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DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON, DC 20350-2000

IN REPLY REFER TO

OPNAVINST 9233.1A
~~OP-03P~~ N8609
81 JUL 1991

OPNAV INSTRUCTION 9233.1A

From: Chief of Naval Operations

Subj: U.S. NAVY DIESEL ENGINE INSPECTION AND INSPECTOR TRAINING
AND CERTIFICATION PROGRAM

Ref: (a) U.S. Navy Diesel Engine Inspector Handbook (NAVSEA
S9233-CJ-HBK-010 and 020)
(b) Naval Ships' Technical Manual Chapter 233 Diesel
Engines (S9086-HB-STM-000)

Encl: (1) Diesel Engine Inspector (DEI) Training and
Certification Requirements

1. Purpose. To establish policy for the inspection requirements of Navy diesel engines, to establish training and certification guidance for all Diesel Engine Inspectors (DEIs), and to assign responsibility for the execution of the program. This instruction has been substantially revised and should be read in its entirety.

2. Cancellation. OPNAVINST 9233.1.

3. Discussion. In March, 1987 a formal program was established to provide for routine inspections of all afloat, ashore, and engineering school training site diesel engines, 400 horsepower and above, by qualified Diesel Engine Inspectors (DEIs). DEIs follow inspection guidance provided by reference (a) which includes an administrative review of records; a secured inspection phase to document "as found" conditions; and an operational inspection phase to evaluate diesel engine performance. Inspection procedures and criteria must be carefully prescribed and standardized to ensure that a successful program is maintained. Because of the variety and complexity of Navy diesel engines and associated support systems, training and certification of all DEIs must be closely monitored and standardized to ensure that diesel engines required by this instruction receive professional inspections. Enclosure (1) delineates the specific requirements for the training and certification of DEIs including military personnel, civil service personnel, and civilian contractors. Emphasis at all levels of command is required to achieve the desired standards and improve overall Fleet readiness.



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4. Policy. All shipboard propulsion and power generation diesel engines (400 horsepower and above) in U.S. Navy ships, craft, and engineering school hot-plant training sites ashore will be given periodic standardized routine inspections by certified DEIs at 18 month intervals with type commanders (TYCOMs) having the authority to extend inspection intervals by an additional 6 months. To the greatest extent practical, all other inspections and maintenance actions (which require engine disassembly) shall be scheduled to coincide with inspections required by this instruction.

5. Inspection Requirements. Main propulsion, ship service and emergency electrical generation, and engineering school hot plant diesel engines shall be inspected and conditions documented as required by references (a) and (b) on the following occasions:

a. When major internal engine malfunctions are suspected.

b. Periodically by a certified DEI. The normal interval between routine diesel engine inspections shall be 18 months. To provide scheduling flexibility, diesel engine inspections may be performed as early as 12 months or as late as 24 months after the previous inspection. TYCOMs shall approve extensions beyond 18 months. Such extensions shall not result in the inspection interval exceeding 24 months. The initial periodic routine inspection will be within 18 months of the acceptance inspection or pre-start inspection.

c. Prior to each phased maintenance availability, complex/regular overhaul, ship conversion, or reactivation to determine repair requirements. This inspection will be scheduled to support public/private availability repair planning events. A pre-start inspection shall be conducted by a qualified DEI after diesel engine overhaul or major repairs prior to the diesel engine being started. The pre-start inspection will also be conducted on diesel engines placed in an inactive equipment maintenance (IEM) status during any availability. To the maximum extent possible, the pre-start inspection will be accomplished by the same TYCOM DEI who performed the pre-availability inspection. That effort to ensure inspector continuity will be made to enhance the quality of work performed during the availability.

d. Prior to delivery of new construction ships, a diesel engine acceptance inspection will normally be conducted in conjunction with the open-and-inspect phase of the Board of Inspection and Survey (INSURV) acceptance trials. A TYCOM DEI will attend the acceptance inspection to observe and become familiar with the engine/equipment/system installation.

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6. Action

a. Commander, Naval Sea Systems Command (COMNAVSEASYSKOM)
shall:

- (1) Provide overall management of the DEI program.
- (2) Ensure that semi-annual Diesel Engine Inspector (DEI) seminars are conducted at alternating coast locations. Seminars are to include discussion of current inspection criteria, procedures, and problems. Feedback from attendees is of critical importance and ensures that the DEI program remains current, accurate, and consistent.
- (3) Ensure that periodic technical audits of the Diesel Engine Inspector Training Course are performed to ensure its technical accuracy and adequacy.
- (4) Provide technical management of the DEI program. Ensure that the required technical documentation to support the program is maintained current.
- (5) Establish and monitor the requirements and standards for routine inspection of shipboard propulsion and power generation diesel engines, and engineering school "hot plant" diesel engines, 400 horsepower and above.
- (6) Maintain rosters of all certified DEIs by name, rating, duty station or place of employment, date of certification and expiration date of certification.
- (7) Ensure that certified DEIs maintain current certification as listed in enclosure (1). Based upon recommendations of Commanding Officer, Naval Ship Systems Engineering Station (NAVSSSES) and the chain of command, revoke the certification of DEIs from those personnel who fail to comply with the requirements in enclosure (1).
- (8) Ensure that the requirements for DEI certification, recertification, and certification extensions are met prior to final approval.
- (9) Ensure that timely inspections of new ships and ships undergoing major overhaul and/or conversion are conducted under this instruction.

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b. Commanding Officer, Naval Ship Systems Engineering Station (NAVSSES) shall:

(1) Conduct the periodic technical audits of the Diesel Engine Inspector Training Course to ensure its technical accuracy and adequacy.

(2) Provide recommendations to COMNAVSEASYSKOM concerning certification extension requests, and reinstatement requests.

c. Fleet Commanders In Chief shall:

(1) Identify and designate those fleet activities which have inspection responsibilities and maintain a base of certified DEIs within those activities assigned to DEI billets.

(2) Review the guidelines and inspection requirements for all diesel engine inspections required by this instruction.

(3) Schedule and coordinate inspections of all propulsion and power generation diesel engines required by this instruction with the appropriate technical activities to avoid unnecessary engine disassembly.

(4) Ensure the availability of a "school" ship to support DEI training (if required).

(5) Initiate action to decertify DEIs who fail to comply with the requirements listed in enclosure (1).

(6) Ensure administration and control of the TYCOM-administered pretest, enclosure (1).

(7) Host the semi-annual Diesel Engine Inspector (DEI) seminars on an alternating coast basis.

d. Chief of Naval Education and Training shall:

(1) Be responsible for the overall training of DEIs to include:

(a) Designation of activities authorized to conduct DEI training.

(b) Final approval of the DEI training course plan, course material, and training aids for DEI training course.

(c) Training of DEI instructors. DEI instructor candidates shall be experienced DEIs.

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e. Chief of Naval Personnel shall:

(1) Ensure that all enlisted personnel assigned to DEI instructor training course billets hold Navy Enlisted Classification (NEC) EN 4314 and are currently certified DEIs.

(2) Assign sufficient numbers of qualified personnel to the DEI course to fulfill billet requirements.

7. Report. The reporting requirements contained in this directive are exempt from reports control by SECNAVINST 5214.2B.



R. K. U. KIHUNE
Assistant Chief of Naval Operations
(Surface Warfare)

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Diesel Engine Inspector (DEI)
Training and Certification Requirements

1. Training. All DEI candidates (military personnel, civil service personnel, and civilian contractors) must satisfactorily complete the DEI course (A-652-0311) taught at Service School Command Great Lakes. The following prerequisites are required for course attendance:

a. Military personnel candidates

(1) Satisfactory completion of an Engineman Diesel Engine Technician Class "C" School, SSN/SSBN Diesel Engine Maintenance Technician Course (NEC 4246), or Marine Diesel Mechanic Course (NEC 4312) within the past 6 years. Waiver on a case by case basis (TYCOM to BUPERS).

(2) Additional military personnel candidate experience prerequisites (R)

(a) Officer - Engineering background with a minimum of 3 years main propulsion diesel engine experience.

(b) Enlisted - E7 through E9 Enginemen or Submarine Service qualified Machinist Mates with a minimum of 5 years experience in operation and maintenance of diesel engines (propulsion or power generation).

b. Civil service and civilian contractor personnel candidates

(1) A minimum of 7 years experience of general marine propulsion and/or power generation diesel engine experience in operations, maintenance repair or inspections. A bachelor's/master's degree in mechanical or marine engineering may be substituted for 3 years of experience.

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(2) A minimum of 2 of the 7 years of experience will be specialized marine propulsion or power generation diesel engine maintenance repair experience at the engineer, technician, planner, designer, foreman, quality assurance, Readiness Support Group, Ship Intermediate Maintenance Activity, Supervisor of Shipbuilding, naval shipyard, or diesel engine ISEA level.

(3) A written recommendation from the candidate's employer verifying the candidate's experience level and familiarity with references (a) and (b). The recommendation will be submitted through the chain of command to COMNAVSEASYS COM (SEA 05D9) via NAVSSES (Code 031B).

c. TYCOM Funded Candidates. TYCOMs may require additional screening of military, civil service, and civilian contractor personnel prior to their attendance at the DEI course when TYCOM funding is being used. The following optional screening tools are provided for TYCOM use:

(1) Completion of an under instruction annual diesel inspection, observed by a certified DEI, within 1 year prior to commencement of the certification course. The candidates will have received positive recommendations concerning their potential to become DEIs in the Diesel Engine Inspection report.

(2) Pass a pre-test developed by the Service School Command, Great Lakes (DEI Training School) and administered by a TYCOM designated representative within 1 year prior to the commencement of the certification course. Retests may not be administered within 6 months of a prior test failure. Tests will indicate the individual's level of knowledge in areas of diesel engine theory, mechanics, engine jacket cooling water treatment, governor operation and the ability to diagnose/trouble shoot engine problems. The Service School Command, Great Lakes shall provide requested copies of the pre-test to the TYCOM for administration; and will grade the returned tests and provide the test results to the TYCOM.

2. Certification

a. Initial Certification. Service School Command, Great Lakes issues an initial 36 month certification to graduates of the DEI course (A-652-0311).

b. Maintaining Certification. All DEIs, including those completing their initial certifications must maintain currency in knowledge of approved diesel inspection practices and policies. Certification will be maintained for those DEIs who comply with the following:

(1) In each calendar year attendance at one of the semi-annual diesel inspector seminars. For DEIs forward deployed or stationed overseas, attendance at one of three consecutive seminars every 18 months is the minimum requirement.

(2) Conduct a minimum of two diesel engine inspections annually.

c. Extending Certification. Currently certified DEIs may request to extend their initial certification or subsequent extended certification, in 18 month increments, provided the requirements in paragraph 2b are met.

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(1) The letter requesting certification extension will be initiated by the DEI and must include a brief description of the DEI's duties during the certification period, specify the date of the latest DEI seminar attended, and provide as enclosures a copy of each of the two most recent diesel engine inspections performed by the DEI.

(2) The commanding officer of the activity to which the inspector is assigned must certify that the DEI currently meets all requirements defined in paragraph 2.b.

(3) Military personnel extension requests must be submitted in writing to COMNAVSEASYSKOM (SEA 56P) via the DEI's commanding officer, squadron commander, TYCOM, and NAVSSES (Code 031B).

(4) Civil service personnel extension requests must be submitted in writing through their chain of command to COMNAVSEASYSKOM (SEA 56P) via NAVSSES (Code 031B).

(5) Civilian contractors, performing DEI functions specified by contract, must submit written extension requests through the government activity for which the DEI services are performed. Such requests will be endorsed and forwarded to COMNAVSEASYSKOM (SEA 56P) via NAVSSES (Code 031B).

d. Reinstatement of an Expired/Revoked Certification. An expired or revoked certification may only be reinstated within 6 months following expiration or revocation. Former DEIs who fail to have their certifications reinstated within the 6 month time period must re-attend and pass the 5 week DEI course (A-652-0311). In order to request reinstatement, formerly certified DEIs must attend a DEI seminar as specified in paragraph 2.b.(1) and inspect two diesel engines under the supervision of a currently certified DEI within the 6 month period following the certification expiration or revocation.

(1) The letter requesting reinstatement will be initiated by the formerly certified DEI and must specify the date of the latest DEI seminar attended and provide, as enclosures, a copy of each of the two diesel engine inspections required by paragraph 2.d.

(2) The commanding officer of the activity to which the formerly certified DEI is assigned must certify that the formerly certified DEI currently meets all requirements defined in paragraph 2.d.

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(3) Military personnel reinstatement requests must be submitted in writing to COMNAVSEASYSKOM (SEA 56P) via the formerly certified DEI's commanding officer, squadron commander, TYCOM, and NAVSSES (Code 031B).

(4) Civil service personnel reinstatement requests must be submitted in writing through their chain of command to COMNAVSEASYSKOM (SEA 56P) via NAVSSES (Code 031B).

(5) Formerly certified civilian contractors must submit written reinstatement requests through the government activity for which the DEI services will be performed upon reinstatement. These requests will be endorsed and forwarded to COMNAVSEASYSKOM (SEA 56P) via NAVSSES (Code 031B).

e. DEI Transition Between Military/Civilian Status and Civilian DEIs. DEIs may transition from military to civilian status, and vice versa, without losing their DEI certification. For those DEIs transitioning, the certification expiration date, remains as established. In all cases the requirements for maintaining certification, extending certification, and reinstatement of an expired/revoked certification are as specified in paragraphs 2.b., c., and d. The DEI status of civil service personnel and civilian contractors who successfully completed the DEI course prior to the date of this instruction will be determined on a case by case basis by COMNAVSEASYSKOM (SEA 56P) with recommendations from NAVSSES (Code 031B).