

Preventative Maintenance

Reduce the risk of emergency events and outages



Full service bus inspection

Have you lived through a catastrophic bus duct failure at your facility? All too often, the critical systems that transmit power at your facility go neglected—and a common misconception exists that bus systems do not utilize moving internal components, therefore regular maintenance and service are not required.

The potential for failure due to aging or neglected bus is a risk that cannot be overlooked. If your bus system has not been inspected, maintenance has not been performed and if old hardware or gasket material is not replaced periodically, the results can mean prolonged unplanned outages, expensive equipment replacement and safety risks to personnel.

Don't let bus failure happen to you. Avail is the industry's only name in full-service bus inspection, maintenance and high-performance testing to keep your system running optimally for years to come— regardless of who manufactured your bus system.

A proactive approach to NERC standards

As upcoming NERC standards are implemented, there will be more focus on bus systems with regard to overall facility ratings. The NERC standard states that each facility must maintain documentation on each sub-system, consistent with the principle that the facility ratings do not exceed the most limiting applicable equipment rating of the individual equipment that comprises the facility. This means that your bus systems can not exceed the ANSI C37.23 standard (for overall temperature and temperature rise) if your plant is to meet your stated output.

Do you have the documentation that verifies your system meets the required standards? If not, we can provide this important deliverable as part of a comprehensive Avail Preventative Maintenance Program.



The importance of a properly maintained bus duct system

Deterioration of high current bus usually follows an exponential curve; many years of slow decline are followed by months of rapid degradation, culminating in significant system failure.

Common Reasons for Bus Failure

- Condensation
- Conductor Connections
- Dirt and Debris
- Damaged Gasketing/Bellows
- Grounding
- Circulating Currents
- Improper Termination Design
- Cracked Weld Joints
- Improper Installation
- Outside Water Intrusion
- Bus System Fatigue



The impact of high temperatures at the transformer connections.



The impact of loose connections at the flex terminations.

Preventative Maintenance Program

- Diagnostics
- Analysis
- Solution Development
- Execution
- Test and Commission



Hot spots shown in thermal analysis can pinpoint loose or broken connections before they become an issue.

Preventing bus system failure

Preventative maintenance is a strategic process, not a one time occurrence, simple visual inspection or reactionary measure. A formulated program must be executed to ensure that maintenance is performed safely and, when potential issues are discovered, a timely solution is enacted to avoid prolonged downtime. Parts, materials and manpower must be on hand prior to commencement of maintenance; and failure to fully provision can be detrimental.

Diagnostics

The Preventative Maintenance program developed by Avail Infrastructure Solutions is a result of decades of bus systems experience. Upon contacting our team, we will immediately work with your facility's staff to schedule a comprehensive on-site diagnostics study. This study is comprised of a comprehensive visual inspection, advanced thermal imaging, as well as low resistance, Hi-Pot and Meggar testing. The study can also include Doble EMI testing and installation of Partial Discharge (PD) sensors and identify potential issues, including:

- Loose or broken support insulators
- Loose, corroded or damaged hardware
- Defective insulation
- Contaminated insulators
- Stray circulating currents
- Defective bus PT connections
- Open PT high voltage fuses

Analysis and Solution

Next, the collected data will undergo thorough analysis, and Avail will provide a full report, inclusive of specific findings—if problems are identified, or maintenance is required, a mutually developed solution is defined and outlined within this report. Additionally, all data and analyses will be recorded within a dedicated Avail database, taking the burden of documentation off of your team and allowing Avail to provide you with timely maintenance interval reminders going forward.

Execution

Upon the development of a prescribed solution, the next step of the Avail process involves the execution of necessary maintenance procedures and/or required system repairs. Whether gasket material, insulators or old hardware need replacement, cleaning be required or upgrades require installation, we are committed to working within your facility's outage schedule to get the job done.

Test and Commission

When maintenance and repair work is completed, the methodical process of testing and commissioning of your bus system is performed. This important final stage confirms the course of action implemented by Avail has restored your system to optimum condition and performance.



availinfra.com/bus-services

120 Aztec Drive
Richland, MS 39218
(601) 939-9191
Emergency: (866) 688-2258