NAVSEA
STANDARD ITEM

FY-15

ITEM NO: 009-119 |
DATE: 06 JAN 2014 |
CATEGORY: II |

1. SCOPE:

1.1 Title: Expanded Process Control Procedure (EPCP); provide and accomplish

2. REFERENCES:

2.1 Standard Items

2.2 Joint Fleet Maintenance Manual (JFMM)

3. REQUIREMENTS:

3.1 Establish and implement a process for the development and use of Expanded Process Control Procedures (EPCP).

3.2 Develop new EPCPs only when directed by the SUPERVISOR.

3.2.1 Obtain from the SUPERVISOR, no later than A-240, a list of EPCPs which require development.

3.2.2 Use Attachment A, EPCP Template, in its entirety for EPCP development. Do not omit any line item. For those line items not applicable, list the line item and note as such.

3.2.2.1 Divide EPCPs into phases to support incremental certification of work. All phases shall be clearly delineated and contained within the EPCP.

3.2.3 Write EPCPs in non-proprietary language. Include statements to bring attention to pertinent Category I and II NAVSEA Standard Item requirements that have a direct impact on the accomplishment of work. (e.g. verify, confirm, ensure, etc.) Category II NAVSEA Standard Items shall be invoked by the work specification for which the EPCP is required, not by the EPCP.

3.2.4 Use Attachment B, EPCP Approval Form, as a cover page for all EPCP submissions.

3.2.5 Use Attachment C, Record of Change Form, to document any changes to approved EPCPs.

3.2.6 Use Attachment D, EPCP Addendum Template, in its entirety for EPCP addendum development. Do not omit any line item. For those line items not applicable, list the line item and note as such.

3.2.7 Use Attachment E, EPCP Incremental and Final Review Form, to document all incremental reviews to support incremental certification of phased EPCPs and to document final review and final certification of all EPCPs.

3.2.8 Submit new EPCPs

3.2.8.1 For planned maintenance availabilities, submit one legible copy, in approved transferrable media (Microsoft Word format), of each new EPCP to the SUPERVISOR no later than A-190. When directed by the SUPERVISOR to develop EPCPs between A-240 and A-204, submit anytime during the planning phase but not later than A-190. When tasked to develop EPCPs after A-204, submit to the SUPERVISOR within 14 days of tasking.

3.2.8.2 For EPCP developed outside of a planned maintenance availability, submit one legible copy, in approved transferrable media (Microsoft Word format), of each new EPCP to the SUPERVISOR within 14 days.

3.2.9 Correct any EPCP returned by the SUPERVISOR for change.

3.2.9.1 Submit one legible copy, in approved transferrable media (Microsoft Word format), of each corrected EPCP to the SUPERVISOR, within 14 days of receiving the SUPERVISOR’s comments.

3.2.10 Attend a review meeting as requested by the SUPERVISOR whenever corrections are required as a result of a second review by the SUPERVISOR. Attend the meeting prepared with the resources to make required changes to the EPCP during the meeting (i.e. laptop computer, technical manuals, technical writer, subject matter expert for the subject EPCP).

3.2.10.1 Submit one legible copy, in approved transferrable media (Microsoft Word format), of corrected EPCPs to the SUPERVISOR, within 48 hours of the meeting.

3.3 Obtain all approved EPCPs to be used during the availability from the SUPERVISIOR.

3.3.1 Use only EPCPs approved by the SUPERVISOR.

3.3.2 Do not accomplish work at any time on Critical Systems designated in Attachment F without an EPCP approved by the SUPERVISOR.

3.3.3 Obtain clarification from the SUPERVISOR when there are questions pertaining to EPCP requirements.

3.4 Participate in a Ready to Start (RTS) review conducted by the SUPERVISOR prior to starting any EPCP work. The SUPERVISOR will ensure that all items required to start work have been verified.

3.4.1 Require the attendance of personnel who are knowledgeable of the EPCP work being performed such as senior on-site managers and supervisors and craftsman/tradesman who will be performing the work.

3.4.2 Ensure that all documentation pertinent to the EPCP is on hand at the meeting including the approved EPCP, all enclosures, attachments, check sheets, referenced tech manuals and other referenced information as applicable so as not to delay the meeting.

3.5 Accomplish the requirements of the approved EPCP.

3.5.1 Maintain the approved EPCP including all enclosures, attachments, check sheets, referenced tech manuals and other referenced information as applicable at the job site during the performance of work.

3.5.1.1 When two or more EPCPs are used for a work item, develop a sequencing document that facilitates the completion of tasks in the correct order. The sequencing document shall include a procedure in an outline format directing the tradesman/craftsman to the pertinent step(s) in the referenced EPCPs.

3.5.1.2 When an EPCP requires work at multiple work sites, copies of the approved EPCP are authorized. However, the “Original” approved EPCP must be maintained as the official record of work being performed. This shall be accomplished by transferring the appropriate portions (QA Forms, procedure steps, in-process signatures, etc.) from the original copy to the working copy, capturing signatures as work occurs at the other worksite(s), and incorporating the appropriate portions back with the original as soon as practical, but no later than the end of each work shift. Any signatures that are contained in EPCP working copies shall be clearly annotated in the original EPCP via statement that the signatures are contained in the copy. The entire copy must be included with the original EPCP on file. In all cases, only personnel who accomplished the steps in EPCP copies are allowed to transfer information from copies to the original EPCP.

3.5.1.3 Mark the cover of the original EPCP clearly to prevent confusion with work site copies.

3.5.2 Accomplish “circle X” requirements.

3.5.2.1 The tradesman/craftsman shall circle each step number in the EPCP as it is commenced. Mark the step number with an “X” upon completion.

3.5.2.2 Accomplish the “circle X” requirement on work steps accomplished per an EPCP enclosure and on EPCP copies at other worksites.

3.5.2.3 When the tradesman/craftsman starts a step directing work to be conducted in accordance with a required reference, the tradesman/craftsman shall circle the number of the EPCP step. Upon completion of the work specified in the required reference, an “X” shall be

marked through the circle as described above. This “circle X” procedure does not apply to procedure steps in required references.

3.5.3 Stop work and notify the SUPERVISOR immediately in the event that a step, test or inspection is not, was not or cannot be accomplished as specified in the EPCP.

3.5.3.1 Resume work only after being directed by the SUPERVISOR.

3.5.4 Accomplish Quality Assurance checkpoints as follows:

3.5.4.1 Ensure that approved QA forms of 2.2 are completed along with associated checkpoints.

3.5.4.2 Use QA Form 17 of 2.2 for documenting fastener torques. Use of QA Forms 34 and 34A of 2.2 is prohibited.

3.5.4.3 Print and sign name and date QA Forms and other OQE documents. Signatures shall be accompanied by an adjacent statement stating that satisfactory compliance with requirements was achieved (e.g. “Level II cleanliness satisfactory”).

3.5.4.4 Accomplish all check points in accordance with 009-04 of 2.1 with the exception that a SUPERVISOR’s Technical Matter Expert (TME) as designated by the NSA CHENG must be present to witness and sign off all (G) point checks. Work cannot resume until the TME is present to witness the checkpoint and the required signature is obtained.

3.6 Accomplish Emergent EPCPs when directed by the SUPERVISOR.

3.6.1 Attend an RTS meeting per 3.4 through 3.4.2.

3.6.2 During the accomplishment of work not covered by an approved EPCP, monitor in-process work continuously and observe and record all craftsman actions using contractor QA personnel and contractor work center supervisory personnel. Continue this in-process monitoring and recording until the official EPCP for the work is approved.

3.6.3 Complete all tests and inspections and record all required Objective Quality Evidence (OQE).

3.6.4 When observing and recording in accordance with 3.6.2, include documentation of all precautions taken, any prerequisite requirements, initial conditions and pertinent personnel qualification requirements, a listing of all material (including HAZMAT) and reference documents utilized, a sequential listing of every procedural step taken and all OQE collected.

3.6.5 Do not proceed with any step of the Emergent EPCP process without SUPERVISOR presence. The SUPERVISOR is required to be at the work site at all times during Emergent EPCP work.

3.6.6 Incorporate all actions taken and all recorded data and signatures into an EPCP to document the work performed. This emergent EPCP package will serve as the completed EPCP and shall be closed out, logged and retained.

3.7 Accomplish Pen and Ink Changes to approved EPCPs as needed for minor administrative changes that do not affect the scope and/or intent of the EPCP. Examples of changes of this nature include typographical/editorial errors, amplifying/additional information to clarify a step, a change in the sequence of steps, or change to the material list that does not alter testing requirements or create a non-conformance.

3.7.1 Do not proceed after pen and ink changes until approved and initialed by the SUPERVISOR to signify acceptance.

3.7.2 Make pen and ink changes by drawing a single line through the portion to be changed and entering the necessary information adjacent to that portion. The person making the change shall print their name, initial and date. The SUPERVISOR approving the change shall also print their name, initial and date.

3.8 Submit one legible copy, in approved transferrable media, of completed EPCP documentation including OQE, to the SUPERVISOR within 72 hours of work completion or a minimum of 48 hours prior to the scheduled Key Event which the work item is tied to, whichever comes first.

3.8.1 Use Attachment B, EPCP Approval Form, as a cover page for all EPCP completion packages.

4. Notes.

4.1 The purpose of the RTS meeting is to review and verify, through a joint meeting that all participants involved are fully prepared to execute and certify the work.

EXPANDED PROCESS CONTROL PROCEDURE TEMPLATE

LIST OF EFFECTIVE PAGES							
SHT NO.	REV NO.	SHT NO.	REV NO.	SHT NO.	REV NO.	SHT NO.	REV NO.

1. **PURPOSE/GENERAL INFORMATION**

1.1 **PURPOSE**

1.1.1 The purpose of this EPCP is *(Describe general scope and purpose of the work contained in the EPCP).*

1.2 **GENERAL INFORMATION**

1.2.1 This EPCP is required to be physically at the work site whenever work under its direction is performed.

1.2.2 *(Describe other general requirements associated with the conduct of the work under the EPCP and administrative use of the EPCP. Use additional paragraphs as required. Where appropriate, the EPCP shall include statements (e.g. verify, confirm, ensure, etc.) to bring attention to pertinent Category I and II NAVSEA Standard Item requirements that have a direct impact on the accomplishment of work. However, Category II NAVSEA Standard Items shall be invoked by the work specification for which the EPCP is required, not by the EPCP.)*

1.3 **PRECAUTIONS**

1.3.1 *(Describe applicable personnel safety precautions or equipment protection precautions for the conduct of work under the EPCP. Include any safety equipment or specialized PPE unique to the work. Include specific precautions to prevent the loss of system or component cleanliness. Include specific precautions to maintain a sanitary environment for the task being performed. Use additional paragraphs as required.)*

1.4 **PREREQUISITES AND INITIAL CONDITIONS**

1.4.1 *(Describe the prerequisite and initial conditions that must be completed prior to commencing work. Include a description of the work boundaries addressed by the EPCP. Examples: Equipment secured, system drained, ship in dry-dock, equipment tagged out, Work Authorization Form submitted and approved. Use additional paragraphs as required.)*

1.5 **PERSONNEL QUALIFICATIONS**

1.5.1 *(List any unique specific qualifications (e.g. NDT, welder qualifications) required by the government for personnel conducting or overseeing work required by the EPCP. Identify personnel by position or title, not by name. Use additional paragraphs as required.)*

1.5.2 In addition to the qualification requirements listed in Section 1.5.1 through 1.5.X, all personnel who conduct work under this EPCP must participate in a pre-work briefing to ensure that they are thoroughly familiar with the work direction, applicable safety precautions, documentation requirements and overall guidance provided by the EPCP. This briefing will be repeated as necessary to accommodate new personnel assignment and when dictated by supervisor judgment. Attendance at this briefing will be documented on Enclosure (2.X). *(Recording of briefing attendance will include name, date, and identifying employee number.)*

1.6 **HAZARDOUS MATERIAL**

1.6.1 *(Option 1)* No hazardous material will be utilized in the processes guided by this EPCP.

1.6.2 *(Option 2)* Hazardous material is required in the performance of this EPCP. Detailed information on material characteristics and considerations in handling can be found in the MSDS. A current copy of each MSDS shall be at the work site as required by NAVSEA Standard Item (NSI) 009-01.

1.6.3 The following measures will be taken to minimize the volume of hazardous waste generated by this EPCP:

1.6.3.1*(Describe measures in sufficient detail to ensure understanding and compliance such as occupational exposure srategies.)*

1.6.4 Hazardous material produced or utilized in the performance of this EPCP will be disposed of as follows:

1.6.4.1*(Describe measures in sufficient detail to ensure understanding and compliance, including Hazardous Substance Control Form as required.)*

1.7 **REFERENCES**

(All referenced documents shall be listed in a manner to allow positive identification of the current revision and/or change used at the time of EPCP preparation.)

(If only a portion of the reference is pertinent to the work, only that applicable portion shall be listed. For example, if a drawing package contains 20 sheets but only two are needed for the EPCP, only list those two sheets; or only list the applicable sections of the tech manual.)

(Any reference required for the execution of the EPCP (e.g. the technical manual that provides a procedure for the craftsman or mechanic to follow, a schematic that the craftsman or mechanic must follow for completing a step of the EPCP, etc.) shall be annotated as "required". All applicable portions of each required reference shall be at the location where the work is being performed. Required references shall not be included as enclosures to the EPCP unless it is not available to personnel conducting the work.)

REF. NO.	REF REQ'D (Y/N)	DOCUMENT/DRAWING NUMBER	DOCUMENT/DRAWING TITLE	REV	CHG NO.

1.8 **MATERIAL**

PIECE NO.	DRAWING NUMBER	NOMENCLATURE	NSN	PART NO.
*	*	*	*	*

(All materials, spare parts, Foreign Material Exclusion (FME) devices, cleanliness caps/plugs/blanks and special tools required to accomplish the work shall be listed. The table above shall be augmented by a Job Material List, Bill of Materials, or other report generated from the contractor's procurement system and included as an enclosure to the EPCP provided it clearly ties the material to the work item.)

2. **ENCLOSURES/ADDENDUMS**

(This section is used to list technical documentation that is not readily available to the craftsman and are therefore enclosed within the EPCP. Enclosures are used to provide information, direction or an approved form to document work. Each page of the enclosure shall contain, at a minimum; the work specification number, EPCP log number, enclosure number, and enclosure page number. Enclosures are not required to be listed as references. Some examples of enclosures include; QA Forms required for documenting the Objective Quality Evidence (OQE), diagrams, sketches, illustrations, weld joint maps, Maintenance Standards, contingency repair procedures/Addendums (predictable event) and others.)

2.1 Record of personnel work brief

2.2 Disassembly Inspection OQE Records

2.2.1 Location 1

2.2.2 Location 2

2.3 Repair OQE Records

2.3.1 Location 1

2.3.2 Location 2

2.4 Assembly OQE Records (including in-process testing)

2.4.1 Location 1

2.4.2 Location 2

2.5 Final Acceptance / Testing / Certification OQE Records

2.6 Technical Source Document Excerpts (Maintenance Standards, Process Instructions, Diagrams, Weld Joint Maps, etc.)

2.7 Addendums

3. **PROCEDURE**

(This section contains the instructions on how to accomplish the work in proper sequence. It does not describe technically how to do a step unless past experience has shown some of this type of information is required. The procedure shall be used to list the various tasks to be performed and the sequence in which they should be accomplished. Notes on proven craftsmanship skill techniques that significantly aid in first-time quality and are not addressed in other reference documents shall be included. A well-written procedure is designed for use by trained personnel who have a requisite level of knowledge about their specialty and the work to be performed. A procedure must have sufficient detail to allow a determination of exactly what was done; material used, inspections completed, and to support certification of the work conducted on the system or component.)

(Retyping/scanning extensive step-by-step procedures from source documents into EPCPs is discouraged. The procedure shall reference the specific section and paragraphs of the source document.)

(The steps of the job shall be placed in a logical and proper sequence. In instances where work can be performed in parallel, identify those steps by use of a sequencing note.)

(All inspections and tests directed by the EPCP, including enclosures, shall include clear acceptance and rejection criteria.)

(All (V), (I), (Q) (D) and (G) inspections and checkpoints called out in the applicable Work Item must be incorporated and present in the EPCP.)

(Record of (V), (I), (Q) and (G) signatures will be captured on the OQE data recording form associated with the action or in signature blocks incorporated within the body of the EPCP.)

(Divide the procedure into phases as appropriate to support incremental certification of the work. A statement shall be included after the last step of the phase to require submission of OQE for that section. A (G) checkpoint shall be included to verify that all work in the phase is completed technically correct with all OQE completed satisfactory.)

(The paragraph arrangement below provides a logical sequence of common repair steps. This will need to be modified or added to as applicable to the specific work being controlled by the EPCP. Section titles may be customized if those listed below do not adequately reflect the work involved.)

3.1 Accomplish a Ready-To-Start (RTS) review in accordance with CNRMCINST 4700.5.

3.2 **Installation of Temporary Systems/Services**

3.2.1 *(Specifically describe and provide sequencing of the necessary actions to accomplish 3.2. Add additional paragraphs as necessary. Removal of temporary systems/services shall be address where appropriate in the procedure.)*

3.3 **Removal, Disassembly and Inspection**

3.3.1 *(Specifically describe and provide sequencing of the necessary actions to accomplish 3.3. Add additional paragraphs as necessary.)*

3.4 **Equipment Repair/Modification**

3.4.1 *(*Specifically *describe and provide sequencing of the necessary actions to accomplish 3.4. Add additional paragraphs as necessary.)*

(Component post-repair inspections, bench testing, etc. may be included in this section)

3.5 **Assembly**

3.5.1 *(Specifically describe and provide sequencing of the necessary actions to accomplish 3.5. Add additional paragraphs as necessary.)*

(Component post-repair inspections, bench testing, etc. may be included in this section.)

3.6 **Installation**

3.6.1 *(Specifically describe and provide sequencing of the necessary actions to accomplish 3.6. Add additional paragraphs as necessary.)*

3.7 **Component Level Installed Testing, prior to Acceptance Test**

(Include all in-process tests, such as seat leakage tests or joint tightness tests performed in the shop.)

3.7.1 *(Specifically describe and provide sequencing of the necessary actions to accomplish 3.7. Add additional paragraphs as necessary.)*

4. ACCEPTANCE AND CERTIFICATION TESTING

(Acceptance or certification testing are those tests which provide final acceptance of the work conducted by the EPCP. This includes, but is not limited to: final system hydrostatic tests, engine operational tests, system functional testing and integrated multi-system testing.)

(Tests may be included as a separate section (phase) in the EPCP or an enclosure to the EPCP.)

(All tests directed by the EPCP, including enclosures, shall include clear acceptance and rejection criteria.)

4.1 **TEST NAME**

4.1.1 *(Specifically describe and provide sequencing of the necessary actions to accomplish 4.1. Add additional paragraphs as necessary.)*

4.2 **TEST NAME**

4.2.1 *(Specifically describe and provide sequencing of the necessary actions to accomplish 4.2. Add additional paragraphs as necessary.)*

5. TRANSFER OF TESTING

(Certain testing cannot be performed until the ship is underway. Two options exist for this situation: 1. Transfer accountability of the testing to a Departure from Specification (DFS), or 2. Transfer of the testing to Ship's Force for accomplishment as part of the CNO Availability Sea Trials Agenda. The approved document providing the test requirements and acceptance criteria and the associated forms to be used for recording results shall be clearly identified in the EPCP.)

5.1 **TEST NAME**

5.1.1 (I)(G) "Test Description" will be accomplished during the next ship's underway period. Accountability for accomplishment of this test has been transferred to DFS Number XXXX-XXXX.

5.1.1 (I)(G) "Test Description" will be accomplished during the next ship's underway period. Accountability for accomplishment of this test has been transferred to Ship's Force for accomplishment and included in the XXX-XXXX Availability Sea Trials Agenda dated MMM DD YYYY.

6. SYSTEM RESTORATION

6.1 (Describe actions necessary to return the system or equipment to a state of normal operability, under ship's standard operating procedures. Add additional paragraphs as necessary. The Transfer of Testing per Section 5 above does not need to be repeated.)

Attachment B

EXPANDED PROCESS CONTROL PROCEDURE (EPCP) APPROVAL FORM

1. SHIP/HULL NAME:			**2. SHIP/HULL NUMBER:**	
3. EPCP TITLE:				
4a. LOCAL EPCP SERIAL NO.:	**4b. REV:**	**4c. REUSED EPCP? (Y/N):**	**5a. CNRMC EPCP SERIAL NO.:**	**5b. REV:**
6. WORK SPEC NO.:		**7. CONTRACT NUMBER:**		
8a. ORIGINATOR (NAME):		**8b. COMPANY/COMMAND:**		**8c. SHOP/CODE:**

REVIEWED BY: *(Print and Sign)*	
9a. CONTRACTOR SHOP/SUPERVISOR: (Optional)	**9b. DATE:**
10a. CONTRACTOR QA MANAGER:	**10b. DATE:**
11a. NSA QUALITY ASSURANCE SPECIALIST (C130):	**11b. DATE:**
12a. NSA PROJECT MANAGER (C300) - Optional:	**12b. DATE:**
13a. NSA ENGINEERING TECH CODE (C200):	**13b. DATE:**
14a. NSA CHENG (or Designated Representative)– Approval Signature:	**14b. DATE:**

INTERIM REVIEW FOR INCREMENTAL CERTIFICATION: *(Signature Required)*	
15a. PRIME CONTRACTOR:	**15b. DATE:**
16a. NSA QUALITY ASSURANCE SPECIALIST (C130):	**16b. DATE:**
17a. NSA TECHNICAL MATTER EXPERT (TME):	**17b. DATE:**
18a. NSA CHENG (or Designated Rep) – Incremental Certification & Approval to Proceed:	**18b. DATE:**

COMPLETION AND CERTIFICATION: *(Signature Required)*	
19a. PRIME CONTRACTOR:	**19b. DATE:**
20a. NSA PM:	**20b. DATE:**
21a. NSA CHENG (or Designated Representative)– Final Certification:	**21b. DATE:**

EPCP APPROVAL FORM INSTRUCTIONS

Complete all blocks for new EPCPs. For reuse EPCPs, complete all blocks except for blocks 8a, 8b, 8c, 11a, 11b, 12a and 12b. Blocks 11a thru 12b are optional at the discretion of the NSA.

BLOCK 1 - SHIP/HULL NAME
Enter the ship's name.

BLOCK 2 - SHIP/HULL NUMBER
Enter the ship's hull number.

BLOCK 3 - EPCP TITLE
Enter a descriptive title for the EPCP. Include system or equipment being worked and nature of the work (e.g. “NO. 1 MRG LUBO Cooler Tube Bundle, Repair”).

BLOCK 4a - LOCAL EPCP SERIAL NUMBER
Enter the local RMC EPCP serial number. See Appendix (B) for format information.

BLOCK 4b - LOCAL EPCP REVISION
Enter the EPCP revision number. Initial issue is "-" (dash). First revision “A”, second revision “B”, etc.

BLOCK 4c - EPCP REUSED?
Enter “Y” if the EPCP is a reused EPCP. Enter “N” if new.

BLOCK 5a - CNRMC EPCP SERIAL NUMBER
If the EPCP is a reuse EPCP, enter the CNRMC Serial Number of the reused EPCP. If the EPCP is a new EPCP, enter “NA”.

BLOCK 5b - CNRMC EPCP Revision
If the EPCP is a reuse EPCP, enter the revision of the reused EPCP. If the EPCP is a new EPCP, enter “NA”.

BLOCK 6 - WORK SPECIFICATION NUMBER
Enter the Work Specification number under which the EPCP is required.

BLOCK 7 - CONTRACT NUMBER
Enter the contract number under which the EPCP is required.

BLOCK 8a - ORIGINATOR (NAME)
Enter the name of the planner or engineer writing the EPCP. For reuse EPCPs, enter “NA”.

BLOCK 8b - COMPANY/COMMAND
Enter the name of the company or government command for which the planner writing the EPCP works. For reuse EPCPs, enter “NA”.

BLOCK 8c - SHOP/CODE
Enter the shop or code number of the planner writing the EPCP. For reuse EPCPs, enter “NA”.

REVIEWED BY

This portion of the form documents the completion of EPCP review (verification review for reuse EPCPs) and approval to use the EPCP.

BLOCKS 9a & 9b - CONTRACTOR SHOP/SUPERVISOR: (Optional)
The contractor shop representative signature/date signifies that:

1. All technical and quality requirements in the EPCP are understood,
2. The contractor is capable to execute the EPCP as written.

BLOCKS 10a & 10b - CONTRACTOR QA MANAGER:
The contractor Quality Assurance Manager shall sign and date to signify that:

1. The contractor performing the work has a valid and current QMS,
2. Personnel conducting the EPCP work are competent and meet all qualification requirements defined in the EPCP.

BLOCKS 11a & 11b - NSA QUALITY ASSURANCE SPECIALIST:
The NSA QAS shall sign and date to signify that:

1. The EPCP contains the appropriate use of qualitative OQE in-process sign-offs,
2. The EPCP contains the appropriate use of quantitative OQE record requirements including the proper JFMM QA Forms,
3. The availability QMP provides adequate coverage of work contained in the EPCP,
4. The EPCP identifies all personnel qualification requirements
5. That the Prime Contractor has an approved, current QMS and the system has been audited with satisfactory results within the last five years

Note: For reuse EPCPs, enter “NA” if verification review by the NSA QAS is not required/conducted.

BLOCKS 12a & 12b - NSA PROJECT MANANGER:
NSA PM signature/date signifies that:

1. The EPCP addresses the work scope of the job listed in the AWP,
2. All pertinent administrative requirements are adequately noted in the EPCP,
3. That the EPCP effectively uses addendums in order to mitigate schedule delays,
4. The any transfer of testing is understood and planned

Note: For reuse EPCPs, enter “NA” if verification review by the NSA PM is not required/conducted.

BLOCKS 13a & 13b - NSA ENGINEERING TECH CODE:
The NSA Engineering Department representative shall sign and date to signify that:

1. A thorough review of the EPCP was conducted and that the technical content, including references, material, procedures, boundaries, testing, etc., is accurate and current,
2. The contents of the EPCP adequately address the work scope of the job listed in the AWP,
3. The appropriate level of quality checkpoints are included,

BLOCKS 14a & 14b - NSA CHENG (or Designated Rep) – Approval Signature:
This signature constitutes approval of the EPCP thereby authorizing it for use.

INTERIM REVIEW

Complete this portion of the form when incremental certification of the EPCP is conducted. If no incremental certification is conducted, enter “NA” in each of the signature blocks.

BLOCKS 15a & 15b - PRIME CONTRACTOR:
The Prime Contractor Representative shall sign to certify that all work up to the designated step was conducted in compliance with the EPCP and that all supporting OQE records are complete, accurate and are included for interim review and incremental certification.

BLOCKS 16a & 16b - NSA QUALITY ASSURANCE SPECIALIST:
The NSA QAS shall sign to concur that all OQE records required to incrementally certify work up to the designated step are complete, accurate and included and that the EPCP is ready for incremental certification.

BLOCKS 17a & 17b - NSA TME:
For work up to the designated step in the EPCP, the NSA TME shall sign to certify that work was conducted in compliance with the EPCP, that all technical requirements are met, that all technical problems have been resolved, that any non-compliances have been resolved and that the EPCP is ready for NSA CHENG/TWH incremental certification.

BLOCKS 18a & 18b - NSA CHENG (or Designated Rep) – *Incremental Certification and* Approval to Proceed:
The NSA CHENG or his/her designated representative shall sign to certify that work up to the designated step in the EPCP is complete, that work was executed and tested (as appropriate) in accordance with correct technical requirements, that any non-conformances have been adjudicated and properly documented and that approval to proceed with the follow-on portion of the EPCP is granted.

COMPLETION AND CERTIFICATION

BLOCKS 19a & 19b - PRIME CONTRACTOR:
The Prime Contractor Representative shall sign to certify that all work was conducted in compliance with the EPCP and that all OQE records complete, accurate and are included.

BLOCKS 20a & 20b - NSA PM:
The NSA PM shall sign to concur that the contractor conducted all work in compliance with the EPCP, that at a minimum the QAS, TME and PSE assigned to the PT have reviewed the completed EPCP and concurred that the EPCP is ready for certification, and that the EPCP is ready for close-out.

BLOCKS 21a & 21b - NSA CHENG (or Designated Rep) – *Final* Certification:
The NSA CHENG or his/her designated representative shall sign to certify that work specified in the EPCP is complete, that work was executed and tested in accordance with correct technical requirements, and that any non-conformances associated with the EPCP have been adjudicated and properly documented.

Attachment C

EXPANDED PROCESS CONTROL PROCEDURE (EPCP) RECORD OF CHANGE FORM

1. **PAGE NO.:** ____ OF ____	2. **SHIP NAME/HULL:**	3. **WORK SPEC NO.:**	4. **RMC EPCP SER NO.:**	5. **CNRMC EPCP SER NO.:**

6. **EPCP REVISION (A,B,etc.)**	7. **DF NUMBER (DF-XXX)**	8. **DATE (MM/DD/YYY)**	9. **CHANGE APPROVED BY (LAST, FIRST, MI, CXXX)**	10. **REMARKS/COMMENTS**

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EPCP RECORD OF CHANGE FORM INSTRUCTIONS

BLOCK 1 - PAGE NO.
As each new page is started, the PSE or appropriate government representative shall enter the appropriate page number.

BLOCK 2 – SHIP NAME/HULL
Enter the ship's name and hull number.

BLOCK 3 – WORK SPEC NO.
Enter the work specification number associated with the EPCP.

BLOCK 4 – RMC EPCP SER NO.
Enter the local RMC EPCP serial number.

BLOCK 5 – CNRMC EPCP SER NO.
Enter the CNRMC EPCP serial number.

BLOCK 6 – EPCP REVISION
Enter the EPCP revision letter (i.e. “A”, “B”, “C”, etc.) associated with the change form entry.

BLOCK 7 – DF NUMBER
When applicable, enter the DF number (e.g. “DF-001”) associated with the change. When a DF is issued, a brief explanation of the change intent shall be entered in block 10, “REMARKS/COMMENTS”. Enter “NA” if not applicable.

BLOCK 8 – DATE
Enter the effective date of the EPCP change (MM/DD/YYYY).

BLOCK 9 – CHANGE APPROVED BY
Print the name (Last, First, MI) and code (CXXX) of the government representative authorizing the change.

BLOCK 10 – REMARKS/COMMENTS
Enter any DFS number associated with the change (e.g. “DFS-1000-2013”) and any other pertinent information associated with the EPCP change, including that discussed in block 7 instructions above.

Attachment D

EPCP Addendum Template

EPCP [*Enter Ser. No.*] ADDENDUM [*Enter Sequential No. (i.e. 1,2,3...)*]

1. Purpose. The purpose of this EPCP Addendum is *(Describe general scope and purpose of the work to be performed within the scope of the original EPCP – this work is generally "growth work" within the scope of original EPCP).*

2. All headings listed below fall under the EPCP. Change/Additions shall be denoted under each specific heading:

2.1 GENERAL INFORMATION *(List any additional general information)*

2.2 PRECAUTIONS *(List any additional precautions)*

2.3 PREREQUISITES AND INITIAL CONDITIONS *(List any additional prerequisites and initial conditions)*

2.4 PERSONNEL QUALIFICATIONS *(List any additional personal qualifications required)*

2.5 HAZARDOUS MATERIAL *(List any additional HAZMAT required)*

2.6 REFERENCES *(List any additional references as required)*

REF. NO.	REF REQ'D (Y/N)	DOCUMENT /DRAWING NUMBER	DOCUMENT/DRAWING TITLE	REV	CHG NO.

2.7 MATERIAL *(List any additional material required to complete work)*

PIECE NO.	DRAWING NUMBER	NOMENCLATURE	NSN	PART NO.

*Note: Additional material is listed in Enclosure (X.X.X).

3. Enclosures

(This section is used to list technical documentation that is not readily available to the craftsman and are therefore enclosed within the EPCP. Enclosures are used to provide information, direction or an approved form to document work. Each page of the enclosure shall contain, at a minimum; the work specification number, EPCP log number, enclosure number, and enclosure page number. Enclosures are not required to be listed as references. Some examples of enclosures include; QA Forms required for documenting the Objective Quality Evidence (OQE), diagrams, sketches, illustrations, weld joint maps, Maintenance Standards, contingency repair procedures/Addendums (predictable event) and others.)

3.1 Record of personnel work brief (As Required)

3.2 Disassembly Inspection OQE Records

3.2.1 Location 1

3.2.2 Location 2

3.3 Repair OQE Records

3.3.1 Location 1

3.3.2 Location 2

3.4 Assembly OQE Records (including in-process testing)

3.4.1 Location 1

3.4.2 Location 2

3.5 Final Acceptance / Work Certification Testing OQE Records

3.6 Technical Source Document Excerpts (Maintenance Standards, Process Instructions, Diagrams, Weld Joint Maps, etc.)

4. PROCEDURE

(This section contains the instructions on how to accomplish the work in proper sequence. It does not describe technically how to do a step unless past experience has shown some of this type of information is required. The procedure shall be used to list the various tasks to be performed and the sequence in which they should be accomplished. Notes on proven craftsmanship skill techniques that significantly aid in first-time quality and are not addressed in other reference documents shall be included. A well-written procedure is designed for use by trained personnel who have a requisite level of knowledge about their specialty and the work to be performed. A procedure must have sufficient detail to allow a determination of exactly what was done; material used, inspections completed, and to support certification of the work conducted on the system or component.)

(Retyping/scanning extensive step-by-step procedures from source documents into EPCP Addendums is discouraged. The procedure shall reference the specific section and paragraphs of the source document.)

(The steps of the job shall be placed in a logical and proper sequence. In instances where work can be performed in parallel, identify those steps by use of a sequencing note.)

(All inspections and tests directed by the EPCP Addendum, including enclosures, shall include clear acceptance and rejection criteria.)

(All (V), (I), (Q) (D) and (G) inspections and checkpoints called out in the applicable Work Item must be incorporated and present in the EPCP Addendum.)

(Record of (V), (I), (Q) and (G) signatures will be captured on the OQE data recording form associated with the action or in signature blocks incorporated within the body of the EPCP Addendum.)

(Divide the procedure into phases as appropriate to support incremental certification of the work. A statement shall be included after the last step of the phase to require submission of OQE for that section. A (G) checkpoint shall be included to verify that all work in the phase is completed technically correct with all OQE completed satisfactory.)

(The paragraph arrangement below provides a logical sequence of common repair steps. This will need to be modified or added to as applicable to the specific work being controlled by the EPCP Addendum. Section titles may be customized if those listed below do not adequately reflect the work involved.)

4.1 Accomplish a Ready-To-Start (RTS) review in accordance with CNRMCINST 4700.5.

4.2 **Installation of Temporary Systems/Services**

4.2.1 *(Specifically describe and provide sequencing of the necessary actions to accomplish 4.2. Add additional paragraphs as necessary. Removal of temporary systems/services shall be address where appropriate in the procedure.)*

4.3 **Removal, Disassembly and Inspection**

4.3.1 *(Specifically describe and provide sequencing of the necessary actions to accomplish 4.3. Add additional paragraphs as necessary.)*

4.4 **Equipment Repair/Modification**

4.4.1 *(Specifically describe and provide sequencing of the necessary actions to accomplish 4.4. Add additional paragraphs as necessary.)*

(Component post-repair inspections, bench testing, etc. may be included in this section)

4.5 **Assembly**

4.5.1 *(Specifically describe and provide sequencing of the necessary actions to accomplish 4.5. Add additional paragraphs as necessary.)*

(Component post-repair inspections, bench testing, etc. may be included in this section.)

4.6 **Installation**

4.6.1 *(Specifically describe and provide sequencing of the necessary actions to accomplish 4.6. Add additional paragraphs as necessary.)*

4.7 **Component Level Installed Testing, prior to Acceptance Test**

(Include all in-process tests, such as seat leakage tests or joint tightness tests performed in the shop.)

4.7.1 *(Specifically describe and provide sequencing of the necessary actions to accomplish 4.7. Add additional paragraphs as necessary.)*

5. ACCEPTANCE AND CERTIFICATION TESTING

(Acceptance or certification testing are those tests which provide final acceptance of the work conducted by the EPCP Addendum. This includes, but is not limited to: final system hydrostatic tests, engine operational tests, system functional testing and integrated multi-system testing).

(Tests may be included as a separate section (phase) in the EPCP Addendum or an enclosure to the EPCP Addendum.)

(*All tests directed by the EPCP Addendum, including enclosures, shall include clear acceptance and rejection criteria).*

5.1 **TEST NAME**

5.1.1 *(Specifically describe and provide sequencing of the necessary actions to accomplish 5.1. Add additional paragraphs as necessary.)*

5.2 **TEST NAME**

5.2.1 *(Specifically describe and provide sequencing of the necessary actions to accomplish 5.2. Add additional paragraphs as necessary.)*

6. TRANSFER OF TESTING. *(Certain testing cannot be performed until the ship is underway. Two options exist for this situation: 1. Transfer accountability of the testing to a Departure from Specification (DFS), or 2. Transfer of the testing to Ship's Force for accomplishment as part of the CNO Availability Sea Trials Agenda. The approved document providing the test requirements and acceptance criteria and the associated forms to be used for recording results shall be clearly identified in the EPCP.)*

6.1 **TEST NAME**

6.1.1 (I)(G) "Test Description" will be accomplished during the next ship's underway period. Accountability for accomplishment of this test has been transferred to DFS Number XXXX-XXXX.

6.1.2 (I)(G) "Test Description" will be accomplished during the next ship's underway period. Accountability for accomplishment of this test has been transferred to Ship's Force for accomplishment and included in the XXX-XXXX Availability Sea Trials Agenda dated MMM DD YYYY.

7. SYSTEM RESTORATION. This step will be covered under the original EPCP – the restoration process covered under the original EPCP will include restoration from this Addendum.

Attachment E

EPCP Incremental and Final Review Form

1a. SHIP/HULL NAME:	**1b. SHIP/HULL NUMBER:**
2. EPCP TITLE:	
3a. LOCAL EPCP SERIAL NO.:	**3b. REVISION:**
4a. WORK SPEC NO.:	**4b. CONTRACT NO.:**

FINAL / INTERIM ***(Circle one)***

5. ***REVIEW COMMENTS:*** *(Use Continuation Sheet As Required)*

DATE	REVIEWER (KTR/QAS/ PSE/TME/ TWH)	FINDINGS/DISCREPANCIES Include Detailed Description & Indicate Type A = Admin T = Technical	RESOLUTION	COMMENTS

Additional sheets used? (Circle one) **Yes / No** **Sheet** _____ **of** _____

1a. SHIP/HULL NAME:		1b. SHIP/HULL NUMBER:	
2. EPCP TITLE:			
3a. LOCAL EPCP SERIAL NO.:		3b. REVISION:	
4a. WORK SPEC NO.:	4b. PLANNER:	4c. COMPANY/COMMAND:	4d. SHOP/CODE:

Final / Interim Review Comments *(Circle one)*

5. ***REVIEW COMMENTS:*** *(Continuation Sheet)*

DATE	REVIEWER (KTR/QAS/ PSE/TME/ TWH)	FINDINGS/DISCREPANCIES Include Detailed Description & Indicate Type A = Admin T = Technical	RESOLUTION	COMMENTS

Sheet ____ **of** _____

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EPCP Incremental and Final Review Form Instructions

BLOCK 1a - SHIP/HULL NAME
Enter the ship and hull name. Copy from EPCP Approval Form (Attachment B).

BLOCK 1b - SHIP/HULL NUMBER
Enter the ship and hull number. Copy from EPCP Approval Form (Attachment B).

BLOCK 2 - EPCP Title
Copy from EPCP Approval Form (Attachment B).

BLOCK 3a – LOCAL EPCP SERIAL NUMBER
Enter the local NSA/RMC EPCP serial number. Copy from EPCP Approval Form (Attachment B).

BLOCK 3b – REVISION
Enter the alpha-character starting with "-", "A", "B", etc. to annotate the EPCP revision.

BLOCK 4a – WORK SPECIFICATION NUMBER
Copy from EPCP Approval Form (Attachment B).

BLOCK 4b – CONTRACT NUMBER
Copy from EPCP Approval Form (Attachment B).

FINAL / INTERIM
- Circle "INTERIM" when form is used to document EPCP review comments and resolution in support of incremental certification.
- Circle "FINAL" when form is used to document EPCP review comments and resolution in support of final EPCP certification.

BLOCK 5 – REVIEW COMMENTS
- **Date** - Enter the date of the review.
- **Reviewer:** Annotate the reviewer's job position (e.g. QAS, PSE, KTR, etc…).
- **Findings/Discrepancies:** Provide a brief description of the findings discovered and whether they are technical or administrative (see definitions for each category below).
- **Resolution** – Provide information on the action taken to resolve identified discrepancies.
- **Comments** – Provide pertinent amplifying information.

Technical: Findings which, based on a review of the applicable EPCP documentation and available OQE, are determined to have an impact on the ability to verify critical measurements or data, or to verify required conditions (i.e., cleanliness) or to verify that work was conducted in accordance with the EPCP.

Administrative: Findings which have no bearing on the technical compliance of the repair but are found to be not in accordance with guidance provided in applicable EPCP governing instructions. Findings of this nature include typographical/ editorial errors.

Attachment F

List of Surface Ship Critical Systems

This list applies to the following Ship Classes: CG47, DDG51, FFG7, LCC19, LCS, LHA1, LHA6, LHD1, LHD8, LPD4, LPD17, LSD41, LSD49, MCM1 and PC1.

Critical Systems List

Note: *The NAVSEA 05 Technical Warrant Holder (TWH) and Ship Design Manager (SDM) shall be notified prior to starting work and upon completion of work (to include completion of pier-side testing and completion of at-sea testing) for all Critical Systems listed below with the exception of SSDG lube oil systems and generator pedestal bearings.*

All Ship Classes

- Main Reduction Gear (MRG) - Includes internal components (coupling, clutches and main thrust bearing). If these components are outside the MRG, they are excluded. OD box removal is excluded.
- MRG Lube Oil (L/O) System – Includes external L/O system that is a part of the MRG and the sump. The L/O purification system, storage tanks and filling system are excluded.
- Steering System

LSD41, LSD49 and LPD17 Ship Classes

- Main Propulsion Diesel Engine (MPDE)
- MPDE L/O System
- Ship Service Diesel Generator (SSDG) L/O System and Generator Pedestal Bearings

PC1 and MCM1 Ship Classes

- MPDE
- MPDE L/O System
- Magnetic Minesweeping Gas Turbine Generator (MMGTG) L/O System
- SSDG L/O System and Generator Pedestal Bearings

LHA6 Class and LHD8 Class

- SSDG L/O System and Generator Pedestal Bearings

LPD4, LHA1, LHD1 and LCC19 Classes

- Main Boiler
- High Pressure/Low Pressure (HP/LP) Turbines
- HP/LP Turbine L/O System

LCS Class

- MPDE
- MPDE L/O System

- SSDG L/O System

FFG7 Class

- SSDG L/O System

General Exclusions:

- Computer software associated with critical systems
- Flex hoses
- Instrumentation (pressure gages, thermometers, thermocouples)
- Valve repairs (by-pass regulating, thermostatic control, air start distributor, exhaust, relief valves, L/O unloader valves and temperature regulating valves)
- Attached/detached pump repairs (includes mechanical seals)
- Fuel injectors
- Attached/detached fuel oil pumps
- Strainers
- Cleaning/inspection/testing of coolers
- Resilient mounts
- MRG dehumidifiers
- In-shop work on small items (e.g., fuel pumps, fuel injector pop tests) can be excluded at the discretion of the NSA CHENG.
- Exhaust leak repairs

Critical System Boundaries

CG47

- MRG
  - The mechanical boundary begins at the input drive flange and ends at the output shaft.
  - Includes all components within the gear case.
  - Includes the SSS clutches, power turbine brakes, sight flow indicators (SFI), input shaft seals, turning gear, attached L/O pump drive gears, attached CRP pump drive gears, foundation bolts, MRG sump.
  - Excludes the CPP pumps, L/O pumps, dehumidifier, turning gear motor, SFI thermometers, and all electrical components beyond the first electrical connection (cannon plug) outside of the gear case.
- MRG L/O System
  - Includes the L/O unloader and the external L/O system that is a part of the MRG.
  - Excludes L/O pump mechanical seals, attached L/O pump, L/O cooler, gages and gage tubing from the gage back to the last mechanical connection before the MRG.
- Steering System
  - The mechanical boundary includes the rudder ram and tiller (including the pins).
  - The hydraulic boundaries include the pump, power unit and all associated hydraulic piping used to operate the rudder.
  - The controls boundary ends at but includes the actuator.
  - Includes the steering pumps, trickwheel box, and feedback linkages.
  - Excludes the oil distribution (OD) box, main pump motor, hydraulic oil cooler, rudder stock and rudder seal, thermometers, pressure switches, transducers and gages.

DDG51

- MRG
  - The mechanical boundary begins at the input drive flange and ends at the output shaft.
  - Includes all components within the gear case.
  - Includes the SSS clutches, sight flow indicators (SFI), input shaft seals, turning gear, attached L/O pump drive gears, foundation bolts, and MRG sump.
  - Excludes the power turbine brake, CPP pumps, dehumidifier, SFI thermometers, and all electrical components beyond the first electrical connection (cannon plug) outside of the gear case.
- MRG L/O System
  - Includes the L/O temperature regulating valves (1-RLO-V-32, 2-RLO-V-32), L/O cooler (oil side), and the external L/O system that is a part of the MRG.
  - Excludes the L/O pumps, attached L/O pump, L/O cooler (seawater side), gages and gage tubing from the gage back to the last mechanical connection before the MRG.
- Steering System
  - The mechanical boundary includes the rudder ram and tiller (including the pins).
  - The hydraulic boundaries include the pump, power unit and all associated hydraulic piping used to operate the rudder.
  - The controls boundary ends at but includes the actuator.
  - Includes the steering pumps, trickwheel box, and feedback linkages.
  - Excludes the oil distribution (OD) box, main pump motor, hydraulic oil cooler, rudder stock and rudder seal, thermometers, pressure switches, transducers and gages.

FFG7

- MRG
  - The mechanical boundary begins at the input drive flange and ends at the output shaft.
  - Includes all components within the gear case.
  - Includes the SSS clutches, sight flow indicators (SFI), input shaft seals, turning gear, shaft brake, attached CPP pump drive gears, foundation bolts, and MRG sump.
  - Excludes the power turbine brake, attached CPP pump, electric CPP pump, dehumidifier, SFI thermometers, and all electrical components beyond the first electrical connection (cannon plug) outside of the gear case.
- MRG L/O System
  - Includes the L/O unloader (RLO-V8), L/O temperature regulating valve (RLO-V4) and the external L/O system that is a part of the MRG.
  - Excludes the L/O pumps, L/O coast-down pump, L/O cooler, gages and gage tubing from the gage back to the last mechanical connection before the MRG.
- Steering System
  - The mechanical boundary includes the rudder ram and tiller (including the pins).
  - The hydraulic boundaries include the pump, rotary hydraulic power unit and all associated hydraulic piping used to operate the rudder.
  - The controls boundary ends at but includes the actuator.
  - Includes the steering pumps, trickwheel box, and feedback linkages.
  - Excludes the oil distribution (OD) box, main pump motor, hydraulic oil cooler, rudder stock and rudder seal, thermometers, pressure switches, transducers and gages.

LCC19

- Boilers
  - Includes anything subject to ASME Boiler and Pressure Vessel Code requirements and ASME Power Piping requirements, or NAVSEA S9074-AR-GIB-010/278.
  - Includes the mechanical boundary of boiler pressure vessel (headers/drums) and pressure vessel piping from the feed inlet of the economizer to the main (superheater) and auxiliary (desuperheater) steam outlets, HP and LP drains and vents.
- MRG and Couplings
  - Mechanical boundary begins at input to the flexible coupling drive flange and ends at the output shaft of the second reduction gear.
- MRG Main L/O System
  - Includes the L/O unloader and the external L/O system that is a part of the MRG.
  - Excludes L/O pump mechanical seals, attached L/O pump, L/O cooler, gages and gage tubing from the gage back to the last mechanical connection before the MRG
- HP and LP Steam Turbines
  - Mechanical boundary stops at and includes the flexible coupling at the turbine drive flange.
  - Steam boundary starts at the first flange upstream of the ahead or astern throttles.
- HP and LP Steam Turbine L/O System
  - The mechanical boundary begins at the L/O sump suction piping connection and ends at the inlet flange connection to the MRG.
- Steering System
  - The mechanical boundary includes the rudder ram and tiller (including the pins).
  - The hydraulic boundaries include the pump, hydraulic power unit (HPU) and all associated hydraulic piping used to operate the rudder.
  - The controls boundary ends at but includes the actuator.
  - Includes the steering pumps and feedback linkages.
  - Excludes the main pump motor, hydraulic oil cooler, rudder stock and rudder seal, thermometers, pressure switches, transducers and gages.

LCS

- MPDEs
  - Mechanical boundary includes, but stops at, the engine coupling.
  - Foundation includes, but stops at, the engine chocks.
  - Air intake boundary includes, but stops at, the shutdown valve (flapper valve)
  - Air exhaust boundary includes, but stops at, the turbochargers.
  - Intercooler boundary includes both the air side and water side of the intercooler.
  - Controls boundary includes, but stops at, the governor.
- Steering System
  - The mechanical boundary includes the rudder ram and tiller (including the pins).
  - The hydraulic boundaries include the pump, hydraulic power unit (HPU) and all associated hydraulic piping used to operate the rudder.
  - The controls boundary ends at but includes the actuator.
  - Includes the steering pumps and feedback linkages.
  - Excludes the main pump motor, hydraulic oil cooler, rudder stock and rudder seal, thermometers, pressure switches, transducers and gages.

- Water-jet steering boundaries include the hydraulic system piping and hoses outboard to and including the hydraulic cylinders. Included is the feedback mechanism used to indicate cylinder position.

LHA1

- Boilers
  - Includes anything subject to ASME Boiler and Pressure Vessel Code requirements and ASME Power Piping requirements, or NAVSEA S9074-AR-GIB-010/278.
  - Includes the mechanical boundary of boiler pressure vessel (headers/drums) and pressure vessel piping from the feed inlet of the economizer to the main (superheater) and auxiliary (desuperheater) steam outlets, HP and LP drains and vents.
- MRG and Couplings
  - Mechanical boundary begins at input to the flexible coupling drive flange and ends at the output shaft of the second reduction gear.
- MRG Main L/O System
  - Includes the L/O unloader and the external L/O system that is a part of the MRG.
  - Excludes L/O pump mechanical seals, attached L/O pump, L/O cooler, gages and gage tubing from the gage back to the last mechanical connection before the MRG
- HP and LP Steam Turbines
  - Mechanical boundary stops at and includes the flexible coupling at the turbine drive flange.
  - Steam boundary starts at the first flange upstream of the ahead or astern throttles.
- HP and LP Steam Turbine L/O System
  - The mechanical boundary begins at the L/O sump suction piping connection and ends at the inlet flange connection to the MRG.
- Steering System
  - The mechanical boundary includes the rudder ram and tiller (including the pins).
  - The hydraulic boundaries include the pump, hydraulic power unit (HPU) and all associated hydraulic piping used to operate the rudder.
  - The controls boundary ends at but includes the actuator.
  - Includes the steering pumps and feedback linkages.
  - Excludes the main pump motor, hydraulic oil cooler, rudder stock and rudder seal, thermometers, pressure switches, transducers and gages.

LHD1

- Boilers
  - Includes anything subject to ASME Boiler and Pressure Vessel Code requirements and ASME Power Piping requirements, or NAVSEA S9074-AR-GIB-010/278.
  - Includes the mechanical boundary of boiler pressure vessel (headers/drums) and pressure vessel piping from the feed inlet of the economizer to the main (superheater) and auxiliary (desuperheater) steam outlets, HP and LP drains and vents.
- MRG and Couplings
  - Mechanical boundary begins at input to the flexible coupling drive flange and ends at the output shaft of the second reduction gear.
- MRG Main L/O System
  - Includes the L/O unloader and the external L/O system that is a part of the MRG.
  - Excludes L/O pump mechanical seals, attached L/O pump, L/O cooler, gages and

gage tubing from the gage back to the last mechanical connection before the MRG

- HP and LP Steam Turbines
  - Mechanical boundary stops at and includes the flexible coupling at the turbine drive flange.
  - Steam boundary starts at the first flange upstream of the ahead or astern throttles.
- HP and LP Steam Turbine L/O System
  - The mechanical boundary begins at the L/O sump suction piping connection and ends at the inlet flange connection to the MRG.
- Steering System
  - The mechanical boundary includes the rudder ram and tiller (including the pins).
  - The hydraulic boundaries include the pump, hydraulic power unit (HPU) and all associated hydraulic piping used to operate the rudder.
  - The controls boundary ends at but includes the actuator.
  - Includes the steering pumps and feedback linkages.
  - Excludes the main pump motor, hydraulic oil cooler, rudder stock and rudder seal, thermometers, pressure switches, transducers and gages.

LPD4

- Boilers
  - Includes anything subject to ASME Boiler and Pressure Vessel Code requirements and ASME Power Piping requirements, or NAVSEA S9074-AR-GIB-010/278.
  - Includes the mechanical boundary of boiler pressure vessel (headers/drums) and pressure vessel piping from the feed inlet of the economizer to the main (superheater) and auxiliary (desuperheater) steam outlets, HP and LP drains and vents.
- MRG and Couplings
  - Mechanical boundary begins at input to the flexible coupling drive flange and ends at the output shaft of the second reduction gear.
- MRG Main L/O System
  - Includes the L/O unloader and the external L/O system that is a part of the MRG.
  - Excludes L/O pump mechanical seals, attached L/O pump, L/O cooler, gages and gage tubing from the gage back to the last mechanical connection before the MRG
- HP and LP Steam Turbines
  - Mechanical boundary stops at and includes the flexible coupling at the turbine drive flange.
  - Steam boundary starts at the first flange upstream of the ahead or astern throttles.
- HP and LP Steam Turbine L/O System
  - The mechanical boundary begins at the L/O sump suction piping connection and ends at the inlet flange connection to the MRG.
- Steering System
  - The mechanical boundary includes the rudder ram and tiller (including the pins).
  - The hydraulic boundaries include the pump, hydraulic power unit (HPU) and all associated hydraulic piping used to operate the rudder.
  - The controls boundary ends at but includes the actuator.
  - Includes the steering pumps and feedback linkages.
  - Excludes the main pump motor, hydraulic oil cooler, rudder stock and rudder seal, thermometers, pressure switches, transducers and gages.

LPD17

- MPDE
  - Mechanical boundary includes but stops at the Gieslinger Coupling.
  - Foundation boundary includes but stops at the engine chocks.
  - Air intake boundary includes but stops at the shutdown valve (flapper valve)
  - Air exhaust boundary includes but stops at the turbochargers.
  - Intercooler boundary includes both the air side and water side of the intercooler.
  - Controls boundary includes but stops at the machinery control interface (commonly known as the "blue box").
- MPDE L/O System
  - Includes external L/O system that is a part of the MPDE. The L/O purification system, storage tanks, filling system and L/O pumps are excluded.
- MRG and Couplings
  - Mechanical boundary begins at input to the flexible coupling drive flange and ends at the output shaft of the second reduction gear.
- MRG Main L/O System
  - Includes the L/O unloader and the external L/O system that is a part of the MRG.
  - Excludes the L/O pump mechanical seals, attached L/O pump, L/O cooler, gages and gage tubing from the gage back to the last mechanical connection before the MRG
- Steering System
  - The mechanical boundary includes the rudder ram and tiller (including the pins).
  - The hydraulic boundaries include the pump, hydraulic power unit (HPU) and all associated hydraulic piping used to operate the rudder.
  - The controls boundary ends at but includes the actuator.
  - Includes the steering pumps and feedback linkages. Excludes the oil distribution (OD) box, main pump motor, rudder stock and rudder seal, hydraulic oil cooler, HPU mechanical seal, tiller linkage bearings, thermometers, pressure switches, transducers and gages.

LSD41

- MPDE
  - Mechanical boundary includes but stops at the Gieslinger Coupling.
  - Foundation boundary includes but stops at the engine chocks.
  - Air intake boundary includes but stops at the shutdown valve (flapper valve)
  - Air exhaust boundary includes but stops at the turbochargers.
  - Intercooler boundary includes both the air side and water side of the intercooler.
  - Controls boundary includes but stops at the governor.
- MPDE L/O System
  - Includes external L/O system that is a part of the MPDE. The L/O purification system, storage tanks and filling system are excluded.
- MRG and Couplings
  - Mechanical boundary begins at input to the flexible coupling drive flange and ends at the output shaft of the second reduction gear.
- MRG Main L/O System
  - Includes the L/O unloader and the external L/O system that is a part of the MRG.
  - Excludes L/O pump mechanical seals, attached L/O pump, L/O cooler, gages and gage tubing from the gage back to the last mechanical connection before the MRG
- Steering System
  - The mechanical boundary includes the rudder ram and tiller (including the pins).

  - The hydraulic boundaries include the pump, hydraulic power unit (HPU) and all associated hydraulic piping used to operate the rudder.
  - The controls boundary ends at but includes the actuator.
  - Includes the steering pumps and feedback linkages. Excludes the oil distribution (OD) box, main pump motor, rudder stock and rudder seal, hydraulic oil cooler, thermometers, pressure switches, transducers and gages.

LSD49

- MPDE
  - Mechanical boundary includes but stops at the Gieslinger Coupling.
  - Foundation boundary includes but stops at the engine chocks.
  - Air intake boundary includes but stops at the shutdown valve (flapper valve)
  - Air exhaust boundary includes but stops at the turbochargers.
  - Intercooler boundary includes both the air side and water side of the intercooler.
  - Controls boundary includes but stops at the governor.
- MPDE L/O System
  - Includes external L/O system that is a part of the MPDE. The L/O purification system, storage tanks and filling system are excluded.
- MRG and Couplings
  - Mechanical boundary begins at input to the flexible coupling drive flange and ends at the output shaft of the second reduction gear.
- MRG Main L/O System
  - Includes the L/O unloader and the external L/O system that is a part of the MRG.
  - Excludes L/O pump mechanical seals, attached L/O pump, L/O cooler, gages and gage tubing from the gage back to the last mechanical connection before the MRG
- Steering System
  - The mechanical boundary includes the rudder ram and tiller (including the pins).
  - The hydraulic boundaries include the pump, hydraulic power unit (HPU) and all associated hydraulic piping used to operate the rudder.
  - The controls boundary ends at but includes the actuator.
  - Includes the steering pumps and feedback linkages. Excludes the oil distribution (OD) box, the main pump motor, rudder stock and rudder seal, hydraulic oil cooler, thermometers, pressure switches, transducers and gages.

MCM1

- MPDE
  - Mechanical boundary includes, but stops at, the flywheel.
  - Foundation boundary includes and stops at the engine rail.
  - Air intake boundary includes but stops at the air filter.
  - Air exhaust boundary includes but stops at the turbochargers.
  - Controls boundary includes but stops at the governor actuator.
- MPDE L/O System
  - Includes external L/O system that is a part of the MPDE. The L/O purification system, storage tanks and filling system are excluded.
- Steering System
  - The mechanical boundary includes the rudder ram and tiller (including the pins).
  - The hydraulic boundaries include the pump, hydraulic power unit (HPU) and all associated hydraulic piping used to operate the rudder.
  - The controls boundary ends at but includes the actuator.

- Includes the steering pumps and feedback linkages.
- Excludes the main pump motor, hydraulic oil cooler, rudder stock and rudder seal, thermometers, pressure switches, transducers and gages.

PC1

- MPDE
  - Mechanical boundary includes but stops at the flywheel.
  - Foundation boundary includes and stops at the engine rail.
  - Air intake boundary includes but stops at the air filter.
  - Air exhaust boundary includes but stops at the turbochargers.
  - Controls boundary includes but stops at the governor actuator.
  - Gearboxes are excluded.
- MPDE L/O System
  - Includes external L/O system that is a part of the MPDE. The L/O purification system, storage tanks and filling system are excluded.
- Steering System
  - The mechanical boundary includes the rudder ram and tiller (including the pins).
  - The hydraulic boundaries include the pump, hydraulic power unit (HPU) and all associated hydraulic piping used to operate the rudder.
  - The controls boundary ends at but includes the actuator.
  - Includes the steering pumps and feedback linkages.
  - Excludes the main pump motor, hydraulic oil cooler, rudder stock and rudder seal, thermometers, pressure switches, transducers and gages.

Attachment E

EPCP EMERGENT WORK APPROVAL FORM

SHIP/HULL NAME:			SHIP/HULL NUMBER:	
EPCP TITLE:				
WORK ITEM NO.:	LOCAL EPCP SERIAL NO.:	REUSED EPCP? (Y/N):	CNRMC EPCP SERIAL NO.:	REV:

EPCP EMERGENT WORK REQUIREMENTS:
1) RTS review is required. 2) QMP is required per CNRMCINST 4700.9. 3) Continuous contractor QA and NSA oversight is required.

DESCRIPTION OF WORK:

REVIEWED BY: *(Print and Sign)*	
CONTRACTOR SHOP/SUPERVISOR:	DATE:
NSA PROJECT MANAGER (C300):	DATE:
NSA ENGINEERING TECH CODE (C200):	DATE:
NSA CHENG (OR DESIGNATED REPRESENTATIVE):	DATE:

AUTHORIZATION TO PROCEED/START: *(Sign)*	
NSA COMMANDING OFFICER:	DATE:

PRE-START CHECKS:		
RTS REVIEW CONDUCTED?:	DATE CONDUCTED:	SIGNATURE (PM/SBS):
QMP DEVELOPED?:	SIGNATURE (PM/QAS):	DATE:

COMPLETION AND CERTIFICATION: *(Signature Required)*	
PRIME CONTRACTOR:	DATE:
NSA PM:	DATE:
NSA CHENG (OR DESIGNATED REPRESENTATIVE) – CERTIFICATION SIGNATURE:	DATE:

EPCP EMERGENT WORK APPROVAL FORM

SHIP/HULL NAME:
Enter the ship's name.

SHIP/HULL NUMBER:
Enter the ship's hull number.

EPCP TITLE:
Enter a descriptive title for the EPCP. Include system or equipment being worked and nature of the work (e.g. “NO. 1 MRG LUBO Cooler Tube Bundle, Repair”).

WORK ITEM NUMBER:
Enter the Work Item Number under which the emergent work is required.

LOCAL EPCP SERIAL NUMBER:
Enter the local NSA EPCP serial number for the EPCP to be developed for this work.

REUSED EPCP?:
Enter “Y” if all or part of a previously approved EPCP will be used to accomplish any portion of this emergent work. Enter “N” if new.

CNRMC EPCP SERIAL NUMBER:
If the EPCP is a reuse EPCP, enter the CNRMC Serial Number of the reused EPCP. If the EPCP is a new EPCP, enter “NA”.

CNRMC EPCP REV:
If the EPCP is a reuse EPCP, enter the revision of the reused EPCP. If the EPCP is a new EPCP, enter “NA”.

EPCP EMERGENT WORK REQUIREMENTS:
The following statements shall be included on all emergent work approval forms:

- RTS is required.
- QMP is required per CNRMCINST 4700.9.
- Continuous contractor QA and NSA oversight is required.

Additional requirement statements may be added as appropriate.

DESCRIPTION OF WORK:
Provide a clear description of the work to be conducted. As appropriate, include pertinent precautions, prerequisites, initial conditions and personnel qualification requirements.

REVIEWED BY:
The following individuals (or designated representatives) shall legibly print their name (Last, First, MI), sign and date this form to document that the form was completed in accordance with this instruction and that the information contained on the form is valid. These required signatures shall not be made until after all of the above information has been recorded on the form. Additionally, these three review signature shall be completed prior to submitting the form to the NSA CO for an “authorization to proceed” signature.

- Contractor or shop supervisor

- NSA Project Manager
- NSA Engineering Tech Code

AUTHORIZATION TO PROCEED/START:
The NSA Commanding Officer (CO) shall, via signature and date, provide authorization for work to proceed under the EPCP emergent work process. This signature shall be made after securing all three required signatures.

PRE-START CHECKS:
The RTS and QMP requirements of this instruction shall be complied with and documented prior to starting work.

- RTS BRIEF CONDUCTED?: Enter "Y" if RTS brief was conducted. Work shall not commence until an RTS brief is completed.
- DATE CONDUCTED: Enter the date of the RTS brief.
- SIGNATURE (PM/SBS): The NSA PM or SBS shall sign to confirm that a RTS brief was conducted. This signature shall be recorded prior to starting work.
- QMP DEVELOPED?: Enter "Y" if a QMP was developed for this emergent work or if the QMP data for this work was included in the availability QMP. Work shall not commence until a QMP is developed for this work.
- SIGNATURE (PM/QAS): The NSA PM or QAS shall sign to confirm that a QMP was developed for this emergent work or that the QMP data was included in the availability QMP. This signature shall be recorded prior to starting work.
- DATE: Enter the date that the PM or QAS signature was made.

COMPLETION AND CERTIFICATION:
PRIME CONTRACTOR:
The Prime Contractor Representative shall sign to certify that all work was conducted in compliance with the EPCP and that all OQE records complete, accurate and are included.

NSA PM:
The NSA PM shall sign to concur that the contractor conducted all work in compliance with the EPCP, that all OQE records complete, accurate and are included and that the EPCP is ready for certification and close-out.

NSA CHENG (or Designated Representative) – Certification Signature:
The NSA CHENG or his/her designated representative shall sign to certify that work specified in the EPCP is complete, that work was executed and tested in accordance with correct technical requirements, and that any non-conformances associated with the EPCP have been adjudicated and properly documented.