ARMED SERVICES BOARD OF CONTRACT APPEALS

Appeals of --	)	
	)	
Fru-Con Construction Corporation	)	ASBCA Nos. 53544, 53794
	)	
Under Contract No. DACW69-93-C-0022	)	

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OPINION BY ADMINISTRATIVE JUDGE PARK-CONROY

The disputes in these consolidated appeals involve a contract to rehabilitate the existing dam and deactivate the old locks at the Robert C. Byrd Locks and Dam on the Ohio River, near Gallipolis, West Virginia. ASBCA No. 53544 is a pass-through claim on behalf of Noell, Inc. (Noell), a subcontractor of appellant Fru-Con Construction Corporation (Fru-Con), which seeks a 733-day contract time extension for alleged government-caused delays, suspensions and changes, together with a contract price adjustment totaling approximately $7.7 million. ASBCA No. 53794 is an appeal challenging the government's claim which seeks entitlement to "credits and savings" in excess of $11 million resulting from alleged relaxation of the contract work. We conclude that appellant is entitled to a contract time extension of eight days and the appeal in ASBCA No. 53544 is sustained to that extent. We further conclude that the government is entitled to a contract time credit of 84 days and the appeal in ASBCA No. 53794 is denied to that extent. Also at issue is appellant's Motion to Strike, which we deny. Only entitlement is before us for decision.

FINDINGS OF FACT

Contract No. DACW69-93-C-0022 in the amount of $35,582,600.20 was awarded to Fru-Con on 18 June 1993 by the U.S. Army Corps of Engineers (Corps) to rehabilitate

the Gallipolis Locks and Dam (subsequently re-named the Robert C. Byrd Locks and Dam) located on the Ohio River (R4, tab D-1). The dam was comprised of eight separate roller gates extending across the Ohio River, each of which was bracketed between pier houses that enclosed the machinery that raises and lowers the gates to control river elevations (ASBCA No. 53544, compl., answer, ¶ 12). The project was to be completed in 1,850 days, approximately five years (R4, tab D-1); however, the original contract completion date, 12 August 1998 (R4, tab F-1), was extended by modifications to 10 June 2000 (ex. G-1 at III-6). The contract provided for liquidated damages in the amount of $3,500.00 a day (R4, tab D-1, § H at H-4, ¶ H.9).

The contract work consisted of 75 separate line items, including removing the eight existing dam roller gates and fabricating, installing and testing eight new gates; removing, replacing and testing the gate chains; furnishing and installing eight post-tensioned pier anchors; testing the existing poiree trestle anchorages; installing poiree dams; removing and replacing the roofing at the pier houses and dam operating building; installing new pier access doors and cleaning pier access tunnels; fabricating new maintenance bulkheads; refurbishing existing gate operating machinery; and deactivating the existing locks (R4, tab D-1 at 1-5).

The standard FAR contract clauses were incorporated by reference to the Engineer Supplement (EFARS), in particular 52.243-0004, CHANGES (AUG 1987); 52.246-0012, INSPECTION OF CONSTRUCTION (JUL 1986); 52.246-0021, WARRANTY OF CONSTRUCTION (APR 1984); and 52.249-0010, DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984) (R4, tab D-1 at H-14, I-5). The contract also included the full text of two other relevant FAR clauses, also identified by the EFARS: 52.212-0012, SUSPENSION OF WORK (APR 1984); and 52.212-0015, GOVERNMENT DELAY OF WORK (APR 1984) (R4, tab D-1 at F-1, -2).

"SECTION 1N – CARE AND DIVERSION OF WATER" of the specifications provided in paragraph 2, "DEWATERING THE GATE BAYS" that "[e]ach dam gate bay shall be dewatered for pier anchor installation and other work as required after erecting and placing the new upstream maintenance bulkheads and the new downstream poiree dam" (R4, tab D-1, § 1N at 1N-1, ¶ 2.1; tr. 2/11-13). Paragraph 2.2, "Poiree Dam," specified that poiree anchorages be tested before the poiree dam was installed and pumping performed "to achieve an [sic] dewatered condition" (R4, tab D-1, § 1N at 1N-1, ¶ 2.2).

Amendment No. 0004 added a new paragraph 15, "SUSPENSION OF WORK AND REWATERING AT DEWATERED WORK AREAS" to "SECTION 1C - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS." Paragraph 15.1, "Seasonal Restriction," provided that, due to probable high river flows from December through May, no work in dewatered gate bays would be permitted without written approval of the contracting officer and, further, that no payments or contract

extensions would be allowed from 1 December through 31 May due to work suspensions. (R4, tab D-1, Amend. 0004 at 1C-8, ¶¶ 15, 15.1) Irrespective of the time of year, the contractor was also precluded from performing work below (downstream) the dam when the total dam gate opening exceeded 25 feet, or from performing work above (upstream) the dam when the total dam gate opening exceeded 40 feet (R4, tab D-1, § 1I at 1I-3, ¶ 6.3).

"SECTION 2A – CONTRACT CONSIDERATIONS" provided in paragraph 4.1, "General," of paragraph 4, "SPECIAL CONDITIONS," that:

> . . . [T]he dam gates and appurtenances will be replaced one at a time, beginning with gate No. 1 on the West Virginia side of the dam and proceeding in order to gate No. 8 at the Ohio bank. . . . At no time shall there be any less than seven (7) gates available for passage of flow.

(R4, tab D-1, § 2A at 2A-3, ¶ 4.1) Paragraph 1 of "SECTION 16D – MOTORS, BRAKES, AND LOCAL CONTROL EQUIPMENT" similarly provides:

> 1. SCOPE. . . . Only one gate bay at a time will be released for construction activities. Each gate bay must be totally complete and operational before a successive gate bay will be released to the Contractor.

(R4, tab D-1, § 16D at 16D-1, ¶ 1) Paragraph 10.1, "General," of paragraph 10, "REBUILD MOTORS," of the same section similarly states that "[d]ue to the project's ongoing operation requirements, only one gate bay will be released to the Contractor at any given time; therefore, the motors shall be rebuilt one-at-a-time" (R4, tab D-1, § 16D at 16D-4, ¶ 10.1).

The specifications for the fabrication and installation of the eight new roller gates were set forth in "SECTION 5C – ROLLER GATES AND APPURTENANCES." Of relevance are the following provisions.

> 9. INSTALLATION. The roller gates and appurtenant items shall be assembled for installation in strict accordance with the contract drawings, approved installation drawings, and shop match-markings. All components shall be in correct alignment before field welding is commenced.
>
> . . . .

> 9.2 Appurtenant Items. Welded field splices in exposed metals shall be ground smooth to assure proper sealing. Metal supports for rubber seals shall be continuous and free of waves, winds, and distortions. Rubber seals shall be installed after the gate painting operations have been completed. Seals shall be adjusted after installation so that they are slightly compressed in the closed, dewatered condition to prevent excessive depression and wear in the closed, watered condition.
>
> 9.3 Existing Seal Plate. The existing embedded seal plate at the sill level shall be cleaned to white metal and any rough areas ground smooth. The mating surfaces of the roller gate and the embedded seal plate shall be ground as necessary so that the mating surfaces shall meet with not more than 0.03 inch [1/32] clearance at any point.
>
> . . . .
>
> 9.5 The Contractor shall have only one gate bay closed at any time. The Contractor may not begin any work on the next gate bay, that would in any way affect that gate's normal operation, until the previous gate and appurtenances have been installed, tested, and approved by the Contracting Officer.

(R4, tab D-1, § 5C at 5C-4 to -5)

Amendment No. 0004 added paragraph 9.7, "New Roller Gate Working Hours," to Section 5C and required that, for each gate, the contractor work 24 hours a day, seven days a week, "from the start of the removal of an existing roller gate and throughout the installation of the new roller gate" until the gate was operable (R4, tab D-1, Amend. 0004 at 6 of 26, ¶ 36).

The final acceptance testing specifications contained in paragraph 11 "ACCEPTANCE TRIAL OPERATION AND TEST" of Section 5C required the contractor "to operate each gate in the dewatered and watered conditions from the opened to the closed position a sufficient number of times to demonstrate to the Contracting Officer that all parts are functioning properly." After testing and "before proceeding with the next gate replacement," the completed new gate was to be "placed in normal operating service for 14 days to allow for adjustments" and any "[a]djustments and/or defects disclosed during this period [were to] be corrected by the Contractor at no cost to

the Government." This 14-day period is referred to as "commissioning." (R4, tab D-1, § 5C at 5C-5, ¶ 11)

"SECTION 5G – MAINTENANCE BULKHEADS AND APPURTENANCES" provided the specifications for "fabrication, furnishing, installing, inspecting and testing eight new maintenance bulkhead units . . . and the rehabilitation of the existing maintenance bulkheads" (R4, tab D-1, § 5G at 5G-1, ¶ 1). Amendment No. 0003 added the following requirement at the end of paragraph 6.1 of Section 5G: "The Contractor is allowed to use only the 8 new bulkheads. The rehabilitated existing 7 bulkheads shall be reserved for Government use only." (R4, tab D-1, Amend. 0003 at 2 of 6, ¶ 6.1)

"SECTION 9A – PAINTING" of the contract specified that the roller gates (interior and exterior) were to be painted (R4, tab D-1, § 9A at 9A-1, ¶ 1.1.2(1); tr. 2/18). Shop painting was defined as "surface preparation and painting operations conducted in a shop, mill, or plant, before shipment of paint-receiving items to the project site" (R4, tab D-1, § 9A at 9A-3, ¶ 3.2). Field painting was defined as "surface preparation and painting operations conducted at the project site" (*id.*, ¶ 3.3). Touch-up painting was defined as "the application of paint on small areas of painted surfaces to repair mars, scratches, and other defects where the coating has deteriorated in order to restore the coating to an unbroken condition" (*id.*, ¶ 3.4). Repainting was defined as "the cleaning and recoating with the same or similar materials originally used on extensive areas on which the existing coatings have deteriorated or otherwise have not provided adequate protection" (*id.*, ¶ 3.5).

Additionally, the contractor was responsible for quality control operations, "both on-site and off-site" (R4, tab D-1, § 1E at 1E-1, ¶ 4). Amendment No. 0002 to the specifications added paragraph 8.1, "Shop Inspection," to Section 5C. It required that the contractor monitor the fabrication of the welded gates closely due to their "unique geometry" and that any deficient work be corrected before the gates were delivered to the site. (R4, tab D-1, Amend. 0002 at 2 of 4, ¶ 9)

Amendment No. 0006 added a revised "SECTION 10 – SUGGESTED ROLLER GATE INSTALLATION SEQUENCE" to the specifications (R4, tab D-1, Amend. 0006, encl. 2 at 10-1 to -5). The suggested installation sequence was "not a contract requirement" (*id.* at 10-1, ¶ 1; tr. 2/215). Nevertheless, it stated in paragraph 5.1, "Gate Bay Sequence," that the upstream maintenance bulkhead should be set with the roller gate in the closed position, that the roller gate should then be raised to preclude ponding between the gate and the bulkhead and then lowered to the assembly jig to be cut up and removed, after which the new roller gate should be set on the jig, assembled and raised, the downstream poiree dam installed, the gate bay dewatered, an operational check performed on the gate, the "fit-up of the gate apron to the existing gate sill" completed and the pier anchorage installed (R4, tab D-1, Amend. 0006, encl. 2 at 10-1 to -2, ¶ 5.1).

The suggested sequence indicated that painting and metalizing could be performed when the gate was on the assembly jig "or at another time" at the option of the contractor (*id.*, ¶ 5.1(3); tr. 2/25). A further description of individual operations contained in paragraph 5.2.2, "Operation Concurrent with Dewatering," suggested that, concurrent with the dewatering, the pier anchors should be installed, side seals adjusted, the apron seal plate ground or welded to the gate sill, and operational testing performed (*id.* at 10-3, ¶ 5.2.2).

Use of critical path Network Analysis Schedules (NAS), updated monthly, was required for the planning, scheduling and reporting of all contract work (R4, tab D-1, § 1A). The Summary Network Diagram was limited to no more than 150 activities (*id*. at 1A-4, ¶ 6.1).

The specifications also provided the number of anticipated adverse weather days each month and the procedure for determination of time extensions for unusually severe weather (*id*. at 1A-7, ¶ 11). Anticipated adverse weather days were to be reflected in the contractor's schedule (*id*., ¶ 11.2).

The Noell Subcontract

Fru-Con considered the project to be very high risk because removal and reinstallation of dam roller gates had not previously been performed in the United States. It decided to transfer the risk by subcontracting the work. (Tr. 2/51-52, 6/105) Thus, prior to submitting its bid, Fru-Con issued a Request for Quotation-005 (RFQ-005) for the installation of the eight roller gates to potential subcontractors, one of which was Noell. RFQ-005 stated that the schedule provided for installation of two gates in 1994, three gates in 1995, and three gates in 1996 (a three-year, 2-3-3 schedule). (R4, tab S-1 at 2)

Noell expressed interest in both fabricating and installing the new gates (tr. 6/103-04) and, on 29 July 1993, representatives of Fru-Con and Noell met to negotiate a subcontract for this work. One of the Noell representatives was Mr. Doetleff Kasdorff, who had visited the project site and was a construction engineer and scheduler employed by Pressaug Noell GmbH, a German affiliate of Noell that had performed roller gate installation work in Europe. (Tr. 1/49, 87-92, 95) Mr. Clifford Crosnoe, Fru-Con's project site manager until early November 1994, represented Fru-Con (tr. 1/43, 67).

The Goldmann Schedule

Prior to attending the meeting, Mr. Kasdorff familiarized himself with a logic and duration construction schedule dated 16 July 1993, which had been prepared by Mr. T. M. Goldmann, a colleague who had visited the project site on 8 June 1993 (R4, tab K-4; tr. 1/94-96). The activities in this so-called "Goldmann Schedule" followed the

"SUGGESTED ROLLER GATE INSTALLATION SEQUENCE" set-forth in Amendment No. 0006 (tr. 1/53). The Goldmann Schedule complied with the Corps technical contract specifications and the three-year, 2-3-3 installation schedule specified in Fru-Con's RFQ-005 (tr. 1/98-99, 2/31-33). It was apparently submitted to Fru-Con with Noell's proposal (R4, tab C-1 at 5, tab C-2, append. 1, tab K-4; tr. 5/20-24).

The Goldmann Schedule identifies the critical path to be the sequential removal and installation of Gate Nos. 1 through 8. The Goldmann Schedule for Gate Nos. 1 and 2 was based upon dayshifts only, using a six-day work week. Excluding mobilization, it reflects a 90-day gate installation period. Of relevance are Activities 1.17 through 1.23. It shows one day for Activity 1.17, "Setting poiree dam, dewatering of gate bay," seven days for Activity 1.18, "Adjusting of sill seal," with six days of concurrent performance for Activity 1.19, "Install and adjust side seal," followed by eight days to perform Activity 1.20, "Metalize, touch up and paint of install[ation] joint," four days for Activity 1.21, "Gate tests in dewatered condition," one day for Activity 1.22, "Water up, pull poiree dam and pumps," and three days for Activity 1.23, "Tests in watered condition." This is a total of 24 days. (R4, tab K-4)

For Gate Nos. 3 through 8, the Goldmann Schedule planned for both day and night shifts, using a seven-day work week, and excluding mobilization, reflected a 59-day gate installation cycle. One day was again scheduled for Activity 1.17, however, only four days were scheduled to perform Activities 1.18 and 1.19 concurrently, followed by five days for Activity 1.20, three days for Activity 1.21, one day for Activity 1.22, and two days for Activity 1.23. This is a total of 16 days. Commissioning of Gate No. 8 was scheduled to be completed on 27 November 1996. (R4, tab K-4)

Both Mr. Kasdorff and Mr. James Valentyn, Fru-Con's project engineer from the spring of 1993 through June 2000, considered the Goldmann Schedule to be reasonable (tr. 1/99-100, 2/7, 10, 33).

The Subcontract Schedule

Fru-Con and Noell executed a subcontract on 16 August 1993, in the amount of $8,700,000.00, pursuant to which Noell was to "complete the detailing, fabrication, shop inspection, shop testing, painting, metalizing, delivery, installation, touch-up painting and metalizing, field adjustments and testing of the eight (8) new roller gates in strict accordance with" the specification requirements of the prime contract between Fru-Con and the Corps (R4, tab G-27 at 2 of 10). Paragraph 3.B. of the subcontract specified that the scope of work included "Specification Section 5C 'Roller Gate and Appurtenances'" of the prime contract. Subparagraph 3.B.3), "Surface preparation, painting and metalizing," stated: "Subcontractor [sic] includes all on-site field touch-up painting and field metalizing as required for Owner acceptance." (*Id.*)

Paragraph 5 of the subcontract listed six items that were excluded from the scope of Noell's work. Among the work items excluded were dewatering, the installation and removal of the bulkheads and poiree dams, and the furnishing and installation of the pier anchors. (R4, tab G-27 at 4 of 10)

Noell's subcontract work was to be performed according to the Attachment D construction schedule, which was incorporated by reference, and provided for a 30 November 1996 completion date. Under paragraph 1 of Attachment D, failure by Noell to meet any of the milestone dates listed would be cause for termination of the subcontract. Paragraph 2 provided that, if Noell did not meet the 30 November 1996 completion date, Noell would pay "any and all" of Fru-Con's costs "occasioned by [Noell's] failure to complete the work on time," including direct and indirect costs and liquidated damages. (R4, tab G-27, attach. D at 1)

The Attachment D construction schedule indicated that no work would be performed from 1 December to 31 May and that field and touch-up painting and metalizing of installation joints would be performed after the gate bay was dewatered. It reflected completion of all of the gate installation work by 30 November 1996, according to a three-year, 2-3-3 installation plan. The milestone dates for the beginning of gate installation and gate handover completion are generally consistent with the installation and commissioning dates contained on the Goldmann Schedule. (R4, tabs G-27, K-4; tr. 2/38-39, 1/56, 71-73) However, the Goldmann Schedule apparently was not discussed during subcontract negotiations and it was not attached to the subcontract (tr. 6/101). The Attachment D construction schedule has a hand-written note which states: "Subcontractor shall provide a revised schedule, for contractor approval by Aug. 24, 1993" (R4, tab G-27, attach. D at 1).

A copy of the Fru-Con/Noell subcontract was submitted to the government on 27 August 1993, identified as "Roller Gate Fabrication Installation Purchase Order (Noell, Inc.)" (R4, tab H-1). The government understood that the subcontract was submitted for information purposes and did not require approval. The submittal was issued a code "F," acknowledging receipt and distributed to "the folks that needed it and stuck it in a pile." (Tr. 6/183-84, 187) A hand-written notation, "on file in contract files," was added to the submittal cover sheet by the government (tr. 6/183). The submission did not include copies of either the subcontract Attachment D construction schedule or the Goldmann Schedule, and the only schedule-related information is found in paragraph 6.A.3 which lists planned delivery dates for the eight roller gate chains (R4, tab H-1 at 12; tr. 6/185). The delivery dates for the chains suggest a three-year, 2-3-3 installation schedule and correspond with the Attachment D shipment and installation dates (R4, tab H-1 at 12-13). We find this evidence to be insufficient to establish that the

government knew that the Noell subcontract to fabricate and install the roller gates was to be performed in three years.

Noell's 25 August 1993 As-Planned Schedule

Noell incorporated the logic and durations of the Goldmann Schedule activities into a Primavera computer program file. The earliest Noell Primavera schedule in the record has a plot date of 25 August 1993 and reflects a three-year, 2-3-3 installation schedule. As is relevant here, beginning with Activity 1200, "SET POIREE DAM, DEWATER GATE BAY," and continuing through Activity 1280, "COMMISSIONING ROLLER GATE[] . . .," it mirrors the Goldmann Schedule activities, sequences and durations both for Gate Nos. 1 and 2 and for Gate Nos. 3 through 8. (R4(b), tab 38) The planned start of work on Gate Nos. 2 through 8 was not restrained by completion of the prior gate, removal of the bulkheads and the 14-day commissioning period. Additionally, the schedule does not reflect holidays and adverse weather days. (Ex. G-1 at III-20) It does not appear that this schedule was provided to Fru-Con for approval (R4, tab S-17). Noell used its schedule "[a] little bit," as a guideline that was not concrete, during project performance (tr. 4/8-10). Mr. Valentyn, however, did not use this schedule for any purpose (tr. 2/151).

The parties have variously referred to both the Goldmann Schedule and Noell's 25 August 1993 schedule as Noell's as-planned schedule.

A roller gate fabrication and erection Primavera schedule submitted to Fru-Con on 22 March 1994 was the only Noell schedule to receive even conditional approval from Fru-Con. The conditional approval stated, among other things: "Each gate must be completed 100% and accepted by the [government] before any work can commence on the next gate. Your schedule must be adjusted to allow for this." (R4, tab S-9; tr. 2/161-62)

An article about the Byrd Dam rehabilitation project was printed in the June-July 1994 issue of THE MILITARY ENGINEER (R4(b), tab 208). The title of the article is "*Rollerin'* BACK THE OHIO." It lists Mr. Wayne E. Budrus, the Corps Project Manager, Mr. F. Denis d'Ambrosi, Noell's Project Manager, and Mr. Walter J. Wells, Fru-Con's Heavy Civil Operations Manager, as the authors and contains a sidebar insert entitled "*Sketch of* HISTORICAL DAM," credited to Mr. Dennis Hughes. (R4(b), tabs 207, 208 at 37-39) The initial draft of the article was prepared by Mr. d'Ambrosi and sent to Messrs. Budrus and Hughes (tr. 6/190). The gate installation sequence described in the article was similar to the installation logic detailed in the Goldmann Schedule. Mr. Budrus thought that it was feasible. (Tr. 1/172-77, 192) Mr. Hughes reviewed the article prior to publication and did not see any significant inaccuracies in it (tr. 6/195).

The article did not reflect any specific time durations or the length of time anticipated to complete performance of the work (R4(b), tab 208 at 40).

We find that the government was not provided with a copy of the Goldmann Schedule, the subcontract Attachment D construction schedule, or the 25 August 1993 Noell schedule. There was some evidence, however, that a three-year, 2-3-3 performance period was generally referred to in the fall of 1993 by both Messrs. Crosnoe and Valentyn in discussions with Mr. Hughes who, during the time period 1993 through 1995, variously served as the Corps project engineer, assistant resident engineer, and resident engineer (tr. 1/62-63, 2/51). There is no evidence as to the substance of those discussions.

Fru-Con's Schedule

Fru-Con's initial project schedule was submitted to the government on 25 August 1993 and has a data date of 16 July 1993, which is also shown as the start date. The schedule reflects a finish date of 8 August 1998, with installation of one gate in 1994, two gates each in 1995, 1996, and 1997, and one gate in 1998 (a five-year, 1-2-2-2-1 schedule). (R4, tab P, vol. 11; tr. 2/39-41) Except for Gate No. 8, the 14-day commissioning period was on the critical path (ex. G-1 at II-2). The Fru-Con schedule did not include anticipated adverse weather delays in the summer of 1998. Nevertheless, the government approved it. (*Id.*)

The Fru-Con schedule logic differs from the Goldmann Schedule. After the "Install Poiree Dam & Dewater Gate Bay []" activity, the Fru-Con schedule shows only one roller gate installation activity; specifically, "Install Anchors & Test Seal in Gate Bay []." Welding of the new gate sections and the end shields, and field painting were scheduled to be performed before installation of the poiree dam and dewatering. (R4, tab B at 3-4, tab P, vol. 11, tab S-154)

All of Fru-Con's schedule updates were based upon a five-year schedule and were used for planning purposes and to determine time extensions and progress on the project (R4, tab P, vols. 11-15; tr. 2/40-42, 151-53). Fru-Con used the entire five-year contract performance period for its schedule because it was concerned about the risk associated with installation of the roller gates. It was, nonetheless, common practice in the industry for prime contractors to hold subcontractors, like Noell, to a "much tighter schedule." (Tr. 2/52)

APPELLANT'S CLAIM
ASBCA No. 53544

In ASBCA No. 53544, appellant seeks a 733-day contract time extension for alleged government-caused delays, suspensions and changes and a contract price adjustment of approximately $7.7 million. Its delay claim is based upon a Critical Path Method (CPM) time impact schedule analysis prepared by Mr. John Byrne, then an employee of Navigant Consulting, Inc. (formerly Peterson Worldwide LLC), and currently an independent consultant. He was qualified as an expert in construction scheduling, including critical path and time impact analyses, and so testified at the hearing (tr. 4/183).

The CPM time impact analysis prepared by Mr. Byrne to demonstrate excusable and compensable delay used the early completion three-year, 2-3-3 roller gate installation duration schedule logic contained in the Goldmann Schedule and Noell's 25 August 1993 as-planned schedule to establish the baseline (R4, tabs C-1, C-2, append. 3; tr. 5/20-27, 77-79, 82-94). He found the Goldmann Schedule to be a "reasonable, realistic plan for accomplishing the work" (R4, tab C-1 at 8-9, tab K-4; tr. 5/80-85). However, he believed, incorrectly, that Noell's as-planned schedule had been approved by Fru-Con (tr. 5/172-74). The as-built schedule he prepared is based upon an as-built schedule prepared by Mr. Kasdorff, the daily logs, project diaries and the quality assurance/quality control reports (R4, tab C-2, append. 11; tr. 2/146-47, 5/89).

The government also performed a CPM time impact analysis of the project, retaining Mr. Stuart Ockman of Ockman & Borden Associates to do so. Appellant stipulated that Mr. Ockman was an expert in scheduling, estimating and construction means and methods, and he so testified (tr. 8/8). He used Fru-Con's approved 16 July 1993 schedule, with an adjustment for the 1998 summer adverse weather days and commissioning of Gate No. 8, to perform his primary time impact analysis of the project delays. The adjustment added 26 days to the contract completion date, pushing it beyond the contractual completion requirement. (Ex. G-1 at II-2) He also used Noell's 25 August 1993 schedule to perform a time impact analysis, although he considered it to be "little more than a pipedream." He adjusted the schedule to reflect the missing restraints for the planned start of work on each gate until work on the prior gate was complete and the 14-day commissioning requirement. He did not adjust the schedule to include the missing holidays and adverse weather days. An early finish credit of 623 days was assigned to the Noell schedule and impacts are deducted from this credit. (*Id.* at III-20, -21, -25)

Late Start of Gate No. 1 Installation

During the late spring and summer months of 1994, Noell prepared several versions of its "Roller Gate Erection Procedure" and provided them to Fru-Con for submission to the government. These procedures are not schedules and the individual who prepared them died before the hearing commenced so there is no evidence explaining what he intended. While the procedures do provide some information about the planned work sequence, we are not persuaded without further explanation, that the word "detailing" means "painting" or that Noell "was only going to test the gate seals (and adjust the seals if necessary by machining the seal plate) after dewatering" as the government presently asserts (R4, tab B at 7, 9).

The use of maintenance bulkheads to close the gate bay upstream to prevent water flow is unique to the Robert C. Byrd Locks and Dam project and is necessary to perform work at the gate bay (tr. 6/213-14, 7/114-15, 141). The Goldmann Schedule and Noell's 25 August 1993 as-planned schedule both show 1 June 1994 as the start date for installation of the upstream bulkheads, the first activity for Gate No. 1 (R4, tab C-2, append. 2, tab K-4; R4(b), tab 38). This work did not begin, however, until 26 July 1994, some 55 calendar days late (ex. G-1 at III-21). There is no evidence that this delay was caused by the government.

There was also delay in the shipment of the roller gates that were fabricated by Noell's subcontractor, AWM Enterprises, Inc., in Gulfport, MS and delivered to the project site by barge (tr. 1/96-97). According to the Fru-Con/Noell subcontract Attachment D construction schedule, the first roller gate was to have been shipped on 2 May 1994, for arrival at the project site on 31 May 1994. Installation was to begin on 17 June 1994, and end on 7 August 1994, with a 30 August 1994 gate hand-over completion date. (R4, tab G-27, attach. D at 2) Similar completion dates are reflected in the Goldmann Schedule and Noell's 25 August 1993 as-planned schedule (R4, tab K-4; R4(b), tab 38). This did not occur.

Roller Gate No. 1 was not delivered to the project site until 29 August 1994, at which time the barges and on-site crane required to remove the old gate were not available, so that removal of the old gate did not begin until 7 September 1994 (R4, tab C-1 at 13-14). Noell concedes responsibility for this delay. Using 1 June 1994 as the planned beginning date for installation of Gate No. 1, appellant's expert computed the delay as ending on 7 September 1994, a total of 88 calendar days (79 days for late delivery and 9 days for late gate removal). The correct total appears to be 98 days (89 days for late delivery and 9 days for late gate removal). In any event, appellant's expert did not evaluate the impact of these delays to the project schedule. (R4, tab C-1 at 13-14, 16; ex. A-2, tab 4 at 13-14; tr. 5/108-10)

The government's expert attributed the delay in installing the upstream bulkheads to appellant, and using Noell's 25 August 1993 as-planned schedule, concluded that this pushed project completion into another six-month winter period, adding 245 days to contract performance (ex. G-1 at III-21). He found that the impact of the late start in removing old Gate No. 1 resulted in Noell-caused concurrent delays which did not extend contract performance (*id.* at III-22).

Deletion of the Poiree Dam

Meanwhile, by a letter dated 12 August 1994, Mr. Hughes, acting as the Contracting Officer's Authorized Representative (COR), advised Fru-Con that the government intended to delete installation of the poiree dam due to "safety concerns which developed during the testing of the poiree anchorages in gate bay number one (1)." The letter stated that the deletion of the poiree dam constituted a "significant change" to the contract and requested a detailed cost proposal. It also requested an analysis of the impact to Fru-Con's project schedule "due to the complexities of this change and the obvious schedule implications." Official notice of the contract change was given on 8 September 1994. (R4, tab F-9; ex. G-1 at III-22; tr. 2/55-57, 6/202-05)

On 6 September 1994, the government issued Modification No. P00010, advising Fru-Con that, "[d]ue to impending changes concerning the use of the poiree dams," it would not be possible to place the pier anchors "in the dry" and that it would "be necessary to drill, place, and stress the pier anchors underwater." The modification also identified the changes required to perform the anchor work underwater, notified Fru-Con to proceed with the work and requested a cost proposal. (R4, tab E-1) The cost of the additional work directed by Modification No. P00010 relating to the pier anchors was settled with Fru-Con for $5,212,125.00 by bilateral Modification No. P00081, effective 16 April 1997, with no change to the contract completion date (R4, tab E-4). No issues relating to the installation of the pier anchors have been raised in these appeals.

By a letter dated 26 September 1994, the Corps further advised Fru-Con that the tolerance between the mating surfaces of the new roller gate and the embedded seal plate required by paragraph 9.3 of Section 5C was being reduced to 1/8 of an inch because the 1/32 of an inch tolerance could not be achieved in underwater or "wet" conditions (R4, tab S-15; tr. 1/150-51, 2/182-85). This change to the contract specifications impacted Activity 1.18, "Adjusting of sill seal," on the Goldmann Schedule and "ADJUST SILL SEAL" on Noell's 25 August 1993 schedule. Both schedules allocated seven days for Gate Nos. 1 and 2 and four days for Gate Nos. 3 through 8 for this work. (R4, tab K-4; R4(b), tab 38)

On 28 November 1994, Noell submitted to Fru-Con a "ROLLER GATE REMOVAL & INSTALLATION" schedule, dated 22 November 1994, which was a plan

for installing Gate Nos. 2 through 8 without dewatering, *i.e.* under wet conditions. The schedule was intended to reflect how the roller gates would be installed without use of the poiree dam. A "Final Acceptance" 14-day commissioning period was on the critical path. (R4, tab C-2, append. 25; tr. 2/58-59, 4/15) The activity descriptions and logic in Noell's 22 November 1994 adjusted, as-planned schedule are different than those contained in the Goldmann Schedule and Noell's 25 August 1993 as-planned schedule.

The 22 November 1994 adjusted, as-planned Noell schedule was submitted to Fru-Con, but there is no evidence that it was ever approved (tr. 2/106). Mr. James Nibert, Noell's general foreman throughout subcontract performance, thought it was a reasonable approach to performing the work in the wet (tr. 4/16).

On 21 March 1995, Noell submitted a proposal to Fru-Con for the cost and schedule impact resulting from the government's decision to delete the poiree dams. It estimated that the schedule impact for each gate could be 15 days. (R4, tab I-2) Fru-Con added its direct costs and mark-ups and submitted the cost proposal to the government on 1 June 1995 (R4, tab G-5). On 11 December 1995, the government requested an amended proposal with a schedule analysis of the additional 15 days per gate and further justification for the proposed direct costs (R4, tab F-21).

On 18 December 1995, bilateral Modification No. P00029 was issued, deleting the work associated with "installation of the poiree dam at the dam gate bays and the lock chambers" and reducing the contract amount by $641,252.00 for the cost of the deleted and related work with no change in the contract completion date (R4, tab E-2). There is no contention that this modification addressed or resolved costs or time relating to Noell's installation of the roller gates.

Noell retained Revay & Associates to prepare the requested schedule analysis (tr. 3/13-15, 78-79). A new proposal was submitted to the government by Fru-Con on 29 October 1996, and amended on 19 November 1996. It requested a time extension of 24 days for each gate, a total of 192 days, computed from Noell's originally scheduled 30 November 1996 finish date (R4, tab G-13, append. 3, tab G-14).

Appellant's expert provided another analysis of the alleged delay associated with the deletion of the poiree dam. He selected Noell's 22 November 1994 adjusted, as-planned schedule to measure the delay, finding that Activities 36 through 53 on the 22 November 1994 schedule were comparable to Activities 1.17 through 1.23 on the Goldmann Schedule. (R4, tab C-1 at 14; ex. A-2, tab 4 at 16; tr. 5/111-16) Using Gate No. 5, his analysis shows 15 days for the Goldmann Schedule activities and 17 days for the comparable activities on Noell's 22 November 1994 schedule.

He made two further adjustments to Noell's 22 November 1994 adjusted, as-planned schedule. He first moved the eight days of intermittent, concurrent work scheduled for Activity 37, "Paint, metallize and touch-up and girth weld," to the end of the iron work (after Activity 52) because, as scheduled, it was a "physical impossibility" since painting, metalizing and touch-up work could not be performed with other work before the welding, grinding and iron work activities (tr. 5/67-68, 191). He next added nine days to perform the work in wet conditions based upon anticipated additional "barge work, scaffolding, surface preparation and equipment utilization" (R4, tab C-1 at 15). These adjustments increase the time required to perform the work impacted by the deletion of the poiree dam by 17 days per gate, a total of 136 days (*id*.; ex. A-2, tab 4 at 16). An animated exhibit used during the trial by appellant's expert portrays a similar analysis (ex. A-2, tab 6 at 28-50; tr. 5/67-73).

With these adjustments, appellant's expert projected that the contract completion date would be extended 364 days, through two winter seasons. He then combined the delays associated with late delivery of Gate No. 1 and the removal of the old gate with the delay he projected from deletion of the poiree dam to create Impact Period I (1 June 1994 to 7 September 1994). He concluded that the project would be delayed a total of 588 days (79 days for late delivery of Gate No. 1, nine days for gate removal delay, 136 days for deletion of the poiree dam, and 364 days for two winter seasons resulting from deletion of the poiree dam). He attributed the potential future delay associated with deletion of the poiree dam to the government and prorated the 364 winter days between appellant and the government according to his determination of responsibility (221 days to the government and 143 days to appellant). (R4, tab C-1 at 14-15; ex. A-2, tab 4 at 16-22; tr. 5/112-20, 6/8-16)

The government's expert thought that Noell's 22 November 1994 adjusted, as-planned schedule was "fatally flawed" because: it planned to begin work in March, when water levels were historically too high to allow productive work; it did not allow sufficient time for commissioning Gate Nos. 5 and 6; it was based upon a seven-day work week, whereas Noell typically worked six days; it did not include an allowance for adverse weather; and, it did not include all of the activities associated with the end shields (ex. G-1 at III-22, -23).

Guardrail Extensions

Another change to the contract work during this general time period involved installation of roller gate guardrail extensions, which began 8 September 1994, and was completed on 3 December 1994 (R4, tab C-1 at 17, tab C-2, append. 11). The Corps issued bilateral Modification No. P00064 for this work, which increased the contract price and included a waiver of any extension of the contract completion date (R4, tab

C-2, append. 26). No compensable or excusable delay is claimed for this change (R4, tab C-1 at 17-18) .

Gate No. 1 Installation Problems

Under Noell's 22 November 1994 adjusted, as-planned schedule, divers were to be used to check the seal interface between the existing embedded seal plate and the knife edge of the roller gate apron after installation of the new apron sections and the driven and non-driven roller end shields. In practice, the divers either marked the roller gate or verbally recorded the knife edges that required surface grinding. Divers were also used to set the measurements for the permanent location of the end seals. The work was performed from floating barges. (Ex. A-2, tab 6 at 28-42; tr. 2/99-102)

On 4 December 1994, during the winter period, Noell began the "Bolt & Weld Installation Joint" activity for Gate No. 1, which involved hanging the roller gate and welding the installation joint on the three apron sections. It completed this work on 12 January 1995. Between 26 December 1994, and 12 February 1995, Noell worked on the installation and adjustment of the side seals. (R4, tab C-2, append. 11; tr. 1/110-11, 5/121) During this time period, Noell accomplished 18 days of critical path schedule progress (R4, tab C-1 at 18). Fru-Con advised the government that final adjustment and welding of the side seals, final grinding of the roller gate apron knife edge for contact with the embedded seal plate, and field painting would be completed in the spring, prior to beginning work on Gate No. 2 (R4, tabs S-24, -27).

Fru-Con was not satisfied with Noell's performance and, by a letter dated 16 March 1995, advised Noell that it was in default of its subcontract for failure to meet the subcontract milestone dates (R4, tab S-30). Another, and stronger, letter also advising Noell that it was in default was sent on 18 July 1995 (R4, tab S-45).

There were serious fabrication and quality control difficulties with roller Gate No. 1 which we attribute to Noell (tr. 2/45, 4/61). First, the gate was not completely round, a problem that was corrected using additional metal filler (R4, tabs S-18, -25; tr. 2/111). There were also significant problems with the welds (R4, tabs S-14, -25; tr. 4/62, 7/18-20) and with the shop painting (tr. 7/15-17).

The biggest initial problem, however, was misalignment of the seal interface (tr. 2/112, 4/62). The problem was first identified on 12 April 1995 (ex. G-1 at III-13). Thereafter, Fru-Con, Noell, and the government all spent a great deal of time and money investigating what was wrong with Gate No. 1 (tr. 4/113). Noell took the position that the specifications were defective (R4, tab S-92). Fru-Con engaged an independent surveyor, who concluded that the roller gate had not been fabricated and installed within the contract tolerances, causing the gate rim gears to be out of time (R4, tabs S-61, -95).

The government also believed that the gate rim gears were out of time and blamed the problem on the fabricator (tr. 4/114). Whether the condition of the existing imbedded seal plate was also a problem, however, could not be analyzed because the gate could not be closed and the bay could not be dewatered (R4(b), tab 221).

By letter dated 5 September 1995, the government advised Fru-Con that installation of Gate No. 2 could begin pending resolution of the problems with Gate No. 1, subject to specified conditions, including temporary repairs. The letter was forwarded to Noell on 7 September 1995. (R4, tab S-54) The temporary repairs to Gate No. 1 were completed on 20 or 21 September 1995 (R4, tab C-2, append. 11; ex. G-1 at III-14).

Before beginning installation of Gate Nos. 2 and 3, Noell hired its own survey company to check the alignment and gear starting points. Thereafter, Noell continued to perform this quality control function itself on the remaining gates. (Tr. 4/30-31, 63-64) Mr. Nibert concluded from the measurements taken by its surveyor on Gate Nos. 2 and 3, that the Gate No. 1 apron section had not been properly welded on the roller gate and was not parallel to it. In 1999, Noell raised Gate No. 1, Mr. Nibert took measurements and determined that the apron was about three inches out of tolerance. Mr. Nibert conceded that, in hindsight, it would have been possible to take the same measurements in 1995, but that, at the time, there were "a lot of high engineers scratching their head[s]" trying to solve the problem. (Tr. 4/31, 63-72, 92, 113-14, 138) Mr. Steven Morgan, the government's resident engineer beginning in January 1997, agreed that the measurements had not been taken because the cause of the problem had not been determined until work had proceeded with other gates (tr. 7/60-61, 125). Mr. Nibert conceded that the survey measurements would not have been necessary if AWM Enterprises had properly performed the fabrication job (tr. 4/64).

The permanent repairs to Gate No. 1 were finally made between 23 August 1999 through 18 November 1999, and were accomplished by cutting off the apron, and realigning and re-attaching it, after which the roller sealed properly (R4, tab C-2, append. 11; R4(b), tab 64; tr. 4/92-93, 138, 7/123). This was Mr. Nibert's suggestion and it solved the problem (tr. 4/93, 7/123-24).

According to Mr. Nibert, the inability to "get down and discover what was the problem" prolonged its resolution (tr. 4/30). Mr. Billy J. Parks, a retired Corps engineer who served as Noell's project manager from December 1998 to February 2002, thought that the problem with Gate No. 1 "would have been intuitively obvious" the first time Noell lowered the roller gate if Noell had been working in "the dry" following dewatering because they "would have been able to look, physically look at the seal where it contacted the . . . the sill and [they] could have told what was wrong, that the apron was out of position, and that it could have been moved slightly to correct the problem" (tr. 4/104-05, 115, 140). Mr. Michael Lawrence, the government's construction inspector

throughout contract performance, agreed that it would have been easier to install the gate, inspect, and make repairs in the dry because the work could be seen (tr. 7/12-13, 52-53, 55).

Appellant's expert combined the difficulties with Gate No. 1 and the guardrail extension change to create Impact Period II (7 September 1994 to 24 September 1995). He found 115 days of delay, beginning on 31 May 1995 and ending on 23 September 1995, associated with the inspection and evaluation of the gate seal difficulties, the cause for which appellant asserts would have been immediately apparent had the work been performed in a dewatered state. (Ex. A-2, tab 4 at 25; tr. 5/122) Ten of these days relate to gate opening restrictions due to high water and are classified as excusable; the remaining 105 days are charged to the government as compensable (R4, tab C-1 at 17-18, 39). The gate opening restriction days claimed by appellant here and elsewhere in its claim do not necessarily correspond to adverse weather days, although some of the days apparently are specifically related to weather (R4, tabs E-3, -5, -7, -8, and tab Q; tr. 6/59-60). Forty-four days of delay were allocated to Noell (the amount of time it actually took to repair Gate No. 1) due to "its inability to discover and accurately define the actual problem" (R4, tab C-1 at 18).

Although the roller gate guardrail extension work was settled by Modification No. P00064 at no change to the contract completion date, appellant's expert concluded there were 61 days of delay associated with this work which he attributed to Noell because it had waived any right to claim impact (R4, tab C-1 at 17-18). In Impact Period II, he concluded that the guardrail extension work, as mitigated by 18 days of critical path work accomplished during the 1994-1995 winter period, and the inspection difficulties with Gate No. 1 delayed the project a total of 202 days, pushing it through the 1998-1999 winter season which he again allocated proportionately between appellant (78 days) and the government (104 days). (R4, tab C-1 at 19; ex. A-2, tab 4 at 23-30; tr. 5/122-25, 128-29)

The government's expert was of the view that Noell's late finish of rim gear casting installation, its late start of the roller gate assembly, its late start of field painting and, primarily, its slow progress in identifying the seal interface alignment problem and implementing temporary repairs were the causes of the delay experienced during this general time period (ex. G-1 at III-11 to -14, III-25 to -27). He nevertheless thought that a reasonable amount of time (five to ten days) should be allowed for Noell to take measurements and survey roller Gate No. 1 to the extent that this work was more difficult in the watered condition (*id*. at III-38). He allowed eight calendar days in his analysis and noted that Modification No. P00076 allowed 12 days during June 1995 for abnormally severe weather (R4, tab E-3; ex. G-1 at III-14, -27).

Gate No. 2 Painting and Weld Problems

Roller Gate Nos. 2, 3, and 4 were delivered to the project site on 30 May 1995 at which time Noell noted that the inside paint did not meet the specification requirements and that there were numerous weld defects (R4(b), tab 73 at 1). Following an inspection on 15 June 1995, the Corps also noted its concerns with the paint and weld defects in a 20 June 1995 letter to Fru-Con which questioned the effectiveness of the quality control system at the fabrication facility (R4, tab S-37). Noell acknowledged these concerns, in particular those relating to "weld quality, missed welds, adhesion of metallizing and low mil thickness of paint," in an internal memo dated 14 July 1995, which stressed that improvement in fabrication, painting and inspection had to be realized (R4, tab S-44).

The upstream bulkhead for Gate No. 2 was installed on 24 September 1995. In Impact Period III (24 September 1995 to 7 October 1997), appellant's expert computes 28 days of delay associated with gate hoist rehabilitation work, between 24 September 1995 and 10 November 1995. He attributes six days of excusable delay to the government due to gate opening restrictions and the balance to Noell. (R4, tab C-1 at 20-21; ex. A-2, tab 4 at 31; tr. 5/129-30) Fru-Con was granted a one-day time extension for abnormal weather in October 1995 by Modification No. P00076 (R4, tab E-3; ex. G-1 at III-28). Gate No. 2 was moved into place for assembly on 27 November 1995 (ex. G-1 at III-15).

Fru-Con was concerned about Noell's lack of progress, and its president and chief executive officer made a visit to the site on 8 November 1995, following which he wrote a letter to Noell dated 10 November 1995 detailing numerous quality deficiencies with the roller gates, including weld defects, paint defects and fabrication errors, and otherwise criticizing Noell's performance (R4, tab S-67). A 31 January 1996 Fru-Con letter chided Noell because only two of the painters at AWM Enterprises in Gulfport were certified as required by the subcontract (R4, tab S-74).

Appellant's expert concluded that Noell accomplished eight days of critical path activity progress in Impact Period III working on the installation joint and the end seals during the 1995-1996 winter period (R4, tab C-1 at 21; tr. 5/130). On 5 June 1996, Noell discovered the sill plate for Gate No. 2 was out of tolerance and completed corrective work on the apron seal knife edge on 18 June 1996, only to damage the gate during operation necessitating further repairs which extended completion of assembly to 17 July 1996 (ex. G-1 at III-16, -39). Time Impact III attributed 29 days of excusable delay associated with Noell's attempts to obtain seal tolerances during June 1996 to the government due to gate opening work restrictions which affected the ability of the divers to verify the condition of the seals (R4, tab C-1 at 21; ex. A-2, tab 4 at 33; tr. 5/133). Fru-Con received a contract time extension of 23 calendar days in Modification No. P00089 due to unseasonably high water in June 1996 (R4, tab E-5; ex. G-1 at III-28).

Appellant's expert testified that Noell performed a "tremendous amount" of remedial, or rework, field painting on Gate No. 2 which was the result of paint deficiencies, problems with fabrication and the copes (joints between the skin of the gate and the interior structure) and over-inspection (tr. 5/134, 7/41). The need to repair the copes became apparent during installation of Gate No. 2 and involved hundreds of welds that were either incomplete or had burs on them that had to be ground (tr. 4/95). Much of the metalizing and painting work that had already been performed on the inside of the roller was damaged during these repairs despite Noell's efforts to protect the work area. The outside of the roller was also damaged. (Tr. 4/34-37) Based upon the record evidence, we agree that the problems associated with fabrication were substantial. However, we are not persuaded that the Corps engaged in over-zealous inspection. (Tr. 4/118, 141-42)

Noell did not heed Fru-Con's admonition to finish the remedial/rework painting before Gate No. 2 was installed, and instead, performed it after Gate No. 2 was installed and at the same time as the contractually required metalizing and painting of the installation joint (R4, tab 67; tr. 4/38, 5/133-35, 216). Gate No. 2 painting began in August 1996 (R4, tab B at 37, tab C-2, append. 11). Painting was suspended in the fall because of cold weather, at which time the painting subcontractor was terminated due to the unacceptable quality of its work. The second painting subcontractor began repainting the entire gate in June 1997 and completed the interior work in the fall of 1997, but refused to begin exterior work until contractual issues with Noell were resolved. When this did not occur, this subcontractor was also terminated and the gate was put into the water with an unpainted exterior. (R4, tab B at 37, tab S-123) The maintenance bulkhead was removed on 17 November 1997 (R4, tab C-1 at 21).

Both Mr. Valentyn, Fru-Con's project manager, and appellant's expert were of the view that the project was "almost at a standstill due to the defective painting, due to all the painting and rework, not the contract painting" on Gate No. 2 (tr. 2/133, 168, 5/135, 6/63). The evidence regarding how much of the remedial/corrective painting was associated with the copes was conflicting (tr. 4/84, 7/42-43). In any event, the copes rework painting is not part of the present litigation (tr. 5/134-35; 7/51; app. br. at 25, n.9). On 5 August 1999, the Corps issued bilateral Modification No. P00118 which settled a claim on behalf of Noell for welding, contouring, blasting and painting of the copes due to alleged defective specifications by increasing the contract price by $287,500.00 and extending the contract completion date 42 days. The settlement contained a full release. (R4, tab E-9)

In Impact Period III, appellant's expert calculated a total of 230 days of delay to the project associated with fabrication and rework on Gate No. 2. He found that 57 of these days occurring after 30 June 1996, but before 30 November 1996, were excusable

because of gate opening restrictions, and attributed the 173-day balance to appellant, including the 42-day contract extension awarded to appellant by Modification No. P00118. The total number of days claimed due to gate opening restrictions during Impact Period III is, therefore, 92 days (6 days + 29 days + 57 days). (R4, tab C-1 at 20-21, 23)

He concluded there were another 12 days of delay associated with gate opening restrictions between 1 June 1997 and 6 October 1997, which he apportioned between the parties based upon the responsibility he had assigned for the delays in Impact Period I. The seven days attributed to the government were classified as compensable, rather than excusable. (R4, tab C-1 at 21, 23) He then allocated the 183 days of the impacted winter period (1999-2000) according to the responsibility for the delay he found associated with Gate No. 2, attributing 62 compensable days to the Corps and 121 days to appellant. (R4, tab C-1 at 22-23; ex. A-2, tab 4 at 34-37; tr. 5/133-37, 139-40)

Using Noell's schedules, the government's expert determined that the bulkheads for Gate No. 3 were installed 424 days late and pushed commissioning of Gate No. 8 to 18 August 2000, an impact of 636 calendar days (ex. G-1 at III-29). His analysis reflects contract extensions of a total of 44 days during this time period for abnormal weather (35 days for September through November 1996 under Modification No. P00089 and 9 days under Modification No. P00091) (*id*. at III-18, -29).

The Second Set of Bulkheads

By a letter dated 10 September 1997, Fru-Con requested permission to use the rehabilitated set of bulkheads that was reserved for the government's use. The government had made this set of bulkheads available for the pier anchor installation work, which had now been completed. The idea was to use one set of bulkheads for the remedial painting and the other set to work on the next roller gate. This would permit Noell to continue painting Gate No. 2 while it began working on Gate No. 3. (R4, tab S-112; tr. 2/138-39, 4/77) Fru-Con expressed the view to Noell that painting was now the critical activity and was driving the installation of the gates (R4, tabs S-117, -122).

On 26 September 1997, in a letter addressed to Fru-Con, the Corps expressed its willingness to allow Noell to use the government's set of bulkheads, referred to as the second set of bulkheads, subject to six conditions:

> 1. Only one (1) roller gate may be inoperable at any given time. Therefore, the second set of bulkheads may only be used to perform work on a gate which is fully operational and can be put into operation immediately if necessary.

2. The government may at any time require the removal of the second set of bulkheads without any additional cost to the government.

3. The second set of bulkheads may only be utilized between 1 June and 30 November of any given year.

4. The bulkheads may only be used in consecutive gate bays. Therefore, the two sets of bulkheads will only be installed in such a manner that they are in adjacent gate bays. This restriction will exist until Gate #1 either has been or is being corrected in accordance with a procedure acceptable to the government.

5. This variance is contingent upon the contractor's submission of an appropriate credit to the government.

6. Fru-Con shall repair and/or replace to the government's satisfaction any bulkhead damaged as a result of the contractor's operations.

(R4, tab C-2, append. 27)

The letter was forwarded to Noell by Fru-Con by a 30 September 1997 letter which advised Noell that none of the Corps conditions was negotiable (*id.*). Noell's counsel, Mr. Michael Smit, thought that the fifth condition, concerning a credit to the government, was vague (tr. 3/80-82) and, after discussion, Mr. Frank Hegan, Noell's chief financial officer, drafted a response to the government's letter dated 4 October 1997 which was signed by Mr. George Pagnotta, the project manager (tr. 3/7, 18-20). The response indicated Noell's agreement with the terms, but further stated:

> . . . However, we would like to clarify our understanding of Condition 5, of the Corps letter. The Corps expects to receive an appropriate credit against claim(s) Noell may have against them; where the time initially anticipated in the claim(s) will be reduced by use of the second bulkhead. Please advise us if we are correct in our interpretation.

(R4, tab C-2, append. 27) In short, Noell anticipated that the credit would be applied against the proposal that had been prepared by Revay & Associates in 1996 (tr. 3/24-25).

The second set of bulkheads was installed on 7 October 1997, at Gate No. 3 (R4, tab C-1 at 24; ex. G-1 at III-29). Mr. Valentyn conceded that the impact of being able to use the second set of bulkheads on the project was "significant" (tr. 2/207-08). Mr. Nibert held a similar view (tr. 4/52-53).

On 16 October 1997, Mr. Morgan, acting as the government's administrative contracting officer, responded to Noell's letter regarding the credit issue as follows:

> My intention with this condition is to obtain a fair and reasonable adjustment to the contract for the variance being granted. I am agreeable to incorporating this adjustment with the settlement of the [sic] your proposal for installing the gates in a wet condition. The two issues are so interrelated that a separate settlement of either issue would be incomplete.

(R4, tab C-2, append. 27) Noell understood from this response that the Corps had found validity to its proposal and had intended to provide relief against which it would take a credit (tr. 3/36, 39, 111).

In preparation for settlement negotiations on Noell/Fru-Con's proposal and the government's intent to take a credit for use of the second set of bulkheads, Mr. Michael Presley, who is not a scheduling expert and served as liaison between the field office and contracting, prepared an internal "Negotiation Agenda" for the government. Among other things, the agenda includes his estimate that 792 work days had been saved by using the second set of bulkheads. His computation was based upon the original Fru-Con schedule, which he thought was the same as Noell's original schedule, and as-built data from Gate Nos. 1 and 2, although he agreed that neither were typical of Noell's experience with the later gates. (R4, tab S-118; tr. 6/128, 131-33, 143, 147, 153) Attached to the Negotiation Agenda is a calculation reflecting Mr. Presely's conclusion that the Corps was entitled to a credit of approximately $9.2 million associated with the 792 days (R4, tab S-118 at 5, 6; tr. 6/138).

Negotiations were held between representatives of Noell, Fru-Con and the government on 4 December 1997. Using Fru-Con's approved schedule, the government took the position that Noell had not been impacted by the deletion of the poiree dam. Negotiations were suspended and Noell was asked to submit additional information. (R4, tabs F-45, S-132; tr. 3/15) The evidence reflects that while the government did tell Noell/Fru-Con the number of days associated with the credit it had computed, it apparently did not tell them that it estimated that it was due $9.2 million (R4, tab F-45; tr. 3/27, 69, 6/138).

In Impact Period IIIA (7 October 1997 to the projected project completion date), appellant's expert gave the government a credit of 116 days for use of the second set of bulkheads (20 days for Gate No. 2, and 16 days each for Gates 3 through 8). He computes this as a day-for-day credit of all activities he believes were associated with scheduled painting in Noell's adjusted, as-planned schedule because this work, which he calls "contract painting," was taken off the critical path (ex. A-2, tab 4 at 40-42; tr. 5/141-43). He did not include any remedial painting in the credit for the use of the second set of bulkheads for rework/remedial painting because of the complexity required to address both the contract and remedial painting (tr. 6/60-62).

Using both Fru-Con's and Noell's schedules, the government's expert found no further delay to commissioning Gate No. 8 or project completion after the second set of bulkheads was installed (ex. G-1 at III-18, -30).

Gate Nos. 3 through 6

Much of the remedial/rework welding and painting for Gate Nos. 3 through 8 was performed at an off-site facility up-river from the dam (tr. 2/212-13, 4/41). Noell continued using the second set of bulkheads through December 2001 (R4, tab C-2, appends. 11, 19; ex. G-1 at III-32; tr. 8/105). Use of two sets of bulkheads permitted Noell to concentrate on installation of the roller gates and took the contract painting off the critical path for Gate Nos. 3 through 8. The result was that contract critical path painting became "commingled" with the remedial painting. (Tr. 5/140-41, 216-17)

In Impact Period IV (7 October 1997 to 1 December 1998), appellant's expert found a delay of 41 days associated with removal and rehabilitation of the hoist machinery for Gate No. 3, one day of which he attributed to Noell. Neither the delay, nor why 40 of the 41 days are attributed to the government is explained. (R4, tab C-1 at 26-27; ex. A-2, tab 4 at 44; tr. 5/144)

During the 1997-98 winter period, Noell continued to perform work off-site on the copes, weld prepping and other tasks that would facilitate gate installation (tr. 4/41-43). Installation of Gate No. 3 was completed on 5 January 1998 and appellant's expert found that 47 days of critical path work on Gate No. 3 was performed (R4, tab C-1 at 27, tab C-2, appends. 14, 19; ex. A-2, tab 4 at 45-46; tr. 5/144-45, 6/64). Gate No. 3 was tested on 19 May 1998, and sealed properly (ex. G-1 at III-30). The record does not reflect any seal problems on Gate Nos. 4 through 8.

Noell also obtained a waiver of the fourth condition set forth in the government's 26 September 1997 letter, requiring the use of the bulkheads in adjacent gate bays (R4, tab S-130; tr. 7/115-17). It began work on Gate No. 4 on 20 May 1998, which

appellant's expert found provided another 11 days of critical path work (R4, tab C-1 at 27; ex. A-2, tab 4 at 46; tr. 5/145).

Noell completed installation of Gate No. 4 on 2 August 1998. In Impact Period IV, appellant's expert found, with virtually no explanation, a net delay of 12 days to project completion associated with installation of Gate No. 4 attributable to Noell. He also charged one day of compensable delay to the government following the delay attributed to Noell because the downstream pool elevation was too low to allow Gate No. 4 to be installed. (R4, tab C-1 at 27; ex. A-2, tab 4 at 47-48; tr. 5/145)

Gate No. 5 was installed from 2 August through 6 October, 1998. Appellant's expert found ten days of delay, again in Impact Period IV, resulting from cracks in the rim gears, attributable to the government (R4, tab C-1 at 28; ex. A-2, tab 4 at 49; tr. 5/145). The record reflects that bilateral Modification No. P00131 awarded Fru-Con $160,996.64 and a contract extension of nine calendar days for the cracked rim gears on Gate No. 5 (tr. 6/75-76). Modification No. P00131 contained the following release:

> In consideration of the modification agreed to herein as a complete and equitable adjustment for the changes described herein, the contractor hereby releases the Government from any and all further liability under this contract for further equitable adjustments attributable to such facts or circumstances giving rise to the modification, including impacts which are known at the time of the execution of the modification.

(R4, tab E-12)

Gate No. 6 was installed from 6 October through 4 December 1998. Appellant's expert found one day of compensable delay because the downstream pool elevation was too low to allow Gate No. 6 to be installed, and a net gain in the schedule of seven days, despite five days of work installing guardrail extensions, any time extension for which was waived in bilateral Modification No. P00064. (R4, tab C-1 at 28; ex. A-2, tab 4 at 50-51; tr. 5/145)

Noell's 13 November 1998 schedule indicates that it planned to begin working on Gate No. 7 on 5 December 1998, finish removing the old gate on 26 December 1998, and bring the new gate into position on 30 December 1998. No other work is scheduled until 1 June 1999. (R4, tab C-1, append. 30) Mr. Billy Parks, who had just joined Noell as its project manager, did not recognize the 13 November 1998 schedule and explained that it did not reflect what he planned to do and was not in compliance with the contract

specifications which required Noell to work 24 hours a day, 7 days a week from the start of gate removal to installation completion (tr. 4/130-35).

Nevertheless, appellant's expert concluded that Noell had rescheduled the installation of Gate No. 7 and anticipated a 61-day recovery to the project schedule during the 1998-1999 winter months, working on such days as conditions permitted (tr. 5/150-53; ex. A-2, tab 4 at 59). His report cites Noell's 13 November 1998 schedule as support for this conclusion (R4, tab C-1 at 3, tab C-2, append. 30). He further concluded that Noell had reevaluated the remaining rework painting for Gate Nos. 1 and 2, adding an additional 54 days to the schedule. He acknowledged that the rework painting was not on the critical path, but determined that it did "end up driving the final completion," and included it as a delay to the overall project attributable to Noell. (R4, tab C-1 at 28-29; ex. A-2, tab 4 at 52-54; tr. 5/146-47)

His ultimate conclusion for Impact Period IV, during which Gate Nos. 3 through 6 were installed, was that appellant was entitled to 52 days of compensable delay and planned to achieve a net 13 days of mitigation to the overall project delay (R4, tab C-1 at 30; tr. 5/148-50). His conclusion regarding the overall project delay combines Noell's actual progress, what he believes is 61 days of anticipated acceleration/recovery for completion of Gate No. 7 installation, and a reassessment of non-critical path work for painting Gate Nos. 1 and 2.

Gate Nos. 7 and 8

Although Noell had performed gate work during winter periods, it had not previously removed an old gate in the winter. The government was concerned by its plan to remove old Gate No. 7 in December because there would be only bulkheads in the gate bay which might not withstand an impact from a breakaway barge, resulting in the loss of the upstream pool. (Tr. 7/136-40) Thus, by a letter dated 30 November 1998, the contracting officer suspended work in Gate Nos. 7 and 8 during the period 1 December 1998 through 30 May 1999, because the risk of maintaining the upper pool using only bulkheads was too great. The letter stated that the Corps was "expending every effort to find a way to protect the bulkheads so that they can be used during periods of high river flow" and that "[a]n unreasonable period for this suspension is not anticipated." (R4, tab F-35) Noell understood from this letter that it would not be allowed to work on Gate Nos. 7 and 8 during the winter months (R4, tab C-2, append. 29; tr. 4/107-08).

The river conditions during the 1998-1999 winter months were such that it might have been possible for Noell to install Gate No. 7; however, the new gate was still undergoing pre-installation repainting and other repairs as late as 8 February 1999 (R4(b), tab 70; tr. 4/86-89, 97-99, 8/226).

The work suspension was lifted on 5 May 1999 (R4, tab F-38). Noell began to work on Gate No. 7 on 10 May 1999 with the placement of the upstream bulkhead and completed installation on 26 June 1999. Assembly of Gate No. 8 followed immediately and was completed on 23 August 1999. (R4, tab C-2, append. 11)

In Impact Period V (1 December 1998 to 1 June 1999), appellant's expert concluded that Noell had accomplished 10 days of critical path work before 1 June 1999 and that the government should be charged with a net of 51 days of compensable delay due to the work suspension imposed by the contracting officer's 30 November 1998 letter because Noell had scheduled 61 days during the winter months to install Gate No. 7 (R4, tab C-1 at 31-32; ex. A-2, tab 4 at 57-58; tr. 5/150-52). He explained that Noell had again reevaluated the painting schedule and increased the time required to perform the remaining rework painting activities by 91 days, which he attributed to Noell, causing an overall project delay of 142 days during Impact Period V (R4, tab C-1 at 32; ex. A-2, tab 4 at 58-60; tr. 5/151-53).

In Impact Period VI (1 June 1999 to 20 December 1999), appellant's expert noted that Noell accomplished 28 days of schedule recovery/acceleration on Gate Nos. 7 and 8, but again resequenced the remaining painting, adding another 16 days to final completion of the project attributable to Noell, a net project gain of 12 days. He also allocated an anticipated nine compensable days to the government associated with an agreement in Modification No. P00128, dated 4 February 2000, to repair guardrails at Gate Nos. 1 and 2. (R4, tab C-1 at 35, tab E-11; ex. A-2, tab 4 at 60-64; tr. 5/154-55) Modification No. P00128 served as a Request for Proposal and provided that an equitable adjustment would be negotiated upon receipt of appellant's detailed proposal (R4, tab E-11). The work has not been performed (R4, tab B at 44; tr. 6/81-82).

All work was substantially complete and the project accepted for beneficial occupancy on 13 December 1999 (R4, tab F-47).

There was still a considerable amount of rework/remedial painting to be performed, however, and both sets of bulkheads were used to perform this work (tr. 8/64, 161). Noell's subcontractor, L.A. Samms, began painting Gate No. 3 in June 1988 and completed it on 29 July 1999, after which it immediately began painting the exterior of Gate No. 2, completing it on 20 December 1999, and then painted Gate No. 1 between 4 January 2000 and 11 October 2000 and Gate No. 8 between 16 May 2000 and 21 August 2000 (R4, tab B at 37, 38, tab C-2, append. 14; tr. 4/77-78). Noell then assumed responsibility for the work and painted Gate No. 7 between 21 August 2000 and 14 November 2000, Gate No. 5 between 15 October 2000 and 27 September 2001, and Gate No. 6 between 14 November 2000 and 28 December 2001 (R4, tab B at 37-38; tr. 7/38-41). All remedial painting was completed on 23 January 2002 (ex. G-8). None of this painting work was on the critical path. The seemingly lengthy amount of time

required to perform this work was due to the numerous weld and painting deficiencies. (Tr. 7/41)

Other Performance Facts

Bilateral contract Modification No. P00076, effective 25 April 1997, extended the contract performance period by 181 days due to abnormally severe weather during the time period 19 July 1993 through 31 March 1996 (R4, tab E-3). Bilateral contract Modification No. P00089, effective 30 January 1998, extended the contract performance period by 149 days due to abnormally severe weather during the time period 1 April 1996 though 31 December 1996 (R4, tab E-5). Bilateral contract Modification No. P00091, effective 23 February 1998, extended the contract performance period by 109 days due to unusually severe weather during the time period 1 January 1997 through 31 December 1997 (R4, tab E-7). Bilateral contract Modification No. P00093, effective 11 June 1998, extended the contract performance period by 72 days due to unusually severe weather during the time period 1 January 1998 through 31 March 1998 (R4, tab E-8). This is a total of 511 days. All four of the contract modifications were issued with no change to the contract price; none of the modifications contains any reservation of rights on the part of Fru-Con.

Contract Modification No. P00127, effective 20 December 1999, was issued extending the contract performance period by 86 days due to abnormal weather during the time period 1 April 1998 through 30 November 1998, at no change to the contract price. This brings the total number of weather days to 597. The record does not reflect whether this modification was bilateral or contained a reservation of rights. (Ex. G-1 at III-6)

Beginning with Gate No. 1, and continuing throughout contract performance, the government allowed appellant to proceed to the next gate before completing commissioning work on the previous gate (tr. 4/49, 7/86). In Mr. Morgan's words: "we no longer commissioned the gate for 14 days" (tr. 7/104). No formal modification was ever issued waiving the 14-day commissioning specification requirement found in paragraph 11 of Section 5C. Nevertheless, Noell understood that it was proceeding at its own risk and remained responsible for correcting any problems that occurred (tr. 4/49-50). No commissioning work was ever performed on the critical path (tr. 5/217).

Appellant's Request For Equitable Adjustment (REA)
And Contract Administration Costs

Despite repeated telephone requests and letters from the government concerning the resumption of the negotiations suspended on 4 December 1997, or the submission of a revised proposal, the record reflects no further action on the part of Noell until January

1999, at which time Noell met with representatives of Navigant in conjunction with a management reorganization. Noell retained Navigant on 3 February 1999 to provide an independent, forensic analysis of the Byrd Dam project so that it understood why the project had taken so long and cost so much and to help it resolve pending matters with the government. (R4, tabs F-45, S-132, -150; R4(b), tab 210; tr. 3/88-93, 124-26, 4/176, 187)

Mr. Smit, counsel for Noell at the time, continued to believe that the government had acknowledged entitlement and thought that the REA "was always a matter to be resolved between the project people" (tr. 3/72-74, 95, 111). On cross-examination, Mr. Smit agreed that the REA was a by-product of Navigant's investigation (tr. 3/125). Nevertheless, we find that it was his understanding that the services rendered by Navigant "were always in pursuit of negotiation with the Corps of Engineers" (tr. 3/105) and that Navigant had "never [been] tasked to prepare a claim against the Corps" (tr. 3/114). That was "not what [Noell] had wanted, [that was] not what [Noell] had asked" (*id.*). Mr. Byrne agreed that: "It was always the intent in '99 to pull together an REA that would serve [as] the basis of negotiation . . . ." (tr. 4/163). The assignment given to Navigant was "to evaluate the project, determine if there was a basis [for] a valid request and to develop an REA for negotiation with the Corps . . . " (tr. 4/176). The evaluation was to be independent and neutral (tr. 4/187-88). Noell also retained the law firm Seyfarth Shaw to assist in preparing the legal analysis for the REA (tr. 3/92-93).

The CPM time impact analysis prepared by Mr. Byrne to which we have referred above in our Findings of Fact, and a cost impact analysis also prepared by Mr. Byrne, together with a narrative and legal analysis prepared by counsel, were submitted as a REA to the government by a letter dated 28 December 2000 (R4, tab C-3; R4(b), tab 213). The cover letter requested government action on the proposal at Mr. Morgan's earliest convenience (R4(b), tab 213). The REA sought a contract time extension of 733 days and an adjustment in the total amount of $7,699,671.00. Included in the total amount sought was $708,448.99 for contract administration, which consisted of the fees of counsel, consultants and accountants, to which home office overhead has been added. (R4, tab C-2 at 54, C-3 at 28) The analysis and proposal prepared by Revay and submitted to the government in November 1996 was formally withdrawn (R4, tab C-3 at 2) and the $80,500 in costs for the work performed by Revay and the accountants included in the contract administration calculations has likewise been withdrawn (tr. 3/101).

Mr. Byrne spent in excess of 100 hours investigating the painting problem. Ultimately, he did not include any contract or remedial/corrective painting in the schedule and cost impact analysis he prepared because the painting was "a very complicated problem" and was commingled and "extremely confusing." (Tr. 8/237, 242, 248) The analysis concludes that the project was delayed a total of 1,456 days. It assigns

Noell responsibility for 723 days of the delay and assigns the government responsibility for the remaining 733 days of delay, 631 days of which it finds are compensable and 102 days of which are excusable.

With respect to the 631 days of compensable delay, the analysis summary shows 475 days for the deletion of the poiree dam, 146 days for work suspensions, 59 days of other delay, and 67 days of prorated winter days due to gate opening restrictions before 30 November 1996. A credit of 116 days for the use of the second set of bulkheads to perform contractually required field painting has been incorporated. (R4, tab C-1 at 38)

With respect to the 102 days of excusable delay assigned to the government for gate opening delays, the expert's findings reflect 10 days in the summer of 1995, 6 days in the fall of 1995, 29 days in June 1996, and 57 days "[b]efore November 1996." It is not clear whether these days are in excess of the adverse weather days the contract advised were to be anticipated and reflected in the schedule, and/or part of the 330 unusually severe weather days awarded Fru-Con in Modification Nos. P00076 and P00089. Indeed, the REA does not appear to account at all for abnormal weather modifications which were awarded to Fru-Con and, if passed on to Noell, would have extended subcontract performance by at least 597 days. (R4, tabs E-3, -5, -7, -8)

The cover letter to the REA and the REA itself made no mention of a Contract Disputes Act (CDA) claim; however, CDA certifications executed by Ronald H. Kaye, President of Noell, on 13 November 2000 and by Michael Hartung, Vice President of Fru-Con, on 28 December 2000 were attached to it (R4, tab C-3 at 29, 30).

By a letter dated 19 March 2001, the COR advised Fru-Con that, based upon a cursory review, he found nothing new in its second proposal and that the request was without merit. He further advised Fru-Con that it could certify the REA and submit it to the contracting officer under the Disputes clause. (R4, tab F-49) Fru-Con responded on 24 May 2001 with a request for a contracting officer's final decision, asserting that the government's failure to respond to efforts to arrange a meeting to discuss and negotiate the proposal left it with no other choice (R4, tab A, ex. 1). When the contracting officer indicated that a final decision would not be issued until 15 April 2002, Fru-Con filed a notice of appeal dated 19 September 2001 from a deemed denial of its claim (R4 tab A, exs. 2 to 4). The appeal was docketed as ASBCA No. 53544.

THE GOVERNMENT'S CLAIM
ASBCA No. 53794

In a final decision dated 11 February 2002, the contracting officer denied Fru-Con/Noell's claim in its entirety and asserted a government claim for "credits and savings" of 1,684 days of contract performance totaling $11,030,924.00 in cost savings

consisting of: (1) 174 calendar days, a savings of $1,139,774.80, associated with the deletion of the poiree dam and the commissioning period; and (2) 1,510 days, a savings of $9,891,149.40, associated with use of the second set of bulkheads (R4, tab B). The same daily rate and mark-ups claimed by appellant were used to compute the government's claim of $1,139,774.80 for the 174-day credit. These rates, plus the cost of the barges ($5,307.00), also were used to compute the government's claim of $9,891,149.40 for the 1,510-day credit. (R4, tab B at 39) A timely appeal from the contracting officer's decision asserting the government's claim was docketed as ASBCA No. 53794.

The contracting officer's decision was prepared by a team of government personnel (tr. 7/37-38, 65, 189). Mr. Morgan explained the factual underpinnings and analysis upon which the contracting officer's final decision was based (tr. 7/67-68, 74-84).

The government's expert also evaluated the alleged waiver of the 14-day commissioning period, the use of the second set of bulkheads, and the deletion of the poiree dam, all of which he asserts provided schedule benefits to Noell. He made revisions to his 14 March 2003 report during the hearing which resulted in the conclusion that there was a total time savings of 2,054 calendar days (rather than 2,375 days) of work. (Ex. G-1A at III-35)

The Poiree Dam and Commissioning Period

With respect to deletion of the poiree dam and the commissioning period, the contracting officer first concluded on the basis of the approved Fru-Con schedule and Noell's roller gate erection procedure submittals that only one activity would be performed after dewatering: "Install Anchors & Test Seal in Gate Bay" (R4, tab B at 4). The decision then goes on, however, to claim a credit of 174 days based upon a comparison of Noell's 25 August 1993 as-planned schedule with its as-built schedule, as both appear in the REA prepared by Navigant. Mr. Morgan explained that the 174 days claimed is simply the difference between the time reflected for the activities the government considered to have been impacted on Noell's adjusted, as-planned schedule (276 days) when compared to its as-built schedule (102 days). (R4, tab B at 16, tab C-2, appends. 3, 11; tr. 7/76-79, 84-86)

As we understand it, the 276 days considered to be as-planned work on Noell's 25 August 1993 schedule begins on the last day of the "Bolt and Weld Installation Joint" activity and ends after the "Commissioning Roller Gate" activity, yielding a total of 45 days for installation of Gate Nos. 1 and 2, and 31 days for Gate Nos. 3 through 8 (R4, tab B at 17, tab C-2, append. 3). The Noell "Bolt and Weld Installation Joint" activity is the same as Activity 1.15 on the Goldmann Schedule and the Noell "Commissioning Roller

Gate" activity is the same as Activity 1.25 on the Goldmann Schedule (R4, tab C-2, append. 3, tab K-4). The 45-day total was changed to 46 days for Gate No. 2 in exhibits prepared for the hearing (ex. G-11).

A number of adjustments were made to the as-built schedule to arrive at the 102 days of actual work. The "Metalize and Paint Installation Joint" activity, a total of 40 days for all 8 gates, was not included, even for Gate Nos. 1 and 2, because the government did not consider the work to have been performed on the critical path (tr. 5/216, 8/242). Additionally, the 14-day commission period for each gate, a total of 112 days, was not included (tr. 6/27-28, 8/66). In computing the 102 days, the same 45 days reflected in the as-planned schedule were arbitrarily included in the as-built schedule because of the roller gate misalignment problems experienced with Gate No. 1. Twenty-one days were computed for Gate No. 2, seven days for Gate No. 3, eight days for Gate Nos. 4 and 5, three days for Gate No. 6, two days for Gate No. 7 and eight days for Gate No. 8. (R4, tab B at 17-18)

The contracting officer's decision includes another set of computations using the as-planned and as-built durations for all gate installation activities (R4, tab B at 19-20). Gate No. 1 was essentially excluded from the analysis because the same 45-day as-planned and as-built durations that were used in the first analysis were again used instead of the actual construction facts (*id*. at 21). These computations reflect as-planned durations and as-built durations for all gate installation activities as follows: Gate No. 2, 92 days as-planned and 82 days as-built; Gate No. 3, 62 days as-planned and 89 days as-built; Gate No. 4, 62 days as-planned and 72 days as-built; Gate No. 5, 62 days as-planned and 64 days as-built; Gate No. 6, 62 days as-planned and 58 days as-built; Gate No. 7, 62 days as-planned and 45 days as-built; and, Gate No. 8, 61 days as-planned and 57 days as-built. All of the excess days are attributed in one way or another to appellant. (*Id*. at 20)

Hearing exhibits prepared by Mr. Morgan reflect further refinements to both sets of computations. The 174 days of credit claimed for the activities associated with deletion of the poiree dam and commissioning was increased to 186.5 days. (Exs. G-11 to -18; tr. 7/81-100) Mr. Morgan acknowledged that the seal adjustment work was performed concurrently with some of the welding operations during the bolt and weld installation joint work, the effect of which would be to increase the number of days reflected in the as-built schedule (tr. 7/88-89). However, no adjustment was made for concurrent activities (tr. 7/195). Non-work days and delays attributed to appellant and bilateral modifications are factored into the as-built computations (tr. 8/93, 95)

The as-built durations for all installation activities shown on the refined computations are as follows: Gate No. 2, 92 days as-planned and 90 days as-built; Gate No. 3, 60 days as-planned and 51.5 days as-built; Gate No. 4, 60 days as-planned and 61

days as-built; Gate No. 5, 60 days as-planned and 56 days as-built; Gate No. 6, 60 days as-planned and 52 days as-built; Gate No. 7, 60 days as-planned and 42 days as-built; and Gate No. 8, 60 days as-planned and 55 days as-built. (Exs. G-11 to -18)

The government's expert took a different approach. As to deletion of the poiree dam, he assumed that 4 or 5 days per gate were eliminated for the installation and dewatering of the poiree dam and that 11 days per gate were eliminated for the installation of pier anchors, with some offset due to the need to have divers check the apron and end shield seals. Although his report does not reflect the computation, he testified that he calculated a combined credit of 102 calendar days, which he converted to 144 days for loss of efficiency in the winter, for both of these activities. He apparently assumed one day of productive work for every three days during the winter period. (Ex. G-1A at III-34; tr. 8/108-110, 201-02) As to the 14-day commissioning period, he found that Gate Nos. 1 and 6 were completed during the winter months when commissioning would not have impacted the start of work on a subsequent gate. Thus, he concluded that 84 days were removed from the critical path when the 14 days of normal operating service were no longer required, which becomes 136 calendar days when converted for the winter loss of efficiency. (Ex. G-1A at III-32; tr. 8/107, 203-04)

The Second Set of Bulkheads

The credit for 1,510 days claimed in the contracting officer's decision for use of the second set of bulkheads was based upon the actual durations of the gate painting. According to the final decision, the government is entitled to a credit for "any time both set[s] of bulkheads were being used concurrently on critical path work (or what would have been critical path work but for the second set of bulkheads)." The painting work with the second set of bulkheads was performed from 7 October 1997 to 30 November 1997 (54 days) and continued through the next four 182-day summer construction seasons (1998 through 2001), another 728 days, for a total of 782 days. The contracting officer adopted Mr. Morgan's analysis, which concludes that the 782 days pushed the gate installation work through four 182-day winter periods, another 728 days, apparently to 27 November 2001, and claimed a total credit of 1,510 days. (R4, tab B at 38-39; tr. 7/65, 121-22) There was no evidence explaining or supporting the claim for the cost of barges.

The government's expert again took a different approach with respect to the use of the second set of bulkheads. The computations in his 14 March 2003 report were changed during the hearing and the red-lined version reflecting those changes is dated 21 July 2003 (ex. G-1A). The report first concludes that, the government's waiver of the requirement of paragraph 9.5 of Section 5C permitted appellant to use the second set of bulkheads and "removed painting from the critical path to substantial completion," which occurred on 13 December 1999. This conclusion then appears to be contradicted by the

statement that "due to the amount of time required for painting once the new roller gates had been erected, painting remained on the critical path to contract completion," which occurred on 23 January 2002. The revised calculations reflect day-for-day credits for all of the calendar days during the summer construction seasons beginning on 7 October 1997 and continuing to 17 December 2001, and total 834 days. He added another 377 days for the 2000 and 2001 construction seasons after installation of all of the new gates had been completed and Noell was painting two gates at the same time. He then assumed that "Noell could have achieved two months of productive painting during each winter season" and applied Primavera CPM projections to conclude that the 834 actual construction days resulted in a savings of 1,303 calendar days during the construction season due to use of the second set of bulkheads and that the 377 days of using both sets of bulkheads resulted in another 471 calendar days of savings. He concluded that a total of 1,775 (sic) days were saved beyond beneficial occupancy. (Ex. G-1A at III-32, -33; tr. 8/98-106)

Although both the contracting officer's computations and the government's expert's computations are addressed in the government's brief, it appears that the government may actually be seeking the larger of the two. It has not computed the dollar value associated with either the 1,696.5 days now computed by the contracting officer or the 2,054 days now computed by its expert. (Gov't br. at 99)

APPELLANT'S MOTION TO STRIKE

Midway through the hearing, the government's expert revised his report, dated 14 March 2003, and prepared a red-lined copy of it dated 21 July 2003 (exs. G-1, -1A). Additional corrections were made during the expert's subsequent trial testimony. The presiding judge overruled appellant's objections to the expert's revisions, admitted government exhibits G-1, G-1A, G-2, G-3, G-3A, and G-4 to G-10 into evidence, and advised appellant to file a post-hearing motion to strike if it wished to clarify the issues raised in its oral objections. (Tr. 8/143-44, 153) Appellant did so in a motion that moves to strike both the 21 July 2003 red-lined revised expert report and the expert's further oral revisions. It asserts that the revisions violate the Board's pre-hearing order and practice and has caused it prejudice. The government opposes the motion.

The Board's Prehearing Order required that the expert witnesses prepare written reports summarizing their opinions and the basis therefore and that expert reports be exchanged by the parties. The reference to Federal Rules of Evidence 702-705 and Federal Rules of Civil Procedure 26(a)(2)(B) in the Order was provided as a guide to the content and preparation of the reports. The parties agreed to exchange expert reports by 21 March 2003. The government complied with this agreement and its expert report, dated 14 March 2003, was included as a hearing exhibit and identified as government

exhibit 1. Also included among the hearing exhibits timely provided to appellant were graphic displays of the time impact analyses discussed in the 14 March 2003 report.

During the trial, counsel for the government advised the Board that its expert wanted to make one substantive revision to his report, which was in appellant's favor, and a number of minor changes, which corrected dates, grammar and spelling. Copies of the revised report, dated 21 July 2003, were provided to counsel for appellant and the Board. (Tr. 5/5) The following morning, counsel for appellant requested a red-lined version of the report specifically identifying the expert's changes, a request which the Board granted (tr. 6/6). The red-lined version of the report, also dated 21 July 2003, was distributed on 24 July 2004 and marked as government exhibit G-1A (tr. 7/6-7, 8/14). The changes were explained by the government's expert (tr. 8/15-22).

The substantive revision contained in the 21 July 2003 report involved a reduction of 321 days (from 2,375 to 2,054 days) to the credit he found was due to the government. The reduction was based upon two changes. The first was due to the expert's mistaken belief that Noell had the use of both sets of bulkheads until the end of the project, whereas the Corps actually only had allowed Noell to use one set during the winter periods. The second was a reduction in the estimated number of work days per gate (from 14 to 11) that he estimated Noell gained when the Corps eliminated the poiree dam. (Tr. 8/19-20) He was asked to explain the narrative and exhibit 3A thereto regarding the 144 days, and did so. Although the explanation seems less than clear in hindsight, counsel for appellant did not seek further explanation. (Tr. 8/161-63) Several additional, but very minor, corrections to the report were made during the expert's testimony (tr. 8/51-53). Most of these corrections were changes to exhibit number references; another was an obvious typographical error (ex. G-1A at III-15, -18, -21, and -22). None of the revisions involved a change to the expert's basic opinion, much less presents a new opinion.

Nevertheless, because of appellant's objections, the government suggested that the proceedings be suspended to give counsel for appellant an opportunity to prepare cross-examination on the changes and offered to make its expert available to further explain them. Counsel for appellant declined the offer, asserting prejudice. (Tr. 8/151-53) Earlier that same day, Friday, 25 July 2003, he had requested that the hearing be extended into the evening so that it could be concluded although it was scheduled through 29 July 2003 (tr. 8/92).

The government's expert witness was cross-examined about the revisions and changes he made to his report (tr. 8/179-85, 196-200). Appellant then re-called its expert as its only rebuttal witness. Although he testified that he would have liked more time to check the details of the reduction in the credit given to the government (tr. 8/214-17), appellant's expert understood the revisions that had been made to the government

expert's report (tr. 8/231-32). The hearing concluded at 6:55 p.m. on 25 July 2003 (tr. 8/255).

DECISION ON THE MOTION

Appellant's motion is without merit. The government's expert report and subsequent hearing exhibits were timely provided to appellant. We find no violation of the Board's Order or rules of practice and no prejudice to appellant. *See W.M. Schlosser Co.*, ASBCA No. 44778, 96-2 BCA ¶ 28,587. Nor is it necessary to apply the five-factor test used by the court in *Southern States Rack and Fixture, Inc. v. Sherwin-Williams Co.*, 318 F.3d 592 (4th Cir. 2003), as appellant urges us to do in order to determine whether the revisions were unjustified and harmful.

The government's expert did not change his opinion, or offer a new one. The revisions he made to his report were explained. Only one of these revisions can reasonably be characterized as substantive: it reduced the credit to which the expert opined the government was due by 321 days.

Further, there were a number of days remaining in the hearing schedule and appellant was offered, but declined, additional time in which to review the revisions. Indeed, instead of taking the weekend to check the details of the revisions, appellant requested that the hearing extend later on Friday, into the evening, so that it could be concluded. Given the nature of the revisions, we are not persuaded that the time and expense associated with appellant's study of the 14 March 2003 report was in any way wasted. On the contrary, the benefit of its work was reflected in its cross-examination of the government's expert.

Finally, our conclusion below that, except for the 84 days associated with commissioning, the government did not carry its burden of demonstrating that it is entitled to the "credits and savings" it seeks on the basis of its expert's evaluation puts to rest any possible lingering doubt about whether appellant suffered any prejudice from the changes to his report.

ASBCA No. 53544
DISCUSSION

Appellant asserts entitlement to a 733-day contract time extension and a contract price adjustment of approximately $7.7 million. In order to prevail upon its claim, it bears the burden of establishing the extent of the delay, the causal link between the government's actions and the delay claimed, and harm resulting from the delay. *See Essex Electro Engineers, Inc. v. Danzig*, 224 F.3d 1283, 1295 (Fed. Cir. 2000). The delay must be to the overall completion of the contract; that is, the delay must be to work

on the critical path because only work on the critical path has an impact upon when the project is completed. *See Wilner v. United States*, 24 F.3d 1397, 1399 n.5, 1400-01 (Fed. Cir. 1994) (*en banc*); *Kelso v. Kirk Brothers Mechanical Contractors, Inc.*, 16 F.3d 1173, 1177 (Fed. Cir. 1994).

Appellant seeks to recover using the Goldmann Schedule and Noell's 25 August 1993 as-planned schedule which reflected early completion of the gate installation work in three years, on 30 November 1996. The approved Fru-Con schedule, on the other hand, used all five years of the contract time and reflected an 8 August 1998 contract completion date. With contract modifications, the actual contractual completion date was extended to 10 June 2000. Beneficial occupancy occurred on 13 December 1999.

The *Mitchell* Decision

Appellant contends that, under *E.R. Mitchell Construction Co. v. Danzig*, 175 F.3d 1369 (Fed. Cir. 1999), it is entitled to recover under Noell's shorter, three-year schedule. It further asserts that the government knew that Noell's subcontract schedule was different from Fru-Con's approved contract schedule, but that, under *Kemmons-Wilson, Inc. and South & Patton, Inc., A Joint Venture*, ASBCA No. 16167, 72-2 BCA ¶ 9689, it can still recover under Noell's subcontract schedule even if the government did not know that the schedule was shorter.

For its part, the government argues that appellant has misstated the holding of *Mitchell*. It also contends that ASBCA No. 53544 is factually distinguishable from both the *Mitchell* and *Kemmons-Wilson* cases. According to the government, the only schedule that can be used to evaluate appellant's delay claim is the 16 July 1993 Fru-Con five-year schedule that was submitted to the government on 25 August 1993 and approved. It disputes appellant's contention that it had knowledge of Noell's shorter, as-planned schedule.

In *Mitchell*, the prime contractor developed its project schedule in conjunction with its subcontractors. The schedule included separate line items for the mechanical subcontractor which clearly specified a completion date approximately two months earlier than the prime contractor's contractual completion date. The schedule was approved by the government. The mechanical subcontractor experienced a 60-day performance delay during which it was essentially on stand-by due to defective plans and specifications. The government conceded responsibility for the specification defects and resultant delay and increased the contract price to reflect the additional costs incurred as a result of corrective changes. The contract was completed a few weeks in advance of the contract completion date, after which the prime contractor submitted a request for an equitable adjustment on behalf of its subcontractor for unabsorbed home office overhead computed under the formula adopted in *Eichleay Corp.*, ASBCA No. 5183, 60-2 BCA

¶ 2688. The court of appeals rejected the government's contention that timely completion of the prime contract was a bar to recovery of the subcontractor's pass-through claim for otherwise satisfactory *Eichleay* damages. In doing so, it specifically made "clear that [its] decision on the legal issue . . . [was] dependent on the operative facts of [the] case, which include[d] the awareness and approval by the government of [the subcontractor's] duty to have completed its work by a date certain." *Mitchell, supra*, 175 F.3d at 1374.

We agree with the government that the operative facts in these consolidated appeals are much different than those in *Mitchell.* Here, Fru-Con and Noell did not coordinate in the preparation of a project schedule that was submitted to, and approved by, the government. Instead, Fru-Con received approval of its 16 July 1993 five-year, 1-2-2-2-1 roller gate installation schedule with an 8 August 1998 completion date. It prepared this schedule by itself, while at the same time negotiating a different, and shorter schedule, with Noell. Fru-Con's approved project schedule did not reflect an early completion date for Noell's subcontract work. The Noell/Fru-Con subcontract, the Goldmann Schedule, and Noell's 25 August 1993 as-planned schedule, however, all reflect a three-year, 2-3-3 roller gate installation schedule with a November 1996 completion date. Additionally, the Fru-Con and Noell schedules contained different logic for the work activities following dewatering. The Fru-Con schedule shows only "Install Anchors & Test Seal in Gate Bay" after dewatering whereas the Goldmann and Noell schedules show "Adjusting of sill seal," "Install and adjust side seal," "Metalize, touch up and paint of installa[tion] joint," and "Gate tests in dewatered condition." It was the Fru-Con schedule, not the Noell schedule, that Fru-Con used for planning purposes, and to determine time extensions and progress on the project.

Significantly, none of the schedules prepared by Noell was ever fully approved by Fru-Con and there is no evidence that any of them was provided to the government, much less approved by it. Indeed, it does not appear from the record that the government knew much, if anything, about Noell's early completion schedule, at least not until the cost proposal prepared by Revay & Associates was submitted to it in late 1996. On this point, we are satisfied that neither Fru-Con's submission of the "Roller Gate Fabrication Installation Purchase Order" to the government nor the government's participation in the "*Rollerin'* BACK THE OHIO" magazine article was sufficient to demonstrate that the government had knowledge of a November 1996 early completion date. The same is true of the various versions of Noell's "Roller Gate Erection Procedure." The testimony relating to general discussions between Fru-Con and government personnel about a three-year, 2-3-3 installation schedule likewise does not establish such knowledge.

It is true, as a general statement, that there is no requirement for the government to be notified of a planned early completion date. *See Oneida Construction, Inc./David Boland, Inc., Joint Venture,* ASBCA No. 44194, 94-3 BCA ¶ 27,237 at 135,727.

Nevertheless, even if we ignore the discussion in *Mitchell* relating to the government's knowledge, we would still decline to apply either *Oneida* or *Kemmons-Wilson*, upon which appellant relies, inasmuch as Noell's "private" and shorter subcontract schedule was never approved by Fru-Con and was not the schedule Fru-Con used to perform the work.

Early Completion

Further, unlike the court of appeals in *Mitchell*, we find it necessary on the facts presented here to consider the rules applicable to early completion recovery. Specifically, the contractor must show that, from the outset of the contract, it intended to complete early, had the capability to do so, and actually would have done so, but for the delay caused by the government. *Interstate General Government Contractors, Inc. v. West*, 12 F.3d 1053, 1059 (Fed. Cir. 1993). We are to look to the contractor's actions and activities during contract performance in determining the reasonableness of the intent to perform on a feasible and attainable schedule. *Frazier-Fleming Co.*, ASBCA No. 34537, 91-1 BCA ¶ 23,378 at 117,287. In this regard, we consider the intent requirement to apply to both the prime and it subcontractor. *Cf. Fruin-Colnon Corp. v. United States*, 912 F.2d 1426 (Fed. Cir. 1990) (appellant must demonstrate reliance on the part of both the prime and the subcontractor of interpretation of ambiguous contract provisions at the time of bidding).

Intent and Capability

The evidence established that Fru-Con considered the removal and installation of the roller gates to be a very high risk and decided to transfer that risk by subcontracting the work. It solicited bids and awarded the Noell subcontract on the basis of a three-year, 2-3-3 roller gate installation schedule. Irrespective of whether Noell knew that this schedule was actually an early completion schedule, we have no doubt that this is the schedule Noell intended to meet. We cannot reach a similar conclusion about Fru-Con's intent, however, because it used its five-year, 1-2-2-2-1 roller gate installation schedule during contract performance and there was evidence that it was a common construction management technique for Fru-Con (and other prime contractors) to impose shorter schedules on subcontractors to ensure timely contract completion.

In any event, assuming that Fru-Con's insistence upon a three-year, 2-3-3 installation schedule and its attempts to hold Noell to the shorter subcontract performance period could be sufficient to establish Fru-Con's intent to complete early, appellant still must demonstrate that early completion was reasonably feasible, *i.e.*, that Noell had the capability to complete the work by 30 November 1996, and actually would have done so, but for delay caused by the government. *Interstate General Government Contractors*,

supra, 12 F.3d at 1059. It was Fru-Con's burden to make this showing. *Wickham Contracting Co. v. Fischer*, 12 F.3d 1574, 1582 (Fed. Cir. 1994). It did not do so.

There was testimony from appellant's expert that the Goldmann Schedule was reasonable; however, he was also under the incorrect impression that Fru-Con had approved the Noell 25 August 1993 as-planned schedule, which mirrored the Goldmann Schedule. And, while there was also some testimony from representatives of Noell and Fru-Con that the Goldmann Schedule was reasonable, Mr. Valentyn, Fru-Con's principal project site engineer, testified that he did not use Noell's schedule for any purpose. The government's expert considered Noell's 25 August 1993 schedule to be "little more than a pipe dream," due to missing restraints and the failure to include holidays and adverse weather days.

Further, although a German affiliate of Noell had performed roller gate installation work in Europe, there was no evidence that Noell, itself, had ever undertaken such work and the record is replete with evidence of the many difficulties it experienced during contract performance. Of particular significance in this regard are the late delivery of and the extensive fabrication defects in the roller gates manufactured by its subcontractor, AWM Enterprises, which resulted in serious installation problems with Gate No. 1 and necessitated extensive weld repairs and remedial/rework painting for all eight roller gates. As our findings indicate, these difficulties are attributable to Noell. Nor did Noell work 24 hours a day, seven days a week as required by paragraph 9.7 of Section 5C of the specifications. In sum, the evidence simply does not support the conclusion that Noell's early completion schedule was reasonably feasible and attainable and that Noell had the capability of completing installation of the roller gates by 30 November 1996.

Causes of Delay

We also cannot conclude that the government was responsible for the 733 days of delay appellant claims. Appellant's delay claims are based upon the CPM time impact analysis prepared by its expert who selected and used Noell's 22 November 1994 adjusted, as-planned schedule to measure the alleged project delays. We are not persuaded that the schedule he selected is reliable for a number of reasons. First, the record reflects that the 22 November 1994 schedule had been submitted to Fru-Con, but never approved. Indeed, the government's expert identified a number of specific logic defects in the schedule which he characterized as rendering it "fatally flawed." Further, even though the 22 November 1994 schedule was supposed to reflect how the roller gates would be installed without the poiree dam, appellant's expert found it necessary to make two substantial changes before using it.

Appellant's delay analysis begins with the late delivery of Gate No. 1, gate removal delays, and deletion of the poiree dam, which are identified as Impact Period I

(1 June 1994 to 7 September 1994). Three hundred and fifty-seven (357) days of compensable delay associated with deletion of the poiree dam are attributed to the government. The analysis first finds that, for Gate No. 5, Activities 36 through 53 on Noell's 22 November 1994 adjusted, as-planned schedule are comparable to Activities 1.17 through 1.23 on the Goldmann Schedule. It further finds that 17 days are scheduled to perform the identified equivalent activities on the 22 November 1994 schedule, whereas 15 days are scheduled for the comparable Goldmann Schedule activities (our computation totals 16 days). This results in an increase of only one or possibly two days, in the time required to perform the equivalent work in wet conditions. Moreover, although the analysis does not address the Goldmann Schedule for Gate Nos. 1 and 2, which reflect a total of 24 days for the identified activities, a comparison of the time required to perform the equivalent work activities for those gates indicates that it would have taken seven days *less* to perform the work in wet conditions.

Given these results, it is not surprising that appellant's expert made changes to the 22 November 1994 adjusted, as-planned schedule he had selected to measure project delays. The changes added 17 days per gate, a total of 136 days, to the work activities he found had been impacted by deletion of the poiree dam. The first change involved Activity 37, eight days of intermittent, concurrent work scheduled for "Paint, metallize and touch-up and girth weld," which he moved to the end of the comparable work activities, following Activity 52. He made this change because he considered it to be a "physical impossibility" to perform the Activity 37 work in sequence planned on the 22 November 1994 schedule. This change added eight days per gate to the schedule. The second change was based upon his estimate of the additional time needed to work in wet conditions to accomplish what he believed would be additional work, even though the schedule was supposed to reflect how the roller gates would be installed without a poiree dam. This change added nine more days per gate to the schedule. Together, these changes doubled the amount of time reflected in the 22 November 1994 schedule, increasing it from 17 to 34 days, to perform the activities allegedly impacted by deletion of the poiree dam.

Although it seems apparent that a reliable schedule should not require such substantial changes, Time Impact I incorporates these changes into Noell's 22 November 1994 schedule and projects the impact of the 136 days of alleged delay over the project duration as pushing performance into two additional winter seasons (1996-1997 and 1997-1998) and causing 364 days of additional delay, 221 days of which are allocated to the government. We agree with the government's contention that appellant's use of the 22 November 1994 schedule in this manner produces only an estimated projection of the delay alleged because it is not based upon any as-built data. This is a point that appellant appears to concede in its response to the government's brief, which states: "The only valid measure of whether the Corps' deletion of the poiree dam positively or negatively impacted Noell's work is a comparison of Noell's actual performance of the work, *i.e.*,

the as-built schedule, with Noell's original as-planned schedule, *i.e.*, the Goldmann Schedule" (app. resp. to gov't br. at 3). The analysis performed by appellant's expert using the 22 November 1994 adjusted, as-planned does not attempt to make such a comparison.

Finally, a credible CPM time impact analysis should take into account and give appropriate credit for all of the impacts to the project. *See Gulf Contracting, Inc.*, ASBCA Nos. 30195 *et al.*, 89-2 BCA ¶ 21,812 at 109,759, *aff'd on recons.*, 90-1 BCA ¶ 22,393, *aff'd*, 23 Cl. Ct. 525 (1991), *aff'd*, 972 F.2d 1353 (Fed. Cir. 1992) (table), *cert. denied*, 506 U.S. 999 (1992). In addition to our concerns about the use of the 22 November 1994 adjusted, as-planned schedule, as further changed and adjusted by appellant's expert, we are not persuaded that appellant's analysis meets the *Gulf Contracting* standards.

With respect to Impact Period I, we found that appellant was responsible for the late installation of the upstream bulkheads, the late delivery of Gate No. 1, and the delay in removing the old gate. While we accept, conceptually, the concept that installation of the roller gates should be more difficult to perform in wet conditions than in dry conditions, any impact resulting from the deletion of the poiree dam cannot be evaluated without taking into account the possible impact resulting from these earlier performance delays. Appellant's analysis does not address the late installation of the upstream bulkheads, which the government's expert concluded was the first delay on the project. And, while appellant's analysis does find that the delay associated with late delivery of Gate No. 1 and the delay in removing the old gate is not attributable to the government, we are not persuaded that it has undertaken a full evaluation of potential project impacts resulting from these delays. We conclude that appellant has not established entitlement to the 357 days of compensable delay claimed in Impact Period I.

Appellant attributes 105 days of compensable delay to the government in Impact Period II due to problems associated with the inspection of Gate No. 1. We reject this analysis, principally because it does not acknowledge any responsibility for the fabrication defects associated with the seal interface misalignment which created the need for the inspections. As we found, the fabrication defects are attributable to Noell, through its subcontractor, AWM Enterprises, and its failure to perform adequate quality control. We recognize, however, that the evidence did establish that it was more difficult to identify the cause of the problem using divers than it would have been if the gate bay had been dewatered. The government's expert estimated that five to ten days represented a reasonable amount of time for divers to take measurements and check the seal, and he allowed eight days for this work. We adopt his estimate.

Appellant seeks a total of 102 days of excusable delay associated with gate opening restrictions due to high water during the 1995 and 1996 construction seasons:

10 days during Impact Period II and a total of 92 days during Impact Period III. Appellant admitted that some of the gate opening restriction days corresponded to adverse weather, but it did not identify how many of these days related to adverse weather or when they occurred. Paragraph 11 of Section 1A of the contract provided both the number of adverse weather days to be anticipated each month, as well as the procedures for determining time extensions for unusually severe weather. In addition to the adverse weather days that Noell should have anticipated and should have included in its schedule, the government awarded a total of 330 days for abnormally severe weather to Fru-Con in bilateral contract Modification Nos. P00076 and P00089 through December 1996. Appellant has not addressed either the anticipated adverse weather days or the time extensions granted in these modifications for abnormally severe weather in its delay analysis. Finally, the seal adjustment difficulties and fabrication and coating rework on Gate No. 2 that appellant asserts in Impact Period III were impacted by gate opening restrictions appear to be the result of fabrication and quality control deficiencies attributable to Noell, again through its subcontractor AWM Enterprises. We find no merit to the claims for gate opening restriction delays.

Another seven days of compensable delay is sought for gate opening restrictions after 30 November 1996 in Impact Period III. There is no explanation as to why these days should be compensable, rather than excusable. The claim reflects a proration based upon the allocation of responsibility for the delays identified in Impact Period I. We found no entitlement to either the delay claimed in Impact Period I or the delays claimed for gate opening restrictions. Since the proration is based upon claims we have rejected, this aspect of appellant's analysis also fails.

Appellant also prorated the 1998-1999 and 1999-2000 winter months according to the delay analysis it performed for Impact Periods II and III. A total of 166 compensable days are allocated to the government (104 days for the 1998-1999 winter months in Impact Period II and 62 days for the 1999-2000 winter months in Impact Period III). Except as to the eight days we adopted from the government's expert as being a reasonable estimate of the additional time required to inspect Gate No. 1, we found no entitlement to the underlying delays claimed in Impact Periods I, II or III. Since there is no evidence that the eight days would have pushed performance into another winter period, there is no basis to allocate any winter delay to the government.

Appellant's claims seeking 52 days of compensable delay in Impact Period IV are also without merit. The ten days sought for the cracked rim gears in Gate No. 5 are barred by accord and satisfaction, having been settled by bilateral Modification No. P00131, which on its face includes all time and costs related to this work and contains a complete release. *See Idela Construction Co.*, ASBCA No. 45070, 01-2 BCA ¶ 31,437 at 155,258. Further, our findings reflect an absence of factual support for the remaining three delays, which comprise the remaining 42 days in Impact Period IV (40 days for

hoist mechanism at Gate No. 3, 1 day each for downstream pool elevations at Gate Nos. 4 and 6). These claims fail for lack of proof.

In Impact Period V, appellant seeks 51 days of compensable delay under the Suspension of Work clause (EFARS 52.212-0012) on grounds the government unreasonably suspended work on Gate No. 7 during the winter months of 1998-1999. It asserts that after the deletion of the poiree dam and the related seasonal restriction against work in dewatered bays between December and May applicable under paragraph 15.1 of Section 1C of the specifications, the only prohibition against winter work was that found in paragraph 6.3 of Section 1I, which precluded work when the total dam gate opening exceeded 25 feet. We agree with appellant that the government's continued reliance upon the seasonal work restriction provisions is unsupportable. When the poiree dam and dewatering were deleted by Modification No. P00029, the related seasonal work restriction provisions were no longer applicable.

Nevertheless, in order to prevail under the Suspension of Work clause, appellant still must show that:

> . . . (1) the Government ordered, in writing, or by its act or failure to act timely, a suspension, delay, or interruption of performance; (2) the suspension, delay or interruption was for an unreasonable period of time; and (3) such performance would not have been suspended, delayed or interrupted by any other cause, including the fault or negligence of the contractor . . . .

Monterey Mechanical Co., ASBCA No. 51450, 01-1 BCA ¶ 31,380 at 154,957.

It is undisputed that the government ordered a suspension of work between 1 December 1998 and 5 May 1999. Whether this suspension was for an unreasonable period of time and delayed appellant depends upon the work appellant planned to perform and could have accomplished. Appellant relies upon its expert, who concluded that Noell expected to install Gate No. 7 in 61 days, as permitted by conditions, during the winter period. How he arrived at this conclusion is not clear; however, his analysis cites to Noell's 13 November 1998 schedule. Unfortunately, that schedule shows only a plan to remove the old gate and position the new gate by 30 December 1998, after which no further work is planned until 1 June 1999.

Moreover, Noell's project manager at the time testified that the 13 November 1998 schedule did not reflect his plan and was not in compliance with contract specifications. The specifications to which he referred are found at paragraph 9.7 of Section 5C of the contract and required Noell to work 24 hours a day, seven days a week,

"from the start of the removal of an existing roller gate and throughout the installation of the new roller gate." On this point, we note that 61 days of performance, as permitted by conditions during a six-month winter period, also does not comply with these requirements. In any event, it appears from the evidence that, while the river conditions were such that it might have been possible for Noell to install Gate No. 7 during the winter months, the new gate was still undergoing pre-installation repainting and other repairs in February 1999. Based upon the foregoing, we are not prepared to say either that the suspension was for an unreasonable period of time or that performance otherwise would have been accomplished.

In Impact Period VI, appellant seeks nine days of compensable delay for upper guardrail repairs to Gate No. 2. This work was authorized by Modification No. P00128; however, there is no evidence that it was ever performed. Thus, at best, the claim is one for anticipated, future delay.

Finally, Impact Periods IV, V and VI also reflect overall project delays resulting from Noell's resequencing of the remaining painting activities. Irrespective of whether this was contract or remedial painting, the delay is attributable to Noell. Moreover, we found that contract painting was taken off the critical path when the government allowed Noell to use the second set of bulkheads and that remedial painting is not part of appellant's claim. The remaining painting, therefore, is non-critical path work which has no impact upon overall project completion. It is not properly a part of the delay analysis. *See Wilner, supra,* 24 F.3d at 1399.

In sum, we reject appellant's contention that it is entitled to recover under its subcontractor's three-year, early completion schedule. Nevertheless, we also conclude that Noell's 22 November 1994 adjusted, as-planned schedule, as further changed and adjusted by appellant's expert, is not a reliable basis upon which to measure project delays. Except for the eight days we found to be a reasonable estimate of the additional amount of time required for divers to take measurements and check the seal for Gate No. 1, appellant's delay claims are also otherwise without merit.

Contract Administration Costs

Appellant contends that it is entitled to recover reasonable legal and consulting costs incurred to prepare and negotiate the REA submitted to the contracting officer on 28 December 2000 because it was prepared and submitted for the sole purpose of furthering negotiations and reaching a settlement with the government (app. br. at 70). Appellant relies upon *Bill Strong Enterprises, Inc. v. Shannon*, 49 F.3d 1541, 1550 (Fed. Cir. 1995), *overruled in part on other grounds, Reflectone, Inc. v. Dalton*, 60 F.3d 1572, 1579 (Fed. Cir. 1995) (*en banc*).

In *Bill Strong*, the court drew a distinction between legal, accounting and consultant costs incurred for the genuine purpose of materially furthering the negotiation process, which may be allowable as contract administration costs, and those costs incurred where the contractor's underlying purpose is to promote the prosecution of a CDA claim against the government, which are unallowable. It instructed that: "In classifying a particular cost as either a contract administration cost or a cost incidental to the prosecution of a claim, contracting officers, the Board and courts should examine the objective reason why the contractor incurred the cost." 49 F. 3d at 1550.

The government contends that Navigant was hired in conjunction with Noell's management reorganization to perform a forensic analysis of the overall cost overrun, rather than to assist with the preparation and negotiation of the REA, and that the REA was simply a by-product of that effort (gov't resp. to app. br. at 156-57). The government's factual contention is based upon Mr. Smit's response to a question on cross-examination. We find that single response to be inconsistent with the preponderance of the evidence which supports the conclusion that the consulting and legal costs incurred by Noell for the preparation of the REA submitted to the government on 28 December 2000 were for the purpose of seeking a negotiated resolution and settlement of the pending issues with the government. These costs may be allowable, if otherwise reasonable, under the FAR Part 31 cost principles. *See Advanced Engineering & Planning Corp.*, ASBCA Nos. 53366, 54044, 03-1 BCA ¶ 32,157 at 158,995, *aff'd*, 292 F. Supp. 2d 846 (E.D. Va. 2003). *See also C.H. Hyperbarics, Inc.*, ASBCA Nos. 49375 *et al.*, 04-1 BCA ¶ 32,568 at 161,159-60. We reach no conclusion on what this recovery might be given the ultimate resolution of these appeals.

The REA was converted into a CDA claim when Fru-Con requested a contracting officer's final decision on 24 May 2001, and any costs incurred in converting the REA into a claim and thereafter are unallowable under FAR 31.205-47(f)(1).

CONCLUSION

Consistent with our foregoing findings and conclusions, we sustain the appeal in ASBCA No. 53544 to the extent that: (1) appellant is entitled to a contract time extension of eight days, together with an appropriate corresponding adjustment to the contract price; and (2) appellant is entitled to reasonable contract administration costs, if any, associated with the preparation of the REA submitted to the contracting officer on 28 December 2000.

DISCUSSION

The government has cast its claims for time credits as deductive changes resulting from alleged relaxations of the contract specifications for which it is entitled to a contract adjustment under the Changes clause. It contends that it is entitled to an "appropriate credit" for alleged schedule savings realized by appellant. (Gov't br. at 72-74, 99) The time credits it claims are associated with commissioning, the poiree dam, and the second set of bulkheads.

The government bears the burden of proving that the specifications were relaxed and resulted in cost savings that it is entitled to recover. *See Nager Electric Co. v. United States*, 442 F.2d 936, 946 (Ct. Cl. 1971). The requirement that a contractor claimant must shoulder the burden of establishing the fundamental facts of liability, causation and resultant injury relating to a claim for which it sees recovery applies with equal efficacy to claims brought by the government. *See Roberts v. United States*, 357 F.2d 938, 949 (Ct. Cl. 1966).

For its part, appellant asserts that the specifications were not relaxed, but that even if they were relaxed, the changes were made to mitigate the government's damages because the poiree dam specifications were defective (app. resp. to gov't br. at 15). Relying upon *Varo, Inc.*, ASBCA Nos. 16087, 16146, 73-2 BCA ¶ 10,206 at 48,114, the government's reply to this contention is that, irrespective of whether the specifications were defective, it would still be entitled to a credit if correction of the defect resulted in less costly performance to the contractor (gov't reply at 30). We note that, on appeal, the Court of Claims held that "alteration in a contractor's position is the proper standard to use in determining whether an equitable adjustment is appropriate" and reversed the Board's award of an equitable adjustment to the government because it would place the contractor in a worse financial position than it would have been and there was no showing of detriment to the government. *Varo, Inc. v. United States*, 548 F.2d 953, 960 (Ct. Cl. 1977).

In any event, the cases relied upon by the government set forth the standard and familiar rules applicable to deductive changes resulting from a reduction to the contract work (gov't br. at 72-74). Neither party has cited any authority directly addressing the government's present claim of entitlement, which seeks recovery of contract time credits based upon the number of days by which contract performance was allegedly reduced. As such, we consider the government's claim to be in the nature of a reverse-delay claim under the Changes clause. *Cf. Elliott Construction Co.*, ASBCA Nos. 23483 *et al.*, 81-2 BCA ¶ 15,222 at 75,394 (government allowed six calendar days on unrefuted claim for deductive change of time for two to three men for two weeks). Under *Wilner*, *supra*, any compensable delay to the project must be to the critical path. Applying *Wilner* by

analogy to the government's reverse-delay claim, any credits for contract time savings likewise must be to critical path work.

At the hearing, the total credit claimed in the contracting officer's final decision was revised upward to 1,696.5 days and the government's expert's computation of the number of days it would have taken Noell to complete the contract work was revised downward to 2,054 days. The computation seeking credits totaling 1,696.5 days is just 153.5 days less than the 1,850 days originally allowed for contract performance; the 2,054 days computed by the government's expert exceeds the original contract performance period by 204 days. The government's claims not only appear to be grossly excessive, for the most part, they also do not withstand factual and legal scrutiny.

Our discussion below of the evidence concerning the contracting officer's decision is not precluded by *Wilner*, 24 F.3d at 1399, 1401-02. We may properly consider evidence considered or discussed by the contracting officer and those who assisted in the review of the claim. *See Grumman Aerospace Corp.*, ASBCA No. 50090, 01-1 BCA ¶ 31,316 at 154,677-78, *aff'd*, 34 Fed. Appx. 710 (Fed. Cir. 2002); *ITT Defense Communications Division*, ASBCA No. 44791, 98-1 BCA ¶ 29,590 at 146,700.

The Commissioning Period and Deletion of the Poiree Dam

As explained and modified during the hearing, the contracting officer's computations of the credits claimed for both commissioning and the deletion of the poiree dam are based upon a comparison of Noell's 25 August 1993 as-planned schedule with the as-built schedule prepared by appellant's expert, as further adjusted by the government. The contracting officer's assertion of time savings resulting from its reduction of the gate seal to sill tolerances from 1/32 inch to 1/8 inch is subsumed within these computations (gov't br. at 82-84).

We concluded above that Noell's early completion schedule should not be used to measure appellant's alleged delay; therefore, it also should not be used to measure time credits to which the government claims entitlement. Accordingly, we decline to accept the contracting officer's various computations of contract time credits for either commissioning or the poiree dam.

Nevertheless, we do find merit to the government's contention that it waived the 14-day commissioning requirement. Paragraph 11 of Section 5C of the specifications required that, "before proceeding with the next gate replacement," the completed new gate was to be "placed in normal operating service for 14 days to allow for adjustments" and that any "[a]djustments and/or defects disclosed during this period" were to be corrected by appellant at no cost to the government. The evidence established that, beginning with Gate No. 1, the government allowed appellant to proceed to the next gate

before completing commissioning work on the previous gate, that no commissioning work was performed on the critical path and that no contract modification was issued by the government deleting the 14-day commissioning requirement.

The government asserts that it waived the commissioning requirement. The contracting officer claims a time credit of 14 days for each gate, a total of 112 days; the government's expert concluded that commissioning for Gate Nos. 1 and 6 would not have impacted the start of work on a subsequent gate and, therefore, included only 84 days in his claim calculations, which he then converted to 136 days to reflect winter inefficiency. Appellant argues that the government did not waive the commissioning requirement and that Noell remained contractually liable for any adjustments and corrections to each gate after completing installation. It asserts that the second set of bulkheads permitted Noell to perform commissioning while simultaneously beginning work on the next gate. (App. resp. to gov't br. at 10)

The issue here is not whether the government waived the requirement to perform commissioning work, but whether the government relaxed the specifications when it waived the 14-day commissioning period required by paragraph 11 of Section 5. We conclude that it did. Irrespective of which schedule is considered, the critical path should have included 14 days for commissioning for each gate, but no commissioning work was ever performed on the critical path. Thus, there was a decrease in the time required for performance of the contract work which is subject to a deductive change under the Changes clause. *See* FAR 52.243-0004(d).

The government's expert found that Gate Nos. 1 and 6 were completed at times when commissioning did not have an impact upon the start of work on a subsequent gate and was not on the critical path. Thus, we reject the contracting officer's conclusion that the credit should include all eight gates. We also reject the government's expert's winter efficiency adjustment because the underlying assumption and calculations upon which it was based were not fully explained and we are unable to determine whether the adjustment comports with Noell's actual winter work experience. Further, there is no evidence in the record of any analysis of the impact to the contract schedule resulting solely from relaxation of the commissioning requirement.

Under the circumstances, we, therefore, consider a time credit of 84 days, 14 days each for Gate Nos. 2, 3, 4, 5, 7, and 8, to be reasonable and conclude that the government is entitled to a contract time credit in that amount, together with such adjustment as may be appropriate.

We reach a different result as to whether the government should recover contract time credits claimed in the contracting officer's computations for deletion of the poiree dam. After deducting 112 days for commissioning, the contracting officer's first, and

principal, computation initially sought a 62-day credit for critical path work impacted by deletion of the poiree dam. This was increased to 74.5 days during the hearing.

There is disagreement between the parties about what work on the critical path was actually impacted when the poiree dam was deleted. Appellant's expert began his comparison of the activities impacted by deletion of the poiree dam with Activity 1.17, "Setting poiree dam, dewatering of gate bay," of the Goldmann Schedule and ended it with Activity 1.23, "Tests in watered condition." The government began its comparison with the "Bolt and Weld Installation Joint," activity on the Noell schedule, which is comparable to Activity 1.15 on the Goldmann Schedule, and ends its comparison with "Commissioning Roller Gate," which is comparable to Activity 1.25 on the Goldmann Schedule.

Further, some of the adjustments made by the contracting officer to the as-built schedule are suspect, in particular the total elimination of the "Commissioning Roller Gate" activity, elimination of the "Metalize and Paint Installation Joint" activity for Gate Nos. 1 and 2, and the use of only 45 days for work on Gate No. 1, which is not based upon the actual facts.

The government's claim fares no better when we consider the opinion of its expert. He considered the deletion of the poiree dam in conjunction with the elimination of the need to install pier anchors. He first assumed that four or five days per gate for the installation of the poiree dam and dewatering had been eliminated, subject to some offset associated with the need to have divers check the apron and end shield seals. On this point, we note that he considered eight days to be a reasonable period of time for divers to perform this work on Gate No. 1 when analyzing appellant's Impact Period II and we have adopted this estimate. He next assumed that elimination of the anchor installation work had saved another 11 days per gate. He then computed a combined net credit of 102 work days for these three activities, which he ultimately converted to 144 calendar days, apparently to reflect winter inefficiency.

The record does not establish which schedule he used, although it appears that it was a Fru-Con schedule because his assumptions include anchor installation. Noell's subcontract work, however, did not include anchor installation and no issues related to anchor installation have been raised in these appeals. Nor does the contracting officer's final decision assert any entitlement to any credit associated with anchor installation, absent which we have no jurisdiction to consider it. *See Honeywell, Inc.*, ASBCA No. 47103, 95-2 BCA ¶ 27,835 at 138,792. Moreover, all anchor installation issues were settled by bilateral Modification No. P00081, with no change to the contract completion date. Therefore, it appears that, at best, under the government's expert's view, the government would be entitled to some unspecified, and very limited, number of days

resulting from his assumptions regarding the elimination of the poiree dam and dewatering requirements, as offset by some unspecified number of days for divers.

Based upon the foregoing, irrespective of whether the credits claimed are as computed by the contracting officer or by the government's expert, as both were adjusted during the hearing, we are satisfied that the government has not established entitlement to any contract time credits associated with deletion of the poiree dam.

The Second Set of Bulkheads

Paragraph 6.1 of Section 5G of the contract allowed appellant to use only the new maintenance bulkheads. The second set of bulkheads, which was comprised of bulkheads that had been rehabilitated, was reserved for the government's use. The government, however, having allowed another contractor to use its set of bulkheads, agreed to make this second set available to appellant for its use in painting. The second set of bulkheads was installed at Gate No. 3 on 7 October 1997. By that time, appellant considered painting to be the critical activity and the project was "almost at a standstill." Use of the second set of bulkheads took the field/contract painting off the critical path and it became commingled with non-critical path remedial/rework painting. Beneficial occupancy occurred on 13 December 1999, but contract completion did not occur until 23 January 2002 due to painting.

When the government agreed to let appellant use the second set of bulkheads for painting, it advised appellant that it expected an "appropriate credit." Noell interpreted the government's condition to mean that a credit would be applied against its 19 November 1996 amended proposal seeking a contract time extension of 192 days for extra work it claimed as a result of the deletion of the poiree dam. The government acknowledged its agreement with Noell's understanding. By the time representatives of Noell, Fru-Con and the government met to negotiate, however, the government had computed a contract time savings of 792 work days, 600 more days than appellant was seeking. The credit sought by the contracting officer's decision is even greater, having been increased to 1,510 days. It begins on 7 October 1997, and continues every day on which both sets of bulkheads were used concurrently, through four 182-day summer construction seasons and four 182-day winter periods, to 27 November 2001. By the time of the hearing, the government's expert had computed a projected savings of 1,775 calendar days after beneficial occupancy, based upon a projection of 1,303 calendar days for use of the second set of bulkheads and 471 calendar days when both sets of bulkheads were used only for painting.

The government asserts that, when it permitted appellant to use the second set of bulkheads, it relaxed the specification provisions which precluded work in more than one gate bay at a time. Appellant contends that the contract did not require it to complete all

activities for one gate before proceeding to the next. We consider its interpretation to be unreasonable because it does not give the contract terms their plain meaning and does not consider the contract as a whole. *See Contel Advanced Systems, Inc.*, ASBCA Nos. 49071 *et al*., 01-2 BCA ¶ 31,576 at 155,930. In addition to the commissioning provisions discussed above (paragraph 11 of Section 5C), paragraph 4.1 of "SECTION 2A – CONTRACT CONSIDERATIONS" and paragraph 9.5 of "SECTION 5C – ROLLER GATES AND APPURTENANCES" plainly specify the work sequence by providing that the roller gates are to be replaced one at a time, and that at no time shall there be less than seven gates available for the passage of water flow. Other contract provisions applicable to related work, *e.g*., paragraph 9.7 of Section 5C and paragraph 1 of Section 16D, likewise refer to completing the installation of one gate before proceeding to the next gate replacement.

We conclude that the government relaxed the specifications by changing the work sequence requirements when it permitted appellant to use two sets of bulkheads and thereby perform work on two gates at the same time. This change to the contract work sequence took field/contract painting off the critical path and commingled it with non-critical path remedial/rework painting. Thus, inasmuch as the contracting officer's decision treats virtually each and every day beginning on 7 October 1997, and ending 27 November 2001 as a day on which critical path work was, or would have been performed, we reject it. *See Gulf Contracting, supra*, 89-2 BCA at 109,759.

The government also claims $5,307.00 for the cost of barges. We find nothing in the record, however, to establish how the barges were used and why these costs should be separately recoverable by the government.

The government's expert acknowledged that painting was taken off the critical path on 7 October 1997. He, nevertheless, presented a contract time savings projection that attempted to measure how long it would have taken appellant to complete contract work without use of the second set of bulkheads. As we understand it, his computation was based upon the assumption that painting would have remained on the critical path until contract completion on 23 January 2002 and Primavera critical path projections. This "would have" computation is a speculative projection into the future which fails to provide the necessary causal link between the government's change to the specified work sequence and the time savings credits claimed. C*f. Essex Electro Engineers, supra*, 224 F.3d at 1295. We conclude that the government has failed to establish entitlement to the contract time credits it seeks for allowing appellant to use the second set of bulkheads.

Appellant's expert spent in excess of 100 hours attempting to understand the painting issues and ultimately excluded contract and remedial painting from his analysis. The government's expert simply projected the assumed time requirement to complete all painting work. We find neither to be persuasive and are satisfied that the evidentiary

record does not provide a factually reliable basis from which we could possibly determine how many days of critical path field/contract painting may have been impacted by the change to the work sequence. Absent such evidence, the government's claim fails. *Wilner*, *supra*.

CONCLUSION

Consistent with our foregoing findings and conclusions, we sustain the appeal in ASBCA No. 53794 to the extent that the government did not establish entitlement to: (1) the time credits it claims for deletion of the poiree dam and appellant's use of the second set of bulkheads; and (2) the cost of barges. We deny the appeal in ASBCA No. 53794 to the extent that the government is entitled to a contract time credit of 84 days associated with the waiver of the 14-day period during which commissioning was to be performed, together with an appropriate adjustment associated therewith.

SUMMARY

ASBCA Nos. 53544 and 53794 are sustained in part and denied in part in accordance with the foregoing.

Dated: 14 April 2005

CAROL N. PARK-CONROY
Administrative Judge
Armed Services Board
Of Contract Appeals

I concur

MARK N. STEMPLER
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 Nos. 53544, 53794, Appeals of Fru-Con Construction Corporation, rendered in conformance with the Board's Charter.

Dated:

CATHERINE A. STANTON
Recorder, Armed Services
Board of Contract Appeals