

GOVERNMENT OF THE DISTRICT OF COLUMBIA
CONTRACT APPEALS BOARD

APPEAL OF:

MCI CONSTRUCTORS, INC.)	
)	CAB No. D-1056
Under Contract No. 91-0037-AA-2-0-LA)	

For the Appellant: J. Jonathan Schraub, Esq., Robert E. Draim, Esq., Schraub & Company, Chtd. For the District of Columbia: Jack M. Simmons, III, Esq., Assistant Corporation Counsel.

Opinion by Administrative Judge Jonathan D. Zischkau, with Administrative Judge Matthew S. Watson, concurring.

OPINION

CourtLink Filing ID 609146

Appellant MCI Constructors, Inc., seeks compensation on behalf of a sub-tier contractor, Safronics, Inc., in the amount of \$272,735, plus interest, for additional material and labor supplied on a contract after the District of Columbia Water and Sewer Authority ("WASA") rejected Safronics' interpretation of the specifications that harmonic distortion was to be measured at the primary side (4,160 Volts) of WASA's transformers rather than the secondary side (480 Volts) of the transformers. Because we conclude that Safronics interpretation was reasonable, WASA's rejection was a change to the contract entitling Appellant to compensation for the change. We find Appellant entitled to \$251,118, plus interest on that amount pursuant D.C. Code § 2-308.06.

FINDINGS

The relevant facts are not in dispute. In February 1993, MCI was awarded Contract No. 91-0037-AA-2-0-LA by the District's Department of Public Works, Water and Sewer Utility Administration (the predecessor in interest to WASA) to make specified improvements to the secondary treatment facilities at the Blue Plains Wastewater Treatment Plant located in the District of Columbia. (Stipulations of the Parties ¶¶ 1-2, filed November 16, 1999). The total contract price was in excess of \$10 million.

MCI, the general contractor on the Blue Plains project, issued a subcontract to Prince Georges Contractors, Inc. ("PGC") to provide certain mechanical supplies required under the Prime Contract. (Stipulations ¶ 3). PGC issued a subcontract to Ingersoll-Dresser Pump Company ("IDP") for pumps, motors, variable frequency drives ("VFDs"), and related supplies and services needed for the Blue Plains project. (Stipulations ¶ 4). In May 1993, IDP issued two purchase orders, Nos. 33-0922642 and 33-092644, totaling \$725,000, to Safronics for the necessary VFD systems and related supplies and services. (Stipulations ¶ 4; Tr. 75; Appellant's Exhibits (AEX) 19-20).

The Prime Contract specifications were prepared for the District by Greeley and Hansen, an engineering firm located in Maryland. (Stipulations ¶ 5). Section 11006 of the specifications set forth the requirements related to the VFD systems. Section 11006.05.A.2.d. states:

Individual or simultaneous operation of the adjustable frequency drives on any common bus shall not contribute more than 5 percent additional harmonic voltage distortion to the bus in accordance with IEEE [Standard] 519. Each drive shall have either an a-c input line harmonic filter or a transformer to limit the harmonic distortion. The harmonic filter shall be connected to the line side of the drive through a contactor.

(AEX 3).

The 1992 version of IEEE Standard 519, entitled “IEEE Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems,” is 100 pages in length and contains 14 sections. (AEX 2). The Introduction (Section 1) to IEEE 519 states that it is to be used for guidance in the design of power systems with nonlinear loads. Nonlinear devices include static power converters such as adjustable speed drives. According to IEEE 519, nonlinear loads change the nature of the ac (alternating current) power current resulting in the flow of harmonic currents in the power system that can cause interference with communication circuits and other types of equipment. (AEX 2, at 7). Because harmonic voltage and current distortion is undesirable, devices such as harmonic filters and transformers are used to limit the harmonic distortion.

Section 10 of IEEE 519, entitled “Recommended Practices for Individual Consumers,” describes current distortion limits that apply to individual consumers of electricity while Section 11 describes the quality of electricity that the utility (producer) should furnish to the consumer. Section 10 states in pertinent part:

These limitations are for the benefit of all parties involved. This recommendation . . . focuses on the point of common coupling (PCC) with the consumer-utility interface. . . . It would be ideal if it were possible to control harmonics to such an extent that harmonic effects . . . were nil at every point in the entire system encompassing the consumer’s own circuit, the utility circuit, and other consumers’ circuits. In reality, however, economic factors and the effectiveness of the harmonic control must be balanced; and some harmonic effects are unavoidable at some points in the system. The recommendation described in this document attempts to reduce the harmonic effects at any point in the entire system by establishing limits on certain harmonic indices (currents and voltages) at the point of common coupling (PCC), a point of metering, or any point as long as both the utility and the consumer can either access the point for direct measurement of the harmonic indices meaningful to both or can estimate the harmonic indices at point of interference (POI) through mutually agreeable methods. Within an industrial plant, the PCC is the point between the nonlinear load and other loads.

(AEX 2, at 75).

The key issue in this case is whether specification section 11006.05.A.2.d, in conjunction with IEEE 519, requires that the amount of harmonic voltage distortion be measured on the primary (4,160V) side of the main transformers (as Safronics argues) or on the secondary (480V) side of the transformers (as WASA argues). There is no question that Safronics' proposed equipment and filters met the 5 percent harmonic distortion requirement when measured on the 4,160V side of the transformers but did not meet it when measured on the 480V side. Ultimately, WASA required Safronics to meet the 5 percent requirement on the 480V side, and Safronics now seeks recovery of the additional costs it incurred in providing additional filtering equipment to meet that requirement.

Prior to publication of the District's specifications, in about 1990, Mr. Kohn of Greeley prepared calculations for the District which (according to the District's Gregory Bloomstein) expressly identified the point of calculation for harmonic analysis as the 480 Volt bus of the main transformers. (Tr. 291). Unfortunately, the District did not provide this document to the bidders or their suppliers and it was never made available to MCI or its subcontractors, including Safronics. At the hearing, the Board was informed that the document had been lost. (Tr. 287-288).

At the pre-bid meeting in March 1992, attended by 43 individuals, including representatives of WASA, Greeley, and Metcalf & Eddy (WASA's construction manager for the project), as well as prospective bidders, subcontractors, and suppliers, no one raised any question concerning the meaning or interpretation of specification section 11006.05.A.2.d. (Stipulations ¶ 8). Nor did the representatives of WASA, Greeley, or Metcalf discuss or clarify the meaning of section 11006.05.A.2.d.

Prior to submitting its bid, Safronics personnel reviewed the specifications, including section 11006.05.A.2.d., as well as IEEE 519, which is referenced in that section. (Tr. 32, 36-37). Based upon its review of the documents, Safronics satisfied itself that it was designing components for the Blue Plains project in accordance with section 11006.05.A.2.d and IEEE 519. (AEX 11, 13-17).

The materials proposed by Safronics, including the use of 3 percent input line reactors, were consistent with Safronics' analysis that the calculation of harmonic distortion was to be taken on the 4,160V side of the transformers. (Tr. 65). In the electrical engineering industry, a reactor such as the 3 percent input line reactor falls within the definition of "filter" or "harmonic filter." (Stipulations ¶ 13). Section 3.1 (Definitions and Letter Symbols) of IEEE 519 defines "filter" as a "generic term used to describe those types of equipment whose purpose is to reduce the harmonic current or voltage flowing in or being impressed upon specific parts of an electrical power system, or both." (AEX 2, at 9).

Following contract award, Safronics was obligated to submit to WASA a preliminary harmonic analysis pursuant to section 11006.03.B.9 of the specifications. (Stipulations ¶ 10). In August 1993, Safronics delivered a preliminary harmonic analysis to WASA. Metcalf & Eddy responded by requesting a revised analysis showing all variable frequency drives running simultaneously. Safronics retained Mr. Conrad St. Pierre, one of the experts who testified for Safronics at the hearing, to prepare the revised harmonic analysis. Safronics asked Mr. St. Pierre to

perform a harmonic analysis in accordance with IEEE 519, without specifying the point at which he should take the measurement. Mr. St. Pierre independently determined that the calculation should be taken at the 4,160V side of the transformers. (Tr. 207-209). Mr. St. Pierre's analysis was transmitted to WASA in November 1993. (Stipulations ¶ 12). His calculations showed harmonic distortion of 2.8 and 3.6 percent on the 4,160V side of each transformer using a total of 42 separate 3-percent reactors proposed by Safronics. Without the filters, the harmonic distortion would have been 6.2 and 7.8 percent, which amounts are in excess of the 5 percent contract limitation. (Tr. 213-215).

Based on the undisclosed Greeley study which called for measuring at the 480V side of the transformers, a consultant hired by Metcalf, acting on behalf of WASA, rejected the revised harmonic analysis. Metcalf then issued a written directive for WASA requiring that Safronics "provide harmonic analysis that shows the voltage harmonic distortion at common buses 480 volts . . . to comply with the requirements of 5% limit of harmonic distortion. The 480 VAC buses shall be considered as points of common coupling (PCC) in accordance with the Specification Section 11006.05.A.2.d and IEEE 519. . . ." (AEX 22). This was the first notice to Safronics identifying the 480V side of the transformer as the point of calculating harmonic distortion under section 11006.05.A.2.d. (Tr. 80). Despite a number of meetings, the contracting parties were unable to resolve the disputed interpretation. Safronics ultimately complied with WASA's directions and provided additional design and filtering equipment to satisfy the 5 percent harmonic distortion limitation at the 480V side of the transformers. (Tr. 82-83).

On July 29, 1994, Safronics requested a change order for the increased costs incurred as a result of WASA's interpretation of section 11006.05.A.2.d. In an August 13, 1995 letter, WASA stated that Safronics' change order request was unjustified. Safronics responded to that letter on September 21, 1995. (AEX 31). In a letter dated October 3, 1995, MCI forwarded Safronics September 1995 response to WASA's contracting officer, requesting a final decision. The contracting officer has never issued a final decision. On September 18, 1998, MCI filed an appeal with the Board from the deemed denial arising from the contracting officer's failure to respond to MCI's October 3, 1995 request for a final decision. (Stipulations ¶ ¶ 19-22).

At the Board hearing, Safronics introduced the testimony of two experts in the field of harmonic distortion and the interpretation of IEEE 519: Mr. Ray Stratford and Mr. Conrad St. Pierre. Both of these experts supported Safronics' determination that section 11006.05.A.2.d called for the harmonic calculation to be taken at the primary side (4,160V) of the transformers.

Mr. Stratford is a licensed professional engineer who helped pioneer studies and techniques in the area of harmonics. (Tr. 137-142). Mr. Stratford developed original techniques for analyzing harmonic distortion, and he was instrumental in the development of the IEEE standards. (*Id.*) He was Chairman of the Static Power Converter Committee of the IEEE in the early 1970s when the Committee initiated work on an harmonic standard, through 1981, when the Committee established the first harmonic distortion standards. (Tr. 138-140). Mr. Stratford was then Co-Chairman of the IEEE working group that produced the 1992 version of the IEEE standard applicable in this case. (Tr. 142).

Mr. Stratford has taught numerous industry courses relating to harmonics and industrial power systems, and has written extensively throughout his professional career on topics including harmonic distortion.

Mr. Stratford explained that IEEE 519 sets certain criteria for the current and voltage quality that the producer, *i.e.*, the utility, must produce, as well as to limit the amount of harmonic distortion that a user inserts back into the power system. (Tr. 157-158). According to Mr. Stratford, IEEE 519 identifies the point of common coupling as the point at which the utility is furnishing power to the user. (Tr. 158-159). Mr. Stratford testified that in the case of the Blue Plains project, "I would interpret ... that this would be at the 4160-volt level, where the utility is feeding power into this section of the plant at 4,160 volts." (Tr. 159, 181).

Safronics' other expert, Mr. Conrad St. Pierre, has performed numerous harmonic analyses (between 20 and 40) since 1985 and has taught seminars and written extensively in the area of harmonics and other topics. (Tr. 202-206). Mr. St. Pierre concurred with Mr. Stratford's opinion concerning the meaning and intent of IEEE 519 and that Safronics properly measured harmonic distortion at the 4,160V side of the main transformer. Mr. St. Pierre independently determined that the calculation should be taken at the 4,160V side and he concluded that Safronics' proposed system satisfied the 5 percent harmonic distortion limit. (Tr. 207-209, 212-215).

WASA's expert, Mr. Robert Mathisen, appears to have less experience in the area of harmonics than Mr. Stratford and Mr. St. Pierre. (Tr. 353-355). Mr. Mathisen agreed with Safronics' experts that Section 10 of IEEE 519 has to do with the condition of the electric current returning to the utility and that too much harmonic filtering may have a detrimental effect on the power system due to interactions. (Tr. 309-311). Nevertheless, Mr. Mathisen focused on the sentence in Section 10 of IEEE 519 which states: "Within an industrial plant, the PCC is the point between the nonlinear load and other loads." He believes that Blue Plains is an industrial plant and therefore this exception in IEEE 519 applies to the case here and requires measuring harmonic distortion at the 480V side of the transformers. No one disputes that the 480V bus is the point between the nonlinear loads and other loads in this section of the Blue Plains facility. Mr. Stratford stated that the intent of the "industrial plant" exception was to provide a limited exception for a large industrial plant that has its own utility section within the plant. (Tr. 162-163). Mr. Stratford did not believe that the exception applied to Blue Plains because it does not have such a utility section within it. We find Mr. Stratford's testimony to be credible.

The District argues that Appellant bears responsibility for not seeking clarification of the contract language which it says is ambiguous. Mr. Mathisen testified for WASA that he found ambiguities in the contract documents that required a prudent bidder or supplier to seek clarification from WASA concerning *inter alia* the meaning of section 11006.05.A.2.d. On the other hand, Mr. Mathisen testified that he would not need to specify which bus should be used for the harmonic distortion measurement because "to . . . [him] it's very clear in IEEE 519 that the bus is the 480 volt bus." (Tr. 357). We conclude that the language was not patently ambiguous such that a prudent contractor should bear responsibility for seeking clarification. *See, e.g., United States v. Turner Construction Co.*, 819 F.2d 283, 285-86 (Fed. Cir. 1987).

Based on our review of the specification, IEEE 519, and the testimony of the experts, we find that Safronics reasonably interpreted the specification at section 11006.05.A.2.d as indicating that the calculation of harmonic distortion be taken on the primary (4,160V) side of the transformers rather than on the secondary (480V) side. The District's suggestion that the 4,160V side is not the point of metering with the utility is irrelevant because the record demonstrates that Safronics' equipment met not only the 5 percent limit at the 4,160V side but also would satisfy the same distortion requirement at higher voltage points upstream from the transformers in question. We do not need to find the District's interpretation of section 11006.05.A.2.d to be unreasonable, because as drafter of the specification, it bears responsibility for not drafting the specification to clearly indicate that it wished the measuring point to be at the 480V side of the transformer. Restatement (Second) of Contracts § 206 (1979). The specification as written does not require the measurement at the 480V bus and the District never disclosed to bidders the Greeley pre-bid study indicating the design engineer's concept of calculating harmonic distortion at the 480V bus. Accordingly, Appellant is entitled to recover its increased costs of performance for complying with WASA's directive to calculate harmonic distortion at the 480V side of the transformer and to provide additional services and equipment to meet the more stringent requirements.

For the most part, quantum is not disputed. At the start of the hearing, Appellant sought \$236,542, consisting of Safronics' material costs of \$156,617, direct labor of \$16,560, engineering of \$11,961, plus mark-ups for Ingersoll Dresser Pump Company, MCI, and bond and warranty. During the hearing, Appellant revised its quantum to \$272,735, by adding an additional amount of \$16,560 to direct labor and \$11,961 to engineering (plus associated increases in the mark-ups on these amounts) in order to include labor burden. We find that a more reasonable amount for burden is \$6,624 for direct labor and \$4,784 for engineering. Thus, Safronics' total costs equal \$196,547. Adding mark-up for Ingersoll Dresser Pump (\$29,482), MCI (\$22,603), and bond and warranty (\$2,486), yields a total quantum of \$251,118 for the contract change. At the hearing, the District's witness challenged the amount of the credit (\$12,000) for the 3 percent reactors which Safronics did not ultimately use. (DEX M). We find that the record produced by Safronics adequately supports the amount of the credit.

In a final argument, the District argues that we lack jurisdiction over the appeal because MCI never filed an appeal with the former Director of the Department of Administrative Services, prior to filing its appeal with the Board. This argument is not well taken. The disputes process was amended by the Procurement Reform Amendment Act of 1996, D.C. Law 11-259, 44 D.C. Reg. 1423 (Mar. 14, 1997), which eliminated the intermediate step of appealing to the DAS Director from a denial or deemed denial of a claim by the contracting officer. *See Eboné, Inc.*, CAB Nos. D-0971, D-0972, May 20, 1998, 45 D.C. Reg. 8753, 8773 & n.14. By the time MCI filed its claim, there was neither a DAS Director nor a statutory procedure for appealing to the DAS Director. The District also relies on 27 DCMR § 3803.5 (1988) to support the obsolete DAS Director appeal procedure and the timing of an appeal from a deemed denial. We hold that section 3803.5 has been superseded by amendments to the PPA. When faced with changes in the statutory disputes process and government procurement reorganizations, we ask whether the change has deprived a party of any substantive rights. In this case, only procedural rights, not substantive rights, have been implicated. *Fry & Welch Associates*, CAB No. D-0821, July 31, 1999, 44 D.C. Reg. 6859, 6876-77. MCI properly followed the applicable disputes procedures when it filed its appeal directly with the Board in 1998.

CONCLUSION

MCI is entitled to \$251,118, plus interest on that amount pursuant D.C. Code § 2-308.06, starting from October 3, 1995.

SO ORDERED.

DATED: March 27, 2002

/s/ Jonathan D. Zischkau
JONATHAN D. ZISCHKAU
Administrative Judge

CONCURRING:

/s/ Matthew S. Watson
MATTHEW S. WATSON
Administrative Judge