PRA ANALISIS *INTERMEDIATE* LOCA AP-600 DENGAN MENGGUNAKAN RELAP-5 MOD-2

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ABSTRAK

Pra Analisis *Intermediate LOCA* AP-600 dengan menggunakan *RELAP-5* MOD-2. Data parameter fisik rangkai primer dan teras diambil dari data PWR-PUN, sedangkan data untuk pembangkit uap dipergunakan data *MODEL F STEAM GENERATOR*. Fasilitas keselamatan CMT (Core Make-up Tank) berisi air yang mengandung garam borat sebanyak 70% volume dari suatu tangki yang mempunyai volume sebesar 56,6 m^3. Akumulator mempunyai tekanan gas nitrogen sebesar 45 kg/cm^2 denagn volume 8,5 m^3 berisi air yang mengandung garam borat sebanyak 48,14 m^3. Nodalisasi rangkaian simulasi terdiri dari 106 node. Pengendalian tekanan pada *pressurizer* dilakukan oleh *Time Dependent Volume*, akan tetapi dieliminasi pada saat simulasi *transien*. Simulasi mulai mengantipasi keadaan *transien* setelah sinyal tekanan rendah tercapai yaitu pada detik ke 13,09. Setelah 90 detik keadaan *transien* akumulator mulai menginjeksikan air bersama-sama dengan CMT. Selama 200 detik keadaan *transien*, cadangan air dalam CMT masih tersisa dan terus terinjeksi, sementara keadaan teras mencapai fraksi kosong maksimum pada detik ke 100 *transien*.

ABSTRACT

PRE ANALYSIS OF INTERMEDIATE LOCA OF AP-600 WITH RELAP-5 MOD-2. Pre analysis of intermediate LOCA of AP-600 was done using RELAP- 5 MOD-2. Data for physical parameters of the primary circuit and the core were taken from data of PWR-PUN, while data for the steam generator were taken from model F steam generator. Safety facilities CMT (Core Make-up Tank) contained borate solution of 70% volume of the tank of 56,6 m^3. The nitrogen pressure of the accumulator was 45 kg/cm^2 with its volume of 8.5 m^3 containing borate solution of 48.14 m^3. The simulation of the circuit was divided into 106 nodes. The pressure control of the pressurizer was done by time dependent volume, but eliminated during transient simulation. The simulation began to anticipate transient condition after low pressure signal was reached, that was at time of 13.09 seconds. After 90 seconds of transient condition the accumulator began to inject water together with CMT. Within 200 seconds of transient condition the make up water in CMT was still left and go on injected, while the core reached the maximum empty fraction within 100 seconds of trnsient condition.

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