



PP01 Programme Submission, Review and Acceptance.

There is a clear need for a 'baseline' programme to be developed after the award of contract, reflecting the intentions of the contractor.

Contract administrators need front-line skills to review a contractor's baseline programme. Accordingly, contract administrators increasingly have to decide if, and to what extent, they are going to trust, approve or accept a contractor's programme submissions. In today's planning software paradise, CA's should be able to detect common techniques or mistakes when reviewing programmes that attempt to or increase the likelihood of extension of time awards. These techniques mean that a programme will not function as a proper predictive tool for measuring progress or quantifying the impact of delays and changes.

Contract requirements: JCT 2005

The Joint Contracts Tribunal Standard Building Contract, With Quantities, 2005, includes in Section 2 Clause 2.9, the following,

'Construction information and Contractor's master programme

2.9 .1 As soon as possible after the execution of this Contract, if not previously provided:

- .1 the Architect/Contract Administrator, without charge to the Contractor, shall provide him with 2 copies of any descriptive schedules or similar documents necessary for use for carrying out the Works (excluding any CDP Works); and
- .2 the Contractor shall without charge provide the Architect/Contract Administrator with 2 copies of his master programme for the execution of the Works and, within 14 days of any decision by the Architect/Contract Administrator under clause 28.1 or of any agreement of any Pre-agreed Adjustment, with 2 copies of an amendment or revision of that programme to take account of that decision or agreement.

But nothing in the descriptive schedules or similar documents (or in that master programme or in any amendment or revision of it) shall impose any obligation beyond those imposed by the Contract Documents.'

Commentary on the JCT 05 requirements

JCT 05 has a very basic requirement for submittal of the contractor's programme, the only requirement being a 'master programme for the execution of the Works' Unlike the NEC3 Contract, there are no requirements on the content of the programme and supporting information.

Contract requirements: NEC3

The Engineering and Construction Contract, 'NEC3', includes in core clause 3, 'Time', the following clauses,

'The programme 31

- 31.1 If a programme is not identified in the Contract Data, the Contractor submits a first programme to the Project Manager for acceptance within the period stated in the Contract Data.
- 31.2 The Contractor shows on each programme he submits for acceptance
 - the starting date, access dates, Key Dates and Completion Date,
 - planned Completion,
 - the order and timing of the operations which the Contractor plans to do in order to Provide the Works,
 - the order and timing of the work of the Employer and Others as last agreed with them by the Contractor or, if not so agreed, as stated in the Works Information,
 - the dates when the Contractor plans to meet each Condition stated for the Key Dates and to complete other work needed to allow the Employer and Others to do their work,



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- provisions for
 - float,
 - time risk allowances,
 - health and safety requirements and
 - the procedures set out in this contract,
- the dates when, in order to Provide the Works in accordance with the programme, the Contractor will need
 - access to a part of the Site if later than the access date,
 - acceptances,
 - Plant and Materials and other things to be provided by the Employer and
 - information from Others,
- for each operation, a statement of how the Contractor plans to do the work identifying the principal Equipment and other resources which he plans to use and
- other information which the Works Information requires the Contractor to show on a programme submitted for acceptance.

The next sub-clause, 31.3, concerns acceptance of the contractor's programme by the project manager, whilst clause 32 is titled 'Revising the programme'. Both clause 31.3 and 32 are referred to in chapter 9 of this book.

Commentary on the NEC3 requirements

The NEC3 contract recognises that the programme is an important tool for use by both the contractor and project manager. The programme is valuable not only as a scheduling tool but also as a project management and change control tool.

NEC3 has distinctive features on the content of the contractor's programme. Indeed, the programme is the contractor's programme and he owns the terminal float. The programme is not only used to portray how the contractor intends to carry out the works, but can also be used for forensic analysis to determine the effect of compensation events for both time and money.

One of the key features of the programme under NEC3 is that upon its acceptance the contractor's programme becomes the 'Accepted Programme'. Any subsequent programmes submitted by the contractor and accepted by the project manager in turn become the 'Accepted Programme', superseding the previous programme.

The third method is a 'Line of Balance' chart. This approach comprises a series of cumulative line graphs set against a common time scale. This approach is somewhat specialist in nature and is ideal for situations of repetition, such as housing and high-rise.

With regard to the required content of the contractor's programme, here are some matters to be aware of;

- i) 'planned Completion', is the date when the contractor plans to complete the works. The requirement is to show on the submitted programme both the 'planned Completion' and the 'Completion Date'. At the start of the contract the contractor's 'planned Completion' may be a date earlier than the contractual 'Completion Date'.
- ii) 'the order and timing of the operations which the Contractor plans to do in order to Provide the Works'. This should be clear from the programme, i.e. network logic and listing of activities with start and finish dates. However, incompatibility in this document and with other contractor documents is sufficient reason for the Project Manager not accepting a programme. The requested information will also facilitate the assessment of compensation events. This item can also include such off-site manufacturing of components such as bathroom pods and the like. It is advisable that the procurement chain of these items, e.g. design, approvals, manufacture, etc, be included.



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- iii) 'a statement of how the Contractor intends to do the work'. In effect this is a resource statement, which is for each activity a list of resources that are intended to be used. Clearly this list will be based on the scope of the work at the time of submittal of the programme. The resource statement will also facilitate the assessment of compensation events.
- iv) 'the order and timing of the work of the Employer and Other' The employer and project manager needs to ensure that any constraints on how the contractor is to 'provide the works' are stated in the 'works information'. The contractor needs to show these constraints in his planning and programme submittal. To introduce constraints at a later date, after commencement of the works, would be a change to the 'works information' and probably a compensation event.

What to look for in a programme review

When the programme is submitted, the CA should ask the following questions,

- i) Does it comply with contractual obligations, milestones, or restraints on working hours or methods?
- ii) Is the entire scope of the work represented?
- iii) Are any activity durations questionably too long, or too short for the scope of work they represent?
- iv) Are there any obvious errors in the programme related to the sequence or timing of the works?
- v) Are there any onerous requirements of the employer's professional team, e.g. early completion programmes, unrealistic time allowances for approvals or supply of information, which are employer's risks?

Review of a CPM programme submittal

A very dangerous misunderstanding exists with a CPM programme submittal; many contract administrator's and other professionals are still of the mistaken opinion that a CPM submittal exists of several pages of activity listings and/or a barchart plot or two. A CPM submission for review should consist of a full copy of the computer files necessary to recreate the programme; everything else is just frills.

A CPM submission, both for the baseline for review and subsequent updates, should consist of three discrete items, which are,

- i) The activity details, including description, original and remaining durations, and percent complete. In conjunction with this, you should see for each activity other computed information such as early and late start and finish times, and total float.
- ii) The logical relationships that connect the various activities together to form a network which makes the CPM work. Full details of any lags and leads, i.e. imposed time durations between activities, is a must in the submittal.
- iii) Lastly and certainly not least is 'constraints'. The true logic of a network can be overridden by the programme containing various time constraints on an activity(s). These will artificially reduce total float and could create an invisible delay, or even have the activity just expand to take all available time. This will never show up on a barchart plot and is only found in a 'constraint' listing and/or a copy of the computer files.



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Having been satisfied that the information in the contractor's submittal is sufficient for a proper review, here are five basic checks or tests that should be carried out using the computer files provided by the contractor,

Test 1: Does the 'longest path' filter identify a reasonable critical path for the project?

Make sure the longest path is reasonable, and then check the reasonableness of near critical paths.

Test 2: Are there any open-ended activities in the programme?

In general, there should be only two open-ended activities in the entire network. One beginning activity with no predecessors, and one completion activity with no successors. Every other activity should be logically tied into the network. Furthermore, every activity should have its finish constrained with at least one FS (finish to start) or FF (finish to finish) successor relationship to another activity. Likewise every activity should have at least one SS (start to start) or FS (finish to start) predecessor relationship to another activity.

Test 3: Do any of the activities have too much float?

Activities with too much float may indicate missing logic links, or logic links that have been overridden in a subsequent progress update. Identify any such activities.

Test 4: Are there any unnecessarily long gaps in workflow when grouping activities by work area and sorting by early start dates?

In most cases once work begins in a particular area or phase of the project then the programme should allow work to continue uninterrupted in that area or phase. Long calendar gaps in a work area or phase may indicate less than ideal workflow and suggests an adjustment of preferential logic links to create a better plan.

Test 5: Are there activities with unnecessary contractor assigned constraints?

As constraints override the network logic in calculating activity start / finish dates and total float they should be used sparingly, if at all. A better approach is to use activity durations and network logic to model the project, and thereby eliminate constraints.

Acceptance of the programme

If the contract administrator fails to comment it may be implied as acceptance that the contractor's programme is contract compliant / satisfactory. When 'accepting' a programme the contract administrator could be merely acknowledging receipt of contractor's intentions. In 'approving' the programme, the contract administrator is more often seen to have performed some level of due diligence on the programme, such as asking the questions above, and is therefore acknowledging that the submission complies with the terms of the contract. However, it is important that a realistic baseline is established for the management of the works and the assessment of potential and actual effects of changes, unforeseen events or other circumstances that could delay the works.

Programmes are key documents in extension of time and delay claims disputes; therefore their significance in potential dispute resolution forums cannot be under-estimated. At the same time, the perspective must be maintained that the programme is a management tool to assist in managing the work. A balance should be struck between keeping the contractor on an accurate progress path and the emphasis on the programme as a claims document. If approval is granted, this should not in any way relieve the contractor from complying with the contract, or in any way increase the employer's liability.