

# PROJECT SUPPORT ENGINEER (PSE)



## DESK GUIDE



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**COMMANDER**  
**NAVY REGIONAL MAINTENANCE CENTER**  
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**FOREWORD**

Ref: (a) COMUSFLTFORCOMINST 4790.3 Joint Fleet Maintenance Manual (JFMM)  
(b) CNRMC Fleet Desk Guide (FDG)

1. This Project Support Engineer (PSE) Role-Based Desk Guide (RBDG) provides the PSE with standardized procedures to assist in execution of their duties and responsibilities outlined in reference (a). Augmented by reference (b), it contains procedures for executing all phases of the maintenance availability end-to-end (E2E) process. All RMCs are directed to incorporate the PSE RBDG within their operations.

2. This RBDG can be accessed and downloaded through the CNRMC web portal at <https://dodcac.portal.navy.mil/navsea/CNRMC/fdg/default.aspx>. Any recommended changes should be submitted using the change request/feedback form located on the website, or forwarded to:

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Distribution:  
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# PROJECT SUPPORT ENGINEER (PSE)



## DESK GUIDE VOLUME I



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## Chapter 1

### The Role of Project Support Engineer (PSE)

- Ref:
- (a) CNRMC ltr 4700 Ser C200/122 of 28 Sep 11, Maintenance Team Project Support Engineer
  - (b) COMUSFLTFORCOMINST 4790.3, Joint Fleet Maintenance Manual (JFMM)
  - (c) NAVSEAINST 5400.95E, Waterfront Technical Authority
  - (d) NAVSEAINST 5400.108, Policy for Quality Management of Work on Non-Nuclear Surface Ship Critical Systems
  - (e) CRNMCINST 4700.5, Standard Operating Procedure (SOP) for Expanded Process Control Procedures (EPCP) on Surface Ships
  - (f) CNRMC ltr 4700 Ser C200/116 of 16 Jul 12, Relaxation of NAVSEAINST 5400.108A
  - (g) CNRMC ltr 4700 Ser C200/126 of 5 Oct 11, Implementation of Controlled Work Packages and Expanded Process Control Procedures on Surface Ships
  - (h) CNRMC ltr 4791 Ser C300/C900 of 9 Apr 12, Adding Work to Availability Work Packages (AWP) for Chief of Naval Operations (CNO) Availabilities.
  - (i) Fleet Modernization Manual (FMP)

1. Introduction. The Project Support Engineer (PSE) position was established by reference (a). This was after determination that maintenance availabilities required additional oversight of testing, work certification and quality per references (a) through (i). The PSE is the assigned engineer that is responsible for providing technical oversight for availability testing and certification during maintenance availabilities.

a. The PSE will be assigned to specific hulls to support availability technical compliance, certification and acts as the primary liaison between the Project Team (PT) and the Naval Supervising Activity (NSA) Engineering Department. The PSE will provide critical oversight and coordination to ensure technical compliance and work certification is completed properly with all required documentation.

b. The PSE will be permanently assigned to the NSA Engineering Department. The PSE will be embedded in the maintenance availability project team for the duration of specific maintenance availabilities and as needed to support prior planning, and reports to the NSA Project Manager (PM) during the ship's maintenance availability.

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2. Measure of Success. The success of the NSA PSE can be measured by these critical outcomes.

a. Customer satisfaction.

b. The ability to provide timely answers to technical questions asked by the availability PT that support resolution of Request for Contract Changes (RCC's), Engineering Support Requests (ESR's) and work certification documents.

c. Helping to minimize New/Growth work in Availabilities by applying technical rigor to RCC process.

d. Organized Process to gather Expanded Process Control Procedure (EPCP) Closeout and Availability Work Certification (AWC) Objective Quality Evidence (OQE) for Naval Support Activity and NSA Chief Engineer (CHENG).

3. Roles and Responsibilities of the Project Support Engineer (PSE). The PSE is a critical member of the PT and is responsible and/or accountable for specific tasks as outlined below in paragraph seven. The roles and responsibilities detailed throughout this guide are intended to describe the PSE's relationship to maintenance team members in specific task areas and the PSE's responsibility in executing assigned tasks during the availability period. The PSE works with many members of the maintenance team and PT but works the closest with the NSA PM, Integrated Test Engineer (ITE) and CHENG. Typical PSE duties include:

a. Reviews the Lead Maintenance Activity (LMA) work specifications ensuring the requirements of tasking documents are met, naval standards are invoked, and final acceptance documentation will validate work performed.

b. Attends all pre-availability planning meetings; assuming a leading role in addressing technical issues and coordinating resolution of technical authority issues.

c. Maintains a records system of tasking documents, 2-Kilos, temporary departure from specifications (DFS), a listing of specifications reviewed and documented comments forwarded for correction.

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- d. Provides technical oversight of the LMA's technical performance of shipboard work for compliance to contract specifications.
- e. Provides technical oversight of LMA's quality assurance management program for technical documents and data.
- f. Provides oversight of contracted Original Equipment Manufacturer (OEM) technical representatives.
- g. Provides technical evaluation and recommendations for LMA change proposals, growth and new work.
- h. Serves as the PT's technical authority point of contact. Assigned to resolve all technical issues, adjudicate non-conformances, departures from specification, waivers and deviations, and provides for technical responses to LMA condition reports.
- i. Provides oversight of assigned planning yard on-site field personnel responsiveness and technical adequacy.
- j. Initiates Liaison Action Request (LAR) to document changes or questions to Naval Sea Systems Command (NAVSEA) installation drawings.
- k. Attends all production meetings to assist and advise the Project Team in all matters concerning the repair and modernization of shipboard systems and equipment.
- l. Provides coordination for the ship availability technical closeout documents to ensure all technical related documents have been properly answered and/or adjudicated.

4. Core Competencies of the PSE. Core competencies are the skills, knowledge and abilities which a person must possess in order to successfully perform specific job functions. Particularly, the PSE should possess the strengths, experience, knowledge and abilities listed below:

- a. Knowledge of Naval Engineering as applicable to ship's auxiliary machinery, piping and refrigeration systems, combat systems, weight handling equipment, and crew habitability systems (sanitary, plumbing, galley, etc.).

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b. Knowledge of Electrical Engineering as applicable to ship's Electrical system functions, limitations, design, operations, performance, safety parameters and maintainability.

c. Knowledge of basic project management principles. This would include but not be limited to planning, organizing, directing and controlling organizational resources in order to meet the goals and objectives.

d. Knowledge of Quality Assurance (QA) principles related to shipyard work.

e. Skill in analyzing complex engineering/technical problems, economic factors and other criteria.

f. Technical knowledge and the ability to apply ship overhaul and building specifications and requirements.

g. Knowledge of U.S. Navy specifications and regulations pertaining to design, maintenance safety and operation of assigned equipment/systems.

h. Knowledge of U.S. Navy, major command and other levels of maintenance engineering program requirements pertinent to the development of scheduled maintenance requirements.

i. Ability to interact with multiple maintenance activities and effectively communicate technical information with senior engineers, technicians, PM and Maintenance Team personnel.

j. Where first-hand knowledge of systems is limited, have the ability to identify and reach back to subject matter expertise within the NSA engineering organizations for assistance.

k. Ability to effectively communicate with forces afloat and ashore naval commands including senior officers, ship Commanding Officers and other officer and enlisted personnel.

l. Detailed knowledge of processes required for assessing the material condition of equipment on U.S. Navy ships.

m. Knowledge of Technical Authority instructions and processes. Ability to enforce and improve technical authority across the command, specifically for non-nuclear surface ship work.

5. PSE Role in the Maintenance Process. The following chart provides a quick reference guide for availability phases and various tasks therein relevant to the PSE position. The codes in the right hand column reflect the PSE's role in the task.

a. (R) Responsible - The person who is assigned to do the work.

b. (A) Accountable - The person who makes the final decision and has ultimate ownership.

c. (C) Consulted - The person who must be consulted before a decision or action is taken.

d. (I) Informed - The person who must be informed that a decision or action has been taken.

**PSE RACI CHART**

Planning (A-360 to A-61)	Event	Milestone	
	Identify and Review EPCP and PCP requirements	A-200 (near A-240)	C
	Work Specifications Review (Scope/Technical/Quality) in appropriate IT System - up to 80%	A-240	R

	Complete all Work Specification F2F reviews for the 80%	A-95	C
	TSRA 2 (A-90) Completion		I
	I Level Work Package 100% Brokered	A-90	I
	I-Level work package fully accepted (A-75)	A-75	I
	Develop Work Specifications (Starts at A-120, continuous process) - up to 100%	A-120	I
	Work Specification Review (Scope /Technical/Quality) in appropriate IT System - up to 100%	A-120	R
	Work Spec Review - Government Estimate (Starts at A-120, continuous process) - up to 100%	A-120	I
	Issue 100% Package Lock Letter (A-75)	A-75	I
	Work Specifications Review - Contractor Estimate (A-75 thru A-60) - up to 100%	A-75	I
Integration (A-60 to A-0)	Event	Milestone	
	Readiness to Start Message	A-30	I
Execution A+1 to C-0	Event	Milestone	
	TSRA 3 - assist ship in achieving Maintenance Phase exit criteria	A	R
	Arrival Conference	A	C
	Docking Conference	A	C
	Dock	A	C
	Undocking Certification Milestone	A	R
	Undocking Conference	A	C
	Undock	A	R
	Open and Inspect	A+20%	I
	Request for Contract Change (RCC) Process - Authorization of New Work		C
	RCC Process - Growth exceeds Controls		C
	RCC Process - Growth within Controls	A	C
	RCC Process - No Growth (Admin / Clarification)	A	C
	Condition Found Report (CFR) Submission	A	I
	CFR Responses	A	C
	ESR (Engineering Services Request)	A	A
	Deviation From Specification (DFS) Process	A	C
	EPCP	A	I
	PCP	A	C
	LARs / RLARs	A	I
	Integrated Test Plan Execution	A	I
	Work Certification	A	R
	Oversight (PVI, PE, PR)	A	R
	LMA Checkpoint Execution (V, G, I)	A	C
	LMA Collection and Management OQE	A	I
	I-Level Collection and Management of OQE	A	I
	Other AWP Collection and Management of OQE	A	I
	LMA Production Completion Date (PCD) scheduled 3-14 days prior to LOA	C-33	I
	Aegis Light Off		R
	Propulsion Plant Light Off or Light Off Assessment (LOA)	C-19	C
	Fast Cruise (Contractual Milestone)	C-9	R
	Sea Trials (Contractual Milestone)	C-2	R
	Availability Completion	C-0	R
	Dock Trials (Contractual Milestone)		R
	Dock Trials (Event)		I
	Fast Cruise (Event)		I
	Sea Trials (Event)		I
	25% Review	A+25%	C
	50% Review	A+50%	C
	75% Review	A+75%	C
	Departure Conference	C+0	C
Closeout (C+1 to C+60)	Event	Milestone	
	Technical Close (C-0)	C-0	R

6. Five Phases of the Maintenance Process

a. Advance Planning. Advanced Planning is defined as the time between the availability A-720 and A-360 when Surface Maintenance Engineering Planning Program (SURFMEPP) hands off



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the Baseline Activity Work Package (BAWP) to the Type Commander (TYCOM) and it becomes the Availability Work Package (AWP). At this time in the end-to-end (E2E) process the ship will be preparing for an upcoming deployment and SURFMEPP is identifying time directed maintenance tasks, deferred maintenance tasks and modernization for inclusion in the upcoming Chief of Naval Operations (CNO) maintenance availability.

b. Planning. Planning is defined as the time between the availability A-359 and A-61 dates when the detailed maintenance availability planning process starts. At this time in the E2E process the ship will be returning from a deployment and may be close to the scheduled 100% depot level work package lock date.

c. Integration. The Integration phase is defined as the time between availability A-60 and A-0 starting after the planning phase and before execution occurs.

d. Execution. Execution begins at availability start (A-0) day one and ends on the availability last day, C-0. At this time in the E2E process the ship will have returned from a deployment. The PSE is overseeing technical and certification processes to ensure the work being performed is accomplished in accordance with all technical requirements and policies.

e. Closeout. The Closeout phase starts the first day after the availability is completed at C+1 and ends at C+90. The PSE's role during the closeout process is to ensure that all technical documentation to support Expanded Process Control Procedures (EPCP) and Availability Work Certification (AWC) are completed and have been routed to the NSA CHENG for signature. Additionally, the PSE shall ensure that all RCC's and Condition Found Reports (CFR's) that require technical adjudication by the Engineering Department are answered to the extent that the PM can route them appropriately in the Naval Maintenance Database (NMD).

7. Work Specification Scope/Technical Review. The PSE will be the NSA Engineering Department Technical Point of Contact (TPOC) for his/her assigned ships per reference (a). In this capacity, the PSE will take part in all availability advance planning meetings with the PT. The PSE shall review all work specifications and ensure they meet criteria outlined in reference (b). Review of work specifications will occur continuously throughout the Advance Planning, Planning and Integration Phases of the maintenance process. Refer to PSE Procedure 1 of this desk guide.

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8. Engineering Support Requests (ESR). The ESR process exists to provide a uniform practice to obtain engineering/technical assistance and engineering information that emerge during the repair, maintenance and modernization of ships. The PSE in his role as TPOC for PT during maintenance availabilities will be responsible for gathering these ESRs, forwarding them to applicable NSA Engineering Subject Matter Experts (SME) and providing a written answer back to the PT in a timely manner. ESRs may be required when:

a. Approved technical requirements do not exist or are unknown.

b. Approved technical requirements are unclear.

c. An alternative technical requirement is proposed.

d. The originator of ESR lacks technical knowledge or authority to evaluate equipment or system condition for the purpose of applying approved technical requirements to:

(1) Evaluation of equipment or system existing condition.

(2) Evaluation of equipment or system improvement.

(3) Evaluation of equipment or system test results.

(4) On-site evaluation of equipment or system operational status.

(5) Technical information.

(6) Other technical assistance as requested.

e. ESRs can be made in a variety of ways. The most common are by message, telephone, E-mail, CHAT, 2-KILO/AWR or by utilizing the ESR form. Project Support Engineers will process ESRs from the Project Team as needed throughout the maintenance process. Refer to PSE Procedure 5 of this desk guide.

9. Support for TSRA 3. Primarily the responsibility of the NSA AD. TSRA 3 assesses the material condition of tanks and voids, structures and equipment. The PSE will work closely with the AD during CNO availabilities to support TSRA 3 events. His duties include technical adjudication of discrepancies and ensuring the

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timely response to ESR. PSE will provide support for TSRA 3 during the execution phase of the maintenance process. See PSE Procedure 2 of this desk guide.

10. Dry Dock Assessments, and "Slow to Degrade Systems" (e.g., tanks, voids, and structures). Primarily the responsibility of the NSA AD, Current Maintenance Plan (CMP) tasks that must be conducted during depot maintenance availabilities such as dry dock assessments or material assessments that require substantial interference removal will be scheduled during TSRA 3. Reference (h) requires that tank and void "Open and Inspect" items be completed within the first 20% of an availability. This allows new work that must be completed during that availability to have minimal impact on scheduling. However the goal is for any discrepancies found to be repaired during the next availability and not the current availability. PSE work closely with the AD during the execution phase and act as a liaison between the PT and Engineering departments. See PSE Procedure 2 of this desk guide.

11. Pre-Contractor Sea Trials support. Primarily the responsibility of the PSE, critical Hull, Mechanical and Electrical (HM&E) systems which are not included in the AWP for repairs/modernization, but required for LMA Sea Trials may require NSA technical support when placing systems into lay-up or bringing those systems out of lay-up and conducting pre-Sea Trials testing using appropriate CMP assessment procedures. NSA support for HM&E system restoration prior to LMA Sea Trials will be on an "as needed/pull" basis from Ship's Force (SF) and TYCOM. When required, SF/TYCOM will request NSA technical support utilizing the Fleet Technical Assist (FTA) process defined in reference (c). When requesting technical support during the availability, the PT (via PSE) must be notified of the FTA request to allow coordination and de-confliction with the Integrated Production Test Schedule. The results of these pre-LMA Sea Trials RMC material assessments will be provided to the ship's Commanding Officer and NSA PM to support ship's certification of Redlines systems and NSA certification of readiness for Sea Trials. Due to complexities involved with conducting material assessments during CNO Availabilities, these assessments should be limited to systems that are critical to support LMA Sea Trials. PSE will provide support during the execution phase of the maintenance process.

12. Key Event Certification

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a. Docking/Undocking. The PSE has a limited role during the docking and undocking evolutions. The NSA Docking Officer is overall in charge and has responsibility. The PSE will support the PT and NSA Docking officer by ensuring all work that requires certification has properly documented Objective Quality Evidence (OQE) prior to the undocking event.

b. Production Completion Date (PCD), Combat System Production Completion Date (CSPCD) or AEGIS Light Off (ALO). The PSE along with the Integrated Test Engineer (ITE) will collect applicable work certification and test documentation for the NSA CHENG. During the process of collecting documents, the PSE will have an excellent deck plate perspective of the availability and will be able to use this along with knowledge of production schedule and Ship's Force training requirements to make a recommendation to the NSA CHENG on whether or not the PCD, CSPCD or ALO Key Events (KE) have been met.

c. Dock Trials (DT)/Fast Cruise (FC)/Sea Trials (ST). The PSE role during these certifying events are as follows: For DT, FC and ST the PSE shall ensure that all technical challenges that arise from returning equipment, systems or machinery from lay-up status to operational are quickly adjudicated to support this key event/milestone. The FTA process should be utilized for requesting technical assistance prior to and during these events. The PSE should assist with providing the ship with the technical assistance they requested during maintenance availabilities.

d. Availability Completion. See PSE Procedure 9 of this desk guide.

13. Expanded Process Control Procedures (EPCP). Per references (d), (e), (f) and (g), the PSE will be the TPOC for the PT. As the TPOC and liaison to NSA SME, the PSE will work to identify work specifications that would require EPCP use and development. During the EPCP development process the PSE will work closely with the NSA, SMEs, PT and LMA to ensure timely completion of the document so that schedule can be maintained. During the execution phase of the maintenance availability the PSE will continually gather OQE for the NSA CHENG to support EPCP closeout and availability certification. See PSE Procedure 3 of this desk guide.

14. Process Control Procedures (PCP). PSE's will treat PCP similar to EPCP. Per reference (b), PCPs shall be developed when the product cannot be ensured by inspections and tests

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alone. The PSE shall review work specifications and help identify where PCPs are required, and during execution collect technical documentation to support PCP closeout, completion and certification. See PSE Procedure 3 of this desk guide.

15. Condition Found Report (CFR) Process. The PSE will check daily for CFRs input into NMD by the LMA and review them for technical validity, EPCP/PCP requirements, and need for a Departure from Specification (DFS). The PSE will also act as the first level of screening for new and growth work, and provide feedback to the NSA CHENG for determination if work is technically required. See PSE Procedure 5 of this desk guide.

16. Request for Contract Change (RCC) Process. See CFR Process above and PSE Procedure 6 of this desk guide.

17. Conferences and Progress Reviews. The PSE will attend CNO availability progress reviews held at 25%/50%/75% of the elapsed time per reference (b). The PSE has the responsibility to Ship's Force and the PT to take action on any technical challenges presented during these meetings. During these meetings all completed work, testing and certification and upcoming key events or milestones will be discussed. The PSE shall communicate to NSA Engineering Department SMEs to ensure prioritization of any outstanding ESRs and review of DFS to ensure a clear path to milestones is understood by all attendees. For docking and undocking conferences the PSE will be in attendance with the PT.

18. Propulsion Plant Light Off. The Afloat Training Group (ATG) will conduct Propulsion Plant Light Off Assessment (LOA) to determine ability for the ship to get underway safely following CNO availabilities. When technical challenges result from ATG assessments during LOA, the PSE has action to understand what technical assistance the ship is requesting, work with ship to establish a Job Control Number (JCN), ensure it has been properly screened and brokered by the TYCOM Port Engineer (PE) and provide a status back to the PT and SF. Technical assistance may be requested via 2-KILO or ESR.

19. Key Stakeholders. These descriptions are designed to provide a general overview of other stakeholders and members of the PT:

a. Type Commander (TYCOM). The TYCOM provides management, oversight, and adjudication for maintenance and fleet

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modernization challenges. TYCOM provides final approval and promulgation of the Maintenance and Modernization business plan.

b. Ashore Ships Maintenance Manager. The Ashore Ship's Maintenance Manager PE for Surface Ships) is the Maintenance Team leader for their assigned ship and is responsible for all off-ship repair, maintenance, and modernization planning and execution. The PE is a technical resource for the ship, RMC, SURFMEPP, NAVSEA and the TYCOM. The PE possesses in-depth knowledge of their ship's equipment and systems, material history, required maintenance, life cycle requirements, and modernization.

c. Type Desk Officer. Each Type Desk Officer is the TYCOM representative for a class of ships. They are involved in all aspects of ship modernization and maintenance including assessments.

d. Availability Work Package (AWP) Manager. The AWP Manager works with the Type Desk Officer and PE to plan for CNO availabilities. The AWP Manager has intimate knowledge of each AWP as it is built and executed during the cycle. AWP Managers perform the following tasks:

(1) Track events such as TSRA and INSURV, and metrics that support AWP milestones for availabilities.

(2) Analyze and validate Business Case Analyses (BCAs) to determine risk when maintenance is unfunded.

(3) Produce deferral letters to report mandatory CMP tasks that cannot be executed as required.

(4) Compile, review and publish the final AWP via a TYCOM AWP Lock Letter. Ensure all Casualty Reports (CASREPS), Departures from Specification (DFS), mandatory tasks, Temporary Standing Orders (TSO), Modernization and Current Ship Maintenance Project (CSMP) repairs are reviewed for inclusion in the final AWP.

(5) Assessment Coordinator. For each assessment the TYCOM will identify an Assessment Coordinator (AC) who will provide TYCOM perspective and be responsible to the TYCOM for approval of the TSRA agenda. The AC shall oversee the execution of the TSRA process to include review and approval of class matrix changes. In addition, the Assessment Coordinator will schedule and publish the TYCOM TSRA schedule quarterly following

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each Fleet Scheduling Conference (FSC). In the absence of an assigned TYCOM AC this person may be the Port Engineer or a Type Desk Assistant.

e. System Commands (SYSCOMs). SYSCOMs are heavily involved in all aspects of modernization, directing resources to properly equip the Fleet. There are four SYSCOMs that the PSE needs to understand and maintain a working relationship with: Naval Sea Systems Command (NAVSEA), Space and Naval Warfare Systems Command (SPAWAR) and Naval Air Systems Command (NAVAIR) and Naval Supply Systems Command (NAVSUP). NAVSEA is the lead in establishing and enforcing technical authority, but all SYSCOMs exercise technical authority related to all aspects of design, operation, and maintenance of their systems and equipment. SYSCOMs are the final authority for any technical decision related to their ships, aircraft or systems.

f. In-Service Engineering Agents. In-Service Engineering Agents (ISEA) may conduct assessments when RMC manning does not support TRSA tasks or when coordinated by the Project Team (PT) outside of TSRA events. ISEAs are engineers appointed by their organizations and the ISEAs technical responsibilities and limitations are documented via a Memorandum of Agreement (MOA) or statement of work. ISEAs provide technical services and support such as analysis, development of technical alternatives, performance assessments, consultation, investigation, research and development, planning, design, and production or integration to the Technical Warrant Holder (TWH), NAVSEA Project Managers (PM) and the Fleet.

g. Naval Supervising Activity (NSA). The NSA is the single Naval activity responsible for the integration, oversight and verification of all work accomplished by all activities working within the assigned availability, and acts as a single point of contact for this work. The NSA will provide the oversight required to ensure all work in the assigned availability is authorized and completed in compliance with applicable technical requirements and policy, and that all work meets schedule, quality and safety requirements. The NSA will possess a NAVSEA technical warrant.

(1) Project Manager (PM). The PM is the availability business manager and represents the NSA Supervisor (Code 300) in all customer and LMA relations. The PM is the leader of the PT which includes the Maintenance Team (MT) during maintenance availabilities. The PM acts as PT point of contact for outside agencies seeking information related to the current project.

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(2) Logistician. The Class Logistician is a PT member. The Class Logistician provides complete Integrated Logistics Support (ILS) coordination (configuration, supply support, technical documentation, support equipments, maintenance requirements, and modernization training). The Logistician identifies and coordinates material life-cycle support deficiency issues, assists in deployment preparations, provides quality assurance of ILS deliverables. The Class Logistician represents the MT for logistic matters at conferences and meetings and provides End of Availability ILS Certification per reference (i).

(3) Integrated Test Engineer (ITE). The ITE is a critical part of availability certification and will work closely with the NSA PSE and CHENG to help certify the availability. The PSE and ITE will both collect technical documentation to support test requirements and final technical certification by the NSA CHENG. Additionally, the PSE will work with the ITE to provide recommendations to the NSA CHENG for Key Event readiness and final Certification.

(4) Assessment Director (AD). The AD is the NSA leader of the assessment team and manages the execution of TSRA visits and CMP assessment events. The AD will provide management of Government engineers and technicians, military personnel, contractors, data entry personal and logisticians in support of assessment visits.

#### h. Ship's Force

(1) Commanding Officer (CO). The CO is the primary representative for the ship and works closely with the Ashore Ship's Maintenance Manager PE for Surface Ships) on the development and prioritization of the ship's maintenance and modernization including the Maintenance and Modernization Business Plan (MMBP).

(2) Ship Material Maintenance Officer (SMMO). Provides the SF work package to the PM and LMA. Assists in coordinating the integration of SF work for CNO and/or Fleet (EM, CM, CMAV) availabilities. Provides shipboard schedule inputs. Interfaces with the PM and the executing activity to resolve maintenance issues. CO's principal assistant for management of ship maintenance. Prepares the ship input to the Planning Board for Maintenance agenda in support of the Ashore Ship's Maintenance Manager. Works with the 3MC to maintain an accurate shipboard



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CSMP. Approves, validates and ensures submittal of accurate work candidates (OPNAV 4790/2K).

(3) 3MC. Responsible for the coordination of all facets of maintenance and material management (3-M) systems. Must possess the ability to implement, evaluate, and coordinate the ship's planned maintenance systems (PMS). As the Ship's Maintenance Data Systems (MDS) manager, the 3-M coordinator must possess the ability to operate and effectively manage the MDS. The 3-M Systems Coordinator also serves as the ship's availability manager. The 3MC works with the SMMO, Ashore Ship's Maintenance Manager and Project Team to maintain an accurate shipboard CSMP.

i. Commander, Navy Regional Maintenance Center. CNRMC will act as the Immediate Supervisor in Charge (ISIC) to all Regional Maintenance Centers (RMC's). In this role CNRMC is responsible for:

(1) Ensuring compliance with Fleet policy and coordination with Program Executive Officers (PMO) and SYSCOMS to facilitate the highest level of RMC effectiveness.

(2) RMC's adherence to established policy, guidance and regulations regarding expenditure of government funds and development of a budget as directed by higher authority.

(3) Compliance with all applicable environmental, safety and health requirements.

(4) Ensuring appropriately trained personnel are available to meet mission requirements.

(5) Continuous improvement of operations to achieve maintenance responsiveness and effectiveness.

(6) Compliance with all NAVSEA Technical Warrant requirements, Federal Acquisition Regulations (FAR) and NAVAWA Contracting Warrant guidance.

(7) Maintain quality processes to ensure LMA quality processes are in compliance with NAVSEA guidance and that internal RMC quality meets all technical requirements.

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# PROJECT SUPPORT ENGINEER (PSE)



## DESK GUIDE VOLUME II



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**PSE PROCEDURE 1****Work Specification Review**

Ref: (a) COMUSFLTFORCOMINST 4790.3, Joint Fleet Maintenance Manual (JFMM)  
(b) COMNAVSEASYS COMINST 5400.95E, Waterfront Engineering and Technical Authority Policy

1. Purpose. To establish requirements and procedures for the Project Support Engineer (PSE) to review work specifications per references (a) and (b). The intent is to ensure that technical requirements are identified and work items that require Expanded Process Control Procedures (EPCP) or Process Control Procedures (PCP) have been validated by NSA Engineering.

2. Discussion. During the planning process, the PSE must continually review preliminary work specifications and adjudicate technical challenges with the Project Team (PT) to ensure a seamless transition from the planning phase to the execution phase. Work specification review shall be in accordance with reference (a). The PSE shall be familiar with all of the work items planned for upcoming availabilities, and be aware of required check points, EPCP and PCP use, and the certification process for each. Additionally the PSE will work closely with the Integrated Test Engineer (ITE) and capture test requirements. During the execution phase the PSE continuously checks the Navy Maintenance Database (NMD) for new Condition Found Reports (CFR) and Requests for Contract Change (RCC).

3. Action. When all Work Specification Reviews have been thoroughly completed by both the LMA and NSA, the PSE can utilize the Project Execution area of NMD to review the approved work specifications. With regard to inspection and test requirements in work items, the PSE must ensure that:

a. Required (V), (I) and (G) point observations are correct per reference (a).

b. Work Specifications match authorized Automated Work Requests (AWR) and support the achievement of the desired physical work aboard ship.

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c. Work Specifications align with documented corrective actions for active CASREPS, Deviations from Specification (DFS) and Fleet Technical Assistance (FTA) Technical Assistance Visit Reports (TAVR).

d. Work Specifications list locations that match those stated in AWRs, DFSs, TAVRs, CASREPS, TSOs or CMP Items as applicable.

e. Inspection criteria for "acceptance" or "rejection" are listed in the work specification. Final acceptance testing, documentation and reporting are addressed and appropriate to the level of work performed.

f. After a thorough review of each work specification, the PSE shall record comments in NMD under the "work specification review" tab. If no comments, the PSE shall input "Reviewed - No Comment". All comments shall include the reviewer's name, date and Code.

g. The NSA Availability Project Manager, with support from the assigned PSE shall ensure that prior to work package definitization or contract solicitation, technical comments that have not been incorporated into the Work Specification will be adjudicated by the NSA Chief Engineer (CHENG)/Technical Warrant Holder (TWH) or his/her designated representative per reference (b).

h. The NSA Availability Project Manager (PM), with support from the assigned PSE shall ensure that prior to work package definitization or contract solicitation, Quality Assurance comments that have not been incorporated into the Work Specification will be adjudicated by the NSA Quality Assurance Director or his/her designated representative.

i. If the PSE cannot complete Work Specification review due to work load, technical expertise, the PSE shall notify their NSA Supervisor to request assistance.



**PSE PROCEDURE 2**

**Support for TSRA 3**

- Ref: (a) COMNAVSURFPAC/COMNAVSURFLANTINST 4700.1A/CNRMCINST 4700.7, Total Ships Readiness Assessment (TSRA)  
(b) CNRMC ltr 4700 C200/122 of 28 Sep 11, Maintenance Team Project Support Engineer  
(c) COMNAVSURFPAC/COMNAVSURFLANTINST 3502.3, Surface Force Readiness Manual  
(d) COMNAVSURFPAC/COMNAVSURFLANT/CNRMCNOTE 4700, Total Ships Readiness Assessment Class Matrices  
(e) COMUSFLTFORCOMINST 4790.3, Joint Fleet Maintenance Manual (JFMM)  
(f) COMNAVSEASYSCOMINST 5400.95D, Waterfront Engineering and Technical Authority Policy

1. Purpose. To establish requirements for the Project Support Engineer (PSE) prior to the beginning and during scheduled Total Ship Readiness Assessment (TSRA) 3 events per references (a) through (f).

2. Discussion. Per reference (b) Project Support Engineers (PSE) will be the primary liaison between availability project teams and NSA engineering. Specific duties may include researching ship's configuration, assisting with identification of parts and material, adjudication of Deviation from Specifications (DFS), ensuring assessment procedures are correct for the specific hull or developing local procedures and tracking Technical Feedback Reports (TFBRs).

3. Action. The PSE shall be the Technical Point of Contact (TPOC) between the Availability Project Team (PT) and Naval Supervising Activity (NSA) Engineering.

a. The PSE shall work closely with the Assessment Director (AD) and maintain a status of all open tanks and discrepancies discovered by the tank inspection team.

b. Coordinate with the Tank Inspection Team, and PE and Project Manager (PM) to ensure Type Commander (TYCOM) and NSA leadership understands any new or growth work associated with tank inspections.

c. Assist PT and Ship's Force (SF) to draft DFS's when necessary.

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d. Attend daily production meetings and TSRA briefs as an Engineering Representative.

e. Report status of all outstanding Fleet Technical Assistance (FTA) requests and Engineering Support Requests (ESRs).

f. Work with the assigned Assessment Director (AD) to identify new or growth work that is technically required to be accomplished.

**PSE PROCEDURE 3**

**Expanded Process Control Procedures (EPCP) and  
Process Control Procedures (PCP)**

- Ref: (a) CNRMCINST 4700.5, Standard Operating Procedure (SOP) for Expanded Process Control Procedures (EPCP) on Surface Ships
- (b) CNRMC ltr 4700 C200/122 of 28 Sep 11, Maintenance Team Project Support Engineer
- (c) NAVSEAINST 5400.108(Series), Policy for Quality Management of Work on Non-Nuclear Surface Ship Critical Systems
- (d) CNRMC ltr 4700 Ser C200/116 of 16 Jul 12, Relaxation of NAVSEAINST 5400.108A
- (e) CNRMC ltr 4700 Ser C200/126 of 5 Oct 11, Implementation of Controlled Work Packages and Expanded Process Control Procedures on Surface Ships
- (f) COMUSFLTFORCOMINST 4790.3, Joint Fleet Maintenance Manual (JFMM)

1. Purpose. To establish guidelines for Project Support Engineers' (PSE) roles with regards to Expanded Process Control Procedure (EPCP) and Process Control Procedure (PCP) use and development per references (a) through (f).

2. Discussion. With the implementation of references (c), (d) and (e) and the creation of the PSE position to assist in technical compliance and availability testing and certification, it has been determined that there is a need for dedicated engineering support from the NSA during maintenance availabilities. As the Technical Point of Contact (TPOC) for the NSA Engineering Department, the PSE will be responsible for review of work specifications that require the use of EPCPs, PCPs and collecting Objective Quality Evidence (OQE) to support EPCP closeout and availability certification by the Naval Supervising Activity (NSA) and RMC Chief Engineer (CHENG).

3. Action. The PSE will perform duties outlined by reference (b) by assisting with the technical review of work specifications during the planning process and have an intimate understanding of the work package throughout the process along with knowledge of the above references and their implications to the maintenance availability.

a. For Expanded Process Control Procedures (EPCP). During the planning and work specification review process when the PSE

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determines that planned work will involve critical systems listed in reference (c) action will be taken to make the Project Team (PT) and LMA aware that EPCP use is necessary. All efforts should be taken to reuse EPCPs. EPCPs are posted in the Naval Maintenance Database (NMD) and can be accessed via:  
[https://aiscgateway.supship.navy.mil/portal/page/portal/AISC\\_Portal/PUBLIC\\_HOME](https://aiscgateway.supship.navy.mil/portal/page/portal/AISC_Portal/PUBLIC_HOME).

(1) If an EPCP is not available for reuse for the system identified in the work package it can be developed by the NSA and provided as Government Furnished Information (GFI) or written by the LMA. During planning meetings prior to definitization the organization that will provide the EPCP shall be identified and agreed upon in writing in the work specification.

(2) The PSE shall participate in the technical review of each EPCP prior to work starting and be in attendance during Ready to Start (RTS) briefs.

(3) During the execution of EPCPs the PSE will adjudicate technical challenges that arise with Engineering Department Subject Matter Experts (SME) and ensure EPCP changes are recorded correctly and are technically correct. It is the responsibility of the PSE to ensure a timely response to technical challenges during the availability and to communicate with NSA leadership early and often to avoid lost time and work stoppages.

(4) The PSE will continually gather OQE during the execution of the EPCP to support Objective Quality Evidence (OQE) review and availability certification.

b. For Process Control Procedures (PCP)

(1) PSE's will also ensure work that requires the use of a PCP is identified during the work specification review process. PCPs are required for systems or work that normal test and inspection checkpoints may not be adequate per reference (f). Procedures for working with PCPs are the same for EPCPs stated above.

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**PSE PROCEDURE 4****Quality Assurance Program**

Ref: (a) NAVSEA Contract Administration Quality Assurance Program (CAQAP)

(b) NAVSEA Standard Item 009-04

(c) NAVSEA Standard Item 009-67

1. Purpose. To provide the Project Support Engineer (PSE) with the basics of reference (a) and list some areas of interest in reference (b).

2. Discussion. The PSE plays a central role in the quality assurance (QA) of an availability as it relates to technical compliance and certification management. Reference (a) outlines QA requirements for new construction, conversion, modernization, and major repair contracts. Reference (b) outlines contractor requirements for quality assurance and has many components that are integrated with reference (c). The PSE must be familiar with the guidelines of these references.

3. Action. The PSE will become familiar with the requirements of the Quality Assurance Program per reference (a); however, his focus will be placed on areas that impact technical documentation required for certification

a. The PSE will collect the data being generated by the LMA via the Test and Inspection Plan (TIP) and from required reports submitted via the Naval Maintenance Database (NMD) and incrementally collect that data for work certification and technical review.

b. The PSE is the Project Team (PT) point of contact that ensures that all Objective Quality Evidence (OQE) documentation has been accounted for and completed in support of certification. This includes QA tickets and PCP/EPCP documentation. They are responsible for ensuring that documentation is received in time to support the work certification process, specifically in support of each Key Event certification.

c. The PSE works closely with the Integrated Test Engineer (ITE) and Project Manager (PM) and passes along QA issues that could impact the testing and certification schedule. The PSE also ensures that all documentation required to certify work is available and provided in a timely manner to members of the PT who need it to verify key event certification.

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**PSE PROCEDURE 5****Engineering Support Requests (ESR)**

Ref: (a) COMNAVSEASYSCOMINST 5400.95D, Waterfront Engineering and Technical Authority Policy  
(b) CNRMC ltr 4700 C200/122 of 28 Sep 11, Maintenance Team Project Support Engineer

## Appendix A: Engineering Support Request

1. Purpose. To establish procedure for the Project Support Engineer (PSE) to track, route and return Engineering Service Requests (ESR's) to the Availability Project Team in accordance with references (a) and (b).
2. Discussion. During the planning and execution of all shipboard repairs, maintenance and modernization ESRs shall be utilized to obtain engineering service and support. The PSE shall be responsible for coordinating each ESR from the Project Team (PT) and ensure it is forwarded to the correct NSA Engineering Department Subject Matter Expert (SME) for technical adjudication. ESRs may be originated by any member of the Project Team, and requests may be made via message, telephone, E-mail, CHAT, 2-KILO/AWR or by ESR form.
3. Action. The PSE is the Technical Point of Contact (TPOC) for his or her assigned ships. During planning and execution of Continuous Maintenance Availabilities (CMAV's), and Chief of Naval Operation (CNO) availabilities the PSE will route ESRs to applicable Engineering Department SMEs when received by the PT.
  - a. The PSE will verify the ESR is valid, obtain an ESR tracking number and work order number and enter this information into the ESR before forwarding to the appropriate Engineering Department Subject Matter Expert (SME).
  - b. Requests originating from the LMA shall be initiated via Condition Found Report (CFR). A member of the PT will forward a copy of the CFR with a completed ESR form to the PSE.
  - c. The PSE will communicate with the appropriate Engineering Supervisor and SME for a reply. If the recommendation creates a non-conformance, the PSE will request a Departure from Specification (DFS) be submitted by the ship,

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unless the ESR originated with the LMA. In this case, the Lead Maintenance Activity (LMA) will submit a DFS.

d. When a reply is received, the PSE shall forward a copy to the originator as well as Engineering personnel responsible for retention and future use.



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**Appendix A**

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**ENGINEERING SUPPORT REQUEST**

Norfolk Ship Support Activity (NSSA), NORFOLK, VA ENGINEERING DEPARTMENT: Code 210, Fleet Technical Support Department (FTSD)		
FROM:	DATE:	ESR NO.:
TO:	Fax:	
SHIP NAME/HULL NO.:	SCD NO.:	
WORK ITEM NO.:	JCN/SWLIN NO.:	JON:
1. Description of action required:		
Drawing/Tech Manual/Documentation associated with problem:	View or Piece No. affected: various	
PRIORITY: <input type="checkbox"/> Priority 1 - Contractor Work Stoppage <input type="checkbox"/> Priority 2 - Impact to Completion/Milestones <input type="checkbox"/> Priority 3 - Future Work/Advance Planning		
2. Desired completion date ( <i>DO NOT USE "ASAP"</i> ):		
3. ESR originator: ( <i>Print</i> )	Code:	E-mail:
Phone:	FAX No.:	
FOR Code 210 USE ONLY		
Assigned to Code:	Cognizant Engineer/SME:	
Date Completed:		

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**PSE PROCEDURE 6****Condition Found Report (CFR) and  
Request for Contract Change (RCC) Process**

Ref: (a) COMUSFLTFORCOM 4790.3, Joint Fleet Maintenance Manual  
(JFMM)  
(b) NAVSEA Standard Items

1. Purpose. To provide a summary of how Condition Found Report (CFR) and Request for Contract Change (RCC) processes work and establish procedures for the Project Support Engineer (PSE) in monitoring submission and approval of CFRs and RCCs that could impact scheduled testing and certification per references (a) and (b).

2. Discussion. During the course of any repair period there are many schedule-impacting circumstances that arise due to conditions that aren't discovered until repairs begin. These conditions are reported by the Lead Maintenance Activity (LMA) via the CFR process and solutions are recommended via the RCC process. Once RCCs are approved by the Naval Supervising Activity (NSA), new requirements are added to the work package. In most cases, the Integrated Production Schedule (IPS), Integrated Test Schedule (ITS), and Test and Inspection Plan must be adjusted accordingly in order to keep the project on schedule

3. Action. The PSE must be familiar with the CFR and RCC processes in order to monitor any impact they might have on new and growth work, certification and the impact to schedule and cost as well as technical requirements. The PSE shall monitor submissions and approvals daily via the Navy Maintenance Database (NMD).

a. Condition Found Reports (CFRs). Per references (a) and (b), CFRs are submitted by the contractor when needed to document any of the following situations:

- (1) As Found Conditions
- (2) Growth or New Work Recommendations
- (3) Progress on Work Items
- (4) Progress on portions of Larger Work Items
- (5) Operational witnessing or tests

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(6) Final documentation of Work Item completion

(7) As required per reference (a), Vol VII, Chapter 7.10.2 and Section 009-01 General Criteria of reference (b).

b. The process begins when the LMA submits a CFR to the NSA via NMD to document any of the above situations. The Regional Maintenance Center (RMC) Shipbuilding Specialist (SBS) conducts the initial review via Navy Maintenance Database (NMD) and in consultation with the Project Manager (PM) and the Port Engineer (PE) prepares the NSA response. The CFR is also forwarded to Engineering Department for technical review. CFRs may request additional work or funding, or be submitted to provide information to the NSA and Project Team. CFRs that request change in scope of work shall be closely scrutinized by the PSE to determine if additional cost, technical requirements and schedule will be affected. These "info only" CFRs contain data and technical information that may support Key Events (KE), Certification and Testing. After any required design considerations and requirements are added by the Engineering Department, the SBS finalizes the government response and routes the CFR to the PM for review and approval.

c. Request for Contract Change (RCC). This process begins when:

(1) New work is brokered from Regional Maintenance Automated Information System (RMAIS) to NMD after the contract has been awarded or definitized.

(2) CFR is entered for growth work after the contract has been awarded or definitized. A Work Item RCC is then generated. The process ends with the settlement of the Work Item RCC, or in the case of new work, with the settlement of the RCC followed by the issuance of a Contract Modification.

d. The PSE shall gain the appropriate level of access in the project execution area of NMD in order to monitor the status of CFRs and RCCs. It is prudent for the PSE to log in to NMD at the beginning of each work day in order to screen new CFRs and RCCs as they are entered into the system. This will give the PSE the information required to ask pertinent questions during daily production meetings and Testing Task Group meetings.

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**PSE PROCEDURE 7****Propulsion Systems Production Complete Date (PCD)**

- Ref: (a) CNRMC ltr 4700 C200/122 of 28 Sep 11, Maintenance Team Project Support Engineer
- (b) COMUSFLTFORCOMINST 4790.3, Joint Fleet Maintenance Manual (JFMM)
- (c) CNRMC ltr 4700 C211/091 of 18 Jul 11, Surface Ship Availability Work Certification and Completion Requirements
- (d) COMNAVSURFPAC/COMNAVSURFLANT Instruction 3504.1A, Redlines Implementing Instructions

1. Purpose. To establish guidelines for Project Support Engineers' (PSE) role prior to and during the Production Complete Date (PCD) Key Event per references (a) through (d).

2. Discussion. The PCD Key Event is used to document that all work, testing and inspections required for Propulsion Plant testing are complete and that all required reports and OQE have been submitted to, reviewed and approved by the Naval Supervising Activity (NSA). The PCD date is set to when Propulsion Plant and Main Machinery spaces can be turned over with sufficient time to shift from a maintenance environment back to an operational environment suitable for training in preparation for Light-Off Assessments (LOA). The NSA must certify via the Work Certification Process that all Work Items tied to the PCD Key Event are completed prior to calling the Key Event. The PSE will ensure that all required documentation to support Availability Work Certification, Expanded Process Control Procedures (EPCP) and Process Control Procedures (PCP) closeout; Condition Found Reports (CFR) and Requests for Contract Change (RCC) requiring engineering department adjudication are completed in the Naval Maintenance Database (NMD) prior to PCD being met. In this manner the PSE will ensure that work required for PCD has been completed. Per reference (b) ALL WORK is defined as:

a. Work that removes or affects the ship's ability to operate the applicable ship's systems or components per ship's systems/operating manuals.

b. Testing or inspections required to establish, maintain or reestablish certification.

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c. Any design, engineering, planning or configuration management functions that involve the final review and/or approval of technical information. Additionally equipment outlined in reference (d) must be complete or have a clear path identified to completion to support LOA and Sea Trials.

3. Action. The PSE shall collect documentation that tests and inspections on systems and spaces required for PCD are complete and that all required reports and OQE have been submitted to, reviewed and approved by the NSA per the requirements of reference (c) prior to PCD.

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**PSE PROCEDURE 8****Combat Systems Production Completion Date (CSPCD) and  
Aegis Light-Off (ALO) Key Event Management**

- Ref: (a) CNRMC ltr 4700 C200/122 of 28 Sep 11, Maintenance Team Project Support Engineer
- (b) COMUSFLTFORCOMINST 4790.3, Joint Fleet Maintenance Manual (JFMM)
- (c) CNRMC ltr 4700 C211/091 of 18 Jul 11, Surface Ship Availability Work Certification and Completion Requirements
- (d) COMNAVSURFPAC/COMNAVSURFLANT Instruction 3504.1A, Redlines Implementing Instructions

1. Purpose. To establish guidelines for Project Support Engineers' (PSE) role prior to and during the Combat Systems Production Completion Date (CSPCD) and AEGIS Light-Off (ALO) Key Events per references (a) through (d).

2. Discussion. CSPCD and ALO are Key Events to validate and document that all work, testing and inspections required for Combat System and AEGIS and that all required reports and OQE have been submitted to, reviewed and approved by the Naval Supervising Activity (NSA). The CSPCD and ALO dates are set to when Combat Systems and AEGIS equipment and spaces can be turned over to Ship's Force (SF) with sufficient time to shift from a maintenance and modernization environment back to an operational environment suitable for training in preparation for Light-Off Assessments (LOA) and Basic Phase Training. The NSA must certify via the Work Certification Process that all Work Items tied to the CSPCD and ALO Key Events are completed prior to calling these Key Events.

**NOTE 1:** Additionally equipment outlined in reference (d) must be complete or have a clear path identified to completion to support LOA, STs and Basic Phase Training.

3. Action. The PSE shall collect documentation that tests and inspections on systems and spaces required for CSPCD and ALO are complete and that all required reports and OQE have been submitted to, reviewed and approved by the NSA per the requirements of reference (c) prior to the Key Events.

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**PSE PROCEDURE 9**

**Availability Work Certification**

- Ref: (a) CNRMC ltr 4700 C211/091 of 18 Jul 11, Surface Ship Availability Work Certification and Completion Requirements  
(b) COMUSFLTFORCOMINST 4790.3, Joint Fleet Maintenance Manual (JFMM)  
(c) NAVSEA Standard Items

1. Purpose. To establish the NSA Project Support Engineer's (PSE) responsibilities to the work certification process during CNO and Fleet availabilities per references (a) and (b).

2. Discussion. The work certification process was developed to provide the NSA maximum reasonable assurance that all availability work has been properly completed and that the ship is materially ready for the next Key Event or Sea Trials. This process provides assurance that all technical waivers or deviations have been reviewed and approved, that any work exceptions (incomplete work) have been assessed not to impact the Key Events or adjudicated accordingly.

3. Action. The PSE shares with the Integrated Test Engineer (ITE) responsibility for facilitating much of the administrative tasks supporting work certification. Working closely with the NSA Chief Engineer (CHENG), Integrated Test Engineer (ITE) and Project Manager (PM), the PSE gathers required Objective Quality Evidence (OQE) documentation to certify the availability. In most cases, this requires the PSE to serve as a liaison and coordinator between the NSA, LMA and all entities performing work during the availability.

a. Key Event Readiness. Reference (b) identifies the minimum Key Events that require certification. Certification of Key Events assures that certification for Fast Cruise or Sea Trials is not a last-minute attempt to certify the availability. Having been in a position to continuously monitor work specification development and review work as it is completed for technical compliance, the PSE is in a prime position to recommend readiness for Key Events to be called as met or not to the NSA CHENG.

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b. The following Key Events are considered significant and will be certified using the Availability Certification Process:

- (1) Undocking (UDK) (if applicable)
- (2) Propulsion Plant Production Completion Date (PCD)
- (3) Combat Systems PCD (ALO for Aegis ships)
- (4) Dock Trials (DT)
- (5) Fast Cruise (FC)
- (6) Sea Trials (ST)

c. Event Readiness List. The Lead Maintenance Activity (LMA) is normally tasked with developing and tracking an Event Readiness List (ERL) using reference (c), sections 009-60 and 009-67. The ERL consists of all prerequisites including work items and actions to be completed by the NSA and all executing activities.

d. Certification Process. The PSE is involved in monitoring the process of work completion during an availability. The bulk of the PSE's time is spent gathering all the technical documentation supporting work completion and working closely with the ITE who is collecting test documentation. It is the PSE's responsibility to ensure the LMA provide Objective Quality Evidence (OQE) within 24 hours of accomplishment and prior to subsequent tests or inspections and records are incorporated into the Test and Inspection Plan (TIP) within 72 hours after completion of tests or inspections. Some of the actions and associated documentation collected is listed below:

(1) Prime Contractor (KTR) letter certifying that all authorized work is completed satisfactorily with any exceptions noted.

(2) Fleet Maintenance Activity (FMA)/I-Level

(a) FMA/RMC Code 900 certifies that all FWP/CWP and test procedures are technically correct and completed.

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(b) Exceptions noted and technically approved by NSA CHENG.

(c) Completion certified by letter/memo from FMA.

(d) NSA PM acknowledges receipt of letter by signing letter/memo signature sheet.

(3) Naval Shipyard (NSY)

(a) NSY Project Superintendent certify all Technical Work Documents and procedures are technically correct and completed.

(b) Exceptions noted and technically approved by NSA CHENG.

(c) Completion certified by letter/ memo.

(d) NSA PM acknowledges receipt of letter by signing letter/memo signature sheet.

(4) Alteration Installation Team (AIT)

(a) AIT On-Site Installation Coordinator provide letter/memo certifying that AIT work and test procedures are technically correct and complete with exceptions noted.

(b) Exceptions itemized and technically approved by NSA CHENG.

(c) NSA PM or AIT Manager acknowledges receipt of letter by signing letter/memo signature sheet.

(5) Ship's Force (SF)

(a) Commanding Officer certifies that all SF FWP and CWPs are technically correct and complete.

(b) NSA PM acknowledges receipt of letter by signing SF Commanding Officer memorandum.

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(6) NSA Engineering

(a) NSA CHENG certifies that all assigned assessments Total Ship Readiness Assessment (TSRA) or Fleet Technical Assists tied to the Key Event (FC/ST) are completed. The PSE is responsible for providing this information to the NSA CHENG and working with the NSA Assessment Director (AD) to collect this data.

(b) Certify that ongoing assessments or FTA do not impact the Key Event (FC/ST).

(7) LMA Testing

(a) LMA Test Coordinator will certify that all HM&E and C5I test procedures identified in reference (c) section 009-067, Integrated Test Plan were completed with OQE documentation or added to the exceptions list.

(b) Tests required to be completed at sea have been identified for inclusion on the Sea Trial agenda.

(c) LMA Test Engineer provides certification via memo/letter to the PSE.

(8) LMA Work Authorization Form (WAF) Coordinator and Ship Commanding Officer verify all WAFs and Tag Outs required for Key Event or ST have been closed and cleared.

(a) Supporting memoranda documenting WAF and Tag Out clearance will be provided to the RMC/NSA Integrated Test Lead.

(b) Signature of a centrally managed signature sheet or a supporting memorandum documenting WAF and Tag Out clearance will be provided to the RMC/NSA Integrated Test Lead.

(c) The NSA Integrated Test Engineer will verify and sign the signature sheet acknowledging WAF/Tag Out completion to support Key Event of ST.

(8) Quality Assurance

(a) NSA (Code 130) QA Manager certifies all QA actions resulting from QA Audits and Surveillances ISO Key Events or ST are completed.

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(b) All contractor Corrective Action Requests (methods B-D) issued during the availability are either closed or in an acceptable condition to support work certification.

(c) Memo describing outstanding items, remaining actions and ECDs should be included.

e. Final Key Event Certification

(1) The NSA PM shall verify that availability work required to complete Key Event/Readiness for ST is completed, that (PR, PE, PVI) and G points have been competed IAW QMP, that non-conformances have been corrected or provided to NSA TA for adjudication and that exceptions to completion have been reviewed and do not impact Key Event/ST completion.

(2) The NSA CHENG shall verify work required to support ST has been completed in a technically correct manner, that all exceptions listed have been reviewed and authorized and that NSA technical review of work items has been conducted in accordance with QMP.

(a) (Prior to UDK, PCD, DT only) NSA PM and CHENG sign a memorandum for the record acknowledging completion of all actions required for Key Event. Any exceptions will be listed and concurred with by NSA, TYCOM and ship's Commanding Officer.

(b) (Prior to FC/ST only) NSA Commanding Officer signs signature sheet certifying readiness for ST releases message to TYCOM certifying readiness for STs using template from reference (b).

f. Availability Completion

(1) The NSA PM will certify availability completion if all testing is satisfactorily completed on ST. Exceptions (including identified growth/new work) are adjudicated by the TWH and agreed by TYCOM.

(2) Exceptions will be tracked to completion by PM via Availability Closeout process.

(3) NSA CHENG will verify all testing required for completion has been completed on ST.

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(4) Any exceptions to completion have been reviewed and do not impact availability completion.

(5) NSA Commander will release message certifying availability completion.

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**PSE PROCEDURE 10****Undocking Key Event Certification**

Ref: (a) NAVSEA S0300-B2-MAN-010/SOM

1. Purpose. To establish guidelines for the Project Support Engineer (PSE) in support of readiness for undocking per reference (a).

2. Discussion. The undocking of a ship is a carefully planned event that is normally handled by a senior dock master from the LMA and docking officer from the NSA. Undocking is a critical Key Event during a major availability due to the inherent safety risk involved and the potential impact on cost and schedule if not accomplished on time. A major part of determining if a ship is ready to undock is the status of schedules and reports that reflect the accomplishment and certification of work required prior to undocking

3. Action. The PSE's role in undocking evolutions is to ensure 100% of dry dock related work is complete and technically correct. Prior to undocking, the PSE will physically walk the dry dock entirely and applicable spaces aboard ship and check for:

a. Preservation and structural work is complete and documented 100% to include:

(1) Underwater hull, bilge keel, skeep, fairwaters, rudders and fin stabilizers

(2) Tanks and voids that have had preservation work during the availability

(3) Access cuts have been made watertight

b. Underwater hull and shafting work are complete and meet requirements for overhaul, repair, installation and modification to include work on:

(1) Bearings and struts

(2) Fairwaters

(3) Rope guards

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(4) Stern tube seals

(5) Controllable pitch propellers (CPP) to include dry dock operational tests (air tests, flow tests).

(6) Underwater log rod meters

(7) Sonar domes

(8) Sea valves, waster sleeves, temporary plugs and strainer plates

(9) Masker/Prairie Air System to include dry dock operational tests

(10) After verification that all underwater hull, shafting and preservation work is found to be 100% complete, technically correct and documentation to support certification has been provided to the NSA, the PSE will provide a recommendation to the LMA Dockmaster, NSA Docking Officer/Observer and Project Team.



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**PSE PROCEDURE 11****Dock Trials (DT), Fast Cruise (FC), Sea Trials (ST)  
Key Event Management**

- Ref: (a) COMUSFLTFORCOMINST 4790.3, Joint Fleet Maintenance Manual (JFMM)  
(b) S9AA0-AB-GOS-030, General Specifications for Overhaul of Surface Ships (GSO)  
(c) S9086-C4-STM-00/CH-094, NSTM, Trials

1. Purpose. To establish procedures for the Project Support Engineer (PSE) in overseeing LMA support of post-production trials per references (a) through (c).
2. Discussion. Post production trials are critical to the process of returning a ship to service after a repair period. Dock Trials (DT) are conducted to determine the ship's readiness to safely go to sea. Fast Cruise (FC) is conducted to determine and certify the state of training of Ship's Company as adequate to conduct at-sea operations. Sea Trials (ST) constitutes the final determination of a ship's material readiness and ability to rejoin the Fleet as a fully operational unit.
3. Action. Because of the PSE's role in technical compliance and work certification processes, the PSE plays a key role on the PT in overseeing LMA support for post production trials. The PSE shall ensure that that the LMA has all the information required from the NSA to support trials. The PSE will promote a collaborative effort between the NSA, LMA and the various other executing activities conducting testing and certification during the availability as continual collaboration and constant communication are critical to the accomplishment of trials. The PSE shall monitor the contractor's progress as follows:
  - a. Ensure that those in leadership positions for the LMA and NSA are in full agreement on the agreed to dates for DT, FC and ST.
  - b. Ensure that the LMA completes "all" contractor-related work required by the contract to ensure the ship is ready to commence operations required for "uninterrupted" post production trials. In order to meet the Key Event milestones of DT, FC and ST, all work and associated testing must be completed, technically correct and certified.

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c. Ensure that the LMA positively ties "ALL WORK" required to meet DT, FC and ST Key Events using the methods required in NAVSEA Standard Items 009-60 and 009-67. Work defined as per reference (a) is any action that removes or affects the ship's ability to operate ship's systems or components per ship's systems/operating manuals or reactor plant manuals; any testing or inspections required to establish, maintain or reestablish certification; and any design, engineering, planning or configuration management functions that involve the final review and/or approval of technical information.

(1) Examples of work include the following:

(a) Action which disassembles or removes any part, component or ship's system.

(b) Action specified in a Technical Work Document.

(c) Any action that removes or affects the ship's ability to operate ship's systems or components in accordance with ship's systems manuals, operating manuals or reactor plant manuals, excluding tagout in accordance with the Tagout Users Manual, including but not limited to:

(1) Component or system tests

(2) Intrusive inspections (such as breaking the plane of electrical panels requiring electrical safety)

(3) Valve line ups that alter the normal system line up not governed by operating procedures

(4) Removing valve hand wheels, disconnecting of reach rods

(5) This includes work performed by systems commands, Alteration Installation Teams (AIT), Commercial Industrial Services (CIS), and Fleet Maintenance Activities (FMA)

d. Ensure that the LMA develops and submits to the NSA, a work completion schedule for work items and activities tied to DT, FC and ST no later than A-15, using the Integrated Production Schedule and Integrated Test Schedule developed under 009-60 and 009-67 of reference (a).

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e. Work certification must be accomplished on/or before the dates indicated on the work completion schedule. The NSA CHENG is the approval authority that may certify a key event or milestone to have been satisfactorily accomplished or completed.

f. Ensure that no work takes place on any equipment, systems or spaces certified to the government from the time of certification until completion of the availability. Absolutely no work shall take place once the work is certified without permission of the NSA.

g. Ensure that the LMA documents that the required work and DT, FC and ST is complete and that all required reports and OQE have been submitted to, reviewed and approved by the NSA per requirements of reference (a).

h. Prompt the LMA to inform the NSA immediately in the event that work supporting these Key Events may not be completed and certified on time.

i. Prompt the LMA to inform the NSA immediately in the absence of Government Furnished Information required to properly manage the schedules required per 009-04, 009-60 and 009-67 of reference (a).

j. Ensure that the LMA understands the degree required to call work in a given space complete. The degree includes final paint, decking, lagging or any other repair work which requires workers to be in the space to complete. Spaces impacted by contractor work are required to be operationally ready for systems startup and subsequent sustained operation for the duration of equipment operations, training and testing. For support systems which are ship-wide distributed in nature, the degree required includes complete installation and restoration of the branches supporting systems required for trials. It shall also include completion of support systems test procedures or applicable portions thereof so that the equipment is operating within design parameters. The selected Stage 3 or Operational Verification Tests to be conducted during systems testing shall be identified in the Integrated Test Schedule managed by the Chief Test Engineer as defined in 009-67 of reference (a).

k. Make sure that the LMA corrects all LMA responsible discrepancies found during the work closeout process prior to the turnover of the ship to the ship's Commanding Officer and NSA for

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trials. The period between the NSA and ship's Commanding Officer acceptance and the completion of trials is reserved for Ship's Force and other organizations as designated by the NSA for the accomplishment of trials.

1. Make sure that the LMA accomplishes the following to support DT, FC and ST per sections 1 and 6 of reference (c).

(a) Provides rigging and crane services and install additional mooring lines to ensure safety and preclude damage to ship during DT.

(b) Provides a licensed marine pilot and tugs to assist the ship during move to and from repair facility, to and from the outer limits of the harbor to conduct STs. Each tug shall have a minimum of 1200 shaft horsepower.

(c) Repairs, tests, sets and adjusts equipment during DTs and STs per the requirements in each work item.

(d) Removes debris, tools, equipment and rigging material not required prior to ST.

(e) Disconnects and reconnects air, steam, water, waste, power, and telephone services, gangways and brows provided by contractor for DTs, FC and ST, when directed by the SUPERVISOR.

(f) Submits DT and ST agenda to the NSA, listing the name of Test Coordinator/Director, each work item and test memorandum number for each equipment and system installed or repaired, the scheduled time and date tests are to be accomplished, 10 days prior to the scheduled dock and sea trials.

(g) Makes ship available to the ship's CO for a 24 hour FC to allow for SF preparation for STs. Ensure that the LMA understands that there shall be no contractor shipboard work in progress or contractor personnel on board during FC.

(h) Ensure that the LMA submits completed test memorandum, listing each deficiency and recommendation to the NSA within 24 hours of completion.

(i) Ensure that the LMA provides the services of seven personnel to support one day DT and seven personnel to support two day ST. For scheduling purposes, a day is defined as a

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period of eight hours for DT and a period of 24 continuous hours for ST.

(j) Ensure that the LMA submits a list to the NSA with the full name, title, security clearance, home address, home telephone number and name of next-of-kin of each person scheduled to ride the ship during ST, ten days prior to established ST date.

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**PSE PROCEDURE 12****Conferences and Meetings**

Ref: (a) COMUSFLTFORCOMINST 4790.3, Joint Fleet Maintenance Manual (JFMM)  
(b) NAVSEA Standard Item 009-60, 009-67  
(c) CNRMCINST 4790.4, Integrated Project Team Development (IPTD) Program Execution Requirements

1. Purpose. To establish expectations for the Project Support Engineer (PSE) with regards to participating and/or chairing various meetings and conferences before, during and after the availability per references (a) through (c).

2. Discussion. One fundamental, but most critical, piece of a successful repair period is team communication. Preparing for and conducting conferences and meetings that are worthwhile and productive is essential to overall project success.

3. Action. From as early as A-195 (when the first Integrated Project Team Development (IPTD) meeting is conducted) to the Availability Closeout Conference, the PSE shall participate in any meeting, conference, briefing or any other forum where the agenda includes topics that could impact technical compliance.

a. IPTD. The focus of IPTD is to improve the functional performance of CNO availability project teams by ensuring that roles and responsibilities of each PT member are known and understood by all, enhancing communication skills, promoting relationships needed to ensure success and developing project plans to drive a high probability of success.

(1) During the A-195 IPTD, the PSE will brief the PT on:

(a) High level review of reference (a) Key Events and Milestones.

(b) Integrated Test Schedule and Integrated Production Schedule.

(c) Key Event Certification and importance of capturing "All Work".

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(2) During the A-120 IPTD Work Package Integration Conference (WPIC), the PSE shall brief the PT on:

(a) General guidance on OMMS-NG data export process for inclusion in LMA schedules.

(b) Reference (a) Key Events and Milestones detailed review

(c) 009-04, 009-60, 009-67 Key Points

(d) Master Integrated Schedule methodology

(3) During the A-30 IPTD Work Package Evaluation Review (WPER), the PSE shall brief the PT on:

(a) Verification that work and testing (D-Level, O-Level/Third Party, I-Level, Technical Assist, Assessment, and AIT) is integrated into MIS.

(b) Training Brief and Lessons Learned discussions from the two most recent avails.

(c) Definitions brief and detailed expectations for Key Event and Milestone Certification.

b. Daily production meetings. These meetings normally occur at the beginning of the work day and are attended by managers and supervisors from the Naval Supervising Activity (NSA), LMA and all entities performing work during the availability. This is where important progress and coordination issues are brought up and discussed. The PSE shall attend all daily production meetings and assess whether or not the issues presented will have an impact on technical certification.

c. Weekly Management Meetings. The PSE should attend all meetings where information impacting technical certification could be discussed. Senior industrial activity management officials normally meet weekly with the CO of the ship during the availability to address important specific issues with the senior industrial activity officials to obtain appropriate resolution. If unable to attend the weekly management meeting, a copy of meeting minutes and action items can be obtained via the NSA.



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d. Progress Reviews. During the course of the availability, periodic progress reviews are conducted at the 25/50/75 percent availability completion points. The PSE shall attend these meetings and take note of actions towards resolving previously reported problems, upcoming milestones and Key Events that may be in jeopardy, status of new work and any other issues that could impact testing and testing related to certification.

b. Docking/Undocking Conferences. For availabilities involving a ship's dry docking, the industrial activity will conduct both a Docking and Undocking Conference. These conferences normally occur within one week of the expected evolution. Being familiar with the Integrated Test Schedule and Integrated Production Schedule, the PSE shall attend these conferences and take note of any issues associated with technical certification of docking and undocking. The PSE shall follow up by ensuring that associated issues are discussed during the daily production meetings or Test Task Group meetings as appropriate.

c. Interim Completion Conferences (Surface Force Ships Only). The NSA and LMA will conduct 25/50/75 percent completion conferences. The PSE shall attend these conferences to ensure that all matters associated with technical certification are being addressed as needed. These conferences normally provide a forum to review all completed work along with testing and certification. Also addressed is all remaining work to include the schedule, upcoming key events, milestones, planned production manning versus actual production manning, integrated test plan, certification and Departures From Specifications.

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**PSE PROCEDURE 13****Technical Closeout**

- Ref: (a) CNRMC ltr 4700 Ser C200/122 of 28 Sep 11, Maintenance Team Project Support Engineer
- (b) COMUSFLTFORCOMINST 4790.3, Joint Fleet Maintenance Manual (JFMM)
- (c) NAVSEAINST 5400.95D, Waterfront Technical Authority
- (d) NAVSEAINST 5400.108A, Policy for Quality Management of Work on Non-Nuclear Surface Ship Critical Systems
- (e) CRNMCINST 4700.5, Standard Operating Procedure (SOP) for Expanded Process Control Procedures (EPCP) on Surface Ships
- (f) CNRMC ltr 4700 Ser C200/116 of 16 Jul 12, Relaxation of NAVSEAINST 5400.108A
- (g) CNRMC ltr 4700 Ser C200/126 of 5 Oct 11, Implementation of Controlled Work Packages (CMP) and Expanded Process Control Procedures (EPCP) on Surface Ships

1. Purpose. To establish procedure for Project Support Engineer (PSE) roles during availability Closeout per references (a) through (g).

2. Discussion. When the Maintenance Availability comes to a close, the Project Team must continue to apply technical rigor to ensure that technical and contractual requirements for availability closeout have been met. During the execution phase the PSE is responsible for the incremental collection of technical documentation to support closeout of Expanded Process Control Procedures (EPCP), Process Control Procedures (PCP) and documentation that supports government checkpoints have been completed as applicable for work items that support Availability Work Certification by the Naval Supervising Activity (NSA) Chief Engineer (CHENG).

3. Action. At the conclusion of the maintenance availability, the PSE shall provide technical documentation and Objective Quality Evidence (OQE) to the NSA CHENG or his/her designated representative to support Availability Work Certification (AWC). The PSE shall be responsible for ensuring that any technical adjudication for outstanding work items, Condition Found Reports (CFR) or Requests for Contract Change (RCC) residing in the

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Naval Maintenance Database (NMD) have been forwarded to Engineering Subject Matter Experts (SME) for adjudication. The goal is to ensure that all maintenance tasked to the Lead Maintenance Activity (LMA) has been completed and meets all technical standards.