

To

The Owner, Agent & Managers

of all the Mines and Oil Fields.

Sub: System of earthing in Power Supply System for underground Mines and Oil Fields.

There was a national workshop on choice and standardization of electrical power supply system in mines on 11th and 12th May 1990 at Dhanbad. Representatives of Mining Industries, National Laboratories, Statutory Authorities, Academic Institutions attended the above workshop and thorough discussion was made regarding the suitable system of earthing the neutral point of the transformer of the power supply system both at surface and at underground feeding power to the electrical equipments in the mines and oil fields. After detailed deliberations it was decided that the restricted neutral system of earthing with a suitable impedance between the neutral point and earth is safest system for the power supply system in the mines. The recommendation of the national workshop was therefore

- (a) with increase in degree of mechanization of power under coal mines, it has been felt necessary to limit the earth leakage current at not more than 750 milliamperes.
- (b) compared to solidly earthed neutral system, the insulated and restricted neutral power supply system for mines have distinct advantages in reducing the hazards from the electrical sources.
- (c) Restricted neutral system can be conveniently adopted in mines. This is also in accordance with I.S. code of practice.
- (d) Solidly earthed neutral system supply in coal mines is to be discontinued accordingly.

With the above background, the provision of the Rule 116(1) of the Indian Electricity Rules 1956 was accordingly amended as "In the interest of safety appropriate equipment shall be suitably placed in the mines for automatically disconnecting supply to any part of the system where a fault, including an earth fault occurs. Fault current shall not be more than 750 milliamperes in 550/1100 volt system in

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underground/oil fields. The magnitude of the earth fault current shall be limited to these specified values by employing suitably designed restricted neutral system of power supply “.

It is, therefore, requested that mine management make suitable action to convert the underground/oil field power supply system from solidly earthed system to restricted neutral system within a year.

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