

FOREWORD



THE TWENTY-SIXTH IEEE CEMENT INDUSTRY TECHNICAL CONFERENCE

May 21-24, 1984

DISNEYLAND HOTEL, ANAHEIM, CALIFORNIA, USA

Sponsored by
THE INDUSTRY APPLICATIONS SOCIETY'S
CEMENT INDUSTRY COMMITTEE
OF THE
INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

The technical papers in this Conference Record have been prepared using guidelines from the "Author's Guide" of the Industry Applications Society (IAS) modified by the Cement Industry Committee. The Committee is one of twenty-eight Technical Committees within the IAS.

This year's Annual IEEE Cement Industry Technical Conference completes twenty-six years of such Conferences. The growing number of registrants at these Cement Conferences started at 298 in 1959 and for this time we expect 650 attending, accompanied by 200 spouses.

The papers included in this Record were written and are presented to comply with the scope for the Cement Industry Committee which has been established by the IEEE Industry Applications Society. In substance, this scope is:

"The development and application of electrical systems, apparatus, devices, and controls to the processes and equipment for which the emphases or dominant factors specifically relate to the cement manufacturing industry; the promotion of safe, reliable, and economic installations; the encouragement of energy conservation; and the creation of voluntary engineering standards and recommended practices."

It is hoped that these technical papers will assist in increasing the understanding and professional stature of all those who prepared them and who read them. Gratitude is expressed to the dedicated work of supporting the activities of the Institute (IEEE) by many Cement Industry Committee members who have given countless hours in discharging their roles as Committee members. Gratitude is also expressed to the many cement manufacturers, to their employees, to those who supply equipment and services to them, and to all who attend this Conference for their participation in the activities of this Twenty-Sixth IEEE Cement Industry Technical Conference.

NORMAN S. ROISTACHER
National Committee Chairman

JOHN A. VIDERGAR
Conference Chairman

Copyright © 1984 by the Institute of Electrical and
Electronics Engineers, Inc., 345 East 47 St., New
York, N.Y. 10017

Library of Congress Catalog Card Number 83-83034



Table of Contents

POWER GENERATION & DISTRIBUTION

MODERATOR: JOHN R. ELIASON

General Electric Company

1. "Important Measurements in Power Systems"
John R. Meeler - Arizona Portland Cement Company
2. "The Electrical Considerations in Co-Generation"
Neil Nichols - Westinghouse Electric Corporation
3. "Operation of a Cement Plant Electrical Distribution System"
Horatio Casati & Lee Gregory - Raymond Kaiser Engineers

AUTOMATION

MODERATOR: JOEL M. REID

Merrick Canada, Ltd.

1. "Experience with Computer Based Kiln Shell Temperature Monitoring (Control) System at Lake Ontario Cement Ltd."
Niels G. Brunn & Gert Slot - F.L. Smidth & Company
John Hall - Lake Ontario Cement Company
2. "Control at Your Fingertips"
W.T. Miller - California Portland Cement Company
3. "Cement Plants and Programmable Controllers — A Systems Approach"
T.C. Teel - General Electric Company
S.J. Keiffer - Fuller Company
4. "Experience with Flowmeters for Kiln Feeding at Ideal Basic Industries, Cris Dobbins Plant, Theodore Alabama"
Gene Rebucci - Schenck Weighing Systems
Donald Peterson - Ideal Basic Industries

DRIVES & RELATED PRODUCTS

MODERATOR: ULF ALSGUTH

Claudius Peters Inc.

1. "Torsional Vibration Analysis and Comprehensive Field Testing on a Large Rotary Kiln"
Dennis A. Fenton - Vibratek Services, Inc.
David Salzborn - Genstar Cement, Ltd.
Robert M. Taylor - Weir-Jones Consultants, Ltd.
Charles B. Mayer - General Electric Company
2. "A Systems Approach for Selecting Large Fans and Drives"
Charles W. Bush & Ray Krekel - Raymond Kaiser Engineers, Inc.
3. "Solution of a Serious Repetitive Vibration Problem on a 4500 HP Single Pinion Synchronous Motor Ball Mill Drive"
Robert M. Johnson - Lone Star Industries, Inc.
Charles B. Mayer - General Electric Company
Dewey J. Gray - Brentwood Engineering, Inc.

4. "An Inverter Driven Synchronous Motor Drive for Fans"
Joseph P. Shemanski - The Monarch Cement Company
John J. Zawacki - General Electric Company

MAINTENANCE & SAFETY

MODERATOR: CHARLES M. COLLINS

Fuller Company

1. "Vibration Analysis — A Proven Technique as a Predictive Maintenance Tool"
John T. Renwick - Shaker Research Corporation
2. "Causes and Effects of Kiln Tire Problems"
Alan Bowen - Coplay Cement Company
Benno Saxer - Holderbank Management & Consulting, Ltd.
3. "Operation and Maintenance of Stackers and Reclaimers in Cement Plants"
Stephen C. Brand - Koch Material Handling Systems
Rick Patton - Martin Marietta Cement
4. "Safety & Maintenance Considerations During a Cement Plant Start Up"
David W. Friedman - Fuller Company
5. "Operational Repair & Maintenance of Programmable Controllers & Process Control Computers"
Victor Sun - Lafarge Consultants, Ltd.
6. "Interesting Features of California Portland Cement Company, Mojave Plant"
Erwin Way - California Portland Cement Company

GENERAL PRACTICES

MODERATOR: RONALD F. PALMER

Ash Grove Cement Co.

1. "The Application of High Efficiency Separators for Finish Grinding Systems"
H.J. Kochmann, H. Micheal von Seebach & Heinz Hanke - Polysius Corporation
2. "Operation of Short Length-to-Diameter Ratio Kiln at Cement Quebec"
Alan J. Kreisberg - Fuller Company
3. "Evaluation of Crushing and Grinding Systems for Three Different Types of Raw Material"
Wilfried Krueger - Holderbank Consulting, Ltd.
4. "Comparison of Dedusting Alternatives for Clinker Coolers"
Hubert L. Smith, Jr. - General Portland, Inc.
Charles E. Wilber - Allis Chalmers Corporation
5. "Energy Saving in the Preheater - Precalciner Kiln - Improved Performance of Cyclones"
Takashi Tanioka, Yuichi Matsuda & Hiroyuki Kohama - Kobe Steel, Ltd.