

FEASIBILITY ANALYSIS OF CHANGING WATER SOURCE SYSTEM OF MOON-LAKE RESERVOIR

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With the development of society, water resources system changes constantly. This paper takes Moon-lake reservoir as an example, and analyzes the change and development of water resource system. Taoer River can not supply water for Moon-lake reservoir. It seems a good measure to import the floodwater of Nenjiang River into Moon-lake Reservoir to maintain it. In order to investigate the measure, a detailed hydrological analysis of two rivers has been carried out. It is found that Taoer River and Nenjiang River have certain hydrological differences that is useful for water management of Moon-lake reservoir. Dalai hydrology station and Jiangqiao hydrology station in Nenjiang River lie near Moon-lake wetland. In Taoer River, the nearest hydrology stations are Taonan and Heidimiao. By use of 45 years' of hydrological data gotten from the four stations, a detailed analysis is done. In order to describe the characteristics of annual runoff amount, we have to take the average runoff amount in statistic years as a stander, and calculate the anomaly percentage of the years and then sort out the high flow or low flow type. After sort out the flow type of each year, comparison is made in succession. Flow type comparison of Taoer River and Nenjiang River is done month by month. The comparison of discharge from July-October represent the main relationship of the two rivers. The discharge during the flood season of the two rivers accounts for the main part of the whole discharge, so we analyzed the daily discharge process of the two rivers from June to October, namely 153 days. According to the above analysis, the Moon-lake Reservoir can store the flood of both Taoer River and Nenjiang River. in more than 1/3 of the total statistic years. The condition of discharge compensation exists. The differences of the two rivers in hydrological details make it possible to import Nenjiang River flood to Moon-lake Reservoir and turn floodwater into a water resource, weaken the Nenjiang River flood peak and increase the safety of downstream. Floodwater turns to be an important resource. It is feasible to change the water source system of the Moon-lake Reservoir by using floodwater of connected river Nenjiang. It is possible to import floodwater of Nenjiang River into Moon-lake Reservoir to supply enough water. And we wake up to that setting a new water supply system for reservoir by using floodwater is a dynamic process, therefore, management and decisions in it are also a new problem. The research is a part work of key research project (50139020): Study on the use of floodwater resources and the management of wetland ecological environment on Songnen Plain, which is supported by National Natural Science Foundation of China and Songliao Water Resources Commission. All of the supports are appreciated.

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