

Overview

This standard is about creating design options for utility networks.

It involves interpreting network design briefs, consulting on network designs, creating a range of design options and incorporating information to support each design option and for decisions to be made.

This standard is for utility network designers.

Performance criteria

You must be able to:

1. obtain and review existing information about specified design requirements from relevant sources
2. apply engineering processes to achieve design briefs in line with organisational procedures
3. carry out preliminary consultations on network designs with all parties who have an interest in it or could be affected by it
4. prepare outline design ideas which take account of environmental constraints, third party restrictions, land ownership, plant protection and working in highways/roadways
5. ensure adequate analysis has been completed before deciding the range of designs which need to be created
6. use software packages which support the preparation of technical information for network designs
7. seek advice from relevant people when design requirements are beyond your area of competence
8. create a range of design options that meet the design brief in line with organisational procedures, providing a rationale for any variations from the design brief
9. incorporate complete risk assessments, cost estimates, and materials assessment for each design option
10. ensure rationales for route selection are clear and reflect industry, environmental, regulatory and legal considerations
11. indicate preferred design options in line with organisational procedures, giving reasons for the choice
12. include sufficient information and key drawings to enable stakeholders to assess each design option
13. ensure designs comply with legislation, regulations, industry standards, specifications and guidelines
14. ensure designs and intellectual property rights are protected in line with organisational procedures

Knowledge and understanding

You need to know and understand:

1. network engineering principles and processes that apply to the network being designed
2. legislative and regulatory frameworks for health and safety the environment and the network being designed
3. principles of design, including design data from the latest versions of UK standards
4. standards, directives, industry guidelines, organisational procedures, systems and manuals, operating parameters and working practices appropriate to the network being designed and the procedures for obtaining information about them
5. patents, copyright, and intellectual property issues relevant to the work
6. the software packages to be used for network design
7. different types of design brief that could be required
8. types and level of detail included in a design brief
9. the methods available for achieving different types of design
10. the engineering processes that could be used in designs
11. the effects that emerging technology and environmental considerations have on network design and how to keep abreast of those changes
12. how to determine how many different designs are necessary to provide stakeholders with a choice
13. the sources of advice and guidance on designs
14. your area of competence and organisational procedures for seeking advice
15. the potential risks to a design, and procedures for protecting the intellectual property of designs

Create design options for utility networks

Developed by	Energy & Utility Skills
Version Number	2
Date Approved	01 Mar 2025
Indicative Review Date	01 Mar 2028
Validity	Current
Status	Original
Originating Organisation	Energy & Utility Skills
Original URN	EUSGNEM22
Relevant Occupations	Building and Construction, Design Associate Professionals, Draughtspersons, Engineering, Network Designers
Suite	Utility Network Design
Keywords	Utility; utilities; gas; water; power; network; gas; water; power; design; idea; options; network engineering; patents, copyright and intellectual property issues; presentation methods
