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A METHOD OF OPERATING A COMBINED CYCLE STEAM AND GAS TURBINE POWER GENERATING SYSTEM WITH CONSTANT SETTABLE DROOP

ABSTRACT OF THE DISCLOSURE

A method of operating a combined-cycle gas and steam turbine power generating system on a single shaft 16 uses as a feedback to the speed control or governor a signal 22 representing the total power output of the generator less the total output of the steam turbine 12, which is then correlated with the error signal between the actual and reference speeds to alter the fuel flow to the gas turbine. By compensating the measured generator output by subtracting a value 24 representative of the steam turbine output so that the compensated signal 26 represents the contribution of only the gas turbine 10 to the generator output, a constant settable droop speed control system may be used in a single-shaft combined-cycle steam turbine and the gas turbine system to compensate for variable heating fuel value and/or changing combustion efficiency in dry low NO_x combustion systems.

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