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USE OF L3 TOWERS

PURPOSE AND SCOPE

This policy briefly describes the background to the current situation that exists with L3 towers with respect to non-compliance with National Grid's latest internal electrical clearance requirements and defines the policy for their continued use.

It is applicable to existing L3 lines operating at 275kV on the National Grid transmission system. It is equally applicable to planned 275kV new build or line diversions within an existing 275kV L3 route.

This policy is not applicable to schemes which are already in development and/or delivery at the time of issue of this document.

This policy does not consider strength or deal with climbing clearances. In common with other towers (including those designed internationally) the L3 tower was not specifically designed to allow for additional 'climbing' clearance under live conditions. OHL Safety Bulletin 03-2006 provides guidance in respect of climbing on L3 towers.

A review of the relative reliability of the originally specified clearances compared with the new requirements along with the impact on performance of reduced length insulator sets is in progress. Following the outcome of this piece of work the Policy will be reviewed and re-issued.

PART 1 – POLICY

1 BACKGROUND

L3 towers were designed in 1953 (ref BES L3), for 275kV operation and to meet the following internal minimum clearances from live metal to tower steelwork and earthed fittings:

Suspension towers:

Insulator string between 0° and 5° from vertical:	2.286 m (90 ins)
Insulator string between 5° and 30° from vertical	1.372 m (54 ins)

Note: Set lengths were assumed to be 3.2 m (126 ins) and clearances obtained on the assumption that the conductor may leave the suspension clamp at any angle between 0° and 15° measured in the plane containing the insulator set.

Tension towers:

Jumper loops hanging in a vertical plane:	2.286 m (90 ins)
Jumper loops deflected 20° from the vertical:	1.372 m (54 ins)

Note. Clearances obtained on the assumption that the insulator set leaves the crossarm at any angle between +5° (up) and -10° (down) from the horizontal.

Over the intervening period a degree of 'rounding up' of clearance values (through metrication) coupled with an increase of clearance margins has defined a set of generic clearances for all new towers at 275 kV and other voltages. Thus, clearances specified in TS 2.4, which are in accordance with international practice (BS EN 50341), are not generically achievable for L3 towers without change to either tower geometry or insulator design.