Power Quality in Metals Fabrication

Identifies Ways to Minimize Power Quality Problems in the Metals Fabrication Industry

Metals fabrication is a $32 billion industry in North America and produces a huge range of everyday objects: lawn mowers, power tools, anti-lock brakes, personal computer hard drives, faucets, and appliances, to name just a few. The processes used in metals fabrication—stamping, milling, boring, cutting, drilling, and grinding—are increasingly automated. Sophisticated computer-controlled equipment carries out much of the work in this growing industry. Unfortunately, advances in technology and automation have resulted in greater susceptibility to power quality disturbances.

For metals fabricators, the inevitable variations that occur in power quality can lead to breaks in production, broken tools, damaged drives, and damaged parts. To help avoid these problems, EPRI is undertaking a project to identify and address the power quality concerns unique to the metals fabrication industry. The project will engage customers in the industry to develop an understanding of the critical power quality issues and problems they experience. It will also involve the manufacturers of metals fabrication equipment and industry professional and technical associations, in an effort to increase immunity to power disturbances by influencing equipment standards.

By participating in the EPRI *Power Quality in Metals Fabrication* project, you can help your customers mount defenses against power disturbances and reduce their production downtime. This project offers valuable customer-specific recommendations, while leveraging resources from an EPRI matching fund.

PROJECT SUMMARY This project will define power quality problems as they apply to the metals fabrication industry and develop cost-effective strategies for mitigating them. Because many metals fabricators—including producers for the automotive, appliance, and electronics markets—use computer numerical control (CNC) machines in their processes, the project will emphasize CNCs while also looking at other automated metals fabrication machinery.

Engineers from EPRI PEAC Corporation will visit the customer site of your choice and compile a report with recommendations on how your customer can improve power quality immunity. They will develop case studies and testing procedures during the project that could provide answers to typical power quality problems encountered throughout the industry. They will produce a set of equipment specifications to be used as a reference for any metals fabrication machinery your customer purchases. They will also provide you with useful reference materials, including an industry guide to major metals fabrication processes, the EPRI Power Quality Sales and Marketing Kit, and the EPRI Power Quality Technical Manual.

DELIVERABLES

- Industry primer of major metals fabrication processes
- Methodology for testing equipment sensitivity to power quality variations
- One-day visit to the customer site of your choice, and technical report with findings and recommendations

- Power quality sensitivity curves for equipment used in the industry
- Power quality case studies
- Recommended specifications for purchasing metals fabrication equipment
- Power Quality in Metals Fabrication newsletter
- EPRI Power Quality Sales and Marketing Kit, and the EPRI Power Quality Technical Manual

RETURN ON INVESTMENT This project will provide you with practical knowledge of the actual processes and issues behind metals fabrication, as well as the nature of business decisions made in the metals industry. It will help you to solve power quality problems encountered with metals fabrication machinery. Your acquired expertise will allow you to enhance the usability and value of the power you deliver and the relationships you have with your customers, as you help them compete in a growing industry.

CONTACT INFORMATION For more information, contact the EPRI Customer Assistance Center at 800-313-3774 or *askepri@epri.com*.

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EPRI • 3412 Hillview Avenue, Palo Alto, California 94304 • PO Box 10412, Palo Alto, California 94303 USA
800.313.3774 • 650.855.2121 • askepri@epri.com • www.epri.com