

# Use Case: Power Generation

## Control Center Communications

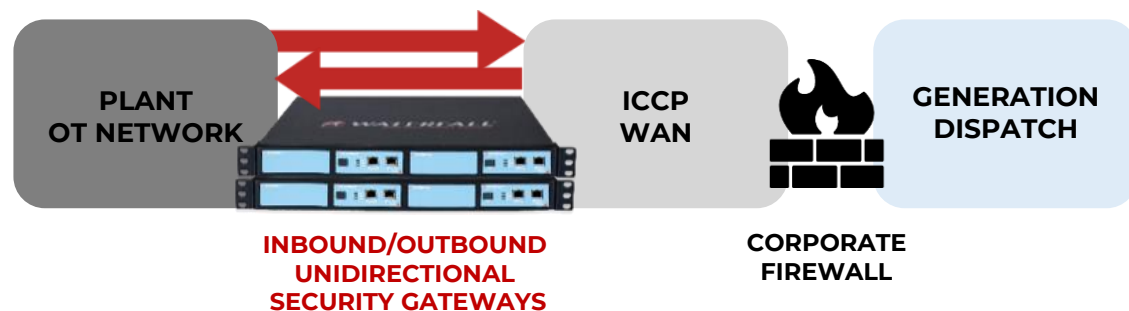
Base-load plants frequently need to communicate with regional authorities such as the power utility's generation-dispatch control center. The protocol of choice is often ICCP, but may also be and of DNP3, IEC 60870-5-104, or 61850 MMS. For some base-load plants, this communication is purely a reporting function; change orders from the regional authority are infrequent and are accomplished through schedules agreed long in advance. Base-load plants can be secured by outbound-oriented Unidirectional Security Gateways, as described in the IT/OT use case above.

### Secure Control of Peaking Plants

Peaking plants are more complex: they require continuous reporting to a generation dispatch center, and require a continuous, second-by-second stream of new setpoints from the dispatch center.

Unidirectional Security Gateways replicating the power plant's ICCP salve or other protocol salve devices to a generating dispatch center meet the needs of some base load plants, and inbound/outbound Unidirectional Gateways can be deployed to meet the needs of all remaining plants. The outbound Unidirectional Gateway replicates the plant's ICCP server to the corporate network or to a dedicated DMZ, so that the dispatch center's EMS/SCADA master can poll the plant replica. The inbound Unidirectional Gateway replicates the EMS ICCP server back into the plant where plant systems query the replica for new setpoints.

## Theory of Operation



Two Waterfall Unidirectional Security Gateways create independent Inbound/Outbound application replications for secure bi-directional information transmission between the power plant OT network and the Generation Dispatch center network.

# SECURITY BENEFITS



Absolute protection against external attacks for plants that do not require continuous commands from a control center



Inbound/Outbound gateway configuration MUCH stronger than firewalls



Permits only reasonable setpoint values to enter the plant control system from generation-dispatch control centers

