

## عنوان مقاله:

DYNAMIC PROGRAMMING FOR HYDRO- THERMAL SCHEDULING INCLUDING RESERVOIR CONSTRAINS

## محل انتشار:

سیزدهمین کنفرانس بین المللی برق (سال: 1377)

تعداد صفحات اصل مقاله: 6

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## خلاصه مقاله:

Economic Dispatch, which includes hydro-thermal scheduling, is a desirable area for development for a number of reasons First, it is an important part of power system operation. Second, it is computationally intensive. Third, it makes use of a number of optimization algorithms which involve an interactive process. Finally it is an area of interest to power system utilities. For these reasons, this work is directed towards an application of Dynamic Programming (DP) in the area of hydro-thermal scheduling through the use of MATLAB in UNIX environment. Dynamic programming (DP) is mathematical technique well suited for the optimization of multistage decision problems like hydro-thermal scheduling [1]. Shoults et al used DP for quasi-static economic dispatch [2]. Gibson et al proposed a new approach for solving multistage decision problems in power system operation by using fuzzy (DP)[3]. Michalland et al provided stochastic dynamic programming (SDP) for trading off hydropower and irrigation [4]. Ozelkan et al applied DP in order to determine the optimal management policy for a water reservoir by modeling the physical problem via a linear quadratic structure [5]. Travers et al employed DP to minimize system variable cost and marginal costs, They characterized the boiler-turbine generators by variable operating costs and ramp rate (linear) constraints and costs [6]. The author applied DP to hydro-thermal scheduling considering the reservoir and environmental constraints. The complete research was to develop a software program using MATLAB which can be used in power system operation as off-line calculation. The package is called the "Optimal Power System Operation" (OPSO). It can facilitate the understanding of power system optimal operation and contains several programs including hydro-thermal scheduling. It is believed that OPSO can be employed to simplify this complicated power engineering concept [7,8,9]. OPSO is also a research tool for the preliminary study of operational schemes for researchers and engineers in industry and the utilities.

## کلمات کلیدی:

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