Acceleration Claims on Engineering and Construction Projects

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Table of Contents

List of Figures

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1. INTRODUCTION

Time is money especially on engineering and construction projects. Because delays in the completion of the project usually result in increased owner, engineer, and contractor costs, the overall time of performance is vital to the financial success of the project. The importance of time is evidenced by the significant role played by CPM schedules, completion dates, and milestones in the bidding and awarding of engineering and construction contracts. The desire to minimize costs and the time of performance often causes the occurrence of acceleration.

This article discusses the following topics:[1]

- Types of Acceleration;
- Key Elements of Acceleration Required by the Courts;
- Acceleration Claims Outside of the United States;
- Notice Requirements;
- The Relevance of the Date When the Time Extension Is Given;
- Contract Provisions Associated with Acceleration;
- The Effect of a "No Damage For Delay" Clause on Acceleration;
- Identifying Acceleration Using the Project Schedules;
- Documenting Acceleration Evidence; and
- Acceleration Damages.

[1] For a more detailed legal analysis of acceleration claims and relevant case law, see Wickwire, Jon M., Driscoll, Thomas D., Hurlbut, Steven B., and Hillman Scott B., *Construction Scheduling: Preparation, Liability, and Claims*, Second Edition, § 7.10 Acceleration, Aspen Publishers, 2003; Cushman, Robert F., Carter, John D., Gorman, Paul J., and Coppi, Douglas, F., *Proving and Pricing Construction Claims*, Third Edition, § 4 Acceleration Claims, Aspen Publishers, 2011.

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2. TYPES OF ACCELERATION

There are three types of acceleration: directed acceleration, constructive acceleration, and voluntary acceleration.

Directed acceleration occurs when the owner or construction manager issues a specific order to its construction contractor under the contract provisions to 1) complete the project earlier than the originally scheduled completion date, 2) re-sequence the work and/or utilize overtime, additional shifts, and/or extra engineering or construction labor, supervision, or equipment to complete the base contract work plus additional or changed work within the original contract time,[2] or 3) re-sequence the work and/or utilize overtime, additional shifts, and/or extra engineering or construction labor, supervision, or equipment to make-up for contractor-caused delays that threaten the on-time completion of the project. These measures can result in costs being incurred that would not otherwise have been required.

Section 52.243-4 of the U.S. Federal Acquisition Regulations specifically permits the contracting officer to issue a change order directing acceleration in the performance of the work, and expressly requires a contractor to show that it notified the contracting officer that it regarded any other written or oral communication causing acceleration as a change order. The regulation provides, in relevant part, as follows:

> *(a) The Contracting Officer may, at any time, without notice to the sureties, if any, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract, including changes - (1) In the specifications (including drawings and designs); (2) In the method or manner of performance of the work; (3) In the Government-furnished property or services; or (4) Directing acceleration in the performance of the work.*
>
> *(b) Any other written or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided that the Contractor gives the Contracting Officer written notice stating (1) the date, circumstances, and source of the order and (2) that the Contractor regards the order as a change order.*

The AIA Document A201, Article 8.3 (2007) contains a similar provision, as do many private contracts.

[2] See, *e.g.*, *Ace Constructors, Inc. v. United States*, 70 Fed. Cl. 253, 281 (Fed.Cl. 2006); *Mactec v. Bechtel Jacobs*, 346 Fed.Appx. 59 (6th Cir. 2009) No. 08-5764.

For example, assume that the contract scope required the contractor to install 5,000 lineal feet of piping in 30 days. If the owner later required the contractor to install 5,000 feet in 20 days or 8,000 feet in 30 days, the contractor was accelerated. Similarly, if the engineer's contract schedule was to complete its detailed design in four months, and the owner required ready for construction drawings in three months, the engineer's work was accelerated. These acceleration directives may have been ordered for valid reasons such as to avoid the potential for seasonal delays, decrease the owner's overhead costs, achieve a market advantage by earlier production, avoid environmental penalties because the new facilities would reduce emissions, or to take advantage of lower equipment and material prices when there is a real threat of rising prices.

Constructive acceleration occurs when a construction contractor encounters excusable delay during its performance of the contract work, such as design changes, added scope, unusually severe weather, differing site conditions, acts of God, or owner-caused delays. Thus, the contractor is entitled to a time extension equivalent to the time of excusable delay as evidenced by an analysis of the impact on the critical path of the CPM schedule. The contractor is constructively accelerated when it is not granted the time extension. The contractor must then decide whether to accelerate its performance to meet the mandated completion date. If the contractor is compelled by such circumstances to accelerate its performance, it may be entitled to recover damages based on a theory of constructive acceleration.

Many cases involving claims for constructive acceleration have been litigated in the federal agency appeals boards and the United States Court of Federal Claims, and have involved construction or procurement contracts with the federal government. Constructive acceleration also been alleged in cases involving claims against private contractors, as well as state and local government entities.[3]

Voluntary acceleration occurs when a contractor unilaterally decides to accelerate its own work. In contrast to directed acceleration or constructive acceleration, in a voluntary acceleration, a contractor is not entitled to damages as a result. A contractor may voluntarily accelerate its work out of necessity, *i.e.*, to make up lost time for the contractor's own delays or to complete its own work.

To determine whether a constructive acceleration condition exists, one must look at the facts of each particular case. Generally, a request, as opposed to a directive, to accelerate is sufficient to constitute a constructive acceleration order. Most changes clauses are worded to give the owner or construction manager the power to accelerate the work, particularly if the contractor is falling behind due to its own performance problems. If an owner or construction manager instructs the

[3] See, *e.g.*, *Murdock & Sons Constr., Inc.*, 461 F.3d at 838; *McDevitt & Street Co. v. Marriott Corp.*, 713 F. Supp. 906, 915 (E.D. Va. 1989); *Envirotech*, 715 F. Supp. at 191; *Sherman R. Smoot Co.*, 736 N.E.2d at 72; *Fru-Con Corp. v. State of Illinois*, 50 Ill. Ct. CI. 50, 51 (Ill. Ct. CI. 1996); *Dept. of Transp. v. Anio Constr. Co.*, 666 A.2d 753, 756 (Pa. Commw. Ct. 1995).

contractor to finish earlier than the original contractual date, this instruction will be exactly the same as a change order issued pursuant to the changes clause and will usually not result in any dispute as long as the owner pays for the increased costs. However, where acceleration results from an owner or construction manager failing to grant an entitled extension of time and insists that the original completion date be met, then a dispute will often arise. Similarly, threats to assess liquidated damages or terminate for default for slow completion, in spite of an excusable delay, will also be deemed to imply an acceleration order. The contractor's personnel should take care not to voluntarily accelerate the work, as such actions are an owner's or construction manager's defense to an acceleration claim.[4]

If an owner's or construction manager's statements do not constitute an express direction to accelerate, the contractor should immediately confirm in writing its understanding that the owner or construction manager is effectively directing acceleration of the work and that the contractor will comply with its understanding of those directions under protest and request compensation for its acceleration costs. While such a confirmation may not necessarily be treated as conclusive proof of the nature of the owner's or construction manager's order, it will help protect the contractor's interests.

Acceleration claims must establish a factual base that the owner or construction manager directed acceleration or constructively required acceleration. A mere request by the owner or construction manager for additional information on a requested time extension or for an updated CPM schedule is not an order to accelerate. Contractor's claims for acceleration have been denied because the owner did not direct it to adhere to the original construction schedule.[5] Key words that are associated with acceleration include overtime, extra shift, longer work day/week, schedule change, early completion, denial of time extension, insufficient time extension, excusable delay, work efficiency, slow down order, and speed up.

A related condition called deceleration can also be experienced on the project. Deceleration occurs if the construction contractor is directed in writing or constructively to slow its job progress. Many of the same considerations that apply to acceleration are also applicable to deceleration. If overall project delay results from deceleration, the contractor's extended overhead costs may be recoverable.

Acceleration claims almost always occur on projects that have already experienced excusable delays. Thus, an acceleration claim is typically included with a delay claim. If excusable delays occur that would warrant an extension of time, or an extension of time and compensation, an owner or construction manager may choose to direct completion of the work on an accelerated basis rather than extend the contract date. By directing the contractor to accelerate, the owner or

4 See, *e.g.*, *Mobile Chem. Co. v. Blount Bros. Corp.*, 809 F2d 1175 (5th Cir. 1987).
5 See, *e.g.*, *Fuerland-Werkstatten Gmbh*., ASBCA 32,970, 87-3 BCA ¶ 20,012.

construction manager assumes the risk that the acceleration costs incurred by the contractor will be less than the costs associated with delayed completion of the project. Such a direct acceleration of work will entitle the contractor to an increase in the contract sum.

3. KEY ELEMENTS OF ACCELERATION REQUIRED BY THE COURTS

Absent a direct or written order, it often becomes difficult to ascertain if a contractor has been constructively accelerated. Such uncertainty often results in a dispute. Courts traditionally examine five key elements to determine if a contractor's work has been accelerated:

1. Excusable Delay: The contractor has encountered delays determined to be unforeseeable and beyond its control for which it is entitled to a time extension.
2. Request for Time Extension: The contractor specifically requested a time extension from the owner or construction manager according to the contract provisions and in a timely manner.
3. Denial of Time Extension: The owner or construction manager issued an order denying the contractor's request.
4. Acceleration Order: The owner's or construction manager's expressed or implied actions directed the contractor to overcome the delay and complete the work within the original performance period.
5. Incurred Costs: The contractor must demonstrate that it attempted to accelerate performance and, in doing so, incurred increased costs or damages due to the accelerated performance effort.

If these elements are proven, the contractor may be entitled to recover the costs that it incurred in accelerating its performance if it can demonstrate its costs.[6]

Time extensions should be granted only for excusable delays that can be shown to have impacted the current critical path of the schedule. Excusable delays can be delays that are caused by the owner, such as changes to the scope of work, delays for which the owner assumes responsibility, such as differing site conditions, or *force majeure* delays defined by the contract, which can include unusually severe weather, strikes, or government actions. Therefore, owners or construction managers should contractually require the contractor to update the CPM schedule on a regular basis. Furthermore, to prove delays, the contractor should have updated the CPM schedules on a regular basis, even if no contractual obligation to do so exists.

Recovery of acceleration costs attributable to making up lost time resulting from excusable delays requires proof that the delay was unforeseeable and, in some material way, beyond the

[6] *M.S.I. Corp.*, GSBCA 2429, 68-2 BCA ¶ 7377. Also see *Norair Eng'g Corp. v. United States*, 666 F.2d 546 (Ct. C1. 1981), where the court held that for an acceleration claim to be successful the contractor must establish three elements: (i) that an excusable delay had occurred; (ii) the contractor was ordered to accelerate; and (iii) the contractor had actually accelerated and incurred costs.

control of, or without the fault or negligence of the contractor. For example, excusable delays include, but are not limited to, the following:

- Labor disputes;[7]
- Changes in scope;[8]
- Requirements to supply an alternative supply of material;[9]
- Acts of God and unusually severe and unforeseeable weather conditions;[10]
- Differing site conditions;[11]
- Design changes;
- Owner's failure to coordinate multiple prime contractors;[12]
- Owner's failure to provide adequate access to the site;[13]
- Owner's failure to provide the right of way;[14]
- Suspension of the contractor's performance;[15]
- Interference by the owner in the contractor's performance;[16]
- Third party delays under the owner's control, such as the architect or the engineer;[17] and
- Other causes beyond the contractor's control.

Acceleration costs incurred to recover from nonexcusable delays are noncompensable. Nonexcusable delays are delays that are the responsibility of the contractor, or delays for which the contractor assumed the risk, such as:

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7 See, *e.g.*, *Contracting and Material Co. v. City of Chicago*, 20 Ill. App. 3d 684, 692, 314 N.E.2d 598, 604 (1974), rev'd on other grounds, 64 Ill. 2d 21, 349 N.E.2d 389 (1976).

8 See, *e.g.*, *Wallace Process Piping Co. v. Martin Marietta Corp.*, 251 F. Supp. 411, 418 (E.D. Va. 1965); *J&K Plumbing & Heating Co. v. State*, 235 A.D.2d 751 (N.Y. App. Div. 1997).

9 See, *e.g.*, *Elte, Inc. v. S.S. Mullen, Inc.*, 469 F.2d 1127 (9th Cir. 1972).

10 *Iconco*, 224 Ct. Cl. 692. 27 Cont. Cas. Fed. (CCH) ¶ 80,392 (1980). Also see *Edge Construction Company, Inc. v. United States* (Fed.Cl. October 29, 2010), No. 06-635C; *Fraser Constr. v. United States*, 384 F.3d 1354, 1360-61 (Fed. Cir. 2005); *Constructors-Pamco*, ENGBCANo. 3468, 76-2 BCA ¶11,940 (1976).

11 See, *e.g.*, *Transpower Constructors v. Grand River Dam Auth.*, 905 F2d 1413, 1418 (10th Cir. 1990).

12 See, *e.g.*, *Eric A. Carlstrom Constr. Co. v. Independent Sch. Dist. No. 77*, 256 N.W.2d 479 (Minn. 1977).

13 See, *e.g.*, *Elte, Inc. v. S.S. Mullen, Inc.*, 469 F.2d 1127 (9th Cir. 1972).

14 See, *e.g.*, *Anderson Development Corp. v. Coastal State Crude Gathering Co.*, 543 S.W.2d 402.

15 See, *e.g.*, *T.C. Bateson Constr. Co. v. United States*, 319 F2d 135 (Ct. Cl. 1963); *Wallace Process Piping Co. v. Martin Marietta Corp.*, 251 F. Supp. 411, 418 (E.D. Va. 1965).

16 See, *e.g.*, *Housing Auth. V. E.W. Johnson Constr. Co.*, 264 Ark. 5243, 573 S.W.2d 316 (1978).

17 See, *e.g.*, *Norair Eng'g Corp. v. United States*, 666 F.2d 546 (Ct. C1. 1981).

- Normal and foreseeable weather conditions;[18]
- Subcontractor-caused delays;[19]
- Improper management and coordination of the work;
- Slow mobilization by the contractor;[20]
- Delays in obtaining equipment or material;[21] and
- Defective and nonconforming work.

If the contractor wants to hold the owner or construction manager liable for the cost of the acceleration, the contractor should never accelerate without first requesting a time extension. If the contractor accelerates without first requesting a time extension, the owner or construction manager may reply to the contractor's request for payment of acceleration costs by saying that the contractor did not have to accelerate because the owner would have granted a time extension if the contractor had only asked. The owner or construction manager may refuse to pay the acceleration costs on the basis that the acceleration was unnecessary.

After requesting a time extension but before accelerating, a contractor should notify the owner or construction manager that it will accelerate its work to attempt to overcome the owner's or construction manager's delays. This notice is extra insurance to prevent the owner or construction manager from later arguing that the acceleration was not necessary because it would have granted a time extension or that the owner thought the contractor was accelerating to compensate for its own delays.

The owner or construction manager can respond to the request for time extension either by denying it or by ignoring it. If the owner or construction manager denies the time extension request, the contractor can accelerate to attempt to meet the un-extended completion date and claim acceleration costs against the owner or construction manager.

If the owner or construction manager ignores the time extension request, the owner's or construction manager's silence is the equivalent of a denial because an owner or construction manager that does not extend the completion date is telling the contractor that the project must be completed by the un-extended date.

Regarding an order to accelerate, owners or construction managers should avoid statements or actions that may be considered an implied order to accelerate, since they incur the same legal

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[18] See, *e.g.*, *McDevitt & Street Co. v. Marriott Corp.*, 713 F. Supp. 906, 915 (E.D. Va. 1989); *Hemphill Contracting Co.*, 94-1 BCA (CCH) ¶ 26,491 (ENGBCA 1993).

[19] See, *e.g.*, *James Walford Constr. Co.*, GSBCA 6498, 83-1 BCA (CCH) ¶ 16,277, 25 Gov't Cont. Rep (CCH) ¶ 196 (1983).

[20] See, *e.g.*, *Burns v. Hanover Ins. Co.*, 454 A.2d 325 (D.C. 1982).

[21] See, *e.g.*, *Malor Constr. Corp.*, IBCA No. 1688-83, 84-1 BCA (CCH) ¶17,023 (1984).

consequences as a directed order to accelerate.[22] Contractors must notify owners or construction managers in writing of their efforts to accelerate and demand a response. Compulsion to complete performance is a necessary component of acceleration. Acceleration performed absent an owner or construction manager directive may be deemed "volunteer" work, which is not compensable.[23]

Regarding the fifth key element above, the key word is "attempted." The law has evolved so that the costs to be reimbursed are not related to the achievement of the original or, indeed, to any earlier-than-entitled completion date. The contractor only has to demonstrate that it attempted to accelerate and incurred increased costs as a result of its reasonable attempt.[24] Thus, if a contractor fails to meet the original contract completion date but completes construction before a valid, adjusted contract completion date, it may still have a valid claim for constructive acceleration.[25]

The text, *Government Contract Changes*, by Ralph C. Nash, Jr., explains this concept:

> *At the outset, it should be stated that the central purpose of the equitable adjustment for acceleration is no different than for any other change—to place the contractor in the same position he would have been in, had it not been for the acceleration order. There is no need to actually make up the time as long as the contractor uses reasonable judgment in incurring the costs. Hence, the inquiry is aimed at what costs were incurred rather than what was the result of the effort.*[26]

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22 See, *e.g.*, *William Lagnion*, ENGBCA 3778, 78-2 BCA ¶ 13,260.
23 See, *e.g.*, *Superior Asphalt and Concrete Co.*, AGBCA No. 75-142, 77-2 BCA ¶ 12,851.
24 See, *e.g.*, *Natkin & Co. v. George A. Fuller Co.*, 347 F. Supp. 17 (W.D.Mo. 1972), reconsidered, 626 F. 2d 324 (8th CIR. 1980).
25 See, *e.g.*, *Mobile Chem. Co. v. Blount Bros. Corp.*, 809 F2d 1175 (5th Cir. 1987).
26 Nash, Ralph C. Jr., *Government Contract Changes*, ¶ 18-15, Federal Publications Inc., 1989.

4. ACCELERATION CLAIMS OUTSIDE OF THE UNITED STATES

As to jurisdictions other than the United States, it would appear that although acceleration claims exist, they are rarely referred to as such. Rather, they are based on arguments related to breach of contract and damages are requested because of that breach, or increased costs are pursued simply as a variation.

An English commentator has criticized constructive acceleration as follows:

> *… a development of what, in any event, is a largely jurisdictional and fictitious doctrine of "constructive change orders" … developed by the Boards of Contract Appeals, and is not founded on any consensual or quasi-contractual basis which would be acceptable in English or Commonwealth Courts."*[27]

The Society of Construction Law (SCL) takes an idealistic approach to actions that may require acceleration not provided for in the contract:

> *Acceleration*
> *Where the contract provides for acceleration, payment for the acceleration should be based on the terms of the contract. Where the contract does not provide for acceleration but the Contractor and the Employer agree that accelerative measures should be undertaken, the basis of payment should be agreed before the acceleration is commenced. It is not recommended that a claim for so-called constructive acceleration be made. Instead, prior to any acceleration measures, steps should be taken by either party to have the dispute or difference about entitlement to EOT resolved in accordance with the dispute resolution procedures applicable to the contract (see Guidance Section 1.18).*[28]

In addition, the SCL provides:

> *1.18.4 Where acceleration is instructed and/or agreed, the Contractor is not entitled to claim prolongation compensation for the period of Employer Delay avoided by the acceleration measures.*

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[27] Duncan Wallace, Ian, QC, (ed.) *Hudson's Building and Engineering Contracts* (11th edn, 1995, Sweet & Maxwell, p. 909 as referenced by Pickavance, Keith, *Delay and Disruption in Construction Contracts*, Third Edition, T&F Informa (UK) Ltd., 2005, p. 390.

[28] "Delay and Disruption Protocol," Society of Construction Law, Oxford, October 2002, p. 9.

> *1.18.5 Where a Contractor accelerates of its own accord, it is not entitled to compensation….*[29]

If there is not an acceleration provision in the contract, a collateral agreement may be made to accomplish the required acceleration.[30]

Regarding directed acceleration, English courts have found that the contractor who fails to accelerate upon proper instruction may be liable for actual loss as a result of the delay to the completion date over and above the contractually stipulated liquidated damages.[31]

The SCL defines constructive acceleration as, "*Acceleration following failure by the Employer to recognize that the Contractor has encountered Employer Delay for which it is entitled to an extension of time and which failure required the Contractor to accelerate its progress in order to complete the works by the prevailing contract completion date. This situation may be brought about by the Employer's denial of a valid request for an EOT or by the Employer's late granting of an EOT.*"[32] However, the SCL states that constructive acceleration is, "*not (currently [as of October 2002]) a recognised concept under English law*."[33]

In one case in Canada regarding acceleration damages, the owner would pay nothing for acceleration and also refused to grant extensions of time where these were entitled. Among other things, the trial judge stated:

> *If he (the owner) should decide against an extension of time, in a clear case of owner-caused delay, the result is that the Contractor remains legally bound to complete by the Contract dates. That may involve acceleration — at additional cost — to overcome the delay. In such circumstances, fair treatment would require the Owner to pay that extra cost….*[34]

The trial court found in favor of the contractor and made an award on a *quantum meruit* basis. The case was appealed and although the court of appeals overturned the *quantum meruit* basis of the award, it approved the holding that the contractor was entitled to acceleration damages stating:

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29 *Id.*, p. 31.
30 See, *e.g.*, *John Barker Construction Ltd. v. London Portman Hotel Ltd.* (1996) 83 BLR 31.
31 See *Masons v. W D King*, [2003] EWHC 3124 (TCC) at 62-68.
32 *Id.*, p. 53.
33 *Id.*
34 *Morrison-Knudsen Company v. B.C. Hydro & Power Authority*, 1978, 85 D.L.R., 3rd 186 (BCCA).

> *If Hydro caused the contractor to speed up its work to overcome owner-caused delays, and we think the trial judge properly found that to be the case, then the additional cost attributable to acceleration can be assessed.…*
>
> *It may be that the award will be remarkably similar to the result of the quantum meruit and that some rather arbitrary figures will have to be used, but difficulty of assessment does not justify abandoning the attempt and making an award on another basis.*[35]

Thus, the court of appeals found that acceleration damages were to be paid and were to be treated as any other damages.[36]

Similar to rulings by US courts, a UK case illustrates the contractor's entitlement to recover its acceleration costs if it is denied a time extension request.[37] Micafil refused to grant a time extension to the contractor, Motherwell, who had incurred excusable delays. The contractor then accelerated by employing extra labor and working night shifts and claimed its acceleration costs. The court held that Micafil had refused to grant a time extension that Motherwell was entitled to receive and thus Motherwell had accelerated. Motherwell proved that the works would have finished late but for the acceleration measures it employed. The court was satisfied that Motherwell notified Micafil of the actual and projected extra acceleration costs either prior to or at the time of taking the necessary measures. Thus, the court held that Motherwell was entitled to its acceleration costs.

English courts have found that in the absence of express words to overcome the effects of an owner-caused or excusable delay, there is no obligation on the part of the contractor to do so.[38]

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35 *Id*.

36 Also see *W Stevenson (Western) Ltd. v. Metro Canada Ltd.*, (1987) 27 Const LR 113 (BCS Ct.).

37 See *Motherwell Bridge Construction Limited v. Micafil Vakuumtechnik* (2002) 81 Con LR 44; (220) CILL 1913 at 581-582.

38 See *Ascon Contracting Ltd. v. Alfred McAlpine Construction Isle of Man Ltd.* (1999) 66 Con LR 119.

5. NOTICE REQUIREMENTS

The contractor must give timely notice of any excusable delay as specified within the terms of the contract.[39] The requirement that a contractor gives notice to the owner and requests an extension of time is excused only if:

1. The acceleration was directed.[40]
2. The owner has indicated that no time extensions will be permitted.
3. The owner has waived the need for notice.

The waiver may be sufficient if the owner or construction manager has (1) informed the contractor that no time extensions will be considered until after the contract completion date, (2) informed the contractor that the construction must be completed by the contract completion date, or (3) indicated that no delays in scheduling will be tolerated.[41] However, in the absence of such conditions, a failure to comply with a contractual provision requiring notice may preclude the contractor from recovering on its acceleration claim.[42]

The owner or construction manager cannot be held to have constructively accelerated the work if the opportunity to grant a time extension was not given. In addition, the notice permits the owner or construction manager to take alternative action in order to avoid or reduce associated acceleration costs. If the owner or construction manager is unresponsive to a request for a time extension, the contractor should notify the owner or construction manager in writing that failure to respond within a specified time period will be construed as a directive to accelerate.

Failure to provide proper notice may invalidate an otherwise meritorious acceleration claim.[43] Even if the contractor is entitled to a time extension due to an excusable delay, the contractor's failure to notify the owner may invalidate a constructive acceleration claim, and the contractor's actions to accelerate may be deemed voluntary.[44]

For example, in finding that the contractor's notice of its intention to file a claim for its acceleration efforts was not timely for all of its acceleration efforts during the contractual period, the court stated:

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39 See, *e.g., Wallace Process Piping Co. v. Martin Marietta Corp.*, 251 F. Supp. 411, 418 (E.D. Va. 1965); *Johnson Controls, Inc. v. National Valve & Mfg. Co.*, 569 F. Supp. 758, 760, 761 (E.D. Okla. 1983) ; *Hemphill Contracting Co.*, 94-1 BCA (CCH) ¶ 26,491 (ENGBCA 1993).

40 See, *e.g., Norair Eng'g Corp. v. United States*, 666 F.2d 546, 548 n.5 (Ct. C1. 1981).

41 See, *e.g., Corbetta Constr. Co.*, PSBCA, 77-2 BCA (CCH) ¶ 12,669 (1977).

42 See, *e.g., Rogers Excavating*, AGBCA No. 79-180-4, 83-2 BCA (CCH) ¶ 16,701 (1983); *Johnson Controls, Inc. v. National Valve & Mfg. Co.*, 569 F. Supp. 758, 760, 761 (E.D. Okla. 1983).

43 See, *e.g., Fru-Con Construction Corporation v. United States*, 43 Fed. Cl. 306 (1999).

44 See, *e.g., Johnson Controls, Inc. v. National Valve & Mfg. Co.*, 569 F. Supp. 758, 760, 761 (E.D. Okla. 1983) .

> *As an initial matter, we agree with the Court of Appeals that AMEC first provided VDOT with written notice of its intention to file a claim for its acceleration efforts in April 2004. However, this notice was not timely for all of AMEC's acceleration efforts during the contractual period. The notice was not timely for AMEC's acceleration efforts prior to April 2004 because the notice was given after the work that comprised the acceleration began, and after the occurrence of the claim because the parties' dispute regarding the compensability of AMEC's acceleration efforts arose before April 2004.*
>
> *Nevertheless, AMEC's notice is timely for its claim for acceleration efforts after April 2004 because the notice was given prior to acceleration efforts made after that time. Therefore, AMEC's notice was timely under Code § 33.1-386 for acceleration efforts after April 2004 because it was given at the beginning of the work upon which AMEC's claim was based.*[45]

Such decisions by the courts are based on the owner's right to investigate the relevant information and mitigate the potential cost impact before additional costs are incurred.

Defenses most commonly employed by contractors to circumvent failure to provide notice are:

1. The owner's position or options were not prejudiced by lack of notice.[46]
2. The specifications were defective resulting in a constructive change not subject to the notice requirements set forth in the changes clause.[47]
3. The owner "knew or reasonably should have known" that a claim would be forthcoming.[48]
4. The owner had constructive notice even though a formal notice letter was not written and provided to the owner.

In both the first and second of these potential defenses, the matter of the owner being prejudiced by lack of notice bears consideration. Constructive changes, even if caused by defective specifications, will often be subject to the prejudice argument prohibiting contractor recovery for costs that may have been avoided or mitigated had the contractor given timely notice.

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45 *Commonwealth v. AMEC Civil, LLC*, 280 Va. 396 (2010) 699 S.E.2d 499.

46 See, *e.g.*, *C. H. Leavell & Co.*, ASBCA No. 16099, 73-1 BCA (CCH) ¶ 9,781 (1973).

47 See, *e.g.*, *John F. Cleary Construction Co.*, GSBCA No. 3158, 71-2 BCA (CCH) ¶ 9,127 (1971); *Kelly Electric, Inc.*, DOTCAB No. 71-34, 71-2 BCA (CCH) ¶ 9,097 (1971); *Chaney & James Construction Co. v. United States*, 421 F.2d 728 (Ct. C1. 1970).

48 See, *e.g.*, *Vanderlinde Electric v. City of Rochester*, 54 A.D.2d 155, 388 N.Y.S.2d, 388 (1976).

6. THE RELEVANCE OF THE DATE WHEN THE TIME EXTENSION IS GIVEN

An issue that frequently becomes contentious in constructive acceleration claims is the date by which entitled time extensions have to be given. Time extensions most often relate to damages for delay, either in the form of liquidated damages that could be assessed by the owner if the contractor does not perform by the contractual completion date or extended home office and field general conditions costs that would be incurred by the contractor. Therefore, the date at which the time extension is given will be relevant when a constructive acceleration situation exists.

Time extension must be granted in a timely manner such that they can be incorporated into the progress schedule and the timing of the remaining work can be coordinated with the contractor's site supervision. If a time extension is not granted for excusable delay in a timely manner, the CPM schedule cannot be revised to reflect the excusable delay. Thus, the progress schedule may show that the contractor is behind schedule when, in fact, the contractor may be on or ahead of schedule if the excusable delay was properly reflected in the schedule. Also, if an owner or construction manager fails to grant an extension of time and continues to insist on completion per the original completion date, a late time extension will be of no benefit to the contractor who has already incurred costs accelerating in an attempt to meet the original completion date.

This situation, at least for the United States, is well described in government contracting, as follows:

> *This rule clearly places the contractor in a difficult position, however, if it cannot find out whether the Contracting Officer intends to grant the time extensions it has requested, it has no basis for making a rational decision on whether to accelerate or to run the risk of a default termination or the assessment of liquidated damages. Once the contractor has accelerated, of course, time is of little use—and more recent decisions have recognized this fact.*[49]

The owner or construction manager is obligated to respond in a timely manner to the contractor's request for a time extension. If the owner or construction manager takes unreasonable time to grant a time extension or fails to respond and the contractor accelerates in an attempt to meet the schedule, believing the time extension request will not be granted, the contractor may be permitted recovery for the acceleration. For example, in *Fortec Constructors v. United States*,[50] the Corps denied the contractor's request for a time extension in a timely manner because the Corps refused to grant modifications in a timely manner and, thus, relied on schedules that did

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[49] *Nash*, Ralph C. Jr., *Government Contract Changes*, ¶ 15-29, Federal Publications Inc., 1989.

[50] *Fortec Constructors v. United States*, 8 Ct Cl. 737 (1972). Also see, *e.g.*, *Brock & Blevens Co. v. United States*, 343 F.2d 951 (170 Ct. Cl. 1965), 7G.C. ¶ 192. *M.S.I. Corp*., GSBCA 2429, 68-2 BCA ¶ 7377; *Continental Consol. Corp*., ENGBCA Nos. 2743, 2776, 67-2 BCA ¶6624.

not reflect changes in performance requirements. The court found that the Corps' denial was improper.

Owners often fail to grant time extensions in a timely manner because of the following:

- The contractor has not submitted a properly prepared time impact analysis to demonstrate its entitlement to a time extension or quantified the entitled time properly;
- The owner incorrectly believes that because of concurrent contractor-caused delays, the contractor is not entitled to a time extension for owner-caused delays. While concurrent delays may negate the contractor's entitlement to delay damages, they may not negate the contractor's entitlement to a time extension unless contractually stipulated;
- Concern that other pending claims may be affected by a decision to grant a time extension. Continual postponement of valid time extension requests may force the contractor to accelerate and incur increased costs for which the owner may be responsible;
- The contractor has made too many time extension requests that appear to be unreasonable. While this may be true, the current request may, in fact, be valid and should be addressed in a timely manner;
- The owner lacks the expertise to properly evaluate a time extension request. An experienced schedule delay expert should be brought in to evaluate the contractor's requests;
- The owner believes that the contractor's schedule updates are not accurate; thus, any modeled impacts to its schedule to determine time extension entitlement will also be inaccurate. The owner should require that the contractor's baseline schedule and schedule updates be corrected immediately such that a proper time impact analysis can be performed;
- An understanding that the time extension request will be deferred pending resolution of other more significant issues. This position is also risky in that the time extensions may be valid even if some of the other issues are invalid;
- An unrealistic belief that the threat of liquidated damages will cause the contractor to accelerate and negate any entitlement it may have to a time

extension. This position fails to recognize that the owner may then have liability for the contractor's acceleration costs.

These positions may ultimately cause the contractor to prepare and submit a complex delay, disruption, and acceleration claim near the end of the project, which could result in expensive arbitration or litigation if not equitably resolved.

Acceleration Claims on Engineering and Construction Projects

7. CONTRACT PROVISIONS ASSOCIATED WITH ACCELERATION

Two basic types of acceleration provisions may be included in the contract. The first gives the owner the right to accelerate the contractor when the contractor's performance has been delayed. The second gives the owner the right to accelerate the contractor even if the contractor is performing on schedule. The effect of these provisions is to transfer the risk of breaching the construction contract from the owner to the contractor. When the owner directs the contractor to accelerate pursuant to the provision, the contractor must comply or the contractor, not the owner, will be liable for breach of contract damages. Thus, the acceleration provisions remove any doubt as to whether the owner has the right to accelerate the contractor. However, to be enforceable, both provisions must be reasonable.

Whether an acceleration provision is reasonable and enforceable may depend on whether it provides that the contractor will be reimbursed for increased costs. For example, a provision that gives the owner the right to accelerate a contractor who is on schedule or who has encountered an excusable delay probably will not be enforced unless it stipulates that the owner will reimburse the contractor for acceleration costs. But, a provision that stipulates that the owner has the right to accelerate the contractor after a nonexcusable delay is reasonable and will be enforced regardless of whether it provides that the contractor will be reimbursed for increased costs.

The following are two examples of two enforceable acceleration provisions. The first provision entitles the owner to accelerate a contractor who has been delayed; the second entitles the owner to accelerate a contractor who is still on schedule.

> ***Provision 1:***
> *In the event of a nonexcusable delay in the performance or progress of the Work, Owner may direct that the Work be accelerated by means of overtime, additional crews or additional shifts, or resequencing of the Work. All such acceleration shall be at no cost to Owner. In the event of an excusable delay in the performance or progress of the Work, Owner may similarly direct acceleration, and Contractor agrees to perform same on the basis of reimbursement of direct cost (i.e., premium portion of overtime pay, additional crew, shift, or equipment costs, and such other items of cost requested in advance by Contractor and approved by Owner, which approval will not be unreasonably withheld) plus a fee of percent (%) of such cost, but Contractor expressly waives any other compensation therefore unless otherwise agreed to in writing in advance of performing the accelerated work. In the event of any acceleration requested pursuant to this paragraph, Contractor shall provide promptly a plan including its recommendations for the most effective and economical acceleration.*

Acceleration Claims on Engineering and Construction Projects

> ***Provision 2:***
> *Owner shall also have the right to direct that the Work be accelerated by means of overtime, additional crews or additional shifts, or resequencing of the Work, notwithstanding that the work is progressing without delay in accordance with the established schedule. Contractor agrees to perform same on the basis of reimbursement of direct cost (contractor, premium portion of overtime pay, additional crew, shift, or equipment cost, and such other items of cost requested in advance by Contractor and approved by Owner, which approval will not be unreasonably withheld) plus a fee of percent (%) of such cost, but Contractor expressly waives any other compensation thereof unless otherwise agreed in writing in advance of performing the accelerated work. Contractor shall again provide promptly a plan, including its recommendations for the most effective and economical acceleration.*

A major U.S. chemical company's EPC contract states the following:

> *Should Owner have reason to believe that the Contractor will not achieve Mechanical Completion by the Scheduled Mechanical Completion Date, Owner shall have the right (but not the obligation) to so notify Contractor, whereupon Contractor shall, at no cost to Owner, work such additional overtime, engage additional personnel and/or take other measures as necessary to achieve Mechanical Completion by the Scheduled Mechanical Completion Date.*

This requirement alone would seem harsh if the owner or an excusable event were the cause of delay. Accordingly, the contract also provides the contractor relief, as follows:

> *The Scheduled Mechanical Completion Date shall be extended, and the Contractor shall not be charges with any resulting damage, only if:*
>
> > *(1) The delay in the completion of work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to, Force Majeure, acts of the Government in either its sovereign or contractual capacity, acts of another contractor in the performance of a contract with the Owner, freight embargoes, unusually severe weather, or delays of Subcontractors arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and such Subcontractors; and*
> >
> > *(2) The Contractor, within 5 days from the beginning of any such delay notifies the Owner in writing of the causes of delay.*

> *Such delay shall be considered an excusable delay and the Owner shall extend the Scheduled Mechanical Completion Date when, in its judgment, the facts justify such an extension. Should the Contractor disagree with the Owner's determination regarding the extension of time, such dispute shall be subject to resolution in accordance with Article 22 of this Agreement.*

Therefore, if an excusable delay occurs and the contractor provides timely notice, the owner can either: 1) provide a time extension, for which the contract states that the contractor waives damages, costs, or expenses of any nature; or 2) not provide a time extension, which will then cause either directed or constructive acceleration. If the contractor has provided timely notice of delay, the delay affected the as-built critical path of the project, and acceleration is required, the owner may be exposed to acceleration costs. However, the contractor will have to also demonstrate that such acceleration was not also the result of delays for which it is responsible. An allocation of acceleration costs between the owner and the contractor would be appropriate if acceleration is caused by contractor-caused and excusable delays.

The FIDIC 1987 Conditions of Contract for Works of Civil Engineering Construction, as adjusted in 1988 and 1992, have several related provisions, as follows:

> *Revised Programme*
> *14.2 If at any time it should appear to the Engineer that the actual progress of the Works does not conform to the programme to which consent has been given under Sub-Clause 14.1, the Contractor shall produce, at the request of the engineer, a revised programme showing the modifications to such programme necessary to ensure completion of the Works within the Time for Completion.*

The FIDIC clause does not, however, address who pays for such changes in the programme (schedule). The FIDIC contract also clearly addresses responsibility for costs of regaining delayed progress in the schedule:

> *Rate of Progress*
> *46.1 If for any reason, which does not entitle the contractor to an extension of time, the rate of progress of the Works or any Section is at any time, in the opinion of the Engineer, too slow to comply with the Time for Completion, the Engineer shall so notify the Contractor who shall thereupon take such steps as are necessary, subject to the consent of the Engineer, to expedite progress so as to comply with the Time for Completion. The Contractor shall not be entitled to any additional payment for taking such steps. If, as a result of any notice given by the Engineer under this clause, the Contractor considers that it is necessary to do any work at night or on locally registered days of rest, he shall be entitled to seek the consent of the Engineer to do so. Provided that if any steps, taken by the*

> *Contractor in meeting his obligations under this clause, involve the Employer in additional supervision costs, such costs shall, after due consultation with the Employer and the Contractor, be determined by the Engineer, and shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.*

Similarly, the 1999 FIDIC Yellow Book Contract for Plant and Design Build Contracts states the following:

> *8.6 Rate of Progress*
>
> *If, at any time:*
>
> *(a) actual progress is too slow to complete within the Time for Completion,*
>
> *and/or*
>
> *(b) progress has fallen (or will fall) behind the current programme under Sub-Clause 8.3 [Programme],*
>
> *other than as a result of a cause listed in Sub-Clause 8.4 [Extension of Time], then the Engineer may instruct the Contractor to submit, under Sub-Clause 8.3 [Programme], a revised programme and supporting report describing the revised methods which the Contractor proposes to adopt in order to expedite progress and complete within the Time for Completion.*
>
> *Unless the Engineer notifies otherwise, the Contractor shall adopt these revised methods, which may require increases in the working hours and/or in the numbers of Contractor's Personnel and/or Goods, at the risk and cost of the Contractor. If these revised methods cause the Employer to incur additional costs, the Contractor shall subject to Sub-Clause 2.5 [Employer's Claims] pay these costs to the Employer, in addition to delay damages (if any) under Sub-Clause 8.7 below.*

Including acceleration provisions in the contract benefits both the owner and the contractor. With such provisions, the owner knows that it has the legal right to order acceleration, and the contractor knows the costs to which it will be entitled should it be accelerated.

Contractors should read and understand contract documents and avoid entering contracts that attempt to shift all risk to the contractor. Contractors should know what risk they will incur due to uncontrollable delays. They should carefully examine the completion date and time extension

provisions, and not assume the contract is standard with typical provisions in place allowing time extensions for excusable delay.

8. THE EFFECT OF A "NO DAMAGE FOR DELAY" CLAUSE ON ACCELERATION

Contracts may be written with clauses that contain very broad language with regard to "No Damages" for any delay, regardless of cause. However, if such clauses are contradictory with other contract provisions, they may be overruled by the courts.

"No Damage for Delay" clauses specifically referencing particular types of delays are often used by owners or construction managers to preclude time-related damages. These clauses are generally valid. However, if the delay breached the contract, was of a kind not contemplated by the parties, was caused by the owner's or construction manager's active interference, or was the result of an owner's or construction manager's bad faith, the "No Damage for Delay" clause may be barred. Such clauses typically refer to time-related damages, but if a valid time extension is denied, and the contractor is required to complete its work by the original contract completion date, its acceleration costs to attempt to meet the original completion date may be recoverable.

In a Chicago case,[51] for example, the City relied on the "No Damage for Delay" clause contained within the contract and refused to grant a time extension to a construction contractor who had incurred excusable delays. The Court found that, because the contractor was entitled to a time extension for suspension and strike delays, the action of the City in denying the time extension and holding the contractor to the original contract completion date constituted acceleration. In allowing the contractor to recover its acceleration costs, the appellate court made following observation:

> *Plaintiff contends that since it was entitled to more performance time, defendant's action denying the extensions and holding plaintiff to the original contract completion date was tantamount to "acceleration."*
>
> *We agree.*

An example of a "No Damage for Delay" clause follows:

> *Except as provided in this Article 4.7, the Owner shall not be obligated or liable to the Contractor for, and the Contractor hereby expressly waives, any claims against the Owner on account of any damages, costs or expenses of any nature which the Contractor may incur as a result of any delay which may occur, regardless of its cause. It is understood and agreed that the Contractor's sole and exclusive remedy in the event of an excusable delay for which Contractor is*

[51] *Contracting and Material Co. v. City of Chicago*, 20 Ill. App. 3d 684, 692, 314 N.E.2d 598, 604 (1974), rev'd on other grounds, 64 Ill. 2d 21, 349 N.E.2d 389 (1976). Also see *Siefford v. Housing Authority*, 192 Neb. 643, 223 N.W.2d 816 (1974).

entitled to an extension of time under Article 4.6 shall be an extension of the Scheduled Mechanical Completion Date.

In addition, if there are known potential causes of delay that may affect the contractor's work, such as the completion of a design package by a licensor or the purchase order of a long-lead item that is being performed by the owner, these delays should be identified by the owner prior to contract award to put the contractor on alert.

Owners should expect that contractors will attempt to take exception to "No Damage for Delay" clauses. Otherwise, the contractor is taking considerable risk for increased costs that are not within its control. The owner also needs to be aware that not all jurisdictions will enforce such a clause, and it may not provide the intended shield. If exceptions to this clause are taken by a bidding contractor, the owner should request some bid price concession from the contractor who would otherwise put extra contingency in its bid to cover this risk.

9. IDENTIFYING ACCELERATION USING THE PROJECT SCHEDULES

The first step in proving an acceleration claim typically involves establishing that the contractor's as-planned schedule is proper and reasonable. Then, the contractor must maintain accurate and reliable schedule updates showing as-built progress on a periodic basis, usually monthly unless a shorter periodic schedule is contractually required. The importance of reliability cannot be overemphasized. Because an as-built schedule reflects all changes, modifications, and delays that occurred during the construction process, the contractor should not wait until construction is complete to prepare an as-built CPM schedule. To ensure the accuracy and reliability of the as-built schedule, the contractor should continually update its as-planned schedule as changes, modifications, and delays occur. If the contractor does not maintain an updated CPM schedule and the owner does, the court will most likely use the owner's schedule in determining whether the contractor was accelerated.

Proof of an acceleration claim is similar to a delay claim where only compensable delays are added to the statused schedule, except that the properly adjusted schedule (baseline/as-planned schedule for delays during the early period of the project, or schedule updates for delays that occur later in the project) includes both owner-caused and excusable but noncompensable delays with a focus upon the specific period of time during the project when the acceleration was initiated.[52] If changes or impacts have occurred, the contractor should adjust that schedule, typically by use of a Time Impact Analysis or Update Impact Analysis without constraints on the completion date, to reflect owner-caused and excusable delays up to the time of the acceleration order or when constructive acceleration is acknowledged. When all of the impacts for a particular time period have been developed and inserted into the schedule, the schedule is recalculated. This schedule can then be compared to the as-built schedule to determine if, in the absence of a time extension, acceleration was accomplished, *i.e.*, the as-built completion date is earlier than the impacted completion date.

AACE International, in its Forensic Schedule Analysis Recommended Practice 29R-03, provides that many different schedule analysis methods can be used to demonstrate acceleration. The following commentary is provided regarding observational/static analyses, MIP 3.1 through 3.4:

> *Observational / static analysis methods can note differences in logic but cannot directly quantify net critical path impact. However, there may be evidence of reduced individual activity duration, which when coupled with detailed records of increased man-hours, would serve as adequate proof of acceleration. Note that*

[52] See, *e.g.*, *Continental Consolidated Corp. v. United States*, 17 CCF ¶ 81,137 (1972), Ct. C1. 737 (1972); *Kenneth Reed Construction Corp.*, ENGBCA 2748, et al., 72-1 BCA (CCH) ¶ 9,407 (1972).

> *the acceleration would be evident in both critical path and non-critical path activities.*[53]

However, AACE International also states that observational/static analysis methods are, "not suited for clearly demonstrating acceleration."

> *As with MIP 3.3, in 3.4 (observational / static analysis methods), acceleration or delay mitigation is identified by comparing the completion date of the longest path of the previous period with that of the current period. A current date that is earlier than the previous date suggests acceleration. However, note that the value is a net number potentially representing both slippage and gain, where the gain was greater than the slippage. Thus, a detailed examination of the longest path, the near-longest path surrounding the data date, and the examination of the logic changes between the last and the current periods along those paths are necessary for a competent identification and quantification of acceleration and delay mitigation.*
>
> *In order to determine whether the promised future acceleration was actually implemented, it will be necessary to compare the proposed accelerated fragnet with an as-built of the same activities. The process can become complicated if the actual execution of the accelerated scenario was hampered by delays that occurred subsequent to the formulation of the acceleration scenario.*[54]

AACE International discusses the use of the as-planned impact analysis (single base, additive model) method (MIP 3.6) for identifying acceleration:

> *The comparison between the completion date of the longest path of the additive model and the actual completion date will provide a gross approximation of acceleration or delay mitigation. This is based on the theory that if non-contractor delays inserted into the baseline yield a completion date that is later than that actually achieved, it must have resulted from shortening of actual performance duration and/or the use of more aggressive logic. Note that the gross comparison does not provide the detail necessary in order to address the issue of who gets the credit for the acceleration.*[55]

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53 "Forensic Schedule Analysis," AACE International, April 25, 2011, p. 43.
54 *Id*. p. 61.
55 *Id*., p. 74.

> *This method can be used to identify acceleration, although actual performance that is better than predicted by use of this method does not, in and of itself, necessarily demonstrate active implementation of acceleratory measures.*[56]

In using the multiple base, additive model (MIP 3.7), such as is done in the Update Impact Analysis method, AACE International states that, "*If the longest path is the same but the overall completion date of the progressed version is earlier, there was acceleration or some other delay mitigation on the delays on the longest path.*"[57] In addition:

> *In MIP 3.7, after inserting delays into the update closest in time preceding the delay, the identity and the movement of the critical path is monitored. Then, when the update is progressed with actual progress data and the same logic path reexamined, if the logic path is shorter than that which was calculated prior to adding actual progress, there was acceleration or schedule recovery during the period for which actual progress was entered.*[58]

As with the single base, additive model, "*this method can be used to identify and quantify acceleration, although actual performance that is better than predicted by use of this method does not, in and of itself, necessarily demonstrate active implementation of acceleratory measures.*"[59]

The as-built but for-analysis can also be used to demonstrate acceleration. In using the single base form of this subtractive model (MIP 3.8), AACE International states:

> *1. Excusable and Compensable Delay (ECD)*
>
> *The difference between the as-built completion date and the collapsed as-built completion date resulting from the extraction of all owner-caused delays is the total ECD. If the owner has paid the contractor specifically to accelerate, then any negative delay durations (delay mitigation) resulting from the owner-paid acceleration should be credited to the owner against the total ECD to avoid double payment to the contractor for acceleration. Where the quantification of the duration of the specific paid mitigation is not reasonably feasible, the credit adjustment may be accomplished by crediting the monetary value of the acceleration payment against the monetary value of the ECD.*

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56 *Id.*, p. 75.
57 *Id.*, p. 78.
58 *Id.*, p. 80.
59 *Id.*, p. 81.

2. Non-Excusable and Non-Compensable Delay (NND)

> *The difference between the as-built completion date and the collapsed as-built completion date resulting from the extraction of all contractor-caused delays is the total NND. If the contractor accelerated or implemented other mitigating measures and the owner did not reimburse the contractor for the cost of mitigation, the net critical mitigation duration should be subtracted from the total NND.*[60]

However, subtractive modeling methods may not be the best tool for identifying and quantifying specific instances of acceleration and delay mitigation:

> *The subtractive modeling methods are not the best tools for identifying and quantifying specific instances of acceleration and delay mitigation, since the methods start with the as-built schedule that already incorporates all acceleration measures to the extent that they were actually implemented. When the delays are subtracted the resulting schedule still retains all acceleration measures that were built into the as-built. Therefore, the resulting comparison is that of one accelerated schedule to another, albeit one without delays.*[61]

And:

> *Not suited for identification or quantification of acceleration because the source as-built schedule already incorporates acceleration.*[62]

The SCL supports the use of the Time Impact Analysis for the analysis of acceleration claims:

> *Time impact analysis is based on the effect of Delay Events on the Contractor's intentions for the future conduct of the work in the light of progress actually achieved at the time of the Delay Event and can also be used to assist in resolving more complex delay scenarios involving concurrent delays, acceleration and disruption.*[63]

Figure 1 demonstrates an acceleration scenario using an additive model, such as a time impact analysis or a single base or multiple base additive model to adjust the schedule by inserting the excusable delays to create a Time Impacted Schedule. The quantification of acceleration is

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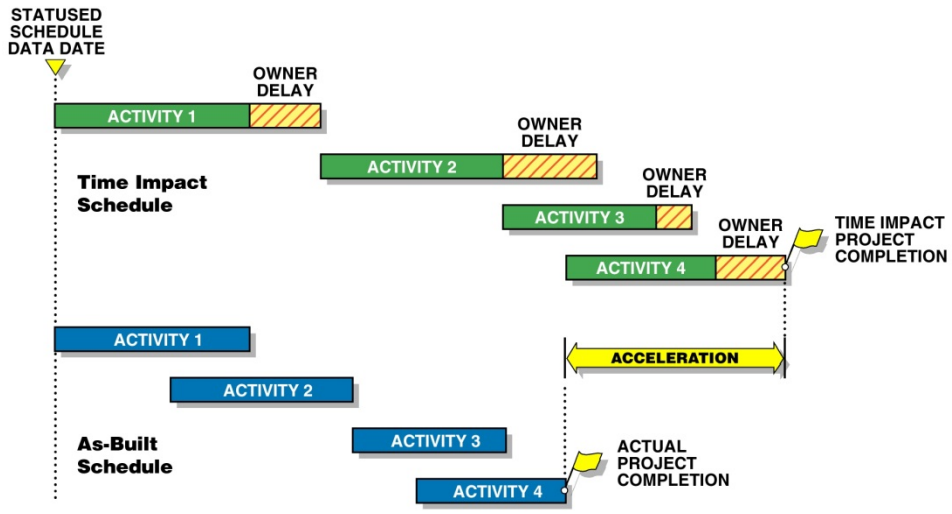
60 *Id.*, p. 85. Also see p. 93 regarding the comments as they apply to the multi-base subtractive model, MIP 3.9.
61 *Id.*, p. 85.
62 *Id.*, p. 90 and p. 97.
63 "Delay and Disruption Protocol," Society of Construction Law, Oxford, October 2002, p. 47.

determined by subtracting the earlier actual project completion date in the As-Built Schedule from the later time impact project completion date.

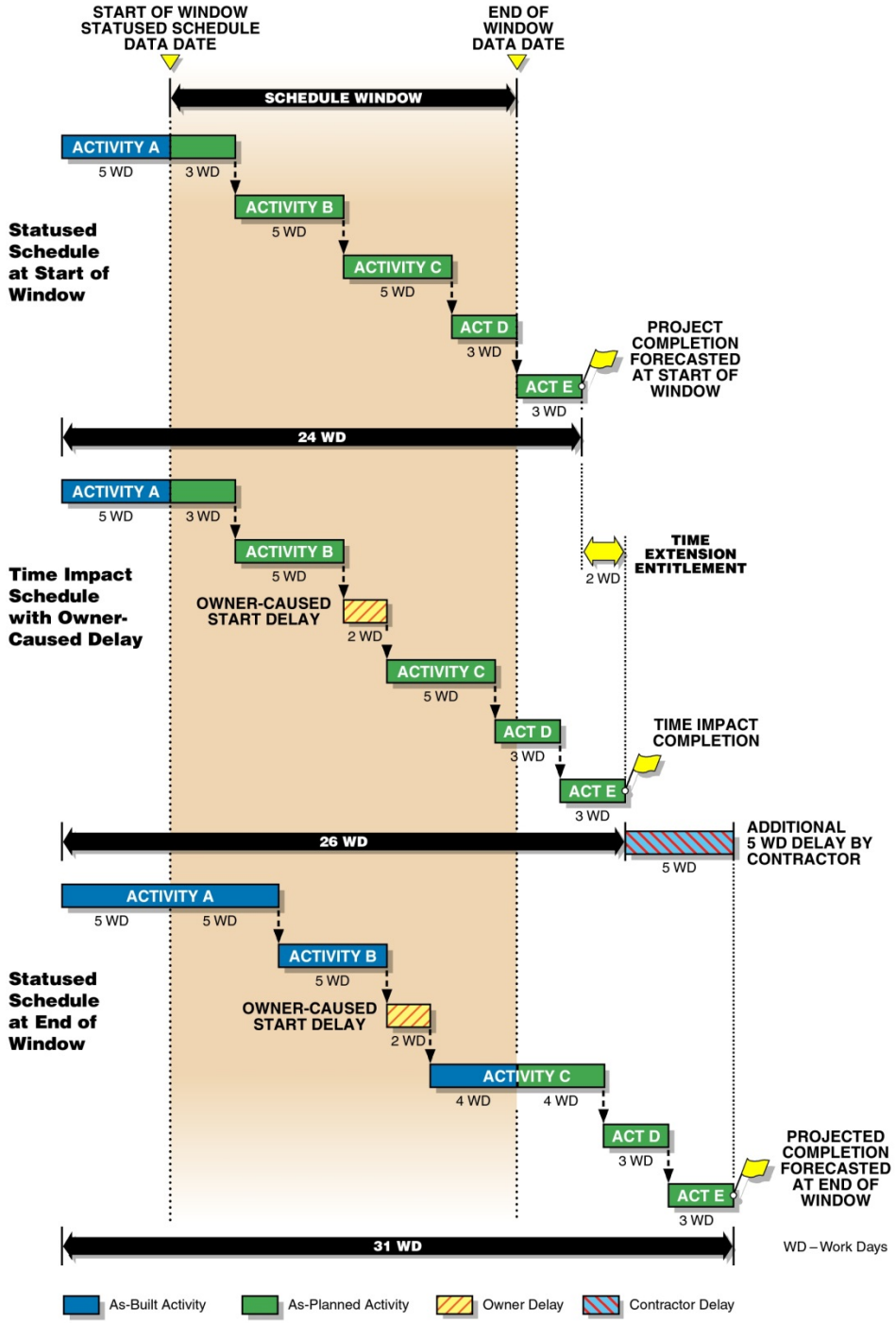
Figure 1: Proof of Acceleration



If the as-built completion date is equal to or greater than the impacted completion date, no compensable acceleration has occurred because of owner-caused or excusable/noncompensable delays, as shown in Figure 2.

Acceleration Claims on Engineering and Construction Projects

Figure 2: Schedule Analysis Showing No Acceleration Occurred



Similar demonstrations of acceleration can be made by comparing progressed schedules, one with accelerated logic and one without accelerated logic.

An as-planned impacted analysis using a single base additive model, such as described by MIP 3.6 in AACE International's Forensic Schedule Analysis R29-03,[64] may not be a valid schedule delay analysis method for evaluating delays that occur throughout the project. For example, if the original as-planned schedule contained invalid logic, the results of the as-planned impacted analysis could be meaningless. Also, actual work sequences and progress may be significantly different from the as-planned schedule. These changes in work sequence may be the result of circumstances unrelated to the claimed owner-caused delays. Consequently, the as-planned impacted analysis may fail to properly account for contractor-caused delays and should not be used to determine the amount of delay for which the contractor may receive extended overhead costs. Numerous decisions by the U.S. Court of Claims and Boards of Contract Appeals have made it clear that attempts to prove delay through the usage of as-planned impacted CPM analyses are not acceptable. Three decisions that confirm the deficient nature of as-planned impacted schedule analysis are *Gulf Contracting, Inc.*,[65] *Titan Pacific Construction vs. United States*,[66] and *Ealahan Electric Company*.[67]

Thus, windows approaches using an Update Impact Analysis[68] or a Time Impact Analysis, where the schedule is statused up through the day prior to each delay event before the delay impact is added to the schedule, may be more appropriate analysis methodologies to determine the contractor's entitlement to a time extension because these methodologies evaluate delays to the then current critical path of the project.

The impacted schedule will demonstrate the contractor's entitlement to a time extension if the impacts affected the critical path of the work. The objective of the adjusted CPM schedule in an acceleration claim is to demonstrate that the contractor was making adequate progress toward job completion when the acceleration order was given or when a request for a valid time extension was denied and the contractor was entitled to finish at a later date than actual completion. Basic to the proof of this aspect of the claim is that a contractor is only required to commit to the project a reasonable amount of men and equipment and not an infinite or unreasonable amount of men and equipment.

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64 See MIP 3.6, April 25, 2011, pp. 70-75.

65 *Gulf Contracting, Inc*., ASBCA Nos. 30,195, 32,839, 33867 et al., 89-2 BCA (CCH) ¶ 22,812 (1989) on recon. 90-1 BCA (*CCH*) ¶ 22,393 (1990).

66 *Titan Pacific Construction Corp*., ASBCA Nos. 24,148, 24,616, 26,692, 87-1 BCA ¶ 19,626 (1987), aff'd 17 Cl. Ct. 630 (Cl. Ct. 1989).

67 *Ealahan Electric Company, Inc*., DOTBCA No. 1959, 90-3 BCA (CCH) ¶ 23,177 (1990).

68 See AACE International's Forensic Schedule Analysis R29-03, April 25, 2011, MIP 3.7, pp. 75-82.

Acceleration Claims on Engineering and Construction Projects

If acceleration is directed, or in the event of the owner's failure to grant a time extension, the adjusted schedule should then be compared with the as-built schedule to evaluate progress. This comparison will reveal whether progress is equal to or ahead of the adjusted schedule, or if the acceleration effort does not catch up to the adjusted schedule. If the as-built schedule shows a completion earlier than a properly adjusted schedule, proof of acceleration is established. If the completion date in the as-built schedule is later than the adjusted schedule, additional contractor-caused delays may have occurred.

The more difficult case to resolve is when the owner grants a time extension to the contractor, but the contractor claims that the time extension was insufficient to cover the excusable delay. This is known as disputed constructive acceleration, and the contractor must provide two levels of proof: first, that it was entitled to a time extension, and second, that the extension granted by the owner was less than the extension to which the contractor was entitled. For example, if a contractor receives a 50-day time extension, and the contractor completes the project within that 50-day extension but feels that it was entitled to a 70-day time extension, then the contractor may claim that it was constructively accelerated by 20 days. The contractor must be able to prove its acceleration claim by showing not only that it was entitled to the 50-day time extension that it received but also that it was entitled to the additional 20 days beyond the 50-day time extension. The contractor, however, may have waived its claim to the additional 20-day extension if it accepted the 50-day extension without reserving its rights for the additional time.[69]

The contractor should avoid producing schedule updates throughout the project which show an on-time completion date even after delays have occurred. This tendency to hide delays in construction progress makes the analysis of delays and resulting acceleration more difficult later. Trying to prove that an event caused a critical delay early in the project when the contractor's schedule updates show no effect on completion is not an easy task. Showing updates to the owner that reflect delayed project completion and discussing means of remedying them may lead to a request for an agreement to compensate for acceleration.

Owners may argue that the contractor was also responsible for delays during the analysis period. However, the courts have held that the contractor is entitled to a time extension even when a contractor delay is concurrent with an owner-caused or excusable delay.[70] Thus, if the time extension is denied or ignored, and acceleration is directed or constructively required, then the owner may be responsible for the contractor's acceleration damages. The owner may argue that the acceleration costs should be allocated between the owner and the contractor because the contractor also accelerated to mitigate delay caused by the contractor and to avoid liquidated damages. The contractor could argue that it would not have accelerated as these costs were

[69] *Freeman Elec. Constr. Co. v. United States*, 618 7.2d 124 (221 Ct. Cl. 1979), *cert. denied*, 449 U.S. 825 (1980).
[70] See, *e.g.*, *Acme Process Equipment Co. v. United States*, 171 Ct. C1. 324, 347 F.2d 309 (1965).

larger than the liquidated damages that could be assessed by the owner. The potential resolution of these arguments is not clear and could vary based on the facts of each case.

Acceleration Claims on Engineering and Construction Projects

10. DOCUMENTING ACCELERATION EVIDENCE

It is essential that owners, engineers, and contractors develop and implement a documentation collection system. CPM schedules, budgets and estimates, change orders, design changes, daily logs and diaries, daily reports, memos, meeting minutes, and correspondence all record the actual events that resulted in acceleration of performance. Acceleration claims lacking documentation necessary to show excusable critical path delays are often dismissed.[71]

Contractor's damages attributable to a reasonable effort to accelerate are recoverable. However, damages are difficult to prove without a documentation system in place prior to the performance of acceleration. Some courts have barred recovery of damages since no accounting or documentation system had been implemented prior to the performance of acceleration.[72]

Ideally, the cost information that should be maintained includes:

1. Daily individual payroll records (by cost code and indicating schedule activity or area worked on). This information should include regular hours, regular labor cost, overtime hours, overtime labor cost, and benefits.
2. Daily, weekly, or monthly equipment charges (by cost code and schedule activity). Information on idle time or working time for equipment is helpful and supplements the documentation in the superintendent's log.
3. Progress information (by units installed or percent completed, by cost code and schedule activity). This data is extremely helpful when measuring the effect on productivity caused by impacts to the project. It can be recorded at any time on the project, but it gives more information when recorded on a weekly basis.
4. Weekly or monthly subcontractor costs (broken down by cost codes or activities worked on).
5. Any other costs affecting the project.
6. Estimates and budgets, especially when prepared in detail at the beginning of the project. These provide a good basis for comparing the costs to perform as well as anticipated productivity. As such, they should be maintained in the project files.

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[71] See, *e.g.*, *Kenneth Reed Construction Corp.*, ENGBCA 2748, et al., 72-1 BCA (CCH) ¶ 9,407 (1972); *Lane Verdugo*, ASBCA No. 16327, 73-2 BCA (CCH) ¶ 10,271 (1973).

[72] See, *e.g.*, *Nat Harrison Assoc. v. Gulf States Utilities Co.*, 491 F.2d 578 (5th Cir. 1974).

Acceleration Claims on Engineering and Construction Projects

11. ACCELERATION DAMAGES

The types of costs that are typically allowed for acceleration claims include the following:

1. Increased construction labor costs for overtime, additional shifts, six or seven days per week, or combinations of these efforts.
2. Increased construction equipment maintenance costs associated with longer work hours.
3. Increased construction equipment rental expenses associated with overtime work.
4. Cost of additional construction equipment or materials.
5. Expediting equipment and material deliveries.
6. Increased field supervision.
7. Increased job site expenses.
8. Increased home office overhead expenses directly related to the acceleration effort.
9. Subcontractor costs. In order to finish on time, some work may be subcontracted at a higher cost than that of the contractor's own labor force. The difference in the cost is damages.
10. Loss of inefficiency and productivity associated with overtime, increased crew sizes, stacking of trades, and re-sequencing of work.

One way to prove these costs is to compare the actual cost of performance before accelerating to the actual cost after accelerating. For example, if a contractor is required to accelerate on the installation of 5,000 feet of straight run pipe after only 2,000 feet has been installed, it may be possible to measure the cost of installing the 2,000 feet and compare it to the cost of installing the remainder of the pipe to determine damages, *i.e.*, a measured mile approach. However, because it is likely that delays also occurred during the installation of the 2,000 feet, this approach may be problematic. To the extent that the owner or construction manager is responsible for the delay, it can also be responsible for the cost of the acceleration effort. If the contractor is also responsible for certain of the delays, then an allocation of the acceleration costs may be appropriate.

When faced with acceleration on a project, the contractor is obligated to mitigate the damages whenever reasonable. This may involve using a larger labor force rather than incurring overtime, using extra equipment rather than more labor, or reducing jobsite overhead when an accelerated project is completed earlier. The contractor must use any available and reasonable means it has to reduce the damages. As a practical matter, on an accelerated project the contractor may be

asked to perform work quickly and to do everything possible to meet a deadline. It is not always possible for the contractor in that situation to take the time to identify cost savings or the best approach. The contractor is focused not on identifying cost savings but on completing the construction as quickly as possible. Therefore, mitigation opportunities may be minimal.

Cost savings that the contractor achieved in the normal performance of the contract, such as in the buyout of subcontracts and material, do not need to be subtracted from the acceleration damages. The contractor would have been entitled to benefit from these savings had no acceleration occurred.

About the Author

***Richard J. Long, P.E.**, is Founder and CEO of Long International, Inc. Mr. Long has over 40 years of U.S. and international engineering, construction, and management consulting experience involving construction contract disputes analysis and resolution, arbitration and litigation support and expert testimony, project management, engineering and construction management, cost and schedule control, and process engineering. As an internationally recognized expert in the analysis and resolution of complex construction disputes for over 30 years, Mr. Long has served as the lead expert on over 300 projects having claims ranging in size from US $100,000 to over US $2 billion. He has presented and published numerous articles on the subjects of claims analysis, entitlement issues, CPM schedule and damages analyses, and claims prevention. Mr. Long earned a B.S. in Chemical Engineering from the University of Pittsburgh in 1970 and an M.S. in Chemical and Petroleum Refining Engineering from the Colorado School of Mines in 1974. Mr. Long is based in Littleton, Colorado and can be contacted at rlong@long-intl.com and (303) 972-2443.*

Acceleration Claims on Engineering and Construction Projects

List of Cases

Cases

Acceleration Claims on Engineering and Construction Projects

