

INTISARI

Waduk Wonogiri memiliki daerah tangkapan air (DTA) sejumlah 10 DAS, dengan DAS Keduang merupakan DAS terbesar dari DTA Waduk Wonogiri. DAS Keduang mengalirkan sedimen dalam jumlah besar sehingga berdampak pada berubahnya volume tampungan serta keamanan waduk. Untuk mengatasi masalah sedimentasi tersebut, telah dibangun *spillway* baru dan *closure dike* yang memisahkan tampungan waduk menjadi 2 bagian, yaitu *Main Reservoir* (MR) dan *Sediment Storage Reservoir* (SSR). Diperlukan model hidrologi-hidraulika untuk pengendalian banjir sesuai dengan situasi dan kondisi pada Waduk Wonogiri.

Perangkat lunak model simulasi pengoperasian Waduk Wonogiri untuk pengendalian banjir di wilayah Sungai Bengawan Solo ini dibuat menggunakan perangkat lunak Microsoft Visual Studio dan Microsoft Access. Perangkat lunak ini melakukan simulasi perhitungan *reservoir flood routing* untuk mendapatkan pola operasi *spillway* yang sesuai agar waduk dalam kondisi aman. Pola operasi tersebut merupakan rekomendasi *spillway* yang akan beroperasi (*spillway* baru saja atau *spillway* lama ikut beroperasi) serta tinggi bukaan pintu.

Hasil pengembangan perangkat lunak memberikan informasi *monitoring realtime* di waduk. Data tersebut berupa informasi tinggi muka air, debit *release* dan tinggi bukaan pintu *spillway* baru atau lama dan atau keduanya bila dioperasikan bersamaan.

Kata kunci: Waduk Wonogiri, *closure dike*, *overflow dike*, *reservoir flood routing*

ABSTRACT

Wonogiri reservoir has water catchment areas (DTA) as many as 10 watershed (DAS), with Keduang DAS is the largest watershed of DTA of Wonogiri Reservoir. Keduang DAS channels large sedimentary so that affect on the reduction of the volume and safety of the reservoir catchment. To solve the sedimentation problem, it has been built a new spillway and closure dike that separates the reservoir catchment into two parts, the Main Reservoir (MR) and Sediment Storage Reservoir (SSR). Therefore, it is necessary to research hydrologic-hydraulic model for flood control in accordance with the circumstances that exist at of Wonogiri Reservoir.

Software of Wonogiri Reservoir simulation operation model for flood control in the area of the Solo River was created using Microsoft Visual Studio software and Microsoft Access. This software simulating reservoir flood routing calculations to obtain the appropriate spillway operation pattern so that the reservoir in a safe condition. That operation pattern are spillway recommendations which will operate (only new spillway or old spillway will operate too) along the door aperture height.

The result of the software development gives realtime monitoring information on the reservoir. That monitoring data in the form of; information of water level, discharge releases, and the door aperture height of new or old and or both spillway when operated simultaneously.

Keywords : Wonogiri Reservoir, closure dike, overflow dike, reservoir flood routing.