

INTRODUCTION

TS 2.10.00

GENERIC ELECTRICITY SUBSTATION DESIGN MANUAL **FOR CIVIL, STRUCTURAL AND BUILDING ENGINEERING**

SECTION NO : 00

TITLE : INTRODUCTION

INTRODUCTION

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PURPOSE AND SCOPE

This Technical Specification (TS) forms the introduction to a suite of documents which outline the design requirements for Civil, Structural and Building engineering for all National Grid Electricity Substation works. The documents share the same numerical prefix (i.e. 2.10) and are subdivided into specific sections by the addition of a sequentially numbered suffix to create a series generically identified as 2.10.xx.

This suite of documents, when complete, will contain National Grid requirements previously covered by, for example, the following documents:

- Design Handbook DH10
- TS 2.20 - Oil Containment at Substations and Other Operational Sites

The above documents will be superseded by the TS 2.10.xx series. However, the new suite of documents contains largely the same information but in the standard TS format. It is National Grid's intention to add information to the TS 2.10.xx series to replace that information contained in other Civil Engineering specifications and handbooks. Where minor differences occur between the superseded guidance and the new TS 2.10.xx, then work should proceed in accordance with the new TS 2.10.xx. The exception to this would be where significant amounts of design work had already been completed to the previous guidance. In this instance, approval shall be obtained from National Grid to proceed in accordance with the superseded guidance.

Previous issues of TS 2.10.xx covered workmanship and construction issues and are now withdrawn, hence this document is not a revision of the previous issue and should be viewed as a new document. An updated version of the information contained within the previous issue of TS 2.10.xx is now contained in TS 3.10.xx. This is part of an ongoing strategy to rationalise the numbering convention for Technical Specifications i.e. design information contained in the TS 2.10.XX series and construction information contained in the TS 3.10.XX series.

The full list of documents in the TS 2.10.XX suite and their issue dates are detailed in Table 1 below:

TS No.	Description	Issued (Yes/No)	Date of Issue
TS 2.10.00	Introduction	Yes (Issue 3)	February 2015
TS 2.10.01	Oil Containment	No	
TS 2.10.02	Perimeter Security	No	
TS 2.10.03	Site Lighting	No	
TS 2.10.04	Piling and Foundations	No	
TS 2.10.05	Access Covers/Ducts/Trenches	No	
TS 2.10.06	Fire Protection	No	
TS 2.10.07	Plant Noise Attenuation	No	

TS 2.10.08	Roadworks and Surfacing	No	
TS 2.10.09	Structural Steelwork and Aluminium	No	
TS 2.10.10	GIS and Substation Buildings	Yes (Issue 1)	September 2014
TS 2.10.11	Seismic Design of Substations	No	
TS 2.10.12	Site Drainage	No	
TS 2.10.13	Flood Defences for Electricity Substations	Yes (Issue 2)	February 2016
TS 2.10.14	Technical Security Specifications for Integrated Security Solution (ISS) Sites	Yes (Issue 2)	March 2016

Table 1: Documents in the TS 2.10.XX suite

Any deficiency, ambiguity or inconsistency in the TS 2.10.XX suite or any cross references to third party documents that have become obsolete, deleted, superseded or amended shall be immediately identified to the Client.

Where a design solution is proposed which is either not covered by, or contravenes the guidance given in TS 2.10.XX, additional supporting information will be required. Supporting information shall contain, as a minimum:

- (i) A technical description of the alternative design methodology proposed;
- (ii) A summary of the expected effect on project risks of adopting the alternative methodology;
- (iii) A summary of further alternatives considered and reasons for rejection;
- (iv) Details of the expected benefits to be realised from the alternative proposal;

Detailed procedural requirements for approval of proposals outside the scope of TS 2.10.XX are outlined in TP 188 – ‘Transmission Construction Electricity – Design Management’.

Where the text within the TS 2.10.XX series makes reference to the construction and workmanship requirements of TS 3.10.XX, CESWI or other third party documents, it is inherent in the design assumptions that the works will be constructed in accordance with these documents. Works constructed to other standards may invalidate the assumptions made in TS 2.10.XX. Where no direct reference is made, it shall be assumed that works are to be constructed in accordance with TS 3.10.XX

Where TS 2.10.XX describes general requirements for particular areas of design, but does not enforce specific methods of design, it is assumed that the professional expertise of a suitably qualified design engineer will be employed to make detailed decisions about the methods adopted. However, design aspects wholly omitted from TS 2.10.XX will require prior approval from National Grid before the commencement of the works.

Mandatory requirements are identified by use of the verb “shall” or “must”. Clauses containing the verb “should”, “can” or “may” give a recommendation of how to comply with the requirements of the specification. However, alternative methods may be used if it can be demonstrated that they are technically and economically equivalent or superior in terms of design function, health and safety, environment and maintenance requirements.

Text contained in boxes provides an **informative commentary**. It does not form part of the formal requirements of the document, but aims to explain the rationale and ‘spirit’ of the requirements. Although the contents do not form part of the mandatory requirements, it is expected that the designer will give due consideration to the information contained in the informative commentary when producing designs.