

SANTI CHUMSRI : RELIABILITY EVALUATION IN A SUB-SYSTEM OF A LARGE
POWER SYSTEM BY ADEQUACY EQUIVALENTS. THESIS ADVISOR : PROF.CHARUAY
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This thesis presents a method for evaluating reliability indices in a sub-system of a large power system by adequacy equivalents. A main divided system is replaced with the adequacy equivalent model for reducing repetitive calculation, then sub-system indices are evaluated, and the result is compared with that obtained by the conventional method. A probabilistic approach by analytical method and network flow are used to analyse adequacy indices of the composite generation and transmission systems, both at load points and in the overall system.

A computer program is developed on a microcomputer to evaluate two standard test systems, i.e., RBTS 6-bus system and IEEE-RTS 24-bus system. Since a consideration has been given to higher contingency level states, reliability indices of a sub-system calculated by adequacy equivalents are reliable than those by the conventional method. For the same level of contingency, the computer times are shorter.