

ARMED SERVICES BOARD OF CONTRACT APPEALS

Appeal of --)
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Aleutian Constructors, J.V.) ASBCA No. 49255
)
Under Contract No. N62474-86-C-0090)

APPEARANCE FOR THE APPELLANT: Bradley L. Powell, Esq.
Oles, Morrison, Rinker & Baker LLP
Seattle, WA

APPEARANCES FOR THE GOVERNMENT: Fred A. Phelps, Esq.
Navy Chief Trial Attorney
James T. Delanoy, Esq.
Senior Trial Attorney

OPINION BY ADMINISTRATIVE JUDGE VAN BROEKHOVEN

Appellant timely appealed a contracting officer's final decision denying appellant's properly certified claim in the amount of \$870,463.00, which with revisions, ultimately totaled \$1,289,273.00. Appellant alleged design errors in the solicitation and contract documents, contending that these resulted in constructive suspension delays and disruptions. Both entitlement and quantum are before the Board for decision.

FINDINGS OF FACT

Background

1. On 22 February 1988, the Government issued an Invitation for Bids (IFB) for the construction of a three story building addition to an existing Bachelor Enlisted Quarters (BEQ) complex at Adak, Alaska, a remote island in the western Aleutian Islands (R4, tab 1). Appellant is a joint venture company established for the purpose of performing construction work in the Aleutian Islands and other remote areas of Alaska (tr. 1/25-26). Both companies that were joined in this joint venture have worked almost continuously in Adak since the 1950s and have had considerable experience performing all types of construction work in Adak, including housing projects and modular construction (tr. 1/25-26).

2. The project in this appeal consisted of a separate three-story, L-shaped building connected by an underground tunnel to the existing barracks facility (R4, tab 1; tr. 1/32-35). Appellant intended to perform all the on-site work, including the foundation and

on-site built components, provide for the shipment of modules to Adak, and erect the modules. The foundation was to consist of steel H-piling driven at Adak, with structural steel framing that would accept modules sitting on the piling. The site development included parking areas, sidewalk, and the usual on-site facilities that would be part of such a project. The building itself consisted of 52 modules composed of sleeping modules, corridor modules, stairway modules, and mechanical modules.

3. Although appellant had warehouse, camp, and support facilities in Adak, it did not have the facilities in which to construct modules (tr. 2/82). Appellant was unable to construct the modules and sought a modular builder in bidding the project (tr. 1/33-34). There were no modular manufacturers in Adak, and although there may have been some in Alaska, the cost of labor in Alaska was considered by appellant to be prohibitive. Appellant, therefore, proceeded to contact modular home builders in the Northwest. Most of these manufacturers were not interested. However, two modular building manufacturers, Pacific Constructors International, Inc., of Boise, Idaho, and Pacific Rim Homes, Inc. (Pacific Rim) of Vancouver, Washington, expressed interest in the project and submitted proposals. (R4, tabs 114-16; tr. 1/34-35) Pacific Rim submitted the lowest bid to appellant. There was substantial difference between the two bids that caused an initial concern by appellant and led to a number of meetings between appellant and Pacific Rim.

4. Pacific Rim was a modular home builder doing work primarily in Oregon (tr. 1/35). At the time appellant was considering contracting with Pacific Rim, Pacific Rim did not have the facilities and equipment necessary for the production of the modules and did not have adequate financing to finance the project (tr. 1/54, 2/116-19). Appellant was concerned about Pacific Rim's financial capability (tr. 2/128-29). On 11 April 1988, appellant sent Pacific Rim a Notice of Intent to award a subcontract to Pacific Rim for the complete fabrication of the wood framed modules subject to its compliance with and meeting the requirements of Paragraphs 1.3 and 1.4.1 of Section 13020 of the specifications contained in the Government IFB. (R4, tab 1; app. supp. R4, tab 404) Paragraph 1.3 concerned the quality assurance requirements, namely, that the module manufacturer shall have not less than three years experience in the fabrication of modular buildings and that the plant facilities in which the modules were to be produced were adequate for this effort. Paragraph 1.4.1 addressed the manufacturer's qualifications, including protected storage areas, protection for units under construction until prepared for shipment, suitable work environment, and evidence of the manufacturer's history, including the documentation of three years of recent successful experience in like or similar projects.

The Contract and Subcontract

5. On 15 April 1988, the Government awarded appellant the subject contract. (R4, tab 1) For the firm, fixed-price of \$7,925,336.00, appellant was required to construct a pre-manufactured BEQ. The work included construction of 52 prefabricated modular units, their shipment by ocean barge to the site at Adak Island, their erection on a pipe-supported structural system, and the on-site work which included the construction of a tunnel connecting the existing BEQ facilities to the newly constructed modular BEQ. The work was to begin promptly and to be completed by 7 November 1989. In its Notice of Award, dated 15 April 1988, the Government stated:

Subject to receipt of acceptable performance and payment bonds by this office within ten (10) calendar days from the date of this notice and, if applicable, approval of your Contractor Quality Control Plan by the Resident Officer in Charge of Construction, you are hereby directed to proceed with the work under the authority of this notice pending execution of such formal contract. The contract time for purposes of establishing the completion date, default, and liquidated damages shall begin to run 15 days from the mailing of this Notice of Award, regardless of when performance and payment bonds are executed.

(R4, tab 119) The Notice of Award, like the formal contract, specified that the contract completion date was 7 November 1989. Appellant submitted its performance and payment bonds to the Government on or about 20 April 1988 (R4, tab 1).

6. The schedule for completion of the project included initial site work during the short Adak construction season in 1988. (Tr. 1/35-37) Severe weather prevented any exterior construction activity any time prior to late April or May, and after October. Appellant planned to complete the foundation work and as much of the site work as possible during the 1988 construction season so that it could receive the modules in the spring of 1989. The module construction was to begin and be completed during the 1988/89 winter months in Vancouver, Washington, with a target barge shipping date of 1 April 1989. The barge charter trip was 11 to 14 days, depending upon the weather. Therefore, appellant expected to receive the modules in mid-April, at which time it would erect the modules on the previously constructed foundations. This construction work included connecting the modules to the existing building, applying exterior siding and roofing, and completing interior finish work. Appellant intended to complete the work in October 1989, which corresponded with the end of the construction season. The contractor was responsible for providing the charter barge to transport the modules to Adak.

7. Contract specifications, Section 13020, Paragraph 1.4, specified that the required submittals, including shop drawings and First Article for Examination required elsewhere in the contract for individual components, be approved prior to acceptance and approval of the modular units. (R4, tab 1) Paragraph 1.4.2 specified the type of shop drawings required for this project. Paragraph 1.4.2.1 specified that shop drawings be “coordinated with work of the building, wall and roof panels, door and window suppliers, mechanical and electrical sections, and all components to assure proper fitting and interfacing of the module work into the building as a whole.” Paragraph 1.4.5, which was the First Article for Examination paragraph, specified that the first completed unit to be inspected for conformance with the project requirements was to be used to establish the Quality Control Standard for the remaining modules (finding 9, *infra*).

8. The contract contained the clauses and provisions that were standard for construction contracts. These included: FAR 52.216-6 TIME EXTENSIONS (APR 1984), FAR 52.212-12 SUSPENSION OF WORK (APR 1984), FAR 52.233-1 DISPUTES (APR 1984), FAR 52.236-5 MATERIAL AND WORKMANSHIP (APR 1984), FAR 52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (APR 1984), and FAR 52.243-4 CHANGES (APR 1984). The FAR 52.236-5 MATERIAL AND WORKMANSHIP clause provided in pertinent part:

(a) All equipment, material, and articles incorporated into the work covered by this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.

....

(c) All work under this contract shall be performed in a skillful and workmanlike manner. The Contracting Officer may require, in writing, that the Contractor remove from the work any employee the Contracting Officer deems incompetent, careless, or otherwise objectionable.

The contract did not contain the standard FAR 52.209-3 or -4 FIRST ARTICLE APPROVAL (APR 1984) clauses. Paragraph 1.11, Section 01010 EQUITABLE ADJUSTMENTS: WAIVER AND RELEASE OF CLAIMS provided:

- (a) Whenever the Contractor submits a claim for equitable adjustment under any clause of this contract which provides for equitable adjustment of the contract, such claim shall include all types of adjustments in the total amounts to which the clause entitles the Contractor, including, but not limited to, adjustments arising out of delays or disruptions or both caused by such change. Except as the parties may otherwise expressly agree, the Contractor shall be deemed to have waived (i) any adjustments to which it otherwise might be entitled under the clause where such claim fails to request such adjustments, and (ii) any increase in the amount of equitable adjustments additional to those requested in its claim.
- (b) The Contractor agrees that, if required by the Contracting Officer, he will execute a release, in form and substance satisfactory to the Contracting Officer, as part of the supplemental agreement setting forth the aforesaid equitable adjustment. The Contractor further agrees that such release shall discharge the Government, its officers, agents and employees, from any further claims, including, but not limited to, further claims arising out of delays or disruptions or both caused by the aforesaid change.

(R4, tab 1)

9. The contract specifications contained a number of provisions relevant to this appeal. Contract specification Section 13020, Paragraphs 1.4.4, 1.4.5 and 3.5 provided in pertinent part:

1.4.4 Schedules: Provide “milestone” graph-type schedule of material approval, assembly, shipment and delivery, indicating the number of days in each step. Submittal must be approved before manufacture is accepted.

1.4.5 First Article for Examination: First completed unit to be inspected for conformance with project

requirements, and used to establish Quality Control Standard for remaining modules. Submit notice of completion date of First Article for Examination and schedule contracting officer's review of same. Include, in First Article for Examination, methods of storage and shipping protection, but do not completely seal unit to allow examination of window seals and other exterior surfaces.

3.5 FIRST ARTICLE OF INSPECTION: A sample corridor module and sleeping room module shall be constructed as the First Article for Examination prior to constructions of subsequent modules. Upon the Contracting Officer's approval, the sample shall be used as a standard of quality for the remainder of the modules. These samples may be incorporated into the work.

(R4, tab 1)

10. During the period of 27 April 1988 to 23 August 1988, the status of a subcontract for the manufacture of the modules was still unresolved. Pacific Constructors International had submitted to appellant a number of revisions to its proposal, reducing its bid for the manufacture of the modules. (R4, tabs 116, 120, 151, 152, 302; tr. 2/121-23) Pacific Rim's bid continued to be the low bid for the manufacture of the modules. On 20 May 1988, appellant sent Pacific Rim a facsimile transmittal with a copy of a proposed Notice of Subcontract and Notice to Proceed for Pacific Rim's review, comment, acceptance, and signature (R4, tab 124). In addition to setting out the general scope of work required of Pacific Rim, appellant stated therein that:

This award is contingent upon subcontractor providing a 100% performance and payment bond from a surety company that is acceptable to contractor at a rate not to exceed 2.0% of the subcontract amount. The cost of such bond will be at contractor's expense. If a 100% performance and payment bond is not provided by subcontractor, an irrevocable letter of credit shall be furnished and/or retention of payment to subcontractor will be made by contractor.

11. On 27 May 1988, Pacific Rim notified appellant that it probably could not obtain the required bonding (R4, tab 302). Pacific Rim had rejected the subcontract and requested a purchase order. By letter dated 22 July 1988, appellant informed Pacific Rim that appellant required full compliance with its requests for bonds or an irrevocable letter of credit or it would terminate any arrangements with Pacific Rim to produce the modules (R4, tab 147; tr. 2/121-22). Moreover, according to its letter of 27 May 1988, Pacific Rim

informed appellant that its general manager had quit the company and that its financial backer had died. Pacific Rim was unable to provide the required bonds and was unable to provide an irrevocable letter of credit to cover the financing of the project (tr. 2/117-18).

12. As of 10 August 1988, there was still no agreement between appellant and Pacific Rim regarding a possible purchase order (R4, tab 156). Following further discussions and correspondence between appellant and Pacific Rim, Pacific Rim accepted the purchase order with appellant on 14 September 1988 (R4, tabs 163, 302). Since Pacific Rim could not obtain bonding, did not have an irrevocable letter of credit, and did not have the financial capability to perform the purchase order requirements and had a cash flow problem, the purchase order stated that appellant would provide financing of Pacific Rim's labor, material, and subcontract costs. (R4, tab 163; tr. 2/117, 4/61) According to the purchase order, appellant "shall provide to [Pacific Rim] advance payments to cover cash flow requirements for the accomplishment of this Purchase Order." These advance payments were to cover direct costs and certain agreed Pacific Rim overhead cost items incurred as a result of the purchase order.

Contract Performance

13. The Government and appellant held a pre-construction conference at Adak Island on 28 June 1988 (R4, tabs 136, 137). During this pre-construction conference, a Request for Information (RFI) system was established to provide an efficient and formal mechanism for responding to the contractor's requests for information. According to this system, if the contractor considered the response to the RFI to be a change, written notice to the Resident Officer in Charge of Construction (ROICC) was required in accordance with the contract. The contract contained no provision regarding the RFI system, nor did the minutes of the pre-construction conference specify any response time to contractor RFIs (R4, tabs 1-3, 136, 137). However, as indicated in each of the RFI transmittal forms, there was a block in which the contractor could indicate the desired response date (R4, tab 109).

14. The contract specifications, Section 01013, Paragraph 2.2.2 required that appellant submit a complete network analysis, consisting of the network mathematical analysis and network diagrams within 40 days after the receipt of the notice to proceed, or by 29 May 1988 (R4, tabs 1, 119). Appellant submitted a Critical Path Method (CPM)-Network Analysis Report on 18 July 1988 and stated in its submission that the required network diagrams would follow by mail (R4, tabs 5, 142). This initial CPM network analysis showed various submittals from Pacific Rim with early start dates of 16 May 1988 and early completion dates for the submittals as 23 July 1988. The corresponding late start dates were 12 July 1988 and late completion dates were 17 September 1988. According to the minutes of the quality control meetings of 8 July 1988, 13 September 1988, and 27 September 1988, Pacific Rim made no submittals within the dates required in the CPM network analysis (R4, tabs 138, 161, 167).

15. By letter of transmittal dated 12 July 1988, Pacific Rim submitted to appellant a module production schedule with various target dates for accomplishing the work and which provided the dollar value of each activity to be the basis for scheduling payments. (App. supp. R4, tab 406; tr. 1/44-46, 50-53) The scheduled completion date for the fabrication and assembly of modules coincided with appellant's required 1 April 1989 barge shipping date. The shop drawings were to include a complete set of module shop drawings for all module types. These were to be submitted as a complete package at one time. Individual drawings, such as, mechanical or structural drawings, were not to be submitted and accepted on an individual basis at various times. Pacific Rim contracted with the engineering firm, John Low Associates, for the preparation of the module shop drawings. According to this schedule, the assembly of the modules was to commence in late September 1988. However, Pacific Rim was unable to meet this schedule because it was unable to obtain a completed set of shop drawings, nor was it able to procure the necessary materials, provide for their storage, acquire a facility in which to construct the modules, and establish its quality control system (tr. 1/53-55). It did not have the equipment to move the modules around its plant facilities (tr. 2/16-17).

16. Although appellant submitted a Notice of Intent to award a subcontract to Pacific Rim on 11 April 1988 (finding 4), and Pacific Rim ultimately accepted a purchase order from appellant on 14 September 1988 (finding 12), there is no evidence in the record that appellant actually began performance of the fabrication of the modules prior to 28 October 1988 (R4, tab 307, report 1). Moreover, it is unclear when Pacific Rim contracted with John Low for the preparation of shop drawings.

17. Appellant submitted a total of 84 RFIs between 3 August 1988 and 23 June 1989 (R4, tab 86, ex. B, tab 109). Appellant's project manager testified that the need for this large number of RFIs resulted from omissions, lack of clarity, or conflicts in the project design documents that required clarification or correction prior to the preparation of shop drawings, and coordination of various systems and subcontractors. (Tr. 3/82-85) The potential impact and delays in this process began during the time appellant was attempting to understand and interpret the plans and specifications and before appellant submitted the actual RFI. However, this testimony was general and conclusory without specific reference to and analysis of the actual plans and specifications alleged to be defective or requiring clarification. Moreover, of this number, 16 RFIs do not pertain to the modular construction by Pacific Rim at Vancouver, WA (R4, tab 86, ex. B, tab 109; tr. 2/148, 3/86-87). Fourteen additional RFIs were unsolicited proposals for added work which were either accepted and a bilateral modification with release issued, or were not accepted. (R4, tabs 2, 109) Four of these fourteen RFIs containing unsolicited proposals did not relate to the module fabrication work. There were an additional 21 RFIs that were requests for variances approved on a no cost/time basis, or not accepted. Therefore, these additional 21 RFIs are not relevant to the appeal. Therefore, there were a total of 51 RFIs that did not have a direct bearing on this appeal, and their relevance was only somewhat peripheral as part of a possible larger context.

18. The Government responded to appellant within the requested time or earlier in the case of most of the 84 RFIs. There is no persuasive evidence that they resulted in any overall delay to contract performance, either individually or collectively. Indeed, the average response time was one week, and ranged from a same-day response to three weeks, depending on the facts and circumstances of the individual RFI. Although there were a large number of RFIs, based on our review of the 84 RFIs contained in the record, most of them addressed minor issues to which the Government promptly responded. Moreover, in approximately 18 RFIs, the Government simply confirmed the drawing and specification requirement as stated in the contract, or informed appellant that appellant had the option as to how a requirement could be satisfied.

19. Almost immediately after appellant issued the purchase order to Pacific Rim and prior to Pacific Rim's acceptance of the purchase order, appellant submitted seven RFIs seeking clarification of certain requirements in the contract drawings. (R4, tabs 109, 305) Six of these pertained to the fabrication of the modules, of which five were submitted by Pacific Rim to appellant. The required response date on these seven RFIs ranged from 12 to 19 September, or four days to two weeks from the date of appellant's submission of the RFI. The Government's response was dated 30 September 1988 on all of these RFIs. At the time Pacific Rim submitted these RFIs, it had to begin preparation of the shop drawings and various submittals, obtain and prepare an additional facility for the construction and assembly of the modules, procure necessary materials, provide for their storage, and establish its quality control (tr. 1/54, 3/76-78, 4/100).

20. Although the record contains all 84 RFIs, and we have reviewed all of them, appellant directs our attention to 22 RFIs which it characterized as major or significant for the purpose of demonstrating the defective nature of the plans and specifications. (App. br. at 7-17; R4, tab 86, ex. B, tab 109) Some of the examples of design deficiencies appellant pointed to included: RFI 6 (insulation thickness was too great to install in vertical pipe chase and in horizontal convector covers when installed on pipe one-inch in diameter or greater); RFI 7 (insulation thickness too great for the glycol heating supply and return lines); RFI 20 (maximum size two-inch glycol supply and return line with insulation would not fit in the radiation enclosure); RFI 24 (inadequate space between the 44-inch wide duct and the sleeve for the required access panel to the fire and air volume dampers); RFI 25 (convector cover top protrudes into the rough window opening because of the specified heights of the window sills); RFI 38 (inadequate space in corridor ceiling chase to accommodate all required mechanical, plumbing, electrical conduits, boxes and fixtures); RFI 43 (removal of temporary 2 x 4 and 1/2-inch plywood "roof" on corridor modules during erection process at Adak); RFI 49 (all mechanical and electrical items would not fit in the allowable corridor ceiling in accordance with revised sketches provided by design engineer and Government); RFI 51 (typical runs on drawings exceed the number of bends, offset saddles, or kicks limited by the National Electrical Code); RFI 60 (conflict of structural elevations between mechanical/core module and wing corridor module); RFI 63

(structural framing at top of corridor and sleeper modules interfered with electrical conduit runs from J-boxes in corridor ceiling space into sleeper module); RFI 69 (contract specification was not clear and specific in covering blocking material for corridor wood protection bumpers (rub rails)); RFI 80 (the dimensioning of the horizontal space between windows in the special entrance framing was incomplete). Except for appellant's project manager's testimony which essentially simply repeated or explained what was in the specific RFI, appellant presented no testimony concerning whether or not these RFIs represented actual design deficiencies or were a result of Pacific Rim's inexperience in performing a major modular construction project such as the instant project (tr. 3/89-125).

21. The Government agreed to appellant's proposals or suggested a modified remedy to the issue appellant raised in connection with RFIs 6, 7, 24, 25, 38, 49, 60, 63, 80, most of which were treated as minor field changes with no increase in contract cost (R4, tab 109). The Government accepted RFIs 43, 51, and 69, as requests for variances and no-cost field changes and RFI 20 was accepted as an additive change proposal for which the Government requested a cost proposal. The Government issued Change Order No. P00008 on 28 October 1988. (R4, tab 2) This change order incorporated appellant's proposed solution to the placement of the glycol supply and return lines, provided a price increase not-to-exceed \$16,200.00 and a request for a cost proposal to be submitted by appellant within 30 calendar days. By contract Modification No. P00020, dated 12 September 1989, the Government definitized Change Order No. P00008, providing a price increase of \$56,765.00, which included the \$16,200.00 previously granted in Change Order No. P00008 (R4, tab 2). According to this modification, the parties were not able to negotiate a price increase for the work represented by the change order.

22. During the period following the acceptance of the purchase order and prior to the Government's response to the initial submissions of RFIs, Pacific Rim needed to assemble a supervisory crew and hire workers in all the trades. Appellant had a representative on-site at Pacific Rim to assist Pacific Rim and John Low Associates in the submittal process, clarify the contract drawings, and interpret the contract documents (tr. 1/52-53, 3/75-78). During the representative's initial visit to Pacific Rim in September 1988, it became apparent that more time was required for him to be on site at Pacific Rim because Pacific Rim lacked the experience in preparing contract documents, such as, submittals and RFIs, and if these were to be submitted expeditiously, appellant's representative would have to be at Pacific Rim as a constant guide in interpreting the contract documents and preparing submittals (tr. 3/207-08).

23. Most of the RFIs dealt with requested clarification of the specifications and with what appellant characterized as deficiencies in the drawings and specifications for the modules in which, according to appellant, insufficient information was provided in the specification or drawing. As we found above, 51 of the 84 RFIs did not pertain to the claim asserted in the instant appeal since they were either irrelevant to the fabrication of modules, or were unsolicited proposals that were either accepted and incorporated in contract

modifications or were rejected (finding 17). Of the remaining 33 RFIs, the Government provided clarification if needed, or confirmed that the specification or contract drawings were correct as indicated in the relevant details.

24. There is no evidence in the record, nor have the parties pointed our attention to any evidence that either appellant or Pacific Rim complained at any time during the contract performance of the number of RFIs or of any possible delay or impact that may have been attributed to either the number of RFIs or the response time by the Government. Moreover, many of the RFIs resulted in reduced effort or costs (tr. 3/169-93). However, no credit was given. No construction work had commenced prior to many of the RFIs, and in others, work could have been performed on certain parts of the module prior to the response to RFIs relating to other parts of the module. Indeed, by contract Modification No. P00032, dated 28 June 1991, the parties agreed to a contract price adjustment as a complete equitable adjustment for work relating to the mechanical and electrical redesign of the corridor module (R4, tab 1; tr. 3/169-93).

25. By letter dated 1 September 1988, the Government requested appellant to provide an updated milestone schedule, as required by Paragraph 1.4.4, to include completion date of the first article wood frame module (R4, tab 8). On 21 September 1988, appellant responded to the Government stating that the first article modules would be available for Government inspection at Pacific Rim Homes, Inc., Vancouver, Washington on 14 November 1988 (R4, tab 9). However, appellant's Contractor Quality Control Representative had not left Adak, Alaska until 14 October 1988 and did not arrive at Pacific Rim until on or about 28 October 1988 (R4, tab 5 at 5 item 970, tab 303 at 10001061, tab 307, report 1; tr. 2/101-02). The contract provided in Section 01400, Paragraphs 2.3, 3.1, and 3.1.1 that no construction work on the modules could be done at Pacific Rim without the presence of the CQCR and an adequate and qualified CQC staff (R4, tab 1, tr. 2/103). The contract further required, in Paragraphs 1.2.1, 2.1.1, 2.1.1.1, 2.3., and 3.1.3, Section 01400, that appellant designate CQC staff, including electrical and mechanical CQC inspectors for the module fabricator which shall be on site during all phases of the module construction process prior to the commencement of construction activity (R4, tab 1). Appellant did not designate in-plant electrical and mechanical CQC inspectors for the module fabricator until 10 October 1988 (R4, tab 169).

26. Pacific Rim did not acquire a facility large enough for the construction of modules until 27 October 1988 when it executed a lease for Building 33 (R4, tab 172). The term of the lease was 1 December 1988 to 1 May 1989, unless terminated earlier in accordance with the lease.

27. There were delays in the preparation, submission, and approval of shop drawings. (Tr. 4/24-28, 60-61, 131-33) Some of the delay, according to appellant, was due to the engineering firm, John Low Associates' belief that it lacked sufficient information for the preparation of all the shop drawings. However, John Low, or any of his representatives, did

not testify in the hearing in this appeal. As a result, we have no evidence relative to the qualifications and experience of John Low Associates in connection with projects of this nature, or any evidence of the specific problems John Low may have had with the plans and specification in its preparation of the shop drawings. Nevertheless these delays continued after Pacific Rim began construction of the modules. Moreover, Pacific Rim had some disagreements with John Low concerning the shop drawings which Pacific Rim did not believe were as well prepared as others, particularly in the mechanical area.

28. Notwithstanding the lack of complete shop drawings and lack of their approval by the Government, Pacific Rim began construction of two first article modules on 28 October 1988 with the setup and layout of glu-lam beams for a second floor corridor module and sleeping module (R4, tab 307, report 1; tr. 4/60-61, 131-33, 5/7-9). First article construction was originally scheduled to begin in late September 1988 (tr. 1/53-55). Pacific Rim concluded that it could not make the scheduled barge shipping date if it waited for the approval of the shop drawings. The modules were wood construction (tr. 2/157-63). The glu-lam beams were glued laminated wood beams that were the structural component of the module. Actual construction work on the glu-lam beams for these modules started on 31 October 1988 (R4, tab 307, report 4). On 28 November 1988, a glu-lam beam on one of the modules under construction failed (R4, tab 307, report 31, 32; tr. 5/9-11). The failure was due to Pacific Rim's failure to provide adequate shoring and support underneath the beam and overloading the beam (R4, tab 307; report 35; tr. 5/10-11). Pacific Rim replaced the glu-lam beam on 2 December 1988 (R4, tab 307, report 36).

29. During the period of 12-18 January 1989, the Government held its first article inspection of these two modules (R4, tabs 33, 38, 307, report 77). The first article modules were not completed at the time of inspection. There were a number of significant deficiencies also noted that made the modules unacceptable and that indicated poor workmanship and poor quality control on the part of Pacific Rim. The Assistant Resident Officer in Charge of Construction (AROICC) reported the deficiencies to appellant by letter dated 30 January 1989, and stated:

Most of the preceding problems could have been avoided or alleviated by the proper use of Contractor Quality Control System as described in Specification Section 01400. This was fully discussed at a separate meeting on Monday, January 16, 1989. It was agreed at this meeting that Aleutian Constructors and the CQC staff will more closely monitor all aspects of construction to assure a quality product.

Upon our initial inspection of the First Article, it was immediately apparent that the First Article was not ready for acceptance inspection as we were informed by your letter

S-138 dated December 23, 1989 [sic]. A second First Article acceptance trip must now be performed. As tentatively discussed, it may become necessary at a later date for this office to pursue reimbursement from the Contractor for this trip.

(R4, tab 38) The first article inspection was ultimately conducted on 10-11 April 1989, during which time a number of deficiencies were noted (R4, tabs 72, 76, 77). Notwithstanding these identified deficiencies, the AROICC noted that appellant had regained control of the project and that the work in place indicated conformance to the contract plans and specifications.

30. Although Pacific Rim had not successfully completed submissions of its shop drawings and had not completed its first article inspection and received Government acceptance of the first article modules, it began construction of the production modules in early December 1988 (R4, tab 307, report 41; tr. 4/60-61, 131-33). There had been no direction from the Government or from appellant for Pacific Rim to proceed with the production units prior to the completion of shop drawings and first article inspection and acceptance. Nevertheless, Pacific Rim decided to proceed with the production units realizing that it was proceeding at its own risk.

31. Things did not go well. In early December, Pacific Rim terminated two of its first hires for "lack of experience" (R4, tab 307, report 43). The contract required use of metal studs in the modular construction (R4, tab 1; tr. 4/15). Pacific Rim had no prior experience with metal studs. Pacific Rim had problems attaching the plywood to the metal studs early in the construction process (findings 32-36, *infra*; tr. 1/88-91). This problem prevented completion of construction work on the corridor modules, backed up all the work that preceded the installation of the plywood on the metal studs, and resulted in a temporary shutdown of Pacific Rim's plant, the laying off of Pacific Rim's employees, and realignment of Pacific Rim's crews (tr. 1/95-101). It had trouble hiring its labor force from at least March 1989 to the end of its performance of constructing the modules (tr. 2/163-67). Appellant's CQCR directed Pacific Rim to remove two incompetent electrician apprentices. However, Pacific Rim failed to do so for over one month. This failure was noted in CQC reports on a daily basis throughout that entire period (R4, tab 307, reports 168-90, 192-94).

32. Pacific Rim's performance of work frequently did not comply with contract requirements and applicable standards requiring considerable rework and corrective work. (R4, tabs 33, 38, 66, 69, 307, reports 76-90, 92-97, 99, 100, 104, 110, 120, 128, 131-32, 137, 141, 146-47, 149-53, 155, 157-58, 160-63, 166-80, 183-96, 199-200, 202-04, 207-19, 222-23, 229, 232-34, 238, 242) Indeed, there was a substantial amount of rework that was due to labor errors in interpreting drawings incorrectly, poor workmanship, and not following industry standards in bending flanges of metal studs and installing blocking. (Tr.

3/161-67, 5/12-29) Pacific Rim installed fiberboard ductwork for building exhaust air systems without internal supports. Without such internal supports the ductwork would have collapsed when the system was turned on. This was contrary to the contract specifications and the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) standards, which were contract requirements. Pacific Rim partially completed panelization of walls in one building and then moved the partially completed panels with plywood on only one side of the panel to the assembly area in building 33. Pacific Rim then had to cut a section of track to permit the penetration of pipes during the module assembly. This adversely affected the structural integrity of the modules. Pacific Rim did not properly store materials, particularly plywood (tr. 5/32-34). Eight foot sheets of plywood would arrive in bundles of approximately 140 sheets. Pacific Rim stacked the plywood bundles with supports only at the ends of the plywood. The weight of the plywood caused the plywood to sag in the middle resulting in a two to three inch bow in the plywood. As a consequence, each sheet of plywood developed a permanent bow. The housekeeping at Pacific Rim was poor with sawdust, wiring, screws, tools, and stuff on the floor panels. (Tr. 5/12-29) Pacific Rim set panels on top of all this stuff or stored panels on their edges causing further buckling. In most cases, Pacific Rim employees did not use the right tools for specific jobs resulting in crude work products. With pipe penetrations and electrical and mechanical connections in the chase walls and the manner in which appellant made connections, the bottom tracks of the modules were wrecked, leaving the modules flimsy and without adequate strength until they were assembled with other modules. Edges of plywood were not smooth. Pacific Rim employees put stress on the plywood with a large quantity of screws in order to force the plywood to come in contact with the studs. This resulted in further bowing of the plywood. Workers in various trades wrecked the work previously performed by other employees, damaging studs, plywood sheathing, bridging between studs, plumbing and mechanical fixtures, electrical connections and junction boxes, through the use of improper tools, performing tasks out of sequence, and sloppy construction techniques (R4, tab 307, reports 83, 87/88, 131; tr. 5/17-30, 36-39).

33. Contract drawings, sheets A-1A and A-1B, specified interior non-load bearing walls to be constructed using 1/2-inch exterior grade plywood attached to both wood and metal studs. (R4, tab 1) Section 09100, Paragraph 2.15 specified 25-gauge minimum metal studs as structural supports for the walls. Paragraph 2.4 of Section 06100 of the contract specifications provided:

2.4 ROUGH HARDWARE: Unless otherwise indicated or specified, rough hardware shall be of the type and size necessary for the project requirements. Sizes, types, and spacing of fastenings of manufactured building materials shall be as recommended by the product manufacturer unless otherwise indicated or specified. Rough hardware exposed to the weather or embedded in or in contact with exterior concrete walls or slabs shall be zinc-coated. Nails and

fastenings for fire-retardant treated lumber and woodwork exposed to the weather shall be copper alloy.

(R4, tab 1) Paragraph 3.1.9.1. of section 06100 of the specifications provided in pertinent part:

Plywood and Structural-Use Panel Wall Sheathing:
Apply horizontally. Extend sheathing over and nail to sill and top plate. Abut sheathing edges over centerlines of supports. Allow 1/8-inch spacing at panel ends and 1/16-inch at panel edges. Sheathing is applied horizontally, stagger vertical end joints. Unless indicated otherwise of [sic] the structural drawings, nail panels with 8-penny nails spaced 6 inches on centers maximum along edges of the panel and 12 inches on centers over intermediate supports and provide blocking of 2 by 4 inches for horizontal joints not otherwise supported.

(*Id.*) There was no specific provision in the contract specifications specifying the size or type of fastener for the application of the 1/2-inch plywood to the 25-gauge metal studs (R4, tab 1; tr. 2/91). Moreover, there were no RFIs addressing the absence of a specific provision in the specifications or drawings concerning fasteners to be used to attach the plywood to the 25-gauge metal studs (R4, tab 109). However, as required in Paragraph 2.4 of Section 06100 of the contract specifications, the sizes, types, and spacing of fasteners was to be in accordance with the recommendation of the product manufacturer.

34. Appellant's project manager on-site at Pacific Rim first became aware of the problem with the 1/2-inch plywood and 25-gauge metal studs soon after Pacific Rim began attaching the plywood to the metal studs in early January 1989 (tr. 3/133-39). Pacific Rim had considerable problems attaching the 1/2-inch plywood to the minimum 25-gauge metal studs. (Tr. 1/88-91, 2/88-92, 3/133-39, 4/29-42) The plywood had bowing in it that prevented it from staying flush on the metal studs. Screw-type fasteners used by Pacific Rim to attach the plywood to the metal studs did not hold the plywood to the stud, leaving a gap between the plywood and the metal stud, or they stripped out as soon as pressure was released off the fastener. In the beginning, this was caused by Pacific Rim employees applying too much torque to the fastener. However, once Pacific Rim determined that there was a problem with overtightening the fastener, it instructed its crews in the correct method for applying pressure on the panel. This did not correct the problem with plywood pulling away from the metal studs.

35. Pacific Rim sought assistance from engineering firms, representatives of the metal stud and fastener industries, and suppliers of metal studs and fasteners to solve its problem in attaching the plywood to the metal studs (R4, tabs 42, 68, 71, 74; tr. 3/138-47, 4/29-34). It reduced its production of modules and ultimately essentially shut down its

production of modules during the period of 22 February 1989 until 2 March 1989 while it attempted to resolve the plywood to metal stud problem (R4, tabs 48, 307, report 118-26; tr. 1/95-101, 3/151-55). However, Pacific Rim was shut down from 3-8 February 1989 because its production facility was unheated and there was no water for restrooms or other uses due to a frozen water main outside building 33 (R4, tab 307, reports 99-103; tr. 5/36). Additionally, Pacific Rim was shut down 24 February to 3 March 1989 because there was no CQCR (R4, tab 307, reports 121-27). It ultimately resolved the problem using W-type screws and installing 20-gauge metal studs with the 25-gauge metal studs (tr. 1/98-99, 2/135-36, 3/148-50, 194-98).

36. The contract specifications required blocking or bridging between the framing studs to support the plywood, the attached plywood sheathing, and the other things that were to be attached to the wall (R4, tab 1, 55, 57, 307, report 131; tr. 3/162-63). Pacific Rim, in performing the blocking between the studs, bent and cut the flanges of the 25-gauge metal frames so that the attachment of the wood blocking could be made to the stud (R4, tab 307, report 131; tr. 3/162-63, 194-95, 5/16-18, 48-50). The architects that designed the project for the Government informed Angeles Metal Systems of this practice of Pacific Rim that distorted the flanges, which appeared to be contrary to the Angeles submittal for bracing detail for the metal studs, and inquired as to whether this was consistent with Angeles recommendations. (R4, tab 55) Additionally, the architect informed Angeles that Pacific Rim was partially constructing wall panels in one location and transporting them to another location with plywood attached to only one side, that it was attaching the plywood with joints being firmly butted, and that it was not following the correct sequence of fastening. According to Angeles,

The wall assembly that is made up of SS358 studs and 1/2" plywood both sides has been successfully constructed in many parts of the country especially the Southwest region. Of course, its important that a gap be placed between each sheet of plywood to allow for the normal expansion and contraction of the plywood. The key to this assembly is proper and careful construction practices, because of the lightweight materials used for the wall panels. The configuration of the studs can not be altered without damaging the structural intergrity of the material.

(R4, tab 57)

37. As we found above, Paragraph 3.1.9.1 of Section 06100 of the specifications required the application of the plywood to the studs with a gap between the sheets of plywood (finding 33). This was an industry standard (tr. 3/199). Pacific Rim had attached the plywood to the metal stud without any gap between the sheets of plywood (tr. 3/135-36, 199-201). Additionally, its practice of distorting the flanges of the metal studs for the

installation of the bridging blocks to the studs contributed to its problems in attaching the plywood to the 25-gauge metal stud because the plywood could not sit flat against the stud (tr. 5/27-29). Pacific Rim also attempted to apply the fasteners to the plywood starting from the edges and working toward the center, rather than starting in the center of the plywood sheet and working out toward the edges. (Tr. 3/149, 198-99) This tended to create a bow in the panel that placed stress on the fasteners.

38. Pacific Rim performed substantial rework on the panels, including the blocking. (Tr. 3/162-67) Approximately two-thirds of the framing was complete when Pacific Rim had to rework those walls affected by the improper blocking practice. Although it changed some of its practices with respect to the bending of stud flanges in reworking the walls for the first article modules, it ultimately had to remove all studs from all the wall panels that it had constructed since the stud flanges had been bent and the studs determined to be weakened and unacceptable. The plywood had to be removed from the walls, and any other elements attached to the plywood had to be removed so that the studs could be replaced and new blocking installed. Pacific Rim then replaced the removed studs with new studs and new blocking.

39. Although the specifications and drawings did not specify the type of fastener to be used to attach the plywood to the 25-gauge metal studs, we are not persuaded that this represented a design defect. Moreover, we are not persuaded that the contract specifications and drawings requiring 25-gauge metal studs constituted a design defect, particularly since the 25-gauge was specified as a minimum gauge. Rather, we find that the problems Pacific Rim experienced in attaching the plywood to the 25-gauge metal studs were primarily related to the way it stored the plywood, its initial overtorquing the screws, its method of installing the blocking between studs, and its method of applying the fasteners beginning at the edges of the plywood and working toward the center rather than starting in the center and working out to the edges.

40. Throughout its performance, Pacific Rim and its subcontractors experienced continuing absentee problems and inability to hire new labor (R4, tabs 198, 205, 214, 224, 227, 230, 237, 302, 307, reports 134, 139, 179; tr. 3/206, 4/115-17). Subcontractors Allied Mechanical and Bee Electric complained of non-payment and the inability to meet their respective payrolls (R4, tabs 227, 230, 239; tr. 4/104-05). After the plywood to stud problem was solved, Pacific Rim increased its crew size. (Tr. 3/156-61) However, it experienced high labor turnover, lack of qualified labor, long shift hours, overtime, worker fatigue, lack of adequate supervision, and morale problems. As a result, Pacific Rim experienced inefficient productivity and errors in the fabrication processes that had to be corrected on subsequent shifts.

41. The problems of Pacific Rim in its performance of the fabrication of modules caused the barge sailing dates to slip from 1 April 1989 to 15 April 1989, to 15 May 1989, and finally to 14 July 1989. (Tr. 1/84-87, 100-01) At the time appellant bid on this

project, it had a commitment from Foss Tug & Barge to provide a charter barge trip to Adak in the first of April time frame, which was the basis for appellant's scheduling. As the delays occurred in the modular construction at Pacific Rim, Foss Tug & Barge informed appellant that it had a commitment for the barge up north in August 1989 and that appellant would lose the charter if its shipping date slipped beyond mid-July 1989. Therefore, the barge sailing date of 14 July 1989 became the firm deadline for sailing, regardless of the status of the modules. According to appellant, there were no other options for 1989. Appellant had initially scheduled a tandem tow to move the modules for this project with a barge carrying materials for another project in any April or May shipping date. With the delayed shipping schedule, appellant was required to charter a single tow for the modules for the instant BEQ project.

42. As of 10 July 1989, Pacific Rim had essentially completed all 52 modules and prepared them for shipping (R4, tab 307, reports 254-257). The CQCR daily reports for 8, 9, and 10 July all stated that appellant was working on completing the construction of the modules, and that the modules were being shipped to Adak without carpeting. Because of the sailing deadline, Pacific Rim did not complete all the modules to the required state of finish. (R4, tab 86, exs. G-1 - G-5, tab 418, ex. G-5; tr. 2/24-26) There was ductwork that was not completed, control systems work not completed, pipe insulation not completed, electrical and plumbing work not completed, and carpeting and floor covering not completed. This uncompleted work was finished by appellant and its subcontractors in Adak after the modules arrived on site.

43. On 24 July 1989, there was a fire on board the barge carrying the modules to Adak. (R4, tabs 246-249, 252, 260) The fire occurred at the Port of Adak. Fifteen of the modules suffered fire and water damage, with 12 modules sustaining total loss. Appellant subcontracted with Tri-Crown Construction to rebuild the destroyed and damaged modules on site, as well as to complete the mechanical work in the modules that was left uncompleted by Pacific Rim (R4, tab 265).

44. At the time of appellant's bid on the Adak BEQ expansion project, it anticipated four and a half months of on-site work at Adak in 1988 and three months at the site in 1989 for the completion of construction of the BEQ module construction project (R4, tab 308; tr. 3/46). Appellant had planned to perform the construction work connecting in the modules to each other, finish subfloor connections between panels, complete the finish work on all module wall connections, including gypsum wallboard work, taping, and painting, complete the ceiling work as part of the module-to-module connections, and perform finish work at the points of connection (tr. 2/35-36).

45. Appellant completed work at Adak on or before 23 February 1990. (R4, tab 293; tr. 2/35-37) This included the rebuilding of destroyed and damaged modules at Adak as a result of the fire. In addition to the rebuilding of these destroyed and damaged modules, appellant completed connections between the modules and finish work related to

each of the connections, and completed the work on the modules which had not been completed by Pacific Rim due to the deadline on the barge shipping schedule.

46. By letter dated 30 January 1990, appellant requested a 130 calendar day extension to 2 March 1990. (R4, tab 288) This request was based on the fact that modules destroyed or damaged in the barge fire had to be reconstructed on site and replacement materials shipped by Government furnished transportation barge. Appellant granted a credit of \$68,062.00 to the Government for the expense of this shipment. Appellant further accepted a charge from the Government's architect firm for expenses incurred by the firm for reviewing additional submittals associated with the replacement of modules due to the fire. By contract Modification No. P00023, dated 6 February 1990, the parties agreed to a 151 day extension to the contract for excusable delay at no cost to the Government due to the barge fire, extending the contractually specified completion of "2 October 1989," to a new completion date of 2 March 1990. (R4, tab 2) (The contract specified 7 November 1989 as the completion date (finding 5)). This modification further reduced the contract price \$84,382.00 from \$8,128,838.00 to \$8,044,456.00 for the credits to the Government offered by appellant in its letter of 30 January 1990. The modification contained appellant's release for any further liability or equitable adjustment "attributed to such facts or circumstances giving rise to the 'proposal for adjustment'" contained in appellant's 30 January 1990 letter. There were additional contract modifications which either made administrative corrections to prior contract modifications regarding accounting and appropriation data, or provided for equitable adjustments arising out of various changes, including changes relating to RFIs (R4, tab 2). By contract Modification No. P00032, dated 28 June 1991, the total contract price was increased to \$8,118,511.00 (R4, tab 2).

47. Appellant informed the Government on 15 February 1990 that the BEQ addition would be ready for Final Beneficial Occupancy Inspection by ROICC personnel on 16 February 1990 (R4, tab 291). By letter, dated 28 February 1990, the Government took possession of the completed work effective 23 February 1990, and enclosed a listing of incomplete work and known deficiencies requiring appellant to correct these deficiencies by 15 July 1990 (R4, tab 293).

48. On or before 30 April 1990, Pacific Rim filed for Chapter 11 bankruptcy (R4, tab 296; tr. 4/140-43). Pacific Rim was ultimately liquidated under Chapter 7 of the Bankruptcy Code. (Tr. 1/106-07, 142-43) Pacific Rim had started to prepare a claim for appellant to submit to the Government prior to filing for bankruptcy, however, it never prepared or submitted any claim or request for equitable adjustment, or documents relating thereto to appellant. Appellant did not file a claim for its advance payments to Pacific Rim to fund its cash flow as a creditor in the bankruptcy proceedings, nor did it seek or receive any permission from the Trustee in Bankruptcy to pursue any claim on behalf of Pacific Rim.

49. As we found above, appellant agreed to provide Pacific Rim advance payments to cover cash flow requirements for the accomplishment of the purchase order (finding 12). The total amount of appellant's purchase order to Pacific Rim was \$3,182,781.00 (R4, tab 163). Although the parties have not directed our attention to documents in the file that establish the actual amount of payments made by appellant to Pacific Rim, the testimony establishes that appellant ultimately paid Pacific Rim \$1.75 million to \$2 million more than the \$3,182,781.00 specified in the purchase order (tr. 1/105-06). Appellant attempted to conduct an audit of Pacific Rim, but the audit was inconclusive.

50. Appellant submitted a request for an equitable adjustment to the ROICC, Adak, on 12 July 1991. (R4, tab 86) The thrust of this request was that there were obvious deficiencies in the contract documents, and that these deficiencies in design, details, and coordination of disciplines became apparent only after Pacific Rim, or John Low Associates had begun to prepare the required module shop drawings. According to appellant, the number of RFIs, *i.e.*, 84, not only indicated the obviousness of the deficiencies in the specifications and drawings, but required continuing detailed review of the specifications and drawings to discover the numerous design errors and inconsistencies that required Government correction or clarification prior to the preparation of shop drawings. Moreover, according to appellant, there were considerable delays in receiving the responses to the RFIs and letters, that together with the number of RFIs, contributed to the delay in the preparation of shop drawings and the subsequent delay in Pacific Rim's construction of the modules. Appellant asserted that as a result, there was a productivity loss or labor inefficiency due to five factors. These five factors, either individually or collectively caused major efficiency loss to Pacific Rim. They included labor efficiency losses due to: the plywood to metal stud problem and plant shutdown; the stacking of trades; increased crew size; labor turnover; dilution of supervisory personnel, and consequential errors attributed to these factors; learning curve experience; and overtime. As a consequence of this loss of productivity allegedly resulting from these contributing factors, appellant claims that it experienced a 90 day delay, which was the delay between the originally scheduled barge shipment date of 15 April 1989 and the actual shipping date of 14 July 1989.

51. In its request for an equitable adjustment, appellant sought \$870,463.00 for the "Navy-caused delay in the fabrication of the prefabricated modules" (R4, tab 86). Appellant's labor efficiency analysis was based primarily on a January 1976 Mechanical Contractor's Association study which provided for a range of percentages of possible lost labor efficiency associated with various factors, which included the factors identified by appellant in its request for an equitable adjustment (R4, tab 86, ex. D). Appellant applied certain percentages, which did not necessarily correlate with those in the study, to various time intervals during which appellant claimed the Pacific Rim work was adversely affected by the various circumstances which allegedly caused delays. Except for some invoices

from various suppliers and subcontractors to both appellant and Pacific Rim, the record is generally devoid of specific documentation to support the various amounts claimed.

52. Following an extended exchange of correspondence between appellant and the ROICC, Adak, and the completion of an audit by the Defense Contract Audit Agency (DCAA), appellant submitted a certified claim to the contracting officer on 24 January 1995 (R4, tabs 87-106). By letter, dated 2 February 1995, appellant requested a contracting officer's final decision on the claim (R4, tab 107). Appellant revised its claim to \$1,289,273.00 on 28 August 1997 (R4, tab 418).

53. The contracting officer denied appellant's claim in its entirety (R4, tab 112). The contracting officer found that appellant's delays were caused by its failure to comply with the contract terms and specifications, scheduling choices it made, and problems regarding maintaining quality control.

DECISION

The Government first contends that the bankruptcy of Pacific Rim with its liquidation precludes appellant from any recovery. The thrust of the Government's argument in this respect is that "any uncollectible amount from its module fabricator is unallowable as a contract cost under the bad debts cost principle" of FAR 31.205-3. According to this theory, if and to the extent the appellant "seeks to recover any amounts in excess of its purchase order price with its liquidated bankrupt module fabricator, it cannot do so in this appeal."

As stated in *Erickson Air Crane Co. of Washington, Inc. v. United States*, 731 F.2d 810, 813 (Fed. Cir. 1984):

[U]nder ordinary government prime contracts, subcontractors do not have standing to sue the government under the Tucker Act, 28 U.S.C. § 1491, in the event of an alleged government breach or to enforce a claim for equitable adjustment under the Contract Disputes Act of 1978. . . . Aggrieved subcontractors have the option of enforcing their subcontract rights against the prime contractor in appropriate proceedings, or of prosecuting a claim against the government through and in the right of the prime contractor's contract, with the prime contractor's consent and cooperation.

The claim in this appeal, however, is appellant's claim for delays and constructive suspension arising out of alleged defective specifications. Notwithstanding the fact that Pacific Rim may have had such a claim that it could have asserted against appellant, or against the Government through and in the right of appellant's contract with appellant's

consent and cooperation, it did not do so. Appellant advanced payments to Pacific Rim well in excess of the amount specified in its purchase order and there is no evidence that appellant had, or believed that it had a claim against Pacific Rim under their purchase order. Moreover, since appellant made payments to Pacific Rim exceeding its \$3,182,781.00 purchase order by approximately \$1.75 million to \$2.0 million and since Pacific Rim never submitted a claim to appellant for the alleged delays, we have no basis for concluding that appellant is asserting a claim here on behalf of its subcontractor, Pacific Rim, or is seeking to recover its excess payment to Pacific Rim in this appeal as contended by the Government. It is clear in the instant appeal that appellant was the only party with whom the Government had privity, was the party in interest, and was the party prosecuting this appeal on its own behalf.

Whereas, appellant focuses on the alleged deficiencies of the specifications as its basis for recovery for the delays, the Government focuses its attention on the delays attributed to the appellant and its subcontractor, Pacific Rim. Appellant, citing *United States v. Spearin*, 248 U.S. 132, 136-37 (1918), first argued that the Government impliedly warranted the feasibility of the specifications it issued to the contractor. We do not disagree with appellant regarding this rule of law. Appellant further contends that for defective specification claims, it may recover any costs incurred due to delays resulting from a mistake in the specifications so long as the allegation is proved, and that all delay produced by defective specifications is *per se* unreasonable and compensable, citing *Neal & Company, Inc. v. United States*, 36 Fed. Cl. 600 (1996). However, as the Court of Federal Claims also holds in *Neal & Company*, “[a]lthough the Government warrants the accuracy of the specifications, they need not be completely accurate. They must be reasonably accurate for the task.” *Id.* at 627. The Court then held that the contractor had proved that there were certain errors and deficiencies in the plans and specifications for which the Government was responsible for additional time and expense, but that it had failed to prove certain other alleged deficiencies for which there was no recovery.

The Government, on the other hand, citing *Technical & Management Services Corporation*, ASBCA No. 39999, 93-2 BCA ¶ 25,681, at 127,753; and *Wilner v. United States*, 24 F.3d 1397, 1401 (Fed. Cir. 1994) (*en banc*), for the proposition that appellant has the burden of proving its affirmative monetary claims, including causation and for the principle that appellant has the burden of demonstrating that specific delays were due to Government responsible causes, that the overall completion of the project was delayed as a result, and that any Government caused delays were not concurrent with delays within the contractor’s control, contends that where the Government’s and contractor’s actions operate to concurrently cause delay, neither party may recover from the other. Again, as general principles, we do not disagree with the Government’s statement of these rules.

According to the Government, under this established principle, appellant cannot recover. The basis for the Government’s position is that the delays were attributed to appellant for several reasons. First, the delays were initially caused by appellant’s failure to

get its supplier or subcontractor under contract in a timely manner and the failure of the subcontractor to timely deliver the modules. Second, had approximately one-third of the modules not been destroyed by the barge fire, appellant would have met the originally specified completion date. According to the Government, nothing happened prior to the barging of the modules that delayed the overall project or contract completion because appellant had anticipated three months for on-site Adak construction activity in 1989 coinciding with the Adak outdoor construction season. Third, Pacific Rim started first article construction later than originally intended, thereby contributing to, if not totally causing any delay in the anticipated 1 April 1989 barge shipping to the actual sailing date of 14 July 1989, particularly since the modules were not completed at that time and required additional work to complete the module fabrication in Adak after they were received in Adak. In this respect, the Government argues that some of the delays in Pacific Rim's completion of the fabrication of the modules were due to the absence of a CQCR at Pacific Rim's plant, the fact that Pacific Rim did not obtain a facility large enough to produce the modules until 1 December 1988, and the difficulty that Pacific Rim experienced in hiring and maintaining an adequate labor force with inefficiencies caused by absenteeism and by labor turnover. Therefore, there were no potentially delaying events, or actions/inactions regarding the fabrication of the modules for which appellant can recover.

Except for its factual conclusory statements to the effect that the specifications and drawings in the instant contract were very poor and among the worst ever encountered (citing tr. 1/68-69, 3/84-85), appellant chiefly relies on the number and substance of the RFIs, contending that the specifications and drawings were defective which was the cause for the difficulty experienced by Pacific Rim in attaching the 1/2 inch plywood to the 25-gauge metal studs. Appellant contends in this regard that it was prevented from submitting timely shop drawings because of the number of RFIs and the delays in Government responses thereto and the disruptions to its fabrication of modules.

As stated by appellant in its brief, it has the burden to show by a preponderance of the evidence that the defective specifications were the most probable cause of its failure to obtain satisfactory results when considered with reference to all other possible causes. *Brantley Construction Company, Inc.*, ASBCA No. 27604, 84-3 BCA ¶ 17,532 at 87,317. However, as we held in *Brantley Construction Company, Inc.*, the contractor there had not eliminated the various factors as possible causes for the failure of its performance and had not sustained its burden of proof that the contract requirements were the most probable cause for the installation failures. In meeting this burden of proof, appellant "must demonstrate that [it] has substantially complied with the Government plans and specifications, and that [it] has installed the requisite materials but an unsatisfactory performance or product resulted." *R. C. Hedreen Co.*, ASBCA No. 20599, 77-1 BCA ¶ 12,328 at 59,554; *R.E.D.M. Corporation v. United States*, 192 Ct. Cl. 891, 428 F.2d 1304 (1970). Should appellant do so, the burden would shift to the Government to prove that defective material was installed or that defective workmanship materially and measurably contributed to the delay, or that there were additional causes of the contractor's

difficulties which absolve the Government of liability. *R. C. Hedreen Co.; R.E.D.M. Corporation v. United States*.

We have examined the specifications and drawing and the RFIs and hold that although the specifications and drawings may not have been perfect, they were not defective. First, appellant attempts to establish the defective nature of the specifications and drawing through its presentation and analysis of the RFIs. We have examined the specifications and drawings in light of the analysis of the RFIs presented by appellant and cannot conclude that, with the exception of a few minor possible conflicts or omissions in the specifications or drawings, they are defective. Although not addressed in any RFI, appellant placed considerable stress on its 1/2-inch plywood to 25-gauge metal studs problem. The specifications provided for a metal stud of 25-gauge “minimum” and were silent as to the type of fastener to be used to attach the plywood to the stud. Pacific Rim was free to choose the size of the stud as long as it was no smaller than 25-gauge, and to choose the type of fastener as recommended by the product manufacturer.

Second, we are not persuaded that the number and substance of RFIs suggest that the specifications were defective, or that they caused unreasonable delays in appellant’s performance of the contract. As we held in *Hensel Phelps Construction Company*, ASBCA No. 49270, 99-2 BCA ¶ 30,531 at 150,795, *aff’d on recons.*, 00-1 BCA ¶ 30,733, *aff’d.*, *Hensel Phelps Construction Co. v. Pirie*, CAFC No. 00-1345 (Fed. Cir. 9 April 2001), “the number of RFIs and changes alone is insufficient to establish the Government’s liability for the contractor’s inefficiency.” *See also, Santa Fe Engineers, Inc.*, ASBCA Nos. 24578, 25838, 28687, 94-2 BCA ¶ 26,872 at 133,754. In its brief, appellant identifies a sample number of RFIs with the Government response times, and makes the claim that appellant and Pacific Rim “spent vast amounts of time discovering, identifying and reengineering problems and errors in the contract documents.” (App. br. at 17) However, based on our review of the record, including the specific portions of the record identified by appellant, we are not persuaded that either appellant or Pacific Rim spent vast amounts of time discovering, identifying and reengineering problems and errors in the contract documents solely or primarily as a result of the alleged errors or deficiencies in the plans and specifications. As we found above, 16 RFIs did not pertain to the module construction in Vancouver, Washington, 14 additional RFIs were unsolicited proposals for added work which were either accepted with a bilateral modification issued or rejected, and 21 additional RFIs were requests for variances which were either approved on a no cost/time basis or not accepted. There were 18 additional RFIs in which the Government simply confirmed the drawing and specification requirement as stated in the contract or informed appellant that it had the option as to how the requirement could be satisfied. We further found that most of the RFIs addressed minor issues, and the Government responded promptly to them. Moreover, we found that there were disagreements between John Low Associates and Pacific Rum concerning the shop drawings. Since John Low, or his representative, did not testify, we are unable to determine whether he may have generated specific RFIs, or whether the RFIs reflected his professional opinion with respect to the

adequacy of the specifications and drawings, either for the purpose of preparing the shop drawings or for the fabrication of the modules.

However, as we held in *Brantley Construction Company, Inc., supra*, appellant has not eliminated the various factors as possible causes for the failure of its performance and delays, and has not sustained its burden of proof that the contract requirements were the most probable cause for the installation failures. Appellant has not demonstrated that it has substantially complied with the Government plans and specifications, and that it had installed the requisite materials and performed the contract in accordance with its requirements. *R. C. Hedreen Co., supra, R.E.D.M. Corporation v. United States, supra*.

As we understand appellant's claim, it is based almost entirely on asserted delays and the labor impact of those delays, which it then attempts to quantify on the bases of certain labor efficiency analyses. However, we have found that the delays claimed were largely attributable to appellant and its subcontractor, Pacific Rim. First, there was the delay in appellant's award of the purchase order to Pacific Rim, primarily due to the inability of Pacific Rim to satisfy the conditions appellant imposed for subcontracting and Pacific Rim's lack of financial capability. Appellant asserted that it gave Pacific Homes notice to proceed and that Pacific Rim did so well prior to the finalization of the purchase order. The record does not support the assertion that Pacific Rim did in fact proceed with the performance of the construction of the modules prior to the finalization of the purchase order.

Second, there were delays in Pacific Rim's commencement of performance of the fabrication of the modules due to causes for which it was responsible. Pacific Rim lacked equipment and facilities adequate to the performance of the contract. It did not complete and submit shop drawings as required by the contract and in accordance with the schedule submitted by appellant. It had difficulty assembling a supervisory and labor workforce in various trades. Appellant did not have in-plant electrical and mechanical CQCRs prior to 10 October 1988. During its performance, Pacific Rim experienced further delays that were unrelated to any problems it may have had with the contract specifications. These included: failures of the glu-lam beams caused by Pacific Rim's failure to provide adequate support under the beams and overloading them; deficiencies in production of the modules as a result of poor workmanship and quality control requiring repeated rework; difficulty in hiring and maintaining an adequate labor force, employee absenteeism, labor turnover, inadequate supervision, and morale problems; and the shutdown of appellant's facility when it was unheated and there was no water due to a frozen water main outside building 33. We further hold that the delays Pacific Rim experienced in connection with the problems attaching 1/2-inch plywood to the 25-gauge metal studs were due primarily to the way Pacific Rim stored the plywood, its initial overtightening of screws, its method for installing the blocking between the studs, and its method for applying the fasteners to the plywood and stud.

In addition to the foregoing, we hold that appellant has not proved that the overall contract completion date was delayed by the problems appellant had, either with the alleged defective specifications or with the performance problems of Pacific Rim. As we found above, the Government granted appellant a 151 day extension in contract Modification No. P00023 (from 2 October 1989 to 2 March 1990) as a no-cost excusable delay for the barge fire. The contract, as awarded, specified the contract completion date as 7 November 1989. Following the barge fire at the Port of Adak in which 15 modules were damaged or destroyed, the reconstruction of those modules at Adak, and the on-site construction activity completing the BEQ, appellant completed the contract performance on or before 23 February 1990. Appellant requested a 130 calendar day extension to 2 March 1990, whereas the actual completion date should have been 17 March 1990 based on the requested 130 day extension from 7 November 1989. We, therefore, hold that appellant has not established that it is entitled to the relief it seeks in this appeal.

In light of our holding that appellant is not entitled to recovery for its claimed Government-caused delays, we make no specific findings and holdings relative to the quantum portion of this appeal. Accordingly, we deny the appeal.

Dated: 24 April 2001

ROLLIN A. VAN BROEKHOVEN
Administrative Judge
Armed Services Board
of Contract Appeals

I concur

I concur

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

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. 49255, Appeal of Aleutian Constructors, J.V., rendered in conformance with the Board's Charter.

Dated:

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