



تدوین و تصویب برنامه زمان‌بندی اولیه (Baseline Schedule)

اصول + نکات حیاتی + چکلیست
(بر اساس سندی از AACE)

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What we will learn?

- ☐ Purpose
- ☐ Overview
- ☐ Applicability
- ☐ Recommended practice
- ☐ Overarching principles
- ☐ Baseline schedule submittal

What we will learn?

- ❑ Baseline schedule review process
 - ❖ Review introduction
 - ❖ Pre-analysis checks
 - ❖ Project analysis
 - ❖ Activity analysis
 - ❖ Activity description checks
 - ❖ Activity code analysis
 - ❖ WBS code analysis
 - ❖ Relationship analysis
 - ❖ Lag and lead checks
 - ❖ Cost analysis
 - ❖ Notebook or log review
 - ❖ Other baseline schedule checks
- ❖ Additional topics



Reference



Primary reference



AACE® International Recommended Practice No. 78R-13

ORIGINAL BASELINE SCHEDULE REVIEW – AS APPLIED IN ENGINEERING,
PROCUREMENT, AND CONSTRUCTION
TCM Framework: 7.2 – Schedule Planning and Development

Rev. October 23, 2014

Note: As AACE International Recommended Practices evolve over time, please refer to www.aacei.org for the latest revisions.

What are the purposes of this guideline?

Purpose



Purpose of This RP

❑ This **recommended practice (RP)** for baseline schedule review addresses two aspects of the **schedule development process**.

1. **Guidelines** for the engineering, procurement, and construction scheduler to create a professional, useable **baseline critical path method (CPM)** project schedule
by making him/her **aware of the criteria** by which the schedule is **to be reviewed**.



Purpose of This RP

❑ This **recommended practice (RP)** for baseline schedule review addresses two aspects of the **schedule development process**.

2. **Guidelines** for the reviewing scheduler to evaluate that baseline schedule for **acceptance** by the **owner or client**.

Overview



Who could use this RP?

- ❑ This recommended practice is to **assist** both
 1. Creator of the baseline schedule (**scheduler**)
 2. Person (**reviewer**) who receives the submitted schedule and reviews it for acceptability on behalf of the owner or client
 3. It may also **assist owners** in the development of their scheduling specifications.
- ❑ The use of the term owner also **includes** the work performed by **their agents** such as contractors, subcontractors, or a project manager acting as the owner's representative.

Could this RP be used for other contractual relationships?



Who could use this RP?

- ❑ For the purposes of this RP it is **assumed** that the schedule is originally created and updated by the **contractor**,
however, the guidelines may **apply** to other contractual relationships.

Why does it matter to use this RP?



Importance of this RP

❑ A **lack of timely agreement** on the acceptance of a baseline schedule can result in

- ❖ Confusion
- ❖ Disagreements
- ❖ Loss of productivity
- ❖ Extra work
- ❖ Un-resolved issues

That may afterward lead to claims or disputes

*It is in the **best interests of all parties** to achieve an accepted baseline schedule in a **timely manner***

Applicability



When to use this RP?

- ☐ This recommended practice is intended to address the evaluation of critical path method (CPM) original **baseline schedules**.
- ☐ This RP does **not apply** to a revised baseline plan or to a schedule update review where **project progress/status** is of **primary concern**.

Why?



Why this RP could not be used for other schedules?

- ❑ The focus of a baseline review is on the **overall quality and completeness** of the original project schedule and overall plan;
it is **not an assessment** of current progress or subsequent project schedule changes.
- ❑ A baseline schedule review **focuses on the following** issues that are **not normally** considered in a schedule update review:
 - Inclusion of the entire project scope.
 - Sequence and work flow.
 - Constructability.
 - Timing and phasing.
 - Adherence to legal and contractual requirements.
 - Unambiguous and clear descriptions of the work.
 - Resource usage and balance.
 - Level of detail.
 - Design and coding of activities and project organization [i.e. organizational breakdown structure (OBS) and work breakdown structure (WBS)].
 - Highlighting key or critical areas of risk.

Recommended Practice



How it is organized?

- ❑ This RP is organized into **two phases**;
 1. The preparation of the baseline schedule submittal by the **contractor**
 2. The review of this submittal by the **owner**



How it is organized?

□ The following topics are outlined as follows:

- OVERARCHING PRINCIPLES
 - Completeness (inclusion of the entire project scope)
 - Delineation of Responsibility
 - Enforceability
- BASELINE SCHEDULE SUBMITTAL
- BASELINE SCHEDULE REVIEW PROCESS
 - REVIEW INTRODUCTION
 - Reviewer's Role and Responsibilities
 - Review Process Overview
 - Baseline Schedule Review Items
 - Factors for Disapproval
 - PRE-ANALYSIS CHECKS
 - Early Project Completion
 - PROJECT ANALYSIS
 - ACTIVITY ANALYSIS
 - ACTIVITY DESCRIPTION CHECKS
 - ACTIVITY CODE ANALYSIS
 - WBS CODE ANALYSIS
 - RELATIONSHIP ANALYSIS
 - LAG AND LEAD CHECKS
 - CONSTRAINT ANALYSIS
 - COST ANALYSIS
 - NOTEBOOK OR LOG REVIEW
 - OTHER BASELINE SCHEDULE CHECKS
- ADDITIONAL TOPICS
 - Resource Leveled Schedules

Overarching Principles

- ❑ **Contractually**, if the **owner requires** the contractor to submit a baseline schedule, then the **owner** of the project should review and comment on that submittal in a timely manner.
- ❑ **Review comments** from the owner should be
 1. Made in writing
 2. Returned to the contractor

What are three primary areas while reviewing a baseline schedule?



Three primary areas

❑ The **review** of a baseline schedule **focuses** on

1. Completeness
2. delineation of responsibility
3. enforceability

1. **All** contractual deliverables and significant pieces of work to be performed by contractor and its subcontractors should be included in the schedule.
2. Any significant expenditure of resources under direct or indirect control of the contractor should be described.
3. **Significant pieces of work** performed by owner, their agents, and other significant stakeholders that have the potential to **affect the contractor's performance** should be included in the schedule.



Delineation of responsibility

- ☐ Each activity in the schedule shall have a
 1. **Primary agent** or
 2. A **single entity** in control of the work
and responsible for its completion.

***Work by different contractors or under other parties' control
should not be combined together into a single activity.***

- ❑ If the **schedule specification** allows or prohibits a **particular CPM practice**,
then that **practice is allowed or prohibited** (as the case may be)
regardless of other considerations.
- ❑ The **contractor may request** that any specific schedule practice be waived and
if such **waiver is granted** by the owner,
may **disregard** that particular practice.
- ❑ Other than for issues of **commonly observed** good scheduling practice,
the **reviewer should not** add any further prohibitions to the project
than those that **already exist** in the
contract, specifications, and plans.

Baseline Schedule Submittal



Minimum schedule submittals

- ❑ At a **minimum**, the baseline **schedule submittal** consists of a
 1. Schedule narrative
 2. A **copy** of the schedule's native electronic backup file in a form consistent for archiving and transfer to other project participants

- ❑ **Additional schedule submittal** components may include printed or electronic copies of
 1. CPM reports and graphics
 2. Submittal/procurement schedules
 3. Early/late progress and budget curves (s-curves)
 4. Related resource graphics
 5. Other deliverables required by the contract

What if we have extensive submittal documents?



Extensive submittal documents

- ❑ If **extensive submittal documents** are required,
then the **owner** may wish to consider specifying a minimum review period in
the contract to provide **sufficient time** for this process.

It is in **both parties best interest** to minimize review periods in
order to **obtain baseline schedule acceptance** as soon as possible.

How to expedite the acceptance process?



Coordination meetings

- ❑ **Open discussions** between the contractor and the owner **early** in the baseline schedule creation process

may aid in establishing the **true needs of the owner** regarding submittal requirements.

What are baseline schedule submittal components?



Baseline schedule submittal components

- ❑ Typically the **baseline schedule submittal** consists of the following components:
 - ❖ A written narrative describing the **general workplan** for the project.
 - ✓ The **narrative** should include an overview of the **contractor's workplan**.
 - ✓ This narrative is not the same thing as a schedule basis memorandum.

What does that mean?
Remember Planning and Scheduling Course?



Baseline schedule submittal components

- Typically the **baseline schedule submittal** consists of the following components:
 - ❖ A **complete electronic copy** of the baseline schedule.
 - ✓ This file should be in the **format produced** by the **CPM scheduling software**



Baseline schedule submittal components

- ❑ Typically the **baseline schedule submittal** consists of the following components:
 - ❖ Printed reports, as **required** by scheduling **specification**.
 - ✓ **Care** should be taken with **printed reports** to ensure that they **reflect** the **calculated dates** in the electronic schedule.



Baseline schedule submittal components

- ❑ Typically the **baseline schedule submittal** consists of the following components:
 - ❖ Graphics, as required by scheduling **specification**.
 - ✓ **Graphics** may be in the form of an electronic file or a printed document, as required by the specifications.
 - ✓ These may include
 - Bar charts
 - Cost or labor histograms
 - S-curves
 - Material procurement information

What if significant portions of the project involve subcontracted work?



Subcontracted work

- ☐ When significant portions of the project involve **subcontracted work**, the **contractor** should **provide documentation** to the **reviewer** to show that each subcontractor
1. Has **reviewed** the submitted baseline schedule
 2. **Agrees** that their portion of the work is **achievable** as depicted in the submitted schedule

Baseline Schedule Review Process



Review introduction – Reviewer’s role and responsibilities

❑ The **reviewer** is usually either the owner’s representative or a member of the owner’s staff.

1. The **reviewer** needs to be fair and objective in the **overall review process**,
 - i. Should **understand** the type of project to be performed, and
 - ii. Should be **trained** in good scheduling practices.
2. The **reviewer** should read and have a good understanding of all the **contract documents** related to the schedule
contract, general conditions, supplemental conditions, specifications,
plans, and other documents
before starting the baseline review process.

5 primary criteria while evaluating baseline schedule



Review introduction – 5 Review criteria

- ☐ The baseline schedule should be **evaluated** using the following criteria:
1. **Scheduling requirements** included in the contract general specifications.
 2. **Scope** of the project as defined by the contract plans and specifications.
 3. The **contractor's** execution plan or workplan.
 4. **Resource** availability.
 5. **Scheduling practices** and **guidelines** generally accepted for use by professional scheduling practitioners.

9 important items that should be considered in the baseline schedule



Review introduction – 9 Baseline schedule review items

❑ **Important items** that should be considered in the baseline schedule are:

1. **Critical** procurement and long lead time activities
2. **Activity durations** that account for utility or permit restrictions
3. Concurrent activities of **similar work** that **exceed** daily planned crew resources
4. **Predecessor** activities unrelated to **successor** activities
5. Project **milestones** that establish the contract performance period
6. Area access restrictions
7. Coordination with **other projects** and **third parties**
8. An **identifiable** and **reasonable** critical path
9. **Compliance** with contract requirements

Why to disapprove the schedule?



Review introduction – Factors for disapproval

- ☐ If the **baseline schedule** is found to be deficient, then it has **limited value** to the project team as a tool to
1. Manage the contract
 2. Track the project's progress
 3. Identify and measure project delay

When the reviewer could disapprove the submitted schedule?



Review introduction – Factors for disapproval

❑ These factors include instances when

1. **Plan** depicted in the **baseline schedule** does **not meet the requirements** of the contract
2. **Plan** depicted in the **baseline schedule** is determined to be unachievable
3. **Baseline schedule** does **not represent** the contractor's plan for completion
4. There are **fatal technical errors**

How to perform pre-analysis checks?



Pre-analysis checks

❑ The **pre-analysis portion** of the schedule review should begin with the following:

❖ **Proper identification of the schedule.**

- ✓ **Check to see** that the schedule **contains** the proper company name, project title, project manager, primary resource, version, etc.
- ✓ This information should be **sufficient to identify** the project and participants **when viewed at a later date** and **out of context**.
- ✓ Schedules should have unique identifiers so that **any report or graphic** will correctly identify the **exact project involved**.
- ✓ The report title section and project version should say,
“Baseline” as well as
version number if **revisions** have been made.



Pre-analysis checks

❑ The **pre-analysis portion** of the schedule review should begin with the following:

❖ **Calculate the schedule.**

- ✓ The CPM schedule **dates** must be calculated;
early and late calculated dates should be present for every activity.
- ✓ This condition will **not be true** if logic loops were **never cleared** and this would be grounds for schedule **submittal rejection**.
- ✓ It is **very important** for the contractor to **calculate** the schedule **before transmitting** it to the owner for review.
 - ✓ **If the reviewer** calculates the **schedule and discovers** that the early or late dates have changed,
this **poses a problem** for the reviewer as to which dates to review.



Pre-analysis checks

❑ The pre-analysis portion of the schedule review should begin with the following:

❖ **Imposed project finish date.**

✓ **Unless** required by the contract,

it is recommended that **schedulers avoid** using these imposed finish dates;

is **better to assign** a **constraint** to the final activity that determines the **contract performance period**.



Pre-analysis checks

❑ The pre-analysis portion of the schedule review should begin with the following:

❖ **Contract Performance Period.**

- ✓ The schedule's '**final activity**' should represent substantial completion, mechanical completion, or whatever term is used in the contract documents as the point at which execution or construction is essentially complete.



Pre-analysis checks

❑ The pre-analysis portion of the schedule review should begin with the following:

❖ Correct data date.

- ✓ The project status date, or data date, should **equal project start**, which should equal the project notice to proceed (NTP).
 - If this is **not the case**, there should an explanation provided in the accompanying narrative.
- ✓ The schedule should **not contain** any activities stated as having actually started,
except perhaps the notice to proceed date or other preconstruction activities that occur prior to the contract performance period (e.g. submission of bonds and insurance documents).
- ✓ **Whatever status** is included in the accepted baseline schedule may be **considered the 'baseline'** and
therefore **not part** of any evaluation of project delay.



Pre-analysis checks

❑ The pre-analysis portion of the schedule review should begin with the following:

❖ **Minimum duration measurement.**

- ✓ The **reviewers** should **verify** that the selected CPM duration unit (days or hours) is appropriate for the project.
 - Unless a schedule is depicting a short-duration turn-around or outage project where status is taken each **hour**,
it is typical to schedule most projects in days.



Pre-analysis checks

❑ The pre-analysis portion of the schedule review should begin with the following:

❖ **Correct currency designation.**

❖ Cost loaded schedules should designate the **correct currency**.



Pre-analysis checks

❑ The pre-analysis portion of the schedule review should begin with the following:

❖ **Weekly Start day.**

- ✓ The **start day** for the week is used for reporting on a weekly timescale to determine **when weekends occur** for calendars.
 - It should **agree** with the first workday in the workweek **most commonly used** on the project.



Pre-analysis checks

❑ The pre-analysis portion of the schedule review should begin with the following:

❖ Calendar checks.

✓ Care should be taken to **thoroughly review all calendars**
before reviewing calculated dates.

➤ **Errors** in establishing project calendars will cause **discrepancies**
in dates that are **difficult to later troubleshoot**.



Pre-analysis checks

❑ The pre-analysis portion of the schedule review should begin with the following:

❖ Calendar checks.

✓ A reviewer should identify potential problems such as:

- Weekend definitions (non-work periods) that do not match the workplan.
- 7-days per week, 24-hours per day calendar (7/24 Calendar) used for appropriate activities such as the curing of concrete. This is the only type of calendar that should not have holidays assigned.
- Inconsistency in the number of hours per working day in a calendar.
- Calendars without assigned holidays (except for 7/24 Calendars.)
- Calendars that do not extend beyond the expected project completion date to accommodate potential delays.
- Issues with incorrectly specified calendar holidays.
- Non-work periods in the contract specifications that have not been included.
- Specialty calendars for activities affected by weather, access restrictions, shift work or other non-standard circumstances, as appropriate.
- Activities that are not assigned to their appropriate calendars.
- Defined calendars that are not utilized by any activity in the schedule.



Pre-analysis checks

❑ The pre-analysis portion of the schedule review should begin with the following:

❖ **Internal operating rules.**

✓ **Confirm all settings** of the internal operating and schedule calculation rules,

including cost-oriented settings

even if cost is not being monitored.

➤ Some such settings can affect the **CPM calculations.**



Pre-analysis checks

❑ The pre-analysis portion of the schedule review should begin with the following:

❖ Out-of-sequence CPM calculation rules.

- ✓ It is recommended that the scheduling method to accommodate out-of-sequence progress be set to **retained logic** for software that supports this.
 - Retained logic will best ensure that **correct total project length** is **maintained** in the situation where out-of-sequence progress occurs.
 - Progress override is typically used **when logic** is only to sequence activities and **not to show interdependencies**.



Pre-analysis checks

❑ The pre-analysis portion of the schedule review should begin with the following:

❖ Scheduling method.

✓ For CPM software that supports this,

1. The software should be set to recognize interruptible activities.

➤ This setting is used for projects where work is aggressively pursued, starting whenever possible

without regard to maintaining a **steady and continuous** work flow.

2. The other scheduling method, continuous activities,

➤ It is best used in situations where work will **not begin until** the **contractor believes** that

they will **not run out of available** work before the task is complete.



Pre-analysis checks

❑ The pre-analysis portion of the schedule review should begin with the following:

❖ Total float calculation.

✓ Determine the **float calculation** method used and confirm that it meets the specifications. There are at least two methods for **calculating total float**;

1. Subtracting the calculated early start from the late start dates or
2. Subtracting the calculated early finish from late finish dates.

❖ This will generally result in the **same value** except
for interruptible activities and summary activities.

1. **Interruptible activities** work better using finish dates setting.
2. **Summary activities** work better using the start dates setting.



Pre-analysis checks

❑ The pre-analysis portion of the schedule review should begin with the following:

❖ **Critical path identification.**

- ✓ Determine the **setting** being used to identify the critical path and confirm that this meets the specification.



Pre-analysis checks

❑ The pre-analysis portion of the schedule review should begin with the following:

❖ **Other calculation settings.**

- ✓ Check to see if the **scheduling specifications** require other schedule calculation settings and confirm that they are properly set.
- ✓ It is a **good practice** for the owner and contractor to document and agree upon the **various schedule calculation settings** to be used, preferably **before** the baseline schedule is **submitted**.

What if we intend to complete project early?



Pre-analysis checks – Early project completion

☐ The **reviewer** should

1. Identify when a baseline schedule submittal shows a **completion date prior** to the contractual completion date,
2. Notify the project management team



Pre-analysis checks – Early project completion

- ☐ The **exact** contract project completion date should be met in baseline schedules, **otherwise** a clear intent and capability of delivering the project early should be **demonstrated**.
- ☐ A baseline schedule with an **early** project completion date typically represents a request for **early project completion** that should be **negotiated**.

Remember how to deal with this issue?
Delay Analysis Course!

Let's see how to perform analysis!



Project analysis

- ❑ The reviewer should investigate and confirm that the following **project-related issues** are in compliance with the scheduling specifications and are aligned with the scope and size of the project:

- ❖ **Total number of activities.**

- ✓ When the **contract specifies** a maximum or minimum number of activities allowed in the baseline schedule,

reviewers should **count** fixed and resource-driven duration activities in the **total**,

not including milestones and summary (level-of-effort or hammock) activities.

- ❖ This requirement helps **guide** the desired level of detail and serves to direct the contractor on the level of scheduling **effort** desired.



Project analysis

- ❑ The reviewer should investigate and confirm that the following **project-related issues** are in compliance with the scheduling specifications and are aligned with the scope and size of the project:

- ❖ **Percentage of activities that are critical or near-critical.**

- ✓ **Many specifications limit** the percentage of activities that can be critical or near-critical in the baseline schedule.
- ✓ It is **not usually reasonable** to extend this limitation to
 1. Schedule updates later in the project, or
 2. Short-duration projects [e.g. Turn-around or outage projects]



Project analysis

- ❑ The reviewer should investigate and confirm that the following **project-related issues** are in compliance with the scheduling specifications and are aligned with the scope and size of the project:

- ❖ **Activity distribution histogram.**

- ✓ Schedulers should confirm that the **level of detail** in the schedule is roughly equally distributed from the **start to the finish** of the project.
- ✓ Showing a **significantly larger number** of activities in the first half of a schedule than in the second might **indicate** an under-developed finish plan.
 - An example of this is **‘rolling-wave’** schedules.
 - This type of under-developed plan is **not recommended** if it is essential that the true critical path in the **early stages** of the project be established and monitored.



Project analysis

- ❑ The reviewer should investigate and confirm that the following **project-related issues** are in compliance with the scheduling specifications and are aligned with the scope and size of the project:

- ❖ **Identify all contractual milestones.**

- ✓ **All milestones** required by the contract should be included in the baseline schedule;

frequently these milestones have assigned constraints.

- ✓ **Milestones** other **than those contractually** required should be documented.



Activity analysis

❑ The reviewer should investigate and confirm that the following **activity characteristics** are in compliance with the scheduling specifications and in accord with good scheduling practice:

❖ **Mechanically incorrect dates.**

- ✓ **Inherently incorrect dates** should **not be allowed** in the schedule under any circumstances.
- ✓ Such dates include missing **early start** dates and missing **early finish** dates.
- ✓ **Finish dates** should **not be earlier** than start dates (a situation which generates a calculation of negative float.)



Activity analysis

❑ The reviewer should investigate and confirm that the following **activity characteristics** are in compliance with the scheduling specifications and in accord with good scheduling practice:

❖ **Actual dates in baseline schedule.**

❖ The **only possible exception** to this rule is for **activities** which precede NTP and are **not part** of the contract performance period.

❖ **Even baseline schedules** that are approved months after the start of the project should not include actual dates;

the **actual dates** should be submitted as part of the first schedule update.



Activity analysis

❑ The reviewer should investigate and confirm that the following **activity characteristics** are in compliance with the scheduling specifications and in accord with good scheduling practice:

❖ **Initial logic should be used.**

✓ The **CPM logic** presented should represent the initial workplan and **not reflect** any changes resulting from events that occurred **after the notice to proceed**.

➤ **Any changes** based on events **after the notice to proceed** will invalidate any later **delay analysis**.



Activity analysis

- ❑ The reviewer should investigate and confirm that the following **activity characteristics** are in compliance with the scheduling specifications and in accord with good scheduling practice:

- ❖ **Planned dates.**

- ✓ The “**look-ahead schedule**” (or equivalent) is the appropriate place for the contractor to **report their planned start dates**.



Activity analysis

- ❑ The reviewer should investigate and confirm that the following **activity characteristics** are in compliance with the scheduling specifications and in accord with good scheduling practice:

- ❖ **Proper activity types.**

- ✓ Most **CPM scheduling software** allows for different activity types.
- ✓ **Just because** an activity has **resources assigned** is **not sufficient reason** to have the activity duration be resource dependent.
 - Resource dependent settings should **only be used** on projects where **varying the resource loads** will be used to directly control activity durations (**or if required by the contract**).



Activity analysis

❑ The reviewer should investigate and confirm that the following **activity characteristics** are in compliance with the scheduling specifications and in accord with good scheduling practice:

❖ **Proper activity percent complete type.**

❖ Some CPM scheduling software allows for different types of settings for activity percent complete (duration, physical, unit, etc.)



Activity analysis

❑ The reviewer should investigate and confirm that the following **activity characteristics** are in compliance with the scheduling specifications and in accord with good scheduling practice:

❖ Negative float.

- ❖ Baseline schedules should not have any activities that show **negative float**.
- ❖ Negative float indicates that the schedule **does not meet** contractual requirements.
- ❖ This condition should **disqualify** the baseline schedule submittal.



Activity analysis

- ❑ The reviewer should investigate and confirm that the following **activity characteristics** are in compliance with the scheduling specifications and in accord with good scheduling practice:

- ❖ **Activity ID coding.**

- ✓ If “**Smart Activity IDs**” are used, they should be **checked** for **consistency**.
- ✓ **Most contracts do not specify** how activity IDs are to be **formatted**
but it is a **recommended** practice to create a **consistent system** for coding activity IDs.
- ✓ This optional ID coding is called, “**Smart Activity IDs.**”



Activity analysis

❑ The reviewer should investigate and confirm that the following **activity characteristics** are in compliance with the scheduling specifications and in accord with good scheduling practice:

❖ Activity duration checks.

- Check the longest activity durations to see if they are within the **limits specified** by the contract.
- Creating a **histogram** of the number of activities and their durations is a way to 'see' the **overall distribution** as well as **their values**.
- Typically, **this duration restriction** does **not include** summary activities and activities depicting deliveries of long-lead items.



Activity description checks

☐ Items to be considered include:

❖ Activities missing descriptions.

- ✓ Confirm that all activities have unique, descriptive titles.
- ✓ This title serves as a **form** of scope of work definition.
- ✓ Typically, descriptions follow a verb-noun-location format.



Activity description checks

☐ Items to be considered include:

❖ **Duplicate activity descriptions.**

✓ Ensure that all activities have unique descriptions.



Activity description checks

☐ Items to be considered include:

❖ Notice to proceed.

- ❖ The notice to proceed activity or multiple notice to proceed activities should be **clearly identified**.
- ❖ **All contracts** that include, “**time is of the essence**” clauses require a formal declaration of the start of the project, usually from the NTP date.



Activity description checks

☐ Items to be considered include:

❖ Field mobilization.

- ✓ **Identify** mobilization or an unusual number of mobilization activities.
- ✓ **Mobilization** is often required by specification, or specifically called out as a **pay item**, and can be an **important legal point** in delay disputes.



Activity description checks

☐ Items to be considered include:

❖ Substantial completion/mechanical completion.

- ✓ On most projects, liquidated damages stop accruing when the project reaches **substantial completion or mechanical completion**.
- ✓ This is normally **not the same** thing as all work complete.
- ✓ Substantial completion/mechanical completion activities should be coded as **milestones** and not as **task activities** with a duration, otherwise **confusion** between the **start and finish** of the event can result.



Activity description checks

☐ Items to be considered include:

❖ **Beneficial occupancy.**

- ❖ **Beneficial occupancy** or **occupy activities** should not be included in the baseline schedule
without addressing their **relationship** to the contract performance period.



Activity description checks

☐ Items to be considered include:

❖ Submittal activities.

- ✓ Confirm that **activities** reflecting **all** submittals are included in the **schedule**
or
at the **very least**, the significant ones.
- ✓ The **submittal-review-deliver process** can frequently impact the critical path of projects with major long lead procurement items.



Activity description checks

☐ Items to be considered include:

❖ Review and approval activities.

- ❖ Ensure that the appropriate review/approval activities are included in the schedule for those activities that **involve interaction** and **possible hindrance** to contractor progress by owner, an owner-agent, or regulatory agency.
- ❖ These review/approval activities should be **coded** so they are selectable for **reporting purposes**.
- ❖ They should be **distinct** from the contractor's submittal preparation and internal review activities.
- ❖ The **reviewer** should ensure that the review activity durations **comply** with **contractually** established durations.



Activity description checks

☐ Items to be considered include:

❖ Major materials purchase and delivery.

- ❖ The baseline schedule should **contain** activities depicting **all major material fabrication and deliveries**.
- ❖ **Materials** under contract to be provided by the owner should be **coded** to make them easy to segregate in a report.



Activity description checks

☐ Items to be considered include:

❖ **Inspection activities.**

- ✓ **Major** inspection activities,
especially those involving critical or near-critical path work, should
be included.
- ✓ It is **not necessary** to include minor or on-going inspection services
performed by **full-time site personnel**.



Activity description checks

☐ Items to be considered include:

❖ Utility activities.

- ✓ **Utility companies** are typically considered 'third-parties.'
 - They are **not under the control** of either the owner or contractor.
- ✓ **Confirm** that the specified notice periods and task durations are included in the schedule.
- ✓ Utility dates and events mentioned in the specifications such as, “**start of permanent power**”
should be represented as **milestones** in the schedule.



Activity description checks

☐ Items to be considered include:

❖ Temporary activities.

- ✓ **Reviewers** should confirm that all of these **proposed actions** are **acceptable**.
- ✓ **Activities** representing the removal of these temporary measures should also be **included**.



Activity description checks

☐ Items to be considered include:

❖ Startup, testing, and commissioning activities.

- ✓ In **facilities-type projects**, the schedule should include activities depicting startup and testing of the facility at the **end of the project**.
- ✓ **Owners** typically have the **expertise to determine** the correctness of the sequencing and time necessary for this portion of this work.
- ✓ The schedule should show the **time required** for the preparation and review of
procedures, permits, training, and other relevant information.



Activity description checks

☐ Items to be considered include:

❖ **Zero-duration activities.**

- ✓ Ensure that there are **no zero duration task activities**;
such activities should be coded as milestones.

موسسه مهندسی و مدیریت ساخت علوی پور (ACEMI)

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