

IEEE Std 463-1993

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(Revision of IEEE Std 463-1977)

IEEE Standard for Electrical Safety Practices in Electrolytic Cell Line Working Zones

IEEE Industry Applications Society

Sponsored by the
Petroleum and Chemical Industry Committee

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**Petroleum and Chemical Industry Committee
of the
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Abstract: Means of safeguarding personnel while operating or maintaining equipment located in electrolytic cell line working zones are provided. Included are related requirements for equipment and electrical conductor installations. The general types of electrolytic cells covered include, but are not limited to, the dc cells used in the production of aluminum, cadmium, chlorate, chlorine, copper, fluorine, hydrogen peroxide, magnesium, sodium, and zinc.

Keywords: cell line working zone, electrical safety, electrolytic cell line, electrical conductor installations

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Introduction

(This introduction is not part of IEEE Std 463-1993, IEEE Standard for Electrical Safety Practices in Electrolytic Cell Line Working Zones.)

In 1974 the Electrical Cell Line Working Group of the Petroleum and Chemical Industry Committee prepared a trial-use standard for Electrical Safety Practices in Electrolytic Cell Line Working Zones. Comments on the trial-use standard were incorporated into a full-use IEEE standard, which was published as IEEE Std 463-1977. The standard was developed to provide electrical safety practices for the unique conditions of the working areas of electrolytic cell installations. It defines the extent of the area covered and sets forth means of safeguarding personnel in the area. The means are based on many years of successful experience in the industry.

This standard covers conditions that are different from those general requirements for safety in electrical installations stated in IEEE Std 141-1993, IEEE Recommended Practice for Electric Power Distribution for Industrial Plants (the Red Book),* and IEEE Std 142-1991, IEEE Recommended Practice for Grounding of Industrial and Commercial Power Systems (the Green Book). The standard was used as a source document for Article 668, Electrolytic Cells, of the National Electrical Code (ANSI/NFPA 70-1993).

This standard must be applied with judgment. The requirements are of necessity general to cover the widely varied conditions of electrolytic cell areas. The selection of safeguards must include consideration of the nature and exposure of an electrical hazard as well as avoid unnecessary restriction of operation of the plant.

In 1991 a working group was formed for the purpose of reviewing and updating the standard. Members of the working group at the time this standard was approved were as follows:

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* As this standard goes to press, IEEE Std 141-1993 is not yet published. It is, however, available in manuscript form from the Institute of Electrical and Electronics Engineers. Anticipated publication date is April 1994.