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| Overview | This standard covers the competence required to routinely maintain, restore and repair instrumentation and control systems on board ship according to maintenance plans and instructions or as a result of an unacceptable variation. Tools and equipment are identified and used. Work areas are confirmed as safe for work to proceed and permit to work and environmental issues and procedures implemented. Machinery and systems are restored to correct settings and work is completed and tested and final checks to ensure maintenance has been effective are carried out.  **Target Group**  This applies to individuals at the management level with responsibility for maintaining instrumentation and control systems on merchant vessels and fishing vessels. |

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| **Performance criteria**  You must be able to: | 1. prepare a work sequence to maintain instrumentation and control systems and their components in accordance with maintenance plan, established regulations, procedures, guidelines, safety practice, and environmental protection 2. carry out isolation and earthing procedures correctly in accordance with the type and nature of the specific equipment 3. confirm that work areas, machinery and equipment are safe for work to proceed and comply with legislative requirements, codes of practice, isolation procedures, permit to work procedures and environmental concerns 4. carry out the maintenance, checks and tests in accordance with established safety rules and regulations, manufacturers instructions and good practice 5. identify details for further action where equipment and parts fail to meet required performance after maintenance 6. restore the equipment or system to the correct settings and specification using the appropriate method 7. recognise variances to specification, plans and schedules and implement effective corrective action 8. complete de-isolation procedures to vessel standards, operational requirements and specification 9. complete documentation and records accurately and to meet future requirements |

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| Knowledge and understanding  You need to know and understand: | 1. the working principles and constructional details of marine instrumentation and control systems 2. the possible hazards associated with the work area and with equipment and machinery in the work area 3. the setting of maintenance objectives and priorities 4. the effects of maintenance on interfaced systems and components 5. the requirements and procedures for isolating and de-isolating equipment and systems 6. the organisational requirements for permits to work 7. the use of tools and equipment for maintenance and repair of instrumentation and control equipment 8. routine test procedures and technical requirements of tests 9. the correct settings for instrumentation and control equipment and systems 10. the adjustments required to maintain correct performance 11. the use of internal communication systems and effective forms of communication 12. statutory and organisational reporting requirements 13. the importance and use of records for commercial and legislative purposes 14. how to evaluate and apply Statutory Regulations and guidelines, organisational instructions and guidance and vessel contingency plans |

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