

The Call For Holistic Maintenance Training

In have attended many courses during my 30-plus years in maintenance. I started as a combat fleet engineer in the military and, after 18 years, I then worked as a test engineer specializing in prototype diesel engine systems in R&D projects. I finally moved into the field of facilities maintenance as a condition-based-maintenance (CBM) service provider specializing in IR, ultrasound, PdM and vibration testing.

One thing that's become clear to me in my years of training is that we only teach one discipline at a time—and never consider a holistic approach to maintenance tasks. In my 18 years of working in IR and attending training courses, I was never made aware of the dangers of arc flash or electrocution while conducting energized inspections of electrical systems. Although we may think traditional training methodology is changing, many among us still seem to be taking a modular approach. I feel that this has to change: Safety and efficiencies demand it!

Another issue is that most training is conducted by manufacturers that concentrate on the discipline related to their equipment. They can be unwilling or unable to discuss competitor's equipment, user tips, etc. They also do not discuss multi-disciplined approaches to equipment maintenance.

For instance, an IR scan of a motor set can give you the bearing temperatures or body temperatures, and may show that you have over temperatures. But if you were to conduct a complete inspection at the same time, including vibration and motor circuit analysis (MCA), you would be able to give a clearer and more definitive diagnosis of the motor.

This holistic, multi-disciplined approach is how we should train engineers. Each should have all

Viewpoint

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the tools required to complete the whole inspection at the same time, under the same running conditions.

Far too often, we complete the IR this month, the vibration next month and the MCA another month. We sometimes find that the results can contradict themselves, because the test conditions (i.e., speed, load, environment, etc.) also change between tests. Inspections conducted using a multi-disciplined, holistic approach are much more efficient and valuable.

The last piece of the puzzle is that our engineers need to be trained to recognize the dangers associated with their tasks and how to avoid them. We need to identify the PPE, tools and specialized safety training required to ensure that our personnel are safe and well-equipped. Far too often, we train our people to complete inspections but give no instruction on the hazards associated with working environments. This training must be conducted at the time they're trained on each discipline, so the engineer associates the training with the task and it becomes second nature.

I write from experience given the fact that our company takes a holistic approach to training. Those who go through our training programs carry with them an invaluable understanding of energized electrical maintenance and—*very important*—a powerful skillset for safely and efficiently completing the tasks required to successfully maintain electrical distribution systems.

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The opinions expressed in this Viewpoint section are those of the author, and don't necessarily reflect those of the staff and management of *Maintenance Technology* magazine.