Schedule Optimisation

The first step of our involvement was to identify the project’s critical and near critical paths. For us to correctly identify the true critical path, we needed to start from the basics, and make sure that the schedule was optimised to be effectual, by identifying float, and functioning properly to react to change as the project progressed.

The insured prepared a schedule to a level of detail covering major work packages, i.e. foundations, pipe rack construction, piping installation, instrumentation installation, etc. This was referred to as a ‘Level 3’ detailed schedule. However, to maximise opportunities for risk mitigation the reinstatement schedule needed to be planned to a more detailed ‘Level 4’ position.

For example, Level 3 told us that the planned duration for the general piping installation was 90 days, but could not identify when the pre-commissioning could commence within the piping installation package. Level 4 explained exactly what was happening in that 90 day period. It assisted in determining how to most efficiently manage the project’s resources, provided confidence in the accuracy of the schedule’s forecast durations, and ultimately assisted in forecasting the anticipated benefits of mitigation measures.

Assessing Mitigation Options

The critical path was initially driven by the procurement of valves, with five other packages found to be near critical, having the potential to either impact the value of any mitigation measures, or prolong the completion of the project should any of their activities experience delay. Each of the critical and near critical activities were analysed to confirm the available float, dependent activities, potential for delay, potential acceleration options, sequencing clashes, labour resource conflicts and labour density issues.

Following discussions between the adjustment team’s expert expeditor and the valve supplier it was possible to mitigate the delivery of the valves by 69 days. Once the procurement of the valves had been expedited, the critical path moved to the high-pressure vessels and these items also required expediting.

CASE STUDY
How to successfully manage time in Business Interruption

A fire within a Diesel Plant caused damage. The reinstatement works were anticipated to be completed within 10 months, actually completed in 8½ months, and the claim was settled within 12 months. All parties benefitted. The quick claim settlement, along with a 5½ week reduction to the business downtime, was facilitated by early involvement, transparency and collaboration.
Without expediting the vessels, it would only have been possible to expect an overall benefit to the project of 16 days. However, by expediting the vessels together with the valves, it was possible to confidently forecast an improvement on the completion date of 38 days.

As a result of the expediting measures, other different works streams had become critical including the flange valves, DC motor, MCC modules and structural steelwork. For further benefits to be derived it would also be necessary to explore mitigating these items - you can start to see how an agile response becomes key to successful mitigation.

Complex reinstatement projects are highly dynamic projects where adjustment teams need to be continually aware of what impact change to any single element may generate, if any. Ultimately, by proactively exploring the potential to expedite all near critical elements and not just the most critical elements, decisions could be made early and before they started to negatively impact the schedule – this principle is central to minimising the Business Interruption.

Pressure on Resources

The site footprint was fairly small. Savings from the expediting measures would only be realised if it was physically possible to perform the work within the allocated project duration. Based on the planned working patterns it transpired that at one point the schedule would require 530 electricians to be working on a single day, in a main work area of 600m². Whilst labour density and productivity factors are unique to each project, it was clear that it would not be possible to work safely, nor productively, with this level of congestion.

In response to this the adjustment team and the insured’s project team explored options to ease congestion at peak times without diminishing the anticipated time savings for expediting measures. It was possible to ease the site congestion by re-allocating float within certain disciplines, altering the working sequence of the project and delaying some non-critical works, but not completely avoid the risk.

In addition, the pressure placed on the critical path by the number of near critical item deliveries increased the risk of project delay. So, following review the adjustment team took the decision that it would not be beneficial to attempt to further expedite the project.

Focus then shifted towards ensuring that the project did not suffer further delay. Float levels for near critical activities were monitored on a weekly basis which allowed the adjustment team to proactively manage further issues. Those who have experience of reinstatement projects following catastrophic incidents will appreciate that often meeting the original forecast completion date can be challenging enough in itself.

Early Involvement, Transparency & Collaboration

Facilitated by the schedule optimisation, increased detailing to ‘Level 4’, implementation of strategic mitigation measures, proactive management of resources and ongoing weekly monitoring of the reinstatement works, the project actually completed 39 days (5½ weeks) earlier than was originally forecast at the outset of the project. The additional gain was a huge credit to the collective efforts of the entire team who contributed to successfully reducing the Business Interruption.

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