



Asset Performance Management powered by Predix* for aeroderivative gas turbines

Remote Monitoring and Diagnostics

Assisting your assets 24x7

GE Power & Water offers a 24x7 Remote Monitoring and Diagnostic (RM&D) service for aeroderivative gas turbine plants. Using advanced analytics, this service enables increased availability, reliability, operating performance and maintenance effectiveness.

In GE's twin RM&D centers in Houston and Cincinnati, a team of more than 20 experienced OEM experts monitors your assets. Operating data is transmitted using the On-Site Monitor (OSM) via a virtual private network (VPN) connection and stored in our secure centralized data warehouse.

Advanced analytics trigger alerts or advisories to notify and support users of anomalies. A wealth of physics-based OEM design knowledge, combined with fleet statistics, drives continuous development of algorithms to increase the probability of early detection. Currently, more than 400 assets are monitored by the RM&D centers, with more than 200,000 incoming datasets per hour.



Remote Monitoring and Diagnostic centers in Houston and Cincinnati

Benefits

Increased up-time - Active monitoring, supported by engineering experts, can provide early warning of changing operating conditions and prompt on-site action for issue resolution. High speed access to data enables faster response to unplanned events. Certain faults may be diagnosed and corrected without a site visit, thereby reducing downtime.

Preventive maintenance - Diagnostic programs seek out emerging trends to enable proactive intervention against potential outages and extended downtime.

Remote support - Connect to our highly skilled technical representatives in the Quick Response Center (QRC) to remotely tune your engine for optimized emissions and operations. The QRC is also there for you to troubleshoot problems.

Delivering information

Advisories - Receive notification of anomalies using Operational Anomaly Advisory (OAA) or a Control Action Advisory (CAA). Selected conditions can trigger early warning alerts to the RM&D team. The monitors then issue alerts with specific observations and recommendations for correction.

Web Portal - You can access your data and trends for selected parameters using the service portal. The portal also provides access to publications and the ability to communicate with GE's experts on questions related to your assets.

Monthly Reports - You receive monthly condition assessment reports summarizing operations, cycle totals, events and conditions observed by the RM&D center and recommendations for corrective actions.

Additional services

Periodic KPI assessment - GE's OEM experts use RM&D data, fleet intelligence and advanced analytics to conduct a detailed assessment of your Key Performance Indicators (KPI) such as performance, reliability, availability and maintainability and make custom recommendations to improve the metrics that are important to you.

Online performance analysis - A proprietary analytic calculates critical performance parameters such as power, heat rate, and heat consumption, corrected to standard conditions, to provide insight into performance changes and assess sub-system level degradation.

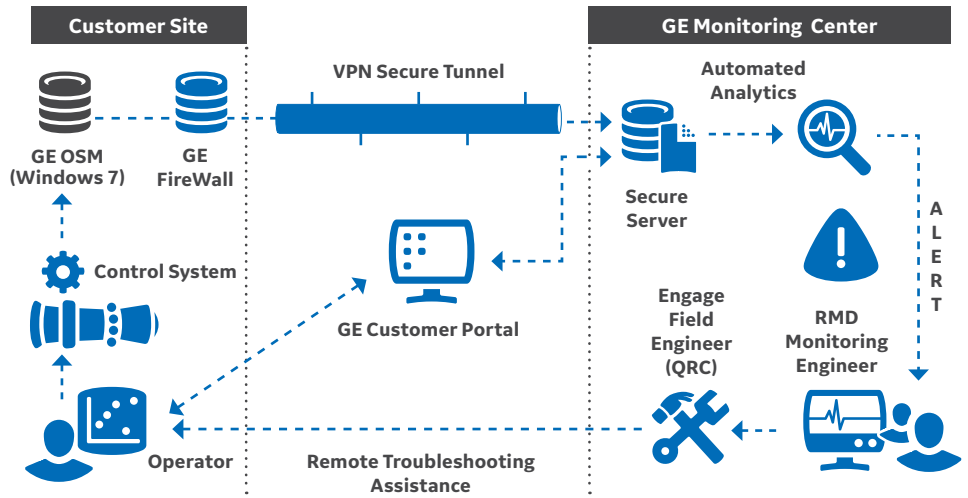
Fleet comparisons - The RM&D service is built on the broadest and deepest gas turbine fleet experience available. With more than 400 units monitored, this service provides a statistical baseline of critical parameters, to assist you in targeting areas for improvements.



Cyber security

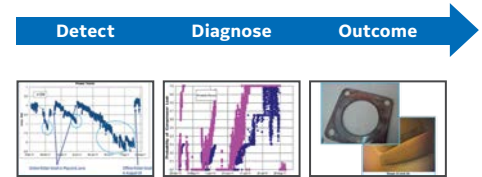
Cyber security is critical in RM&D services. The RM&D platform is configured to provide you with a secure data connection assisting you to meet government and customer regulatory requirements. Highlights of the security program include:

- Authentication and login to the OSM and GE’s network
- Virus protection
- External communication sessions logged by the OSM as events, recording the time of connection and user ID
- OSM software configured for read-only data collection.
- No files transferred from the OSM to the control system.
- Single modem configuration on all OSMs allows only one user at a time, preventing unauthorized access.
- VPN, DSL, and satellite communications require a special firewall device on site (device provided by GE).

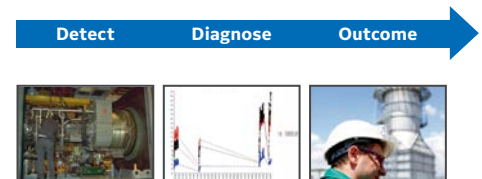


Customer experience

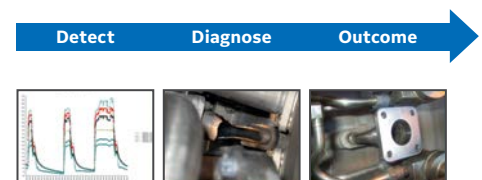
Performance recovery - The RM&D Performance module showed an accelerated performance loss of 2.5 MWs. The diagnostic algorithm targeted a compressor leak and fouling. The site was notified and the performance was recovered via an offline water wash and leak repair.



Quick return to service - The RM&D service reported a high power trip and multiple alarms. Within 15 minutes, Quick Response Center (QRC) contacted the customer to offer assistance. The engineer remotely checked the engine mode, altered the bulk schedule and brought the unit back into operation.



Avoiding failure - The RM&D service detected a shift in the sump temperature and notified the site. The customer investigation revealed a ruptured sump pressurization tube. Field repair was implemented and the unit returned to service, avoiding major damage.



GE’s global service network provides lifecycle support for more than 3,500 aeroderivative gas turbines worldwide to help you meet your business challenges and success metrics - anywhere and anytime. Our global service network connects with you locally for rapid response to your service needs.

Find your local support online:
www.ge-distributedpower.com