

ARMED SERVICES BOARD OF CONTRACT APPEALS

Appeal of --)
)
SPS Mechanical Co., Inc.) ASBCA No. 48643
)
Under Contract No. DACA01-92-C-0183)

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OPINION BY ADMINISTRATIVE JUDGE SCHEPERS

This timely appeal is from a termination for default allegedly due to failure to prosecute the work to ensure its completion, as specified in appellant's contract to replace certain underground steam and condensate pipes with new steel carrier pipes which were surrounded by insulation and encased in a jacket of steel or fiberglass. The termination, however, was issued approximately five months after the completion date, as extended. Appellant asks that the termination be converted to one for convenience based primarily on the assertions that: (a) the Sigma Piping System (Sigma), which was the subject of a Government Letter of Acceptability, was inherently defective; and (b) the Government constructively changed the contract when it: (1) required air testing for the fiberglass jackets at 15 p.s.i.; and (2) prohibited the use of acetone solvent to clean the joints in the fiberglass jackets as they were being installed. The Government denies each allegation, and asserts that the default was proper primarily on the contentions: (1) appellant understaffed the contract and ultimately essentially abandoned the work; (2) appellant failed to comply with the contract in that it did not have a Sigma representative present during specific work; and (3) appellant's work was poor. We sustain the appeal.

FINDINGS OF FACT

1. On 5 August 1991 the U. S. Army Corps of Engineers (Corps of Engineers or Government) issued a solicitation for bids for the repair and replacement of the existing underground heat distribution system at the Redstone Arsenal in Huntsville, Alabama (R4, tab 29). As a result of that solicitation, on 30 September 1992 appellant was awarded

Contract No. DACA01-92-C-0183 in the original amount of \$935,273, increased to \$1,160,846, to replace underground steam and condensate pipes in Areas 3700, 4200, and 4600 in Redstone Arsenal at Huntsville, Alabama (the contract) (R4, tabs 5, 29; tr. 1/27). Initially approximately 13,320 linear feet of a new “Class A” piping system were required (tr. 1/25; R4, tab 25). The original contract performance period of 328 days, or until 18 November 1993, was extended to 12 October 1994 primarily due to weather delays (R4, tab 5 at 1, tab 6). The contract included FAR 52.233-01 DISPUTES (APR 1984) (R4, tab 29 at 73), and FAR 52.249-10 DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984) which states in part (*id.* at 104):

(a) If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract including any extension, or fails to complete the work within this time, the Government may, by written notice to the Contractor, terminate the right to proceed with the work (or the separable part of the work) that has been delayed.

and FAR 52.236-0007 PERMITS AND RESPONSIBILITIES (APR 1984) which states in part (*id.* at 79):

. . . . The Contractor . . . shall take proper safety and health precautions to protect the work, the workers, the public, and the property of others. . . .

2. The contract specifications § 02695 state in part (ex. G-2 at 3; tr. 1/78):

1.3.3 Approved Brochure

A brochure which provides complete design, hardware, installation, maintenance, repair and quality control requirements for a supplier’s underground heat distribution conduit system and is prefaced by a Federal Agency Letter of Acceptability. A Federal Agency Letter of Acceptability is a letter signed by representatives of the federal agencies participating in the Federal Agency Committee on Underground Heat Distribution Systems stating that the supplier’s conduit system is approved for use for the site groundwater conditions, operating temperature, and soil classification indicated.

1.4 DESCRIPTION

. . . .

The design, manufacture, fabrication, installation and testing of the system and its components shall be in accordance with:

a. Federal Agency Approved Brochure for the conduit system being supplied.

....

1.5 SYSTEM REQUIREMENTS

The system provided shall be approved for Class A groundwater conditions and corrosive soil conditions. The system shall be designed for steam and condensate service with an operating temperature of 400 degrees F and an operating pressure of 200 psig. The maximum permissible heat loss shall be as shown in Table 1 below. Heat loss calculations shall be based on an earth conductivity factor of 15.0 Btu-in/hr-square foot-degree F and an average earth temperature of 55 degrees F.

3. The contract specifications § 02695, Underground Heat Distribution Systems (Preapproved Systems) (ex. G-2 at 5 and 11-12) states in part:

SD-76, Certificates of Compliance

....

Upon completion of the work and before final acceptance, the Contractor shall deliver to the Contracting Officer a notarized statement signed by a principal officer of both the supplying and contracting firm, certifying that the system has been installed satisfactorily and in accordance with the plans, specifications and Approved Brochure.

....

3.3 CONTRACTOR RESPONSIBILITY

.... The conduit system shall be inspected, installed, and tested in accordance with the conduit system supplier's Approved Brochure and any directions given by the conduit system supplier's representative.

3.4 RESPONSIBILITIES OF THE CONDUIT SYSTEM SUPPLIER'S REPRESENTATIVE

The conduit system supplier's representative shall be present at the jobsite when the following types of work are being performed:

- a. Inspection and unloading [of conduit].
- b. Inspection of the trench prior to laying conduit.
- c. Inspection of concrete thrust block prior to coldspringing.
- d. Coldspringing.
- e. Hydrostatic tests of all service lines.
- f. Field joint closure work.
- g. Air test of conduit.
- h. Repair of any coating patchwork.
- i. Holiday test of conduit coating.
- j. Initial backfill up to ten inches above the top of the casing.

The Contractor shall not perform any of this work in the absence of the conduit system supplier's representative. The representative shall take prompt action to return to the factory all damaged or defective material and to order prompt replacement of such material. Damaged or defective materials are defined in the Approved Brochure.

4. The Government divides its underground heat distribution systems into four classifications: Classes A, B, C, and D. The Class A system for underground heat distribution is subjected to the Government's strictest standards, and is generally utilized in wet areas or areas in which the underground water table is near the surface. (Tr. 1/37-38, 123)

5. At the time of bid and award, the systems approved for Class A underground piping and thus available for use in the contract, were comprised of an interior steel carrier pipe, surrounded with insulation and an outer jacket. In some of the systems the jackets were made of steel and in others, fiberglass. (Tr. 1/25, 30, 39, 45-46) The carrier pipes were subject to hydrostatic testing; the jackets, air testing (ex. A-39 at 15).

6. Mr. Ernest W. Stiles, appellant's corporate officer who "basically ran" appellant's operations in Alabama, prepared appellant's bid for the contract (tr. 2/4-5). In arriving at its bid, Mr. Stiles used a price offer for the buried piping system from U.S. Polycon Corporation, a representative of Sigma (tr. 2/5-6). The Sigma piping system used a carrier pipe wrapped in insulation with a fiberglass jacket (tr. 1/25, 29-30). Costs for the contract of using Sigma with its fiberglass jacket were approximately \$200,000 less than that of systems with steel jackets (ex. A-39 at 20).

7. Prior to preparing appellant's bid, Mr. Stiles had no experience with fiberglass, but rather chose Sigma due to the price (tr. 2/25-27). There is no evidence Mr. Stiles tried to make himself more familiar with fiberglass or any of its deficiencies prior to submitting appellant's bid. Rather, in deciding to use Sigma, Mr. Stiles relied on a Tri-Services Federal Letter of Acceptability dated 18 August 1989 which was included in Sigma's brochure for its Underground Heat Distribution System (tr. 1/40, 45-56). That Letter of Acceptability states in part (tr. 1/189; ex. A-38):

The Sigma Class A Heat Distribution System described in the Sigma Class A Heat Distribution System Product Brochure dated August, 1989 complies with the requirements for use at a maximum operating temperature of 450 degrees F in Class A sites where the water table is expected to be frequently above the bottom of the system or the water table is expected to be occasionally above the bottom of the system and surface water is expected to accumulate and remain for long periods in the soil surrounding the system. The system also meets the requirements for use at sites classified as Class B, C, and D.

8. Sigma's brochure, which was incorporated into the contract specifications as the brochure for the conduit system being supplied, states that quality assurance air testing "shall be up to 15 p.s.i.g. and in accordance with Quality Control section" (ex. A-38 at E-11, ¶ 11; tr. 1/73, 86, 102, 168, 206). The Quality Control section of the Sigma brochure provides in part (ex. A-38 at F-1):

ON SITE

A field service technician representative of Sigma Piping Co., Inc. shall be present at the job site in accordance with the requirements of the Federal Construction Guide Specification and will certify that the following procedures have been accomplished.

1. Inspection of the bed and backfill materials.

2. The hydrostatic test of the carrier pipe prior to insulating the pipe at the field joints.
3. Air-testing of the casing. Testing shall not begin before all joints have been surface dry for at least three hours on the run being tested.
4. Up to 15 psig air test of casing for one hour before backfill, and until backfill is 12" above casing.
5. Inspection of all aspects of the installation shall be made before the representative leaves the job site.
6. Each day the representative is at job site a written report will be made and any exceptions to the suppliers criteria or the Federal Specification 15705 will be made.
7. Dryout of conduit insulation area as required in paragraph 15 on page E-13.

(Tr. 1/86, 102, 206) The contract specifications do not state at any other place, the p.s.i. at which the fiberglass jacket should be air-tested (tr. 1/73, 127, 131).

9. Sigma's brochure also states in part (ex. A-38 at E-15):

3. The field joint connector and 4 to 6 inches each side should be cleaned with acetone and roughed with sand paper or file.

(Tr. 1/212, 2/6-7)

10. On 23 December 1992 notice to proceed was issued and acknowledged by appellant (tr. 1/32; R4, tabs 5, 29).

11. In the spring of 1993 the Government approved appellant's use of Sigma, and appellant began installing the system in spring or early summer 1993 (tr. 1/40-41, 97).

12. Sigma shipped in twenty-foot lengths the bulk of the carrier pipes which were encased in insulation and fiberglass jackets (tr. 1/45-46; ex. A-39 at 128-132). At the joints, the fiberglass was shipped in two halves (tr. 1/45). The steel carrier pipe joints were sealed by welding (tr. 1/25); the fiberglass was sealed by field wrapping with fiberglass cloth and resin (tr. 1/46). There were Z bends for expansion between the manholes (tr. 1/45).

13. The Government disallowed the use of acetone to clean the fiberglass joints, asserting that the use was a violation of safety requirements of the Permits and Responsibilities clause because the acetone was highly flammable (tr. 1/71, 212, 2/38; R4, tab 29 at 79). The substitute for acetone left “somewhat of an oily film” on the joints (tr. 2/7). Workers for the contractor for the surety spoke of using acetone in completing the contract after the default termination, albeit without the Corps of Engineers knowledge or approval (tr. 1/213; ex. A-41 at 12, ex. A-40 at 11).

14. Aside from the indication in the Government’s Memorandum of Record of a meeting held January 1995 (finding 38), there is no evidence appellant raised the deletion of the use of acetone as a problem, a change, or a cause of delay in any correspondence or at meetings with the Government (R4, tabs 7, 9, 11, 14; tr. 2/6-7, 38; Gov’t proposed finding 20 and app. resp.).

15. Pursuant to the contract requirement that there be a Sigma representative on site during certain installations (findings 3, 8), Paul Phillips was designated Sigma’s representative (ex. G-2; R4, tab 11 at 5; tr. 1/49, 2/38).

16. Repeatedly throughout the contract the fiberglass jackets failed to pass the air test. The Government’s primary concern regarding appellant’s contract work was these failures to pass the air test, rather than the manner of appellant’s installation. (Tr. 1/81, 201, 219, 232, 2/17, 24, 31) When a fiberglass jacket failed an air test, that section was wrapped and rewrapped in the field until the jacket passed the air test (tr. 1/49, 200; R4, tab 11).

17. Due to the problems appellant was having obtaining a successful air test, in November 1993, the Redstone Office of the Corps of Engineers requested an inspection of the jobsite by personnel from the Corps of Engineers Research Laboratory, which included Dr. Charles Marsh. The inspection lasted no more than two days, and was followed by a meeting concerning failure of the fiberglass jackets to pass the air tests. (Tr. 1/43, 80-83, 201, 2/16-18, 30-31) The record does not reflect conclusions, if any, which were reached during the inspection and the following meeting.

18. During the November 1993 inspections and meeting, Dr. Marsh expressed concern that there was some debris in the joints of the fiberglass (tr. 1/203). The inspections and meeting were the first time debris in the joints of the fiberglass was mentioned to appellant (tr. 1/82, 200). Those portions of Mr. Phillips’ daily reports which are included in the record certify that the contract work was done without exception and do not note any debris in the joints (tr. 1/99, 204; ex. A-13). It was necessary to make some fiberglass joints in the ditches, resulting in some foreign matter in the wrappings (tr. 1/82-84, 2/10, 37).

19. Other explanations advanced for the air test failures are: (1) Some fiberglass jackets arrived from the manufacturer in a damaged condition, or with pinholes or thin places, which resulted in leaks (tr. 1/46, 2/28-29, 31, 47). (2) Appellant left some fiberglass jackets adjacent to the ditches (seemingly only in area 4200, the area postponed

by the Government (finding 38)) often without cover over the end caps enabling rain to moisten the insulation, and often exposed to sunlight for long periods which resulted in some deterioration of the fiberglass (tr. 1/70, 94, 117). (3) At times appellant's employees, against the appellant's instructions, walked on the pipes (tr. 2/35-36). Mr. Phillips also at times walked on the pipes (tr. 2/35), and there is no evidence that the weight of an adult man would damage pipes designed to be buried.

20. Mr. Stiles testified that prior to November 1993, the fiberglass jackets were tested at 5 p.s.i. and appellant had difficulty passing at that pressure; the Government witnesses testified that the fiberglass jackets were tested at 15 p.s.i. throughout the contract (R4, tabs 11, 12; tr. 1/137, 226, 230, 232, 2/18). On 8 December 1994, Sigma's authorized representative stated (R4, tab 11): "[A]n air-pressure test of 5 psig would suffice. . . . Accordingly, it would be difficult to justify a greater pressure." There is no evidence that the fiberglass jackets would have consistently passed the air tests at slightly less than 15 p.s.i., or that the testing was so accurate that it was never less than 15 p.s.i. We find based on the entire record, and specifically Mr. Stiles' testimony, that the fiberglass jackets would not have consistently passed the required testing at slightly less than 15 p.s.i. or even at 14.75 p.s.i.

21. During the contract work, appellant installed portions of the system and performed work set out in findings 3 and 8 without a Sigma manufacturer's representative on site (tr. 2/32-35, 48). With this exception, appellant installed the system in accordance with the Sigma brochure for Class A systems and pursuant to Mr. Phillips' instructions (tr. 1/133, 199, 2/16, 24, 47).

22. On 10 March 1994 the Government contracting officer wrote appellant a letter which the contracting officer considered a cure notice (R4, tab 26). That letter referred to a performance appraisal in January 1994 that asserted appellant had failed to make progress and the quality of its work was poor, and required appellant to submit within ten days a revised schedule of work to assure timely completion (R4, tab 27, tr. 1/155). However, subsequently the completion date was extended to 12 October 1994, and the revised schedule of work was not required (R4, tab 5).

23. Due to the following occurrences, during the summer of 1994 there was no manufacturer's representative on the job site (tr. 1/48-50, 118-20). An argument resulted when appellant withheld a \$12,000 payment from Sigma because Mr. Phillips exploded a Z bend pipe (R4, tab 24; tr. 2/21). Due to this dispute Mr. Phillips trained and certified appellant's employee Donald Brownlow as his "genuine" field service technician, and on 18 February 1994 Mr. Phillips left the job site (R4, tabs 20-22; ex. A-2; tr. 1/119, 134, 2/20-21). Mr. Brownlow filled the position through spring of 1994 (tr. 1/49, 2/20). In August 1994, Mr. Phillips returned to the job after the resolution of this dispute (tr. 2/22, 48). Appellant's pass/fail rate for the air test on the fiberglass jackets did not vary in any material respect whether or not Mr. Phillips was present (tr. 1/130, 219).

24. During the contract appellant had at least five superintendents and a turnover of all employees, which hurt the overall efficiency. Mr. Stiles testified that not all appellant's laborers had sufficient experience, and the supervisors did not have the knowledge of installation of underground piping which they claimed to have. (Tr. 1/56, 114, 2/30, 44; R4, tabs 26, 27) Mr. Stiles testified that the turnover of employees was due to frustration at not making progress (tr. 2/21-23). Appellant's employees were always paid (tr. 2/36).

25. The Government considered that throughout the contract, appellant had inadequate staff and equipment, and poor management (tr. 1/112-14). The record does not contain the number of employees the Government considered adequate. Copies of some of the daily reports submitted by Messrs. Phillips and Brownlow are included in the record; only twenty-four of these reports reflect appellant's staffing and are as follows:

January 1994 (5 days)

2 days	6
1 day	2 (little work due to rain)
1 day	8
1 day	9

February 1994 (13 days)

4 days	9
2 days	10
2 days	7
1 day	8
1 day	2 (no work due to weather)
1 day	11
2 days	12

March 1994 (6 days)	
3 days	10
1 day	11
1 day	8
1 day	12

Appellant's staffing of the contract from August 1994 to October 1994 was (R4, tab 13):

1-5 August	8 employees
8-19 August	6 employees
22 August-2 September	7 employees
5-30 September	6 employees
3-14 October	5 employees
17-28 October	2 employees

The Government project manager who performed daily inspection of the contract (tr. 1/80-81), testified that there were two people on the job in October and November (tr. 1/121) and at (tr. 1/195):

Q. How many did you have on site in the earlier part of the contract?

A. There were probably, probably no more than eight to twelve even when they had a lot of people out there, somewhere in that range.

26. By 28 July 1994, appellant had placed: (1) in the 3700 Area, 62% of the approximately 5,700 feet of piping, with 11% accepted for service; and (2) in the 4600 Area, 83% of the approximately 4,560 feet of piping, with 67% accepted for service (R4, tab 25; tr. 1/60-62, 2/40, 49-51). The Government postponed work in the 4200 Area due to the contract delay resulting from the failure of the fiberglass jackets to pass the air tests (tr. 1/140, 214-15). There was very little contract work after July 1994 (R4, tab 13; tr. 1/63, 194, 2/49-51). During the late summer and fall of 1994 appellant reduced its work force because they were making no progress regardless of the staffing (tr. 2/45).

27. During performance of the contract, appellant received and performed without trouble, a significant change order of about \$200,000 for 1,000 feet of underground piping in which appellant used steel in both the carrier pipe and jacket (tr. 1/32, 175, 2/23).

28. We find, based on the entire record and specifically findings 24 - 27 and 38, the Government has not proven that: (1) appellant repudiated the contract or abandoned the contract work; or (2) the delay in the contract work was attributable to the number of appellant's employees or the amount and condition of appellant's equipment as opposed to defects in the Sigma system.

29. On 10 August 1994 the Government sent a Show Cause Notice to appellant noting that appellant's lack of performance was cutting off steam heating to six buildings (R4, tab 23).

30. On 16 August 1994, appellant wrote the Government and stated in part (R4, tab 22):

In answer to your letter dated 10 Aug 94 and in our defense:
Since the outset of this Project there have been serious problems that we have been unable to control. The first, and foremost, has been the impossible task of getting the manufacturer's representative on site

. . . .

You reference unpaid suppliers and I admit to owing Sigma but we cannot agree on the amount. The amount of money can be resolved if and when they fulfill the specification requirement.

31. On 31 August 1994 the contracting officer advised appellant (R4, tab 21):

Despite the lack of information presented to show that delays are without your fault or negligence, I have decided against a termination for default at this time. Instead, I have instructed the Area Engineer to initiate changes to the contract to delete work that is critical to providing steam to the buildings I mention[ed] in my letter of August 10. I urge you to cooperate in bilaterally resolving these changes.

The contracting officer also stated that it was not the intention of the Government to condone any delinquency or to waive any rights the Government had under the contract.

32. On 11 October 1994, Richard C. Armstrong, Chief, Engineering Division, Directorate of Military Programs, Corps of Engineers, sent a Memorandum regarding Heat Distribution Systems (tr. 1/135), which states in part (R4, tab 19):

1. The Federal Agency Committee has received many reports of poor performance of existing steam and high temperature underground heat distribution systems (HDS). As a result of these reports, investigations and evaluations under the direction of the Federal Agency Committee on Underground HDS were initiated. This analysis has confirmed that many of these systems are not performing as intended. In anticipation of DoD direction, a revised policy on the selection and installation of HDS operating at 95 degrees C (200 degrees F) and above is enclosed. This new policy includes changes in materials and

establishes a preference for aboveground and shallow concrete trench systems.

2. All Army projects that have not reached concept stage shall comply with the enclosed policy. Army projects with direct buried systems, that have not been awarded but are beyond the concept design stage, shall comply with the material and end seal requirements for direct buried systems in the enclosed policy. Any exceptions should be submitted to and approved by CEMP-ET.

The enclosure states:

Policy
for Army Heat Distribution Systems
Carrier Pipe Temperatures 95 degrees C (200F) and Above

ALL Sites:

Heat distribution systems for all sites will be selected in the following order of preference.

- a. Aboveground
- b. Shallow Concrete Trench
- c. Direct Buried

Direct Buried systems shall only be provided where aesthetics or functional requirements preclude the use of aboveground or shallow concrete trench systems. Direct Buried systems shall use fixed end seals only. Gland type end seals will not be permitted. Direct Buried systems, when used, shall be provided in accordance with CEGS 02695 and the following criteria. Definitions for site classification are included in CEGS 02695.

Buried Class A Sites:

Where a direct buried system is required, only class A drainable, dryable, air pressure testable (DDT) systems with steel casings will be used.

Buried Class B Sites:

Where a direct buried system is to be provided, only class A DDT systems with steel casings or class B water spread limiting systems will be used.

Buried Class C and D [S]ites:

Where a direct buried system is to be provided, only class A DDT systems with steel casings, class B or class C water spread limiting systems will be used. [Emphasis in original]

33. On 14 November 1994 the Government wrote appellant that since its then completion date as extended had passed, and liquidated damages were \$1,189 per day, appellant's request for payment through 31 October 1994 and all further requests would not be processed until warranted (R4, tab 17).

34. This record reflects only two instances when appellant failed to pay Sigma: (1) the dispute due to the exploded Z bend (findings 23, 30), and the Government's withholding payment (finding 33; tr. 1/120).

35. On 21 November 1994 appellant responded to the Government's 14 November 1994 letter and stated in part: "This project was delayed one year after bidding, which required us to hold our price even though some prices escalated" (R4, tab 14).

36. On 2 December 1994 appellant was advised its accrued liquidated damages as of 1 December 1994 were \$78,474 (R4, tab 13).

37. On 12 December 1994 the Government sent appellant a second Show Cause Notice in which it noted that since the 10 August 1994 Show Cause appellant had made little progress on the contract (R4, tab 10).

38. On 17 January 1995 the parties met at appellant's request to discuss the 12 December 1994 Show Cause (R4, tabs 5, 7, 8; tr. 1/122, 167, 175). In a Memorandum of Record of that meeting, one Government representative noted (R4, tab 7):

8. Mr. Slutsky [appellant's president] offered a plan to complete the work. He proposed to change the pipe system in the areas left to be completed; i.e., change to a steel pipe system. Mr. Stevens [Area Engineer, Corps of Engineers] noted that a lot of (Sigma) materials had been delivered, had been left unprotected on the job site, and questioned what would happen to that material. Mr. Slutsky stated that only the materials for the 4200 area [the area postponed by the Government (finding 26)] had been delivered. He continued, saying SPS has satisfactorily installed the new system they propose to substitute. As part of the SPS plan, Mr. Slutsky said the Government would not assess liquidated damages. As

reasons for this, he noted that SPS would need time to get a new supplier. . . .

9. In addressing further reasons for excusable delays, Mr. Slutsky stated that SPS had requested time extensions for changes, but these requests were denied. . . .

. . . .

12. . . . Mr. Slutsky stated that they would increase manpower, and estimated that payrolls of \$4,500 to \$5,000 per week would be sufficient. The Area Engineer pointed out that this estimated payroll reflected one crew of 10 people, and offered the opinion that this would not be sufficient to complete within 4 months, especially since material delivery would take some of this 4-month period. Mr. Slutsky estimated 6 weeks to deliver materials. . . .

. . . .

14. Following the meeting, the Government representatives discussed the contractor's presentation. . . .

Change in Pipe System. The use of Polycon/Sigma was the contractor's choice. After all of the problems encountered since notice to proceed, the contractor took no action, nor did he indicate he took any action, to correct the problems; nor did they indicate that they ever considered going to another manufacturer. The only factor that could have prevented SPS from changing pipe systems was the requirement that the "system" be inspected daily, and eventually, certified by the manufacturer's representative. However, this did not seem to be a problem for the contractor, since he was now proposing just such a change. Since the contractor stated that he had problems with Sigma (i.e., late and improper delivery) from the very start, it seemed too late, a year and a half after the original completion date, to start corrective action. . . .

39. On 9 February 1995 the contract completion date was extended to 12 October 1994, due to earlier adverse weather (R4, tab 6). On 15 February 1995 the contract was terminated for default upon the ground that appellant had "failed to prosecute the work to ensure its completion, as specified in the contract"; \$905,094 in payments had been made with a balance of \$255,752 remaining (R4, tabs 4, 5). Thus the termination was issued after the completion date of the contract had passed (R4, tab 6). Appellant timely appealed the contracting officer's decision.

40. After termination of the contract, the project was completed by the surety using the firm of Mason and Dulion (M&D). M&D had problems meeting the air test on the fiberglass jackets when installing the Sigma materials and the job took nine months, substantially longer than they expected (tr. 1/95-97, 220-21). Further Sigma refused to certify the system at M&D's completion of the contract (ex. A-39 at 28).

41. The deposition of Mr. Nicholas Vance, a consultant for M&D, was accepted into evidence as appellant's exhibit 39. Mr. Vance was straightforward in his testimony, and this record does not reflect any interest he had in the outcome of the appeal, or any other reason for Mr. Vance to be biased or prejudiced. We find Mr. Vance's testimony, particularly when considered in conjunction with all of the record, to be credible. Mr. Vance stated that prior to 1950, almost all underground steam and condensate systems were cast iron, which was expensive and difficult to install due to the weight. In approximately 1950 the industry began using coated steel; in approximately 1970 the Government began using fiberglass. A product made by E. G. Kaiser was the best fiberglass system Mr. Vance was familiar with and Mr. Vance knew of one Kaiser system which had been operating successfully for 20 years. However, the Kaiser system is expensive to install. (*Id.* at 15-20)

42. Mr. Vance would not use the Sigma system primarily because the industry "scuttlebutt" was that Sigma had never certified a system (a point later confirmed to Mr. Vance) (*id.* at 20, 28; tr. 1/223). A certified system has a jointly-signed letter from the contractor and the manufacturer that the system is installed in accordance with plans and specifications and the manufacturer's recommendation; if the manufacturer does not sign, it has no responsibility under its warranty for the completed product (ex. A-39 at 20-21).

43. In Mr. Vance's experience, the Sigma system had failed for twenty years and was, in Mr. Vance's view, inherently defective due to the design of the Z bends which had horizontal seams along the sides of the jackets at the joints (*id.* at 18, 23-27). The Sigma system left for M&D to install "was obviously defective material"; "[S]ome of the casing would be three-sixteenths of an inch thick, and on the other side you look at it and it might be three-eighths of an inch thick." (*Id.* at 45) Also "the casing itself was just junk, it was worthless." (*Id.* at 47, 89-91) Some of the Sigma piping had deteriorated due to the ultraviolet radiation from being exposed to the sun for perhaps 18 months prior to the contract with the surety (*id.* at 43).

44. Mr. Vance testified at 89:

A. . . . I can't tell you why I didn't make it, I don't know, but it certainly was a very poor, poorly manufactured product, from some just observation of the quality control that was used in the thickness of the casing.

And then seeing all of these leaks, it just made my job, it took us twice the time. . . . And if you try to test something and

just sit there and test it again and fix it and test it and fix it and test it and fix it, and it's very frustrating.

45. We find that the condition of the Sigma pipe as described by Mr. Vance to the extent that it is attributable to disintegration due to exposure to the sunlight, is not pertinent to this dispute.

46. Mr. Harold E. Slutsky, who had a Bachelor of Science in Civil Engineering and at time of trial had been appellant's president for thirty-five years (tr. 2/56), had little input into the administration of the contract (tr. 2/57). Mr. Slutsky visited the job site twice during the installation of Sigma (tr. 2/71). Mr. Slutsky had no "hands-on" experience with fiberglass (tr. 2/70).

47. After the default, Mr. Slutsky investigated "quite extensive[ly]" underground heat distribution systems which used fiberglass, and talked with the personnel in about eight or ten of the Corps of Engineers contracting offices all along the East Coast (tr. 2/57).

48. Those persons Mr. Slutsky talked with included Dr. Charles Marsh, who was one of three authors of an "Investigation of Preapproved Underground Heat Distribution Systems," and Dale Otterness, of the Office of Chief of Engineers, Corps of Engineers (tr. 2/60). During these discussions Mr. Slutsky learned that at some Government locations, systems with fiberglass had been installed and none of these systems with fiberglass had been certified and some were never completed (tr. 2/58-59). Dr. Marsh stated that the fiberglass pipe was "decertified" primarily because: (1) the life expectancy was seven years; (2) the fiberglass systems were hard to install; and (3) the systems were generally defective type (tr. 2/64). Mr. Slutsky reported that Dr. Marsh stated that out of thirty-five or forty fiberglass systems at about fifteen installations throughout the United States, only seven percent were able to hold the pressure test (tr. 2/63-64). Dale Otterness stated to Mr. Slutsky that the Government, in error, approved the fiberglass systems on a laboratory test in a laboratory chosen by the manufacturer, rather than a field test. There is a major difference in making joints in a laboratory environment rather than in a trench with the outdoor environment such as dirt. (Tr. 2/65)

49. We find, based on the entire record but specifically findings 21 and 23 that appellant's failure to have Mr. Phillips present at the work site when activities set out in findings 3 and 8 occurred, was the only manner in which appellant failed to demonstrate that it substantially complied with the Government plans and specifications, and this failure to strictly follow the contract plans and specifications, was not shown to be the cause of appellant's failure to complete the contract. We further find, based on the entire record and specifically findings 28, 32, 40-44, and 48, that: (1) Sigma's defective design, which was improperly approved by the Government, and the defective manufacture by Sigma were the causes of the fiberglass jackets' failure to pass the air test with the resulting delays to the contract; and (2) it would have been impossible for appellant to provide the Government with a certified Sigma system. The record does not enable us to apportion the delays between those attributable to the defective design and defective manufacture.

DECISION

Evidentiary Issue.

Mr. Slutsky's testimony of statements made to him by Government employees was received over the Government's hearsay objections, as a party-opponent statement pursuant to Rule 801(d)(2) of the Federal Rules of Evidence. The parties argued the point in their post trial briefs. The evidence is properly admitted. *Reese Industries*, ASBCA Nos. 25862 *et al.*, 83-1 ¶ 16,245 at 80,743; *see also USD Technologies, Inc.*, ASBCA No. 31305, 87-2 ¶ 19,680 at 99,617.

The Merits

In this appeal from a default termination, the Government states the termination was upon the ground that appellant had "failed to prosecute its work to ensure its completion, as specified in the contract" (finding 39). Appellant asserts that its lack of progress (and thus failure to achieve substantial completion by the final completion date) was excusable and "entirely the result of defective Government furnished specifications and two constructive changes" (app. reply br. at 18). Appellant claims there were defective specifications due to the Government's Letter of Acceptability which approved Sigma Piping System (Sigma) as a Class A heat distribution system. That approval entitled appellant to install Sigma in the contract and thus incorporate Sigma's specifications into the contract. Appellant contends both the Sigma system and the Sigma specifications were defective. Appellant identifies the two constructive changes as the prohibition of the use of acetone and the requirement to test at 15 p.s.i. instead of 5 p.s.i. (App. br. at 2-3)

We noted the default termination was issued 15 February 1995, several months after the completion date, as extended, of 12 October 1994 had passed. However, this fact does not change the parties' respective burdens.

"A default termination . . . is a drastic sanction which should be imposed (or sustained) only for good grounds and on solid evidence." *J.D. Hedin Construction Co. v. United States*, 408 F.2d 424, 431 (Ct. Cl. 1969). The Government has the burden of proof that its default termination was justified. *Lisbon Contractors, Inc. v. United States*, 828 F.2d 759, 763-65 (Fed. Cir. 1987).

The basic law regarding defective specifications is well settled. In *C.L. Fairley Construction Co., Inc.*, ASBCA No. 32581, 90-2 BCA ¶ 22,665, *aff'd on recon.*, 90-3 BCA ¶ 23,005, this Board quoted from *R.C. Hedreen Co.*, ASBCA No. 20599, 77-1 BCA ¶ 12,328 at 59,554:

The general rules applicable within the present factual context are clear. Where the Government specifies the materials which are to be used in performing the contract, an implied warranty

arises that those materials are capable of meeting contractual testing and performance requirements. The contractor must demonstrate that he has substantially complied with the Government plans and specifications, that he has installed the requisite materials but that an unsatisfactory performance or product resulted. Having done so, the burden is shifted to the Government to prove that defective materials were installed or that defective workmanship materially and measurably contributed to the delay, or that there are additional causes of the contractor's difficulties which absolve the Government of responsibility. [Citations omitted]

When the Government provides alternate methods by which a project may be completed, the Government's warranty of its specifications extends to both options. *Detweiler Brothers, Inc.*, ASBCA No. 17897, 74-2 BCA ¶ 10,858 at 51,641; *Bart Associates, Inc.*, EBCA No. C-9211144, C-9312163, 96-2 BCA ¶ 28,479 at 142,235-4; *Neal & Co., Inc. v. United States*, 19 Cl. Ct. 463, 464 (1990). Although Government-furnished plans need not be perfect, they must be adequate for the task or "reasonably accurate." *John McShain, Inc. v. United States*, 188 Ct. Cl. 830, 412 F.2d 1281 (1969). In *McNally Industries, Inc.*, ASBCA Nos. 43027, 44688, 93-3 BCA ¶ 26,130, this Board found the specifications were defective, noting that during contract performance the Government stated those specifications which were the subject of the appeal were erroneous, insufficient, incomplete, conflicting and too restrictive, and ultimately changed that portion of the specifications.

In *Maecon, Inc.*, ASBCA No. 31081, 89-2 BCA ¶ 21,855 at 109,945 this Board further addressed appellant's requisite proof of the defective specifications:

There is no disagreement over the principle . . . if a construction contractor is bound by contract to build according to plans and specifications provided by the owner, he will not be responsible for the consequences of defects in those plans and specifications. The contractor has the burden of proving that the plans or specifications are in fact defective. This is normally done by his showing that he substantially complied with the plans and specifications and an unsatisfactory result nevertheless ensued. However, the contractor's failure to strictly follow the contract plans and specifications, if shown not be to the cause of the performance failure, will not preclude a result of government liability for a design defect in its plans or specifications. The burden of proof, a recognizably difficult burden, on that issue, rests with the contractor. (Citations omitted)

In this appeal the evidence established: at the time the solicitation for the contract was issued the Sigma system with its fiberglass jacket (or outer pipes) had failed for fifteen years and was inherently defective due to the design of the expansion joints (or Z bends) (finding 43); no Sigma system had ever been certified (certification initiates the manufacturer's responsibility under its warranty, and results from a jointly-signed letter from the contractor and the manufacturer that the system was installed in accordance with plans and specifications) (finding 42); the system which is the subject of this appeal was not certified by Sigma after its installation was completed by the contractor for the surety (finding 40); at the time of the default termination, the Government had used fiberglass systems for over twenty years (finding 41) and only 7% of the thirty-five to forty fiberglass systems located in approximately fifteen Government facilities in the United States were able to hold the pressure test (finding 48); none of the fiberglass systems installed in the eight to ten Government facilities visited by appellant's president after the default termination, had been certified and some were never completed (findings 47, 48); the Government in error approved the fiberglass systems for use with the heat distribution systems on a laboratory test in a laboratory chosen by the manufacturer, rather than a field test (finding 48); use of fiberglass had resulted in a system which was generally defective (finding 48); and during performance of the contract the Government withdrew approval of fiberglass for use in A, B, C, and D Class Heat Distribution Systems (finding 32).

We found that: (1) appellant's failure to have Mr. Phillips present at the work site when activities set out in findings 3 and 8 occurred, was the only manner in which appellant failed to demonstrate that it substantially complied with the Government plans and specifications; and (2) that failure to strictly follow the contract plans and specifications, was not shown to be the cause of appellant's failure to complete the contract. We further found that the cause of the failure of the fiberglass jackets to pass the air test and the resulting delays to the contract, was Sigma's defective design, which was improperly approved by the Government, and the defective manufacture by Sigma. The record did not enable us to apportion the delays between those attributable to the defective design and manufacture. (Finding 49)

Under these circumstances, pursuant to the case law stated above, we sustain the appeal and convert the termination for default to a termination for convenience. In light of this determination in this appeal from a default termination, we will not address appellant's assertion of two constructive changes.

Dated: 9 February 2001

JEAN SCHEPERS
Administrative Judge
Armed Services Board
of Contract Appeals

I concur

MARK N. STEMLER
Administrative Judge
Acting Chairman
Armed Services Board
of Contract Appeals

I concur

EUNICE W. THOMAS
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 No. 48643, Appeal of SPS Mechanical Co., Inc., rendered in conformance with the Board's Charter.

Dated:

EDWARD S. ADAMKEWICZ
Recorder, Armed Services
Board of Contract Appeals