STATE OF SOUTH CAROLINA	)	**BEFORE THE CHIEF PROCUREMENT**
COUNTY OF RICHLAND	)	**OFFICER FOR CONSTRUCTION**
	)	
	)	
IN THE MATTER OF: CONTROVERSY	)	**DECISION**
AGRICULTURE BIOTECHNOLOGY/	)	
MOLECULAR BIOLOGY COMPLEX	)	
STATE PROJECT NUMBER P20-9518-MP	)	**POSTING DATE: January 11, 2005**
	)	
ELLISDON CONSTRUCTION, INC.	)	
vs.	)	
CLEMSON UNIVERSITY	)	
	)	

This matter is before the Chief Procurement Officer for Construction (CPOC) pursuant to a Request for Resolution ("RFR") of a contract controversy filed on April 23, 2003 [Exh. 1] by EllisDon Construction, Inc. ("E-D") under the provisions of §11-35-4230 of the South Carolina Consolidated Procurement Code (Code), for an administrative review on the construction of the Agriculture Biotechnology/Molecular Biology Complex project ("Project") for Clemson University ("CU"). CU submitted a written response to E-D's claim ("CU Response"). [Exh. 2] Pursuant to §11-35-4230(3) of the Code, the CPOC evaluated the issues for potential resolution by mutual agreement and determined that mediation was highly appropriate. An initial attempt at mediation failed. Accordingly, a hearing on the matter was held on February 2-11, 2004. N. Ward Lambert, Esq. and David J. Larson, Esq. represented E-D. James W. Logan, Jr., Esq. represented CU.

It is the CPOC's normal practice to request the parties to a complex construction contract controversy to exchange documents they propose to submit for the record, and if possible, to agree on a combined set of material that can be introduced into the record without objection. At the outset of this hearing the parties submitted 19 volumes of documentation spanning six feet of shelf space. The CPOC notified the parties that this documentation would be received for information only, and that only those documents found to be germane to an issue in contention would be entered on the record as an exhibit.

At the conclusion of the 6½ days of hearings, the CPOC again urged the parties to engage in mediation and held the hearing open pending the results of that effort and to permit the CPOC to review the procurement files in more detail. The final attempt at mediation failed and the CPOC granted the parties 30 days to submit written closing arguments. Copies of the closing arguments submitted by E-D and CU are attached as exhibits. [Exhs. 3 and 4, respectively]

The hearing record was closed on January 5, 2005 after a total over 350 hours of review of the testimony and documents provided.

NATURE OF THE CONTROVERSY

The Project, as conceived by CU and as contracted with E-D, involved a multi-step sequence of demolition of existing structures and the construction of a new 108,000 gross square foot ("gsf") Laboratory Building, a 14,500 gsf Head House[1] and 40,000 gsf of new greenhouse space on the CU campus. The original Contract Sum was $23,091,701. The original Contract Time was 600 calendar days. [Exh. 5(A), paragraphs 3.2 and 4.1]

In accordance with the Contract Documents, the contractor had to maintain the existing Head House and three (3) of the existing Green Houses in operation until at least half of the new Green Houses were ready for use. Although it was clear that there were two phases envisioned, the Contract for Construction ("the Contract") defines only one period of performance and therefore only one date for Substantial Completion of the entire Project.

From the outset this Project was entangled in a complex web of stop work orders, design changes, changes in construction sequencing and extensions in the duration of many elements of construction work. Although the original Contract Sum and Time were adjusted through seventeen fully executed Change Orders, the ultimate result was a decision by CU to assume responsibility for completion of the work [Exh. 6] and to terminate E-D for default. [Exh. 7] The termination was acknowledged by E-D and its surety. [Exh. 8]

Of the adjusted Contract Sum of $23,977,433 as agreed-upon through Change Order 17 [Exh. 9], CU has withheld payment of $231,000 in liquidated damages, representing 231 days of disparity between the adjusted Date of Substantial Completion of October 16, 2001, as agreed-upon through Change Order 17, and the declared date of Substantial Completion of June 19, 2002 [Exh. 10]; $150,000 for the value of work contracted for but allegedly unperformed by E-D; and $516,838 for alleged defects in the construction of the floors of the laboratory building. In addition, E-D asserts claims of unresolved change order requests and other damages.

E-D's Request for Resolution listed 17 elements for which monetary damages or time extensions, or both, were sought. In summary, these were:

[1] In the context of this project, a "head house" is a building intended to house those specialized systems and facilities needed to support the operation of the greenhouses.

No.	E-D's RFR Tab	Title	General Description	Damages Sought	Time Sought
1.	C	General Delay Issues	Delay resulting from the presence of lead contamination in the greenhouses; delay in owner or A/E addressing shop drawings, Requests for Information, E-D's Hot List, and Contractor's Supplemental Instructions.		15[2]
2.	D	Unpaid Contract Balance	Funds withheld by CU for liquidated damages and claims of unpaid subcontractors	$ 875,157	
3.	E	Proposed Change Order 018	Correct miscellaneous direct costs, both additive and deductive on three unresolved COR items.[3]	$ 42,024	
4.	F	Punch List Holdback	Value of unperformed work after substantial completion withheld by CU	$ 150,000	
5.	G	Proposed Change Order 019	Value of defective concrete floors	$ 516,838	
6.	H	COR 10	Heating System Revisions		126
7.	I	COR 42	Wiring for Greenhouse Louvers		7
8.	J	COR 43	Greenhouse Under-bench Heating		13
9.	K	COR 45	Unresolved Direct Cost	$ 89,539	31
10.	L	COR 46	Lab Roof Extension		19
11.	M	COR 47	Lab Penthouse Stairs		4
12.	O	COR 86	Unresolved Direct Cost	$ 69,908	22
13.	P	Constructive Acceleration	Labor costs	$ 70, 012	

[2] E-D noted that it was entitled to a 15-day compensable time extension due to CU's issuance of a stop work order one day after issuing the Notice to Proceed on the Project. The other elements of delay mentioned in Tab C are discussed more specifically in other tabbed sections of the RFR.

[3] Under the terms of the Contract, a Change Order ("CO") is issued when the parties reach final agreement on adjustments to the Contract Sum, Contract Time or Scope of Work. [Exh. 5(B), Article 7, as amended] A Change Order is typically comprised of multiple sub-elements referred to as "Change Order Requests" ("COR") that are negotiated individually by the parties and collected into a CO. In response to these requests, CU proposed to resolve these requests by execution of proposed Change Order 18. Except for three items in the proposed Change Order, CU and E-D agreed on the direct cost dollar value for each of the CORs. CU and E-D did not agree on the time impact of any COR. Accordingly, the undisputed portions of proposed CO 18 are treated as having been agreed-upon. This order addresses only the unresolved time and direct cost elements of CO 18.

No.	E-D's RFR Tab	Title	General Description	Damages Sought	Time Sought
14.	Q	Compensable Project Delay	Multiple items of owner-caused delay resulting in extended field overhead for 170 days	$ 855,576	
15.	R	Substantial Completion Delay	Multiple items of owner-caused delay	$ 163,329	65
16.	S	Unabsorbed Home Office O/H	Owner-caused delay	$ 241,885	
17.	T	Interest	Late payments, outstanding change order requests and unpaid contract balance	$ 637,177	
	U/V		Total Claim	$3,711,445	235[4]

FINDINGS OF FACT

1. On January 10, 2000 E-D and CU entered into a contract for the construction of the project. [Exh. 5]. The Contact Sum was $23,096,701.00 and the Contract Time was 600 days from the Date of Commencement to be established in the SE-390, Notice to Proceed.

2. CU issued the SE-390, Notice to Proceed, to E-D on February 7, 2000. [Exh. 11] The Date of Commencement was established as February 8, 2000. Accordingly, E-D was required to achieve Substantial Completion was set by September 29, 2001.

3. The Contract Sum and Contract Time were both modified by a series of 17 Change Orders. The revised Contract Sum as of Change Order 17 is $23,977,433.00. Seventeen calendar days were added to the Contract Time, which allowed E-D until October 16, 2001 to achieve Substantial Completion. [Exh. 9]

4. The Architect of Record for the Project, HOK Architects, Inc. ("HOK"), declared the Project Substantially Complete as of June 4, 2002. [Exh. 10]

[4] The CPOC notes that the RFR's discussion of time issues is notably unclear. Delay issues are presented without context and connection to the overall project and the sum of the individual time delays does not equal the value in the Claim Summary presented in Tab V.

5. On February 3 and 4, 2004 E-D submitted revisions to its claims for time and damages, which are reflected in the table following. [Exh. 12] Changes from the original RFR values are noted by underline or strikethrough.

No.	E-D's RFR Tab	Title	General Description	Damages Sought	Time Sought
1.	C	General Delay Issues	Delay resulting from the presence of lead contamination in the greenhouses; delay in owner or A/E addressing shop drawings, Requests for Information, E-D's Hot List, and Contractor's Supplemental Instructions.		15
2.	D	Unpaid Contract Balance	Funds withheld by CU for liquidated damages and claims of unpaid subcontractors	$ 231,000[5]	
3.	E	Proposed Change Order 018	Correct miscellaneous direct costs, both additive and deductive on three unresolved COR items.	$ 42,024	
4.	F	Punch List Holdback	Value of unperformed work after substantial completion withheld by CU	$ 150,000	
5.	G	Proposed CO 19	Value of defective concrete floors	$ 516,838	
6.	H	COR 10	Heating System Revisions		126
7.	I	COR 42	Wiring for Greenhouse Louvers		7
8.	J	COR 43	Greenhouse Under-bench Heating		13
9.	K	COR 45	Unresolved Direct Cost	$ 89,539	31
10.	L	COR 46	Lab Roof Extension		19
~~**11.**~~ ~~**1**~~	~~M~~	~~COR 47~~	~~Lab Penthouse Stairs~~[6]		~~**4**~~
12.	O	COR 86	Unresolved Direct Cost	$ 69,908	22
~~**13.**~~ ~~**1**~~	~~P~~	~~Constructive Acceleration~~	~~Labor costs~~[7]	~~$ 70, 012~~	
14.	Q	Compensable Project Delay	Multiple items of owner-caused delay resulting in extended field overhead for 163 days	$ 617,504	

[5] The reduced claim amount is due to CU's release of over $644,000 in earned compensation to E-D through E-D's surety. [Exh. 13]
[6] E-D withdrew this claim during the hearing.
[7] E-D submitted no evidence or testimony on this issue. It is hereby denied and dismissed.

No.	E-D's RFR Tab	Title	General Description	Damages Sought	Time Sought
15.	R	Substantial Completion Delay	Multiple items of owner-caused delay	$ 163,329	65
16.	S	Unabsorbed Home Office O/H	Owner-caused delay	$ 128,976	
17.	T	Interest	Late payments, outstanding change order requests and unpaid contract balance	$ 447,221	
	U/V		Total Claim	$ 2,386,431	235

DISCUSSION

General

Both parties have argued their rights and defenses as those rights and defenses are provided for by the Contract, notwithstanding that CU terminated the contract after E-D had substantially performed. The parties have argued their cases, and their claims and defenses are analyzed, accordingly.

To the extent possible, each element of the original Request for Resolution (as amended by the revised claim) will be discussed and resolved individually as to the issue's specific impact to the Contract Sum and Contract Time. To the extent one element of a claim is duplicative of another or bears on the merits of another, those merits will be discussed with the resolution of the second element. Before proceeding with the evaluation of each element, it is necessary to clearly establish the **contractual** basis for adjustments to the Contract Time and Sum.

Delays in Contract Completion

Many of the parties' claims involve a request for adjustment to the Contract Time and the Contract Sum resulting from alleged delay by the other party. Delays in project completion may fall into one of three categories.

> *1. "Inexcusable Delay:" Delay caused by an event within the control of the contractor or its subcontractors or suppliers and beyond the control of the*

> *owner, for which the owner is entitled to recover damages for the contractor's breach of contract and may, under certain circumstances, be justified in terminating the contract, without right of the contractor to obtain any extension of contract time or compensation from the owner. . . .*
>
> *2. "Excusable Delay:" Delay caused by an event beyond the control of both the owner and contractor, for which the contractor and its affected subcontractors and suppliers are entitled to an extension of contract time only. Both parties bear their own monetary losses attributable to untimely performance. "Excusable" delay not being foreseeable by either party at the time of entering into the contract is not allocated to either party.*
>
> *3. "Compensable Delay:" Delay caused by an event within the control of the owner and beyond the control of the contractor, for which the contractor and its affected subcontractors and suppliers are entitled to an extension of contract time and damages or an equitable adjustment.*[8]

It is the first and third of these three categories of delay that are at issue in this claim.

- <u>Inexcusable Delay (Contractor-Caused Delay)</u>

A contractor agrees to perform a given scope of work for a specified price (the Contract Sum) within an agreed-upon period of performance (the Contract Time). Failure to perform within the Contract Time constitutes a contract breach. Paragraph 3.2 of A101 establishes both the Contract Time and a measure of damages for any Inexcusable Delay caused by E-D. Paragraph 3.2 of the Contract for Construction [Exh. 5B] states:

> *The Contractor shall achieve Substantial Completion of the entire Work not later than 600 calendar days after the Date of Commencement as established in the Notice to Proceed (SE-390), subject to adjustments of this Contract Time as provided in the Contract Documents. The Owner shall retain as Liquidated Damages the sum of One Thousand Dollars ($1,000.00) for each calendar day the actual Construction Time to achieve Substantial Completion exceeds the specified or adjusted Contract Time for Substantial Completion as provided in the Contract Documents.*

- <u>Compensable Delay (Agency-Caused Delay)</u>

An agency, like CU, can incur liability for delaying the Contractor's completion of a project in any of several ways, as detailed in Paragraph 8.3 (as amended) of the General Conditions of the Contract for Construction [Exh. 5C, page 6], which states in relevant part:

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[8] Philip L. Bruner and Patrick J. O'Conner, Jr., *Bruner & O'Conner on Construction Law*, §15:29, at 99 (West 2002).

> ***8.3.1*** *If the Contractor is delayed at any time in progress of the Work by an act or neglect of the Agency or A/E, or of an employee of either, or of a separate contractor employed by the Agency, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control, or by delay authorized by the Agency pending resolution, or by other causes which the A/E determines may justify delay, the Contract Time shall be extended by Change Order for such reasonable time as the A/E may determine.*
>
> …
>
> ***8.3.3*** *This Paragraph 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.*

Paragraph 8.3 establishes a contractual basis for adjusting the Contract Time when a delay is caused by the Owner, i.e., Compensable Delay.[9] It is not sufficient to establish simply that some element of work was prevented or extended. The elements of work so prevented or extended must be: (1) work in the Owner's control that; (2) delays the overall completion of the Project. Once it is established that the Project's completion was (or is reasonably expected to be) actually delayed, the Contractor must establish the length of the time extension to which it is entitled.

Changes in the Contract Sum Due to Delay

- <u>Inexcusable Delay (Contractor-Caused Delay)</u>

As noted in the contract clause quoted above (¶3.2), an Owner is entitled to recover the damages resulting from any breach of contract resulting from the contractor's late completion of the Project. In this case, the Contract expressly provides for the owner to recover Liquidated Damages in the amount of $1,000 for each day of inexcusable delay.

- <u>Compensable Delay (Agency-Caused Delay)</u>

Like the Owner, a Contractor is entitled to recover the damages resulting from any delay for which the Owner is responsible. The Owner's liability arises out of the Owner's common law obligations.

> *The common-law basis for the imposition of damages for "compensable" delay is the owner's breach of the mutual obligations implied in every contract (1) to act in good faith, (2) to cooperate in carrying out its contract obligations, and (3) to do nothing to delay, hinder or interfere with the contract performance of the*

[9] Paragraph 8.3 also provides a basis for adjusting the Contract Time for Excusable Delay. As the parties have alleged that all delay was caused by either the owner (CU) or the contractor (E-D), Excusable Delay, for which neither party is responsible, is not at issue in this case.

> *other party. The implied mutual duties to cooperate and not hinder is a universally recognized principle of contract law.*[10]

Unless limited by contract,[11] the Contractor is entitled to recover those damages that are the natural and probable consequence of the increase in time.[12] In ¶4.3.8.1 of this contract, the Contractor agreed to a partial limit of its recovery.

> *Monetary adjustments made for the Agency-caused delays, if allowed, shall be limited to job specific costs. Adjustments shall not be allowed for either [1] indirect costs to the Project, including but not limited to, home office overhead and unrealized profit or [2] overhead and profit[,] other than that allowed by Subparagraph 7.1-5* [sic].[13]

In other words, the Contractor is not allowed to recover for any lost profits or home office overhead expenses related to the increased costs caused by delay, except as provided in Subparagraph 7.1.5 of the contract documents. Paragraph 7.1.5 allows for overhead and profit by allowing a specific percentage markup to be added to the changes in the Contractor's direct cost of performance of the Work.

> *Delete Subparagraph 7.1.5 and substitute the following:*
>
> *7.1.5 In determining the cost to the Agency resulting from either an increase or a decrease in the Work, by either Change Order or Construction Change Directive, the allowances for overhead and profit combined, included in the total cost to the Agency, shall not exceed the percentages as follows:*
>
> *.1 For the Prime Contractor, for any Work performed by his own forces, 15% of the cost;*

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[10] Philip L. Bruner and Patrick J. O'Conner, Jr., *Bruner & O'Conner on Construction Law*, §15:50, at 137 (West 2002). See, generally, U.S. for Use and Benefit of Williams Elec. Co. v. Metric Constructors, Inc., 325 S.C. 129, 480 S.E.2d 447 (1997) ("We premise our discussion by recognizing that, in South Carolina, there exists in every contract an implied obligation of good faith and fair dealing."). Of course, the Procurement Code requires that all contractual obligations must be conducted with honesty in fact and pursuant to reasonable commercial standards of fair dealing. § 11-35-30.

[11] F.D.I.C. v. Prince George Corp., 58 F.3d 1041 (1995) ("Parties may contractually agree to measure of damages in the event of breach or default on contract.").

[12] 17 S.C. Jur. Construction §42.

[13] The General Conditions also provide that adjustments to the contrast sum may not include home office overhead. Subparagraph 7.2.3 provides as follows:

> *7.2.3 Adjustments to the Contrast Sum shall include only direct costs directly attributable to the Change Order. Costs such as lost profit and home office overhead shall not be included in the adjustment.*

As also reflected in paragraph 14.3.4, the clear intent of the contract documents was to prohibit the recovery of extended home office overhead, except as provided by paragraph 7.1.5, by limiting recovery to job specific costs plus a fixed percentage markup.

> *14.3.4 Adjustments made in the cost of performance shall be limited to job specific costs. No adjustment shall be approved for overhead and profit other than that allowed by Subparagraph 7.1.5 nor for any indirect costs to the project.*

.2 For the Prime Contractor, for Work performed by his Subcontractors, 7% of the amount due the Subcontractor;
.3 For each Subcontractor involved, for Work performed by his own forces, 15% of the cost;
.4 For the Subcontractor, for Work performed by lower tier Subcontractors, 7% of the amount due the Subcontractor.

[Exh. 5C]. Under this provision, the Contractor can apply the stated percentage markup to its actual job-site costs. By long-standing industry custom, these costs fall into one of two basic categories.

1. Direct Cost. This cost category represents the labor and materials that comprise the finished work.

2. Field Indirect Cost. The second job-site cost category represents the cost of on-site functions required in general support of the actual construction work. These costs are typically referred to as "field overhead" or "general conditions" expenses and include items such as mobilization and demobilization of the contractor's field operations, the labor of the project manager and supporting field staff, site office supplies and services supporting field operations, field accommodations (i.e., job trailers) and general use equipment.

Unlike labor and materials costs, general conditions costs exhibit a variety of time-related behaviors. Some, such as office supplies, are variable (i.e., proportional to the amount of work) and are not time-related. Some, such as field staff monthly salaries, are fixed (i.e., time-related) and do not reflect the volume or cost of work. Others, such as mobilization, are sunk costs (i.e., one-time, non-recurring) irrespective of project duration. Some cost elements might be considered semi-variable (i.e., have a mixture of fixed and variable characteristics).

Regardless of the behavioral nature of the general conditions cost elements, there is one principle that must apply to any evaluation of a claim for damages–since contract modifications are priced on the basis of a change in cost[14], it logically follows that there must be some showing that a change in cost has actually occurred. Such a showing requires the contractor, who bears the burden of proving the amount of its claim, to submit cost and pricing data to support each claim.[15] If, for example, the time-related costs in a contractor's field overhead have not increased because

[14] See Exh. 5B, ¶7.2.1 and 7.3.6.
[15] See also §11-35-1830 of the Code.

of a specific contract modification, the contractor is not entitled to include the those costs in a claim for additional field overhead costs.

Ideally each contract modification would involve an arm's length negotiation of every element of cost claimed by the contractor, in full recognition of the fact that field overhead costs can vary dramatically over relatively short periods of time. Acknowledging the tedious and contention-prone process of negotiating allowable field overhead costs on every potential change order, it is also typical on large projects for the parties to negotiate daily field overhead rates applicable to specific stages in the construction process. At the hearing, E-D presented [see Exh. 12A] a compensable delay claim based on an asserted daily field overhead rate of $2,562 for itself and $787 for Cullum. E-D and Cullum evidently believe these single values should apply to every compensable delay event, regardless of actual project conditions existing at the time of the delay event. This is patent overreaching. While the proposed exhibits included voluminous copies of cost account records and receipts, there was no testimony offered by either E-D or Cullum to give the CPOC any context and understanding of the relevance of the documentation to the events and conditions on the site at the time these costs were allegedly incurred. Accordingly this material is not included in the CPOC's hearing record.

Conversely, the parties addressed the issue of extended field overhead by direct negotiation as documented in COR 47 [Exh. 14], wherein Keeshen acknowledged the parties' agreement on "…a daily rate…for extended field overhead…" of $1,820/day for E-D and $787/day for Cullum Mechanical ("Cullum"), the mechanical subcontractor for the Project. Given that these negotiations appear to have been roughly contemporaneous with the delay events giving rise to the claims for damages and that they are the result of negotiation over the allowability of these costs, the CPOC finds the values of $1,820/day (for E-D) and $787/day (for Cullum) are the more credible representation of reasonable extended general conditions costs. To the extent that E-D and Cullum establish their entitlement for compensable delay, these values will be applied as the appropriate measure of damages.

Evaluation of the Individual Claim Elements

1. <u>Greenhouse Lead Contamination (Request for Resolution Tab C)</u>

It was agreed by the parties that on February 8, 2000 CU directed E-D to stop the Phase 1 greenhouse demolition due to improper handling of lead-contaminated material in the greenhouses. This direction was given one day after the issuance of the Notice to Proceed. In its

Request for Resolution E-D stated that demolition work resumed on February 23, 2000, some fifteen days later [Exh. 1, Tab C] The direct cost impact of this stop work order was addressed in Change Order 005, [Exh. 15] This Change Order did not include any extensions of time.

CLAIMANT'S POSITION

E-D contends that it was entitled to a 15-day compensable time extension because the greenhouse demolition was a critical path activity. E-D states that the extension was not requested at the time of delay to maintain a positive approach in the early days of the Project.

RESPONDENT'S POSITION

CU contends that the presence of lead paint contamination on wood structures was addressed in Addendum 4 to the Bidding Documents; that the presence of lead was addressed (i.e., "mentioned") at the pre-construction meeting; and that E-D proceeded with the building demolition without holding the pre-demolition meeting required by the technical specification for demolition and without employing proper disposal techniques for lead contamination. [Testimony of Kinard, the CU Project Manager]

CPOC's ANALYSIS AND FINDING ON THE ISSUE

Mr. Kinard testified that E-D was advised, prior to award, of the presence of lead-based paint in the buildings scheduled for demolition. The CPO was unable to find any documentation to confirm this testimony.

The CPOC finds that the delay associated with the removal of lead-based paint from the Phase I demolition of the existing greenhouse is the unequivocal responsibility of CU. E-D was excusably delayed in the performance of the first task on the project schedule and shall be compensated therefore. The Contract Time shall be increased by 15 days. The Contract Sum shall be increased by $27,300 (15 days @ $1,820/day for E-D).

2. Unpaid Contract Balance (Request for Resolution Tab D)

As noted in the Findings of Fact, the only portion of Contract Sum remaining unpaid is the amount of assessed Liquidated Damages. Resolution of this issue is deferred to the CPOC's analysis of the overall delay claim.

3. Proposed Change Order 18 (Request for Resolution Tab E)

Proposed Change Order 018 [Exh. 16] is comprised of several items totaling approximately $167,000. Only three of these items were included in the E-D Request for Resolution. They are:

1. Deletion of $5,989 in standby equipment costs approved by CU.
2. The addition of $20,103 for plant grow lights installed in the Head House.
3. The addition of $28,000 in landscaping costs deducted by CU.

Item #1 was resolved by the parties in E-D's RFR and CU's Response. Clemson included $5,989 in Proposed Change Order No. 18 for stand by equipment costs claimed by E-D under COR No. 45. Although E-D never agreed to COR No. 45, CU paid $5,989 for this item. As these direct costs are addressed separately in COR No. 45, CU is entitled to a $5,989 credit towards the $89,539 amount claimed by E-D for these direct costs.

Item #2 was resolved by agreement. During the hearing, the parties advised the CPOC that an agreement had been reached regarding one direct cost item—grow lights that were added in the greenhouse. CU previously deducted this amount from Proposed Change Order No. 18, claiming these costs had been included in a prior change order paid by CU to E-D. CU advised the CPOC that this amount should not have been deducted from Proposed Change Order No. 18 [see Exh. 16, COR No. 76] and is owed by CU to E-D. Based upon the agreement of the parties, the CPOC determines that E-D is entitled to payment from CU in the amount of $20,013 for grow lights added to the greenhouses.

Item #3 is discussed below.

CLAIMANT'S POSITION

E-D contends that CU improperly deducted the full value of the landscaping work and that E-D is entitled to $18,000 for work performed and $10,000 in contract termination charges. In support of its position, E-D submitted its subcontract with Design South Landscaping Co. ("DSL"), an internal accounting record and an invoice from DSL. [Exh. 17]

RESPONDENT'S POSITION

CU maintains that it is entitled to the full value of the landscaping subcontract, but acknowledges that some preparatory work may have been performed and therefore any payment to E-D should reflect actual costs incurred. [Exh. 2, Tab 6]

CPOC's ANALYSIS AND FINDING ON THE ISSUE

It is undisputed that E-D included $52,622.00 in the contract amount for landscaping. During the project, CU elected to self-perform the landscaping and deducted the full amount, $56,622.00, as was shown on E-D's Schedule of Values for landscaping. CU included this value in its Proposed Change Order No. 18. [Exh. 16]

Deductive changes to the work are governed by the provisions of the Contract related to Changes in the Work [see Article 7 of Exh. 5B, as amended]. In the event of disagreement on the amount of an adjustment in the Contract Sum, subparagraph 7.3.6 directs the Contractor to collect and present records of the actual costs incurred for review in anticipation of an "…adjustment…on the basis of reasonable expenditures and savings…attributable to the change, including…a reasonable allowance for overhead and profit." The "reasonable allowance for overhead and profit" is defined in subparagraph 7.1.5, *supra*.

Prior to being advised by CU that it intended to self-perform landscaping, E-D paid costs totaling $15,393.12 for placement of topsoil and seeding work. [Exh. 17] In addition, E-D was charged $9,650 by its landscaping subcontractor for services performed by it prior to deletion of that work by E-D, due to CU's decision to self-perform the work. [Exh. 17] E-D contends that the credit included in Proposed Change Order No. 18 for this item should have totaled $27,578.88 ($52,622.00 - $15,393.12 - $9,650.00), rather than $52,622.00.

CU offered no evidence or testimony at the hearing before the CPOC regarding this issue. In its written Response to the Request, CU acknowledges that E-D is entitled to payment under the landscaping line item for the costs it incurred in placing topsoil, along with markups provided in the Contract Documents. In addition, CU asserts that the grassing work performed by E-D was required for erosion control and soil stabilization, which it contends was included in E-D's base bid. However, CU offered no evidence or testimony at the hearing in support of these assertions.

Mr. Guedel testified at the hearing that the grassing work performed by E-D was required due to CU's failure to irrigate after it performed hydroseeding, causing the initial stand of grass to die. CU offered no evidence or testimony to refute this testimony by Mr. Guedel.

Based on the findings of fact as stated above, and a preponderance of the evidence, it is the determination of the CPOC that a credit in the total amount of $27,578.88 for landscaping work

self-performed by CU should have been included in Proposed Change Order No. 18, rather than $52,622.00.

The final value of Proposed Change Order 018 is determined by the CPOC as follows:

Proposed Change Order 18 Cost Element	**Original Value ($)**	**Final Value ($)**
COR 10.3 Greenhouse Heating Changes	$ 200,333.00	$ 200,333.00
COR 42.2 Wiring for Greenhouse Louvers	$ 7,320.00	$ 7,320.00
COR 43.2 Greenhouse Underbench Heating	$ 31,117.00	$ 31,117.00
COR 44 Change to Head House Ceilings	($ 27,531.00)	($ 27,531.00)
COR 45.2 Standby Equipment Costs	$ 5,989.00	$ 0.00
COR 46.4 Extended Laboratory Roof	$ 19,100.00	$ 19,100.00
COR 54 Steam Line Expansion Anchors	$ 3,818.00	$ 3,818.00
COR 76 Head House Grow Lights	($ 20,013.00)	$0.00
Credit for Self-Performed Landscaping Work	($ 52,622.00)	($ 27,578.88)
Total	**$ 167,511.00**	**$ 206,578.12**

The Contract Sum is hereby increased by $206,578.12 for the work included in Proposed Change Order 018.

4. <u>Proposed Change Order 019–Punchlist Holdback (Request for Resolution Tab F)</u>

In unsigned Change Order 019 [Exh. 18] CU deducted $150,000 from the contract sum to account for the cost of work left unfinished at the time of Substantial Completion, which was declared to be June 4, 2002.

<u>CLAIMANT'S POSITION</u>

E-D contends that the sum withheld by CU is excessive; that E-D was and is willing to perform any unfinished work and finally; that any work that did remain unfinished at the time of termination was due to CU's failure to complete work that was a prerequisite to E-D completing its work. [Exh. 19] E-D believes the value of the incomplete punchlist work is $25,000.

RESPONDENT'S POSITION

CU contends that E-D was given ample and timely notice of the unfinished work and that E-D failed to pursue an extensive list of incomplete or deficient work as documented in a 40+ page punchlist. [Exh. 2, Tab 6]

CPOC's ANALYSIS AND FINDING ON THE ISSUE

The term "substantial completion" means performance that is in good faith and in compliance with the contract, but falls short of complete performance due to minor and relatively unimportant deviations. As both parties would agree, E-D achieved Substantial Completion for the Project. Subparagraph 9.8.2 of the Contract states in relevant part:

> ***9.8.2*** *When the Contractor considers that the Work, or designated portion thereof, is substantially complete, the Contractor* ***shall prepare and submit to the A/E a request for a Substantial Completion inspection along with a comprehensive list of items to be completed or corrected.***
>
> ***.1*** *No Substantial Completion inspection shall be made until such time as the A/E, the Agency and the OSE have received a letter in the following words:*
>
> *"The work on the Contract for* (insert Project Number and Name as it appears on the Contract)*, having been completed except as stipulated herein below, it is requested that a Substantial Completion inspection be made promptly by the A/E. The following work is incomplete through no fault or negligence of the Contractor:* (List any work the Contractor regards as exceptionable and after each item substantiate why its incompleteness is not due to his fault or negligence)*."*
>
> ***.2*** *The Contractor shall proceed promptly to complete and correct items on the list. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.* **[emphasis added]**

There was considerable conflicting testimony [Guedel, Taylor, Kinard and Keeshen] and evidence [Exh. 20] offered as to whether the "comprehensive list of items to be completed or corrected" (i.e., "punch lists") was prepared by the other party, their timeliness of preparation and the degree of completion of the work at any point in time.

Curiously neither party presented the CPOC with any credible evidence or testimony to support their respective positions on a specific and current list of unfinished work; nor was there any evidence submitted as to the reasonable value that work. A 60+ page listing of deficiencies in Laboratory Building [Exhs. 30E and 30F] was apparently provided to E-D in June of 2002. A

review of those documents shows that the contractor has noted correction of many of the deficiencies listed, but there is no evidence of inspection and acceptance by the A/E. CU acknowledged that E-D completed some portion of the punch list work in the period between June and October of 2002. CU stated [testimony of Wells] that the $150,000 figure was taken from "verbal quotes" obtained from CU's "on-call contractors." The scope of work included in these verbal quotes was not defined. Mr. Wells did not testify to his own estimate of the costs to correct the remaining punch list items. Rather, he testified that he believed that the estimates were reasonable. Such testimony is merely the hearsay repetition of another's estimate. Without the testimony of the authors of the estimate and the basis therefore, the CPOC finds the $150,000 estimate to be unpersuasive, uncorroborated hearsay.[16]

When the breach of a construction contract results in defective or unfinished construction, the Agency is entitled recover its damages.[17] The amount of damages may be established by either: (1) the cost of correcting or completing the construction; or, (2) the diminution in value between the structure as erected and the structure as contracted.[18] In either case, the burden of proof as the appropriate amount of damages lies with the Agency, not the contractor.

CU failed to meet its burden of proof in at least four areas:

1. There was no credible evidence that would clearly define the scope of the <u>remaining defective or uncompleted work</u>. When an Agency chooses to reject work or to assert that contracted work is unperformed, the Agency has the burden of proof that the work is, in fact, either defective or unperformed and remains defective or uncompleted.

2. There was no credible evidence to support CU's determination of the original amount withheld. When an Agency chooses to reject work or to assert that contracted work is unperformed, the Agency has the burden of proof of establishing either the reasonable cost of correction/completion or the loss of value associated with the defective or uncompleted work.

3. There was no credible evidence to support a determination of what punch list work was completed by CU and what remains to be performed. The parties apparently agree that

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[16] *Richards v. City of Columbia*, 88 S.E.2d 683 (S.C. 1955); *Hamilton v. Bob Bennett Ford*, 528 S.E.2d 667 (S.C. 2000).
[17] *National Loan Exchange Bank of Greenwood v. Gustafson*, 157 S.C. 221, 154 S.E. 167, 171 (S.C.)
[18] 17 S.C. Jur. *Construction* § 46. <u>See also *Kincaid v. Landing Development Corp.* 344 S.E.2d 869 (S.C. Ct. App. 1986), *Coleman v. Levkoff*, 122 S.E. 875 (S.C. 1924)</u>

CU has actually spent some $36,498 in punch list work in the 1+ year the building has been occupied. [Exh. 21]

The CPOC is persuaded that E-D did not finish the construction as it contracted to do. The CPOC is persuaded there were significant areas of unfinished and shoddy work on the Project. Nevertheless, and with great reluctance, the CPOC finds that CU has failed to document the extent of this unfinished and shoddy work and to adequately quantify its damages. Accordingly, E-D is entitled to the amount of $113,502 withheld for incomplete punch list work.

5. Defective Concrete Floors in the Laboratory Building (Request for Resolution Tab G)

Technical Specification 03300 [Exh. 22A] requires that the floors of the Laboratory Building meet certain criteria for flatness and levelness. CU believes that E-D did not meet those criteria and withheld some $516,000 as compensatory damages. [Exh. 18]

The flatness and levelness[19] criteria whose interpretations are in dispute are included in Technical Specification 03300, paragraph 3.11.D, as follows:

> *2. Finish surfaces to the following tolerances, measured within 24 hours according to ASTM E 1155/E 1155M* [Exh. 22B] *for a randomly trafficked floor surface:*
>
> *a. Specified overall values of flatness, F_F 35; and levelness, F_L 25; with minimum local values of flatness F_F 24; and levelness, F_L 17; for slabs-on-grade.*
>
> *3. Finish and measure surface so gap at any point between concrete surface and an unleveled freestanding 10-foot-long straightedge, resting on two high spots and placed anywhere on the surface, does not exceed the following:*
>
> *a. ¼ inch.*

In addition to the interpretation of the above paragraphs, the parties also disagree on the assignment of responsibility for any testing on the concrete. The inspection and testing requirements are contained in Technical Specification 01400 [Exh. 22C], which states in relevant part:

> *1.3.A: Contractor Responsibilities: Unless otherwise indicated as the responsibility of another identified entity, Contractor shall provide inspections, tests and other quality-control services specified elsewhere in the Contract Documents and required by authorities having jurisdiction. Costs for these services are included in the Contract Sum.*

[19] The term "flatness" refers to the degree a floor dips and rises as one walks across the floor. The term "levelness" refers to the degree to which a floor has an overall slope.

1. *Where individual Sections specifically indicate that certain inspections, tests and other quality-control services are the Contractor's responsibility, the Contractor shall employ and pay a qualified independent testing agency to perform quality-control services. Costs for these services are included in the Contract Sum.*

2. *Where individual Sections specifically indicate that certain inspections, tests and other quality-control services are the Owner's responsibility, the Owner will employ and pay a qualified independent testing agency to perform those services.*

And also in Technical Specification 03300 [Exh. 22A], which states in relevant part:

> *3.16.A: Testing Agency: Owner will engage a qualified independent testing and inspection agency to sample materials, perform tests and submit test reports during concrete placement. Sampling and testing for quality control may include those specified in this Article.*
>
> *3.16B: Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed to the following requirements:* [there follows eight paragraphs describing tests on the material properties of the concrete]…
>
> *3.16.G: Additional Tests: Testing and inspecting agencies shall make additional tests of concrete when tests indicate a slump, air content, compression strength or other requirements have not been met, as directed by Architect.*

CLAIMANT'S POSITION

With respect to the issue of the applicable standards for flatness and levelness, E-D argues that paragraph 3.11.D.2 of Technical Specification 03300 applies only to slabs-on-grade and that paragraph 3.11.D.3 applies to suspended slabs. [testimony of Guedel and Taylor]. In support of their testimony, E-D offered the report [Exh. 22D] and testimony of an expert witness, Eldon Tipping, who stated that, in his professional opinion, paragraph 3.11.D.2 applies only to slabs-on-grade and that paragraph 3.11.D.3 applies to suspended slabs. Mr. Tipping testified that such an interpretation and application of Specification 03300 is both logical and would comport with what one would normally expect to see for this type of construction. Mr. Tipping testified that F_F or F_L values or requirements do not normally apply to suspended slabs, as these slabs are prone to movement either when the supports are removed or when the slabs assume additional loads, which the CPOC interprets to refer to equipment, interior finishes and the building superstructure.

In addition, E-D cites the testimony of Keeshen, who acknowledged that Technical Specification 03300, paragraph 3.11.D.2 defines the flatness and levelness requirements for slabs-on-grade and

that paragraph 3.11D.3 defines the flatness requirements for suspended slabs in the Laboratory Building.

With respect to any testing to demonstrate its compliance with the flatness and levelness requirements, E-D contends that any such testing was, pursuant to the Specifications, the responsibility of CU. In support of this contention, E-D relies upon paragraphs 3.18B and 3.16G, of Technical Specification 03300, as quoted above.

E-D contends that pursuant to Technical Specification 03300, paragraph 3.16.A, CU was responsible to perform all tests and inspections necessary during the concrete placement, which would include any tests for floor flatness. E-D contends that the Agency's obligations under paragraph 3.16.A are not limited to the specific tests identified in paragraph 3.16.B. E-D maintains that, pursuant to Technical Specification 01400, paragraph 1.3.A.2, CU has the responsibility for performing such tests. In support of this argument, E-D notes that CU never requested E-D to perform floor flatness tests but chose to have these tests performed by outside contractor, Bunnell-Lammons Engineers, Inc. ("BLE").

To the extent that CU might have a valid claim for defective concrete work in the Laboratory Building, E-D disputes CU's quantification of that claim. E-D asserts the following:

1. No testing was performed on the slab-on-grade to determine whether the flatness of that floor surface complies with the requirements of Technical Specification 03300, paragraph 3.11.D.2.

2. BLE's flatness measurements included all pours of the second floor slab and two out of three pours on the third floor slab. In other words, E-D contends that in testing the upper floor slabs for flatness using the "F-test" method, BLE tested the elevated slabs for compliance with a technical standard that did not apply to those slabs.

3. CU does not know the full extent of current non-compliance, if any, with the applicable flatness and levelness standards. [testimony of Kinard] E-D performed corrective work on the floors inspected by BLE and there was no re-inspection. [testimony of BLE's project manager, William Mathews] E-D performed corrective work involving removal of tile on areas identified by Keeshen [testimony of Guedel and Taylor].

4. CU's amount of withholding is based on an estimate for repair work that would result in floors having flatness and/or levelness exceeding the applicable standards.

5. CU has performed no repairs to the floors in the Laboratory Building and has no intention of performing any repairs until such time as a demand is made by building occupant.[20] [testimony of Robert J. Wells, CU's Chief Facilities Officer]

RESPONDENT'S POSITION

CU relies on the same provisions of the Technical Specifications as E-D, but offers an alternative interpretation. CU maintained that the overall flatness/levelness standards of F_F 35/F_L 25 applies to all floor slabs and that the local minimum flatness/levelness standards of F_F 24/F_L 17 applies to the slab-on-grade. [testimony of Kinard]

CU contends that the Agency's testing obligations under Technical Specification 03300, paragraph 3.16.A are limited to the specific tests identified in paragraph 3.16.B. Inasmuch as paragraph 3.16.B does not specifically list floor flatness measurements; CU concludes that such measurements were the responsibility of E-D pursuant to Technical Specification 01400, paragraph 1.3.A.1. CU also relies upon subparagraph 3.3.4 of the General Conditions of the Contract [Exh. 5B], which provides:

> *The Contractor shall be responsible for inspection of portions of Work already performed under the Contract to determine that such portions are in proper condition to receive subsequent work.*

CU maintains there were significant concrete floor problems in the Laboratory Building, to the point that Mr. Keeshen testified that the level of concrete floor finish in this building was horrible, the worst he had encountered in his twenty-five (25) years of experience. [Exh. 22E] As an example, Keeshen testified that the photographs he took in January, 2001 (which are referenced in his report) show ponded water; that he and Taylor walked the site after a rain and marked on a set of the floor plans the areas of significant and deep puddles. This set of plans was given to Taylor, who was to have had these problems corrected. No verification of the claimed corrective action was ever performed and the drawings have apparently been lost.

[20] Confirming CU's intentions to respond only to demands for corrective action, the CPOC notes that Wells also testified that CU had removed a laboratory bench in one room and installed a flat, level concrete pad to support a piece of specialized analytical equipment required by a particular research scientist.

After completion of the first pour on the second floor, CU directed BLE to perform flatness and levelness tests to see if the elevated slab floors met the contract specifications as CU interpreted them. Five tests were performed and reports submitted.[21] [Exh. 22F] These tests showed that each of the slabs had F_F and F_L values below those specified in Technical Specification 03300, paragraph 3.11.D.2, indicating a failed condition. CU contends these results establish the non-conforming condition of the tested slabs. In support of this contention, CU relies on the testimony of Mathews, who confirmed the opinion in his written report that the observed flatness of the tested slabs failed to comply with either the F_F value of 24 or the "¼-inch gap in 10 feet" limit. [Exh. 22G]

In lieu of requiring the removal and correction of what it contends is defective work, CU asserts its right, under the terms of the contract, to accept non-conforming work, by citing subparagraph 12.3.1 of the General Conditions of the Contract, as follows:

> *"12.3.1 If the Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made."*

CU asserts its entitlement to a reduction in the Contract Sum in the amount of $516,838.00. [Exh. 22H] CU also rebuts E-D's challenge to the reduction based on CU's lack of performance of any corrective work. CU acknowledges that while Wells testified that CU anticipates having to make the repairs at some indefinite date in the future when required by the researchers, CU contends that neither the terms of the contract nor the law requires the work to be performed before a reduction is permitted.[22]

<u>CPOC's ANALYSIS AND FINDINGS ON THE ISSUE</u>

> *"When I use a word, it means just what I choose it to mean—neither more nor less."*
>
> *Lewis Carroll, <u>Through the Looking Glass</u>*

[21] The CPOC notes that E-D's expert witness reviewed only the first four of the BLE reports.

[22] See *National Loan Exchange Bank of Greenwood v. Gustafson*, 157 S.C. 221, 154 S.E. 167, 171 (S.C.) the Court stated, ''it would be manifestly inequitable to require the owner to pay the contract price to the contractor, after a breach of the contract by him, without first making itself whole for such damages as it has suffered by reason of the breach." Consistent with this rule of law, 41 A.L.R. 4th 131, 21 states that an owner can recover the cost of repair without making the repair.

It never ceases to amaze that even when there are no disagreements about the law, the contract or the circumstances of a claim, human minds can seize unalterably upon drastically different opinions about the meaning of words. Throw in a few of those disagreements, as in this case, mix in a pinch of mutual incompetence and you have a situation where it is fair for the CPOC to say, "Now that I know both sides' positions are outrageous, let's move on."

First, it is necessary to decide the contractual requirements for the as-constructed levelness and flatness of the concrete slabs in the Laboratory Building. Having heard many hours of testimony and having reviewed the evidence submitted, and reading the Contract as a whole, it is the determination of the CPOC that:

1. In accordance with paragraph 3.11.D of Technical Specification 03300, E-D was required to "[grind] smooth any surface defects [on all concrete surfaces] that would telegraph through applied coatings or floor coverings." This obligation was not in dispute.

2. In accordance with subparagraph 3.11.D.2.a of Technical Specification 03300, E-D was required to construct all slabs-on-grade within the overall and local levelness and flatness tolerances specified. [testimony of Taylor]

3. In accordance with subparagraph 3.11.D.3 of Technical Specification, E-D was required to construct all slabs, including slabs-on-grade, to a local flatness standard of a ¼-inch gap in 10 feet.

Second, it is necessary to determine how compliance with the contractual flatness and levelness requirements was to be verified. Having heard many hours of testimony and having reviewed the evidence submitted, and reading the Contract as a whole, it is the determination of the CPOC that the as-constructed flatness and levelness of slabs-on-grade was to be verified by an inspection according to the protocols defined in ASTM E 1155. It is further the determination of the CPOC that the flatness of elevated slabs was to be verified by use of a 10-foot straightedge. The CPOC notes that it is not necessary to perform an ASTM E 1155 inspection on every slab provided the proper construction techniques are used. As noted in paragraph 7.15.3 of ACI 302.1R-89 [Exh. 22I], the flatness and levelness F-numbers to be obtained using a given floor construction procedure are summarized in Table 7.15.3. These are the F-numbers achievable by competent, knowledgeable finishers under "standard" job conditions. But such reliance on "competent, knowledgeable finishers" should be validated. In footnote 5 to Table 7.15.3, the ACI further states that:

> *"Contractors should always verify their ability to produce the specified F_F/F_L requirements by means of measurements of previously constructed slabs prior to bidding a project."*

While non-performance of the specified verification tests may be an appropriate decision, the failure to perform such verification tests opens the responsible party to charges of non-compliance, as is the case here.

Third, it is necessary to determine the party responsible for performing the verification inspections. It is undisputed that the terms of the Contract required E-D to construct the slabs and floors of the Laboratory Building to specific standards of levelness and flatness. Just as E-D was solely responsible to construct the slabs to all applicable standards, the CPOC finds that E-D also bore sole responsibility for performing any verification inspections of the flatness and levelness of the slabs it constructed. E-D's attempts to transfer this responsibility to CU are specious[23] and do much to undermine the CPOC's confidence in E-D's commitment to present a claim in good faith.

Finally, it is uncontroverted that E-D did not perform any flatness or levelness tests of the slabs-on-grade in accordance with ASTM E 1155. There was no evidence or testimony submitted to demonstrate that E-D performed any localized flatness tests using a 10-foot straightedge. While its failure to perform such tests in the face of repeated complaints from the A/E speaks volumes about E-D's lack of commitment to quality work, the core issue facing the CPOC is whether E-D had substantially performed to those standards at the time of Substantial Completion. Lacking any contemporaneous record other that the BLE tests on the elevated slabs, the CPOC must decide the issue on whether the floors in the Laboratory Building, <u>as it stands today</u>,[24] support a conclusion that E-D had substantially performed to those standards at the time of Substantial Completion.

There was considerable testimony offered to demonstrate that the slabs, <u>as originally constructed</u>, were unacceptably bumpy. [testimony of Keeshen, Exhs. 22E and 22J] What is greatly disturbing is E-D's apparent passive attitude to the issue. Once presented with a slab-on-grade full of obvious puddles [testimony of Keeshen and Taylor] there is no evidence that E-D did anything to

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[23] The CPOC notes that if CU had wanted to assume responsibility for such inspections, as it did with the concrete materials property tests listed in Paragraph 3.16 of Technical Specification 03300, it could have said so—and it did not.

[24] Given that CU has performed work on the floors in only one limited area, the CPOC believes that the condition of the floors today fairly represents the flatness condition of the floors at the point of building turnover.

evaluate or otherwise alter its construction methods to prevent recurrence; or to perform self-inspection to ensure it was complying with the flatness/levelness specifications E-D believed were applicable; or in any other way to assume control of a situation totally within its scope of responsibility. E-D's sole action related to the placement of concrete appears to have been the use of several different concrete finishing firms for reasons apparently unrelated to the quality of the work. [testimony of Taylor] Section 1.3B of Technical Specification states:

> *Retesting: The Contractor is responsible for retesting where results of inspections, tests, or other quality-control services prove unsatisfactory and indicate noncompliance with Contract Document requirements, regardless of whether the original test was Contractor's responsibility.*

The meaning is clear. It doesn't matter what specific levelness or flatness standard applied to a given slab; it doesn't matter whether the F-test procedure was an inspection or a test; it doesn't matter whether E-D or CU were responsible to examine the floors. It doesn't matter whether a contractor's laser level survey or an architect shuffling around in his stocking feet discovers with the deficiency. All that matters is once a noncompliance was identified, it was E-D's responsibility to correct the noncompliance and provide evidence that the work, as repaired, met the contract requirements. Based on E-D's total silence on this point, the obvious conclusion is that E-D did nothing to demonstrate its compliance with its contractual obligations related to level and flat floors.

Equally disturbing to the CPOC is the reactive nature of CU and its consultants to this issue. Having seen the same set of puddles, CU apparently did nothing to raise the issue of the flatness and levelness standards that it believed applied to the Laboratory Building floors. Keeshen testified that throughout 2001 ED repeatedly assured him that the floor deficiencies would be corrected. There is no evidence that plans, procedures or processes for identifying, correcting and minimizing such deficiencies were ever requested by CU or offered by E-D. Based on the evidence submitted to the CPOC, CU apparently did nothing to evaluate E-D's corrective actions or to verify that the corrective work had been done until November 2001 when the laboratory casework was being installed. At that point, with the floors already covered with vinyl tile, Keeshen found areas of the floors where a 10-foot straightedge revealed gaps of as much as one (1) inch. Keeshen submitted a sketch to illustrate the observed condition. [Exh. 22K] Keeshen further testified that in March 2002, he performed more measurements and confirmed the fact that the floors remained in a non-conforming condition. At this point the laboratory casework was

fully installed and corrective action would mean removal and reinstallation of the casework with a significant negative effect on the Project schedule.

Slab-On-Grade Levelness

Considering the totality of the evidence and testimony, the CPOC finds that it is uncontroverted that no testing was performed in the Laboratory Building to determine whether the levelness of the slab-on-grade complied with the requirements of Specification 03300, Paragraph 3.11.D.2, as interpreted by the CPOC above. Based on the Contract Documents, such testing was intended to be performed within 24 hours of concrete placement, [Exh. 24I, paragraph 7.15.5] It is not possible, at this date, to use the ASTM test for F_L to determine the levelness of the slab as it was when constructed. [testimony of Tipping] We have no contemporaneous evidence of the as-constructed condition of the slab-on-grade and cannot create a credible *post facto* evaluation. CU offered no alternative evidence or testimony to support a determination of the levelness of the slab-on-grade. Lacking any evidence to the contrary, the CPOC must conclude that CU has failed to meet its burden of proof as to the levelness of the slab-on-grade in the Laboratory Building. To the extent that CU's damage claim includes costs related to the levelness of the slab-on-grade in the Laboratory Building, these claims must be denied.

Floor Slab Flatness

As to the flatness of all of the floors in the Laboratory Building and again considering the totality of the evidence and testimony offered, the CPOC finds that E-D did not construct the floors of the Laboratory Building in conformance with the flatness standards of the Contract Documents, as interpreted by the CPOC. While it was admitted by the parties that E-D did perform some amount of corrective work during the course of construction, nevertheless deficiencies yet remain. [testimony of Keeshen] In support of his testimony, Keeshen produced a series of marked floor plans showing areas of significant non-conformance with the ¼-in-10-feet standard for flatness. [Exh. 22K] Keeshen stated that his investigation into the current state of the Laboratory Building floors was not exhaustive (e.g., he did not examine any spaces but the large laboratories), but rather was intended to support his contention that E-D had not fully corrected the as-built deficiencies. This evidence is in addition to both the photographic evidence and the January 20, 2004 report of BLE, in which BLE "estimated that the gap under an unleveled 10-ft. straightedge would be between 5/16 and ½ inch, which exceeds the ¼ inch tolerance." [Exh. 22L]

Having found that E-D performed nonconforming work and did not correct those nonconformances, the issue becomes one of adjusting the Contract Sum accordingly. CU seeks compensation for accepting lesser-quality work. This is in accordance with Paragraph 12.3.1 of the General Conditions of the Contract, as follows:

> *If the Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.*

We are finally arrived at the point of deciding what adjustment in the Contract Sum, if any, is "appropriate and equitable." Damages need not be proved with mathematical exactitude, but with reasonable certainty, provided the amount is not based on conjecture, guess or speculation[25].

CU asserts its entitlement to $516,838 based on its extrapolation of the cost to fix one lab suite from the assignable square feet in the Laboratory Building (approximately 60,000 SF). [Exh. 22H] In defense of this estimate, CU asserted that the estimate assumed that none of the casework or utilities would have to be removed. Should that be necessary, CU estimates that to remove a single section of a large piece of lab casework and put it back is approximately $8,000. CU asserts that because the 12 lab suites contain six large and two small pieces of casework, the estimated cost for the proposed corrections in each suite would approximate $95,000. CU concludes that the amount currently withheld would address repairs to just five lab suites and not correct any other floor deficiencies in offices or corridors.

E-D objects to the damages calculation on the grounds that it: (1) does not reflect the current flatness of the floors; [testimony of Kinard and Mathews] and (2) is based on a corrective action that results in floors constructed both flat and level, which exceeds the basis for the contract. E-D further objects to the claim on the grounds that CU has no specific intent to actually perform the repairs.

The CPOC must acknowledge some sympathy for E-D's objections to the damages calculation offered by CU. While CU's approximations may have been appropriate for the original purpose of broadly defining a holdback amount while the Project was under construction, the CPOC is deeply concerned that in the many weeks that passed from Substantial Completion, through two aborted attempts at mediation, and despite withholding nearly $600,000 for the stated purpose of

[25] See *Whisenant v. James Island Corporation*, 277 S.C. 10281 S.E.2d 794, August 31, 1981.

making repairs to the floors, CU apparently did absolutely nothing to determine the actual extent of nonconformance (and a more accurate estimate of its damages) until the penultimate day of a week-long hearing. This is when Mr. Keeshen reported the results of a survey, taken on his own initiative, of the floor flatness in the large laboratory spaces. However, the CPOC is equally repulsed by the prospect that E-D, having clearly performed in a cavalier and deficient manner, should be rewarded for its incompetence in basic concrete construction. The CPOC, having spent many years working in similar laboratories is well aware of the long-term, insidious and deleterious effects on the occupants of floors as poorly constructed as these. While the decision is close, the CPOC finds sufficient merit in the basis for CU's claim to proceed with a determination of damages. The CPOC finds that:

1. The method proposed by CU for correction of the uneven floors, i.e., the use of a self-leveling material to fill low spots is a reasonable technique that can be applied in a controlled and limited manner intended to correct deficiencies in floor flatness;

2. The admittedly limited survey performed by Keeshen is sufficient to establish that low spots occur broadly and randomly throughout the structure. The CPOC is persuaded that a more rigorous examination of the floors would show substantial additional areas of nonconformance with the "¼-inch-in-10-feet" standard;

3. That CU's estimate of $95,000 per laboratory is based on achieving flat <u>and level</u> floor surfaces throughout the building, which results would clearly exceed the applicable standards called for in the Contract Documents for the above-grade floor slabs.

Accordingly, the CPOC finds that given the likely extent of the areas requiring flatness correction, it is reasonable to accept that some casework will have to be removed in addition to the work of relocating the occupants to temporary quarters, removing tile and adhesive, filling low spots, retiling and returning the laboratories to operation. CU shall be entitled to a reduction in the Contract Sum of $360,000, based on an average cost of correction of $30,000 per large laboratory for each of 12 laboratories. The balance of the withheld funds, $156,838, shall be paid to E-D.

6. <u>COR 10–Heating System Revisions (Request for Resolution Tab H)</u>

The design of the heating system for the Project was based on the use of natural gas supplied to the Head House through a 4-inch pipeline. During construction E-D noted to HOK that the actual

line was only 2-inch and questioned the ability of the existing line to supply the required amount of fuel. [Exh. 23A]After considerable discussion among the parties, CU directed that the heating system be redesigned. [Exh. 23B]

CLAIMANT'S POSITION

E-D acknowledges that CU has compensated E-D for the direct costs associated with the revisions to the heating system in the Head House. E-D contends that it is further entitled to a compensable time extension of 126 calendar days. In support of this contention, E-D submitted an analysis of the impact of the change on the project completion schedule. [Exh. 27]

RESPONDENT'S POSITION

CU's position is that E-D is not entitled to an increase in Contract Time due to the heating system delays not being on the critical path and lack of notice. [Exh. 23C]

CPOC's ANALYSIS AND FINDINGS ON THE ISSUE

It is undisputed that the project's heating system required significant modification. It is undisputed that CU and E-D negotiated a settlement for the direct costs of the modifications, which agreement is captured in Proposed Change Order 018. As allowed by ¶7.1.5 of the General Conditions (which is discussed above under the heading "Agency-Caused Delay"), the Change Order presumably includes an amount for both E-D's increased field overhead costs and its profit margin. However, E-D is also seeking to recover its extended home office overhead. This request must be denied. The contract simply does not provide for the recovery of home office overhead—subparagraph 4.3.8.1(c) of the General Conditions specifically states that adjustments are not allowed for home office overhead and, further, that the only overhead and profit allowed are the fixed percentages provided for in ¶7.1.5.[26]

Because the only issue remaining in contention is the effect of this change on the overall completion of the Project and the resultant assessment of liquidated damages, the resolution of this item will be addressed as part of the CPOC's overall analysis of delay.

[26] The CPOC notes that even if the contract allowed for such damages, §11-35-1830 of the Code requires significant evidence ("cost and pricing data") to be submitted in support of any requested price adjustment. E-D submitted no evidence to prove either the amount of extended home office expenses or that CU's actions actually caused that amount of increased cost.

7. COR 42–Wiring for Greenhouse Louver (Request for Resolution Tab I)

The greenhouses include louvers as part of the environmental control system. These louvers are intended to be operable. The Contract Drawings omitted the necessary power wiring to the motors for the louvers. CU directed E-D to provide the missing wiring.

CLAIMANT'S POSITION

E-D's position is well stated in its Request for Resolution and no substantive additions were offered during the hearing. In essence, E-D contends that it identified a design omission in that no wiring was shown on the electrical drawings for the operable exhaust louvers installed in the greenhouses and communicated this to HOK. [Exh. 24A] On March 12, 2001, HOK confirmed its direction to E-D to proceed with installing the required wiring, provided the cost to install such wiring was not to exceed $7,500 and the time impact was not to exceed one week "for the Phase I greenhouses." [see attachments to CSI 233, Exh. 24A]. E-D acknowledges that Clemson paid E-D $7,320 by written change order for this additional work.

E-D argues that it is uncontroverted that there are no milestone dates included in the Contract Documents. E-D contends, therefore that by acknowledging that this additional work would extend the duration of the Phase I greenhouses by one week, the project architect was acknowledging a one-week compensable delay for this additional work. In support of this contention, E-D offers the schedule analysis prepared by Mr. Robison, which in E-D's opinion, establishes that during the March, 2001 time frame, completion of the Phase I greenhouses was on the project's critical path.

RESPONDENT'S POSITION

CU's position is equally well stated in its Response to E-D's RFR. In summary, CU argues that it paid E-D for the cost of installing the wiring. As to the delay, CU relies of the position of the Project Architect, which is stated in the 6/14/02 letter included as Exhibit 24C. CU's position is that any delays in the completion of the Phase I Greenhouses caused by the wiring omission were incidental and not on the critical path of the Project at the time the delay.

CPOC's ANALYSIS AND FINDINGS ON THE ISSUE

Its own scheduling consultant, Mr. Peter Warner, undercuts CU's position. Warner testified that whether this event was perceived to be on critical path, an extension of time had been

administratively agreed-to by the Agency. Mr. Warner recognized the imprecise language used by HOK in its responses and evaluation of E-D's request for a time extension. There was only one date for Substantial Completion. E-D asserted that the louver wiring issue adversely affected a critical path activity, which is the same as saying the project is being delayed past the established date of Substantial Completion. HOK evidently disagreed with E-D's characterization of the criticality of the issue, but nevertheless stated "…one week for Phase I greenhouses" in its initial handwritten response. E-D reasonable relied on the HOK's direction and proceeded with the work. Only after 15 months had passed did HOK state its position that the Phase I greenhouses were not on the critical path at the time and therefore no time extension was warranted. The CPOC finds that E-D was reasonably entitled to rely on HOK's initial evaluation of its request for a time extension and to act under the presumption that the request for a time extension had been approved.

Inasmuch as this issue resulted in a change to the Contract Sum addressed in the resolution of Proposed Change Order 018, the CPOC finds E-D is entitled to an extension in the Contract Time of seven days and an increase in the Contract Sum of $12,740 for extended field overhead.

8. Change Order Request 43/Construction Change Directive 005 (Request for Resolution Tab J)

The Contract Drawings did not call for direct heating of the growing benches in the greenhouses. CU requested that steam heating pipes be installed under the growing benches by E-D.

CLAIMANT'S POSITION

E-D contends that the addition of the greenhouse under-bench heating system added work to E-D's scope and entitles E-D to a compensable time extension.

RESPONDENT'S POSITION

CU argues that by executing Construction Change Directive ("CCD") 005, E-D accepted the terms of the proposed change, including the proposed change in Contract Sum and Contract Time.

CPOC's ANALYSIS AND FINDINGS ON THE ISSUE

It is undisputed by the parties that CU requested that E-D furnish and install a system for providing heating to the growing benches in the greenhouses. [Exh. 25] It is undisputed by the parties that the system was installed and accepted. [testimony of Guedel and Kinard] It is undisputed by the parties that HOK, E-D and CU properly executed CCD 005 to increase the Contract Sum by $31,117 and the Contract Time by four days.

Under the Contract for Construction, ¶7.3, the role of a CCD within the overall administration of the Contract is defined in part as:

> ***7.3.1*** *A Change Directive is a written order prepared by the A/E on SE-420, "Construction Change Directive", signed by the Agency and A/E, directing a change in the Work and stating a proposed basis for adjustment, if any, in the Contract Sum or Contract Time, or both. When a Change Directive is estimated to exceed Agency Construction Certification, it shall be approved by the State Engineer. The Agency may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.*
>
> …
>
> ***7.3.5*** *A Construction Change Directive signed by the Contractor indicates the agreement of the Contractor therewith, including adjustment in Contract Sum and Contract Time or the method of determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.*

Further, the face of SE-420 contains the following affirmative statement immediately above the Contractor's signature:

> *Signature by the Contractor indicates the Contractor's agreement with the proposed basis of adjustment in the Contract Sum and Time set forth in the Construction Change Directive.*

Having heard no testimony to support a contrary determination, the CPOC finds that the parties are bound by the terms of the executed. Accordingly, the Contract Sum shall be increased by $31,117 (this amount is included in the CPOC's evaluation of E-D's claim for Modifications to Change Order 18, above) and the Contract Time shall be increased by four days.

9. COR 45–Head House Demolition and Phase II Site Work (Request for Resolution Tab K)

E-D began the demolition of the existing head house. CU subsequently directed E-D to stop work pending the resolution of concerns about asbestos and lead contamination in the structure. Those concerns were resolved and E-D was later released to proceed under revised directions. The only issue addressed at this time is E-D's entitlement to direct costs.

CLAIMANT'S POSITION

E-D seeks payment in the amount of $89,539 in direct costs for 23 days of standby equipment charges incurred by E-D's grading subcontractor while awaiting Clemson to resolve issues regarding the presence of asbestos and lead in the existing head house. [Exh. 26A]

In support of its request, E-D submitted a synopsis of the events surrounding this issue [Exh. 26B], supported by the testimony of Guedel, and argues that asbestos removal was both the responsibility of CU and a condition precedent to E-D's responsibility to demolish the existing head house, as stated in Technical Specification 02060, Building Demolition, [Exh. 26C], which includes the following:

> *1.7D Clemson University will remove all existing or encountered asbestos. If the Contractor suspects any asbestos is encountered, they are to contact the University and the University will be responsible for removing it in a timely fashion.* **[added by Addendum 3 to the Bidding Documents]**

E-D contends that E-D began demolition of the existing head house on February 2, 2001 because "[w]e had been told that the abatement program at the head house was complete and we could proceed with demolition,…". [Exh. 26D] On February 12, 2001, E-D received verbal direction to cease demolition of the existing head house. E-D characterizes the reason for the stop work order as the discovery that there was unabated asbestos present in the building.

On February 23, 2001, E-D acknowledged CU's direction to resume work and gave notice of a potential claim from the grading subcontractor. [Exh. 26E] E-D further states that its grading subcontractor then raised concerns regarding the presence of lead contamination in the debris. On March 1, 2001, CU issued a second stop work order pending resolution of E-D's concerns. [Exh. 26F]

On March 14, 2001 E-D acknowledged CU's direction to resume demolition. [Exh. 26G]

E-D seeks recovery in the amount of $89,539 for its equipment standby costs incurred by it while awaiting CU to resolve issues regarding the presence of asbestos and lead in the existing head house. [Exh. 26A]. E-D bases its claim on the unit prices defined in Schedule A in E-D's subcontract with C&C Grading, [Exh. 26H].

RESPONDENT'S POSITION

CU acknowledges that after E-D began demolition of the existing head house there was confusion regarding the presence of hazardous materials. [Exh. 26I] CU notes that on February 26, 2002, E-D incorrectly determined that the lead levels in the head house paint were excessive and stopped work. CU further notes that on the same day, the A/E directed ED to proceed and Clemson provided test results with no indication of harmful levels of lead-based paint. E-D rejected CU's test and demanded a more stringent test. CU performed more testing and those results substantiated CU's original findings. Accordingly, the A/E issued CCD 4 on March 14, 2001, stating its belief that some equipment was on standby for approximately seven days. [cumulative testimony of Keeshen]

CU disputes E-D's calculation of the costs incurred, noting that E-D refused several written requests from the A/E to meet and to discuss the direct costs, which the A/E had found to be based on excessive rates, included charges for dump trailers not on site, and that three pieces of equipment were on standby for only a portion of the requested time. CU further asserts that the jobsite daily logs indicated the work was completed during the time in question, including the site grading, storm sewer installed, and concrete slab preparation and installation. [Exh. 26I] CU believes that E-D is due a total of $5,980 in standby equipment costs.

CPOC's ANALYSIS AND FINDINGS ON THE ISSUE

It is clear from the record that on February 12, 2001 CU ordered E-D to stop work on the demolition of the Head House due to the presence of asbestos. It is equally clear from the record that the asbestos issue was resolved and CU directed E-D to resume work on February 23, 2001.

The second event involving hazardous materials is the issue of lead-based paint. On February 26, 2001, three days after receiving a directive to resume demolition, E-D apparently identified the presence of lead-based paint and stopped work. This is in accord with subparagraph 10.1.4 of the A201 (as amended):

> ***10.1.4*** *If reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop work in the affected area and report the condition to the Agency and A/E in writing. The Agency, Contractor and A/E shall then proceed in the same manner described in Subparagraph 10.1.2.*

CU immediately performed tests of the suspect material and determined that lead-based paint was not present. These results were reported to E-D and E-D was directed to resume work. [Exh. 26I] CU's response to E-D's concern appears to be in accord with subparagraph 10.1.5 of the A201 (as amended):

> ***10.1.5*** *The Agency shall be responsible for obtaining the services of a licensed laboratory to verify a presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to verify that it has been rendered harmless. Unless otherwise required by the Contract Documents, the Agency shall furnish in writing to the Contractor and A/E the names and qualifications of persons or entities who are to perform tests to verify the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the A/E will promptly reply to the Agency in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Agency. If either the Contractor or A/E has an objection to a person or entity proposed by the Agency, the Agency shall propose another to whom the Contractor and the A/E have no reasonable objection.*

Apparently E-D was dissatisfied with the first round of testing and demanded more sophisticated testing. The second round of testing confirmed the original findings, after which E-D resumed the Head House demolition work on March 14, 2001, some 16 days after it stopped work. Unlike the asbestos issue, where it is clear that CU ordered E-D to stop work, the lack of testimony and documentation leaves the CPOC less clear on the assignment of responsibility for the costs resulting from the second period of delay. E-D provided no testimony to establish a foundation for its belief that lead-based paint existed in the head house or why it felt the initial test results were unsatisfactory. Conversely, CU offered no explanation of why it took over two weeks to satisfactorily address E-D's concerns. While the CPOC does not believe a contractor should feel compelled to work in unsafe conditions, it is likewise true that an agency should not be held hostage to capricious and unfounded assertions that hazards exist.

That said, the fact remains that there were two delay events. The CPOC recognizes that good business judgment may dictate that a contractor should keep both labor and equipment at the ready to continue performance once a delay or disruption has resolved itself. In that event the contractor is entitled to recover the costs of idle labor and unused equipment, <u>subject to an</u>

evaluation of the contractor's efforts to mitigate those damages. Nevertheless, the contractor has the burden of proof of both its entitlement to damages and to the amount of those damages. [Exh. 5B, ¶4.3.1] The amount of damages allowable must reasonably approximate the actual cost to the contractor. A contractor has the same duty to minimize its costs in executing a change to the project (including a delay or disruption) as it has to mitigate its damages in the case of a breach. These costs include both labor and equipment costs, which will be discussed in turn.

Normally, a contractor is expected to discharge or reassign workers who cannot be used productively on a particular element of the work. Any decision to retain workers in an idle status must be supported by convincing evidence that either discharge or reassignment was impracticable or that retention was necessary to support other project needs. The costs of those idle workers will be offset by the amount of productive work performed by them during the period. Further, any recovery of labor costs must be supported by evidence by which the amount of idle time can be clearly distinguished from productive time.

The cost of idle contractor-owned equipment (there is no evidence in the record that would indicate that any of the grading subcontractor's equipment is rented) is compensated at either actual costs or at rates contained in equipment rate manuals. Subparagraph 7.36 of the A201 (as amended) defines the process as follows:

> ***7.3.6*** *If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the method and the adjustment shall be determined by the Architect on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, a reasonable allowance for overhead and profit. In such case, and also under Clause 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Subparagraph 7.3.6 shall be limited to the following:*
>
> ***.1*** *costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' or workmen's compensation insurance;*
>
> ***.2*** *costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;*
>
> ***.3*** *rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;*
>
> ***.4*** *costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and*

> ***.5*** *additional costs of supervision and field office personnel directly attributable to the change.*
>
> *The Contractor shall itemize the Change Directive into building components and shall use the labor, material and equipment unit costs as listed in the most current issue of Means Construction Cost Data. The Contractor shall also be permitted to add overhead and profit as shown in Subparagraph 7.1.5. Where the Contractor does not properly itemize as requested, the A/E shall provide the itemization and this shall be the basis for compensation.*

An allowance for standby ownership expense must be supported by evidence that the equipment for which compensation is claimed was reasonably and necessarily set aside for performance under the contract. In effect, the contractor must demonstrate that its decision to maintain the equipment in readiness was, in fact, prudent and reasonable under the specific circumstances before the CPOC will find that the Agency is obligated to pay the charges for that equipment.

The CPOC finds that by the greater weight of the evidence, E-D has failed to meet its burden of proof to its entitlement to the claimed standby equipment charges related to the demolition of the Head House.

1. E-D failed to provide any evidence that its grading subcontractor's personnel and equipment were in fact, idle during either of the two stop work periods.

2. E-D failed to provide any evidence that it acted to mitigate the costs of idle personnel and equipment as required.

3. E-D failed to provide any evidence that the personnel and equipment actually maintained in a standby status were required to remain so as a reasonable and prudent business decision.

4. E-D failed to quantify its claim as required by the terms of the Contract for Construction, and more specifically, did not segregate its labor and equipment costs.

5. E-D submitted a claim based on 23 days of idle time on several pieces of equipment at an hourly rate established in a contract between E-D and its grading subcontractor. The rates contained in this subcontract are inapplicable to the contract between CU and E-D, which clearly calls for either actual costs reasonably paid, or appropriate reference to cost guides published by R. S. Means Co.

Consistent with the above, the CPOC finds that the evaluation by the A/E, as documented in Exh. 26I is the more credible and hereby awards E-D the sum of $5,980 in standby equipment costs.

10. COR 46–Laboratory Roof Extensions (Request for Resolution Tab L)

CLAIMANT'S POSITION

While its RFR asserted that E-D was entitled to a 19-day extension, E-D acknowledges that it was undisputed by CU that E-D is entitled to a compensable four-day extension in the Contract Time for additional work performed by it in extending the laboratory roof at the penthouse. [Exh. 2, Tab E].

RESPONDENT'S POSITION

CU did not dispute E-D's characterization of the letter from Keeshen awarding increases in both Contract Sum and Time.

CPOC's ANALYSIS AND FINDING ON THE ISSUE

The CPOC notes with great dismay that the two parties chose to maintain and present an issue so utterly trivial for resolution at a hearing, especially in the face of E-D's July 23, 2002 written acceptance of the A/E's June 20, 2002 decision on the matter. [Exh 2, Tab E] This is not an example of two parties standing on principle, but rather squatting in peevish obstinacy.

The CPOC finds that E-D is entitled to a four-day extension in Contract Time. The increase in Contract Sum for this issue is a component of the final adjusted amount for Proposed Change Order 018.

11. COR 47–Stair to Laboratory Penthouse (Request for Resolution Tab M)

CPOC's ANALYSIS AND FINDING ON THE ISSUE

As noted in the Findings of Fact, E-D elected not to pursue this element of claim. The claim is accordingly dismissed.

12. COR 54–Steam Line Expansion Restraints (Request for Resolution Tab N)

During the course of construction of the steam lines in the Head House, E-D raised a concern about the need to provide restraints to absorb the forces generated by the expansion of the steam lines as they heated up.

CLAIMANT'S POSITION

E-D seeks an increase of four days in the Contract Time, noting that this extension was approved by the A/E. [Exh. 2, Tab G]

RESPONDENT'S POSITION

Although not conceding that this event resulted in a delay to the Project, CU had offered to increase the Contract Time by four days. [Exh. 2, Tab 14] CU offered no testimony to rescind it's A/E's evaluation of the issue.

CPOC's ANALYSIS AND FINDING ON THE ISSUE

Based on the very limited testimony offered by the parties, the CPOC finds the A/E's evaluation of the claim to be the more credible. Accordingly, the CPOC finds that the Contract Time shall be increased by four days. The costs for this change were addressed in the analysis of Proposed Change Order 018.

13. COR 86–Greenhouse Demolition Delay (Request for Resolution Tab O)

During the course of the Project, E-D began the demolition of the remaining original greenhouses. This work was stopped and ultimately removed from E-D's scope of work and self-performed by CU.

CLAIMANT'S POSITION

E-D contended in its RFR that it was entitled to an increase in the Contract Sum in the amount of $69,908 and a 22-day extension in the Contract Time. [Exh. 1, Tab O]

RESPONDENT'S POSITION

CU disputes E-D's entitlement to any adjustments in either the Contract Sum or Time. [Exh. 2, Tab 15]

CPOC's ANALYSIS AND FINDING ON THE ISSUE

E-D presented no testimony to support its entitlement to the costs summarized in the RFR. The CPOC has previously discussed the issue of awarding recovery on the basis of speculation or unsubstantiated assertions. The CPOC finds the A/E's evaluation to be the more credible. No damages are awarded. To the extent this issue impacted the completion of the Project, this will be discussed in the CPOC's overall evaluation of compensable delay.

14. Constructive Acceleration (Request for Resolution Tab P)

CPOC's ANALYSIS AND FINDINGS ON THE ISSUE

As noted in the Findings of Fact, E-D elected not to pursue this element of claim. The claim is accordingly dismissed.

15. Compensable Project Delay (Request for Resolution Tab Q)

The Date of Substantial Completion for the Project was established in the Notice to Proceed as September 29, 2001. [Exh. 11] The actual Date of Substantial Completion as determined by HOK was June 4, 2002. [Exh. 10] The Project was therefore completed 247 days later than originally planned. The discrepancy was partially resolved through approved Change Orders that, in the aggregate, added 17 days to the Contract Time [Exh. 9], leaving in dispute the responsibility for a total of 230 days of delayed completion.

CLAIMANT'S POSITION

E-D's amended claim summary [Exh. 12C] asserts its entitlement to a total of 163 days of compensable delay and some $617,000 in monetary damages. In support of this claim, E-D offered the testimony of Guedel, Taylor, Cullum and Mr. Gil Robinson, a scheduling expert. Mr. Robinson also submitted a report of his analysis of the project schedule. [Exh. 27]

In the initial RFR, E-D identified several elements of alleged delay. Three of these remain to be addressed by the CPOC. These three elements are:

1. Changes to the Greenhouse Heating System [Exh. 1, Tab H]: 126 days
2. Head House Demolition Delay [Exh. 1, Tab K]: 31 days
3. Greenhouse Demolition Delay [Exh. 1, Tab O]: 22 days

Robinson's report presents his evaluation of these delay events and concludes that E-D is entitled to a time extension of 144[27] calendar days, comprised of 122 days for the Head House delays and 22 days for the delayed demolition of the Phase II Greenhouses. The delay in the Head House demolition was apparently subsumed by the other two delay events. In support of the Robinson evaluation, E-D offered extensive testimony by Guedel, Taylor and Cullum, the mechanical subcontractor for the Project.

RESPONDENT'S POSITION

CU does not dispute the existence of the three events cited by E-D. CU does raise two counter arguments. CU first argues that E-D breached its contract with CU in not complying with various terms and provisions of the contract documents and CU is thereby relieved of any obligation to pay the claims asserted by E-D. While the CPOC sees no need to recite each of E-D's claimed breaches, they involve: (1) failures to comply with various contractual scheduling and reporting requirements as defined in Technical Specification 01311 [Exh. 5E]; (2) that E-D's analysis of the schedule uses an incorrect baseline schedule [Warner testimony]; and (3) the Robinson analysis was not based on an accurate "as-built" schedule.

As a second defense, CU contends that the Robinson analysis was flawed in numerous details, most tellingly in that it failed to consider the concurrent delays caused by E-D's failure to complete the Laboratory Building and other structures within the durations originally scheduled. Again, the CPOC sees little benefit in detailing these assertions, which are on the record.

CPOC's ANALYSIS AND FINDINGS ON THE ISSUE

If construction is that human activity which is most commonly characterized by mutual voluntary self-delusion, then the critical path method[28] ("CPM") of scheduling is surely how we give form to our delusion that we can control time and events. A CPM schedule consists of two facts (the contractual starting and ending dates) sandwiched around a complex and tangled skein of possible

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[27] The report, as submitted, shows a claim of 147 days. During testimony Robinson amended this number to 144 calendar days. The specific changes made by Mr. Robinson are indicated in the Exhibit as pen-and-ink changes initialed by the CPOC.

[28] *The Critical Path method is a management technique or discipline for assembling a large quantity of information in a format that allows the manager specifically to identify the time frame during which different activities collectively comprising a project must be performed to achieve a resulting project completion date. At the heart of this technique is a flowchart that depicts each of the "activities" comprising the project and the logical relationships that exist between those activities.* R. Bednar, *et al*.,

activities based on hunches, guesses, hopes and mandated milestones. Absent clear contractual language, those planned activities and the work they purport to represent are not promises, not commitments and not otherwise enforceable under the contract. Schedules do not make promises, people do. Schedules do not erect buildings, people do.

While CPM has been recognized as a beneficial and effective tool, it is no magic wand, and the CPOC will not automatically accept every schedule presented merely because the CPM technique is employed. The CPOC recognizes that a CPM analysis is only as credible as the underlying information and logic. The CPOC will decline to rely upon a CPM analysis where such information and logic are not shown by the submittor to be complete, accurate, and reliable and that the analysis is consistent with events that actually occurred on the job. To the extent a CPM schedule has any validity it must be based on a set of sound assumptions about the specific project. For this Project, the key assumptions were embodied in the phasing plan established by CU. [Exh. 28A-C] In summary, that plan was:

1. Demolish a portion of the existing Greenhouse structure and commence construction of the new Head House and the first set of new Green Houses. This was referred to as Phase I of the Project.
2. Until at least half of the Phase I Green Houses were ready for use, the contractor had to maintain the existing Head House and three (3) of the existing Green Houses in operation.
3. In parallel with, but independent of, the Head House/Green House construction, the contractor was to construct the new Laboratory Building.
4. When the Phase I Greenhouses were usable, CU would vacate the few existing Green Houses and the contractor could complete the demolition of the existing structures and complete the Phase II Green Houses and the Laboratory Building.

Although it was clear that there were two operational phases envisioned and that CU needed and intended to take partial occupancy of the Project, there was only one contractual date for Substantial Completion. Accordingly, E-D was free to arrange the multitude of subordinate activities as it saw fit, provided it delivered the completed Project within the Contract Time. While there was considerable dispute during the testimony of the witnesses as to the identity of

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Construction Contracting, page 622, (2nd ed. 1993) (discussing delays, suspension of work, and acceleration).

the “original schedule”, there was no dispute that E-D began the Project believing, without objection from CU, that the Project’s original schedule for completion was driven by the work associated with the construction of the Head House and the new Greenhouses. [Exh. 29A] As a consequence of this belief, the construction plan for the Laboratory Building was clearly arranged so as to fit within the available Contract Time without being a part of the Project critical path. That is, the original schedule contains no evidence of any interconnection between the activities in the Laboratory Building construction sequence and the remainder of the Project. Lacking this interconnection, any changes in the start, finish or duration of intermediate events in one construction path will have no apparent effect on the completion of the other path. Speaking broadly and simplistically, it was as if two separate projects were being constructed on a common site. For example, see [Exh. 29C], the June 2000 schedule update, which shows some logical connections between various activities in the overall construction schedule. There are no connections shown between the Laboratory Building activities and the remainder of the schedule.

E-D’s belief in the lack of interrelation between the two construction schedules quickly proved to be false as Taylor recognized that several mechanical and controls systems required for operation of the Head House and Greenhouses were also serving the Laboratory Building. [testimony of Guedel]. The precise timing of this realization is apparently unknown, but it was “early on”. [testimony of Guedel]. What did E-D do with this information? There was no testimony or evidence that E-D ever:

1. Recognized that a fundamental assumption of its work plan was invalid;
2. Recognized that the construction schedule needed to be reevaluated in detail;
3. Made any adjustments in its construction approach or resource allocation in response to the changed circumstances; or,
4. Communicated its realization to CU in the form of a revised schedule.

What is known is that it was not until late October of 2000 that E-D indicated to CU that the Laboratory Building had appeared on the critical path for the first time, but solely due to E-D’s laggardly performance in constructing the building. [Exh. 29B]

What does this say about the value of the Project Schedule? Typically the Contractor will use the Project Schedule to establish the reality and magnitude of alleged delays, including the specific delay event's projected consequences on the project completion date. The CPOC notes with emphasis that it is recognized in construction custom and case law that claims for excusable delay

are expected to be presented and evaluated on an individual basis, at the time the delay event is first recognized and in accordance with the notice and substantiation requirements of the Contract binding the parties. [testimony of Robinson]

Section 01311 of the Project's Technical Specifications [Exh. 5E] requires the Contractor to prepare and maintain current project schedules. The required formats are: (1) a preliminary "bar chart" schedule; (2) a detailed Gantt chart; and, (3) a detailed network of activities linked with appropriate logic to other activities.[29] E-D was required by contract to provide sub-schedules to define critical portions of the entire schedule and to perform and submit a regular analysis of the actual progress and the effects of changes and problems. The clear intent of Section 01311 is to define the Project Schedule as an effective tool of communication among E-D, CU and HOK.

Not only is there scant evidence that this intent was ever fulfilled, the testimony suggests that it was actively subverted by Guedel. E-D did not produce the monthly schedule updates with any acknowledgment of the existence of known delay issues or analysis of the real or potential impacts, despite the clear requirements of Technical Specification 01311 to do precisely that. [testimony of Robinson] According to Guedel's testimony, he took this approach to conceal potential delays from subcontractors who might be encouraged to file delay claims. The CPOC wonders just how unobservant Guedel believed his subcontractors to be if they could not observe the actual conditions of the construction site and compare those to an outdated bar chart schedule.[30] Guedel also stated repeatedly that he always hoped to find a way to complete the project on time. While hope in a positive outcome may be a laudable attitude, mere hope coupled with active avoidance of open discussion does little to fulfill a contractor's more fundamental obligation to communicate fully and truthfully to its client so that the client can make the best decisions possible using all available information.

Not to be outdone, CU also failed to follow the prescriptions of its own scheduling document. Specifically, HOK evaluated several claims for increased time and found that E-D was entitled to extensions. In none of the instances where time extensions were granted did E-D ever submit the

[29] In the jargon of CPM scheduling, these relationships are called “predecessor” or “successor”, depending on whether the activity in question must start or be completed before another activity can be started or completed.

[30] The CPOC is reminded of a old commandment about hiking in unfamiliar territory: "If you get lost while hiking in the woods, and your map doesn't agree with the terrain, believe the terrain." In this vein, the CPOC notes that Keeshen testified that he placed little reliance on the monthly schedule reports and the delay analyses provided by E-D to support its various claims. He placed far more reliance on his observations of actual site activities.

sort of detailed schedule analysis (called a “time-impact analysis” or “TIA”) in support of its claim for additional time. At the beginning of the Project the parties established an alternative procedure for addressing potential delays and for providing notice of potential delays. A document referred to as a Contractor’s Supplemental Instruction (“CSI”) was adopted as a standard document for the Project. Both CU and E-D acknowledged during the hearing that the CSI format was the written format agreed to, adopted and used by the parties to provide written communication and notice of changes to the Project. Specifically, the CSI was used by E-D to notify CU if a particular change in the work might result in the need for time extension. During the course of the Project, when E-D became aware of the actual duration of a potential delay, it then provided CU and HOK with support for its claim for the time extensions.

There was no evidence produced either in the form of documents or by testimony, that CU ever required the submission of TIAs as a basis for granting time extensions to E-D. All the evidence presented supports a conclusion that the parties ignored the operational requirements of Technical Specification 01311 during contract performance. Considering the conduct of the parties, the CPOC finds that to the extent that the Contract Documents called for a different procedure, such as TIAs, the parties mutually waived such requirements.

In considering all of the testimony of the various witnesses, the CPOC finds that the original Project Schedule as developed by E-D was fatally flawed by virtue of the unworkable construction phasing plan devised by CU. The CPOC further finds that the Construction Schedule, as implemented by the parties during the execution of the Work, and any statements made on the basis of its projections, are not credible with respect to the criticality or non-criticality of any specific event.

Despite having reached the conclusion that the Project Schedule is not a credible tool for evaluation of E-D’s delay claim, there remains E-D’s assertion that it is entitled to an increase in Contract Time to March 12, 2002 due to CU-caused delays and CU-initiated changes. Those delays and changes identified by E-D were the changes to the design of the Head House heating system and the delay in the demolition of the Phase II Greenhouses. While CU asserted various defenses, their main rebuttal is a claim of concurrent delay based on the late completion of the Laboratory Building. These events are shown visually on the drawing denoted Exhibit #B, located in Robinson’s Schedule Analysis report [Exh. 27]

As has been noted previously the Project phasing plan was founded in the incorrect premise that the construction of the Head House/Greenhouse complex was independent of the construction of the Laboratory Building. During contract performance the parties chose to treat the construction of the two as independent components despite the belated and general acknowledgement that they were in fact interrelated.[31] [Exh. 29D] So be it. The CPOC will not now fashion complexity where the parties most knowledgeable of the facts chose to ignore them. Delays and the consequences for them will be evaluated as if the construction of the two project components were in fact, independent.

When delay events are independent, the burden is on the party claiming damages from the one delay to provide a reasonable basis for apportioning the effects of the delay between the owner and the contractor. To establish its entitlement to damages, the claimant must demonstrate "but for" the actions of the other party, the contract would have been completed earlier. In this case, E-D is obliged to demonstrate, by the greater weight of the evidence, that absent the alleged Head House/Greenhouse delays, it would have completed the project earlier. After reviewing the testimony and evidence, most notably the testimony of Cullum, Robinson and Warner, the CPOC concludes that the delays in completion of the demolition of the existing structures, as well as the delay and disruptive effects of the extensive revisions to the Head House/Greenhouse mechanical systems were the root cause of the late completion of the Head House/Greenhouse complex. Having heard no testimony suggesting that E-D contributed in any material way to the length of the resultant delays, the CPOC further finds that CU is primarily responsible for these events and their consequences. Accordingly, the CPOC finds that E-D is entitled to an extension 136 calendar days in the Contract Time. This award is comprised of the 114 days between E-D's first notices to CU and HOK that there was a problem with the sizing of the gas supply to the Project and CU's issuance of the Construction Change Directive authorizing E-D to proceed with implementation of a revised design; and the 22 days of additional time taken by CU to complete the demolition of the existing Greenhouses so that the construction of the Phase II Greenhouses could proceed.

CU's claim of an offsetting concurrent delay in the construction of the Laboratory Building is denied. As has been noted previously, the construction schedule for the Laboratory Building was

[31] Kinard testified that he thought there were "two critical paths." While technically incorrect, he and Keeshen were correct in their view of the interrelated nature of the Project and that the construction schedule should have been to reflect this. It is unfortunate that neither side chose to understand the implications of this fact.

apparently developed by E-D to fit within the overall Contract Time based on the assumption that the construction of the Head House/Greenhouse complex defined the Project's critical path. When a significant owner-caused delay such as the revision to the Head House/Greenhouse mechanical systems occurs, the contractor is not automatically required to conduct all of his other construction activities according to the pre-delay schedule and without regard to the changed circumstances. It must be recognized that the occurrence of a significant delay will generally affect other work, as the contractor's attention turns naturally to overcoming the delay rather than slavishly following what appears to be a now-meaningless schedule for the Laboratory Building.

That said, while E-D was entitled to relax its construction schedule for the Laboratory Building, it was not free to finish the Laboratory Building whenever it saw fit. E-D is still bound to apply the resources necessary to complete the entire Project within the adjusted time. As a result of the CPOC's award of additional time in this and preceding sections of this decision, a total of 170 days of time has been added and the adjusted date of Substantial Completion is April 4, 2002. E-D claims that it achieved Substantial Completion of the Laboratory Building, and therefore the Project, on March 29, 2002, but CU denied this claim. That issue will be addressed in the section following.

16. <u>Substantial Completion Delay (Request for Resolution Tab R)</u>

E-D claims that it achieved Substantial Completion of the Project on March 29, 2002. [Exh. 30A] The A/E declared the Project to be substantially complete some 65 days later, on June 4, 2002. E-D seeks the recovery of $163,329 in extended general conditions.

<u>CLAIMANT'S POSITION</u>

E-D argues that HOK improperly refused to conduct a substantial completion inspection after receiving notice that the building was ready for inspection. In contrast to HOK's refusal the engineers responsible for the mechanical, plumbing and electrical work inspected the building and E-D proceeded with the completion of the punch list items for the MEP work [testimony of Guedel and Taylor and Exh. 30B] E-D asserts that these engineers deemed the building substantially complete,

E-D contends that to the extent the Laboratory Building was incomplete, it was because of CU's failure to clarify design issues or to complete its own work [Exh. 30C] E-D asserts that CU was

delaying substantial completion in order to mask the fact that CU was prevented from occupying the building until certain building code issues were resolved.

RESPONDENT'S POSITION

CU argues that HOK, the Project Architect, properly exercised its contractual authority to declare the Project substantially complete. CU contends that E-D's March 29, 2002 letter did not meet the contractual requirement that E-D prepare and submit to the A/E a "comprehensive list" of items to be completed or corrected. CU notes that the E-D Project Superintendent stated the Project was "more incomplete than your letter dated March 29, 2002 indicated." [Exh. 30D] Nevertheless, the A/E performed a preliminary inspection; found a substantial of discrepancies; and terminated the inspection pending E-D's development of a complete punch list. CU argues that no such list was submitted until E-D submitted a 16-page "comprehensive list" on May 28, 2002 to the A/E. Following receipt and inspection, the Architect declared substantial completion on June 4, 2002. Thereafter, a multi-page punch list was developed and forwarded to E-D two weeks later. [Exhs. 30E and 30F] E-D apparently felt a punch list of this length was not unusual for a project of this size and complexity. [testimony of Guedel]

CPOC's ANALYSIS AND FINDINGS ON THE ISSUE

A project should be considered substantially completed when it is capable of being used for its intended purpose.[32] In determining whether the project is capable of being used for its intended purpose, it is necessary to consider the specific provisions laid out in the contract. Thus, it is first necessary to identify the contract provisions defining the parties' expectations as to the Agency's reasonable use of its facility. A finding of substantial completion is only proper where an Agency has obtained, for all intents and purposes, all the benefits it reasonably anticipated receiving under the contract. The doctrine of substantial completion should not be carried to the point where the Agency is compelled to accept a measure of performance fundamentally less than had been bargained for. Likewise, neither should the contractor be denied a declaration of substantial completion on grounds other than the contractor's performance in accordance with his contractual obligations.

[32] See ¶9.8.1 of the General Conditions.

The contractual requirements for a declaration of Substantial Completion are contained in Technical Specification 01700 [Exh. 31] and in §9.8 of the *General Conditions of the Contract for Construction* (as amended) [Exhs. 5B and 5C]

E-D's attempt to join the issuance of a Certificate of Occupancy for the Laboratory Building and the fulfillments of its contractual responsibility to achieve Substantial Completion is misplaced. It is E-D's contractual responsibility to advance the contracted scope of work of the Project to the point that "…the Owner can occupy or utilize the Work for its intended purpose." [Exhs. 6B and 6C] The Owner's ability to "utilize" may include achieving a condition that allows others to perform the work necessary to fulfill the legal requirements for a Certificate of Occupancy.

In considering the totality of the testimony and evidence presented, in particular the results of the preliminary inspection performed and documented in Exh. 30D, the CPOC finds the actions and opinions of Mr. Keeshen to be the more credible. The CPOC concludes that the Laboratory Building was not substantially complete on March 29, 2002 and that CU may withhold liquidated damages as allowed by the Contract for Construction.

17. <u>Unabsorbed Home Office Overhead (Request for Resolution Tab S)</u>

E-D seeks compensation for home office overhead that was not recovered as a result of the delayed completion of the Project.

<u>CLAIMANT'S POSITION</u>

E-D presented a calculation of $241,885.50 of unabsorbed home office overhead [Exh. 1, Tab S]. This claim was subsequently modified during the hearing to $128,976. [Exh. 32]

<u>RESPONDENT'S POSITION</u>

CU rejects E-D's claim in total, relying on the terms of Subparagraph 4.3.8.1(c) of the Contract for Construction, which states:

> *(c) Monetary adjustments made for Agency-caused delays, if any, shall be limited to job specific costs. Adjustments shall not be allowed for wither indirect costs to the Project, including but not limited to, home office overhead and unrealized profit other than that allowed by Subparagraph 7.1.5.*

CPOC's ANALYSIS AND FINDINGS ON THE ISSUE

A substantial portion of the monetary value of the E-D claim is the recovery of unabsorbed home office overhead. For the reasons stated at the beginning of this opinion, under the heading "Changes in the Contract Sum Due to Delay," the CPOC finds that all claims for unabsorbed home office overhead barred by the express terms of the Contract for Construction. Even if the Contract had not barred the recovery of such costs, E-D failed to provide any credible evidence that the damages claimed were, in fact, caused by the claimed delay.

18. Interest Charges (Request for Resolution Tab T)

E-D's claim for interest is comprised of four elements: (1) interest on late payments; (2) interest on the withheld contract balances; (3) interest on various direct cost and delay claims; and, (4) interest on owner-caused delay in the declaration of Substantial Completion. [Exh. 12B] These elements will be addressed separately.

- ***Interest on Late Payments***

CLAIMANT'S POSITION

E-D contends that according to the express terms of the Supplementary Conditions of the Contract, E-D is entitled to interest on late payments from CU at the rate of 1% per month, accruing from 7 days after the date on which payment to Ellis-Don became due. In support of this contention, E-D refers to Subparagraph 9.7.2 of the Supplementary Conditions.[Exh. 5C]

E-D contends that CU and E-D expressly agreed in their contract to afford Ellis-Don the benefits bestowed on contractors by this Code section; the primary benefit being that Ellis-Don is entitled to a higher rate of interest than that normally allowed (1% per month) as opposed to the 8¾% per annum interest allowed under §34-31-20 of the S.C. Code of Laws for prejudgment interest. E-D argues that the imposition of interest becomes non-discretionary under §29-6-50.

E-D rejects CU's argument that in order for E-D to receive late payment interest pursuant to the provisions of §29-6-50, Ellis-Don must have first provided CU with specific notice of CU's duty to pay interest to E-D in each partial pay application submitted by E-D. E-D contends that the primary intent of the language relied on by CU is to provide the owner with notice that its payments are subject to the increased interest imposed by §29-6-50. E-D maintains that CU, by

virtue of referencing §29-6-50 in the Supplementary Conditions to the Contract, not only knew of this Code section, but also evidences its intent to be bound by it.

E-D contends that the express terms of §29-6-50 allow contractors and owners to control the application of this statute via provisions in a specific contract. E-D maintains that while the language of §29-6-50 may not expressly allow a contractor to contract around its obligation to provide notice, the implication is clear that parties subject to a construction contract may impose extra-contractual obligations, or waive portions of this statute. E-D believes that it should follow that parties, such as CU and E-D, can agree to waive the notice requirement of §29-6-50 by specifically referencing the statute in their contract.

In the alternative, E-D maintains that even if CU is correct in its argument that specific notice is required under §29-6-50, E-D is entitled to interest as provided for in §34-31-20 of the S. C. Code of Laws. This section provides that "[i]n all cases of accounts stated and in all cases wherein any sum or sums of money shall be ascertained and, being due, shall draw interest according to law, the legal interest shall be at the rate of eight and three-fourths percent per annum." E-D states that under §34-31-20(a), prejudgment interest is allowed on an obligation to pay money from time when, either by agreement of parties or operation of law, the payment is demandable, which assumes that sum of payment is "certain and capable of being reduced to certainty."

RESPONDENT'S POSITION

In its Reply to E-D's RFR, CU stated it's position that E-D is not entitled to receive any interest on late payments as a result of E-D's failure to give notice as required by §29-6-50 of the S.C Code of Laws, as amended. In the alternative, CU maintains that E-D is due, under the most favorable conditions, no more than $19,716.77 in interest for the late payment of seven pay applications. [Exh. 2, Tab 20].

CPOC's ANALYSIS AND FINDINGS ON THE ISSUE

Paragraph 9.7.2 of the Supplemental Conditions states :

> *The Agency shall pay interest on delayed certified progress payments to the Contractor* ***in accordance with*** *Section 29-6-50 of the S.C. Code of Laws.*
> **[emphasis added]**

The law applicable to the impositon of interest on late payments in construction contracts is reflected in §§29-6-30 through -50 of the S.C. Code of Laws, as amended. These provisions state:

29-6-30. Time and manner of making payment to contractors and subcontractors. ***When a contractor or a subcontractor has performed in accordance with the provisions of his*** *contract, the owner shall pay the contractor by mailing via first class mail or delivering* ***the undisputed amount of any pay request*** *within twenty-one days of receipt by the owner of any pay request based upon work completed or service provided under the contract, and the contractor shall pay to his subcontractor and each subcontractor shall pay to his subcontractor, within seven days of receipt by the contractor or subcontractor of each periodic or final payment, by mailing via first class mail or delivering the full amount received for that subcontractor's work and materials based on work completed or service provided under the subcontract.*

29-6-40. Grounds on which owner, contractor, or subcontractor may withhold application and certification for payment; contract terms unaffected. ***Nothing in this chapter prevents the owner, the contractor, or a subcontractor from withholding application and certification for payment because of the following: unsatisfactory job progress, defective construction not remedied, disputed work,*** *third party claims filed or reasonable evidence that claim will be filed, failure of contractor or subcontractor to make timely payments for labor, equipment, and materials, damage to owner, contractor, or another subcontractor,* ***reasonable evidence that contract or subcontract cannot be completed for the unpaid balance of the contract or subcontract sum, or a reasonable amount for retainage****.*

Nothing in this chapter requires that payments due a contractor from an owner be paid any more frequently than as set forth in the construction documents, nor shall anything in this chapter affect the terms of any agreement between the owner and any lender.

29-6-50. If ***a periodic or final payment to a contractor*** *is delayed by more than twenty-one days or if a periodic or final payment to a subcontractor is delayed by more than seven days after receipt of periodic or final payment by the contractor or subcontractor, the owner, contractor, or subcontractor shall pay his contractor or subcontractor interest, beginning on the due date, at the rate of one percent a month or a pro rata fraction thereof on the unpaid balance as may be due.* ***However, no interest is due unless the person being charged interest has been notified of the provisions of this section at the time request for payment is made.*** *Nothing in this chapter shall prohibit owners, contractors, and subcontractors, on private construction projects only, from agreeing by contract to rates of interest and payment periods different from those stipulated in this section, and in this event, these contractual provisions shall control, provided the requirements of Section 29-6-30 and this section are specifically waived, by section number, in conspicuous bold-faced or underlined type. In case of a willful breach of the contract provisions as to time of payment, the interest rate specified in this section shall apply.* **[emphasis added]**

By law, these provisions are applicable to contracts issued by public bodies,[33] and nothing in the Contract sought to modify these statutory obligations.

[33] §29-6-10(4) …"Owner" includes any state, local, or municipal government agencies, instrumentalities, or entities.

Read together, the CPOC holds that the provisions of the statute trigger a public owner's obligation to pay late payment interest on progress billings only if:

1. The amount payable is not in dispute for any of several reasons; and,
2. Notice of the owner's liability for late payment interest was given at the time a specific application for payment is made.

This conclusion is consistent with Panel precedents. In Appeal of McCarter Electric Co., Case No. 1992-21, the Panel provided the following explanation:

> *McCarter also asks the Panel to award McCarter interest on payments which it claims were unlawfully delayed by Clemson. (Record, pp. 16-17). The Panel denies McCarter's request because McCarter has not met the requirements of S. C. Code Ann. §29-6-10 et seq., which provides that, when a contractor has performed in accordance with its contract, the owner shall pay the contractor by mailing the undisputed amount of any pay request within twenty-one days of receipt of the pay request or pay interest beginning on the due date at a rate of one percent per month, provided the contractor has notified the owner of the provisions of this section at the time request for payment is made. An owner may withhold application and certification for payment on account of unsatisfactory performance or disputed work.*
>
> *The evidence is that Clemson withheld the payments in question because it found McCarter's work unsatisfactory. Further, McCarter's payment requests do not notify Clemson that McCarter would be seeking interest under section 29-6-50 as required by that section. Some of the invoices indicate an interest rate greater than the statutory rate. (See, e.g., Record, p. 124).*
>
> *The Panel holds that McCarter is not entitled to interest on the withheld amounts.*

Clearly, many of the items for which E-D seeks interest were in dispute. More importantly, E-D presented no evidence that it provided such notice on any of its invoices. Accordingly, E-D's claim for interest is denied.

CPOC SUMMARY FINDINGS

The following table summarizes the CPOC's findings with respect to the Contract Sum and Contract Time as revised through Change Order 17.

SUMMARY OF CPOC ADJUSTMENTS TO CONTRACT SUM AND TIME		
Issue	**Impact on Contract Sum ($)**	**Impact on Contract Time (days)**
Contract Sum and Time as amended through Change Order 17	**$ 23,977,433.00**	**617**
Less Funds Currently Withheld by CU	**($ 897,838.00)**	**N/A**
Direct Cost and Time Adjustments Awarded to E-D		
1. Greenhouse Lead Contamination (RFR Tab C)	**+ $ 27,300.00**	**+ 15**
2. Proposed Change Order 018 (RFR Tab E)	**+ $ 206,578.12**	
3. Heating System Revisions (RFR Tab H)	**Included in Change Order 018**	**See Item12**
4. Wiring for Greenhouse Louvers (RFR Tab I)	**+ $ 12,740.00**	+ 7
5. Greenhouse Under-Bench Heating System (RFR Tab J)	**Included in Change Order 018**	**+ 4**
6. Head House Demolition Delay (RFR Tab K)	**+ $ 5,980.00**	**See Item12**
7. Laboratory Roof Extensions (RFR Tab L)	**Included in Change Order 018**	**+ 4**
8. Added Stair to Lab Penthouse (RFR Tab M)	**Withdrawn by E-D**	**N/A**
9. Steam Line Expansion Restraints (RFR Tab N)	**Included in Change Order 018**	**+ 4**
10. Greenhouse Demolition Delay (RFR Tab O)	**+ $ 0.00**	**See Item12**
11. Constructive Acceleration (RFR Tab P)	**Withdrawn by E-D**	**N/A**
12. Compensable Project Delay (RFR Tab Q)	**+ $ 0.00**	**+ 136**
13. Substantial Completion Delay (RFR Tab R)	**+ $ 0.00**	**0**
14. Reduced Liquidated Damages (RFR Tab D)	**+ $ 170,000.00**	**See Item 12**
15. Reduced Punch List Holdback (RFR Tab F)	**+ $ 113,502.00**	**N/A**

SUMMARY OF CPOC ADJUSTMENTS TO CONTRACT SUM AND TIME		
Issue	**Impact on Contract Sum ($)**	**Impact on Contract Time (days)**
16. Reduced Cost-of-Correction for Defective Concrete Floors (RFR Tab G)	**+ $ 156,838.00**	**N/A**
17. Unabsorbed Home Office Overhead (RFR Tab S)	**+ $ 0.00**	**N/A**
18. Interest Charges (RFR Tab T)	**+ $ 0.00**	**N/A**
Final Contact Adjustments		
19. Adjusted Contract Sum and Time	**$ 23,773,320.12**	**787**

DECISION

It is the decision of the Chief Procurement Officer for Construction that the adjusted date of Substantial Completion of the Clemson University Agriculture Biotechnology/Molecular Biology Complex is April 4, 2002; that the adjusted Contract Sum is $23,773,320.12 and Clemson University is hereby directed to pay EllisDon Construction, Inc. an amount sufficient to increase the total payments from Clemson University to EllisDon Construction, Inc. to the full amount of the Contract Sum. Such payment shall be made in full within thirty days of the posting of this Order.

IT IS SO ORDERED

Michael M. Thomas

Michael M. Thomas, PE, C.B.O.
Chief Procurement Officer for Construction

January 11, 2005
Date

STATEMENT OF THE RIGHT TO APPEAL

The South Carolina Procurement Code, under Section 11-35-4230, subsection 6, states:

A decision under subsection (4) of this section shall be final and conclusive, unless fraudulent, or unless any person adversely affected requests a further administrative review by the Procurement Review Panel under Section 11-35-4410(1) within ten days of the posting of the decision in accordance with Section 11-35-4230(5). The request for review shall be directed to the appropriate chief procurement officer who shall forward the request to the Panel or to the Procurement Review Panel and shall be in writing setting forth the reasons why the person disagrees with the decision of the appropriate chief procurement officer. The person may also request a hearing before the Procurement Review Panel.

List of CPOC Hearing Exhibits

1. *Request for Resolution*, dated April 23, 2003, submitted by William E. Guedel, Senior Project Manager, EllisDon Construction, Inc.
2. *Response to Request for Resolution*, dated July 11, 2003, submitted by Robert Wells, P.E., Chief Facilities Officer, Clemson University.
3. Proposed Decision, *RE: EllisDon/Clemson University Matter, Agriculture Biotechnology/Molecular Biology Complex*, 04/02/2004.
4. Post-hearing Submission, *RE: Agriculture Biotechnology/Molecular Biology Complex*, 04/01/2004.
5. The Contract for Construction is comprised of:
   (A) AIA Document A101-87, *Standard Form of Agreement Between Owner and Contractor*, and the documents referenced therein;
   (B) AIA Document A201-87, *General Conditions of the Contract for Construction*;
   (C) *Supplementary Conditions-Rev. 1*, dated 2/1/99;
   (D) Addenda Nos. 1 through 4; and
   (E) *Memorandum for Record*, dated 12/6/99, Kinard to Chapman.
6. Letter from Michael P. Keeshen to William E. Guedel, dated 10/11/02, stating CU's decision that it was "too late" for E-D to address the remaining items of incomplete and defective work.
7. A series of five letters:
   (A) Miller (HOK) to Stelpstra (E-D), *RE: Clemson University Agricultural Biotechnology Facility Project*, dated 1/6/03;
   (B) Miller to Liberty Mutual Insurance Company, *RE: Clemson University Agricultural Biotechnology Facility Project*, dated 1/6/03;
   (C) Wells to Stelpstra, *RE: Clemson University Agricultural Biotechnology Facility Project*, dated 1/9/03;
   (D) Miller to Liberty Mutual Insurance Company, *RE: Clemson University Agricultural Biotechnology Facility Project*;
   (E) Wells to Lechner (Liberty Bond Services), *RE: Clemson University Agricultural Biotechnology Facility Project*, 2/6/03.
8. Two letters:
   (A) Letter from E-D (Stelpstra) to CU (Wells), dated 3/13/03;
   (B) Letter from Liberty (Maloney) to CU (Wells), dated 3/19/03.
9. SE-480, *Construction Change Order 017*, dated 10/9/02 by W. E. Guedel. HOK and CU did not sign the copy submitted for the record, but all parties agreed that the Change Order was properly executed. The OSE's own contract files include a fully executed copy of the Change Order.
10. AIA Document G704-78, *Certificate of Substantial Completion*, dated 6/19/02, signed by Michael Keeshen, HOK and W.E. Guedel, E-D.
11. SE-390, *Notice to Proceed*, dated 2/7/00, by Mark Allen Wright, Acting Director of Construction Services, Clemson University.
12. A series of three documents:
    (A) Facsimile transmission from Weinberg Wheeler, *Compensable Project Delay*, dated 2/3/04.
    (B) Facsimile transmission from Weinberg Wheeler, *Interest Calculation*, dated 2/4/04.
    (C) Facsimile transmission from Weinberg Wheeler, *Claim Summary*, dated 2/4/04.
13. Letter, Wells to Maloney, *RE: Clemson University Agricultural Biotechnology Facility Project*, dated 4/15/03.

14. A series of three letters:
    (A) Letter, Guedel to Kinard, *RE: COR 47.2 Claim for Time Extension and Extended Field Overhead*, dated 6/4/01.
    (B) Letter, Keeshen to Guedel, *RE COR47 Claim for Additional Money and Time*, dated 6/21/02.
    (C) Letter, Guedel to Keeshen, *RE: COR 47* [accepting A/E's determination in (B)], dated 7/23/02.
15. SE-480, *Construction Change Order* 005, dated 9/22/00.
16. SE-480, *Construction Change Order* 018, undated, with attached memorandum dated 10/4/02.
17. Subcontract Agreement between EllisDon Construction, Inc. and Quality Lawn Care & Landscaping, dated 2/7/01 and supporting accounting records (two pages).
18. SE-480, *Construction Change Order* 019, undated, with attached 10/4/02 memorandum from C. Douglas Kinard, III, AIA, Project Manager, Clemson University.
19. A series of three documents:
    (A) Email, Stelpstra to Wells, dated 11/20/02;
    (B) Letter, Stelptra to Wells, dated 1/8/03;
    (C) Letter, Stelpstra to Miller, dated 1/13/03.
20. A series of documents including:
    (A) Email, Keeshen to Guedel, dated 1/28/02;
    (B) Memorandum, Jones, dated 3/11/02;
    (C) Letter, Guedel to Keeshen, dated 3/29/02;
    (D) Memorandum, Jones, dated 4/9/02;Letter,
    (E) Guedel to Keeshen, dated 4/17/02;
    (F) Fax, Bianco to Guedel, dated 4/11/02;
    (G) Memorandum, Jones to Taylor, dated 4/23/02;
    (H) Memorandum, Taylor to Keeshen, dated 5/28/02;
    (I) HOK Interiors Punchlist (62 pages), dated 6/4/02, annotated;
    (J) Letter, Guedel to Keeshen, dated 6/26/02;
    (K) Letter, Keeshen to Guedel, dated 7/8/02;
    (L) Letter, Guedel to Kinard, dated 7/9/02;
    (M) Memorandum, Kinard to Guedel, dated 8/2/02;
    (N) Letter, Keeshen to Guedel, dated 8/29/02;
    (O) Letter, Guedel to Keeshen, dated 10/8/02;
    (P) Letter, Keeshen to Guedel, dated 10/11/02;
    (Q) Letter, Guedel to Keeshen, dated 10/15/02;
    (R) Letter, Keeshen to Guedel, dated 10/25/02;
    (S) Email, Keeshen to Wells, dated 11/21/02;
    (T) Email, Wells to Kinard, dated 11/27/02;
    (U) Email, Stelpstra to Wells, dated 11/26/02;
    (V) Email, Wells to Stelpstra, dated 12/4/02;
21. A series of nine work order summaries dated 02/18/03 through 10/31/03.
22. A series of documents including:
    (A) Technical Specification 03300, *Cast-In-Place Concrete*, 9/16/99;
    (B) ASTM E 1155-87, *Standard Test Method for Determining Floor Flatness and Levelness Using the F-Number System;*
    (C) Technical Specification 01400, *Quality Control*, 9/15/99;
    (D) Letter, Tipping to Larson, *Floor Surface Tolerances*, dated 1/14/04 and attached Tipping C.V.

(E) Letter, Keeshen to Guedel, RE: Concrete Floors, dated 4/12/02, and three sheets of photographs;
(F) BLE Reports, RE: *Floor Profile Measurements*, 10/24/00 (2 reports), 11/21/00 (2 reports) and 12/5/00.
(G) Letter, Mathews and Howard, to Logan, RE: *Floor Surface Tolerances*, dated 1/30/04;
(H) Email, Kinard to Wells, RE: *Cost of Floor Leveling*, dated 9/11/02, with 10 pages of supporting material;
(I) ACI 302.1R-89, *Guide for Concrete Floor and Slab Construction*;
(J) Series of letters between Keeshen and Guedel, 4/17/02 through 5/17/02, discussing E-D's efforts to repair non-conformances in Laboratory Building floors;
(K) Sketch, *Agricultural Bio Complex Lab Suite 142C*, dated 2/5/04.
(L) Letter, Howard and Mathews to Logan, RE: Floor Surface Tolerances, dated 1/30/04.

23. A series of three documents:
(A) RFI 021(M), dated 03/28/00, requesting confirmation of the capacity of the existing gas lines to support the additional demands.
(B) SE-420, *Construction Change Directive* 02, dated 07/20/00.
(C) Letter Keeshan to Guedel, *COR 10 Claim for Additional Time and Money*, approving certain cost increases for COR 10 and rejecting the claims for time. This letter was included in part in CU's Response to the RFR.

24. A set of three documents:
(A) CSI 233, RE: Wiring for Greenhouse Louvers, dated 3/12/01;
(B) COR 42, dated 10/18/01; and,
(C) Letter, Keeshan to Guedel. RE: COR 42, Louver Wiring, dated 6/14/02.

25. SE-420, *Construction Change Directive 005*, dated 3/20/01, and attached supporting communications.

26. A series of documents, including:
(A) E-D Construction Estimate dated 3/19/01 and supporting letter from C&C Grading;
(B) Letter, Guedel to Keeshen, *Compensable Project Delay*, dated 11/6/01.
(C) Technical Specification 02060, *Building Demolition*, dated 9/16/99, as amended;
(D) Letter, Guedel to Kinard, *Head House Demolition*, dated 2/13/01;
(E) CSI 219, dated 2/23/01;
(F) Conversation Record, Kinard to Taylor, dated 3/1/01 and letter, Guedel to Keeshen, dated 3/1/01, Subject: Head House Demolition;
(G) SE-420, *Construction Change Directive No. 4*, dated 3/14/01 and letter, Guedel to Keeshen, *CCD #4: Existing Head House Demolition*, dated 3/14/01;
(H) Subcontract Agreement 4108-6-2300-BC, dated 2/15/00; and,
(I) Letter, Keeshen to Guedel, *Existing Head House Demolition*, dated 6/19/02.

27. *Schedule Analysis Summary for the Agricultural-Biotech Facility in Clemson, SC*, dated 1/15/04, by Mr. Gil Robinson, Senior Consultant, 91Inc.

28. Three Contract Drawings:
(A) C106, *Demolition Plan (Phase I)*, dated 03/05/98;
(B) C107, *Demolition Plan (Phase I)*, dated 03/05/98; and,
(C) C108, *Demolition Plan (Phase II)*, dated 03/05/98.

29. Four scheduling documents including:
(A) Nine page Gantt chart schedule, data date 02/07/00, which E-D maintains in the "Original Planned" or Baseline schedule;

(B) Letter, Guedel to Kinard, RE: *Project Schedule October Update*, dated 10/24/00;
(C) Letter, Guedel to Kinard, RE: *Narrative Update on Project Schedule*, dated 06/2/00;
(D) Letter, Guedel to Keeshen, RE: *Headhouse Completion*, dated 10/23/01.

30. A series of six documents:
    (A) Letter, Guedell to Keeshen, *Substantial Completion of Laboratory Building*, dated 03/29/02.
    (B) Letter, Guedel to Wells, *Project Delays*, dated 05/06/02.
    (C) Letter, Guedel to Keeshen, *Substantial Completion*, dated 03/15/02.
    (D) Letter, Keeshen to Guedel, RE: *Lab Building Punch List*, dated 04/18/02.
    (E) Listing of incomplete work, *C.A.B.F. HOK Building Exterior*, dated 06/04/02. Four pages.
    (F) Listing of incomplete work, *C.A.B.F. HOK Building Interiors*, dated 06/04/02. Sixty-two pages.
31. Technical Specification, *Contract Closeout*, Clemson University Agricultural and Molecular Biology Complex, HOK Project No. 07-0559-00, dated 9/15/99.
32. Document titled *4108-Clemson-Eichleay Calculation*, undated.