

Isolated Phase Bus Duct



Global Power Services
Doble's Expert Consulting Division



Consider the consequences on your plant operation if your isophase bus fails.

Can you afford to ignore your Iso Phase Bus?

What is the condition of the bus that delivers power from your generators to your transformers? What will happen if that bus fails?

Can your present testing program identify **all these defects on your isophase bus systems:**

- Loose or broken support insulators
- Loose or corroded hardware
- Defective insulation
- Stray circulating currents
- Foreign material objects inside bus
- Defective bus PT connections
- Open PT high voltage fuses
- Contaminated insulators (dirt, dust, water)

All of the above conditions have been found in various customers' isophase bus by Doble engineers using EMI Diagnostics.

EMI Diagnostics is a technology used for over 30 years that allows on-line, non-intrusive testing without affecting the equipment operation. This technology allows the user to identify and locate many defects in equipment that other technologies are unable to detect.

Do you have loose bolted connections in your bus duct?



Phase I: Loose Connections

Problems in Iso-Phase bus frequently begin with loose bolted connections as shown at right. This causes pitting and discoloration due to heating and arcing in the early stages of the problem. At this point heat generated is not likely to heat the bus duct enclosure, but it will produce a reading which can be detected by EMI.



Phase II: Melting of the Metal

If allowed to continue, the heating melts the metal. Current is still flowing and at this point would be more obvious on the EMI diagnostics. You may also be able to detect the problem with Infrared Scanning techniques now. Do you want to wait until the problem reaches this point before detecting it? Even now, time consuming and costly repairs are needed.



Phase III: Failure

It does not take long to get from the step illustrated above to failure. At this point a forced outage will shut down a generating unit and the cost will include lost production as well as the cost of replacing the bus connection. This could have been prevented with annual EMI Diagnostics.



EMI Diagnostics will allow you to **find loose bolts and cracked insulators** before significant damage occurs. It will allow you to **schedule maintenance when convenient**, rather than enduring a forced shutdown while materials are replaced.



Another problem that can lead to bus duct faults is damaged insulators. Unless you use EMI Diagnostics, these are difficult to detect before they lead to a fault. The cracks or chips in the insulators will cause EMI signals that we can detect. This permits maintenance to be focused on solving problems, not looking for them.

For reliable performance of your electrical equipment, call Doble Global Power Services.

Contact us at 1-617-926-4900 or DobleGPS@doble.com