



INSTITUTE OF ENGINEERING TECHNOLOGY

MARINE ENGINEERING DIVISION

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8.0 MEASUREMENT, ANALYSIS AND IMPROVEMENT

8.1 PLANING

MED has determined applicable methods including statistical techniques, to plan and implement the monitoring, measurement, analysis and improvement processes needed to

- a) Demonstrate the conformity to the product requirement
- b) Ensure conformity of the QMS and
- c) Continually improve the effectiveness of the QMS.

REFERENCE

- Lesson Plans
- Management Review Minutes
- Audit Reports
- Appendix-02-Process Monitoring Table

8.2 MONITORING AND MEASUREMENT

8.2.1 CUSTOMER SATISFACTION

MED monitors information on customer satisfaction and/or dissatisfaction as determine if customer requirements have been met, as one of the measures of the performance of the QMS. MED handles all the customer inquiries and complaints and directs them to relevant divisions. Providing a questionnaire at regular intervals (annually) carries out monitoring of information related to customer perception, and the feedback analysed to take necessary action for continual improvement of the quality of the product and services provided.

REFERENCE

- Customer Complaint Register
- Customer Feedback Form [student, industry, end user]



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8.2.2 INTERNAL AUDIT

Internal audits are carried out **once in six months** as per the procedure QAP-04, to determine whether the QMS:

- a) Conforms to the planned arrangements, to the requirements both the ISO 9001:2000 standard and to the QMS, and
- b) Is effectively implemented and maintained.

The MR plans an audit programme by preparing an audit plan, taking into consideration the status and importance of the processes and areas to be audited, as well as the results of previous audits. The audit criteria, scope, frequency and methods are defined. Auditors are selected and conduct audits ensuring objectivity and impartiality of the audit processes. Auditors do not audit their own work.

The responsibilities and requirements for planning and conducting audits, and for reporting results and maintaining records are defined in procedure QAP-03.

The management responsible for the area being audited ensures that actions are taken without undue delay to eliminate detected nonconformities and their causes. Follow-up activities include the verification of the actions taken and the reporting of verification results by way of Audit Reports. Institute also shall determine the suitability of using external party for Internal Audits as per the requirements

REFERENCE

- QAP-03-Procedure for Internal Audit



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8.2.3 MEASUREMENT AND MONITORING OF PROCESSES

MED applies suitable methods for monitoring and, where applicable, measurement of the QMS processes. These methods demonstrate the ability of the processes to achieve planned results. When planned results are not achieved, correction and corrective action is taken, as appropriate to ensure conformity of the product / service. The Process Monitoring Table is used to verify the effectiveness of processes, by checking if the established quality objectives are being achieved. Institute carry out a Monthly performance review and process measures are discussed in this meeting.

REFERENCE

- Appendix-02-Process Monitoring Table
- Lesson Plans

8.2.4 MEASUREMENT AND MONITORING OF PRODUCT

The institute monitors and measures student performance to verify that the requirements are met.

1. The Institute has developed processes needed for education and training. Verification, monitoring, inspection and test activities are performed in accordance with the quality objectives.
2. Students have to sit for examinations, evaluations and carry out practical tests in accordance with the documented procedures.
3. Evaluation of applications, selection tests and interviews are carried out as per planned arrangements.
4. Written examinations, evaluation of the training at the end of each Industrial training programme and evaluation of attendance of the trainees are conducted as per planned arrangements.
5. Examination after completion of academic instruction programme and final evaluation of training is conducted as per planned arrangements.
6. When planned results are not achieved then appropriate corrective and preventive actions are taken to ensure the conformity



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REFERENCE

- Examination Results
- Evaluation Results

8.3 CONTROL OF NONCONFORMING PRODUCTS / SERVICES

8.3.1. General Process

1. The relevant authorised personnel in accordance with the examination procedures do identification of non-conforming products.
2. All students who failed any examination, practical test or evaluation should re-sit or re-evaluated as per documented procedure.

8.3.2. Review & Disposition

1. Management Representative and HOD (Marine) in consultation with the Director/Principal shall review and terminate students who have failed examinations as per procedure.

8.3.3. Records

1. Records are maintained to identify the students and the nature of non-conformances.
2. Copies of such records will be given to relevant personnel to take appropriate corrective and preventive actions.

REFERENCE

- QAP-04-Procedure for Control of Non Confirming Products
- Corrective Action Records
- Customer Complaint Register



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8.4 ANALYSIS OF DATA

MED determines, collects and analyzes appropriate data to demonstrate the suitability and effectiveness of the QMS and evaluates where continual improvement of the effectiveness of the QMS can be made. This includes data generated from the Process Monitoring Table.

The analysis of data provides information relating to:

- a) Customer satisfaction and/or dissatisfaction,
- b) Conformity to product/service requirements, (see 8.2.4)
- c) Characteristics and trends of processes and products including opportunities for preventive action and (see 8.2.3 & 8.2.4)
- d) Supplier's (see 7.4)

REFERENCE

- Appendix-02-Process Monitoring Table
- Customer Feedback Form [student, industry, end user]
- Customer Complaint Register
- Lesson Plans
- Purchase Orders

8.5 IMPROVEMENT

8.5.1 PLANNING FOR CONTINUAL IMPROVEMENT

MED is committed to continually improve the effectiveness of the QMS through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review meetings.



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8.5.2 CORRECTIVE ACTION

MED is committed to take corrective action to eliminate the causes of nonconformities in order to prevent recurrence, as per the procedure QAP-05. Corrective action is taken after identifying the root causes to ensure that such action is appropriate to the effect of any nonconformity encountered.

The procedure for corrective action defines requirements for:

- a) Identifying non conformities (including Customer complaints);
- b) Determine the causes of nonconformity;
- c) Evaluating the need for actions to ensure that nonconformities do not recur;
- d) Determining and implementing the corrective action needed;
- e) Recording the results of the action taken;
- f) Reviewing the effectiveness corrective action taken.

REFERENCE

- QAP-05-Procedure for Corrective Action
- Corrective Action Reports



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8.5.3 PREVENTIVE ACTION

MED is committed to identifying potential nonconformities, determining and taking preventive action to eliminate the causes of potential nonconformities in order to prevent their occurrence. Preventive action is taken as per the procedure QAP-06 and such action will be appropriate to effects of the potential problems.

The procedure QAP-06 defines requirements for;

- a) Determining potential nonconformities and their causes;
- b) Evaluating the need for action to prevent occurrence of non conformities,
- c) Determining and implementing the action needed,
- d) Recording of results of the action taken,
- e) Reviewing effectiveness of the preventive action taken.

REFERENCE

- QAP-06 – Procedure for Preventive Action