

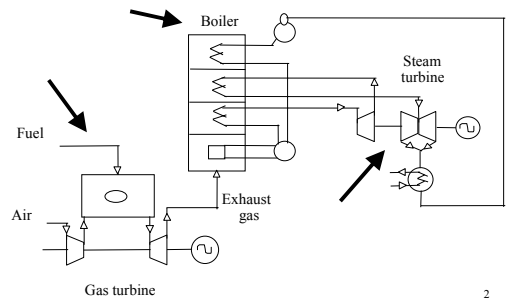
Application 1

- “Nueva Renca” combined cycle power plant
 - Steam turbine 170 MW
 - Gas turbine 200 MW



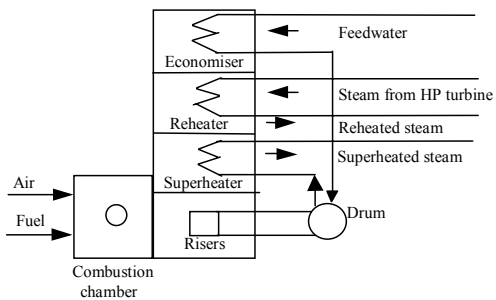
1

Process description

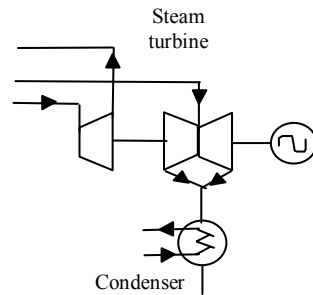


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Boiler System

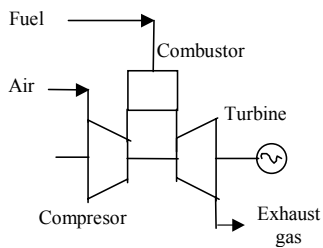


Steam turbine



4

Gas Turbine



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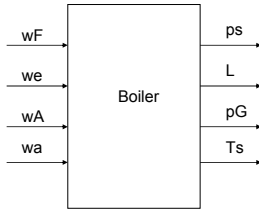
Simulator tests

- The simulator tests includes:
 - Open-loop tests
 - Closed-loop tests using PI controllers

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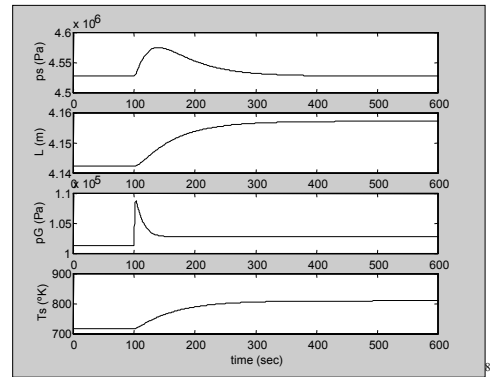
Simulator tests

- Boiler: Open-loop



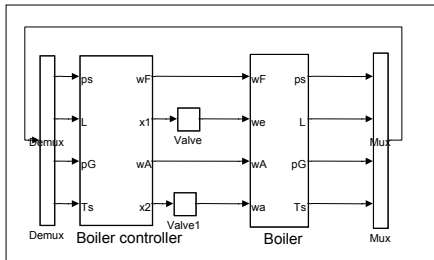
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Step response in w_f

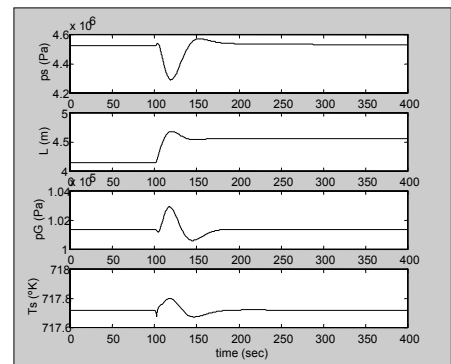


Simulator tests

- Boiler: Closed-loop



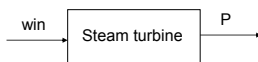
Step response in L^* . Controlled variables



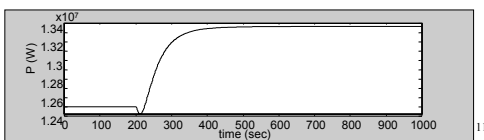
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Simulator tests

- Steam turbine: Open-loop



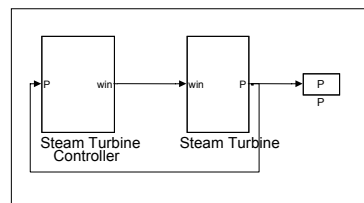
- Step response in w_{in}



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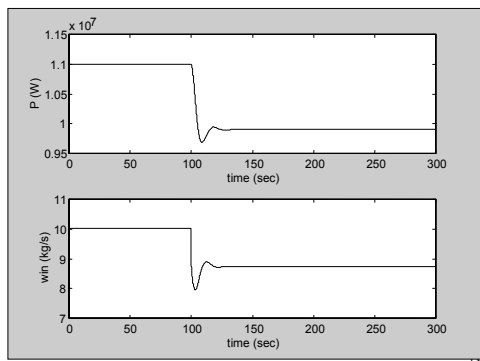
Simulator tests

- Steam turbine: closed-loop



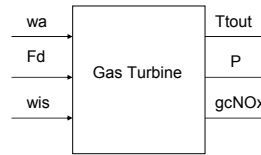
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Step response in P^* . Controlled variables



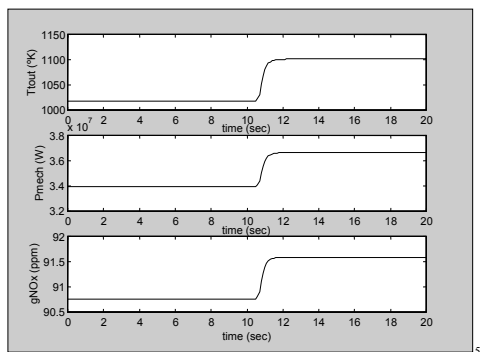
Simulator tests

- Gas turbine: open-loop



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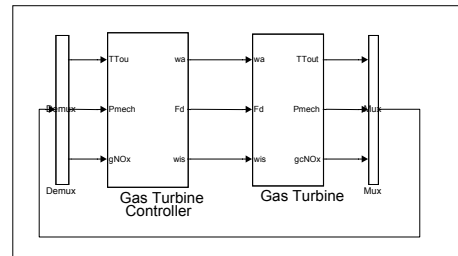
Step response in F_d



5

Simulator tests

- Gas turbine: closed-loop



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Step response in T_{Tout}^* . Controlled variables

