

ARMED SERVICES BOARD OF CONTRACT APPEALS

Appeals of --)
)
CDM Constructors Inc.) ASBCA Nos. 62026, 62088, 62089
)
Under Contract No. W912PL-12-C-0022)

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OPINION BY ADMINISTRATIVE JUDGE SWEET

These quantum appeals relate to our entitlement decision in *CDM Constructors, Inc.*, ASBCA No. 60454 *et al.*, 18-1 BCA ¶ 37,190 (*CDM I*). In *CDM I*, we held that the Army Corps of Engineers (Corps) constructively changed a contract to design and build a water treatment plant (WTP) at Fort Irwin, California when it compelled appellant CDM Constructors, Inc. (CDM) to size the WTP's evaporation ponds (EPs) using a three million gallon per day (mgd) average daily flow (ADF), and a 0.8 pan evaporation coefficient only if the maximum depth was three feet or less (collectively, EP changes). *Id.* at 181,013-14. However, we held that the Corps did not constructively change the contract when it compelled CDM to provide a standby EP. *Id.* at 181,012-13. In *CDM I*, we also held that the Corps provided defective specifications regarding a standby generator. *Id.* at 181,014-15. Finally, we returned the appeals to the parties for a determination of quantum. *Id.* at 181,016.

After the parties proved unable to resolve the issue of quantum, CDM filed these quantum appeals.¹ In these appeals, CDM attempts to calculate its equitable adjustment for the EP changes by using the revised 100 percent design to establish the reasonable costs of

¹ ASBCA No. 62026 addresses the EPs. ASBCA Nos. 62088 and 62089 address the generator.

performing the contract's requirements without the EP changes. However, that attempt fails because CDM has not met its burden of showing that the revised 100 percent design complied with all of the contract's requirements—particularly its standby EP requirement.

Regarding the generator, the parties stipulate that CDM is entitled to a \$318,684.46 equitable adjustment for the defective generator specifications. Moreover, CDM has met its burden of showing that it is entitled to an additional \$7,367.54 for its increased general conditions costs due to the increased complexity caused by the defective generator specifications. Therefore, CDM is entitled to an equitable adjustment of \$326,052 for the defective generator specifications.

FINDINGS OF FACT

1. On August 8, 2012, the Corps awarded Contract No. W912PL-12-C-0022 (0022 Contract) to CDM for the design and construction of a WTP at Fort Irwin, California. *CDM I*, 18-1 BCA ¶ 37,190 at 181,005.²

I. Facts Unique to the Evaporation Ponds Appeal (ASBCA No. 62026)

A. Contract Requirements

2. The 0022 Contract did not require CDM to use any particular ADF, or any particular evaporation coefficient for any particular water depth. *CDM I*, 18-1 BCA ¶ 37,190 at 181,008.

3. However, the 0022 Contract required CDM to provide “2 + 1 STANDBY” EPs. *Id.* at 181,007. A standby EP is an EP that is operational, but, for an indefinite time period, need not be used to prevent operational overflows—*i.e.*, inflows exceeding net evaporation—except in an emergency. *Id.* at 181,007-08, 181,017 n.12; *see also* (app. post-hearing br. at 37; app. post-hearing reply at 17-18). While the Corps concedes that a standby EP may be used while cleaning in-service EPs, it may not be used to prevent operational overflows (tr. 2/132-33, 2/136; app. supp. R4, tab 2016 at 20,300; app. post-hearing br. at 37; app. post-hearing reply at 17-18). The uncontroverted evidence establishes that a reasonable time-period for cleaning EPs was about two months. Therefore, an EP that is used for about two months may qualify as a standby EP that only is being used while cleaning an in-service EP. However, an EP that is used for longer than two months does not qualify as a standby EP because that use constitutes use to prevent operational overflows. (Tr. 2/155, 2/157, 2/203; gov't supp. R4, tab 1048 at 2,753-56)

² *CDM I* presents the facts in greater detail, and we presume familiarity with *CDM I*.

B. Relevant Design

4. After the Corps rejected several EP designs, CDM submitted a revised 100 percent design and a May 17, 2013 design memorandum (collectively, relevant design). *CDM I*, 18-1 BCA ¶ 37,190 at 181,009. It is undisputed that the relevant design used a 2.25 mgd ADF, used a 0.8 evaporation coefficient for a water depth greater than three feet, and had three EPs. *Id.* at 181,009. Rather, the central dispute in ASBCA No. 62026 is whether one of those EPs was a standby EP (app. post-hearing br. at 4; gov't post-hearing br. at 27).

5. In an attempt to show that the relevant design lacked a standby EP, the Corps presented testimony from Antonia Ortiz—the Corps' project engineer and an expert in the sizing of ponds for outflows to balance inflows (tr. 2/119). In an attempt to show that the relevant design included a standby EP, CDM presented testimony from William B. O'Neil—CDM's designer of record, and an EP expert (tr. 1/109-10; app. witness list (Feb. 5, 2020); gov't objections to app.'s evidence (Feb. 12, 2020)).

6. Ms. Ortiz, Mr. O'Neil, and Dr. Beth Gross—CDM's EP expert at the entitlement hearing—agreed that the determination of whether a design includes a standby EP should start with a water balance analysis, which estimates whether net evaporation balances inflows (gov't supp. R4, tab 1001 at 10-11, tab 1003 at 33-35; app. supp. R4, tab 2018a at 20,550-51; ASBCA No. 60454 app. supp. R4, tab 59 at 183; tr. 2/164-65, 2/172, 3/35-36).³ Mr. O'Neil asserted that additional modeling should be performed (CDM's Model) to provide a more accurate determination of whether net evaporation balances inflows (gov't supp. R4, tab 1001 at 10-11; tr. 3/35-36).

1. Water Balance Analysis

7. Ms. Ortiz, Mr. O'Neil, and Dr. Beth Gross all agree that the basic equation to calculate the average surface area required for net evaporation to balance inflows (required surface area) under a water balance analysis is to divide the average inflows by the average net evaporation rate (gov't supp. R4, tab 1003 at 33; app. supp. R4, tab 2018a at 20,550; ASBCA No. 60454 app. supp. R4, tab 59 at 183). Using that equation, both Ms. Ortiz and Mr. O'Neil agree that the relevant design's required surface area was greater than the available surface area of its two in-service EPs at their maximum five-foot depth (app. supp. R4, tab 2018a at 20,550-51; *see also* tr. 2/172, 3/84).⁴

³ Unless otherwise indicated, all citations to the R4 files are to the R4 files in the quantum appeals. Citations to the R4 files in the entitlement appeals start with "ASBCA No. 60454."

⁴ Ms. Ortiz and Mr. O'Neil calculate slightly different required surface areas of 4.7 acres and 4.48 acres respectively based upon different treatment of

8. As CDM’s own expert Dr. Gross opined at the entitlement phase, the required surface area is an average, and “the ponds are not continuously operated at maximum or greater depths to provide the required pond surface area” (ASBCA No. 60454 app. supp. R4, tab 59 at 183; *see also* tr. 2/172-73). Ms. Ortiz agreed that “there’s no way the maximum can be the average depth because you can’t exceed the maximum depth” (tr. 3/84). Therefore—as Dr. Gross conceded in addressing a different design and as Ms. Ortiz testified regarding the relevant design—the fact that the required surface area was greater than the available surface area of the in-service EPs at their maximum depth means that there would be operational overflows without use of the purported standby EP (app. supp. R4, tab 2018a at 20,551; ASBCA No. 60454 app. supp. R4, tab 59 at 183; tr. 3/84). As such, the water balance analysis shows that the relevant design lacked a standby EP (gov’t supp. R4, tab 1003 at 33-34).

2. CDM’s Model

9. The relevant design presented CDM’s model, which analyzed the depth required for the relevant design’s net evaporation to balance its inflows (required depth). According to that analysis, the required depth would not exceed three feet—which was less than the five-foot maximum available depth—under the operating scenario of using the purported standby EP for twelve months (original operating scenario) (gov’t supp. R4, tab 1057 at 2950-53).⁵ However, that twelve month period far exceeded the two month period during which the standby EP needed to be used while cleaning the in-service EPs. Thus, the original operating scenario went beyond merely using the purported standby EP while cleaning the in-service EPs, and instead used the purported standby EP to prevent operational overflows (tr. 2/155, 2/157, 2/203). As a result, the original operating scenario fails to establish that the relevant design included a standby EP (tr. 2/132-33, 2/136; app. supp. R4, tab 2016 at 20,300; app. post-hearing br. at 37; app. post-hearing reply br. at 17-18).

precipitation (gov’t supp. R4, tab 1001 at 11, tab 1003 at 34). The surface area of the relevant design’s two in-service EPs at their five-foot maximum depth was 4.42 acres (app. supp. R4, tab 2018a at 20,551). Therefore, regardless of whether we use the required surface area from Ms. Ortiz or Mr. O’Neil, the relevant design’s required surface area was greater than the available surface area of its two in-service EPs at their five-foot maximum depth.

⁵ CDM asserts that the 0022 Contract did not require the use of any particular operating scenario, but concedes that CDM had to show that there was *some* operating scenario under which the EPs would meet the 0022 Contract’s requirements—including the standby EP requirement—and not overflow (app. post-hearing br. at 29-30).

10. During CDM’s rebuttal at the hearing, Mr. O’Neil testified that he re-ran CDM’s model, this time under an alternative operating scenario of using the purported standby EP only for two months each year while cleaning each of the in-service EPs (alternative operating scenario). According to Mr. O’Neil, the result was that the required depth did not exceed about 40 inches—which was less than the five-foot (60 inch) maximum available depth. (Tr. 3/21-22, 3/25-26)

11. Several factors undermine the reliability of Mr. O’Neil’s testimony regarding the alternative operating scenario. First, the required depth under Mr. O’Neil’s water balance analysis averaged over five-feet (60 inches) (app. supp. R4, tab 2018a at 20,551),⁶ but the required depth under his alternative operating scenario averaged only about 20 inches (tr. 3/27). While the water balance analysis is only an estimate, the unexplained magnitude of that discrepancy between the required depth in Mr. O’Neil’s water balance analysis and his alternative operating scenario—a two-thirds difference—undermines Mr. O’Neil’s testimony regarding the alternative operating scenario (tr. 3/73-74). Second, Mr. O’Neil’s testimony regarding the alternative operating scenario is undermined by the fact that CDM only supported that testimony with a demonstrative exhibit; instead of with any evidence—let alone with any evidence that Ms. Ortiz had the opportunity to review and address (tr. ex. 5). Third, even if we were to rely upon that demonstrative exhibit, it shows that the purported standby EP needed to be used for more than two months a year, which contradicts Mr. O’Neil’s testimony that the alternative operating scenario only needed to use the purported standby EP for two months a year while cleaning the in-service EPs (*id.* at 1). In light of these factors, Mr. O’Neil’s testimony fails to show that the purported standby EP only was needed while cleaning the in-service EPs; instead of being needed to prevent operational overflows. Thus, Mr. O’Neil’s testimony fails to establish that the relevant design included a standby EP.

C. Post-Relevant Design Redesign

12. In letters dated May 20, 2013 and May 22, 2013, the Corps rejected the relevant design because it used a 2.25 mgd ADF and a 0.8 evaporation coefficient for a maximum depth of five feet, and it lacked a standby EP. *CDM I*, 18-1 BCA ¶ 37,190 at 181,009.

13. In *CDM I*, we held that the Corps constructively changed the 0022 Contract by compelling CDM to use a 3.0 mgd ADF and a 0.8 evaporation coefficient only if the maximum depth was three feet or less. *CDM I* at 181,013-14. However, we held that “[t]here was not a constructive change when the Corps compelled CDM to

⁶ That represents the depth at which the required surface area occurred (app. supp. R4, tab 2018a at 20,551).

provide a backup EP that was operational, but not in use except in an emergency” *id.* at 181,012.

14. CDM submitted a final design package, which included a 3.0 mgd ADF, a 0.8 evaporation coefficient for a maximum depth of three feet or less, eight in-service EPs, and one standby EP. The Corps approved that design. *CDM I* at 181,009.

15. On July 15, 2014, CDM submitted a request for equitable adjustment (REA) regarding the EPs (R4, tab 4). In the REA, CDM acknowledged that an infinity symbol represented a standby EP that was not necessary to prevent operational overflows (*id.* at 36). However, in a table addressing the design criteria, CDM did not use the infinity symbol to describe the relevant design’s standby period (*id.* at 109).⁷ Therefore, the REA effectively conceded that the relevant design needed to use the purported standby EP to prevent operational overflows.⁸

II. Facts Unique to the Generator Appeals (ASBCA Nos. 62088, 62089)

16. Before award, the Corps provided CDM with concept drawings—including drawings from the utility Southern California Electric (SCE)—showing a single standby generator connected to the primary network by one automatic transfer switch (ATS). *CDM I*, 18-1 BCA ¶ 37,190 at 181,010-11.

17. After award, CDM submitted a 10 percent electrical design, which followed the concept drawings by using a single standby generator connected to the primary network by one ATS. *CDM I*, 18-1 BCA ¶ 37,190 at 181,011.

⁷ While the REA represented that the relevant design included a standby EP (R4, tab 4 at 109), it did so based upon CDM’s definition of a standby EP as providing standby capacity (*id.* at 36-37), which we rejected at the merits phase. *CDM I*, 18-1 BCA ¶ 37,190 at 181,013.

⁸ The Corps answered the interrogatory “[i]s it your contention that all of the Evaporation Ponds in the Technical Memorandum are needed or otherwise necessary to handle operational overflow?” by stating, “[r]egarding the ‘Technical Memorandum’ as defined above, no.” (App. supp. R4, tab 2016 at 20300-01) That does not establish that the relevant design included a standby EP because that interrogatory’s use of the word “handle” instead of “prevent,” and its failure to specify a time-frame, are confusing. As the REA acknowledged, the technical memorandum showed that the relevant design could prevent operational overflows without using all three EPs, but it only could do so for 12 months (R4, tab 4 at 109).

18. At a meeting between CDM, SCE, and the Corps, SCE indicated that it no longer would accept a design that used a single standby generator connected to the primary network by one ATS. *CDM I*, 18-1 BCA ¶ 37,190 at 181,011.

19. In response, CDM redesigned the electrical system to use the secondary network to feed electricity from the generator to two locations, each with an ATS. *CDM*, 18-1 BCA ¶ 37,190 at 181,011.

20. In *CDM I*, we held that CDM is entitled to an equitable adjustment because the Corps provided defective specifications regarding the generator. *CDM I*, 18-1 BCA ¶ 37,190 at 181,014.

21. The parties stipulate that CDM is entitled to an equitable adjustment of \$318,684.46 for the defective generator specifications. They dispute whether CDM is entitled to an additional \$7,367.54. (Tr. 1/50; gov't br. at 33)

22. The \$7,367.54 are for increased general conditions costs (tr. 1/57-58). Those general conditions costs “are the management costs, the temporary facilities, temporary power costs and utilities that are associated with that work. It also includes some surveying, third-party testing, inspection, management, superintendents, health and safety, any number of things.” (Tr. 1/54) General conditions costs may increase because of an increase in either the project’s scope of work or the required time (tr. 1/54-56). Here, CDM’s general conditions costs increased because of an increase in the project’s scope of work—such as additional concrete encasements for the wiring—that arose from the defective specifications; not because of an increase in the required time (tr. 1/56-59). In particular, CDM incurred the following increased general conditions costs:

Description	Amount
Project Management	\$2,750
Field Engineer	\$1,019
Field Supervisory Staff	\$966
Project Safety Officer	\$2,040
Testing	
Temporary Utilities Usage	\$134
Project Vehicles	\$1,008
Total	\$7,918

(Compl. ex. 2.A-3; *see also* tr. 1/57-58)⁹

⁹ Complaint exhibit 2.A-3 shows the total increased general conditions costs as \$7,918, but the sum of the individual cost components is \$7,197. We attribute the difference to rounding. Moreover, while Complaint Exhibit 2.A-3 shows the total increased general conditions costs of \$7,918, CDM only seeks increased

DECISION

I. The Evaporation Ponds Appeal (ASBCA No. 62026)

CDM has failed to meet its burden of showing the quantum of its equitable adjustment for the EP changes. The contractor bears the burden of proving the amount by which a change increased its cost to perform. *B.R. Servs., Inc.*, ASBCA No. 47673, *et al.*, 99-2 BCA ¶ 30,397, at 150,272 (quoting *Buck Indus., Inc.*, ASBCA No. 45321, 94-3 BCA ¶ 27,061 at 134,878). To meet that burden, a contractor must demonstrate “the difference between the reasonable cost of performing the work with and without the change.” *Id.*

Here, CDM argues that the relevant design establishes the reasonable cost of performing the 0022 Contract’s requirements without the EP changes because the relevant design allegedly complied with all of the 0022 Contract’s requirements—including the standby EP requirement (app. post-hearing br. at 4, 20; app. post-hearing reply at 1). A standby EP is an EP that may be used for two months while cleaning the in-service EPs, but need not be used for longer than that to prevent operational overflows—*i.e.*, for net evaporation to balance inflows—except in an emergency (finding 3). CDM’s argument that the relevant design satisfied the standby EP requirement fails because the water balance analysis shows that the relevant design needed to use the purported standby EP to prevent operational overflows, and CDM’s Model does not negate that showing (findings 8-9, 11).¹⁰

general conditions costs of \$7,367.54 (app. post-hearing br. at 52). Therefore, we limit CDM’s increased general conditions costs to \$7,367.54.

¹⁰ CDM argues that, by failing to raise the issue in its post-hearing brief, the Corps waived the argument that the relevant design lacked a standby EP because the purported standby EP was needed to prevent operational overflows (app. post-hearing reply at 15-19). It would have been helpful if the Corps devoted more attention in its post-hearing brief to that central issue, instead of focusing so much of its briefing on extraneous issues. Nevertheless, the Corps’ reference in its post-hearing brief to Ms. Ortiz’s opinion that the relevant design did not include a standby EP was sufficient to raise the issue (gov’t post-hearing br. at 27), particularly since Ms. Ortiz explained why she concluded that the purported standby EP was needed to prevent operational overflows (findings 7-8). In any event, waiver is a discretionary rule, and we would decline to find waiver to avoid the unfairness that would result from waiver of such a central issue in these appeals. *Becton Dickinson & Co. v. C.R. Bard, Inc.*, 922 F.2d 792, 800 (Fed. Cir. 1990).

First, the water balance analysis shows that the relevant design needed to use the purported standby EP to prevent operational overflows (finding 8). In particular, the water balance analysis shows that the relevant design's required surface area was greater than the available surface area of its two in-service EPs at its five-foot maximum depth (finding 7).¹¹ A required surface area that exceeds the available surface area at the maximum depth means that there would be operational overflows (finding 8). Therefore, the relevant design needed to use the purported standby EP to prevent operational overflows (*id.*).

Second, CDM's Model does not negate that demonstration (findings 9, 11). The original operating scenario in CDM's Model went beyond merely using the purported standby EP for two months while cleaning the in-service EPs, and instead used the purported standby EP for twelve months to prevent operational overflows (finding 9). Moreover, Mr. O'Neil's last minute testimony that the alternative operating scenario shows that the purported standby EP only was needed for two months a year while cleaning the in-services EPs—and not to prevent operational overflows—is undermined by: (1) the unexplained magnitude of the discrepancy between the required depth in his water balance analysis and in his alternative operating scenario; (2) the lack of supporting evidence; and (3) the fact that the supporting demonstrative exhibit shows that the purported standby EP needed to be used for more than two months a year (finding 11). In fact, contrary to the position that it has taken during the quantum phase, CDM effectively conceded in its REA that the relevant design needed to use the purported standby EP to prevent operational overflows (finding 15).

Because CDM has failed to show that the relevant design did not need to use the purported standby EP to prevent operational overflows, it has failed to show that the relevant design satisfied the 0022 Contract standby EP requirement (findings 8-9, 11). As a result, CDM has failed to meet its burden of establishing the reasonable cost of performing the 0022 Contract's requirements without the EP changes because CDM has provided no baseline from which to demonstrate its increased costs. Thus the quantum of its equitable adjustment for the EP changes is not calculable.

II. The Generator Appeals (ASBCA Nos. 62088, 62089)

CDM is entitled to a \$326,052 equitable adjustment for the defective generator specifications. The parties stipulate that CDM is entitled to a \$318,684.46 equitable adjustment (finding 21). Moreover, CDM has met its burden of showing that it is entitled to an additional \$7,367.54 for increased general conditions costs. The Corps'

¹¹ While the water balance analysis only provides an estimate (finding 6), it plays a significant role in determining whether net evaporation balances inflows, as evidenced by the fact that even CDM's experts performed water balance analyses (findings 6-7).

only argument is that there were no delays, so CDM could not have incurred any increased general conditions costs as a result of any delays (gov't post-hearing br. at 33-34). That argument ignores the fact that delay is not the only reason general conditions costs may increase (finding 22). General conditions costs also may increase because of an increase in the project's scope of work (*id.*). And indeed, here, the increased general conditions costs were due to an increase in the project's scope of work that resulted from the defective specifications, and were not due to an increase in the required time (*id.*). Because the defective specifications provided by the Corps caused that increase in the project's scope of work—and therefore those increased costs (*id.*)—CDM is entitled to an equitable adjustment for those increased costs. Therefore, CDM is entitled to a \$326,052 equitable adjustment for the defective generator specifications.

CONCLUSION

For the foregoing reasons, CDM has not met its burden of showing that it is entitled to an equitable adjustment in ASBCA No. 62026. CDM is entitled to an equitable adjustment in ASBCA Nos. 62088 and 62089 in the amount of \$326,052, plus interest from July 22, 2015, under the Contract Disputes Act, 41 U.S.C. §§ 7109.

Dated: October 29, 2020



JAMES R. SWEET
Administrative Judge
Armed Services Board
of Contract Appeals

I concur



RICHARD SHACKLEFORD
Administrative Judge
Acting Chairman
Armed Services Board
of Contract Appeals

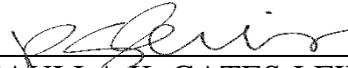
I concur



J. REID PROUTY
Administrative Judge
Vice Chairman
Armed Services Board
of Contract Appeals

I certify that the foregoing is a true copy of the Opinion and Decision of the Armed Services Board of Contract Appeals in ASBCA Nos. 62026, 62088, 62089, Appeals of CDM Constructors Inc., rendered in conformance with the Board's Charter.

Dated: October 29, 2020



PAULLA K. GATES-LEWIS
Recorder, Armed Services
Board of Contract Appeals