

Likelihood of Failure (API 580) (“Probabilistic approach”)



Generic failure frequencies

Equipment Type	Source	1/4"	1"	4"	Rupture
Centrifugal Pump	1	6X10 <sup>-3</sup>	5X10 <sup>-4</sup>	1X10 <sup>-4</sup>	—
Column	2	8X10 <sup>-5</sup>	2X10 <sup>-4</sup>	2X10 <sup>-5</sup>	6X10 <sup>-5</sup>
Filter	1	9X10 <sup>-4</sup>	1X10 <sup>-4</sup>	5X10 <sup>-5</sup>	1X10 <sup>-5</sup>
Heat Exchangers	1	4X10 <sup>-5</sup>	1X10 <sup>-4</sup>	1X10 <sup>-5</sup>	6X10 <sup>-5</sup>
Piping (8")	3	3X10 <sup>-7</sup>	3X10 <sup>-7</sup>	8X10 <sup>-8</sup>	2X10 <sup>-8</sup>
Pressure Vessels	2	4X10 <sup>-5</sup>	1X10 <sup>-4</sup>	1X10 <sup>-5</sup>	6X10 <sup>-5</sup>
Storage Tanks	5	4X10 <sup>-5</sup>	1X10 <sup>-4</sup>	1X10 <sup>-5</sup>	2X10 <sup>-5</sup>

Damage factor

- Damage rate
- Inspection effectiveness

Universal factor

- Plant condition factor
- Weather condition factor
- Seismic condition factor

Mechanical factor

- Complexity factor
- Construction code factor
- Life cycle factor
- Safety factor
- Monitoring factor

Process factor

- Continuity factor
- Stability factor
- Relieve valve factor

Generic Mngmnt Factor

