

How well do you know your power system?

The following questions were arrived at to point out the kind of information that is needed to troubleshoot, modify, expand, maintain, and efficiently manage the average power distribution system.

A. Trouble-shooting during unexpected system outages or equipment failures.

- ✓ Do you have an up-to-date detailed system one-line diagram?
- ✓ Are equipment instruction books available on-site for easy reference?
- ✓ Are there electrical diagrams for each piece of electrical distribution equipment assemblies and are they accurate?
- ✓ Has a recent short-circuit and coordination study been performed that will have determined the optimum settings for all protective devices in your system and is it readily available?
- ✓ Is all pertinent power equipment cataloged by type and ratings and information categorized for easy reference in order to place emergency orders?
- ✓ Do standard operating procedures exist that explain how the system operates and what to do in an emergency?
- ✓ When circuit breakers trip following abnormal system occurrences, can you interpret what the protective regulating flag devices are telling you?

B. The need to modify the power system and its equipment to achieve better reliability and performance.

- ✓ How does your power system compare to present-day power system design standards and codes?
- ✓ Are modifications such as power system monitoring and control packages, ground fault sensing systems, switchgear, automatic transfer switches, motor starting and protection systems needed, necessary, and physically and economically feasible?
- ✓ Are all circuit breakers, transformers, motor starters, switches, bus and cabling systems properly rated for normal overload and short-circuit conditions?
- ✓ Do you need standby power generation to increase your system reliability and is it economically beneficial?

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How well do you know your power system? (continued)

C. The need to expand the system due to increased power demands

- ✓ Can your power system be easily expanded without jeopardizing its performance and reliability?
- ✓ Can power be redistributed to get more expansion out of your existing system?
- ✓ Are the existing power company power lines into your facility adequate for your future needs?

D. Power system and component maintenance and testing is an established way of increasing reliability

- ✓ Is a system-wide maintenance management program in place and is it designed for maximum return for the money spent?
- ✓ Are all annual maintenance and test reports tracked and cataloged to spot trends in equipment conditions, tolerance changes or failures?
- ✓ Are consistent and necessary procedures followed during annual maintenance and testing periods?

If the answer to any of these questions is no, Midwest Engineering Consultants feels a solution to helping you manage one of your most important assets is a Power System Profile.

Power systems are uniquely comprised of many different equipment components. Equipment is generally represented by different vendors and different vintages. Plant personnel should understand each component and how it fits into the entire system's operation. The Power System Profile can help by first collecting, then cataloging pertinent power system design and maintenance requirements.

Contact **Midwest Engineering Consultants, Ltd.** for more details on how a Power System Profile can help increase your system reliability and efficiency.