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Multi-objective scheduling mode utilization of cascaded reservoir group in upper Yellow River during ice jam flood prevention

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The cascaded reservoir group in upper Yellow River has the integrated function of ice jam flood prevention and power generation. The main factors which affect the utilization of the ice jam flood prevention volume of Liujiaxia reservoir are analyzed during the period of ice jam flood prevention, based on the input of new power station in upper Yellow River, the method of cascaded compensating scheduling are applied and the relation curve between the ice jam flood prevention volume and the cascaded output power of Liujiaxia reservoir is calculated, and the scheduling multi-objective solution set for the reservoir is obtained. On this basis, the new scheduling mode solving the reservoir integrated scheduling problem in upper Yellow River during the period of ice jam flood prevention is discussed. Comparing with the regular scheduling results, the new scheduling mode based on multi-objective solution set has the outstanding advantage in solving the problem of multi-objective scheduling of cascaded reservoir group.