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Steam System

- Troubleshooting
- Training
- Design Assistance

Wet Steam Glossary

Carryover is the flow of small water droplets out of the boiler. According to GE Betz: *“Carryover can never be eliminated completely. Even the best boiler designs operating with well-controlled water chemistry produce trace amounts of carryover.”*

Entrainment is the minerals dissolved in the carryover.

Foaming is the frothy bubble development at the water surface. Foaming is caused by accumulations of feedwater minerals, chemical additives, or oil. Check for blowdown, leaking fuel oil or water heaters, and treatment upsets.

Priming is really severe carryover where lots of water surges out of the boiler with the steam. Foaming or sudden load/pressure swings can cause priming.

Accumulators are tanks to hold steam as a reserve for priming prevention during intermittent heavy loads.

Steam quality is a dryness measurement. Steam that is 85% quality would have 15 pounds of liquid water in 100 pounds of flow. Steam quality can be indirectly measured by measuring entrainment (dissolved minerals) or directly measured with a calorimeter.

Drip Legs drain liquid water from the system at low points and at intervals along the system.

Separators improve steam quality by disengaging liquid water and draining it from the system.

Steam Filters usually act like a separator, plus have a sintered metal or charcoal element to remove impurities.

NCG's – Non-condensable gases are found in the steam piping. They might be air, oxygen, or carbon dioxide. They are pushed by condensing steam into the far reaches of the system. They can cause corrosion and poor heat transfer.