

# EXAMPLE: OPF

CONSIDER THE FOLLOWING POWER SYSTEM:

程序代写代做CS编程辅导



$$P_{L1} = 3.0 \text{ p.u.}$$

$$Q_{L1} = 0.3 \text{ p.u.}$$

$$P_{L2} = 2.0 \text{ p.u.}$$

$$Q_{L2} = 0.2 \text{ p.u.}$$

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$$\mathbf{Y}_{bus} = jB \begin{bmatrix} -1 & 1 \\ 1 & -1 \end{bmatrix} \text{ p.u.}$$

COST OF GENERATION:

Assignment Project Exam Help

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$$\begin{cases} C_1(P_1) = 1 + P_1 + 3P_1^2 \\ C_2(P_2) = 2 + 2P_2 + P_2^2 \end{cases}$$

OPERATING LIMITS QQ: 749389476

$$V_{min} \leq |V_i| \leq V_{max} \quad i=1,2 \quad V_{min} = 0.95 \text{ p.u.} \\ V_{max} = 1.05 \text{ p.u.}$$

$$0.5 \leq P_{G1} \leq 4.0$$

$$0.5 \leq P_{G2} \leq 3.5$$

$$-0.5 \leq Q_{G1} \leq 0.5$$

$$-0.6 \leq Q_{G2} \leq 0.6$$

$$-3.0 \leq P_{12} \leq +3.0$$

FORMULATE THE OPTIMAL POWER FLOW PROBLEM, CONSIDERING MINIMIZING THE TOTAL COST OF THE SYSTEM.