

SECTION –1

SCOPE, SPECIFIC TECHNICAL REQUIREMENTS AND QUANTITIES

1.0 SCOPE

This technical specification covers manufacture, packing and dispatch of Phase colour discs & Danger Labels.

The equipment is required for the following Project:

Name of Customer : NHPC Ltd.
KISHANGANGA CONSORTIUM:
Hindustan Construction Company (HCC) Ltd. / HALCROW
Subcontractor: Bharat Heavy Electricals Ltd.
Name of Consultant : HALCROW Noida
Name of the project : 220/33kV Switchyard for Kishanganga (3x110MW) HEP
Refer Section - 3 for Project Details and General Specifications.

1.1 SPECIFIC TECHNICAL REQUIREMENTS

Material of Danger label : M.S. Sheet

Material of Phase : M. S. Plate
Colour discs

Thickness of Danger label : 2 mm

Thickness of Phase : 2 mm
Colour discs

Inscription colour : As per enclosed Sketch 1 & 2
for Danger labels/ Phase
colour discs

Fixing Hardware : As per enclosed Sketch -1 & 2

1.2 Quantities are as follows complete with Hardware:

S.No.	Description	Quantity
1	Danger Label as per enclosed Sketch-1	220KV=08 Nos., 33KV=01 Nos. and 11KV=02 Nos.
2	RED, YELLOW, BLUE Phase coloured discs as per enclosed sketch-2	10* Sets (i.e., 30Nos. for Red, Yellow and Blue Phase Colored Discs)

*Each set comprise Red, Yellow and Blue Phase Colored Discs (1 No. Each) complete with hardware as per specification

SECTION 2

EQUIPMENT SPECIFICATION

2.1 GENERAL

This section covers the general technical requirements of the Danger labels and Phase colour discs. In case of any discrepancies between the requirements mentioned in this section and those specified in other sections of this specification the latter shall prevail and shall be treated as binding requirements.

2.2 APPLICABLE STANDARDS

The Danger labels and Phase colour discs shall strictly conform to the following Indian standards, as appropriate:

Danger Notice Plates	IS 2551; 1982
Colour for ready mixed Paints & enamels	IS 5; 1978

2.3 CONSTRUCTIONAL FEATURES

2.3.1 The Phase colour discs and Danger plates covered under this specification shall be of size and specification as per drawings enclosed & requirements as outlined in clause 1.2

2.3.2 All lettering shall be centrally spaced & in capitals only.

2.3.3 The material supplied shall be in a sound condition and of recent manufacture. It shall conform to requirements as specified in drawing. The finished material shall be free from defects, loose mill scale, slag fillings, rust, etc.

2.3.4 Enameling shall provide continuous adherent film of adequate thickness on the surface being coated and protect it from attack due to continuous exposure in industrial atmosphere prevailing at the site and exposure in continuous corrosive environment. Enameling shall be done on both sides of labels, discs and plates unless otherwise specified.

2.3.5 The design and manufacture of Danger labels shall conform to IS: 2551, 1982. The colour shades for all labels shall be in conformance to IS-5; 1978

2.3.6 Phase colour discs shall also be coloured as per IS: 5; 1978. Following colour shade scheme shall be strictly adhered to: -

Red colour No. 538 (Post office Red)

Blue colour No. 166 (French Blue)

Yellow colour No. 355 (Lemon Yellow)

- 2.3.7 Size, type and style of lettering shall be as per drawing attached and letters shall be of uniform height and thickness.
- 2.3.8 All lettering in labels shall be centrally spaced. The label inscription shall be engraved.
- 2.3.9 These labels and phase colour discs shall be suitable for fixing on switchyard structure/gantries etc.
- 2.3.10 All fastener items shall be of metric sizes as per standards and shall be as per enclosed drawing.

2.4 INFORMATION TO BE FURNISHED AT CONTRACT STAGE.

The following information shall be furnished immediately in the event of award of contract.

- 2.4.1 Drawings on scale 1:1 for all labels and phase colour discs.
- 2.4.2 Non-returnable samples of the following:-

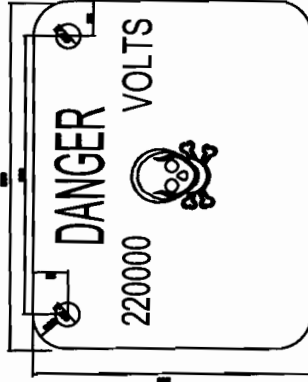
- Phase colour disc (typical) : One No.
- Danger Label (typical) : One No.

Note: Only on written approval (by BHEL) of drawing and samples of labels & phase colour discs, should the production work commenced.

2.5 TESTING and INSPECTION

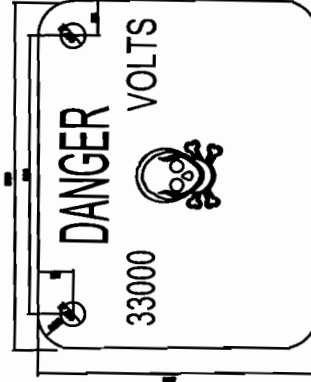
The test certificates for the full material received from the manufacturer should be furnished and shall be got approved. The finished material shall be offered for inspection as per data sheet/ test reports/ drawing, before commencement of supply.

SKETCH-1: DANGER LABEL FOR 220 KV YARD



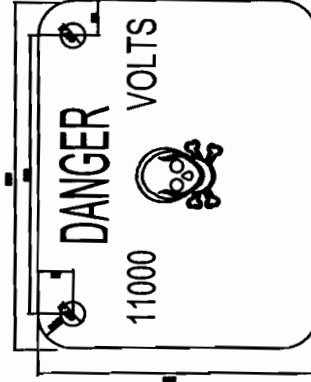
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SKETCH-1: DANGER LABEL FOR 33KV YARD



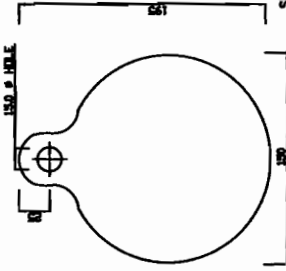
SHEET 2 OF 3

SKETCH-1: DANGER LABEL FOR 11KV YARD



SHEET 3 OF 3

SKETCH-2: PHASE COLOR DISC FOR 220 & 33KV YARDS



SHEET 1 OF 1