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## Training Schedule

### 2010 Flanders Training Schedule:

- **APR 28** Thunder Basin Coal  
EM 2011 MSHA Electrical Re-Qualification
- **MAY 3-5** CK Vaughan Ctr. / Plano, TX  
IPC-01 Instrumentation & Controls Combo
- **MAY 3-5** Gillette College Tech Center  
E-06 Advanced Dragline Control Systems
- **MAY 5** Thunder Basin Coal  
EM 2011 MSHA Electrical Re-Qualification
- **MAY 12** Thunder Basin Coal  
EM 2011 MSHA Electrical Re-Qualification
- **MAY 17** Flanders, Evansville, IN  
AC Motor Design; Prep Class
- **MAY 19** Arch Minerals, Black Thunder Mine  
EM 2011 MSHA Electrical Re-Qualification
- **MAY 24-26** Flanders, Longview, TX  
EO1: Electrical Principles
- **MAY 24-27** Gillette College Tech Center  
PLC-02: PLC Controls & Troubleshooting
- **MAY 27** Flanders, Longview, TX  
EM 2011: MSHA Electrical Re-Qualification
- **JUNE 13-14** BP Houma Training Ctr.-Houma, LA  
IPC-01 Instrumentation & Controls Combo
- **JUNE 14-17** Flanders, Evansville, IN  
SIMATIC S7-300/400 PLC Programming I
- **JUNE 15** BP Houma Training Ctr.-Houma, LA  
PV-01: Panel View®
- **JUNE 28-30** Gillette College Tech Center  
E-03: AC Machines, VFD's, Power Delivery Systems

*\*To register, call Flanders Electric at 812-867-7421 and ask for training information or email [feengineering@flanderselectric.com](mailto:feengineering@flanderselectric.com).*

FE Newsletter Questions/Comments-Contact:  
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## MG Set Bearing Pedestals

Excessive MG Set Bearing high oil temperatures can be a problem and increased cooling can increase the margin of error for bearing failure. Flanders Electric has engineered a solution to address this; our pedestals have cooling fins. With this improvement over the original design, we have increased the external surface area by 75% for greater heat dissipation as well as increased the oil reservoir by 17%; this allows for more oil to be in contact with the pedestal, additionally increasing the cooling process.

Oil is the lifeblood in a bearing. Flanders has engineered an additional safeguard against losing oil. Our pedestal has a groove in the flange of the base between the base and the cap. This groove captures oil that may otherwise leak out and allows it to drain back into the oil reservoir. Oil can also be lost if the oil level site gauge is broken. This gauge is often broken while inspecting the motor and generators or performing maintenance, resulting in maintenance personnel spending time and money to replace. We have resolved this problem by using a flat profile clear glass oil level site. This site gauge is a see-through site window allowing maintenance personnel to visually inspect inside the base to see if the oil slinger ring is spinning properly. This enhanced feature allows for the verification of reliability and function of the pedestal. The Flanders Electric synchronous motor and generator pedestals are drop in replacements for all GE size 6.5" x 8" and 6.5" x 6.5" pedestals respectively.

The first Flanders universal pedestals with the new style cooling fins were installed with no flaws. However, field data of the percentage of temperature change is currently being recorded and evaluated for actual temperature change in the field. Field data results will be published in the next newsletter issue (July/Aug/Sept 2011).



FE bearing pedestal face showing machined fins



FE bearing pedestal side showing oil sight glass/window

## Bearing Lube Oil Cooling System

A customer operating four 3000HP motors at 3500HP was encountering over temperature issues with the motor pedestal babbit bearings. The original pedestals only had capacity for approximately three gallons of lubricating/cooling oil compared to other comparable pedestals having seven gallon capacities. The motors are exposed to direct sun and above design ambient air temperatures (exceeding 115°F), thus requiring the need for an oil cooling system.

Flanders designed and built four small oil recirculation systems that utilized a water to oil heat exchanger, oil flow/balancing manifold and lubricating oil to each motor bearing pedestal. Individual flow switches provide low flow indication for each bearing. The system was built as a compact free standing system requiring a single 120VAC feed for the circulation pump.



Oil Cooler Unit: side view, pump, reservoir and control equipment



Oil Cooler Unit: front view, pump, reservoir, site tubes and pressure gauges



Oil Cooler Unit: front view, with front cover panel

## Baldor Introduces New Cooling Tower Direct Drive Motor & Variable Speed Drive

Cooling towers place a high value on operating efficiency, reliability, quiet operation and low maintenance costs. Baldor has developed a new direct drive cooling tower system around a specifically designed, high efficiency, permanent magnet motor and variable speed drive that addresses the requirements and demands of a modern cooling tower system. The new RPM AC Cooling Tower Direct Drive motor and VS1CTD Cooling Tower PM Drive are designed to replace conventional mechanical gear or belt drive speed reduction designs.

The RPM AC motor is a power dense industrial motor with proven reliability in the most demanding industrial applications including steel mill, paper mill and drill rig applications. The Cooling Tower version of this motor utilizes permanent magnet rotor technology and is designed to be mechanically interchangeable with many existing cooling tower gearbox designs. The fan mounts directly to the motor, thereby eliminating the entire gearbox and driveshaft torque transmission components.

The VS1CTD variable speed drive is designed exclusively for cooling tower applications and the RPM AC motor. Unlike a typical AC Induction Motor, a Permanent Magnet AC motor cannot run across the line and requires a specially designed AC drive for operation. These motor drive packages are designed for cooling tower applications and will function "out of the box" with very little tuning or commissioning required. Simplicity of setup and operation combined with built in diagnostics provide a high level of efficiency, ease of use and unmatched system performance.

Flanders Electric can provide the Mechanical and Electrical Engineering for a trouble free retrofit. Flanders engineers are factory trained and certified to properly commission Baldor's Cooling Tower Motor and Variable Speed Drive.



Drop-In Replacement



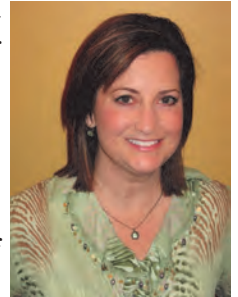
Precise Airflow Control



Variable Speed Drive=Efficiency

## Region VII Safety Professional of the Year - Beth Phelps

Beth Phelps, Flanders Electric's Corporate Safety Manager, and ASSE (American Society of Safety Engineers) Audubon Chapter's President, has been awarded the Region VII Safety Professional of the Year Award (SPY). There are eight regions that make up the ASSE. Region VII includes the states of Michigan, Indiana, Ohio, Kentucky, Tennessee, West Virginia and the country of Nigeria. This is a prestigious honor that evaluates and awards the most qualified candidate on the following safety principles:



1. Demonstrates technical expertise in the broad field of safety and a thorough knowledge of operational aspects of his/her safety environment.
2. Society, Council, Chapter, Region or Practice Specialty activities, including committee or task force chair, officer, project director, services to members, lecturer at seminars, etc.
3. Professional contributions to advance the Safety Profession, such as fostering professional development, public/community services, instructor at educational institutions, involvement in codes and legislation, articles written, work with allied groups, etc.
4. Awards and Innovations, including citations, honors, plaques, or new procedures or systems developed.
5. Leadership in establishment, maintenance and improvement of technical or Society programs in organization nominee serves or elsewhere.
6. Other personal achievements related to safety and health.
7. Endorsements by superiors and verifications by associates, in the form of letters on appropriate stationery of the employer and Chapter, Council, Region or Practice Specialty.

In earning this recognition, Beth will also be considered for the International ASSE Society Safety Professional of the Year Award for the following year. For more information on ASSE, please visit [www.asse.org](http://www.asse.org).

## Custom OEM Control Cabinets

Among the expanding capabilities of Flanders Electric is the addition of custom control cabinets supplied to OEM's. Recently, Flanders undertook a time constrained project in cooperation with an OEM to develop, design and assemble large and technically advanced proprietary cabinets for green energy applications. Working closely with the OEM, Flanders exceeded their expectations in prototyping design, quality manufacturing, delivery and line-up performance and have since asked for more of the same from us.

Contact Flanders with your next green or renewable energy project and see how we can be your supplier of choice!



Cabinets joined together atop Flanders' Unitary Base



Completely customized to suit

## Delba Electrical

In February of 2011, Flanders Electric finalized an alliance agreement with Delba Electrical in South Africa.

Much like Flanders, Delba is a high quality provider of electrical apparatus and a family owned business. Delba is one of the most respected, professional and trusted electric motor rewinding, repair and testing partners in Southern African mining and industry. ISO 9001:2008 certified and BBBEE compliant, Delba repairs, rewinds and designs AC high/medium low voltage motors; new motors, certified flameproof motors, high efficiency and vibrator motors, load testing, axial flow ventilation fans and submersible pumps with performance tests and transformers. Extrusion, wire covering and coil manufacturing are also included in the service portfolio.

They share many of our same values and will be an excellent distributor for Flanders in sub-Saharan Africa. Piet Steyn, Service Engineer for Flanders Electric, will work closely with Delba to continually expand Flanders business in Africa.

Delba's founder and owner, Armando Balocco, is extremely positive about this new alliance and says that with so much synergy between the two companies, the alliance was virtually a forgone conclusion. Balocco elaborates, "Together the two companies have more than 110 years experience in the electric motor industry. Both companies are family owned, stand for integrity and strong values, and are uncompromising when it comes to product and service quality." He adds that both the respective managements led by example, sharing similar leadership styles that contribute to the long term success of the two companies.

Known for setting benchmarks, Delba was also selected because of the company's on going commitment to quality, progress and innovation. This new alliance is yet another milestone in the company's successful history.

More information about Delba can be found at <http://www.delba.co.za/>.



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[www.flanderselectric.com](http://www.flanderselectric.com)



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## Announcements.....

### *Come See Us:*

- May 2-5:** 2011 AISTech Conference- Booth #435 in Indianapolis, IN
- May 3-5:** 2011 Coal Prep Show - Booth #2001 in Lexington, KY
- May 15-18:** 2011 Haulage & Loading Conference - Booth #31 in Phoenix, AZ
- May 21-25:** 2011 CIM Conference & Exhibition - Booth #1519 in Montreal, Quebec, Canada
- June 1-3:** 2011 WMEA Conference in Billings, MT

### **P9 Demo on May 10-12, 2011 at Flanders Electric corporate headquarters in Evansville, Indiana.**

Toshiba is proud to unveil its revolutionary new adjustable speed drive for the pump industry, the P9. This new ARRA-compliant drive, with its cutting-edge capabilities, has completely optimized pumps and pump systems to dramatically reduce pressure buildup and energy consumption, thereby maximizing efficiency, energy savings, and the life of the pumping equipment. See the P9 in action May 10th - 12th in Evansville, Baumgart North Plant.

For more information, please contact Michael Lindley at 812.867.4014 ext. 3355 or [mlindley@flanderselectric.com](mailto:mlindley@flanderselectric.com).

Mark your calendars for the next **Flanders Electric Electrical Engineers Technical Conference:**

**August 22- 26, 2011 at Flanders headquarters in Evansville, Indiana**

To register, please contact:

Jed Jensen, Flanders Electric Training Academy Director, at 1.307.689.0598 or [jjensen@flanderselectric.com](mailto:jjensen@flanderselectric.com)

[www.flanderselectric.com](http://www.flanderselectric.com)

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