

ABSTRACT

ANALYSIS OF SEMANTOK RESERVOIR OPERATION PATTERNS IN NGANJUK REGENCY AFTER THE ENLARGEMENT OF THE NORTH WIDAS IRRIGATION SUPPLEMENT CHANNEL

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Abstract :

Semantok Dam is located in Sambikerep Village, Rejos District, Nganjuk Regency, East Java Province where the upstream of Semantok Dam is in the Tritik Irrigation Area and Ngomben Irrigation Area. Semantok Dam has 2 Intakes namely the Main Intake and Ngomben Intake. Due to the limitations of the irrigation supplementary channel that flows from the Ngomben Intake, namely in the North Widas irrigation, it is planned to enlarge the irrigation supplementary channel so that it can flow water to rice fields with a wider coverage than the water flow it passes through.

From the analysis results that have been carried out, several conclusions were obtained, namely the total existing service of 1900 ha and the results of the simulation of water availability in the reservoir, namely the highest average inflow discharge of 11,815 m³/s and the lowest of 0.560 m³/s while the highest outflow discharge of 2,580 m³/s and the lowest of 0.312 m³/s. With the enlargement of irrigation supplementation in North Widas, the results of the simulation of water availability in the reservoir that are most optimal are irrigation services in the Main Intake of 1517.4 ha and irrigation services in the Ngomben Intake of 980.5 ha so that the total irrigation service is 2497.9 ha. The operation pattern of the reservoir after the enlargement of the North Widas irrigation supplement, where the simulation results of water availability in the reservoir, which originally served 1900 ha with the highest outflow discharge of 2,580 m³/sec and the lowest of 0.312 m³/sec, now has a highest outflow discharge of 3,380 m³/sec and the lowest of 0.312 m³/sec.

Keywords: Semantok Dam, Reservoir Operation Pattern, Irrigation Supplement.

ABSTRAK

ANALISIS POLA OPERASI WADUK SEMANTOK DI KABUPATEN NGANJUK PASCA PEMBESARAN SALURAN SUPLESI IRIGASI WIDAS UTARA

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Abstrak :

Bendungan Semantok terletak di Desa Sambikerep, kecamatan Rejoso, Kabupaten Nganjuk, Provinsi Jawa Timur yang mana hulu Bendungan Semantok berada di Daerah Irigasi Tritik dan Daerah Irigasi Ngomben. Bendungan Semantok memiliki 2 Intake yaitu Intake Utama dan Intake Ngomben. Dikarenakan keterbatasan saluran suplesi irigasi yang dialiri dari Intake Ngomben yaitu pada irigasi Widas Utara maka direncanakan akan memperbesar saluran suplesi irigasi agar bisa mengalirkan air ke sawah yang cakupannya lebih luas dari aliran air yang dilewatinya.

Dari hasil analisa yang telah dilakukan, didapatkan beberapa kesimpulan yaitu total layanan eksisting 1900 ha dan hasil simulasi ketersediaan air di waduk yaitu rata-rata debit inflow paling tinggi 11,815 m³/dt dan terendah 0,560 m³/dt sedangkan debit outflow paling tinggi 2,580 m³/dt dan yang terendah 0,312 m³/dt. Dengan adanya pembesaran suplesi irigasi di widas utara maka hasil simulasi ketersediaan air di waduk yang paling optimal yaitu layanan irigasi di Intake Utama sebesar 1517,4 ha dan layanan irigasi di Intake Ngomben sebesar 980,5 ha jadi total layanan irigasi 2497,9 ha. Pola operasi waduk pasca pembesaran suplesi irigasi Widas Utara yang mana hasil simulasi ketersediaan air di waduk yang semula layanan eksisting 1900 ha dengan debit outflow paling tinggi 2,580 m³/dt dan yang terendah 0,312 m³/dt sekarang menjadi debit outflow paling tinggi 3,380 m³/dt dan yang terendah 0,312 m³/dt.

Kata Kunci : Bendungan Semantok, Pola Operasi Waduk, Suplesi Irigasi.