EUSUM8

Solve utility network engineering problems with engineering solutions

Overview

This national occupational standard is about systematically investigating and assessing problems affecting networks which arise from new works, modifications, maintenance or repairs. Problems may relate to unpredictable factors where systematic investigation will clarify the cause fully or else the factors may be more elusive and prove more difficult to detect.

It involves collecting information about engineering problems, carrying out quantitative and qualitative analysis, identify solutions and deciding on the most appropriate solution.

This Standard is for supervisors, first line managers or the competent person on site who are responsible for solving utility network problems with engineering solutions.

Performance criteria

You must be able to:

1. investigate engineering problems that are within your area of knowledge and expertise without delay
2. gather data and information from all relevant sources to help identify and define the nature and extent of engineering problems
3. use data analysis methods and software that will support objective decision making
4. consider and evaluate feasible and realistic engineering solutions to solve network engineering problems which comply with industry regulations and guidelines
5. use the results of evaluations to determine the most effective engineering solutions for the short interim and long term
6. gain permission for the implementation of engineering solutions in line with organisational procedures
7. keep relevant managers, colleagues, and others informed throughout the process in line with organisational procedures
8. keep records to support decisions taken in line with organisational procedures
9. ensure selected engineering solutions are implemented according to plan and without delay

Knowledge and understanding

You need to know and understand:

1. relevant health and safety regulations, procedures and guidelines relating to yourself and others including duty of care, hazardous substances, personal protective equipment (PPE), use of equipment and machinery, confined spaces, excavations, lifting machinery, manual handling and other relevant industry specific regulations
2. network engineering legislation, regulatory frameworks, codes of practice, compliance agency standards, associated permits, national quality standards, principles, processes and equipment specifications relevant to the network being worked on
3. relevant environmental legislation and environmentally responsible work practices and organisational policy and their importance, including waste disposal standards
4. construction and engineering principles and processes
5. organisational procedures and systems
6. the different technical, operational, and contractual problems that could occur, what type of information about them is important and how to determine their criticality
7. sources of information about engineering problems including data and statistics from historic records and quality audits, feedback from colleagues and others who use the networks, own observations, operating manuals, company procedures, health and safety information, environment documentation and other relevant data
8. how to identify the cause of problems including human factors, resource issues or constraints, restricted access, misalignment, communication failures, incomplete deliveries, material or equipment compatibility, design issues, safety issues, time allocation
9. system thinking approach, problem-solving methods and the potential engineering solutions for different types of problem
10. how to select and use different evaluation methods to enable the most effective engineering solution for a particular problem including operational effectiveness, ease of implementation and the timescales, functionality of the network, health and safety implications, environmental impact, financial impact, personnel implications, and conformity with company policies
11. lines of reporting and authority and who should be kept informed of progress

12. communication skills and techniques
13. the procedures for monitoring the implementation of engineering solutions

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