Perhitungan biaya bahan bakar pembangkit listrik termal area empat sistem kelistrikan Jawa Bali dengan minimalisasi rugai-rugi tranmisi

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Abstrak

The systematic coordination of the operation of a system of hydroelectric generation plants is usually more complex than the scheduling of an all thermal generation system. The reason is both simple and important. In the operation of a hydroelectric power system, three general categories of problems arise. These depend on the balance between the hydroelectric generation, the thermal generation, and the load.

The transmission network's incremental power losses may cause a bias in the optimal economic scheduling of the generators. The coordination equations include the effects of the incremental transmission losses and complicate the development of the proper schedule. The network elements lead to two other, important effects: the total real power loss in the network increases the total generation demand, and the generation schedule may have to be adjusted by shifting generation to reduce flows on transmission circuits because they would otherwise become overloaded. It is the last effect that is the most difficult to include in optimum dispatching.

The requirements for the operation of hydroelectric plants, one must appreciate the limitations imposed on operation of hydro-resources by flood control, navigation, fisheries, recreation, and water supply. The largest category of hydrothermal systems includes those where there is a closer balance between the hydroelectric and thermal generation resources and those where the hydroelectric system is a small fraction of the total capacity. In these systems, the schedules are usually developed to minimize thermal generation production costs, recognizing all the diverse hydraulic constraints that many exist.