TECHNICAL ARTICLE

OFFSETTING DELAYS — THE OWNER'S FRIEND

John C. Livengood, CFCC PSP

Abstract: When dealing with contractor delay claims, owners of construction projects often use their superior bargaining power to strike a deal better than the facts or the law would permit. This is especially true in cases where it is possible for the owner to argue sequential delays by the contractor should offset earlier delays caused by the owner, making both delays non-compensable. These delays have the special name of offsetting concurrent delays. Concurrent delays, particularly delays associated with performance of non-critical work, are poorly understood by the courts and schedule analysts alike. Savvy owners use this lack of understanding when negotiating settlements of delay claims by contractors. This article discusses the most recent technical issues associated with concurrent delay, and shows how confusion has made the legal rulings on concurrent delay unpredictable, thus strengthening the owners bargaining position and allowing for the popularity of offsetting delays claims. An earlier version of this article was first presented as manuscript CDR.609 at the 2011 AACE International Annual Meeting in Anaheim, Calif. The author has made some updates and revisions since that presentation and they are included with this printing.

Key Words: Concurrent delay, forensic schedule analysis, offsetting delay and sequential delay

The Offsetting Delay Issue

Concurrent delay is an important issue in virtually all construction delay cases. The stakes are high, because if there are two delays and they can be considered concurrent, then the contractor is not entitled to delay damages and the owner is not entitled to liquidated damages, although a non-compensable time extension is usually granted [9].

Figure 2 illustrates a typical concurrency situation.

The author's definition of concurrency, including offsetting delays follows:

> "Concurrent Delay is the occurrence of two or more delay events at the same time —one an owner risk event, the other a contractor risk event—the effects of which are felt at the same time. The term "concurrent delay" is often used to describe the situation where two or more delay events arise at different times, so long as the effects of them are felt at the same time. This is generally referred to as offsetting concurrent delays."

Concurrency is primarily a legal theory dating from the early 1900s (although it was not called concurrency then). Most of the contemporary concurrency law we rely upon in the US was developed in the 1960s through the 1980s. During this period, judicial decisions reflected a careful dissection of the then available CPMs schedules that unfortunately generally made detailed allocation of responsibility impossible to determine, hence more findings of concurrent delay [2].

Yet, concurrency as a legal theory that is poorly understood and inconsistently applied by courts and experts [15, 22]. Concurrency has been characterized as, "a risk allocation principle that operates to distribute costs associated with contemporaneous delays on a status quo basis [6]." Concurrency operates in this manner because historically the courts could not untangle the complicated fact patterns causing the delay.

Offsetting delays are an extreme type of concurrent delay. They arise when the two delays meet the criteria of

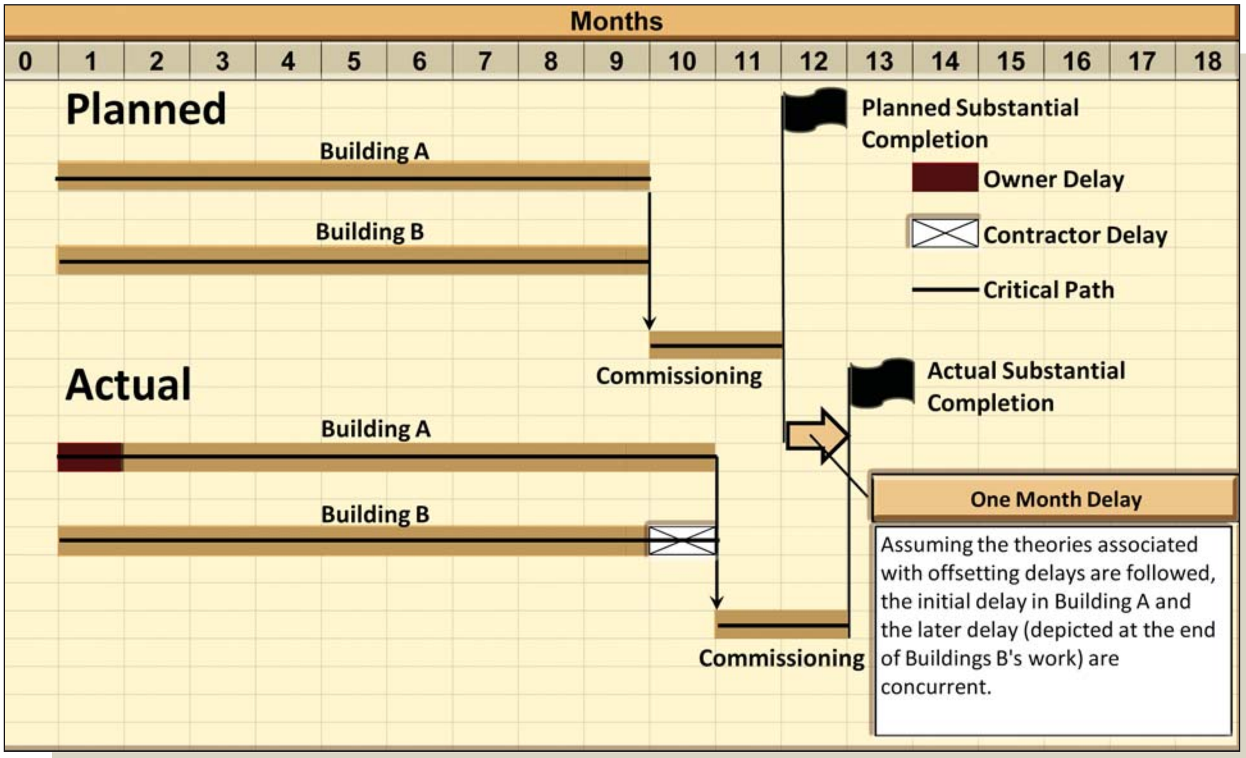

Figure 1 — Concurrent Delay with Offsetting Delays Recognized

concurrency, but occur at widely separated times. To illustrate, the same basic fact pattern will be used in figures in this article:

> The project was a two-building complex with a planned simultaneous start on both Buildings A and B. Both buildings had planned a nine-month duration—they were on co-critical paths and both actually took 10 months to complete prior to commissioning. When both buildings were complete, there was a joint two month commissioning period leading to substantial completion.

Figure 1 depicts the following scenario, typical of how the offsetting delays are negotiated: An aggrieved owner and delayed contractor hold a negotiating session after construction is complete on a two-building complex.

The owner acknowledges that it had delayed site access for one month on Building A, resulting in an actual 10-month duration for that building. Nevertheless, the owner believed that unrelated delays of one month associated with the contractor's poor performance in completing mechanical work on Building B resulting in a 10-month duration, which balanced out the initial delay on Building A.

The owner reasoned that even had the delay to Building A not occurred, the total project would have been delayed a month because of the contractor's delay on Building B. The owner offered a non-compensable time extension of one month.

Under the following definition, the term concurrent does not carry the generally understood meaning of, "at the same time." As the term is used in many cases, concurrent delays may occur during any part of the project performance period, not necessarily at the same time.

> "The period of concurrency is the period of project performance, not just the period during which any individual delay may have occurred [4]."

Rather, concurrent means under this construction the impact at the end of the project is the same for each delay [19]. Essentially, the delays that are being looked at and balanced against each other can occur at any time during the project. We will return to this timing problem after discussing the more general requirements for concurrency, as described in the **AACE International Recommended Practice 29R-03** *(2011) Forensic Schedule Analysis Practice Guide [FSAPG 29R-03], Subsection 4.2* [1].

What's Required for Concurrent Delay

While FSAPG 29R-03 quotes five definitions of concurrent delay, it does not adopt any of them. Rather, the FSAPG 29R-03 defines seven criterion, all of which are needed for a concurrent delay, as listed below:

1. Two or more delays that are unrelated, independent [6];
2. Either would have delayed the project even if the other delay did not exist [16];
3. Two or more delays that are the contractual responsibility of different parties, but one may be a force majeure event [6];
4. The alleged concurrent delay must be involuntary [13];

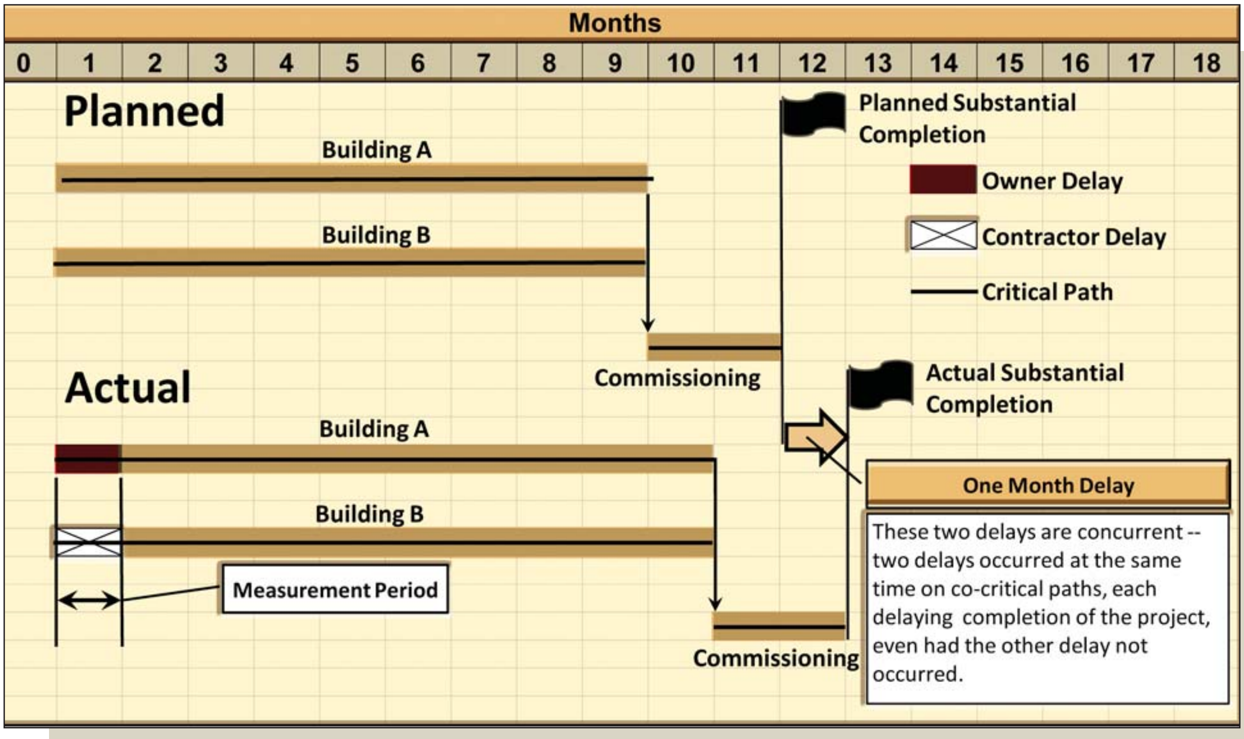

Figure 2 — Concurrent Delay During Same Measurement Period

5. The work associated with the alleged concurrent delay must be substantial and not easily curable;
6. The delays, each of which absent the other, must independently delay the critical path [12]; and,
7. The delays must occur during or impact the same time analysis period.

Figure 2 depicts a typical concurrent delay situation. Building A had a one month delay because of owner-caused site access. Building B was initially delayed because the specialized equipment and crews needed for that building were unavailable. Each delay, absent the other, delayed actual substantial completion, i.e., the events were on the critical path. None of the delays were voluntary and none were easily curable—textbook concurrency.

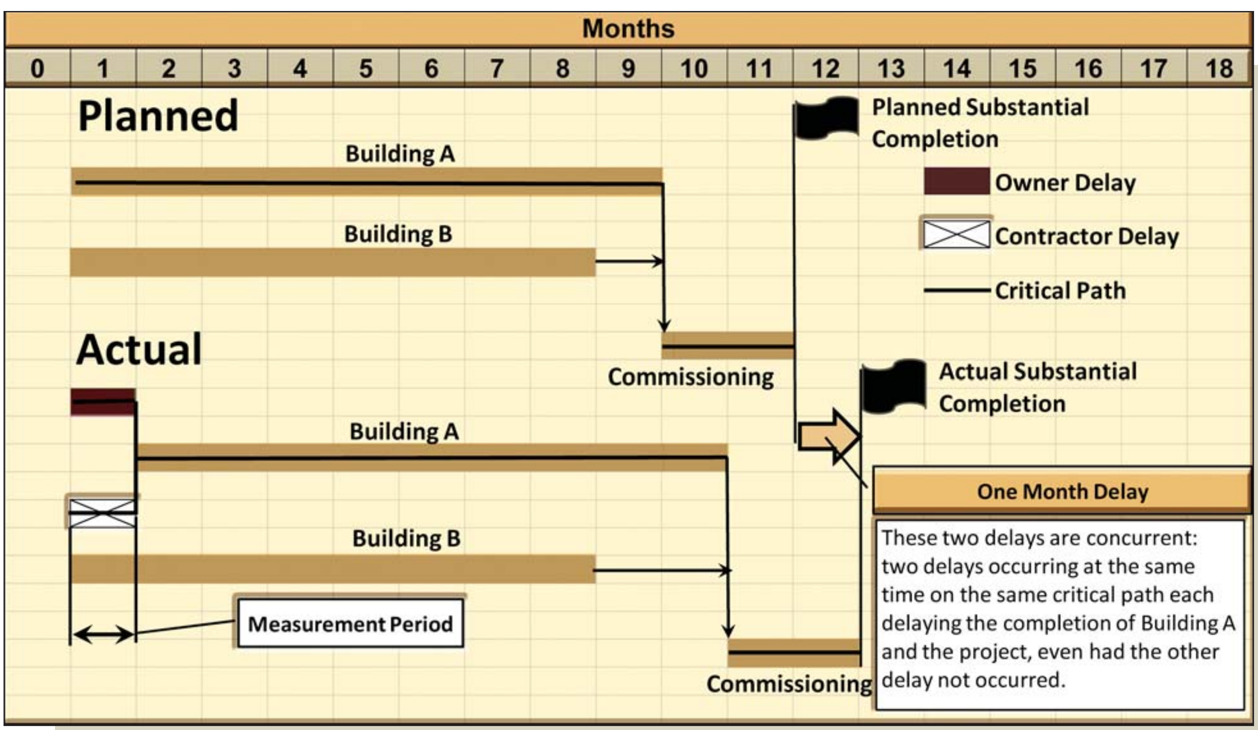

Figure 3 — Concurrent Delay Along a Single Critical Path

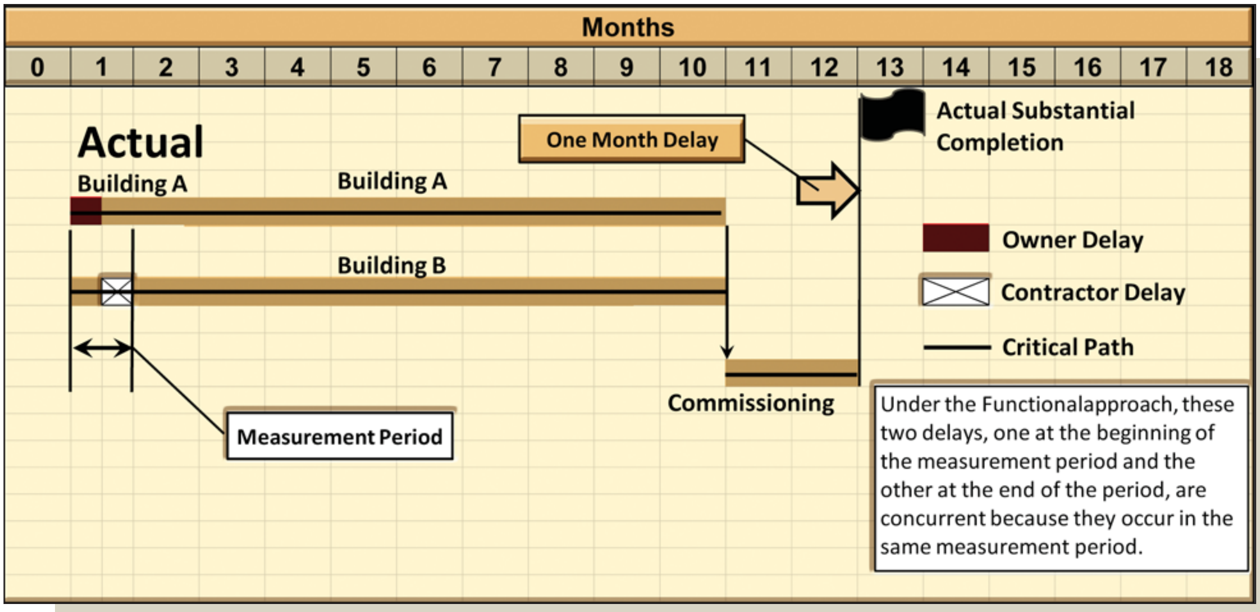

Figure 4 — Concurrent Delay Under the Functional Approach With Two Delays Within the Same Measurement Period

The first three of the above criteria are familiar to all who have encountered concurrent delays and are generally reflected in the usually cited definitions. For expert analysts, much of the work of establishing or rebutting a concurrency argument revolves around the proof of these issues.

Equally important and discussed only briefly in the FSAPG 29R-03 is the burden of proof associated with concurrency. Concurrency is generally an affirmative defense initiated after there has been an allegation of delay [3, 6, 10]. Typically, one party will allege there was a delay, and the other party will respond with an allegation of concurrency. The party initially alleging concurrency bears the burden of proof for establishing concurrency [8]. Then the party asserting the original delay often presents its analysis showing a lack of concurrency. As a practical matter, most delay experts now routinely identify concurrency, or lack thereof, as part of their initial analysis. FSAPG 29R-03 is written to reflect that identification of concurrency is often undertaken as part of the typical schedule delay analysis.

The fourth and fifth criterion, added by FSAPG 29R-03 in the 2011 edition, are common sense additions. Criterion 4, the concurrent delay must be involuntary is simply a reflection that a voluntary delay otherwise meeting the concurrency criteria would be characterized as pacing, which is discussed extensively in the FSAPG 29R-03 in Subsection 4.3 [1]. Criterion 5 reflects the practical reality that neither an owner nor contractor should be allowed to claim concurrency if the alleged concurrent delay is trivial.

The sixth criterion requires that both alleged delays must be on the critical path, even in the presence of the other delay. This is almost identical to the second criterion that requires either would delay the project absent the other; however, there is a subtle difference. Criterion 6 means you cannot just subtract one of the delays to see if the other affects completion because subtracting one of the delays changes the critical path and could make other activity sequences critical [8].

So the test is that both delays have to be on the as-built critical path. As discussed below, this matter is one of the key issues related to offsetting delays.

The seventh criterion — the requirement that the delays be in the same time period — is also discussed later in this article.

Other Concurrency Considerations

FSAPG 29R-03 also discusses several other essential issues associated with concurrency the analyst must consider when performing an evaluation. They include:

- Single or co-critical paths;
- Cause or effect; and,
- Lowest float or negative float

The first issue is the need for co-critical paths in order to have concurrency. Essentially, it asks if you can have concurrent delays when there is only one critical path? The answer is Yes. Co-critical paths are not required as concurrency usually occurs when there is only a single critical path [6]. Concurrency in these situations is more closely associated with the method of activity representation in the CPM network itself, and the fact that such networks are only approximations of the real logic connections between activities. As a result, it is almost always unnecessary and always unwieldy to put all the relationships into a schedule. Such a schedule would be so large, even on a moderate sized job, as to be unusable. The solution is to look at the causes of the delay.

For example, as shown in figure 3, on a project with a single critical path starting with the first activity "mobilization," the owner is unable to provide site access on the required date to Building A. At the same time and unrelated to the owner's delay, the contractor is unable to mobilize its crews and equipment, also to Building A. There are two concurrent causes of delay to

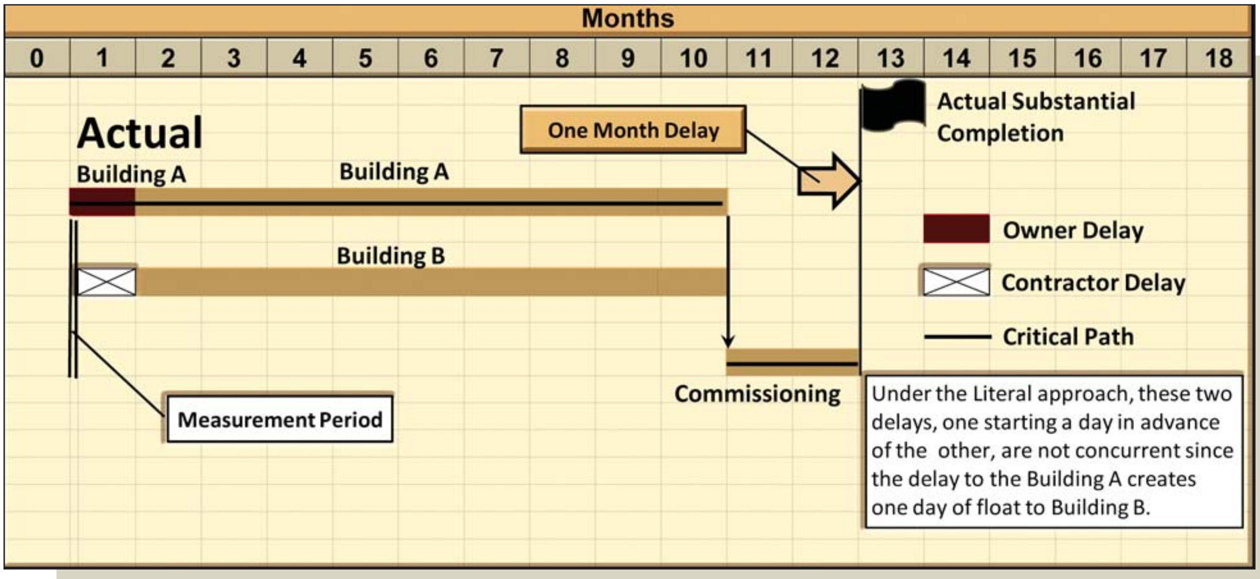

Figure 5 — No Concurrency Delay Under the Literal Approach With Two Delays Separated by One Day

the single critical path. These two causes could be depicted as separate activities in the CPM network prior to start of Building A critical path. However, such a level of detail is unnecessary in a CPM even if it is necessary to identify and to determine concurrency. It is sufficient to recognize there are two events (otherwise meeting the seven criteria) causing a delay.

Closely related to this issue is the second issue of cause or effect. Is the concurrency being discussed associated with the event that causes the delay, or the manifestation of the delay itself? This often appears where there are non-critical delays that lead to a critical path delay. For example, assume a schedule activity with a planned duration of seven days has slow productivity and extends for another three days for a total duration of 10 days. The delay does not manifest itself until the activity fails to be completed on the seventh day. The delays were earlier, but the effects of these delays do not appear until the end of the seventh day. When is the delay for purposes of determining concurrency?

FSAPG 29R-03 does not identify a preferred method in this situation, but this author believes that it is generally best to measure concurrency at the point the delay is manifested on the critical path—at the end of the seventh day in the example above. The alternative would be to investigate the timing of each of the causative elements associated with the alleged delays. This is often impossible.

FSAPG 29R-03 also identifies that such an investigation may be impacted by the placement of measuring periods since the causative events may occur long before the delay appears. The best solution is to recognize there is no actual delay at an activity level until the activity fails to complete on time; however, a detailed examination is still required to look at the causes of the delays since they affect the consideration of pacing and voluntariness.

Regarding the third issue, FSAPG 29R-03, Subsection 4.2.D.2 has an extensive discussion of the fundamental issue of least float or negative float as it relates to criticality. The negative float theory assumes criticality of any activity that has negative total float relative to a contractual milestone. The negative float approach has a certain advantage in that contractors often manage activities with negative float more closely and recovery of these activities is essential to the recovery of project delay. The lowest float path theory provides for criticality on the longest path only, even if other secondary paths are late with regard to a contractual milestone.

Under this theory, all paths shorter than the longest path (even those with negative total float) have positive total float with respect to the longest path and are therefore non-critical. The issue is so fundamental that FSAPG 29R-03 identifies it as an essential consideration in five of its nine delay analysis methodologies [1].

The difference between these two theories has a significant impact on determining concurrency. Under the negative float theory, any activities with negative float occurring during the measurement period are potential candidates for concurrency. This theory supports the application of offsetting delays since any delay to negative activities would be a critical path delay. FSAPG 29R-03 identifies that most schedule delay analysts and FSAPG 29R-03 itself generally follows lowest float path theory. This theory reduces the potential application of offsetting delays.

Same Time Period

Perhaps the most controversial and at the same time most important new concept relating to concurrency in FSAPG 29R-03 are the conflicting approaches of Functional v. Literal Concurrency. Simply put, it asks how far apart in time can would-be concurrent delays be? This concept and terminology was developed in FSAPG 29R-03 (2007) and while it had never been separately identified as an element of concurrency, it has often been an underlying issue in court cases [14].

Under the Functional approach, the delays must occur in the same analysis measurement period. This means that a delay by the owner in the beginning of

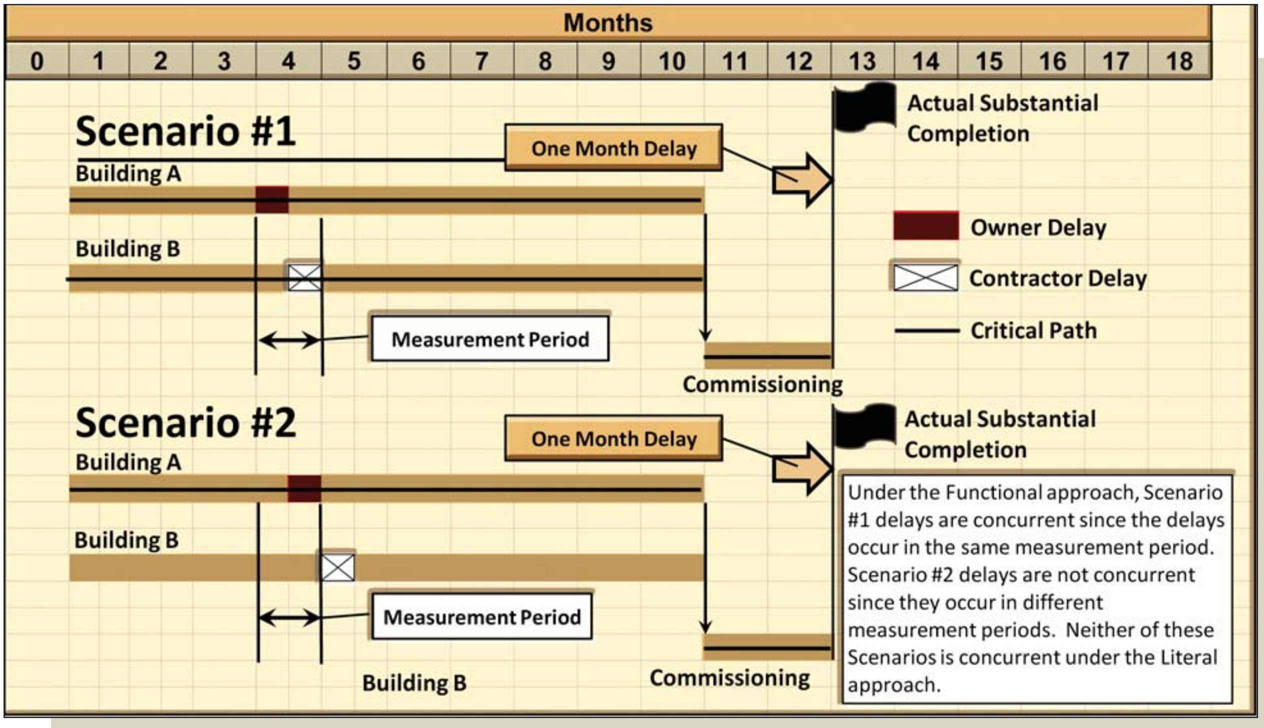

Figure 6 — Comparison of Two Delays and Two Different Measurement Periods

the measurement period can be concurrent with a delay by the contractor in the end of the measurement period, see figure 4.

Under the Literal approach the concurrent events must start at the same time, but need not be of identical duration. If one of the delay events starts prior to the other event, the first event creates float in the second event preventing it from being on the critical path [18]. While perfect simultaneity is impossible, they cannot start at exactly the same time, FSAPG 29R-03 recognizes the measurement period for most schedules is a day, so the alleged delays must start on the same day. If the measurement period was an hour, as it is in shut-down or outage projects, or a week, as might occur in certain planning projects, the same rule applies, see figure 5.

The differences between these two opposing approaches are far-reaching. The Functional approach is closely aligned with an evaluation period that often coincides with schedule updates by the contractor. Since most construction schedules are updated or intended to be updated monthly, the approach holds that if the two delays occur in the same period and other seven criteria identified above are met, there is concurrency. This approach reflects the reality of the monthly update, as well as the inherent unreliability in attempting to measure events too precisely. Despite best efforts, records from the field are often incomplete and do not measure events or progress with daily accuracy. In most cases, the Functional approach will generate more days of concurrent delay because the time period (generally a month) is relatively large. Under the Functional approach a delay in the first two weeks of a monthly measurement period is concurrent with a two week delay at the end of that same period, assuming the other concurrency criterion are met.

But the Functional approach also has its disadvantages. The location of the start and end of the measurement period used in the analysis has a significant impact on the determination of concurrency. If the dividing line between measurement periods falls between the two delays, there is no concurrency. Figure 6 shows the implications of the placement of the measurement period and the alleged delays. In Scenario 1, the two delays fall in the same measurement period, resulting in concurrent delays. In Scenario 2, the delays, otherwise identical to the previous one, fall in different measurement periods with the result of them not being concurrent. Offsetting concurrent delays, as we will return to in a few paragraphs, always occur within the same measurement period, but a measurement period of that can be as long as the entire project.

The Literal approach also has advantages and disadvantages. It assumes that both planned and actual activity measurement is accurate to within one day. As previously mentioned, this is often not the case. Yet, typical CPM schedules are developed, monitored, and updated with a planned accuracy of a day, so it is not unreasonable to measure to that accuracy.

Further, in order to establish the basic seven elements of concurrency, the analyst usually investigates the events surrounding the alleged delays in detail, on a day-to-day basis, so as to establish the first three criteria. Once this evaluation has been made, it seems absurd to then disregard this detail in characterizing non-simultaneous delays as concurrent.

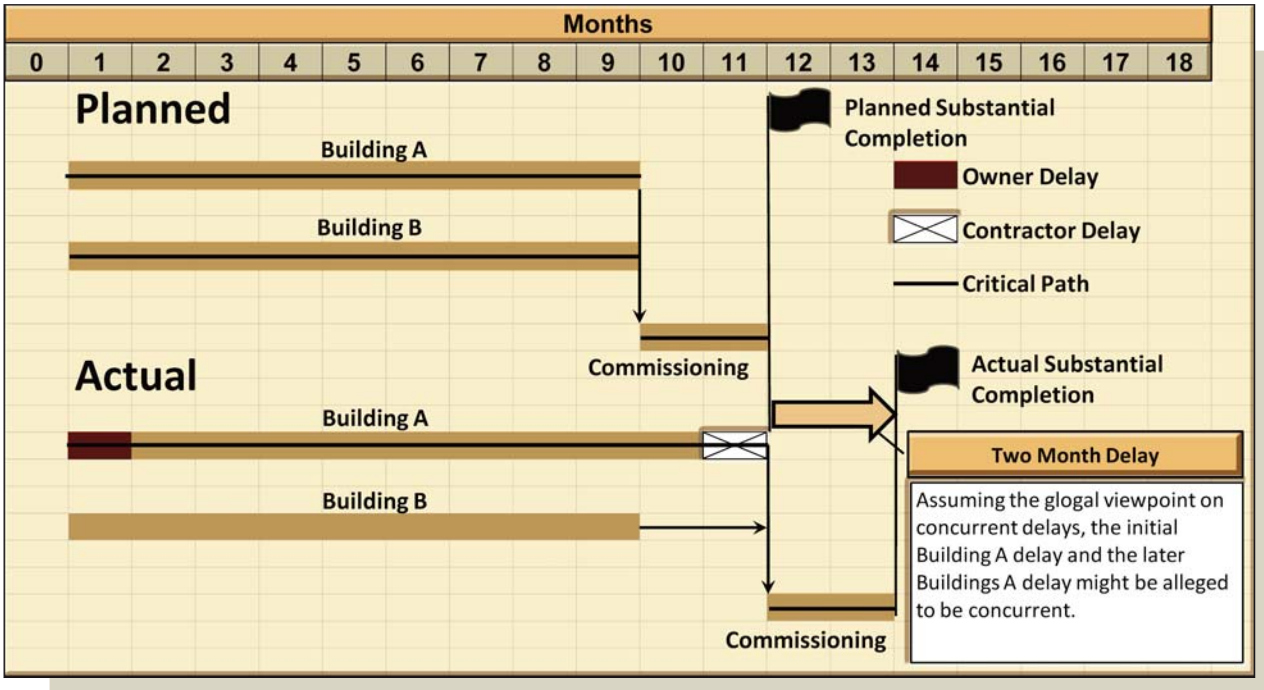

Figure 7 — Offsetting Concurrent Delays Along a Single Critical Path

FSAPG 29R-03 takes no position on whether the Functional or Literal approach is preferred. As discussed below, the Functional approach appears to be more widely accepted in court decisions, but at least one expert treatise published subsequent to the FSAPG 29R-03 seems to support the Literal approach [23].

Concurrent Delay is a Legal Theory

There are two conflicting viewpoints in court decisions regarding the time relationship between two delay events [5]. The first viewpoint adopts a global view of concurrency, one that is consistent with offsetting concurrent delays. These decisions find sequential delays along the critical path, even those that are widely separated in time, are concurrent [7]. These delays that occur along different co-critical paths in a sequential manner are concurrent because each would have delayed completion absent the other. The rational for this finding is that the effect of either individual delay is the same as the combined effect of both delays as shown in figure 1.

A more complicated situation however occurs when the two sequential delays occur along the same critical path. For example, assume the owner delays Building A commencement by one month. Later, the contractor delays work on Building A for a month. Since both delays are on the same critical path they might be considered concurrent under a global view of concurrency. However, the overall delay to building A is now two months, with each party responsible for one month. This appears to be a sequential non-concurrent delay. It is unclear from any reported cases whether this would be considered concurrent, see figure 7.

These cases finding sequential concurrent delay seem to generally be older cases (some dating to the 1930s) where the factual presentations were insufficient to allow apportionment of the delays between the parties [14]. They do not distinguish between co-critical and single critical paths. One hopes that with modern CPM analysis better prepared cases result in these offsetting delay decisions no longer being valid.

The second viewpoint in reported cases discounts the global view of concurrency, thus preventing findings of concurrent offsetting delays [5]. Yet, these cases do not distinguish between literal and functional concurrency, either implicitly or explicitly. In these cases, the courts rely on the following two overlapping approaches to reach their decisions.

- In the first approach, they apportion delay responsibility based on the facts and delay analysis presented [20]. Such an allocation, if sufficient, permits a day-by-day allocation of responsibility. The courts have found that since the contractor is generally attempting to prove the delay, it must generally prove apportionment between the owner and contractor, and failure to establish apportionment will result in a finding against the contractor [24].

- The second and more successful approach is to strictly construe the critical path. Such a perspective, given sufficient detail, will lead to the literal approach of concurrency. Recall that under the literal approach, the critical path delay that starts first creates float in the remainder of the schedule. In Santa Fe, Inc. [21], the board stated: "[I]f the [government's] concurrent delays affected only work that was not on the critical path … they are not delays within the meaning of the [concurrency] rule…" This strict approach has been followed in other cases, but only when there is sufficient evidence to support such an analysis [17].

Are Offsetting Delays Concurrent Delays?

So now we know that owners can argue that time-separated delays can be concurrently offsetting delays because according to some judicial decisions, sequential delays along the critical path can be considered concurrent [11]. Owners generally posit this situation in negotiations because owners often have poor schedule control policies, or worse have affirmative policies that leaves determinations of delay quantification and entitlement until the end of the project.

Recall in our initial discussion, the owner attempted to offset a delay in site access with a subsequent contractor delay. This attempt often occurs because the owner fails to resolve delays as they occur. The most common reasons are:

1. The owner, through poor management practices, simply fails to act on a contractor's delay request. Such failures generally result in increased costs of resolution because contractors increase their pending change order claims to cover the increased delay and, constructive acceleration becomes more likely since the contractor has not been granted a contemporaneous time extension, yet is required to continue to make progress.
2. The owner can consciously adopt a "wait and see" attitude concerning delays. This is usually done with the hope that the possible delay claim will evaporate through contractor resequencing, uncompensated acceleration or later contractor delays. This procedure incurs the same increased cost and constructive acceleration risks described above.
3. The owner can have an active policy of deciding all delay issues at the end of the project. Owners often implement this policy under the misguided idea that it is cheaper to pay the premium for late issuance of a time extension rather than potentially pay for "undeserved time." Undeserved time occurs when contractors are contemporaneously given time extensions, only to have after-the fact analysis show such a time extension was undeserved.

In all these situations, the owner arrives at the end of the project without having contemporaneously resolved requested time extensions. The recourse often is a discussion of offsetting delay.

Negotiating Offsetting Delays

While the contractor should always follow the contract procedure and press for timely resolution of delay issues, the contractor needs to be prepared in the event there is an end-of-project balancing effort by the owner.

Contractors have three major positions they can take in negotiating offsetting delays: (1) they can fight the alleged offsetting concurrency by establishing they were not responsible for the second delay; (2) they can encourage and welcome such a negotiation; or, (3) they can yield to the owner's superior bargaining position and accept the offsetting delay. In many cases, contractors will follow all three alternatives sequentially.

The first reaction is almost always to prove the initial owner—caused delay and then go on to prove that all subsequent delays were not the contractor's responsibility. This is, of course, what schedule delay experts working for contractors typically attempt. It is seldom fully successful, but almost always partially successful. It appears from observation, based on the rarity of actual payment of liquidated damages, that contractors are often successful in eliminating liquidated damages from owner claims. This can be considered a partial success.

Second, after the initial effort at proof of delay, the contractor may recognize that the best resolution would be a finding of offsetting concurrency in lieu of winning on the owner's initial delay and losing on the subsequent delay. Part of this evaluation will be purely financial; that is, balancing the delay damages against the owners liquidated damages [2]. The result is neither party gets damages although a time extension is granted.

Finally, many times contractors simply yield to the superior bargaining position of owners on this issue of offsetting delay. Contractors compare the costs and risks of litigation with the potential recovery, and conclude the cost of litigating construction issues usually outweighs potential recovery. Thus owners continue to assert their questionable entitlement to offsetting concurrent delays.

The Future of Offsetting Delays

Like CPM scheduling itself, the experts and industry are significantly more advanced in concurrency analysis than the courts. While there still exists a series of decisions that make concurrency decisions on a global basis, resulting in sequential delays being deemed concurrent, better understanding of concurrent delay by the experts, better CPM schedules maintained during projects, improved record keeping, and better forensic CPM delay analyses, all portend that offsetting concurrent delays will be a thing of the past. ◆

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