

ES3009 RB211 closed loop VIGV control upgrade

Eliminate the possibility of compressor surge and increase operational efficiency



Engineered solution purpose

This engineered solution schedules the Variable Inlet Guide Vane (VIGV) with far greater accuracy by employing closed loop control techniques.

Applicability

All RB211 gas generators not currently equipped to operate with automatic closed loop VIGV control.

Technical description

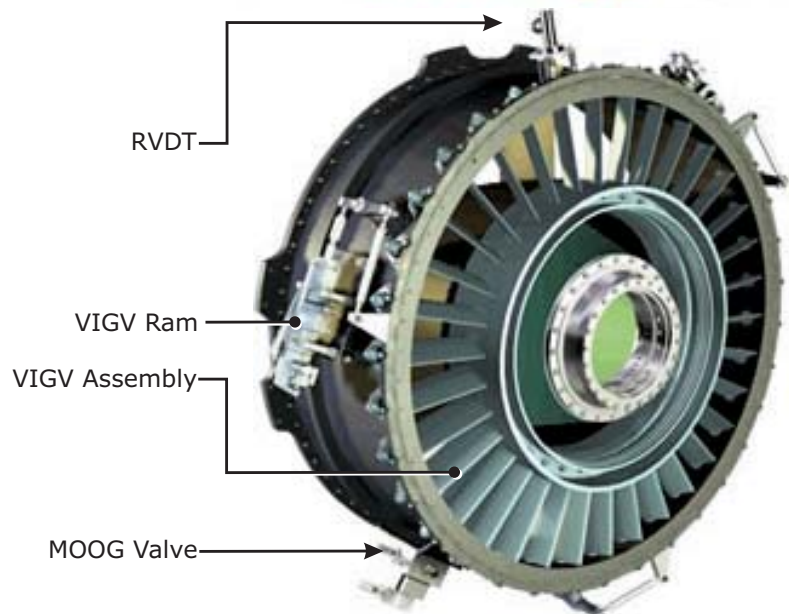
The existing P2 operated 'open loop' control system of the VIGV can be susceptible to drift arising from changing Intermediate Pressure compressor conditions. This system is replaced with an electronic 'closed loop' VIGV control system as a standalone modification.

Benefits

By eliminating VIGV drift, efficiency is maintained and the possibility of compressor surge is removed. Time-consuming maintenance of P2 'open loop' system and the need to enter the gas turbine enclosure to validate VIGV position during engine operation are no longer required.

Experience

VIGV closed loop control has been installed on over 150 engines and has accumulated operational experience



Scope of work

Remove VIGV master ram and replace with additional slave ram.

Install either Rotary Variable Differential Transformer (RVDT) or Linear Variable Displacement Transformer (LVDT)

Install Moog valve

Control modifications and associated wiring

Bill of materials

Slave ram and associated piping

Moog valve

LVDT (Mod 1213)
or RVDT (Mod 1321, 1503)

Control system modification or upgrade

Wiring

Undertaken

At site

Bundling opportunities

Controls upgrade [\[ES6006\]](#)

Instrumentation upgrade [\[ES6007\]](#)



Rotary Variable Differential Transformer