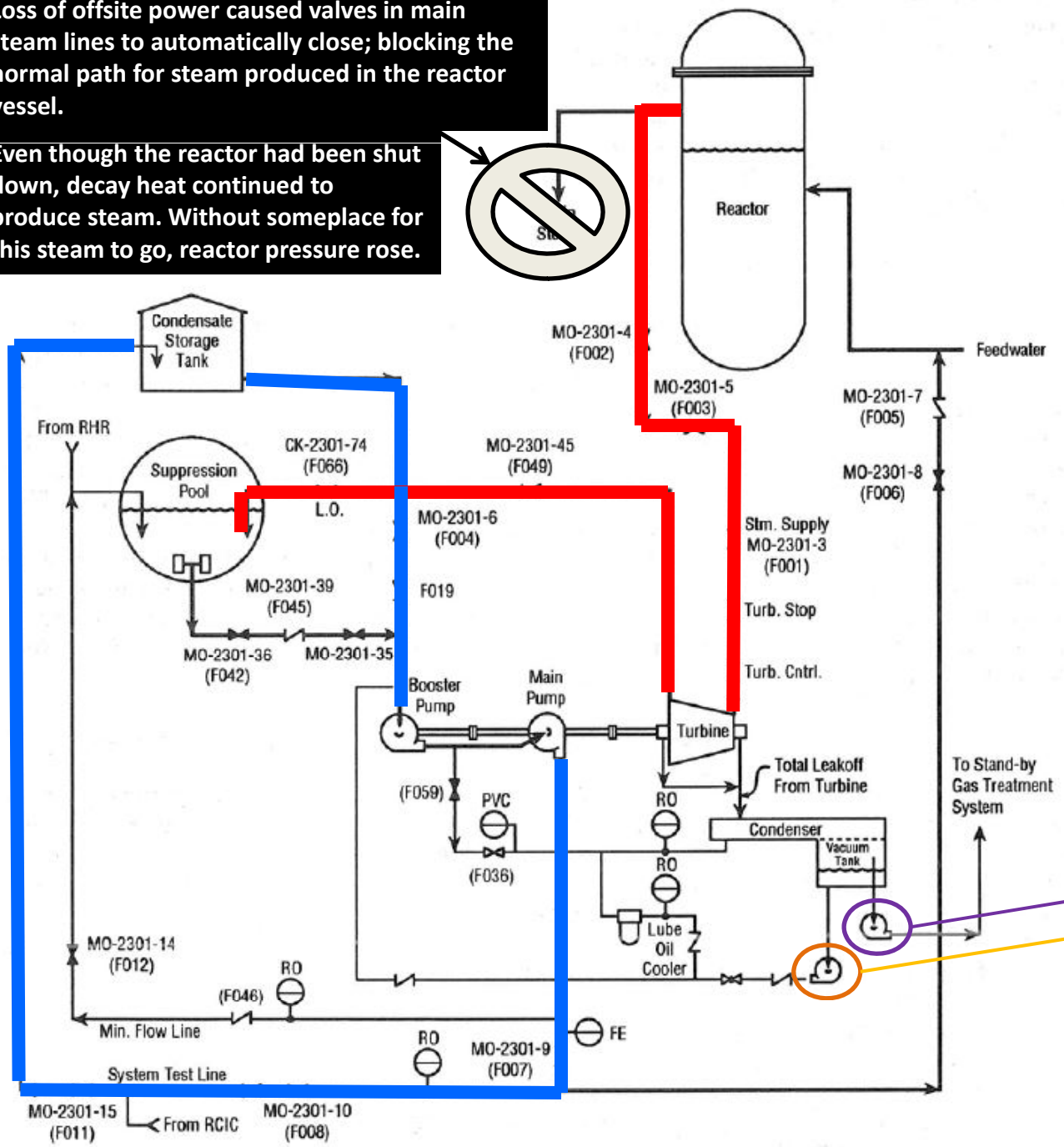
Quick Backgrounder on Pilgrim's first 2015 Event

Loss of offsite power caused valves in main steam lines to automatically close; blocking the normal path for steam produced in the reactor vessel.

Even though the reactor had been shut down, decay heat continued to produce steam. Without someplace for this steam to go, reactor pressure rose.



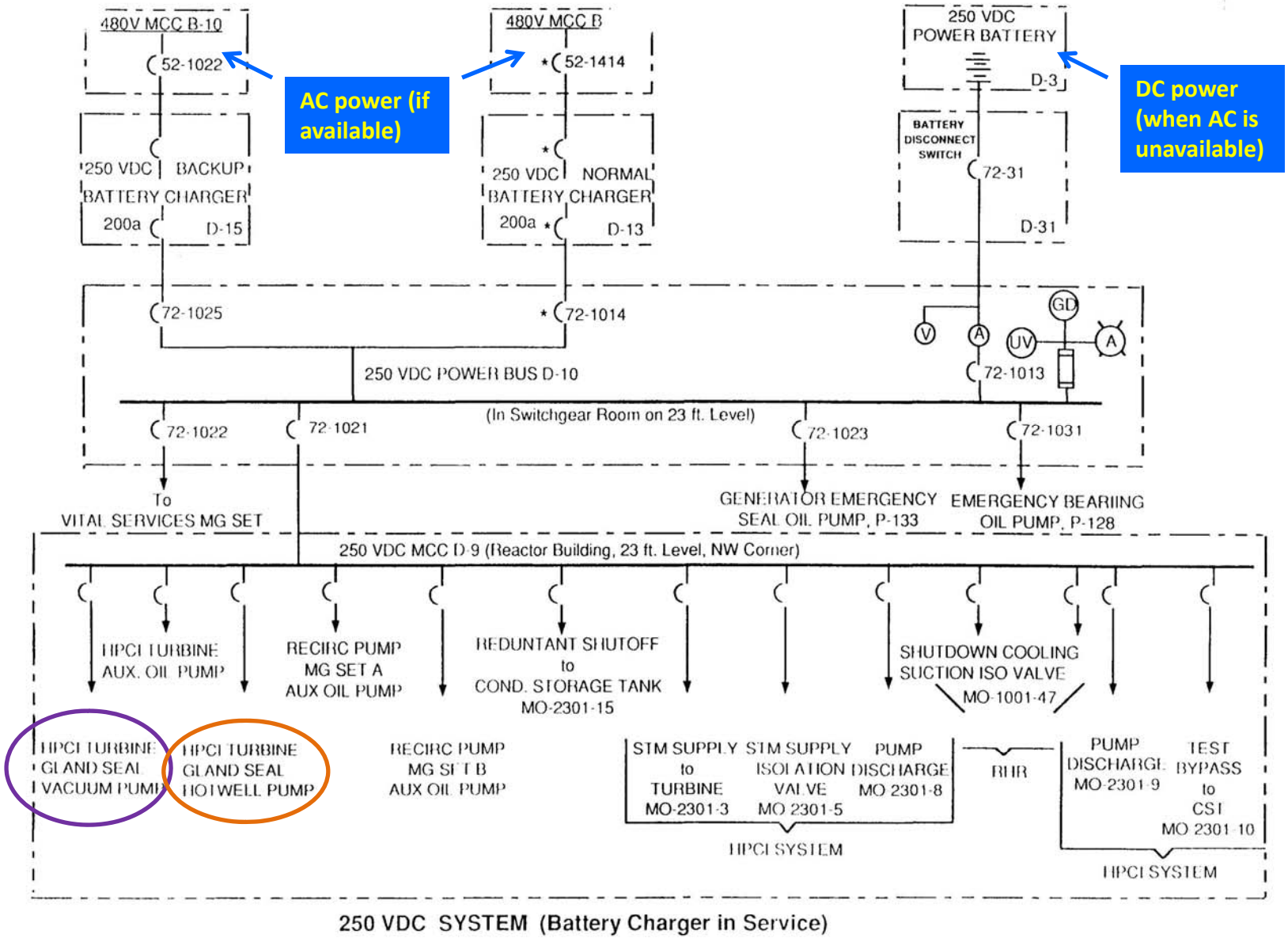
To control pressure inside the reactor, the operators ran the High Pressure Coolant Injection (HPCI) system. It takes steam from the reactor vessel to spin a turbine. The steam exits the HCPI turbines and flows into the torus.

The HPCI pump took water from the Condensate Storage Tank and returned it to the CST.

Makeup to the reactor vessel to compensate for the inventory loss (e.g., the fluid leaving as steam to HPCI), was being provided by the Reactor Core Isolation Cooling (RCIC) system. Like HPCI, RCIC uses steam from the reactor vessel to spin a turbine connected to a pump. Thus, it also serves to control pressure. But HPCI is nearly 10 times larger than RCIC and thus does a better job controlling pressure.

Operators had to turn HPCI off, reportedly due to a problem with either the gland seal blower or the condensate pump.

After HPCI was turned off, operators opened safety/relief valves to discharge steam from the reactor vessel through pipes into the torus.



250 VDC SYSTEM (Battery Charger in Service)

Both the gland seal blower and the condensate pump are powered from the safety-related 250 volt banks of batteries. Steam leaking past the turbine shaft seals collects in the gland seal condenser. The gland seal blower sends air and non-condensibles gases to the Standby Gas Treatment System for release. The condensate pumps returns condensed steam and the process water that was used to cool it back to the HPCI pump suction pipe.