

Degraded Reactor Core Reflood Experiment (DRCRE) Test Facility:

The facility comprised of 60 kW power supply, electrical steam generator and water pumps. The facility is dedicated to study the LWR specific Severe Accident Management Guideline Validation Studies. Experiments have been performed in DRCRE experimental facility (Figure 1) to assess minimum injection flow rate required for quenching of PWR type fuel pins without exceeding the threshold temperature of hydrogen generation (980°C). DRCRE setup simulates a partially degraded PWR type reactor core with 45% flow blockage extending over 60% of the length. With injection flow rates increasing from 0.385 g/s to 1.57 g/s per pin, the quench pattern changes from conduction controlled rewetting to fluid controlled rewetting. Quenching was observed for all the injection flow rates. However, the maximum clad temperature was limited to 980°C for injection flow rates higher than 0.58 g/s per pin. Figure 2 shows the quenching map.



Figure 1 DRCRE experimental facility

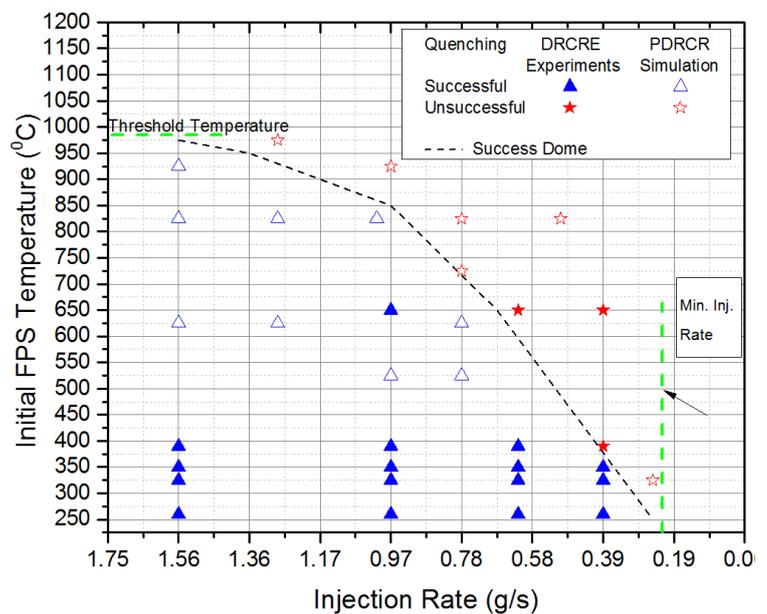


Figure 2 Quenching map