UNITED STATES
CIVILIAN BOARD OF CONTRACT APPEALS

DENIED: December 19, 2014

CBCA 3438

MATRIX BUSINESS SOLUTIONS, INC.,

Appellant,

v.

DEPARTMENT OF HOMELAND SECURITY,

Respondent.

Charles W. Mahan and Richard L. Carr, Jr., of Dunlevey, Mahan & Furry, Dayton, OH, counsel for Appellant.

William H. Butterfield and Tamekia W. Reese, Office of Procurement Law, United States Coast Guard, Department of Homeland Security, Washington, DC, counsel for Respondent.

Before Board Judges **HYATT** and **POLLACK**.

HYATT, Board Judge.

Matrix Business Solutions, Inc. (appellant or Matrix) appeals the denial of its claim for an equitable adjustment under a contract awarded by the United States Coast Guard (respondent, USCG, or Coast Guard) for the development and upgrade of aircraft testing engines in support of its air rescue operations. In particular, Matrix seeks to recover costs associated with the installation of a flow meter to diagnose water system conditions that were affecting the dynamometer it provided under the contract, and for the replacement of the screen filter around the dynamometer. The amount in dispute is less than $100,000. Matrix elected the accelerated procedure, 41 U.S.C. § 7106(a) (2012), pursuant to Board Rule 53 (48

CFR 6101.53 (2012)), which provides that a decision may be issued by a panel of two judges. The parties have submitted the case for decision on the written record pursuant to Board Rule 19. The record considered by the Board in issuing this decision consists of the pleadings, the appeal file exhibits, and the parties' submissions. For the reasons discussed below, we deny the appeal.

Findings of Fact

On October 28, 2009, the Coast Guard issued a solicitation setting forth a statement of objectives for the upgrade of its ATF3, T-700, and CT7 aircraft engine testing cells at the USCG Aviation Logistics Center in Elizabeth City, North Carolina. The Coast Guard announced that a firm fixed-price contract would be awarded. The solicitation called for offerors to develop a statement of work proposing a solution for upgrading the aforesaid testing cells, and encouraged the prospective contractor to provide an "innovative approach/solution, on its best terms." Offerors were required to provide specification/data sheets for all proposed equipment, and the solicitation advised that the data sheets may be included in the contract.

Potential offerors were afforded access to the site on November 10, 2009, for the purpose of evaluating the conditions at the facility so that they could propose a technical solution that would work in the existing environment. Matrix and its subcontractor took advantage of the opportunity to visit the facility.

All questions about the solicitation were to be submitted in writing; the answers to those questions were posted on the Federal Business Opportunity (FedBizOps) website. None of the prospective offerors posed questions about the capabilities of the water system. In response to a question about the need for possible modifications to the water system, the agency advised that a successful proposal would use the current system without any modifications and included the metrics of the system, collected as of the last time it ran.

On February 9, 2010, the Coast Guard awarded firm fixed-price contract HSCG38-10-C-410004 to Matrix for the amount of $3,430,282. It selected Matrix for award because it had determined that its offer presented the best solution to its statement of objectives. The stated objective of the contract was "to quickly design, upgrade, modify, and provide sustainment of the ATF3, T-700, and CT7 aircraft engine testing cells." Contract completion was to occur within twelve months of award. Matrix's proposed solution and statement of work, including data sheets it provided from various original equipment manufacturers (OEMs), were incorporated into the contract with no substantive changes.

Section 5 of the contract, which was authored by Matrix and its subcontractor, spelled out the requirements that Matrix would meet. Matrix agreed that it would "deliver turnkey

systems capable of testing the ATF3 in the jet engine test cell and T-700 and CT7 engines in the turboshaft test cell." The contract also specified that "[t]he Contractor shall provide all materials and perform all modifications . . . required to successfully test T-700 and CT7 engines," and that the Government would not have to do any configuration development or system setup. Section 5.3.5, "Dynamometer and Test Bed," stated that "[t]he Contractor shall perform all structural changes required, including . . . hydraulic dynamometer water supply hookup" and "provide the necessary modifications to facilities and cooling tower apparatus to ensure safe and reliable operation of the new dynamometer system."

A major component of the Matrix proposal was the provision and installation of the Kahn series 400 hydraulic dynamometer, a mechanical device that tests the power output or force of an engine.[1] Under the statement of work,.the dynamometer was required to generate a continuous and steady water flow to perform optimally. That water flow is dependent on water pressure. The Kahn guidelines for water system requirements applicable to hydraulic dynamometers caution that a "steady, nonfluctuating water supply is the most important prerequisite for the operational stability of a hydraulic dynamometer." The Kahn guidelines further state that "[t]o diagnose and monitor the water system, a fast-response, accurate flow meter, capable of measuring flow fluctuation amplitudes and frequencies, should be installed upstream from the dynamometer inlet control valve." Matrix did not include the Kahn guidelines in its proposal. The use of a flow meter was also not addressed or mentioned in the specifications for the dynamometer proposed by Matrix, nor was an express requirement to supply one incorporated into the underlying contract.

After Matrix commenced work under the contract, it raised concerns with the Coast Guard about the ability of the Kahn dynamometer it had provided for the T-700 testing cell to work with the Coast Guard's existing water system. At the suggestion of Matrix, the Coast Guard upgraded the water pumps. After that, Matrix and its subcontractor advised the Government that they could still not guarantee that the water system would be sufficient to meet the requirements for operation of the dynamometer. After attempting to resolve the problems encountered by the contractor, and in the interest of facilitating progress in completing the work, the Coast Guard asked Matrix to provide a proposal for all work necessary to update the water system to assure full operation and functionality of the new dynamometer.

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[1] In order to obtain an accurate measurement of power output, a hydraulic dynamometer must receive the proper flow rate of water and the proper pressure because a continuous flow of water through the dynamometer is necessary to produce resistance to rotation and removal of the heat generated by the power absorption process. The water flow rate is dependent upon the water pressure and the water pump characteristics of the water system.

In March of 2012, a bilateral modification to the contract, in the amount of $142,724, was issued for the upgrade of the water system to resolve the water flow problems. The modification established a completion date of June 1, 2012, and extended the dates for completion of the T-700 portion of the work to July 13, 2012. The modification incorporated Matrix's technical proposal identifying the work required to bring the water system up to a condition where the dynamometer could function safely.[2]

In July 2012, the Coast Guard inquired of Matrix whether the use of a flow meter to troubleshoot the water pressure problems would be helpful. Matrix responded that the installation of a flow meter was unnecessary, despite the fact that flow pressure issues were preventing completion of the testing cell. On October 10, 2012, after Matrix's continued failure to provide USCG with requested information on the flow rates necessary for the dynamometer to function properly, the contracting officer issued a final decision directing Matrix to provide and install a water flow meter to diagnose the problems with the dynamometer. Matrix responded to that decision by forwarding a letter from Kahn, stating that the use of a flow meter was not absolutely necessary for normal operation. Kahn subsequently clarified the statements in this letter in an email message to the Coast Guard, advising that it does recommend the flow meter in testing new cells before the dynamometer is commissioned.

In August 2012, the Coast Guard asked engineers from the Navy's Fleet Readiness Center East (FRCE) to visit the facility and evaluate the readiness and status of the test cells after all of the upgrades. The FRCE engineers wrote a report observing that the water filter provided by Matrix was "unreasonable in type and mesh," given that the Kahn specifications recommend a 340 micron screen water filter to best filter particles while still allowing for sufficient water flow. Matrix had installed a 75 micron screen water filter, which the FRCE engineers advised was significantly more restrictive than the filter recommended by Kahn, and hampered the water flow to the dynamometer. On October 10, 2012, the contracting officer issued a decision directing Matrix to install the 340 micron screen. Matrix offered to purchase the new material if government personnel would install it. The Coast Guard rejected that proposal. The 340 micron screen filter was no longer available, so Matrix asked to use a 280 micron screen filter, instead, which the USCG accepted.

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[2] A price reasonableness memorandum, written by the contracting officer to justify the modification, stated that changes to the water system, apart from tying the new pumps into the system, were never contemplated to be a part of the contract but that, to avoid further delays, repairs to the system would be made in conjunction with the underlying contract.

On November 9, 2012, the Coast Guard asked Matrix when it intended to provide and install the flow meter. The Coast Guard repeated this inquiry on November 26, also asking about the time line for the installation of the correct filters. Matrix responded, asserting once again that the flow meter was not needed for the dynamometer to function. The Coast Guard explained that the flow meter was needed to troubleshoot the continued water flow problems that were preventing the dynamometer from working properly in the system.

On November 30, 2012, Matrix appealed the contracting officer's decision dated October 10, 2012, to the Board. That appeal prompted further communication between Matrix and the Coast Guard. As a result of those discussions, Matrix withdrew its appeal, and the contracting officer substituted a letter of direction for the final decision, instructing Matrix to install the flow meter and replace the filter.

Delays in the procurement of the flow meter pushed back the time of its installation. The contracting officer's representative, on February 12, 2013, once more asked Matrix to install the flow meter, as water flow and water pressure complications continued to impede the proper operation of the dynamometer. On February 14, 2013, Matrix completed the installation of the flow meter and the filter, informing the Coast Guard that the appropriate location of the flow meter posed challenges to installation. It subsequently submitted a request for equitable adjustment seeking $47,581.08 for costs incurred in purchasing and installing the water filter and flow meter.

On June 11, 2013, Matrix requested a final decision from the contracting officer on its claim for the cost of purchasing and installing the flow meter and for the cost of replacing the filter. On June 18, 2013, the contracting officer issued a final decision denying Matrix's request for an equitable adjustment on the grounds that the Kahn specifications were binding under the contract, and provision of the 340 micron screen filter and flow meter were thus required under the contract. Matrix appealed this decision to the Board. The Coast Guard has pointed out that, as of the time the parties completed their record submissions, Matrix had still not provided a functioning T-700 test system.

Discussion

Matrix contends that it is entitled to an equitable adjustment for providing the flow meter at the Government's direction because the contract did not require it to do so. It also maintains that because it provided a filter that exceeded the requirements, the Coast Guard should pay for the expenses Matrix incurred in replacing that filter with a new filter at the Government's direction.

Flow Meter

With respect to the flow meter, the parties focus on whether the contract for the provision and installation of turnkey aircraft testing cells required Matrix to provide and install the flow meter for the T-700 testing cell. The Coast Guard contends that, reading the contract in its entirety, Matrix was required not simply to provide the dynamometer, but also to install it, and to ensure that it worked at the Coast Guard's existing facility. From this perspective, the Coast Guard argues, in light of the persistent water pressure problems preventing the dynamometer from operating properly, installation of the flow meter became necessary to diagnose the water flow deficiencies in order to complete performance under the contract. This is especially so since it has already paid Matrix to upgrade the water system.

Matrix, on the other hand, maintains that the flow meter was an optional diagnostic tool which was not part of the contract because the manufacturer does not categorize this item as strictly necessary to install the system. Appellant asserts that it did not include the data sheet recommending the flow meter because it only provided data sheets for equipment it planned to use. In its view, the Kahn guidance was not a specification to provide a flow meter; rather, Kahn simply recommended a flow meter be installed if there were problems with the water system. The "Water System Requirements for Hydraulic Dynamometers" data sheet lays out the ideal water system metrics for operation of the dynamometer. Matrix thus argues that because the contract was not for the modification of the water system, this data sheet was not relevant since Matrix had determined, based on the water system metrics provided by the Coast Guard, that the Kahn dynamometer would work. Moreover, the data sheet was provided to the Coast Guard at its request once it became clear that the water system was preventing the dynamometer from working properly. It was never submitted as a specification for the dynamometer, but rather for the water system, at the request of respondent after contract formation. Matrix thus argues that it was not required to furnish the flow meter under its contract and that the Government ordered extra work not required under the contract, which constituted a constructive change to the contract.

As to the recovery of costs for changed work under a contract, the Board has succinctly observed:

> "A constructive change occurs where a contractor performs work beyond the contract requirements without a formal order, either by an informal order or due to the fault of the Government." *International Data Products Corp. v. United States*, 492 F.3d 1317, 1325 (Fed. Cir. 2007) (citing *Miller Elevator Co. v. United States*, 30 Fed. Cl. 662, 678 (1994)); *see also Ace Constructors, Inc. v. United States*, 499 F.3d 1357, 1361 (Fed. Cir. 2007). "To recover on its constructive change claim, [a contractor] must prove that the [Government]

> ordered it to [perform additional work] . . . and that this work was not required under the contract." *LB&B Associates Inc. v. United States*, 91 Fed. Cl. 142, 153 (2010) (quoting *Al Johnson Construction Co. v. United States*, 20 Cl. Ct. 184, 204 (1990)).

IAP World Services, Inc. v. Department of the Treasury, CBCA 2633, 12-2 BCA ¶ 35,119, at 172,444-45.

The contract states as its objective that Matrix would "design, upgrade, modify, and provide sustainment of the ATF3, T-700 and CT7 aircraft engine testing cells." Additionally, it provides that "the Contractor shall deliver turnkey systems capable of testing the ATF3 in the jet engine test cell and T-700 and CT7 engines in the turboshaft test cell." These objectives were drafted by Matrix and included in its offer to perform the work. Notably, Matrix proposed a technical solution for delivery on a turnkey basis. The common understanding of the term "turnkey" is that the system installed will be produced in a "state of readiness for immediate use." Black's Law Dictionary 1750 (10th ed. 2014); *see also Futura Systems, Inc.*, ENG BCA 6037, et al., 95-2 BCA ¶ 27,654.

In essence, this is a contract for which the Government announced its objective and left to the contractor the determination of how to achieve the desired result. Thus, the Matrix contract contains performance, rather than design, specifications. The Board has consistently noted:

> Under performance specifications, the Government sets forth an objective or standard to be achieved, and the contractor is to use its own ingenuity to select the means to achieve that objective or standard of performance while assuming responsibility for meeting the contract requirements. . . . In the case of performance specifications, the risk of poor design choice or problems falls upon the contractor.

Fluor Intercontinental, Inc. v. Department of State, CBCA 490, et al., 12-1 BCA ¶ 34,989, at 171,960 (citations omitted). It is also well-established that "a contractor with a fixed price contract assumes the risk of unexpected costs not attributable to the Government." *IAP World Services*, 12-2 BCA at 172,445; *accord Fluor Intercontinental, Inc. v. Department of State*, CBCA 1559, 13 BCA ¶ 35,334, at 173,428.

The contract states that Matrix will "provide the necessary modifications to facilities and cooling tower apparatus to ensure safe and reliable operation of the new dynamometer system." Whether Matrix included a data sheet for the flow meter or not, the scope of work is broad enough to require Matrix to provide and install any item that is necessary to ensure that the dynamometer is capable of operation for the purpose of testing aircraft engines. In

this case, Matrix has been unable to integrate the dynamometer and the water system, which it upgraded, to produce a functional system capable of testing aircraft engines. The parties attribute the problem to water pressure inconsistencies. After repeated, unsuccessful troubleshooting attempts, the Government sought a resolution under which the water flow and pressure problems could be identified and resolved so that the contract work could be completed. It reviewed the Kahn specification that recommended the use of a flow meter to diagnose water flow deficiencies when the dynamometer did not work, and directed Matrix to implement this recommendation.

That Matrix did not intend to supply a flow meter, and did not include the data sheet for the flow meter in its proposal, is not controlling. These arguments do not change the fact that this was a performance specification and that Matrix bore the responsibility to integrate the dynamometer into the existing water system. The contract encompassed all work necessary to achieve its objective. In the circumstances, Matrix has not shown that the Government's instruction to obtain and install the flow meter constituted a change to the work it was to accomplish. Matrix was accorded substantial time in which to resolve the water flow issues, including a modification to the contract under which it designed an upgrade to the water system to accommodate the needs of the dynamometer. Matrix did not implement or articulate any alternative method by which the problem could be resolved without resort to installation of the flow meter. The Government was well within its rights to direct Matrix to purchase the flow meter in order to diagnose the problems. Matrix has not shown that the contract could be completed without installing the flow meter. As such, Matrix is not entitled to the equitable adjustment it claims.

Screen Filter

The contract plainly states that Matrix was to ensure the "safe and reliable operation of the new dynamometer system." The Kahn specifications that were incorporated into the contract specifically recommended a 340 micron screen filter for optimal performance and were silent as to how or whether different filter meshes might affect performance of the dynamometer. Appellant supplied a finer filter than this, presumably believing that the finer mesh would work as well as, or better than, the one recommended by Kahn. This was not the case.

Under the included Kahn specifications, "a continuous flow of water through the dynamometer is required" for it to operate normally. Matrix could not achieve the requisite continuous water flow with the filter it initially installed. This filter, which was capable of separating smaller particles than Kahn's recommended 340 micron screen filter, restricted the water flow, thus hindering the proper operation of the dynamometer.

Under the circumstances, respondent was entitled to require Matrix to replace the filter it used with the filter that was prescribed by the manufacturer. *Cf. Living Tree Care, Inc. v. Department of the Interior*, CBCA 2008, et al., 11-2 BCA ¶ 34,850, at 171,441 ("The Government is entitled to strict compliance with the specifications irrespective of whether the contractor believes it has devised a better or more economical way of performing the work.") (citing *Teg-Paradigm Environmental, Inc. v. United States*, 465 F.3d 1329, 1342 (Fed. Cir. 2006)). The Coast Guard agreed to a substitute that would not excessively restrict the water flow when the designated filter was no longer available. Appellant has not proven that the filter it used was working properly, or that the Government required it to do more than it was obligated to do under its contract. *See LB&B Associates*, 91 Fed. Cl. at 155 ("[N]ot every change that the government requires triggers a constructive change entitling the contractor to an equitable adjustment."). As such, the Government is not liable to reimburse Matrix for the cost of buying and installing the correct filter.

Decision

The appeal is **DENIED**.

CATHERINE B. HYATT
Board Judge

I concur:

HOWARD A. POLLACK
Board Judge