

Solutions for Asset Integrity & Reliability

Any team that is charged with the responsibility of ensuring high levels of Asset Integrity and Reliability is focused on the ability to operate, maintain and store the assets over long lifetimes. This in turn ensures the overall costs of operation (including storage, maintenance infrastructure, return – to – use costs) of the assets is optimized, while ensuring fastest time to duty and best protection from aging.

The key areas of focus often include.

- Asset Health Monitoring & Early Warning Strategies
- Predictive Maintenance Programs for Services, Repairs and Retrofits
- Access to critical spares
- Preservation / Mothballing of Assets while ensuring corrosion prevention

Among the assets owned by the Company, the rotating equipment, ferrous and non-ferrous metal components, electrical systems and their associated assets show the maximum potential for optimization and savings. However, this puts more pressure on ensuring the best health of the systems and their uptimes while ensuring the costs of monitoring, maintaining and repairs is not ever-increasing.

We offer Innovative and Niche solutions to collect key health inputs continuously (On-line monitoring) on operational health status of assets (both mechanical health and electrical health) and analyze them to detect the early signs of deterioration, possible failure events and perform predictive maintenance; all in real time. We also provide the solutions for the prevention of corrosion, removal of corrosion and mothballing / preservation of plant assets.

Our effort starts with a discussion with you on the various assets, their current state and pain points followed by real-world site study leading to gap analysis. Then we frame the solution / proposal which will be backed by 'Use Case' in similar application / study in Industry. The data capture in real time, aggregation, analysis and actions will ensure short Payback Period and good ROI.

Unlike other point solution providers, Biewu is in the unique position to accomplish desired results based on our "Concept – to – Completion" approach to integrate KPIs of equipment and process through data on unified platform and communication to business layer for decisions.

Typical Challenges in the Industry

- Real time monitoring of machines, process and results – **Cost Intensive Scaling.**
- Preventive and Predictive maintenance through Analytics – **Models of Assets Needed.**
- Dashboards in systems, Tablets, Mobile and Decision support systems – **Secure, 24 x 7 Access.**
- Lifetime extension through retrofits, refurbishing, critical parts availability – **OEM Independence.**

Solutions

To address the above challenges, Biewu offers the following solutions

- a) Preservation, Mothballing and Corrosion removal services.
- b) IIoT Solutions - Equipment health monitoring, Prediction analytics, Acoustics monitoring
- c) Retrofitting, Refurbishment services for Medium Voltage VFDs and components
- d) Spare Parts Fabrication through reverse engineering for critical spares

a. Preservation, Mothballing and Corrosion removal services

Preservation / Mothballing of assets over long lifetimes is critical to ensure lower costs in maintaining spares inventory, ensuring higher success & usability of stored components. Conventional techniques for preservation, corrosion removal utilize techniques that are either destructive, or leave toxic residues or require costly maintenance infrastructure. Every company that invests in asset spares inventory looks for the means of preserving them with lowest cost; but at times at cost of utilization of the assets.



Solution

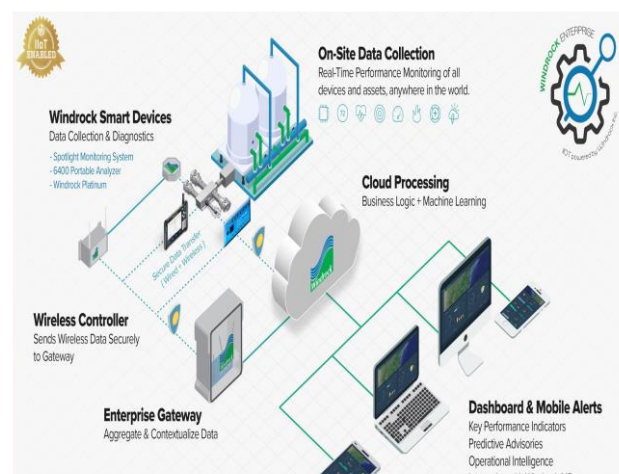
The use of **Vapour Phase Corrosion Inhibitors (VpCI)** is an effective and easy way of ensuring that the assets are kept in the best of health and integrity – irrespective of the condition they are in, prior to corrosion removal and mothballing. This is applicable to Ferrous and non-ferrous metals.

Benefits

- Safe, secure, cheaper strategy to preserving assets and removal of corrosion with no damage to the asset or its components.
- Ideal for complex assets and fitted assemblies; to protect from compromising the ability to use the asset directly from storage when required.
- Environmentally safe strategy for long-term preservation of assets with no constraints of toxic by-products of preservation
- Specific targeted products and solutions tailored to each unique asset type.

b. IIoT Solutions - Equipment health monitoring, Prediction analytics, Acoustics monitoring

Implementation of Industry 4.0 (IIoT) and digitalization strategy to equipment health monitoring will allow companies to greatly improve the visibility into critical assets, enforce better maintenance strategies and increase early warning of potential failures. Typically, the early detection of threats related Harmonics, Leakage Currents and Voltage peaks, vibration & temperature analysis can be easily provided through the use of condition monitoring to assets like VFDs, Motors, Gear trains, etc. The condition monitoring solution can also be extended to cover critical mechanical assets like the engines, generators, pumps, compressors to ensure overall health and availability of the systems.



Solution

IIoT enabled Condition monitoring is an effective and easy tool to ensure that the assets' health is monitored in real time – 24 x 7 to detect any anomalies that can be used to provide early warnings, predict possible failures, perform timely and prescriptive maintenance.

Benefits

- Ensured compliances with regulations
- Improve visibility on health and availability of assets and equipment
- Minimize risks and increase transparency, safety and reliability
- Maximize uptime and reduce maintenance costs
- Perform root cause analysis - Early identification of machinery damage
- Reduce site visits and expediting data collection
- Optimizing operational efficiencies
- Enhanced Communications

c. Retrofitting, Refurbishment services for Medium Voltage VFDs and components

We offer retrofitting and refurbishment and preventive maintenance programs for Medium Voltage VFDs (Variable Frequency Drives) and its components like the Power Cell, Transformers, Capacitors, etc. Leveraging the in-house technical expertise, we can provide for shop repairs, servicing, etc.

Solution

Retrofit and Repair of Power Cells is a critical decision, ensuring that the assets lifetime is extended through timely repair supported by service guarantees.

The practice allows the Company to optimize its asset value over a longer lifetime and avoid costly upgrades and spares inventory.

Benefits

- Reuse equipment that was previously too costly to repair.
- Better ROI on asset due to increased lifetime.
- Repair is supported with service guarantee.
- Faster time to Repair and put back in service, thus reducing spare inventory costs.
- Minimize overhead costs
- Better customer service, satisfies both your needs and budget



BIEWU Technical Team member performing preventive maintenance on one of nine power cells from a 1600HP 4160V series 4 Siemens Perfect Harmony Medium Voltage VFD

d. Spare Parts Fabrication through reverse engineering for critical spares

The process of acquiring critical spares and maintaining large inventories can be optimized by leveraging digital technology to maintain a virtual library of spare parts that can be fabricated on demand within short times. This eliminates the need for costly (and mostly non-effective) inventories and delays due to long lead times for components.

Critical Spare Fabrication

We offer customers the ability to maintain a virtual library of critical, obsolete and fast-moving spares. Combining our technical know-how in parts fabrication for several rotating assets with our Deliver – On – Demand strategy, we are able to provide OEM grade spare in shorter times and at a fraction of the cost.



Benefits

- Reduce costly inventories and long lead times.
- Reduced and eliminate OEM dependence.
- Maximize uptime and reduce maintenance costs

Why BIEWU

Biewu International is a solution provider with several decades of expertise in providing solutions to protect People, Assets and Environment. With a team of 300+ resources spread over 10 locations; we leverage our technical Know-How across 20 distinct solution portfolios ranging from PPE, Specialty Chemicals to Digitalization and IIoT solutions.

Our group expertise spans all layers from assets and sensors to networking, controllers, cloud, apps, big data and predictive analytics. Compared to large OEMs of software and IT companies, Biewu possesses knowledge and **experience in all three primary needs for proposing and implementing Industry 4.0 solutions viz. Machines, Process, Technology and IT.**