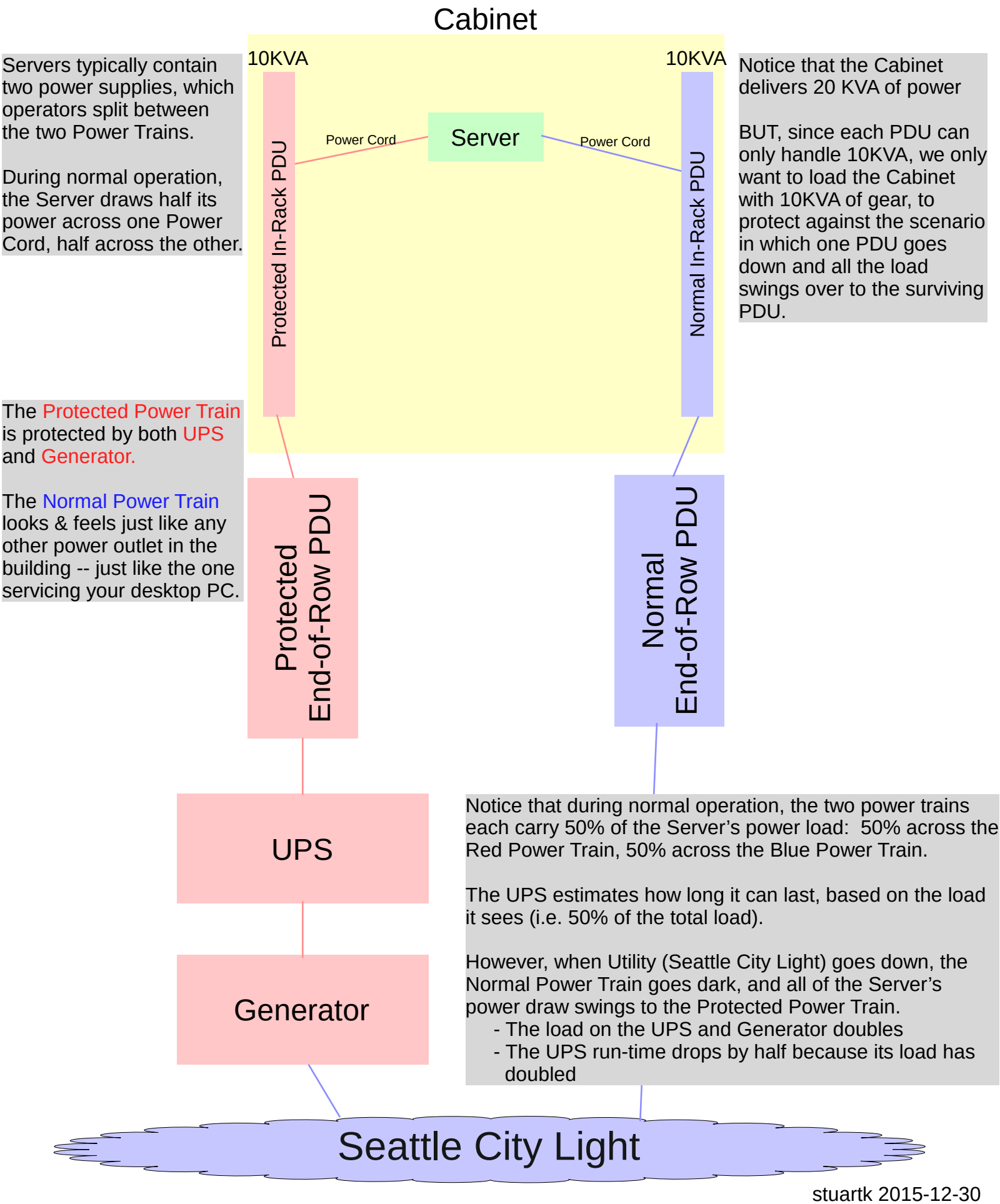
Typical Cabinet-Level Power Train in Data Center



Servers typically contain two power supplies, which operators split between the two Power Trains.

During normal operation, the Server draws half its power across one Power Cord, half across the other.

Notice that the Cabinet delivers 20 KVA of power

BUT, since each PDU can only handle 10KVA, we only want to load the Cabinet with 10KVA of gear, to protect against the scenario in which one PDU goes down and all the load swings over to the surviving PDU.

The Protected Power Train is protected by both UPS and Generator.

The Normal Power Train looks & feels just like any other power outlet in the building -- just like the one servicing your desktop PC.

Notice that during normal operation, the two power trains each carry 50% of the Server's power load: 50% across the Red Power Train, 50% across the Blue Power Train.

The UPS estimates how long it can last, based on the load it sees (i.e. 50% of the total load).

However, when Utility (Seattle City Light) goes down, the Normal Power Train goes dark, and all of the Server's power draw swings to the Protected Power Train.

- The load on the UPS and Generator doubles
- The UPS run-time drops by half because its load has doubled

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