

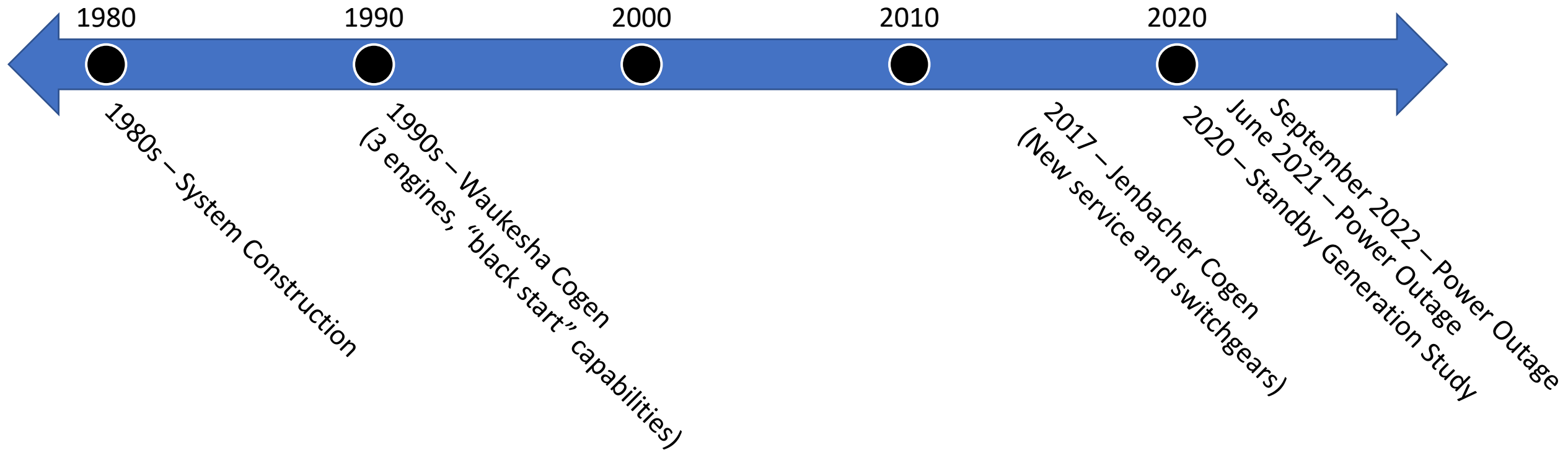


Regional Treatment Plant Emergency Power System

Agenda Item 8

November 10, 2022

Brief History of RTP Power System

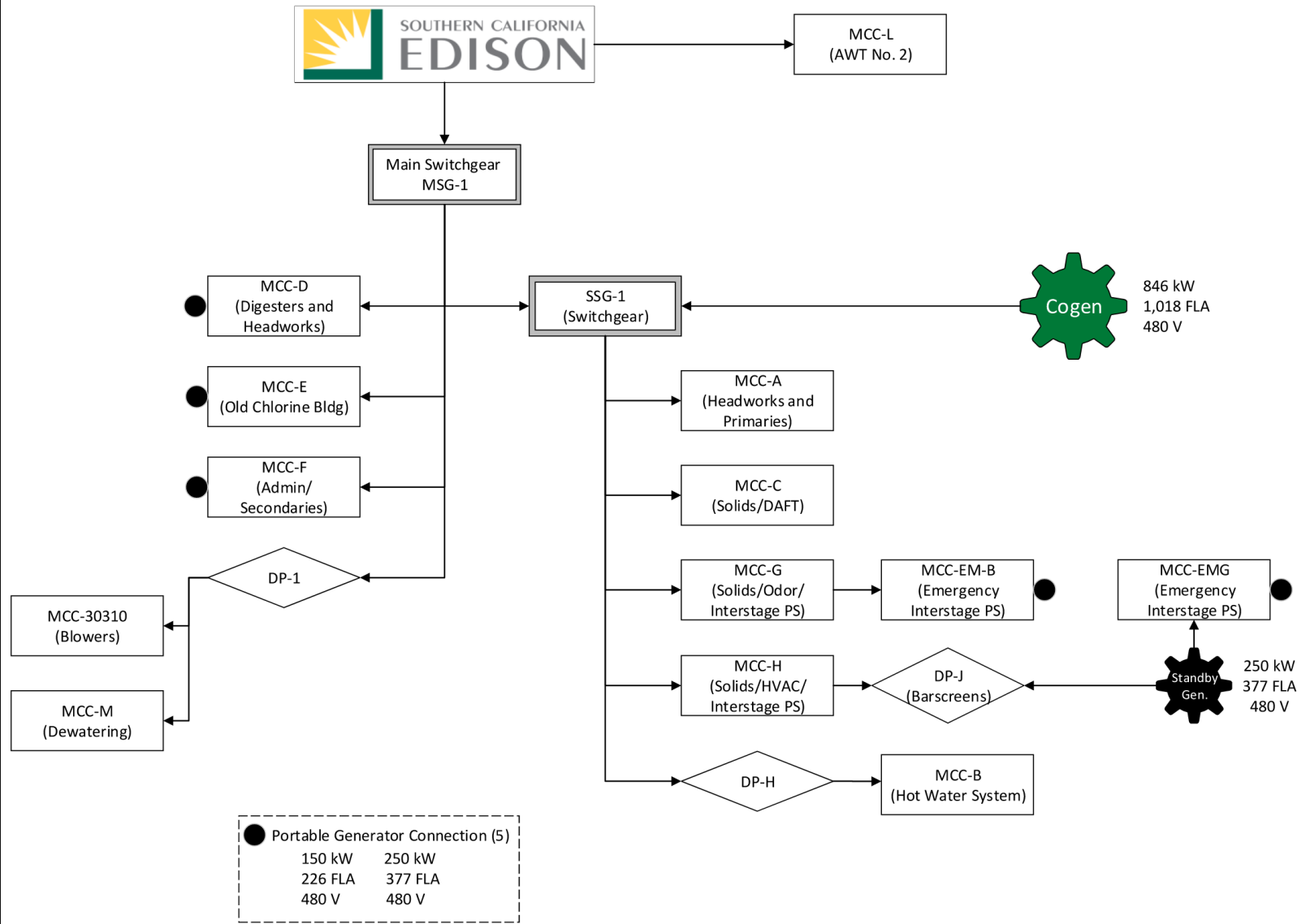


2017 Cogen Project

- Removed
 - 3 Waukesha cogen engines
 - Main switchgear (MS-1)
- Added
 - Jenbacher cogeneration engine
 - Electrical service from SCE
 - Main switchgear (MSG-1)
 - Intermediate switchgear (SSG-1)
 - Gas conditioning system
 - Boiler



RTP Power System Diagram

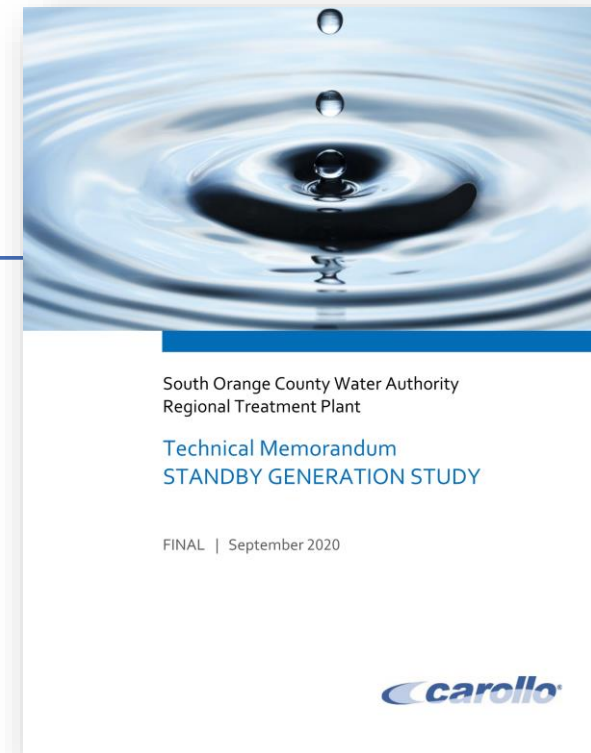


Cogen Specs

- 846 kW and 1018 Amps
 - Sometimes overproduces, sometimes underproduces
- Sizing considerations:
 - Gas production
 - Equipment loads
 - SCE/SGIP/SCAQMD limitations
- Additional features:
 - Island Mode – ability to run without utility power
 - Black Start – ability to start without utility power

2020 Standby Generation Study

- Carollo Engineers (designers of the 2017 cogen project)
- Looked at possibility of Island Mode
 - SCE agreement
 - Load shedding
 - No gas blending
 - Modifications to switchgear and controls
 - Entire plant load and inrush current
- *“Relying on cogeneration for standby power is not recommended”*
- *“Carollo’s recommendation to provide the RTP with standby power is to install permanent centralized generation, with a permanent load bank.”*



2020 Standby Generation Study

Table 1 Existing MCCs and Standby Power Requirements

Designation	Service	Year Installed	Standby Capability	Connected Standby Load ⁽¹⁾
MCC-A		1984		400 kVA
MCC-B/DP-H		2005/2017		100 kVA
MCC-C		1984		125 kVA
MCC-D/VFD-D/DP-D		1984/2008	Receptacle	315 kVA
MCC-E		1984	Receptacle	155 kVA
MCC-F/VFD-F		1984	Receptacle	210 kVA
MCC-G		1984		325 kVA
MCC-H/VFD-H		1984/2008		105 kVA
MCC-EMG/DP-J		2009	Receptacle, Permanent Generator	190 kVA
MCC-EM-B		2005	Receptacle	175 kVA
MCC-30310		2005		450 kVA
MCC-M		1996		1,125 kVA

Load Requirements

- Potential Loads: 3,000 kVA
- Typical Loads: 1,400 kVA
- Average Cogen Production: 800 kVA
- Temporary Generator during Construction: 1,875 kVA (1.5 MW)

What Now?

- Potential options identified:
 1. Centralized backup generator
 2. Distributed backup generators
 3. Cogeneration Island Mode + Black Start

- Potential actions:
 - Study
 - Preliminary design
 - Buy portable generators