A Study on Dynamic Behavior of Depressurization System in Hydrocracker Plant

Wang Qiang, 김익현, 단승규, 윤인섭*
서울대학교
(esyoon@pslab.snu.ac.kr*)

The emergency depressurization system is normally used to reduce pressure by removing vapors quickly from pressure vessels that would be weakened by excessive temperature due to exothermic runaway reactions in high pressure process facilities such as hydrocracker unit. In this study, the emergency depressurization rate is decided which is used for depressurization valve sizing and confirmation of flare capacity, and also the temperature experienced by vessels and piping both upstream and downstream of depressurization valve during depressurization is checked which is used for material selections of these vessels and piping. By the proper studies, not only the capital cost for emergency depressurization system can be lowered, but also the plant safety can be improved. The study was conducted with the help of computer program HYSYS to reduce the effort required.