

Downstream: Refinery

EQUIPMENT TYPES	Efficiency Loss	Seal Failure	Bearing Failure	Rotating Equipment Failure	Valve Failure	Tube Failure	Fouling	Combustion Problems	Overheating	Carry Over	Flooding
Reciprocating Compressors	X	X	X		X		X				
Axial Compressors	X		X	X			X				
Centrifugal Compressors	X	X	X	X			X				
Centrifugal Pumps	X	X	X								
Electric Motors	X		X	X			X		X		
Expander Turbines	X		X	X			X				
Steam Turbines	X		X	X			X				
Gas Turbines	X		X				X				
Heat Transfer Equipment	X						X	X	X		
Control Valves						X	X				
Fired Heaters	X				X	X	X	X			
Boilers	X					X	X	X	X	X	
Catalytic Processes	X					X	X		X	X	X
Gas-Liquid Contact									X	X	X
Liquid-Liquid Contact	X								X	X	X