

Purdue University
School of Nuclear Engineering
NUCL 355 - Nuclear Thermal-Hydraulics Laboratory
Spring

Prelab HW 8: Two-phase Natural Circulation

Consider a two-phase air-water loop 6 m tall and 15mm diameter (see figure below). The operating pressure is 1.1 atm. The average void fraction in the riser is 0.35. The major pressure loss is in a 3 mm orifice in the bypass line. All other pressure losses are negligible.

Calculate the mass flow rate in the natural circulation loop.

