Electric Machinery Company (WEM)  
Minneapolis – USA

Founded in 1891, Electric Machinery (EM), part of WEG Group, custom designs and manufactures the motors and generators that serve thousands of customers worldwide. Engineering cost-effective solutions for both simple and complex applications, we offer more than standard design; we build machines to your exact specifications, combining experience and innovation to deliver consistency and reliability in every unit.

EM has earned its reputation for designing, manufacturing, and servicing large, custom-engineered electrical motors and generators in the U.S. and worldwide by developing:

- First High-Starting-Torque Synchronous Motor
- First Automatic Starting System for Synchronous Motors
- First 2-Pole Induction Motor Design to Operate below its First Critical Speed
- First Solid-State Brushless Excitation System
- Pioneered the Duraguard™ insulation system in the early 1970’s. Today, EM’s Duraguard™ process, using epoxy resin tape and vacuum/pressure impregnation (VPI), is recognized as the benchmark of the industry.

**Product Range:**

<table>
<thead>
<tr>
<th></th>
<th>Induction Motors</th>
<th>Turbo Generator 2 poles</th>
<th>Synchronous Motors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output Range:</strong></td>
<td>2,000 - 25,000 HP</td>
<td>6,000-120,000 kW</td>
<td>400-150,000 HP</td>
</tr>
<tr>
<td><strong>Speed:</strong></td>
<td>200 - 3,600 RPM</td>
<td>3,000 / 3,600 RPM</td>
<td>150 - 3,600 RPM</td>
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<tr>
<td><strong>Frequency:</strong></td>
<td>50 Hz / 60 Hz</td>
<td>50 Hz / 60 Hz</td>
<td>50 Hz / 60 Hz</td>
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<tr>
<td><strong>Voltages:</strong></td>
<td>2,300 - 14,400 V</td>
<td>4,160-14,400 V</td>
<td>2,300 - 14,400 V</td>
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<tr>
<td><strong>Construction</strong></td>
<td>Horizontal &amp; Vertical*</td>
<td>Horizontal</td>
<td>Horizontal &amp; Vertical</td>
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<tr>
<td><strong>Excitation</strong></td>
<td>N/A</td>
<td>Brushless Excitation, Static with collector rings</td>
<td>Brushless or Static with collector rings</td>
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<tr>
<td><strong>Standards:</strong></td>
<td>NEMA, IEEE, IEC, API 541, ISO 9001</td>
<td>NEMA, ANSI, IEEE, IEC, API 546, ISO 9001</td>
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<tr>
<td><strong>Enclosures</strong></td>
<td>DP, DPG, WPI, WPII, PMDP™, TEWAC, TEAAC, TEFV</td>
<td>Room Air Cooled, TEWAC, TEAAC</td>
<td>DP, DPG, WPI, WPII, PMDP™, TEWAC, TEAAC, TEFV</td>
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<tr>
<td><strong>Applications</strong></td>
<td>Pumps, Centrifugal Compressors, Extruders, Fans, Mixers</td>
<td>Steam and Gas Turbines</td>
<td>Reciprocating and Centrifugal Compressors, Condensers, Ball Mills, SAG Mills, Vacuum Pumps, Refiners, Chippers, Crushers, Grinders</td>
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<tr>
<td><strong>Special Notes</strong></td>
<td>True Stiff-Shaft 2 pole design, options of semi-stiff or flexible shaft</td>
<td>Continuous or Peaking Duty</td>
<td>Industry leading synchronization system</td>
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</tbody>
</table>

* Vertical = Limited HP for 2 poles

**Nuclear Safety Related Equipment:**
- Motors and generators built and tested for Class 1E safety related applications.
- Quality assurance program meeting requirements of ASME NQA-1

**After Sales Support and Service:**
- Installation, commissioning and start-up
- Field Service engineers 24/7 available
- Repair services and original parts available
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References:

Induction Motors

TESORO – Los Angeles Refinery – USA
Stiff shaft – 10.000HP, 4 Poles, 3PH / 60 Hz / 11.6 kV

Valero Refining Co. – San Antonio TX - USA
20.000HP, 2 Poles, 3PH / 60 Hz / 13.2 kV

Turbo Generator 2 poles

Mondi Paper – South Africa
56.500 kVA, 2 Poles, 3PH / 50 Hz / 11.0 kV

Dresser-Rand – Arizona Public Service – USA
52.500 kVA, 2 Poles, 3PH / 60 Hz / 13.8 kV

Low Speed Synchronous Motors

Metso Minerals – Minera Alumbrera – Argentina
Ball Mill - 8000HP, 34 Poles, 3PH / 50 Hz / 6.6 kV

United Taconite LLC – Minnesota USA
Load sharing Ball Mill 3000HP, 44 Poles, 3PH / 60 Hz / 4.0 kV