During the plant's operation, instances may arise where the system residuals contain hazardous materials. Therefore, contract provisions should also be included to require the design-builder to report the existence of such materials to the owner and relevant regulatory agencies and bodies. Typically, the design-builder will be responsible for the transport and disposal of the hazardous residuals to an authorized disposal facility in accordance with established procedures. Other environmental issues that arise during operation may be addressed in the form of performance standards and guarantees.

• *Changes*

Because water and wastewater treatment projects are rarely designed, constructed, and operated in the same form and manner as origi-

nally contemplated, changes clauses provide an owner with flexibility to adapt a project to varying needs, conditions and circumstances. For example, changes in environmental laws may require modifications to the plant's design or performance standards. Also, the service needs of the community may change over time, thereby necessitating a change in the manner that the plant is operated.

To provide for these contingencies, a changes clause should allow an owner to make changes to the performance specifications, the method or manner of performance, the time of performance, and the scope of the services provided. Often, a changes clause is drafted so that the right to direct changes does not require the design-builder's prior consent. However, a design-builder should have the ability to seek additional time and compensation as a result of a unilaterally-issued change.

Consideration should be given to establishing a pre-determined method for adjusting the compensation owed to a design-builder if the parties cannot agree to a lump-sum amount. For changes during the design or construction phase, a common approach is to reimburse a design-builder for the actual costs incurred, along with a fixed percentage of these costs to pay for a design-builder's overhead and profit. The actual costs incurred, however, must be supported by adequate cost documentation. For changes during the operation phase, a negotiated adjustment to the service fee may be more appropriate.

If a design-builder claims that a change affects the time of performance, it is prudent for the owner to condition a time extension on a showing that: (1) the work affected was on the project's critical path at the time of the change; (2) the change delayed the overall project schedule; and (3) the design-builder complied with contractual notice and claims submission requirements. If an owner directs a design-builder to maintain the original schedule even though a time extension is justified, the design-builder should be compensated for the costs of accelerating its work.

• *Force Majeure*

Even if an owner does not affirmatively direct a change in the work, there may be instances when a design-builder's performance may nevertheless be adversely affected for reasons which are not its fault and are beyond its reasonable control. Therefore, most contracts contain "force majeure" clauses, which generally provide a design-builder with some form of relief from performing under its original contract obligations. The task for the parties during contract drafting is to reach agreement as to what circumstances qualify as "force majeure" events and what relief should be afforded should these events occur.

Typically, force majeure clauses cover events that are beyond the reasonable control, and not the fault, of the party claiming force majeure. These events may include naturally occurring disasters, abnormal weather conditions, terrorism, and sabotage. Excluded from force majeure clauses are fluctuations in general economic conditions (such as interest rates, inflation, labor and commodity costs), changes in the financial condition of the parties, and weather conditions normal to the project's location.

There are some issues peculiar to water and wastewater treatment projects that may influence how the parties define "force majeure" events. For example, various types of permits and approvals are required from environmental and regulatory agencies and boards. To avoid disputes during performance, the contract should specify which regulatory delays qualify as force majeure events and which do not. In a DBO contract involving a wastewater collection, treatment, and disposal system for the City of Taunton, Massachusetts, the parties included the following "force majeure" definition:

> "Force Majeure" means any act, event or condition or any combination thereof that is beyond the reasonable control of the Party relying on the same and that (i) materially

> interferes with its performance of its obligations or (ii) increases its costs of performance. Force Majeure includes the following categories of events as well as such other events as are unforeseen and not otherwise anticipated, specifically or by reasonable implication, by the provisions of this Service Contract: (i) naturally occurring events (except reasonably anticipated weather conditions normal for the Northeast United States) such as landslides, lightning, earthquakes, underground movement, hurricanes, tornadoes or floods; (ii) civil disturbances such as acts of a declared public enemy, wars, blockades or riots; (iii) labor disputes other than labor disputes involving only [the design-builder] or its contractors or sub-contractors; (iv) loss or inability to obtain utility services (including telephone, telecommunications, water, sewerage, fossil fuels and electric power) necessary for the operation of the Contract System or the construction of the ICI; and (v) receipt of Improper Influent. "Force Majeure" shall not include: (a) change in Plant Sludge disposal options or costs that are not attributable to a Change in Law; (b) Change in Law, City Fault, Concealed or Unknown Conditions, [design-builder] Breach, long term increases in flows or loadings which exceed the Design Capacity/Capabilities–Improved Facilities or Existing Design Capacity/Capabilities, as applicable, all of which are elsewhere addressed in this Service Contract; or (c) general changes in national, regional or local economic circumstances that are not specific to the Contract Systems (for example, changes in commodity prices, employment markets or demographic data).

Generally, the remedy associated with a force majeure event is to allow a time extension and/or temporary suspension of performance. Especially in the context of water and wastewater treatment operations and maintenance, allowing a design-builder to delay or suspend performance is generally not a desired option. Therefore, it is often preferable for an owner to pay the additional costs associated with a force majeure event for continued performance by the design-builder.

• *Indemnification*

Indemnification provisions are widely used risk allocation devices in construction contracts. Generally, contractual indemnification involves one party agreeing to hold the other party harmless from damages and losses arising from a specific occurrence. In the context of water and wastewater treatment contracts, indemnification clauses are often used to distribute responsibility for losses associated with hazardous waste, regulatory violations, patent infringement, health and safety problems, physical injury, and property damage.

During contract negotiations, the scope of a party's indemnification obligation is the key issue to address because an indemnification clause can take various forms. A "broad form" indemnification clause requires one party (the indemnitor) to indemnify the other party (the indemnitee) for damages and losses arising out of an occurrence, regardless of who was at fault. An "intermediate form" indemnification clause requires the indemnitor to indemnify the indemnitee for damages and losses arising out of an occurrence, unless the indemnitor was solely at fault. A "narrow form" indemnification clause requires the indemnitor to indemnify the indemnitee for damages and losses arising out of an occurrence, but only to the extent that the damages or losses were the indemnitee's fault. In other words, each party is responsible for the damages and losses caused by their own fault.

Several considerations influence how indemnification clauses are drafted. As an initial matter, certain types of indemnification agreements may be limited or unenforceable in some states as a result of "anti-indemnification" laws or other legal restrictions. For example, some states void indemnification clauses in construction contracts if one party seeks indemnification for losses caused solely from its own negligence.[12] Other states limit a party's indemnification obligations to a certain amount or type of damages.[13] Therefore, the parties should be cognizant from the very beginning about whether there are legal constraints on their ability to allocate liability through indemnification provisions.

Even if there are no legal limitations on the scope of indemnification clauses, parties should consider whether the losses associated with a risk are insurable. Indeed, the availability of insurance coverage often determines how risks are allocated between the owner and design-builder. If a design-builder's scope of work includes hazardous waste remediation and the owner requires an indemnity associated with these activities, the design-builder should look into the availability of insurance policies to cover this risk, such as a contractor's pollution liability policy. Again, the success of a project may be influenced by whether the risks are properly assigned to the party in the better position to manage and control such risks.

• *Limitations of Liability*

The potential liability for a design-builder in designing, constructing, and operating a water and wastewater treatment plant can be significant. Among other things, the design-builder faces the risk of incurring liquidated damages for failing to meet its performance guarantees, liability for environmental fines, and losses associated with its indemnity obligations. Therefore, many design-builders seek to include some form of limitation on its contractual liability to preserve the financial benefits of entering into the contract.

One type of limitation of liability clause places a dollar or percentage limitation on the design-builder's overall contractual liability, using the contract price as the reference point. A similar approach is to place a cap on a design-builder's liability for only certain types of damages. For example, a contract may place a ceiling on the amount of liquidated damages that can be assessed against a design-builder for failing to meet the performance guarantees, but not on the design-builder's liability for third-party claims that may arise for failing to meet these same guarantees.

Also, a design-builder may seek a waiver from the owner related to liability for consequential damages. Generally, consequential damages are defined as damages, losses or injuries that do not flow directly and immediately from the act of a party, but only from some of the consequences or results of such act.[14] These may include damages for loss of use and lost profits if a facility is shut down.[15] However, a waiver of consequential damages clause must be drafted carefully because the common law definition of consequential damages often varies from jurisdiction to jurisdiction. Also, any liquidated damages that are recoverable against a design-builder should be expressly excluded from the scope of a consequential damages waiver.

From a conceptual standpoint, limitations of liability clauses are typically viewed with disfavor by owners. Nevertheless, the advantages and disadvantages of utilizing these clauses should be considered in light of the magnitude of the uninsurable risks assumed by a design-builder, the ability to manage and control the risks, the likelihood of the risks materializing, budgetary constraints and the contract's profitability. Indeed, because the risks assumed by a design-builder are often factored into a contract's price, an owner may be able to obtain a better price and other concessions if a limitation of liability clause is included in a contract.

• *Performance Security*

Because many water and wastewater treatment projects require a significant amount of a design-builder's resources, an owner often demands some form of performance security in the event that the design-builder is unable to meet its contractual obligations. The most common types of performance security in construction projects are performance and payment bonds.[16]

Under a performance bond, a third party known as a surety guarantees that the design-builder will timely and adequately perform the obligations under its contract with the

owner. However, a surety's liability under a performance bond is typically limited to a fixed amount. Under a payment bond, the surety ensures that subcontractors who have valid claims against the design-builder will receive payment for labor and materials furnished to the project. In fact, states have enacted laws known as "Little Miller Acts" mandating that payment bonds be furnished for certain types of construction projects involving public works.[17]

Bonds, however, may be problematic. In addition to increasing a project's costs, a large water and wastewater treatment project can absorb much of a design-builder's bonding capacity. Also, a bond guaranteeing the performance of a design-builder's operations and maintenance obligations may be difficult to obtain, especially for long-term contracts. As a result, some owners prefer to waive the requirement for performance bonds in favor of a guaranty from an entity related to the design-builder, which is usually the design-builder's parent company. Similar to a surety-issued bond, a "parent" guaranty provides assurance that the design-builder will honor its performance obligations under the contract. Unlike a surety bond, a parent guaranty usually has no cap on liability (other than those already contained in the parties' contract) and the costs, if any, of furnishing the guaranty are minimal. Essentially, a parent guaranty provides a "deeper" pocket for the owner to rely upon should the design-builder fail to honor its contractual obligations.

• *Suspension and Termination*

Because water and wastewater treatment services are vital to the public's welfare, the right to suspend and terminate a design-builder's performance is of particular importance if problems arise. For example, public owners often insist that they be given a right immediately to suspend and take over a design-builder's operations when there exist threats or emergencies related to the public's health, safety or welfare, regardless of whether the design-builder was at fault. A typical clause for water and wastewater treatment contracts would read as follows:

> In the event that the City determines at any time that a public health, safety or welfare emergency exists or is threatened, the City shall have the right to assume immediate and total control of the Facility, including all construction, operation and maintenance services. Such a determination may be made (1) based on any fact or circumstances known or suspected by the City, which threaten or may threaten public health, safety or welfare and (2) irrespective of whether the fact or circumstance giving rise to the public health, safety or welfare concern is caused by the design-builder or force majeure, and regardless of whether the cause thereof is known at the time of the emergency determination.

Under these circumstances, it is important to define what the design-builder's obligations are in assisting the owner during these emergencies and when a design-builder is allowed to resume control of the plant's operations. Usually, if the design-builder did not cause the emergency, the design-builder is entitled to reimbursement of any added costs incurred during the emergency, and the design-builder is not held responsible for any losses or claims that may arise while the owner was operating the facility.

Rather than suspend a design-builder's performance, an owner may wish to terminate a design-builder's services altogether. The most common reason for terminating a design-builder is the design-builder's failure to perform its contractual obligations. However, because termination is a drastic remedy, the right to terminate a design-builder for cause is typically reserved for material breaches of contract, such as repeated failures to timely perform, failures to furnish sufficient or qualified personnel, failures to pay moneys owed to subcontractors, or other material failures. Also, a termination for cause clause often allows a

design-builder an opportunity to cure its default within a certain time period, except for contractor defaults that pose imminent threats to health and safety.

Even if a design-builder is not in default, owners often insist on the right to terminate a contract for their own convenience and without cause. For example, an owner may want to terminate a contract because of changing needs of the service area, or for financial reasons. If a contract is terminated without cause, a design-builder should be paid all amounts due and owing at the time of termination, and costs incurred related to demobilization. Alternatively, an owner may agree to pay a fixed termination fee to the design-builder.

Regardless of whether a contract is terminated for cause or without cause, the contract should require the design-builder to deliver all project documents and files (in electronic and hard copy format), turn over any spare parts or equipment, and follow any other directives of the owner necessary for winding down the contract. If the owner or another contractor is going to take over the operations, the design-builder should be required to provide assistance during this transition period. For example, in the contract involving the City of Seattle's treatment facility, the parties included the following language:

> Notwithstanding the foregoing provisions of this Section to the contrary, if the City or the Company shall terminate the Agreement prior to the end of the Operations period, the Company shall, for up to ninety (90) days after the actual termination date (as opposed to the notice of termination date) make fully available its managers and employees performing the Operations Services to continue to perform the Operation Services, or such lesser amount of Operations Services as the City shall determine, in order to provide a smooth and orderly transition of the management, operations and maintenance of the Treatment Facility to the City or its successor contract operator(s); provided, however, in no event shall such provision of service by the Company extend beyond the expiration date of this Agreement. The Company shall fully cooperate with the City to effectuate such a transition, including the provision of training and "know how" in the procedures and techniques employed by the Company in meeting its obligations under the Operation and Maintenance Manual.

To ensure the design-builder's cooperation during the transition period, a separate contract provision should be included specifying the compensation to be paid to the design-builder for its transition services.

Conclusion

Design-build as a project delivery system has great potential for the water and wastewater industry and is becoming increasingly popular among governmental owners. In general, both public owners and design-build entities have reported that they favor design-build procurement for engineering intensive projects such as water and wastewater treatment facilities because the work scope can be largely defined by performance requirements and because design-build generally allows for shorter overall schedules, lower total costs, and fewer change orders and claims. The favorable experiences reported by design-build participants coincide well with the recent changes in procurement laws that have created new opportunities for the use of design-build in the public sector that did not exist just a few years ago. Moreover, the issuance of Executive Order 12803, combined with recent changes to the tax code, have generated a renewed interest in developing water and wastewater projects through privatization of services that have traditionally been performed by the municipalities. Indeed, design-build has emerged as an important delivery system for future water and wastewater projects. So long as the design-build participants are careful to take a fair and balanced approach in the development of the RFP and follow on contract documents, design-build should continue to yield great successes for water and wastewater projects.

Guidelines

These *Guidelines* are intended to provide practical advice on utilizing the design-build delivery system in procuring water- and wastewater-related projects. They are not, however, a substitute for professional representation in any specific situation.

1. Owners should avoid simply completing a design for an RFP to a predetermined level (i.e., 15% or 25%), as the level of required design necessary to adequately define the scope will vary from project to project.

2. Owners should use performance criteria as opposed to prescriptive criteria where possible, and balance the level of design in the RFP to encourage innovation by the design-builder.

3. Unless the owner has a significant history with design-build and an experienced in-house staff, the use of design-build consultants and attorneys is recommended to supplement the owner's knowledge and expertise.

4. Carefully evaluate the payment and price structure to match the structure to the risks in order to obtain the best financial value.

5. Develop a fair evaluation system for selecting the design-builder that discloses the evaluation criteria to the proposers up-front. The system should consider both price and technical expertise and must consider life cycle costs in addition to the initial capital investment.

6. The parties should identify any unique objectives, requirements, and risks associated with a water and wastewater project and tailor their contract to address these issues. Project risks should be assigned to the party who is in a better position to manage and control the risks.

7. Performance guarantees should reflect the project's overall operational objectives with clear and measurable criteria and standards. At a minimum, the contract should specify the testing procedures to be implemented, any acceptable tolerances in the test results, who is required to approve and sign off on the test results, and the design-builder's liability for failure to successfully meet a performance guarantee.

8. Because a public owner is ultimately the one held accountable for the quality and price of water and wastewater services, contracts must contain provisions that allow the owner to monitor and inspect key activities. At the same time, the contract must give the design-builder the flexibility and autonomy to exercise its own judgment and employ its own means and methods to address the project's needs.

9. Indemnity provisions must comply with any applicable anti-indemnification laws and other legal restrictions. The parties should also consider whether a loss for which one party seeks indemnity can be covered through insurance.

10. For design-builders, limitations of liability clauses provide assurance that a design-builder's opportunity to earn a profit is not negated by the risks assumed. If the parties agree to include a limitation of liability clause, the scope and breadth of the clause should take into account the magnitude of the uninsurable risks assumed by the parties, the likelihood of the risks materializing, and the contract's profitability.

11. Termination provisions should define a design-builder's "winding down" obligations. These obligations should include the delivery of all project documents and spare parts to the owner. If the owner or another contractor is going to take over the operations, the design-builder also should be required to provide assistance during the transition period.

References

1. FAR 36.300.
2. 10 U.S.C. § 2305(a)(2) and 41 U.S.C. § 253a(b); see also FAR 15.304.
3. See Latecoere Int'l v. United States, 19 F.3d 1342 (11th Cir. 1994).
4. See MCR Fed. Inc., B-280969, 99-1 CPD ¶ 8; see also Windnall v. B3H Corp., 75 F.3d 1577 (Fed. Cir. 1996).
5. See Metro Machine Corp., B-281872.2, 99-1 CPD ¶ 101; see also SRS Tech., B-254425.2, 94-2 CPD ¶ 125.
6. 40 U.S.C. § 270a – 270f.
7. United States Environmental Protection Agency, Guidance on the Privatization of Federally Funded Wastewater Treatment Works (2000) at 5.
8. See Comm. on Privatization, supra N. 12 at 21.
9. See EPA, supra N. 7 at 18.
10. Committee on Privatization of Water Services in the United States et al., Privatization of Water Services in the United States: An Assessment of Issues and Expenences at 25–26.
11. See DBIA Document No. 535, Standard Form of General Conditions of Contract Between Owner and Design-Builder, Article 4 (1998); AIA A201-1997, General Conditions of the Contract for Construction, ¶ 10.3.
12. E.g., Va. Code § 11-4.1.
13. E.g., Fla. Stat. § 725.06.
14. Black's Law Dictionary (6th ed. 1990) (citing Richmond Redevelopment & Hous. Auth. v. Laburnum Const. Corp., 195 Va. 827, 80 S.E.2d 574, 590 (1954)).
15. See DBIA Document No. 535, Standard Form of General Conditions of Contract Between Owner and Design-Builder, Article 10.5 (1998); AIA A201-1997, General Conditions of the Contract for Construction, Subparagraph 4.3.10.
16. See generally Daniel J. Donohue and George W. Thomas, "Surety Bond Basics," Construction Briefings No. 96-3 (Feb. 1996) and David C. Mancini and Charles W. Durant, "Performance Bonds: Expectation vs. Reality," Construction Briefings No. 99-8 (July 1999).
17. See generally Judah Lifschitz and Alexander P. Haig, Jr., "Little Miller Acts," Construction Briefings No. 84-8 (Aug. 1984).