

NAVSEA
STANDARD ITEM

FY-24

ITEM NO: 009-60
DATE: 25 OCT2022
CATEGORY: I

1. SCOPE:

1.1 Title: Schedule and Associated Reports for CNO Availabilities; provide and manage

2. REFERENCES:

2.1 Standard Items

2.2 S9AA0-AB-GOS-010, General Specifications for Overhaul of Surface Ships

3. REQUIREMENTS:

3.1 Develop one legible copy in Gantt Chart format of an Integrated Production Schedule (IPS) using Critical Path Method (CPM) Network Analysis principles, tools, and practices that reflects accurate scheduling data for each key event and milestone using automated Network Analysis tools in accordance with the following requirements:

3.1.1 Include Key Events, Milestones, tests, and work being accomplished by Alteration Installation Teams (AITs), Government-Contracted Third Party Maintenance Providers, Ship's Force (S/F), Commercial Industrial Services (CISs), and Fleet Maintenance Activities (FMAs).

3.1.1.1 Alteration (ALT) numbers, Job Sequence Numbers (JSNs), and Task Order numbers (TOs) are considered equivalent to the contractor's Work Specification Work Items for the purposes of scheduling the work of these third-party organizations in accordance with this Standard Item.

3.1.1.2 The term Work Item is inclusive of these additional methods of identifying a body of work.

3.1.1.3 When calling out the Key Events for any Work Activity, the following KE acronyms shall be used - AC, C5ILO, DT, FC, UD, PCD, WC, and ST.

3.1.2 Schedule each Work Item to the Work Activity level, listing the planned start and planned completion dates, and durations *in full days* for each Work Activity.

3.1.2.1 Assign each Work Activity with the appropriate predecessor and successor relationships within the contractor's scheduling software that establish the logic

relationship between schedule Work Activities. Each activity must have at least one predecessor and one successor, with the exception of the Key Event Start Availability (which may have no predecessors) and the Key Event Complete Availability (which may have no successors). Each Event and Activity may have more than one predecessor and more than one successor. ***The majority of relationships within the detailed schedule should be Finish-Start however, work that is concurrent or in parallel should be scheduled as start-start or finish-finish accordingly.*** The use of scheduling Lags and Leads must be minimized.

3.1.2.2 Assign appropriate predecessor relationships to each Key Event and Milestone(s) to ensure there is an accurate logical progression through all work activities leading to their assigned Key Event and Milestone(s), ensure milestones are linked to the Key Events they support, and ensure the IPS supports accurate prediction of Key Event and Milestone(s) attainment.

3.1.2.3 Assign appropriate predecessor and successor relationships between the Work Activities conducted on the same component, or in the same location but under differing Work Items, to ensure all related Work Activities across all Work Items are interdependently linked together.

3.1.2.4 Schedule Stage 2 Weight Tests and Hydrostatic Tests, and all Stage 3 through Stage 6 required tests as Work Activities by Work Item. Include the predecessor/successor relationships between tests, the production work, and system restoration required to manage work-to-test progression. Test Stages are defined in Section 092 of 2.2.

3.1.2.5 The use of hard constraints is limited to contractually-defined Key Events and milestones. Each contractually-defined Key Event and Milestone will have a constraint assigned in order to lock their date to the current contractual or government approved date.

3.1.2.6 The contractor is permitted, to include contract changes (growth, descopes, and new work) within the integrated production schedule prior to settlement of the associated change. All changes incorporated prior to settlement must be clearly denoted by the word “pending” in the title, in accordance with TABLE 1.

3.1.2.7 Descope activities must remain in the schedule until settlement of the associated change. Corresponding hours and schedule logic may be removed and or updated accordingly.

3.1.2.8 In execution of the availability, the contractor may allow dates to exceed the contract period of performance. This does not constitute government approval of a change to the end of availability.

3.1.2.9 When required by contract, the LMA will be required to lead a Schedule Model Review (SMR). See note 4.1.31.

3.1.3 Schedule production work and preliminary inspections generating reports required by 2.1 or the Work Item, that could result in a change in work to be accomplished or

additional material to be procured, to support reporting no later than the first 20 percent of the availability duration.

3.1.3.1 Schedule dry dock, or dry berth for Navy boats and craft, related inspections generating reports required by 2.1 or the Work Item to support reporting no later than the first 20 percent of the scheduled docking or dry berth period.

3.1.3.2 When the Required O&I Reports present a sequencing conflict that would prevent one or more reports from being accomplished by the 20 percent O&I Milestone (e.g., stability, work integration, etc.), additional milestones will be created based on when they could be accomplished, and the lower priority conflicted Required O&I Reports will be associated to those new milestones. (See NOTE 4.1.33)

3.1.4 Schedule production work final inspections and testing for work that has to be completed prior to pre-flood/undocking and which generates technical data requiring Government review to complete no later than four days prior to the scheduled undocking (when applicable) or provide a technical justification for not meeting this requirement.

3.1.5 Develop the Schedule of Record (SOR) to serve as the “baseline” schedule, a revised IPS at the start of the availability (A-0 day) that includes refined sequencing and completeness as a result of completed subcontracting actions, incorporation of additional Government Furnished Information (GFI), or any contract modifications increasing the scope of work between contract/delivery Order award and availability start. The baseline will be maintained to reflect contract changes (RCCs and descopes) throughout availability execution. Deviations from contractually authorized dates will be addressed in the mitigation plan. Mitigation measures must be formulated prior to the next weekly update of the IPS, but in no case exceed two weekly IPS update cycles.

3.1.6 Revise Weekly IPS at the Work Activity level to include additions, deletions, modifications, actual start and finish dates, progress, and completions. Progress must be based on degree of completion of physical work or accomplishment of the Work Activity.

3.1.6.1 Reassign Milestone and Key Event relationships for incomplete Work Activities when the associated Milestone or Key Event has passed and the Work Activity was authorized as an exception. All other reassignments of Milestone or Key Event relationships must be approved by the SUPERVISOR prior to implementation in the IPS.

3.1.6.2 Activities projected to finish after their assigned Key Event or Milestone date, either by scheduling software-calculated date or by the accumulation of negative float, must be identified and a mitigation plan must be developed. Mitigation measures must be formulated and documented in report in accordance with 3.4 prior to the next weekly update of the IPS, but in no case exceed two weekly IPS update cycles.

3.1.6.3 When attainment of each Milestone or Key Event is projected to finish after their planned completion dates as a result of settled contract scope, corrective action must be taken through resource allocation, rescheduling, or other means, to restore predicted Milestone or Key Event attainment within contractually authorized dates. Where the attainment

of a contractually-defined Key Event or Milestone cannot be recovered by means that are within the contractor's control, comply with the reporting requirements of 009-01 of 2.1.

3.1.7 Include the following minimum data elements for each Work Activity in the schedule, as appropriate. Elements listed in Table 1 are not required to be displayed in ADOBE PDF views of submitted IPS unless otherwise directed in this Standard Item.

Table 1
Activity Data Elements and Descriptions

Data Element	Description
Work Item Number (as appropriate)	4-E specification Work Item number
Work Activity Identifier	Numerical designator identifying the Work Activity within the Work Breakdown Structure (WBS)
Title	Descriptive title of Work Item and Work Activity
ICN / Task Number (as appropriate)	Industrial Control Number (ICN): AIM/PSS system identifier for naval shipyard and FMA work and for private shipyards the unique identifier (Task Number) from AIT, Government-Contracted Third Party Maintenance Providers, S/F, CIS, FMA, and other maintenance providers Plan of Actions and Milestones (POAM).
Key Event	Key Event applicable to the Work Activity (See 4.4)
Milestone (as appropriate)	Milestone applicable to the Work Activity
System (as appropriate)	System(s) affected (See 4.5)
Component (as appropriate)	Component Unit (For example: tank, valve, motor, pump)
Location	Work location/ <i>individual tank</i> /compartment number (See 4.6)
Executing Activity	ID specific organization: Prime KTR, Sub-KTR, FMA, SMMO, AIT, or OSIC
Superintendent or Zone Manager	Responsible Contractor Superintendent or Zone Manager
Baseline Start	The Baseline start date identified on the current IPS. (See 4.1.15)
Baseline Finish	The Baseline finish date identified on the current IPS. (See 4.1.15)
Early Start	Software determined date (See 4.1.18)
Early Finish	Software determined date (See 4.1.19)
Late Start	Software determined date (See 4.1.20)
Late Finish	Software determined date (See 4.1.21)
Actual Start	Actual date for the Work Activity's start
Actual Finish	Actual date for the Work Activity's finish
Percent Complete (Planned)	Degree of completion based on the Work Activity planned work scope and planned degree of accomplishment of production labor. Based on the Project Baseline.
Percent Complete (Actual)	Degree of completion based on the Work Activity's work scope and degree of accomplishment of production labor.
Duration	The total number of work periods required to complete a Work Activity.
Calendar Identification	Number of scheduled workdays per week

Total Float	The total number of workdays that the Contractor can delay a Work Activity without affecting the project finish date.
Predecessor	An Activity or Event that immediately precedes one or more Activities or Events with a direct tie in the Total Project Network. Every Activity and Event in the Total Project Network must have at least one Predecessor (except Start Availability).
Successor	An Activity or Event that immediately follows one or more Activities or Events with a direct tie in the Total Project Network. Every Activity and Event in the Total Project Network must have at least one Successor (except Complete Availability).
Constraints	Constraints used as applicable to Work Item or Work Activity. This may be provided within the predecessor or successor field.

3.1.8 Develop an export of the IPS data elements in a sortable/filterable spreadsheet format compatible with Microsoft Excel. The spreadsheet must include a column for each of these elements laid out in the order presented in table one from left to right. For AIT Installed alterations the Alt Type and Number should be entered in the Work Item Number field.

3.2 Display the IPS in a time-oriented Gantt chart format that shows only Critical Path and Controlling Work Items at the Work Activity level and assigned Key Events and/or Milestones.

3.2.1 Revise the Gantt Chart weekly in conjunction with the weekly IPS revisions of 3.1.6.

3.3 Develop a Critical Path Network in Precedence Diagram Method (PDM) format that displays only the Critical Path sequences of the availability with associated Key Events and Milestones. Display Critical Path at the Work Activity level to provide visual representation of the logic relationships between displayed Work Activities.

3.3.1 The network or any sub-network thereof may be continued on additional pages.

3.3.2 Label each Work Item, Work Activity, Milestone, and Key Event of the network with each Activity box on every Precedence Diagram must contain the following data elements of 3.1.8: Work Item Number, Activity Title, Early Start Date or Actual Start Date, if Started, Early Finish Dates or Actual Finish Date, if finished, Original Duration, Percent Complete, Calendar Identification, and Total Float.

3.3.3 Update the project's PDM for the 25, 50 and 75 percent points of the availability.

3.4 Provide Schedule Analysis Reports.

3.4.1 Generate a Key Event and Milestone Analysis Report that includes the following information for each Key Event and contractually-defined Milestone: Event Type

(Key Event/Milestone), Title, Work Activity Identifier, Original Schedule Date, Revised Schedule Date, Actual Completion Date, Projected Finish Date, (inclusive of accounting for negative float), and analysis/actions.

3.4.1.1 The revised schedule date and actual date of accomplishment must be left blank on the initial submission and filled in to reflect actual conditions on subsequent submission of the report.

3.4.1.2 Revise the Key Event and Milestone Analysis Report weekly to reflect up-to-date contract performance. Address Work Items on the Critical and Controlling Path with negative float to Key Events and Milestones in accordance with 3.1.6.3. The report must reflect the addition, deletion, or modification of settled and pending Work Item changes.

3.4.2 Generate a Schedule Health Report that includes the following information: Number of incomplete activities with missing logic; Finish-to-Start Percentage; Number of incomplete activities with negative float; Number of incomplete activities with high duration; Throughput Percentage. Parameters exceeding threshold values require explanation. Submit Schedule Health Report with the Initial IPS, SOR, and at the 25, 50, and 75 percent progress of the availability. (See 4.1.29, for report element description and threshold values).

3.5 Provide manpower management information using Attachment A.

3.5.1 Develop a total manpower-loading curve depicting the forecasted manning required to execute the IPS. Show scheduled manning throughout the contract period calculated in Full Time Equivalents (FTEs). The curve must indicate that portion of the total that is subcontractor provided. The curve must be incremented on a weekly progression.

3.5.1.1 Manning values must reflect actual FTEs expended. Future requirements must reflect weekly average FTE estimated to complete the project, scheduled using the early start/finish dates.

3.5.2 Develop separate manpower curves showing scheduled manning by trade throughout the contract period calculated in FTE. The curves must indicate that portion of the total that is subcontractor provided. The curves must be incremented on a weekly progression.

3.5.2.1 Manning values must reflect actual FTEs expended. Future requirements must reflect weekly average FTE estimated to complete the project, scheduled using the early start/finish dates.

3.5.3 Update the manpower curves of 3.5.1 and 3.5.2 weekly to accurately reflect the actual FTE expended and any changes necessary in future weeks' manpower requirements to meet scheduled Milestones, Key Events and vessel delivery.

3.5.4 Develop a weekly progress report showing the availability's planned and actual progress.

3.5.4.1 The weekly progress report must indicate the total hours, *within the 3.5.1 Manpower Loading Curve, which are* attributed to work pending descope and pending growth RCCs. This must not include unallocated LOE to completion.

3.6 Provide a representative whose function is to coordinate and schedule AIT, Government-Contracted Third Party Maintenance Providers, S/F, CIS, and FMA work with contractor work into the IPS.

3.6.1 The representative must meet with the SUPERVISOR, AIT, Government-Contracted Third Party Maintenance Providers, S/F, CIS, and FMA between contract award and A-0. Commencing at A-0, this engagement must occur daily to compare and coordinate programmed AIT, Government-Contracted Third Party Maintenance Provider, S/F, CIS, and FMA work with the IPS.

3.6.2 Coordinate AIT, Government-Contracted Third Party Maintenance Provider, S/F, CIS, and FMA work integration into the IPS prior to setting the Schedule of Record (SOR). (See 4.1.22).

3.6.2.1 The representative must develop a report identifying missing or incomplete schedule integration data for known participants in the availability when the SOR is submitted. Identification of missing or incomplete schedule integration data is required to highlight areas of elevated IPS uncertainty, but must not be cause for delay in establishing the SOR nor the delivery of reports required under this Standard Item.

3.6.3 Incorporate updated progress from AIT, Government-Contracted Third Party Maintenance Providers, S/F, CIS, FMA, and other maintenance providers into the IPS.

3.6.3.1 Provide a common template in Microsoft Excel compatible format to facilitate submission of progress updates of 3.6.3.

3.6.4 Identify, at the weekly progress meeting, schedule conflicts where programmed AIT, Government-Contracted Third Party Maintenance Provider, S/F, CIS, and FMA work interferes with previously scheduled contractor work.

3.6.5 Identify, at the weekly progress meeting, required AIT, Government-Contracted Third Party Maintenance Provider, S/F, CIS, and FMA prerequisite actions necessary to support contractor testing and equipment operation schedule.

3.7 Provide cognizant shipyard management representation to participate in the weekly progress meeting at the time and location agreed to by the SUPERVISOR. The representative(s) must be authorized to make management decisions relative to the routine requirements, implementation of corrective actions for each schedule shortfall that, in good faith, commit the contractor. Discussion will include the Schedule Analysis of 3.4 and each work item of concern.

3.8 Participate in review conferences at the 25, 50, and 75 percent points in the availability. Data from the most recent submission in accordance with 3.9.3 will be used at the review conferences. Review conferences will be held within 2 days of the Weekly progress Meeting of 3.7 or, subject to SUPERVISOR approval, may be held simultaneously with the

Weekly Progress Meeting. The conferences will be scheduled at a time and place mutually agreeable to all parties. The contractor must:

3.8.1 Be prepared to discuss planned production manning versus actual production manning by total, trades, and subcontractors.

3.8.2 Identify known factors that may affect Key Events, Milestones and the contract completion. Provide recommended courses of action to resolve problem areas.

3.8.3 Provide the SUPERVISOR with the status of open and inspect reports and be prepared to discuss possible impact of growth work in these items at the 25 percent review conference.

3.8.4 Provide the SUPERVISOR with the following information for the 50 percent review conference:

3.8.4.1 A machinery reinstallation plan showing projected dates for installing the equipment on the foundation, hook-up of the equipment, and operational tests of the equipment.

3.8.4.2 A valve status list showing projected completion and reinstallation dates.

3.8.4.3 A list of items required for the next Key Event and Production Completion Date (PCD) that are not complete. Annotate those items on the list that may be in jeopardy of completing by the next Key Event and PCD.

3.8.5 Provide the SUPERVISOR with one legible copy, in approved transferrable media, of a test schedule for all planned underway equipment and system testing to the SUPERVISOR to support the 75 percent review conference.

3.9 Submit the following reports as listed in Adobe Acrobat (.pdf), Microsoft Excel (.xls), or Microsoft Word (.doc) compatible media as per Table 2 and Table 3:

Table 2
Deliverables.

Para. Number	Requirements	Title	Format	Due
3.9.1	3.1 3.1.8 3.2 3.4.2	Initial IPS -Gantt chart -Spreadsheet -Critical Path (Gantt) -Schedule Health Report	*.pdf *.xls *.pdf *.doc or *.xls	Based on contract type as listed in Table 3
3.9.2	3.1 3.1.8 3.2 3.3 3.4.2 3.5.1	Schedule of Record -Gantt chart -Spreadsheet -Critical Path (Gantt) -Critical Path Network (PDM) -Schedule Health Report -Manpower Curves (Total)	*.pdf *.xls *.pdf *.pdf *.doc or *.xls *.xls	A-0

	3.5.2 3.6.2.1	-Manpower Curves (Trades) -Incomplete GFI	*.xls *.doc	
3.9.3	3.1.8 3.2 3.4 3.5.1 3.5.2 3.5.4 3.6.2.1	Weekly IPS -Spreadsheet -Critical Path (Gantt) -Schedule Analysis (less 3.4.2) -Manpower Curves (Total) -Manpower Curves (Trades) -Progress Report -Incomplete GFI	*.xls *.pdf *.doc or *.xls *.xls *.xls *.xls *.doc	Weekly after A-0, 24 hrs prior to weekly progress meeting
3.9.4	3.1.6 3.3 3.4.2	25 Percent Conference Support -Gantt Chart (Most recent Revised Weekly IPS) -Critical Path Network (PDM) -Schedule Health Report	*.pdf *.pdf *.doc or *.xls	3 days prior to meeting
3.9.5	3.1.6 3.3 3.4.2 3.8.4.1 3.8.4.2 3.8.4.3	50 Percent Conference Support -Gantt Chart (Most recent Revised Weekly IPS) -Critical Path Network (PDM) -Schedule Health Report -Machinery Reinstallation Plan -Valve Listing -Incomplete PCD Listing	*.pdf *.pdf *.doc or *.xls *.xls *.xls *.xls	3 days prior to meeting
3.9.6	3.1.6 3.3 3.4.2 3.8.5	75 Percent Conference Support -Gantt Chart (Most recent Revised Weekly IPS) -Critical Path Network (PDM) -Schedule Health Report -Underway test schedule	*.pdf *.pdf *.doc or *.xls *.xls	3 days prior to meeting

Table 3
Initial IPS Schedule Submission Requirements

Firm Fixed Price Type Contract	Cost Plus Type Contract
The earlier of: 60-days after contract award or A-7	NLT A-30 Days (Surface Ships)
	NLT A-60 Days (CVNs and Submarines)

4. NOTES:

4.1 Definitions.

4.1.1 Critical Path Method: The critical path method is used to derive the critical activities—that is, activities that cannot be delayed without delaying the end date of the program. The amount of time an activity can slip before the program’s end date is affected is known as “total float.” Additionally, the critical path method is used for planning and executing complex, interdependent projects that identifies the Critical Path to each Key Event and Milestone using automated Network Analysis Tools. Unless the IPS represents the entire scope

of effort and the effort is correctly sequenced through network logic, the scheduling software will report an incorrect or invalid critical path. That is, the critical path will not represent the activities affecting the program finish date. With no accurate critical path, management cannot focus on the activities that will be detrimental to the program's key milestones and finish date if they slip.

4.1.2 Work Breakdown Structure: The WBS reflects how each Work Item is broken down into Work Activities in the IPS, representing a manageable unit of work to be accomplished at a specific period of time in relation to other Work Activities in the IPS to complete the Availability. Typical WBS might break a Work Item down into Work Activities to Remove a component, Repair the component, Install the Component, and Test the Component.

4.1.3 Industrial Testing: Conducted by using stages of testing for the progressive validation of the proper installation and performance of equipment and systems. Test Stages are identified in 009-67 of 2.1.

4.1.4 Integrated Production Schedule (IPS): A schedule used by the contractor as a means of planning, tracking, coordinating and de-conflicting work during the availability. It incorporates all work planned for accomplishment during the maintenance availability including; Alteration Installation Team (AIT), Government-Contracted Third Party Maintenance Providers, Ship's Force, Commercial Industrial Services (CIS), and Fleet Maintenance Activity (FMA) work. An IPS connects all the scheduled work of the government and the contractor in a network, or collection of logically linked sequences of activities. The sequences clearly show how related portions of work depend on one another, including the relationships between the government and contractors.

4.1.5 Work Activity: A portion of an individual Work Item, which is a logical subdivision of the Work Item, representing a manageable unit of work which must be accomplished at a specific period of time in relation to other Activities of the Job Order.

4.1.6 Duration: The total number of work periods (not including holidays or other nonworking periods) required to complete a scheduled Work Activity.

4.1.7 Key Event: Specific occurrences that could impact or delay the overall schedule, or prevent timely delivery of the vessel. Key Events are identified by the contract, the SUPERVISOR, or the contractor.

4.1.8 Milestone: A significant event identified by the Maintenance Team. Milestones are used as a scheduling aid and establish significant points where progress must be evaluated and confirmed. Accumulated failure to achieve Milestones on schedule may result in missed Key Events. Milestones may be identified by either the contractor or the SUPERVISOR.

4.1.9 Critical Path: That sequence of Work Activities which forms the work and test chain of the longest duration, and directly affects the completion of the availability. Factors that influence when a Work Activity is on the Critical Path include: time duration required for the Work Activity, space limitations, manpower available, and the predecessor/successor relationships between Work Activities. The Critical Path is determined by automated schedule

analysis and will include any sequential set of Work Activities forming the longest chain of events extending throughout the schedule and which has the least Total Float.

4.1.10 Controlling Work Items: Specifications in which include activities that are on the critical path of the IPS, which, by virtue of scope, material requirements, complexity, or other considerations, have the significant potential for impact on the scheduled project Key Events or completion of the availability.

4.1.11 Total Float: The total number of days that the Contractor can delay a Work Activity without affecting the project finish date. A path of Work Activities is established by predecessor and successor relationships.

4.1.12 Logic Relationship: Defines an interdependence between Work Activities. It is established by assigning predecessor and successor relationships to Work Activities using the functionality provided by project scheduling software. An individual Work Activity will frequently have more than one predecessor or more than one successor.

4.1.13 Network: A graphic display showing the planned sequence and interdependent relationship of Work Activities, Milestones, or Key Events within the Job Order.

4.1.14 Resource: Labor and non-labor demands required to complete a Work Activity. These may include personnel (trade skills), material, special tools, facilities, space, and equipment.

4.1.15 Baseline Start or Baseline Finish. The date identified in the IPS when the contractor plans to start or finish (respectively) the Work Activity. This may be established by a controlled schedule baseline (preferred method) or by manual entry into the scheduling software according to contractor policy/practice.

4.1.16 Planned progress percent. Baseline progress of work to be completed based on planned start and planned finish dates.

4.1.17 Actual Progress percent. Degree of completion based on the Work Activity's work scope and degree of accomplishment of production labor.

4.1.18 Early Start: The earliest point in time that a Work Activity may start based on the IPS network logic and any other schedule constraints. Early start dates may change as the availability progresses.

4.1.19 Early Finish: The earliest point in time that a Work Activity may be completed based on the IPS network logic and any schedule constraints. Early finish dates may change as the availability progresses.

4.1.20 Late Start: The latest point in time that a Work Activity may begin without delaying the applicable Milestone or Key Event based on the IPS network logic.

4.1.21 Late Finish: The latest point in time that a Work Activity may be completed without delaying the applicable Milestone or Key Event based on the IPS network logic.

4.1.22 Integration: The incorporation of all work (including testing and availability work certification) for all organizations involved in an availability.

4.1.23 Precedence Diagram Method (PDM): Used in Critical Path Method Project Management for building a project schedule network diagram using lines and nodes to show the logical relationship between schedule activities.

4.1.24 Gantt Chart: A graphic display of schedule-related information. Typically, schedule Work Activities or work breakdown structure components are listed down the left side of the chart, dates are shown across the top, and Work Activity durations are shown as date-placed horizontal bars.

4.1.25 Negative Float: The amount of time by which the early start or finish dates of a Work Activity exceeds its late start or ending dates. The quantity of float then indicates the amount of time that must be recovered in order to achieve an imposed date.

4.1.26 Schedule of Record: The official IPS at the start of the availability (A-0 day) that includes refined sequencing and completeness as a result of completed subcontracting actions, incorporation of additional Government Furnished Information (GFI), or any contract modifications increasing the scope of work between contract/delivery Order award and availability start.

4.1.27 Un-Exercised Level of Effort: LOE which has not been settled and placed on contract.

4.1.28 Hard Constraint: A Mandatory Start or Finish date imposed on an activity, i.e. the activity becomes fixed to that date. When expressed as the activity Must Start On (MSO) or Must Finish On (MFO) the given date. Hard Constraints prevent their associated activity from being logic-driven.

4.1.29 Schedule Health Report: A report inferring the reliability of the IPS in accurately predicting availability progression based on correct logic relationships, adequate work breakdown structure, and the completion of work. Schedule Health report elements include:

4.1.29.1 Activities with missing logic. Denotes incomplete activities without a predecessor or successor relationship to another activity. Threshold value is 2 activities of the total incomplete work activities in the IPS. Does not include Summary Activities.

4.1.29.2 Finish-to-Start Percentage. Denotes the preference for use of Finish-to-Start logic relationships between incomplete work activities in the IPS. Calculated by dividing the total number of Finish-to-Start logic links by the total number of all logic link types in the IPS. There is no threshold value; however, a Finish-to-Start percentage below 90 percent may require explanation by the contractor for other relationship types and their application.

4.1.29.3 Activities with negative float. Denotes the accumulation of incomplete activities projected to finish later than required to maintain the downstream schedule. Threshold value is 5 percent. Does not include Summary Activities.

4.1.29.4 Activities with high (>60 days) duration. Denotes incomplete activities that may not be distributed into an effective Work Breakdown Structure. Threshold value is 5% of the total incomplete work activities in the IPS. Does not include Summary Activities or administrative and support activities planned for the duration of the availability.

4.1.29.5 Progressing Percentage. Denotes success in meeting scheduled activity completion for the 25, 50 and 75 percent point of the availability. Calculated by dividing the number of activities actually completed in the period prior to the data date of the analysis by the number of activities required to complete in the same time period according to the planned schedule finish dates. Does not include Summary Activities, or GFI regarding work accomplished by AIT, Government-Contracted Third Party Maintenance Provider, S/F, CIS, and FMA. There is no threshold value, however, throughput below 80 percent must be evaluated to understand causal factors and potential impact to on-time availability completion.

4.1.30 Lags and Leads. Lags and Leads are scheduling functions used to represent a gap (Lag) or overlap (Lead) between activities. The use of Lags and Leads must be controlled to ensure they support an accurate and logical work flow. Improper and overuse of Lags and Leads can have a detrimental effect on a logic driven schedule and adversely affect float and the Critical Path. Typical examples where their use may be warranted include: insertion of time delay to represent report cycle time, staggering unrelated work item start dates, or drive work based on material receipt projection.

4.1.30.1 Lag: The delayed start of a successor activity and represents time that must pass before the second activity can begin.

4.1.30.2 Lead: The accelerated start of a successor activity where there is a finish to start relationship. The second activity can begin and be conducted in parallel with the first activity.

4.1.31 Schedule Model Review. An LMA-led event to review the IPS (in its current state) and thorough discussion of any predicted challenges, constraints, schedule efficiencies, etc will be conducted in accordance with contractual requirements. The contractor will discuss the schedule in sufficient detail to support understanding of time and space constraints, critical and controlling path work, and items requiring integration. CNRMCINST 4701.1 Schedule Model Review (SMR), provides policy and guidance for the administration, preparation and execution of the Schedule Model Review (SMR) meeting.

4.1.32 Full Time Equivalent (FTE) – A normalized representation of full-time workers based on the number of hours spent/scheduled during a finite period of time. An FTE unit assumes an 8-hour work day and a 5-day work week (Monday-Friday) except when accounting for holidays. For example, if the hours spent or scheduled during a week with one holiday was 160 hours, then the FTE value representing that week would be equal to 5 FTE (160 hours divided by 8-hour days divided by 4 work days equals 5 FTE).

4.1.33 CNRMC Instruction 4711.1 OPEN AND INSPECT REPORTS; POLICY provides guidance for the request and approval process for additional O&I milestones.

4.2 The SUPERVISOR will provide, or direct provision, of the AIT, Government-Contracted Third Party Maintenance Providers, S/F, CIS, and FMA availability data required for schedule integration in 3.1.1, 3.1.2.3, and progress/de-confliction in 3.6.

4.3 When invoked, the following Standard Items interface with this Standard Item: 009-67, and 009-81.

4.4 The following codes are provided as designators for Key Events within the IPS as directed in 3.1.7.

Code	Description / Meaning
AC	Availability Complete
C5ILO (C5I)	Command, Control, Communications, Computer, Combat Systems and Intelligence Light-Off
DT	Dock Trials
FC	Fast Cruise
UD	Undock/Flood Dock
PCD	Engineering Plant Production Completion Date (Propulsion/Aux)
WC	Work Complete
ST	Sea Trials

4.5 The following codes are provided as designators for specific ship systems when applied to Work Activities in the IPS as directed in 3.1.7. More than one designator may be used for a Work Activity. This list is not all-inclusive.

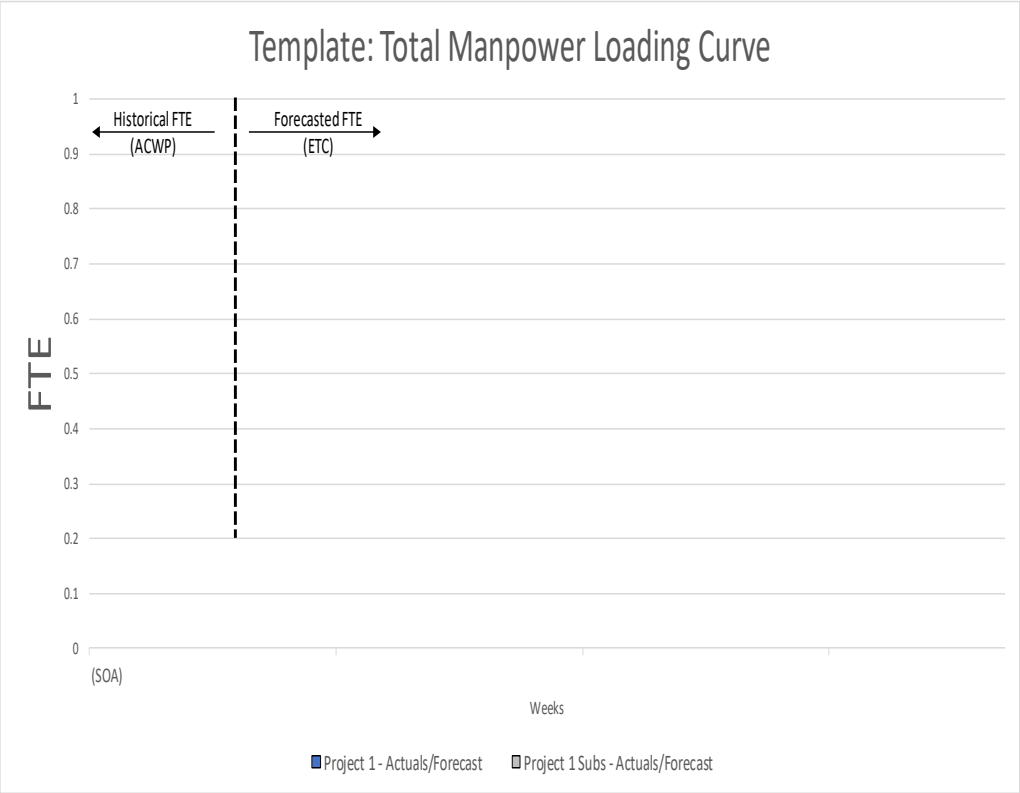
Code	System
ACE	Aircraft Elevator
ACP	Air Conditioning Plant
AG	Arresting Gear
ANT	Antenna
AUX	Auxiliary Steam
BIL	Bilges
CAT	Catapults
CHT	Collecting, Holding and Transfer
CHW	Chilled Water
COM	Communications
CNDS	Condensate
CS	Combat Systems
CMWD	Countermeasures Wash Down
DECK	Any Decking Work
DC	Damage Control
ENG	Engineering
MNFD	Main Feed
FDK	Flight Deck
FM	Fire Main

FO	Fuel Oil
HAB	Habitability
HDK	Hangar Deck
HPA	High Pressure Air
HULL	Hull
IC	Internal Communication
JP5	JP-5 Tanks/System
LAG	Lagging and Insulation
LC	Load Center
LO	Lube Oil
MAG	Magazine
MS	Main Steam
NSK	Non-Skid
PROP	Propulsion System, including Controllable Pitch Propeller
PW	Potable Water
SCAF	Scaffolding Required
SS	Service Steam
STRG	Steering System
STRL	Structural, General
SW	Sea Water
TIS	Temporary Industrial Systems
VEN	Vents/Ventilation
VPC	Vertical Package Conveyor
WH	Water Heaters
WEL	Weapons Elevator
WPNS	Weapons
WW	Waste Water

4.6 The following standard convention is used for identifying locations when applied to Work Activities in the IPS as directed in 3.1.7. The use of general terminology, such as “throughout ship”, as a means of documenting location must be minimized.

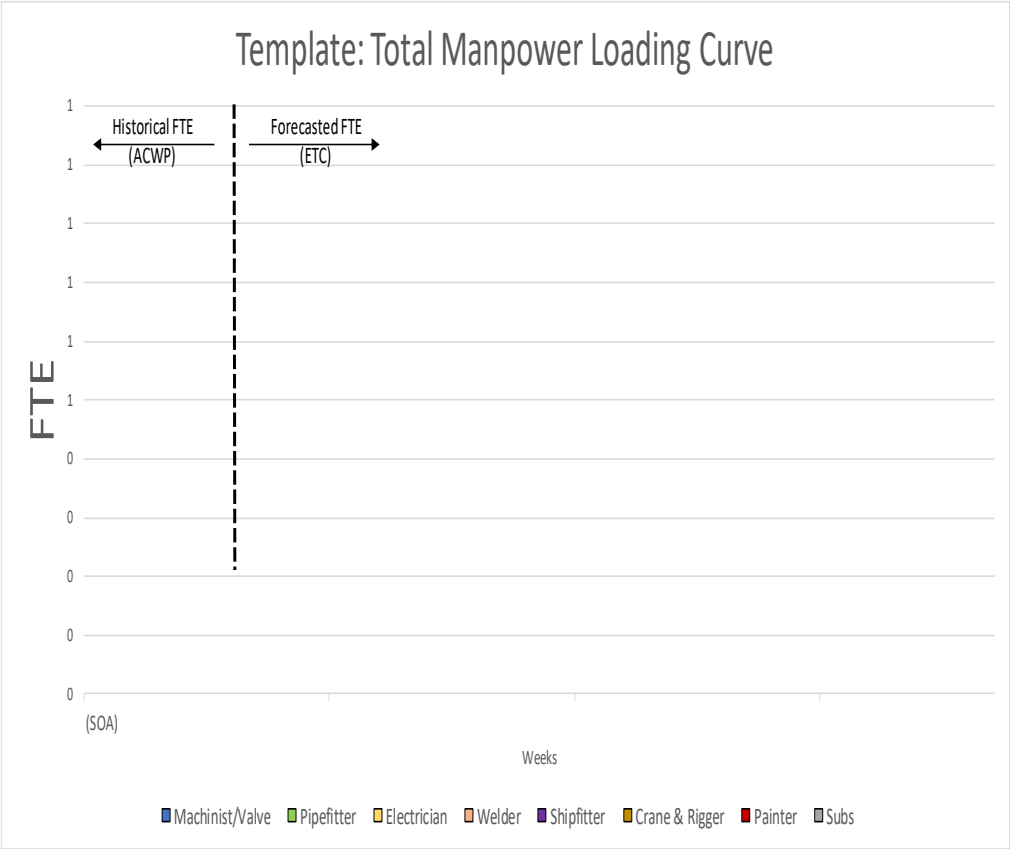
- Space/Compartment Number (i.e. 03-130-2-L, 6-81-0-E, etc.)
- Flight and Hangar Deck Locations: deck-frame-P or S (e.g. 04-190-S or 1-190-P)
- Weather Decks: closest deck-frame-P or S (e.g. 03-140-P-WEA)
- Span of Frames: deck-frame span-P or S (e.g. for flight deck frames 55 to 100 starboard side use 04-55/100-S)
- Masts: Use mast name (e.g. Main Mast, etc.)

Attachment A



Date (xx/xx/xxxx)	(SOA)																									
Project 1 - Actuals/Forecast																										
Project 1 Subs - Actuals/Forecast																										

Attachment A



Date (xx/xx/xxxx)	(SOA)																												
Machinist/Valve																													
Pipefitter																													
Electrician																													
Welder																													
Shipfitter																													
Crane & Rigger																													
Painter																													
Subs																													

Attachment A

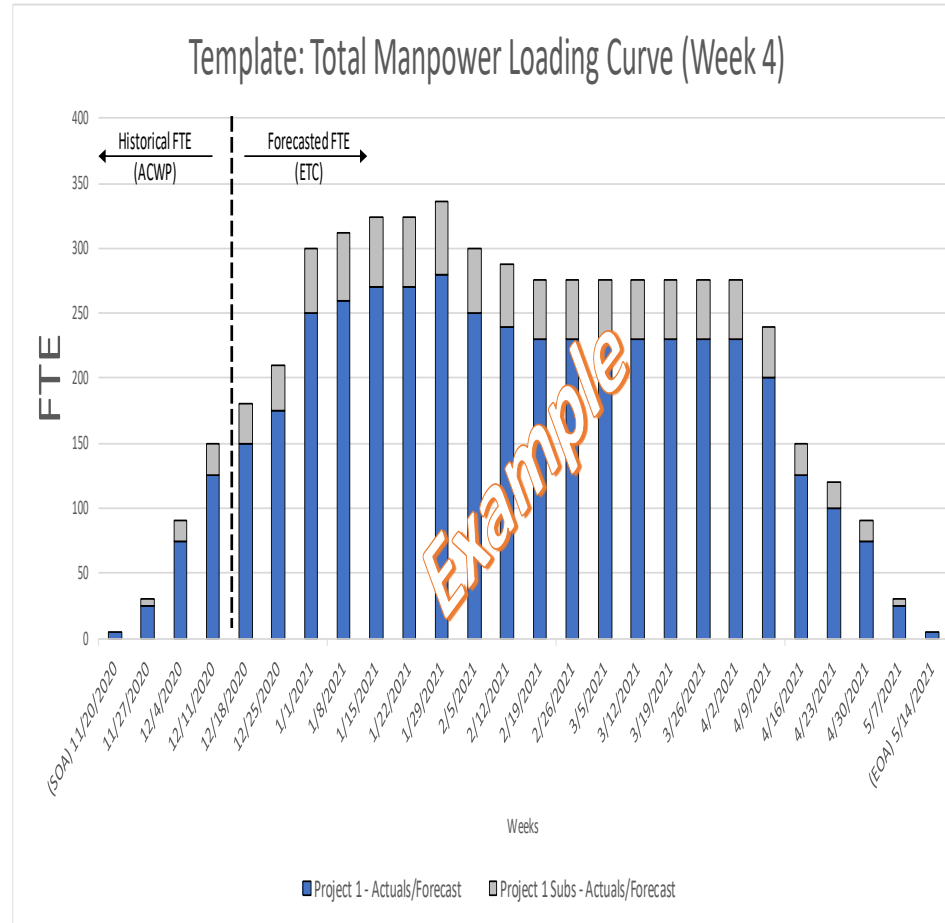
Production Progress (not inclusive of material):

Current Week	
Planned Progress	
Actual Progress	

Pending RCC Impact Summary:

Growth/New Work Hours	
Descope Hours	

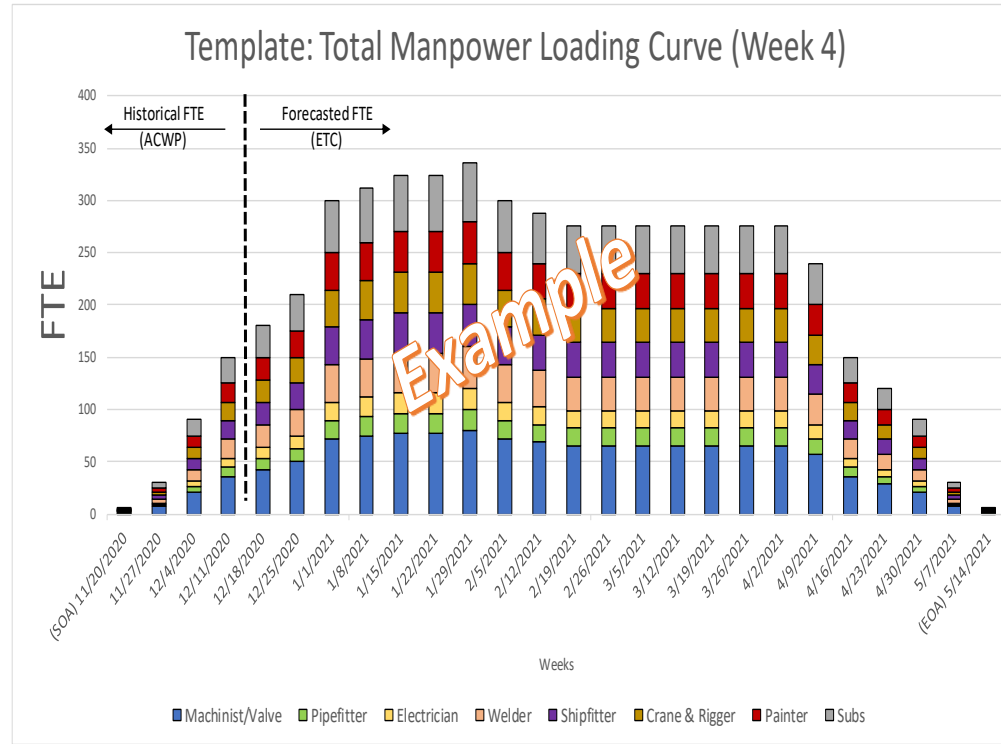
Attachment A



	(SOA) 11/20/20	11/27/2020	12/4/2020	12/11/2020	12/18/2020	12/25/2020	1/1/2021	1/8/2021	1/15/2021	1/22/2021	1/29/2021	2/5/2021	2/12/2021	2/19/2021	2/26/2021	3/5/2021	3/12/2021	3/19/2021	3/26/2021	4/2/2021	4/9/2021	4/16/2021	4/23/2021	4/30/2021	5/7/2021	(EOA) 5/14/2021
Project 1 - Actuals/Forecast	5	25	75	125	150	175	250	260	270	270	280	250	240	230	230	230	230	230	230	200	125	100	75	25	5	
Project 1 Subs - Actuals/Forecast		5	15	25	30	35	50	52	54	54	56	50	48	46	46	46	46	46	46	40	25	20	15	5	0	

*Template contains notional data. To be revised for contractual submission.

Attachment A



	(SOA) 11/20/2020	11/27/2020	12/4/2020	12/11/2020	12/18/2020	12/25/2020	1/1/2021	1/8/2021	1/15/2021	1/22/2021	1/29/2021	2/5/2021	2/12/2021	2/19/2021	2/26/2021	3/5/2021	3/12/2021	3/19/2021	3/26/2021	4/2/2021	4/9/2021	4/16/2021	4/23/2021	4/30/2021	5/7/2021	(EOA) 5/14/2021
Machinist/Valve	1	7	21	36	43	50	71	74	77	77	80	71	69	66	66	66	66	66	66	66	57	36	29	21	7	1
Pipefitter	0	2	5	9	11	13	18	19	19	19	20	18	17	16	16	16	16	16	16	16	14	9	7	5	2	0
Electrician	0	2	5	9	11	13	18	19	19	19	20	18	17	16	16	16	16	16	16	16	14	9	7	5	2	0
Welder	1	4	11	18	21	25	36	37	39	39	40	36	34	33	33	33	33	33	33	33	29	18	14	11	4	1
Shipfitter	1	4	11	18	21	25	36	37	39	39	40	36	34	33	33	33	33	33	33	33	29	18	14	11	4	1
Crane & Rigger	1	4	11	18	21	25	36	37	39	39	40	36	34	33	33	33	33	33	33	33	29	18	14	11	4	1
Painter	1	4	11	18	21	25	36	37	39	39	40	36	34	33	33	33	33	33	33	33	29	18	14	11	4	1
Subs	0	5	15	25	30	35	50	52	54	54	56	50	48	46	46	46	46	46	46	46	40	25	20	15	5	0

*Template contains notional data. To be revised for contractual submission.