

EX + LS TEST STANDS & LS TEST STAND  
(Power Industry)



## Client Background

Client is an American multinational conglomerate involved in the production and servicing of commercial and military aircraft engines and systems, renewable energy generation equipment, and various power generation equipment.

Optimized Solutions designed, manufactured, tested, supplied, and installed equipment and instruments for testing excitation control system panels for large turbo generators. The project encompassed two types of test stands: three EX+LS test stands and one LS test stand. The comprehensive setup included transformers, load banks, DAQ systems, and various instruments to ensure precise and reliable testing operations for the client's global market products.





## Challenge

The client, required a robust and versatile testing setup capable of handling complex and varied test scenarios. The system needed to support high-capacity power transformers, provide precise load management, and ensure remote and automated operation capabilities. Additionally, stringent specifications for environmental conditions, compliance, and safety had to be met.

## Engagement Journey

Started With



Extended To



Ongoing Support



## Solution

To address the complex testing requirements, Optimized Solutions delivered high-capacity transformers (600 KVA, 40 KVA) and RL load banks with remote-operated load selection, SFU, and HT fuse protections. These components ensured robust power management and precise load control, crucial for testing excitation control systems.

The solution also included customized DAQ and control panels, enabling remote testing operations and monitoring. This setup facilitated efficient data acquisition and control, reducing manual intervention and enhancing operational efficiency. Additionally, advanced instruments such as DC supplies, Hi-pot testers, oscilloscopes, and control transformers were integrated to support comprehensive testing capabilities.





## Solution

Efficient power and cable management systems, including swing arm cable jib cranes, were implemented to organize and streamline operations. The entire setup was designed to meet ANSI, NEMA, IS, and IEC standards, ensuring reliable performance under various environmental conditions and maintaining stringent safety and compliance requirements.



## Benefits

1. **Enhanced Testing Capabilities:** The system provided precise control, synchronization, and high-capacity power management, significantly improving testing accuracy and reliability.
2. **Remote and Automated Operations:** The integration of DAQ and control panels enabled efficient remote operation and monitoring, reducing manual intervention and increasing operational efficiency.
3. **Scalability and Flexibility:** The modular design allowed for easy integration of additional components, ensuring long-term adaptability to evolving testing needs.
4. **Environmental and Safety Compliance:** The setup met stringent environmental and safety standards, ensuring reliable operation under varied conditions.



## Benefits against alternatives

1. **Integrated System:** The comprehensive solution integrated multiple functionalities into a single cohesive system, reducing the need for disparate components and ensuring seamless operation.
2. **High Performance:** The system's high-capacity transformers and precise load banks outperformed many conventional testing setups, delivering superior accuracy and efficiency.
3. **Customizability:** The modular and scalable design allowed for tailored configurations to meet specific testing requirements, unlike rigid, off-the-shelf solutions.
4. **Future-Proofing:** The ability to easily add or upgrade components provided a future-proof solution, enabling the client to adapt to new testing challenges without overhauling the entire system.



## Value Proposition

Our solution offered a cutting-edge, integrated test system tailored to the client's specific needs for testing excitation control systems. By providing a high-performance, scalable, and environmentally compliant testing environment, we enabled the client to achieve precise and efficient testing processes. The comprehensive support services ensured smooth implementation and operational success. This project not only met the immediate requirements but also laid a strong foundation for future advancements, making it a valuable investment for the client's long-term goals.

