

## ABSTRAKSI

Bendungan / waduk berfungsi untuk menyimpan air di saat kelebihan (musim penghujan) dan mengeluarkannya pada saat dibutuhkan (musim kemarau). Pada saat ini Waduk Sempor menyangga beban yang cukup berat untuk memenuhi berbagai macam kebutuhan antara lain pemenuhan irigasi, air baku dan PLTA. Dalam upaya untuk memanfaatkan air waduk, timbul permasalahan dalam pengoperasiannya yang mengakibatkan banyak daerah yang kurang mendapatkan pelayanan air. Keterbatasan pada ketersediaan air juga disebabkan oleh sedimentasi sehingga volume tampungan efektif waduk berkurang dan mengurangi tingkat keandalan waduk. Selain itu, di sepanjang saluran pembawanya, kehilangan air juga cukup dominan. Oleh karenanya perlu dilakukan pengkajian kinerja pengoperasian Waduk Sempor. Pengkajian ini dimaksudkan untuk mengetahui kinerja waduk saat ini, pembuatan rekomendasi pengoperasian pada masa yang akan datang dan mengevaluasi kondisi jaringan irigasi Sempor.

Metode yang digunakan dalam kajian ini adalah dengan menggunakan simulasi pengoperasian menggunakan simulasi eksisting, SOP, dan *rule curve*. Simulasi dilakukan selama 10 tahun pengoperasian terakhir.

Hasil simulasi menunjukkan pada kondisi eksisting keandalan waduk adalah 60,42 %, kelentingannya adalah 41,05%, dengan nilai rata-rata “deficit rasio sebesar 35,93%. Pada simulasi menggunakan SOP, keandalannya 98,33%, kelentingannya 25 % dan nilai rata-rata “deficit rasio” sebesar 67,52%. Pada simulasi menggunakan *rule curve*, keandalannya sebesar 63,33%, kelentingannya sebesar 38,64% dan nilai rata-rata “deficit rasio” sebesar 61,22%. Dari hasil simulasi ini disimpulkan bahwa pada saat ini kondisi pengoperasian waduk kurang bagus (andal), dan pola pengoperasian yang terbaik adalah pola pengoperasian dengan menggunakan SOP.

Kata Kunci : Kinerja, Waduk Sempor, Irigasi

## ***ABSTRACTION***

*The function of the Dam / Reservoir is to store water when excessive (rainy season) and release it when required (dry season). Nowadays, The Sempor Reservoir has heavy load to fulfill various of requirements such as irrigation, water supply and hydro power. In order to exploit the reservoir, some problem have been raised while caused many areas were insufficient water. The lack of water supply was also caused by sedimentation that result effective storage volume of the reservoir reduced and its reduces the level of the reservoir reliability. Moreover, alongside of the conveyance channel, the loss of irrigation water also dominant. Therefore, it's necessary to evaluate operational performance of the Sempor Reservoir. This evaluation intended to know the reservoir performance recently, making operational recommendation for the next period and evaluate the irrigation network condition of the Sempor Reservoir.*

*Key words : Performance, Sempor Reservoir, Irrigation*

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*The dam / reservoir has function to storage water when surplus (rain season) and release it when needed (dry season). At the moment, Sempor Reservoir support burden which enough heavily to fulfill various requirement for example irrigation, water supply and PLTA (water power plant). In effort to exploit reservoir, the problem has been occurring when its operate, resulting a lot of area which less get irrigation service. Limitation of availability irrigation also because of sedimentation so that effective volume of reservoir is decreased and reducing the level of reservoir reliability. Moreover, alongside of the channel carriers, the loss of irrigation water also dominant. Therefore, its necessary to evaluate operational performance of Sempor Reservoir. This study is intended to know performance of reservoir at this time, making operational recommendation at next period and evaluate condition network irrigation of Sempor Reservoir.*

Dum has the function to keep water when it's supply is excessive (wet season) and release it when it's needed (dry season). Nowadays, Sempor Dum has heavy burden to provide many kinds of needs such as irrigation, water standard and PLTA. In order to make use of dum water, there is problem in operating causes many area get water service limited. The restriction of water supply is caused by sedimentation that result dum effective storage volume reduced and it reduces dum capacity level. Beside, there is much water lost along the tunel. So, it's necessary to investigate operating performance for Sempor Dum. The investigation aimed to know the dum performance recently, make operating recommendation in future nad evaluate Sempor irrigation network condition.