

# FIELD SERVICE FOR FRAME GAS TURBINES

Taking advantage of the vast technical and outage management experience of its parent company Alstom, PSM is able to undertake field service work on Frame 6B, 9E, and F-class gas turbines. Services range from boroscopic inspections and field assessment/consulting work to major inspections and to engine up-grades. We utilise resources from our global field service network and our gas turbine technical centres at PSM, Jupiter, USA and Alstom, Baden, Switzerland. OEM-standard processes, including Environmental Health and Safety, and OEM-standard documentation principles are applied; value comes from thorough documentation and close cooperation with the customer, ensuring transparency during all phases of the project.

## Customer Benefits

- + Independence from the Frame gas turbine OEM
- + Access to PSM and Alstom specialists with large Alstom gas turbine fleet experience as well as Frame 6B, 9E and F-class gas turbine experience
- + Proven processes and clear, useable documentation
- + Fast, global support through our global field service network
- + Comprehensive home office backup with engineering expert support



Figure 1. Global Field Service Network

## A Global Field Service Organisation

PSM offers field services on Frame 6, 7 and 9 (E/F-Class) gas turbines via its parent organisation Alstom Power Service (more than 20,000 employees). A population of 4,700 engineers and technicians within our global field service network, across 31 locations worldwide, is supporting our customers. We execute and are involved in more than 150 major gas turbine outages every year through our dedicated field service, logistics, and technical support organisation. We support

our customers' needs for their Frame gas turbines, offering standard inspections and outages as a complete-scope package or as a part of a long-term agreement. Selecting us as the field service partner means taking advantage of our approach to customer relations, which is based on: quality, project management excellence, transparency, trust and multinational culture. We are involved and experienced in the power generation, industrial, and oil & gas sectors.

## Field Service Offerings

The inspection services provided for Frame gas turbines range from boroscopic inspections to major inspections. We prepare, execute, and close out all standard inspections of Frame gas turbines. Scope of supply can be customised, as shown in Figure 2.

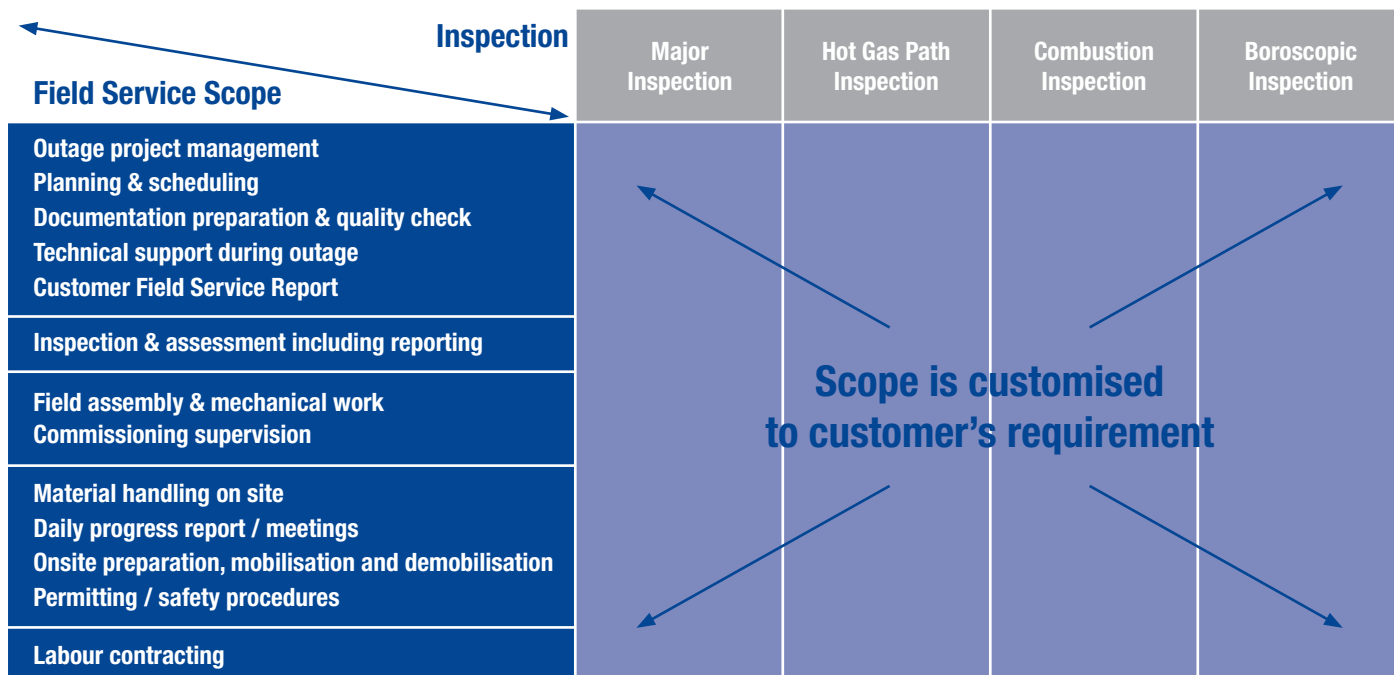


Figure 2. Standard Field Services With Customised Scope of Supply

Furthermore, we can also support our customers with additional services such as gas turbine plant assessment, plant consulting and extended-scope work, including steam turbine, generator and controls.

## Quality — Processes & Documentation

Our Frame gas turbine inspections comply with the OEM inspection recommendations. The robust and standardised processes of our field service network are employed to define, prepare, execute, and close out every gas turbine inspection. These processes and standards have been developed through years of experience and have been fully certified.

Our Management System fulfills the customers' expectations for the quality of our products and services, including the requirements of the ISO 9001:2000 standard. Further, our Management System is compliant with the requirements of ISO 14001:2004 and OHSAS 18001:1999.

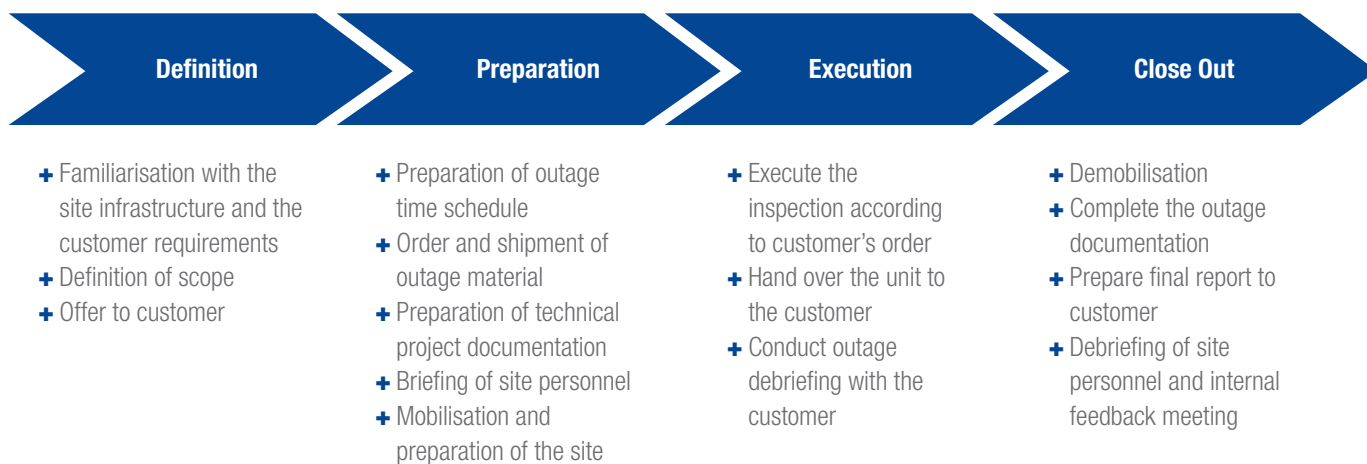


Figure 3. Robust and Standardised Outage Processes

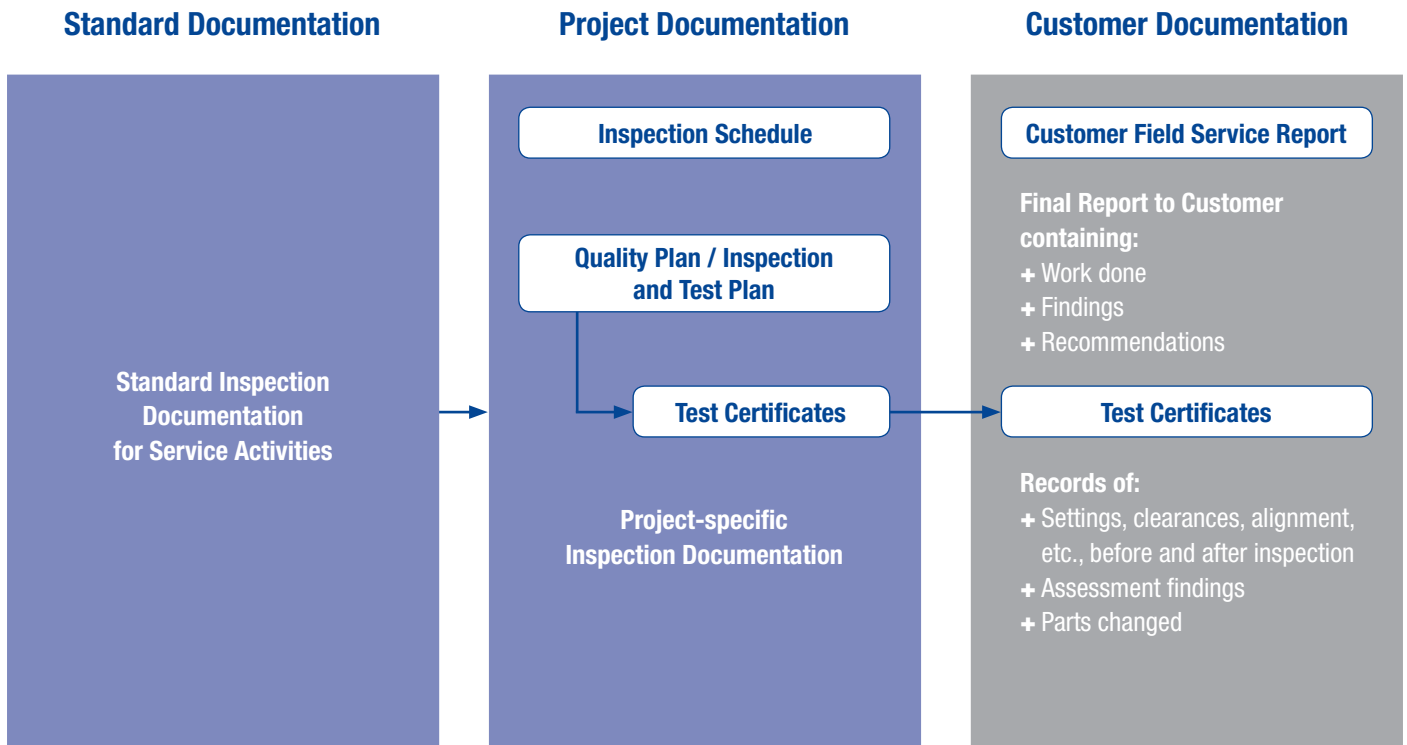


Figure 4. Key Elements of the Outage Documentation System

## Quality — Skilled People

Our field service staff are trained to our high in-house standards covering both technical and Environmental Health and Safety (EHS) requirements. Each of our employees cultivates a strong sense of responsibility and seeks out every improvement potential. Environmental protection and Occupational Health & Safety are integral components of our entrepreneurial responsibility, and are naturally compliant with legal and industry requirements on environmental protection, safety at work and health care.



Figure 5. Inspection Work on Frame 9E Turbine

## Full Transparency in Partnership

We partner with our customer to plan his inspection requirements in accordance with the plant operating regime and other boundary conditions. Such planning and scope agreement is the most efficient way to keep costs down by organising and managing contract labor, tooling, shipping cost etc. Close cooperation means flexibility and transparency, which our customers expect from an independent service provider.

We deliver detailed documentation as well as independent assessment of critical findings by our Frame gas turbine experts. Our technical centre in Switzerland also provides engineering, operational expert support and remaining lifetime statements for gas turbine parts.

Our global field service network provides quick support, wherever your plant is located. We also can help in organising capital and consumable spare parts logistics. For any specific inquiries, please refer to our PSM offices in Jupiter, FL, USA or Baden, Switzerland or to your nearest Alstom office.

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