

## **TYPE REGISTRATION OF OVERHEAD LINES**

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### **PURPOSE AND SCOPE**

The purpose of this guidance note is to outline the process by which the National Grid policy on type registration contained in PS (T) 003 should be applied in the case of an Overhead Line (OHL) system. This document should be read in conjunction with UKBP/TP183 which sets out general information on the type registration process.

This document applies to equipment purchased to the National Grid Technical Specification (TS) suite of 3.4 documents covering overhead line systems.

### **PART 1 – PROCEDURAL**

#### **1 OVERHEAD LINE TYPE REGISTRATION REQUIREMENTS**

##### **1.1 Type Registered OHL System and an OHL System as a ‘Solution’**

For type registration purposes, a type registered OHL system shall comprise of three sub-systems: conductor sub-system, insulator sub system and earthwire sub-system. These sub-systems shall be type registered individually and independently of each other. Each shall be made up of a range of components, fittings and ancillary items that a selection can be made from to construct a specific solution for use on the network.

##### **1.2 Equipment Included in an OHL Sub-System Type Registration**

###### **1.2.1 General**

All components that are type registered will be recorded on the National Grid Type Registration Register (TRR). This will be made available for use by **National Grid to the relevant Delivery Organisations.**

### 1.2.2 Insulator Sub Systems

An insulator solution is made up of a string of insulators and metalwork to facilitate connection between the tower and the conductor fittings. Only components that are required in an insulator set as specified in TS 3.04.36 are required in a type registered sub system.

The list of this equipment includes:

- a) Cap and Pin or Composite insulators
- b) Fittings - e.g. Ball and Socket couplings, Shackles, Links, Socket Clevis, Socket Tongues, Sag Adjuster Assemblies and Yoke Plates.
- c) Arc Horns and Corona Shields

Note: It is preferable to assemble string sets using components supplied by a single component supplier, i.e. all components for the suspension string sets for a particular route or circuit should be sourced from the single component supplier. It is then acceptable to source all the components for the tension string sets for the same scheme from an alternative component supplier.

### 1.2.3 Conductor Sub Systems

A conductor sub-system includes all components that are directly connected to the conductor itself. Only components that are required in a conductor sub-system as specified in TS 3.4.37 are required in a type registered system. The list of this equipment includes:

- a) Conductor
- b) Fittings – Anchor Clamps, Mid-span Tension Joints, Non-Tension Joints/Palms, Suspension Clamp Assemblies and Repair Fittings
- c) Spacers – Spacer Dampers, Semi-Flex, Rigid and Bonding.
- d) Vibration Dampers.

### 1.2.4 Earthwire Sub Systems

An earthwire sub-system includes all components with direct connection to the earthwire conductor. Replacement earthwire systems should use Keziah or Keziah equivalent Optical Ground Wire (OPGW) instead of traditional conductor. Only components that are required in an earthwire sub-system as specified in TS 3.04.37 are required in a type registered system. The list of this equipment includes:

- a) Conductor
- b) Fittings - Anchor Clamps, Suspension Clamps, Non Tension Joints, Mid-span Joints and Repair Sleeves.
- c) Vibration Dampers
- d) Earth Bonds.

### 1.3 General Type Registration

Prior to type registration of any component or string set a business case shall be established. The level of risk management required for any particular type registration solution will be in accordance with TGN 266 Type Registration Risk Assessment Methodology.

The decision to undertake or decline a request for Type Registration will be made using the following criteria:-

- a) Requirement due to new product / solution innovation.
- b) Requirement due to a new component supplier and availability of the product within the marketplace.
- c) Requirement due to design or location of manufacture changes or change of sub suppliers.
- d) Evaluation upon the impact of the failure of product including associated health, safety and environmental risks.
- e) **Identified commercial advantage to National Grid from a chosen supplier.**

Type registration shall be completed by the National Grid Policy Development Engineer or a nominated person that is deemed to have the appropriate knowledge and experience to complete the task, as agreed by the Policy Development Manager.

All components will be fully supported by a datapack which must be submitted to the relevant Policy Development Engineer via [eniassetpolicy.typereg@nationalgrid.com](mailto:eniassetpolicy.typereg@nationalgrid.com). Following review and validation of the datapack, test report and component drawing, National Grid will record the details on the TRR and issue a component type registration code to the supplier. The issue of this code denotes that the type registration process is complete and the components deemed fit for installation and service on the system.

**Note:** The mailbox **detailed** above is used for all asset types within National Grid **therefore** any communication regarding overhead lines should have a prefix of 'OHL' in the subject field of the mail.

National Grid will only accept one datapack and therefore one drawing from each component supplier for registration on any particular component; all sub suppliers of the component shall be identified on the registered drawing. For all sub suppliers identified suitable test data shall be provided.

### 1.4 Type Registered Solutions

#### 1.4.1 General

National Grid will draft, maintain and publish a suite of generic type registered string drawings and associated type registration pro-forma which will be made available **by National Grid to any delivery organisations and component suppliers.** These drawings are in accordance with the relevant Technical Specification and should be used as a basis for the scheme specific final drawings.

**Note:** Generic string drawings only detail designs for standard installations and do not detail bespoke or one off installations; in cases such as this the best fit generic drawing should be referenced during design work.

All system drawings will be published in a readable but non editable format and will be issued with an EGI code in accordance with UKBP TP169 Appendix C4.