

IEEE Recommended Practices for Cement Plant Electric Drives and Related Electrical Equipment

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IEEE Recommended Practices for Cement Plant Electric Drives and Related Electrical Equipment

**Sponsor
Cement Industry Committee
of the
IEEE Industry Applications Society**

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Foreword

(This foreword is not part of IEEE Std 499-1974, Recommended Practices for Cement Plant Electric Drives and Related Electrical Equipment.)

Electrical equipment is the major factor in the powering and control of cement plants. As management of the cement industries demand more precision for quality control, greater production capacity, and less production cost, more and more emphasis is placed on the reliability of the plant's installed electrical equipment.

The Cement Industry Committee has analyzed many areas pertaining to such requirements and through the working groups recommended practices have evolved for this industry. Several years ago the Electrical Distribution Group published their analysis as a guide line for the cement industry, which was subsequently accepted as one of the standards and published by IEEE.

The recommended practices listed herein pertain to the Drives and Related Products Working Group. This evaluation has precipitated after several years of analysis, discussions, revisions, omissions, activation, etc, by the working group and is in a form on which all members of the working group and the committee in general could reach agreement. Certainly specific plant conditions could and probably would alter such a recommendation in a certain area; however, in general it is hoped the practices would be a good guideline for the industry.

This recommendation reflects the thinking of the Drives and Related Products Working Group of the Cement Industry Committee in particular, and the entire committee in general.

Membership of the Drives and Related Products Working Group was:

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IEEE Recommended Practices for Cement Plant Electric Drives and Related Electrical Equipment

1. General

1.1 Purpose. The purpose of these recommendations is to define and recommend specifications for electric drives and related electrical equipment for installation in the cement industry in order to promote:

- (1) safety to personnel and equipment
- (2) maximum reliability with minimum loss of production
- (3) reduced maintenance and increased life of equipment
- (4) clarification of needs and conditions to reduce special engineering and chance of error in specification
- (5) over-all economy

1.2 Scope. These recommendations apply to all electric drives and include motors, control, and control wiring associated with machinery or equipment commonly used in the manufacturing areas of cement plants. They are intended as a guide and may be supplemented where special needs exist. They are not intended to apply to power distribution circuits.

These recommendations shall apply to electrical equipment having a supply voltage of 13 800 V or less. Voltages higher than this are not being covered at this time.

1.3 Use of Recommendations. It is urged that users and manufacturers cooperate with the working group to help formulate final recommendations which will insure the use of proven equipment and methods. The ultimate objective is to establish recommendations which will assist in preparing specifications for electric drives for cement plant equipment and their installation.

1.3.1 Definitions. Certain words used throughout these recommendations are defined as follows:

adequate. See Section 1.3.2.

effective. See Section 1.3.2.

nominal. An approximate or rated value. For

purposes of this standard within plus or minus 10 percent.

securely. See Section 1.3.2.

shall. Intended to indicate requirements where those recommendations are actually standards.

should. Intended to indicate that which, at the present time, is considered a recommendation, that is, advised but not required. As these recommendations are developed, the word *should* presently used in a certain place may become *shall*.

suitable. See Section 1.3.2.

1.3.2 Special Use of Terms. The terms *suitable*, *adequate*, *effective*, and *securely* denote conditions determined by the user or his representative after taking cognizance of all codes, standards or practices applicable to the situation.

1.4 Applicable Standards. It is assumed that apparatus mentioned herein shall comply with the latest edition of the National Electrical Code. Cognizance of local codes must also be taken by the user to insure that equipment involved complies therewith. Compliance with NEMA and American National Standards is also assumed where applicable to the equipment involved.

The following are NEMA Standards.¹
Industrial Controls and Systems ICS-1970
Instrument Transformers, EI 2-1966 (R1972)
Motors and Generators, MG 1-1972
Color Coding of Wires and Cables WC 30-1971
Enclosed Switches, KS 1-1969
Low Voltage Power Circuit Breakers, SG 3-1971
High Voltage Power Circuit Breakers, SG 4-1968

¹ Available from the National Electrical Manufacturers Association, 155 East 44th Street, New York, New York 10017.