

**SOLVING HYDROTHERMAL COORDINATION USING
OPTIMIZATION TOOLBOX APPROACH**

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**MOHD RAZALI BIN SELAMAT
FACULTY OF ELECTRICAL ENGINEERING
40450 SHAH ALAM, SELANGOR DARUL EHSAN
MALAYSIA
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ABSTRACT

This paper presents an approach to solve a hydrothermal coordination problem in power system using Matlab Optimization Toolbox. The objective of this paper is to determine hydro and thermal generation coordination in order to satisfy hydro, thermal and electrical constraints while optimizing a criterion of performance. The power balance constraints, total water discharge constraints, reservoir volume constraints and constraints on operating limits of the equivalent thermal and hydro units are taken into account. The Matlab Optimization Toolbox was utilized to determine the coordination of hydro and thermal units as well as their output for one day such that the total generation cost will be minimized. The proposed method was performed on a system consisting of a thermal unit and hydro unit and the results show that the total daily operating cost is effectively minimized.

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