VENDOR PROCUREMENT: 
ESSEX COUNTY ENERGY RECOVERY FACILITY

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ABSTRACT

This paper describes the resource recovery vendor procurement process utilized for the Essex County, New Jersey Energy Recovery Facility. The three step process included a Request for Qualifications, a Request for Proposals and contract negotiations. The process was based on a full service concept with the system vendor responsible for the design, construction and operation of the facility.

PROJECT BACKGROUND

The New Jersey Solid Waste Management Act, as amended by Chapter 326 of the Laws of 1975, established 22 Solid Waste Management Districts (the 21 counties and the Hackensack Meadowlands Development Commission). The districts were mandated to develop Solid Waste Management Plans to provide for the long term disposal of solid waste in an environmentally sound manner. In July, 1979, the Essex County Board of Chosen Freeholders unanimously adopted the Essex County Solid Waste Management Plan which was subsequently revised in 1980 and 1981 and approved by the New Jersey Department of Environmental Protection in 1981.

For many years, all Essex County solid waste has been sent to landfills outside Essex County for disposal. The Solid Waste Management Plan provides for the implementation of a resource recovery project in Essex County in Newark to dispose of the County's nonhazardous, processible solid waste through combustion and the subsequent disposal of the inert combustion residue in a landfill. In April, 1981, a Memorandum of Understanding was signed by Essex County and the Port Authority of New York and New Jersey which established the means by which the resource recovery project would be implemented, including the project responsibilities of the two parties. One of the project responsibilities assigned to the Port Authority was to carry out the procurement of a resource recovery system vendor according to a plan to be jointly developed by the County and the Port Authority.

In May, 1983, an amended consent judgment was entered into by Essex County, the Hackensack Meadowlands Development Commission and the New Jersey Department of Environmental Protection. The consent judgment requires Essex County to cease dumping its waste in the Meadowlands District after mid-1987 in exchange for certain economic benefits.

VENDOR PROCUREMENT PROCEDURE

A resource recovery facility functions very similarly to a coal fired power generating plant with the primary differences in the fuel characteristics because solid waste is a heterogeneous fuel which varies by season, day and even truck load. The nonuniformity of solid waste creates considerable technical difficulties and contractual complexities. In the 1970's, many companies tried to develop new resource recovery systems which failed technically due to the heterogeneity of solid waste. These project failures resulted in a Port Authority-Essex County vendor procurement plan based on the following principles:

(1) The procurement would include the three major steps of a Request-for-Qualifications (RFQ), a Request-for-Proposals (RFP) followed by contract negotiations.
[2] The procurement would be based on a full service concept in which the system vendor would be responsible for the design, construction and operation of the facility.

(3) The procurement would be based on a competitive proposal process and not strictly on a low bid basis.

The RFQ was deemed desirable as an initial step in order to eliminate, at an early stage of the procurement process, firms which might offer unproven technology or be unable to provide the financial capability to stand behind the required performance guarantees. A full service concept is being used for the Essex County Energy Recovery Facility because of the proprietary nature of some of the facility's design and equipment and because of the desire to assign the responsibility for the design, construction and operation of the facility to a single vendor. It was determined to be very desirable to request detailed proposals on a competitive basis based on the extensive functional requirements for the facility prepared by the Port Authority but to leave the final engineering design as the responsibility of the full service vendor. Accordingly, detailed specifications based upon extensive engineering evaluation of the state-of-the-art and plants in operation were prepared for the RFP. Because the final design of the plant and the final contractual relationship between the parties could not be part of the RFP, it was recognized that the responses to the RFP would be preliminary, not final, and would require further clarification and modification through a process of contract negotiations with the selected vendor finalist. A competitive bid process was inappropriate for the project although it was a desire of both the County and the Port Authority to maintain the competitive nature of the procurement process for as long as possible.

REQUEST-FOR-QUALIFICATIONS

In the summer of 1981, an advertisement was placed in various local media (e.g. the Newark Star Ledger) and national trade magazines (e.g. Engineering News Record) which expressed a desire by the Port Authority to develop a list of qualified firms with experience in resource recovery facility design, construction and operation and also able to take an equity position in such facilities. The RFQ listed certain goals of the project and included a seven page questionnaire requesting general information about the firm; specific information on the technical capability of the firm and its experience in the design, construction and operation of resource recovery systems; the financial capability of the firm; and any previous involvement in the financing of other resource recovery projects. Special emphasis was placed on the technical and economic feasibility of the resource recovery system and the firm's experience with that system.

Twenty three firms submitted qualifications to the Port Authority. An evaluation team including representatives of the Port Authority's Economic Development, Finance, Law and Engineering Departments and Essex County reviewed the qualifications and selected four firms to subsequently receive a Request-for-Proposals for the Essex County Energy Recovery Facility. The four firms were Browning-Ferris Industries of Houston, Texas, UOP, Inc. of Des Plaines, Illinois, Wheelabrator Frye of Hampton, New Hampshire, and Widmer and Ernst of New York City. Each of the four firms offered a proven mass burning resource recovery system by license from a European firm (Deutsche Babcock Anlagen of West Germany, Josef Martin of West Germany, Von Roll of Switzerland and Widmer and Ernst of Switzerland, respectively). Each of the mass burning systems offered has been in use in over fifteen plants worldwide wide, on a large scale (more than 1000 TPD), have been in operation for at least five years and have experience with energy recovery from the combustion of solid waste. Each of the selected firms was found to have the financial capability to stand behind any necessary performance guarantees and the management capability to design, construct and operate the Facility. Although mass burning technology was not a prerequisite of the RFQ, none of the firms which offered alternate technologies was selected to receive the RFP. This decision on technology was based on extensive facility inspections in this country, Canada, Europe and Japan by Port Authority and County staff since 1976, various engineering analyses by in house staff and consultants (including William F. Cosulich & Associates, Camp, Dresser & McKee and Kupper Consultants) and upon the technical submissions of the firms in response to the RFQ. In addition, firms which offered mass burning systems, but did not have extensive previous experience with the system or with energy recovery from large scale resource recovery plants, were not selected to receive the RFP. Several of the firms which were not selected requested interviews to review the selection procedures. No formal challenges were made because the procedures had been clearly explained in advance and were followed throughout the process. As publicity about the project increased, various firms attempted to enter the selection process although they had not responded to the advertisements concerning the RFQ. Such attempts were rejected and upheld because the initial selection process had been clearly delineated.

REQUEST-FOR-PROPOSALS

In April, 1982, Essex County, the City of Newark and
of solid waste consisting of three 750 TPD rated boiler burning facility. The RFP included an introductory description of the project, four sections describing the Technical/Environmental, Management, Contractual and Financial/Economic aspects of the project, a section on the Proposal requirements and a section describing in general how the proposals would be evaluated.

The Technical section was approximate 200 pages long and listed in substantial detail the functional and equipment requirements of the proposed facility. The reason for the extensive detail was to ensure that a high quality facility design would be proposed and to permit a comparative evaluation of the proposals on an equal basis. Although each of the firms offered mass burning technology and had been selected through the RFQ process, it was felt that each firm had various "models" to offer and we wanted the high quality version. It does not appear as though high performance standards achieve the same quality because performance guarantees have proven very difficult to collect on in other projects. The proposed facility size was required to be 2250 TPD rated capacity of solid waste consisting of three 750 TPD rated boiler units. The expected daily throughput (design capacity) is expected to be 83 percent of the rated capacity, or 1870 TPD. Because of the uncertainty concerning Essex County's current and projected solid waste generation, additional space and certain equipment provisions for a possible fourth unit in the future was required as part of the response to the RFP. The Technical section also specified the environmental performance required of the facility. The Management section listed the project requirements during the Construction Contract (design, construction, start-up and acceptance) and the Operation Contract in terms of scope of work, project controls and personnel. Because the project is to be implemented on a full service basis, the Contractual section of the RFP listed contractual principles during construction and operation for comment by the Proposer. The section on Financial Considerations provides for possible financing under both public and private ownership options and identified certain economic considerations during construction and operation. The private ownership option involved an equity contribution that permits a reduction of approximately twenty five to thirty percent in the amount of debt service paid by the project. The return on private equity is realized through Federal tax benefits (e.g. investment tax credit and accelerated depreciation) to the equity contributor and not through project revenues. The economic considerations included a guaranteed lump sum construction price as of the date of the proposal which would be adjusted during the proposal evaluation and negotiation phase according to a mutually agreed upon adjustment factor and become a fixed construction price upon the execution of the construction contract. The term of the construction contract is expected to be three years. The economic requirements during the twenty year term of the Operation Contract include a guaranteed Base Annual Service Fee, to be annually adjusted according to a mutually agreed upon adjustment factor; certain performance guarantees regarding solid waste throughput and energy recovery; and an energy revenue sharing factor.

Subsequent to the issuance of the RFP, Wheelabrator Frye and the Signal Companies (the parent of UOP, Inc.) announced their intention to merge. When asked about the impact of the merger on the Essex County project, both firms indicated they would independently prepare two separate proposals offering the Von Roll and Martin technologies for the Essex County project. In November, the Widmer & Ernst license was acquired by the Blount, Inc. firm of Montgomery, Alabama. In mid-January, 1983, shortly before the proposals were due, the Signal Companies decided to keep one European license (Von Roll) and to surrender the other European license (Martin) for future resource recovery projects but to continue to offer the Martin system to six ongoing projects, including Essex County. On January 31, 1983, proposals were received from three proposers (Blount did not submit a proposal):

1. BFI (Deutsche Babcock technology)
2. UOP/Signal (Martin technology)
3. Wheelabrator Frye/Signal (Von Roll technology)

The first three weeks of the proposal evaluation process consisted of an intensive review and familiarization with the contents of the three proposals which were each approximately 500 pages long. This initial review included representatives of the Port Authority's Economic Development, Finance, Law, Engineering and Management Services Departments and Essex County and their consultants including William F. Cosulich & Associates, Kuppers Consultants and Kidder Peabody. Upon comple-
tion of the familiarization process, it was determined that certain aspects of each Proposal required some clarification and that it might be possible to obtain cost reductions through a competitive Request-for-Proposals (RFP) process while all three Proposers were still under consideration. A Request-for-Proposals was issued to the three Proposers on April 14, 1983, with revisions due back to the Port Authority on May 16. The RFP included proposal clarifications and certain proposal revisions relating to the elimination of some of the equipment specifications for a possible fourth unit.

While the Proposers were preparing the Revisions, the evaluation team discussed possible negotiating strategies. Two possible strategies were favored. One would be to simply identify the best overall Proposal and to enter into negotiations for the Construction and Operation Contracts with it for a period of time (e.g., one year). At the end of the initial negotiating period, the likelihood of reaching agreement would be assessed and either the negotiations would continue, or stopped and negotiations would begin with the second ranked Proposer. The second selection/negotiation strategy was to select two of the three Proposers and begin simultaneous negotiations for a limited period of time with each Proposer for the design, construction and operation of the energy recovery facility before selecting one Proposer for final negotiations.

A Project Development Group (PDG) was formed in March, 1983, which consists of two representatives each from Essex County, the City of Newark, non-Newark municipalities and the Port Authority. The County's Board of Freeholders retained the firm of Kupper Consultants to assist it in its determinations concerning the project. In April, the Project Development Group was briefed as to the Proposals and vendor selection options were discussed. Initially, members believed dual negotiations with two Proposers would maintain the competitive process.

On May 16, the Revisions were received from each of the Proposers and the evaluation process continued. On the basis of that evaluation process a majority of members of the PDG believed negotiations with a single party were preferable. It was decided to begin negotiations with Browning-Ferris Industries, but to maintain the ability to begin negotiations with another firm if desirable or, in addition to, BFI. BFI's proposal was judged to be the best overall Proposal by all members of the evaluation team and all but one member believed that negotiations with one party were desirable.

Shortly after BFI was selected for negotiations, it announced its intention to form a joint venture with Air Products and Chemicals of Allentown, Pennsylvania, for this and future resource recovery projects. This announcement caused considerable concern about the role of Deutsche Babcock and discussions were held with BFI to ensure DB's continued active participation in the project.

Negotiations began in August and are expected to reach a successful conclusion in the Summer of 1984. It is clear from the progress of the negotiations to date that the decision to rely on technical specifications rather than on performance guarantees was wise. It has been very difficult to reach agreement on language concerning guarantees on solid waste throughput and energy recovery since both items are dependent on the Btu content on the waste stream, a parameter that is difficult to measure over a year. It is much easier to feel comfortable that a high quality, well designed facility will be built because it was initially specified in the RFP. Another area of complexity in the negotiations results from the three party economics. It is difficult for BFI and the Port Authority to reach agreement on economics and particularly risk allocation until the Port Authority and the County reach agreement on economics and risk allocation. Because the Port Authority was created by the two states and is not controlled by the County, it is difficult for the County and the Port Authority to reach agreement until more is known about the BFI-Port Authority agreement. Although both the County and the Port Authority participate in all negotiating sessions with BFI, it is desirable that only one party have the ultimate responsibility to negotiate the vendor contracts.

CONCLUSIONS

Some of the lessons that have been learned to date from the vendor procurement process for the Essex County Recovery Project are summarized below:

1) An RFQ is a desirable step because it prevents unrealistic firms from submitting Proposals and clouding the procurement process. It also reduces the amount of work to perform in the proposal evaluation process if only three or four firms are given an RFP.

2) A defendable procurement procedure must be established and followed during both the RFQ and RFP process because the procedure is likely to be challenged by losing firms. Since the ultimate selection is really a value judgment, specify the information required and use only that information in your selection procedure.

3) An identified site is virtually mandatory prior to the issuance of an RFP, but not the RFQ, because firms spend a large sum of money in preparing proposals and they need the assurance of a "real" project before committing to the expenditure.

4) The RFP should be very specific and very detailed even if a full service process is used and even if an RFQ...
has been used as a first step. It ensures that proposers will be proposing on the same basis; it pins down the negotiating position of the selected Proposer and it helps the customer clarify its own thinking about the project.

(5) A full service concept is very desirable because proprietary equipment and designs are involved and because a single point of responsibility for the facility’s performance is necessary. Finally, the vendor is likely to construct a better “black box” if it has to remain on the site for 20 years to operate what it has constructed.

(6) Don’t negotiate with two firms simultaneously. It may sound like a good idea but it isn’t because it prevents full concentration on either.

(7) A single party should be made responsible for carrying out the vendor procurement process in consultation with other parties. Responsibility for major aspects of a large project cannot be shared.

Key Words: Essex County, New Jersey • Full Service • Produce • Request for Proposal