



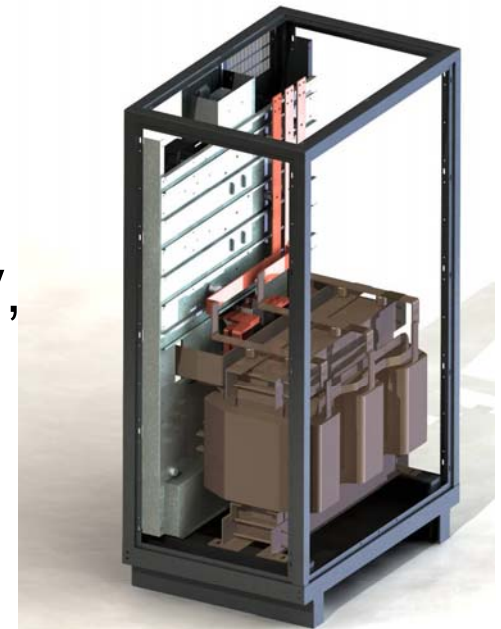
**Your partner for competitive and reliable
high power magnetics...**

Specialty Magnetics Solutions

ONYX is a leading supplier of power magnetics to the UPS, power conversion and alternative energy and UPS industries:

HOW CAN ONYX HELP YOU:

- ▶ Alternatives for mitigating rising copper and steel costs
- ▶ Large and experienced engineering staff for design assistance
- ▶ Specialty ultra high efficiency designs
- ▶ Certification to international standards including TUV, UL, CE
- ▶ Assistance with complete product regulatory qualification



THE POWER MAGNETICS QUALITY LEADER

About ONYX Power

ONYX at a glance.....

- ▶ Management owned and operated
- ▶ Over 180+ employees
- ▶ 65,000 square feet (Santa Ana, CA) three year old facility
- ▶ \$15MM recent investment in capital equipment
- ▶ Close to \$60 million per year in revenues
- ▶ Based on a 30 year legacy of pioneering power quality products
- ▶ Wide installation base spanning many of the countries largest financial and industrial organizations
- ▶ COMMITTED TO QUALITY EXCELLENCE



ONYX Power headquarters in Santa Ana, California.

Management Team

Jeff Wiederkehr - President / CEO

Helen Hogle - CFO / principal

Alan Katz - Sales / Product Dev.

Vijay Tendulkar - C.T.O.



THE POWER MAGNETICS QUALITY LEADER

ONYX Transformers

The largest and most modern power transformer manufacturing facility in the Western United States

- ▶ Dry type transformers and power magnetics up to 4 MVA
- ▶ Providing high quality OEM and complex specialty magnetics solutions
- ▶ Produced over of 15,000 high power transformers with excellent field reliability
- ▶ Tenured high quality work force

ONYX Power Magnetics Products

- **Inverter Transformers**
- Harmonic Reduction
- **Inductors**
- Design Engineering Expertise
- Drive Isolation
- Auto Transformers
- Energy Efficient TP-1
- Specialty OEM Transformers
- **Gap Magnetics**
- Low Inrush
- K-Factor
- Low Impedance
- In house enclosure design
- **Integrated Inverter Transformer / Inductors**
- 12 ,18, & 24 Pulse Rectifier
- **Medium voltage up to 15 kV**



Above: 1 MVA 12 pulse rectifier transformer with integrated inductors; a complex design that resulted in great savings and performance.

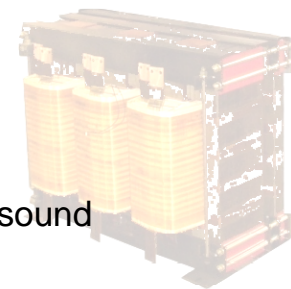


Factory Infrastructure



ONYX Key Equipment

- ▶ 2 x Vacuum Impregnation Systems
- ▶ Calibrated Anechoic Chamber for accurate sound measurements
- ▶ 20 Broomfield foil and wire winders
- ▶ 4 automated core cutters
- ▶ 3 precision varnish curing ovens
- ▶ High capacity test bay with two full time test engineers (full test reports are kept on each transformer)
- ▶ 50 Hz and 400 Hz motor generator for testing different frequencies and excitation testing
- ▶ Seven design and manufacturing engineers using Pro-E and Solidworks design platforms
- ▶ Proprietary magnetics design and simulation software
- ▶ 15,000 square foot sheet metal manufacturing facility with precision welding stations and CNC punch press
- ▶ Water jet cutting system
- ▶ 10 ton factory wide overhead crane network



THE POWER MAGNETICS QUALITY LEADER

Transformer Value Proposition

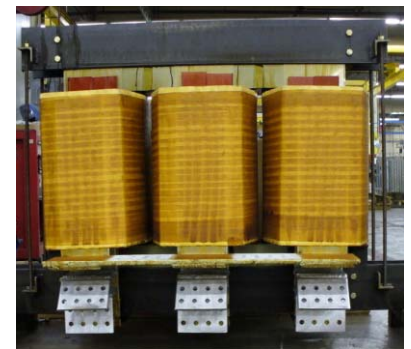
Simple Reasons to Partner with ONYX Power

- ▶ **Significant cost savings:** ONYX has been able to help our partners offset rising costs by developing optimized designs by incorporating new design technologies or alternate cost effective materials that provide identical performance
- ▶ **Proven cost effective:** ONYX solutions have proven cost competitive prompting many customers to use ONYX as their standard solution
- ▶ **Short Lead Times:** using a modern, flexible manufacturing infrastructure allow us to ship orders in very short lead times [cutting weeks of the industry standard lead time](#)
- ▶ **Easy design transition:** ONYX makes transitioning suppliers easy; we take responsibility not just for the design but also can assist in qualification making the transition process seamless



Transformer Value Proposition

- ▶ **Proven Performance:** ONYX and its predecessor companies MGE /EPE/ Square-D/ Merlin Gerin have over 30 year of experience in manufacturing magnetics for critical power devices like large UPS systems. Our design practices are well established and have proven reliable through long term operation.
- ▶ **Technical Advantages** of ONYX solutions often allow OEM customers to differentiate their products
- ▶ **Stringent quality standards:** We use both inside and outside quality control resources to maintain production standards including a dedicated quality expert with a Master Degree in Quality Management. A tour of our plant reflects one of the cleanest facilities in the power magnetics industry which shows in the final quality of our product.
- ▶ **Experienced Staff:** At the heart of all ONYX transformers are the manufacturing staff who have an average of 15 years experience
- ▶ **Owner based management** – manufacturing partners interface directly with the owners who are on site every to ensure results



Transformer Value Proposition

ONYX seeks OEM partners...not just customers

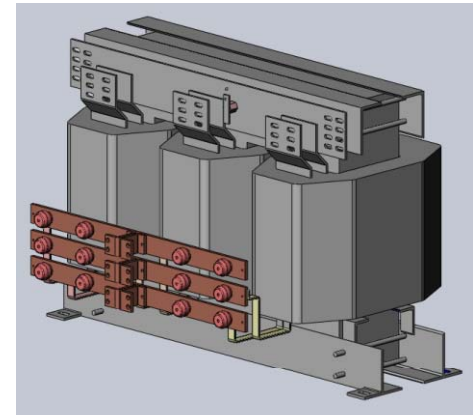
- ▶ A **skilled engineering development team** led by Mr. Vijay Tendulkar (recognized by the IEC) can produce the most complex specialty designs, or optimize existing designs for added savings.
- ▶ **Capacity to ship up to \$150 MM of power magnetics per year:** Our facility has proven the ability to ship \$180 MM per year with the design capacity to ship \$200 MM per year to satisfy larger industrial partners
- ▶ **Aggressive procurement and sourcing contracts** managed by ONYX yield favorable material costs.



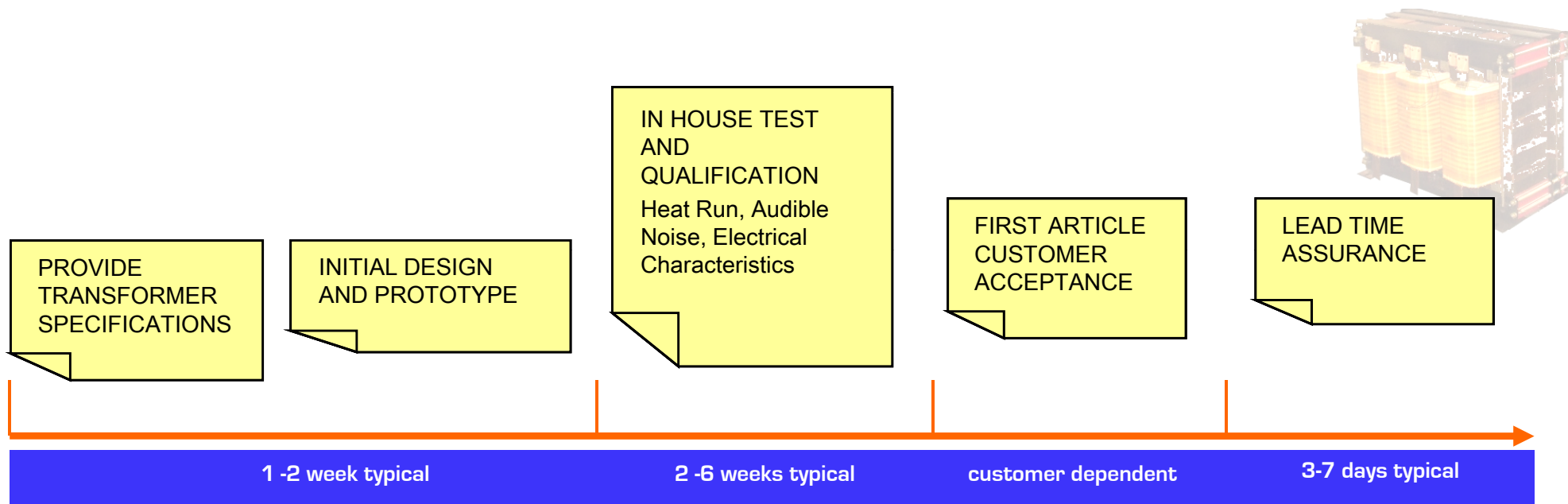
Product Qualification

Let ONYX expedite performance and regulatory qualification

- ▶ ONYX can take the burden of regulatory qualification issues required when substituting our magnetics into existing solutions.
- ▶ Our relationship with regulatory agencies allows us to achieve certification often in very short time frames
- ▶ **Full regulatory compliance:** We can build and certify to all international standards including CE, UL, FM and TUV and commonly build for international clients requiring a high degree of regulatory compliance. ONYX is also a UL certified facility.



Transformer Design Qualification



- ▶ **Qualifying your new transformer or existing transformer is an easy process**
- ▶ **Your lead times will likely be reduced and your inventory costs lower**
- ▶ **The quality of your product will be as high or higher**



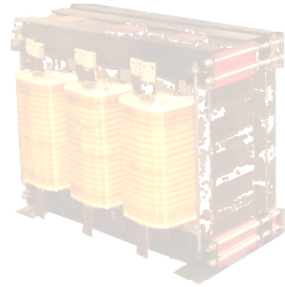
Substituting an existing solution is a fast and straight forward process



Transformer Manufacturing Capabilities



- ▶ 20 new Broomfield winding machines / welders
- ▶ Experienced staff of winders
- ▶ Three automated core cutters

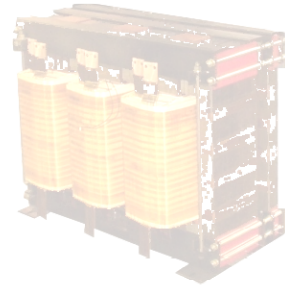


Infrastructure for \$200MM in capacity



THE POWER MAGNETICS QUALITY LEADER

Transformer Manufacturing Capabilities



- ▶ Two vacuum impregnation (VPI) systems ensure a superior varnish coating and less vibration and noise problems
- ▶ Three precision controlled varnish furnaces

Focused on maintaining the fastest lead times



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Sheet Metal Fabrication



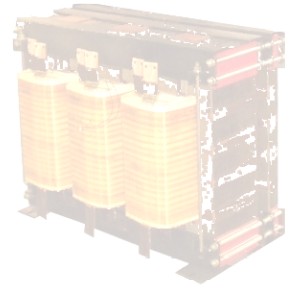
- ▶ 15,000 square foot sheet metal fabrication area
 - ▶ Dedicated sheet metal designers on staff
 - ▶ Welding area with four dedicated welding staff for custom frame fabrication
 - ▶ State of the art water jet cutter
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- ▶ Enclosures and cabinets (NEMA1 to 3R)
 - ▶ Bus bars
 - ▶ Floor stands
 - ▶ Specialty enclosures



THE POWER MAGNETICS QUALITY LEADER

ONYX has invested in test and quality assurance to meet the needs of critical power customers

- ▶ Our in house test and quality procedures and tenured staff (12 years average) is our key to quality..
- ▶ All transformers are individually tested and documented with full test reports.



Anechoic chamber for accurate audible noise testing



Test and qualification area with two full time test engineers



Variable frequency generators allow excitation tests up to 400 Hz



Roberto Cardoza: Engineering Manager (M. Sc. Quality Control); VB Tendulkar C.T.O. – NEMA and IEC committee member / recognized transformer expert

Recognized as the quality leader



Integration Services

Onyx can build what you need!

- ▶ **ONYX Integration Services** designs and builds customized power systems solutions
- ▶ Capabilities include design, assembly and qualification
- ▶ Fast turn-around time ideal for specialty projects
- ▶ The security and simplicity of dealing with a single vendor

Integration Services Capabilities

- ❑ *Electrical and Mechanical Engineering design*
- ❑ *Purchasing (benefit from ONYX purchasing discounts)*
- ❑ *Sheet metal fabrication*
- ❑ *Regulatory Certification (i.e. UL / CE)*
- ❑ *Test and qualification*



Integration Services Division



If you can think it.....we can build it!

The ONYX Design Build Process

IDENTIFY THE SOLUTION

Meeting with the ONYX engineering staff, customers identify their exact needs. During this time, ONYX engineers provide possible suggestions on to start developing the look and feel of the solution.



PROTOTYPE CONSTRUCTION

After reviewing the 3D models and specifications, customers provide feedback and change the design as needed. The engineering team then proceeds to build a industrial prototype for customer review



PROTOTYPE DESIGN

Working with the latest computer aided design tools including Pro-E, and Solidworks, the engineering staff creates a 3D prototype and technical specifications for initial customer review.



THE POWER MAGNETICS QUALITY LEADER

Engineering and Design Expertise



The people that make things happen....

- ▶ Large team mechanical and electrical engineers
- ▶ Solidworks® based design system
- ▶ Full R&D test and prototype facilities
- ▶ 50, 60 and 400 Hz test generators
- ▶ Engineers are in close proximity to fabrication areas allowing for a hands on approach to design



Roberto Cardoso
Engineering Manager



All solutions are tested and qualified to attain UL certification and ONYX quality standards.



ONYX can provide completely integrated transformer solutions and provide in house turn key transformer solutions.



THE POWER MAGNETICS QUALITY LEADER

Not Business As Usual

What you will notice dealing with ONYX..

- ▶ The people that will be taking your order will make sure you receive it on the committed date
- ▶ We maintain the shortest lead times in the industry lowering your inventory requirements
- ▶ You deal directly with the owner / managers
- ▶ Our engineering and design staff will provide you with unique value driven solutions not found elsewhere



We are working on making things better for you



Our Commitment To You



▶ ***THE BEST CUSTOMER SERVICE***

▶ ***EASY TO WORK WITH***

▶ ***OUTSTANDING DESIGN PERFORMANCE AND QUALITY***

▶ ***RESPONSIVE LEAD TIMES***