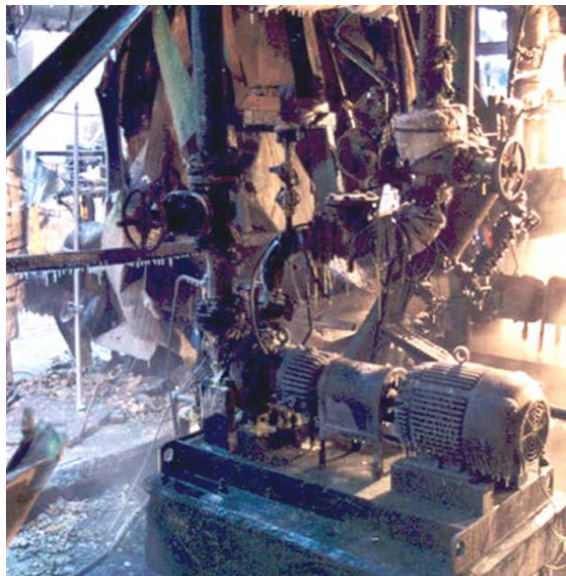


The Seal That Didn't Perform!



What is a Seal?

(Hint: We are not talking about the circus!)

Many, probably most, pumps have some type of mechanical seal. In GENERAL terms, it is a device which prevents significant leakage of the fluids in pumps and other powered machinery items. Seals come in a number of different designs and a wide array of different materials of construction. While the function of a mechanical seal is relatively simple, selecting the correct seal for a given application requires judgment and experience.

Why do they Leak?

Nothing complicated here:

- 1) they wear out,
- 2) they are not installed correctly,
- 3) they are not operated properly, or
- 4) they are made of wrong materials.

Leakage rates can be very significant with some types of failures!

Here's What Happened:

The pump in this picture was destroyed because the mechanical seal failed. The light hydrocarbon being pumped was released; it ignited and burned – causing extensive local damage. No one was near the pump when the fire occurred, so there were no injuries.

What can I do?

- When you walk through areas, always be alert for liquids around pumps. Liquid presence may mean a seal leak.
- Operate the pump the way it was designed to function. For instance, if the seal has a barrier fluid or seal purge, make sure there is fluid in the reservoir and that it is flowing to the pump. Understanding these special systems and their proper operation will extend seal life and minimize failures.
- Never 'dead head' (no liquid flow) a pump. Pumps and seals can heat significantly when there is no liquid flow. This can lead to a number of unwanted consequences, including seal failure.
- During maintenance activities, be sure the installed seal is made of the correct materials.
- When you detect a leaking seal, take the pump out of service promptly and get it repaired. Seal leaks quickly get worse with time.

Understand the special features of the mechanical seals in your facility – monitor their performance and take care of them!