Amounts of water injection assumed in MAAP analysis for Unit-2

[Condition for the water injection rate in the current MAAP analysis (Attachment 3)]

The amount of water injection by the reactor core isolation cooling system (RCIC) for the analysis was set at about its rated flow rate before the loss of all AC and DC power supplies. After the loss of DC power, RCIC water injection rate was set larger than rated design value in order to simulate the increasing reactor water level recorded by process computer. After reactor water level reached main steam nozzles, RCIC water injection rate was set as 30t/h, about one third of rated design value, and two-phase flow was extracted for RCIC turbine with the energy corresponding to decay heat, in order to simulate the low reactor pressure transient. (Figure 1)

The water injection by fire engines as the input for the current analysis was assumed to start when fire engines were started up after the reactor depressurization by opening the safety relief valve (SRV). And during the core melt progression, it was assumed that water injection into the reactor was interrupted when reactor pressure exceeded 1.1 MPa[gage]. Finally, the reactor water level was assumed as unable to keep the level sufficient to cover the core region. Consequently, the water injection rate in the analysis was set so that the reactor water level stayed below the fuel region. And also the water injection rate was set so as not to exceed its daily average discharge flow rate from fire engines (Figure 2).

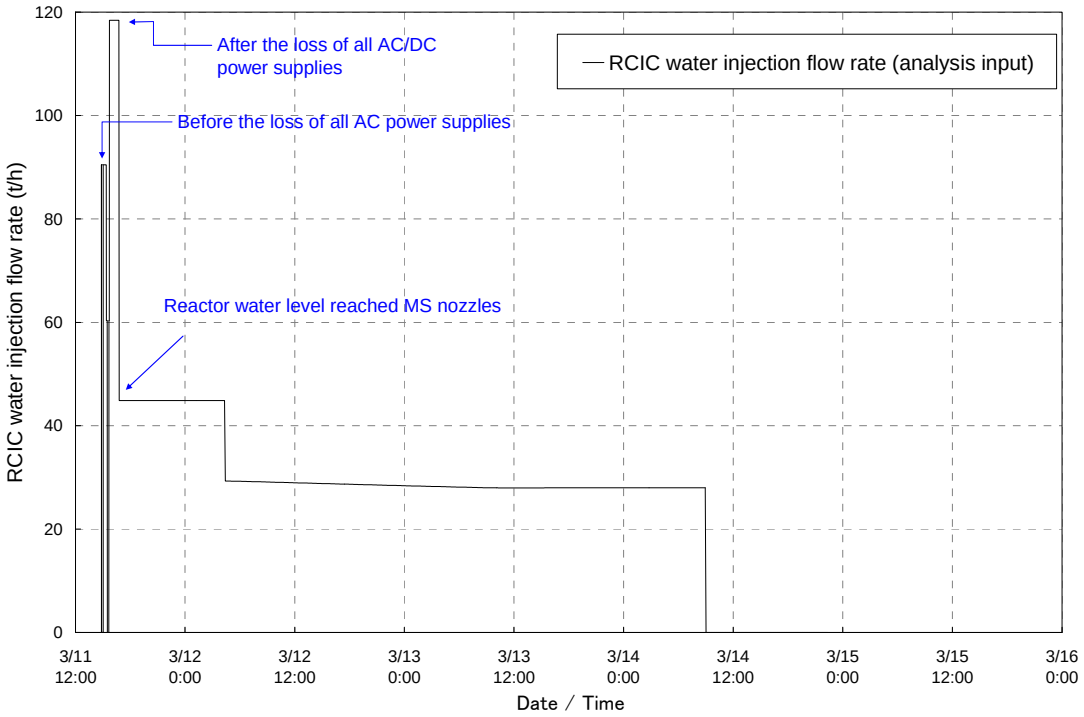

Figure 1　RCIC water injection flow rate

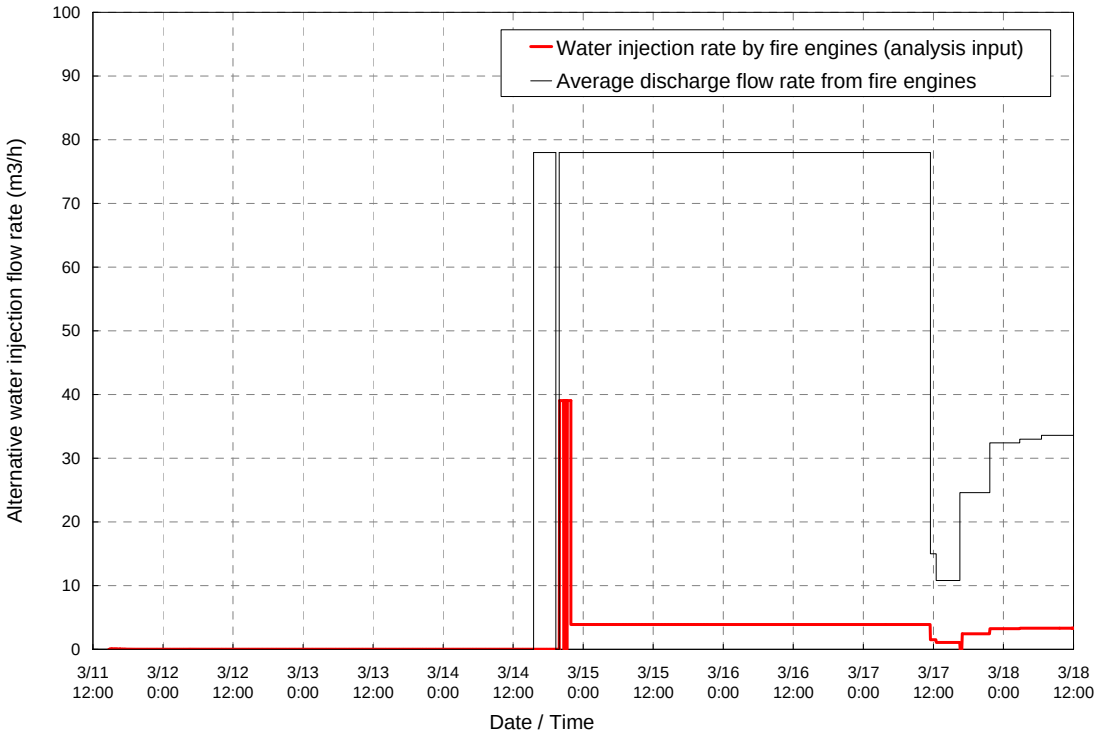

Figure 2　Water injection rate by fire engines

[Condition for the water injection rate in the previous MAAP analysis reported in March 2012 (Separate Volume 1)]

The amount of water injection by the reactor core isolation cooling system (RCIC) for the analysis was set at about its rated flow rate before the loss of all AC power supplies and at about 30t/h after the loss of all AC power supplies so that the reactor pressures observed could be simulated (Figure 3).

The amounts of water injection into the reactor by fire engines has been set in the MAAP analysis for Unit-2 as not exceeding the daily average of water injection, based on the operation records made public so far and interrupting the injection when the reactor pressure exceeded 1MPa[gage], because the discharge pressure of fire engines at that time was about 1MPa[gage] (Figure 4).

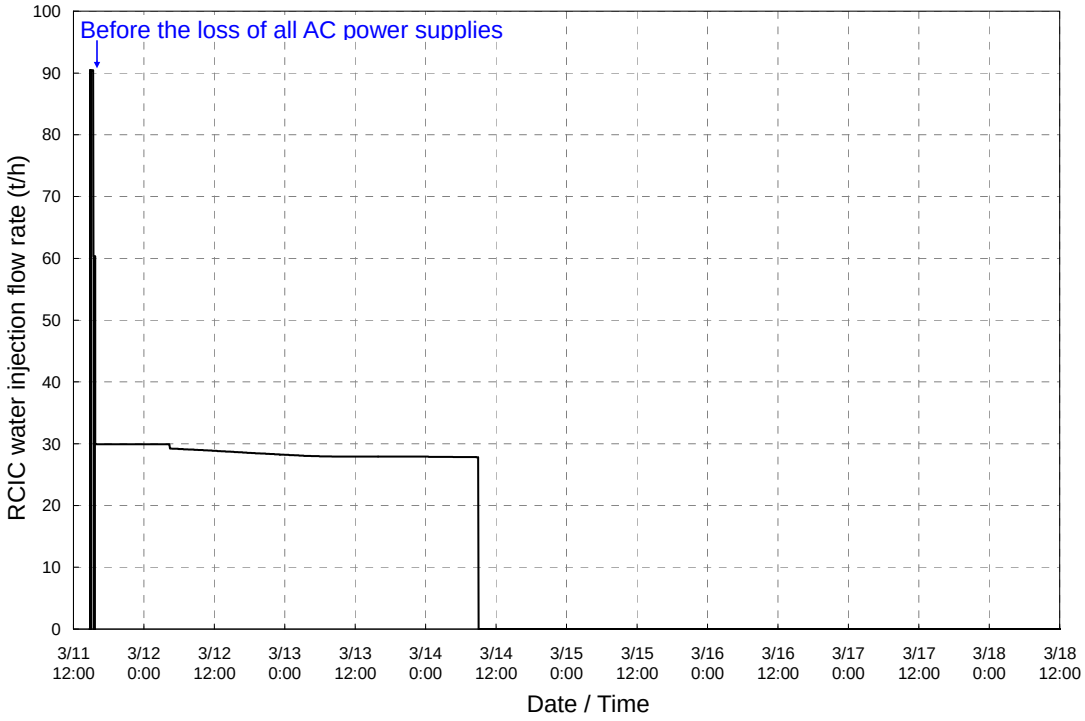

Figure 3　RCIC water injection flow rate

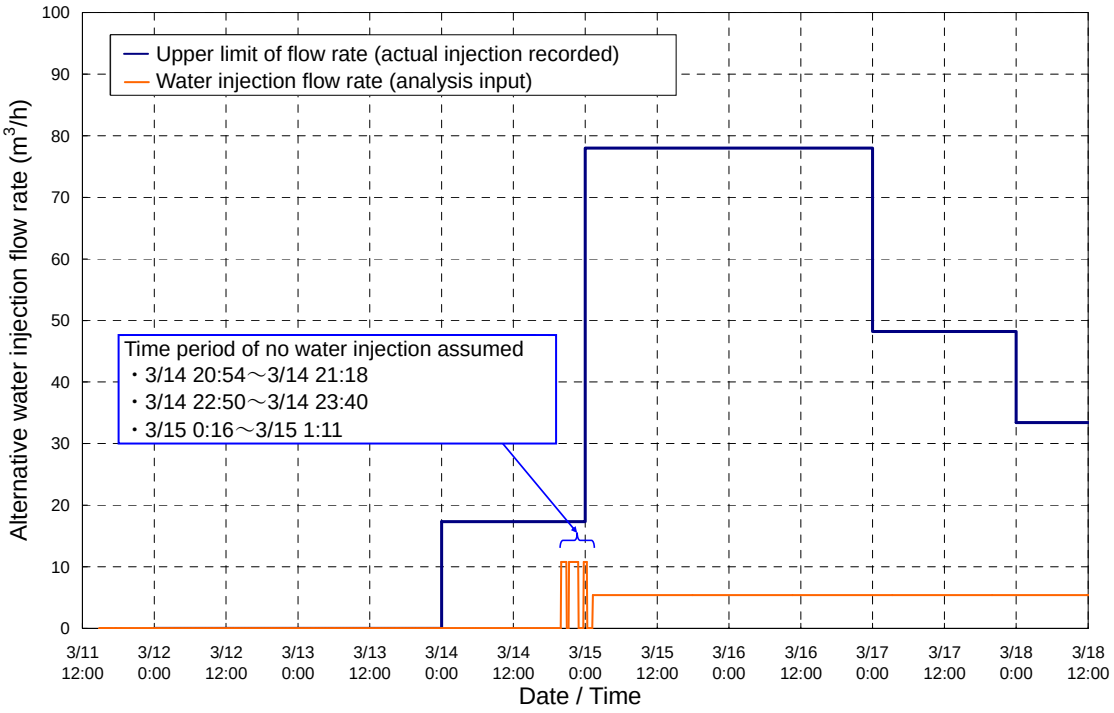

Figure 4　Water injection rate by fire engines