"Project Management Using Earned Value"
Case Study Solution 18.1

18.1

CASE STUDY

Special Networking Considerations

Special Networking Considerations Solution

1. The only thing that could cause this discontinuity in a "critical path" is the use of directed dates or constraints. It is apparent that directed dates have been applied to activity numbers 16, 17, 18, and 19, and possibly to 15 as well.

2. A listing of directed dates should be requested to allow further analysis of the network update results.

3. A Not-Later-Than" directed date or constraint of August 15 should be applied to the final project activity (Activity "V", #22). While directed dates may distort analysis when applied to intermediate activities within a network, there should always be one applied at project completion unless the finish date is not important. The very existence of a schedule indicates the end date is significant.

4. (1) One way would be to use start-to-start restraints with lags, i.e.

   Activity P: SS0
   Activity Q: SS5
   Activity R: SS10
   Activity S: SS15

   (2) Activities Q, R, and S could have their durations extended to correspond with the desired completion dates. Then the durations would be as follows:

   Activity P: 5 days
   Activity Q: 10 days
   Activity R: 15 days
   Activity S: 20 days

   While both of these approaches would result in the desired dates in the baseline file, current status will cause them to shift according to progress or lack thereof.

5. (A) No, this is not the same logic as developed in the original baseline schedule. Activity S, for example, may end up as a critical activity strictly as a result of its artificial long 20-day duration or due to its artificial 15-day lag.

(B) The advantage of both of these approaches compared with using directed dates is that as each new status update occurs, at least the dates will be determined per standard CPM calculations. This allows the dates to "float" in accordance with actual progress. Problems such as negative total float can then be addressed for these activities by shortening the durations or lags as appropriate.

6. If the approach (1) is used from question 4, there is no impact on activity resource loading, although it will have real impact on resource leveling.

7. If approach (2) were used from question 4, resources would have to be spread non-linearly. There should be no resources used until the final five days of the scheduled activity, at which time the full resource usage would occur over the final five days. Activity stretching with reduced resources (linear) may be possible, but the original baseline plan for 5-day activities suggests that this is the most efficient way to assign resources.