

4-6. Multi Array system

Systems with more than one array or stage are used for higher system recoveries without exceeding the single element recovery limits. Usually two arrays will suffice for recoveries up to 75%, and three must be used for higher recoveries 87.5%. These numbers are based on the assumption that standard pressure vessels with six elements are used.

Generally speaking, the higher the system recovery, the more membrane elements have to be connected in series. In order to compensate for the permeate that is removed and to maintain a uniform feed flow to each array, the number of pressure vessels per array decreases in the direction of feed flow.

A typical two-array system using a staging ratio of 2:1 is shown in Figure 4. The staging ratio is defined as the ratio of pressure vessels in two adjacent arrays, upstream vessels: downstream vessels.

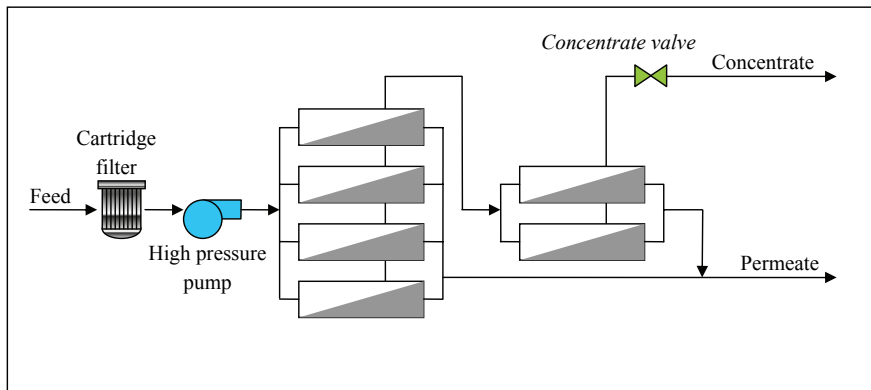


Figure 4. Two Array System