

Dynamics in Neighbored Two Steam Jets Condensation in Subcooled Water  
- Proposal of a New Parameter -

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Abstract

In order to understand the effect of steam jet interaction on the pressure oscillation in submerged steam jet condensation, typical three types for two-hole steam jet condensation test were considered; a case where the two holes are located in opposite direction each other and no interaction between jets are expected (B-type), a case where the two holes are located up and down and continuous interactions are expected (C-type), and a case where two holes are located with some angle and interactions are expected only near the holes (D-type). Overall oscillation trend of two-hole test was similar with that of single-hole, however the frequencies were lower than single-hole test. For a few test sets of C- and D-type, where the two jets were close and not overlapped, two dominant frequencies were observed. From this fact, it was found that the concentrative condensation occurs in the end part of jet. In particular, the dominant frequencies of B-type were lower than those of single-hole, in spite that there was no interaction between jets. This phenomenon was successfully explained by introducing liquid velocity of boundary layer near steam jet. In order to check the effect of liquid velocity once more, tests with much less water inventory in pool were performed, and the lower frequencies were obtained.