

# San Antonio Water System: Dos Rios WRC Electrical System Improvements - Phase 1

*Scope Summary and Construction Sequence*



# DOS RIOS WRC



# Presentation Outline

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# Scope Summary

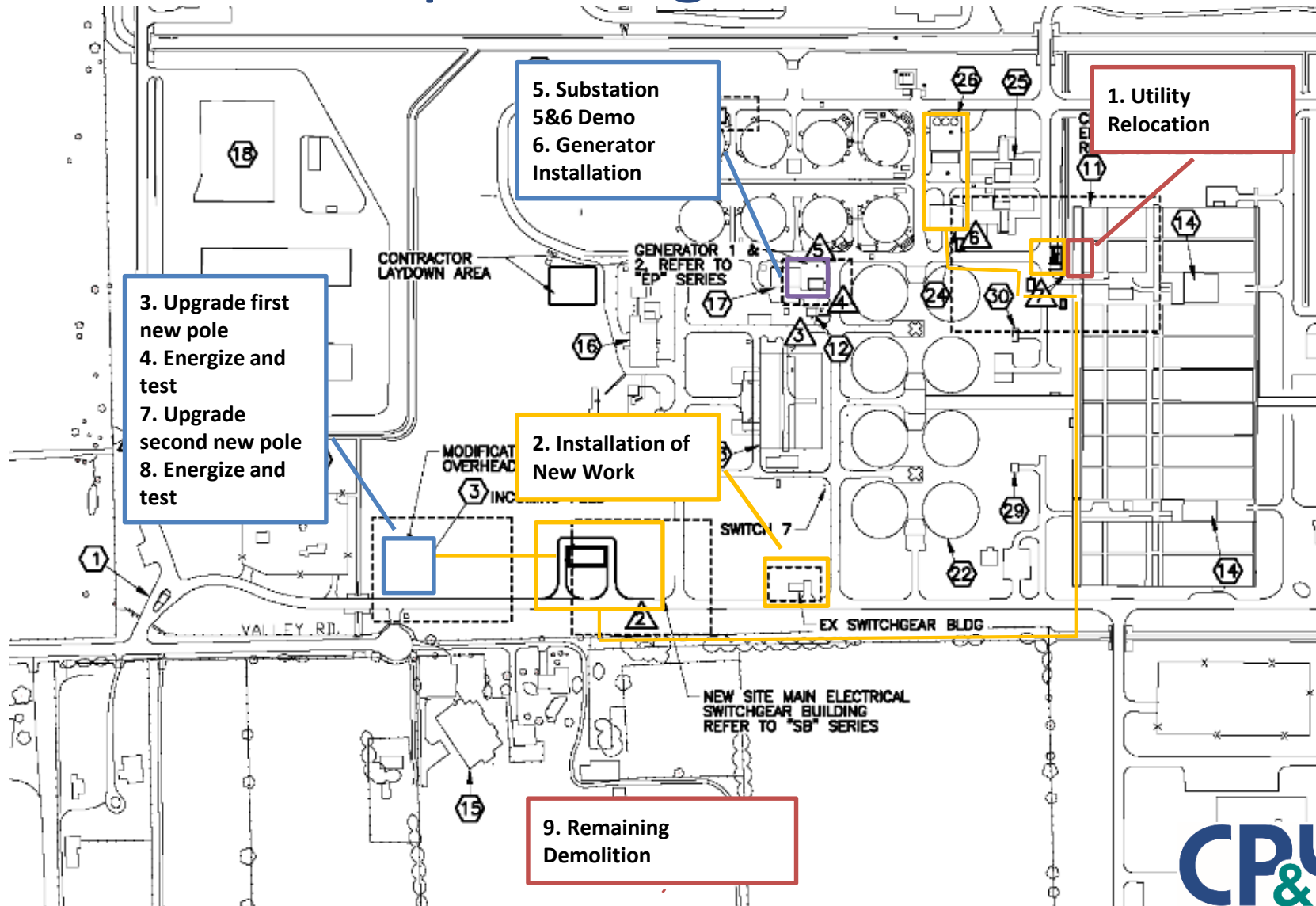
1. New Site Main Electrical Switchgear Building and Cable Vault.
2. Aeration Electrical Building for the Channel Aeration Blower (CAB) MCC's
3. Electrical and Instrumentation improvements, equipment procurement, and installation
4. Miscellaneous Site Civil; roads, grading, and utility relocations
5. 15kv & 480 V Electrical Distribution network

# Special Constraints

Including but not limited to the following:

1. Contractor shall field verify, investigate, and confirm all affected underground utilities prior to beginning construction.
2. Relocation of Large Utility Lines prior to beginning construction of proposed improvements.
3. Incoming pole utility work shall not be performed until new infrastructure is in place.
4. Demolition of Substations 11 & 12 shall not occur until the new installation and energization of the new Stage 1 Aeration Electrical Building
5. All process equipment affected by the scope of this project shall be switched and rolled from the existing feed to its new feed one at a time before demolition of any existing service

# General Sequencing



# Construction Phases

## 1. Phase 1

- New Infrastructure and Building Installation – congruent construction items

## 2. Phase 2

- Improvements to incoming service feeder 1

## 3. Phase 3

- Generator No. 1 & 2 Replacement

## 4. Phase 4

- Improvements to incoming service feeder 2

## 5. Phase 5

- Demolition



# Potential Concurrent Construction – Phase 1

The following scopes can occur concurrently before any other construction takes place

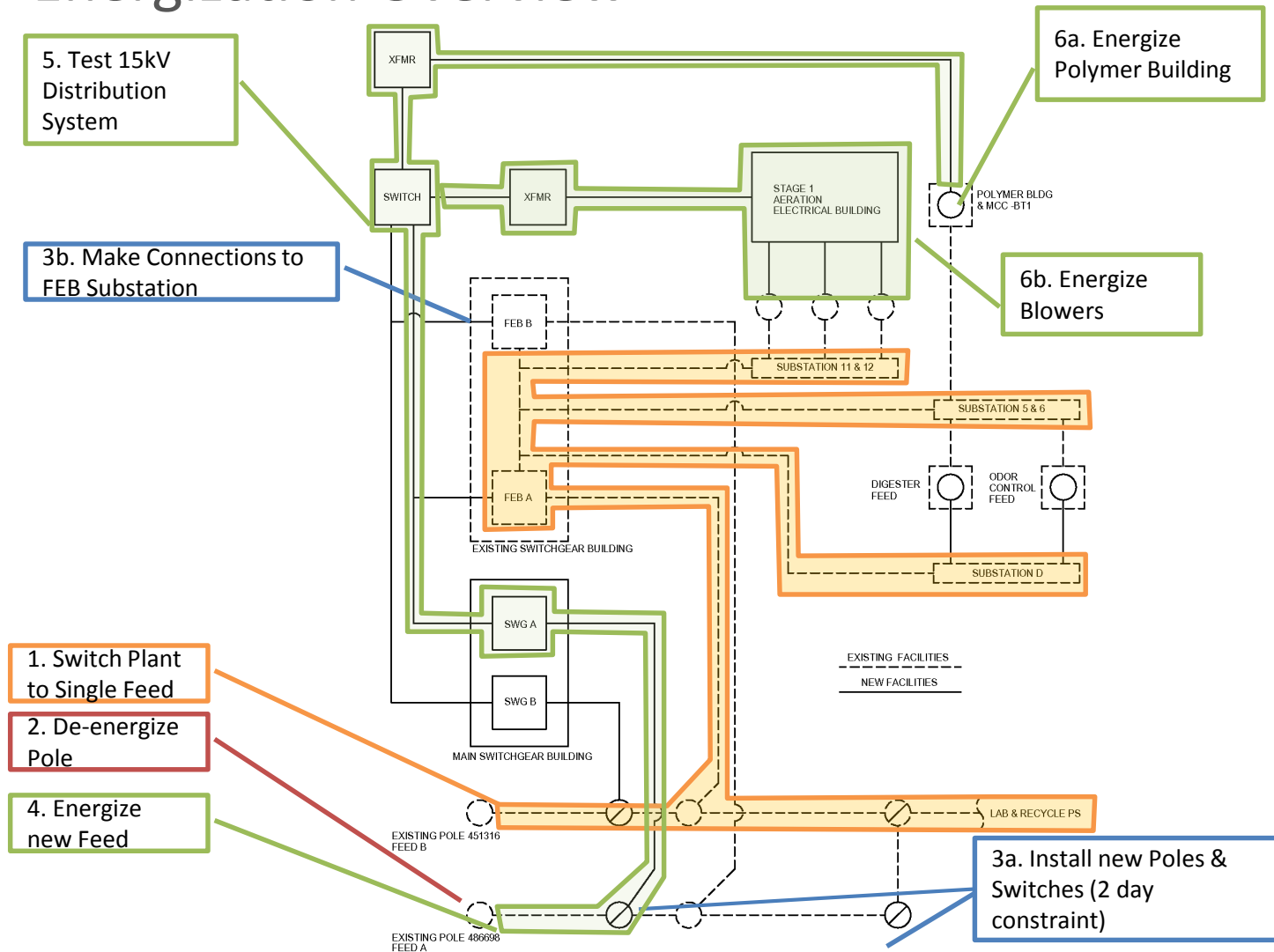
1. **New Main Electrical Switchgear Building**
  1. Relocate existing lighting circuit
2. **New 15 kV Electrical Distribution**
  1. Ductbanks, manholes, and conduit bridges
  2. Transformers and pad mounted switches with pads
  3. Conduit and conductors
3. **New Stage 1 Aeration Electrical Building**
  1. Relocation of existing 42” spike line and 16” water line
  2. 480V ductbank, conduit and conductors.
  3. 4160V ductbank, conduit and conductors
4. **New Odor Control Building Feed**
  1. 480V ductbank, conduit and conductors from existing Substation D
5. **New Digester Feed**
  1. 480V ductbank, conduit and conductors. (PD3 & PD4)
6. **New Polymer Building Feed**
  1. New MCC-3AB
  2. 480V ductbank, conduit and conductors from transformers
7. **FEB Feeder (H2) – Double Lug – Sectionalizing Cabinets**





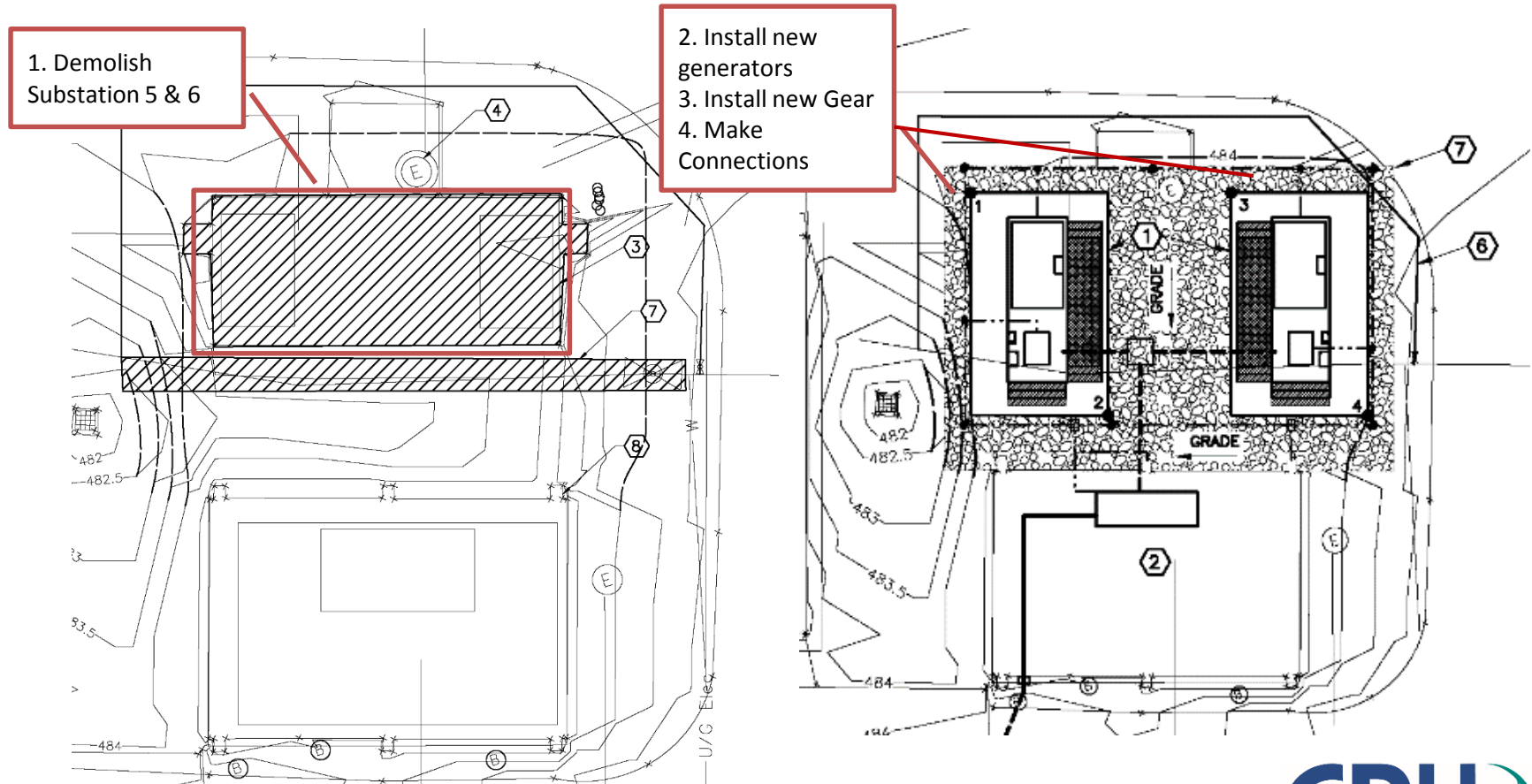
# Phase 2 – Energization of CPS-1

## Energization Overview



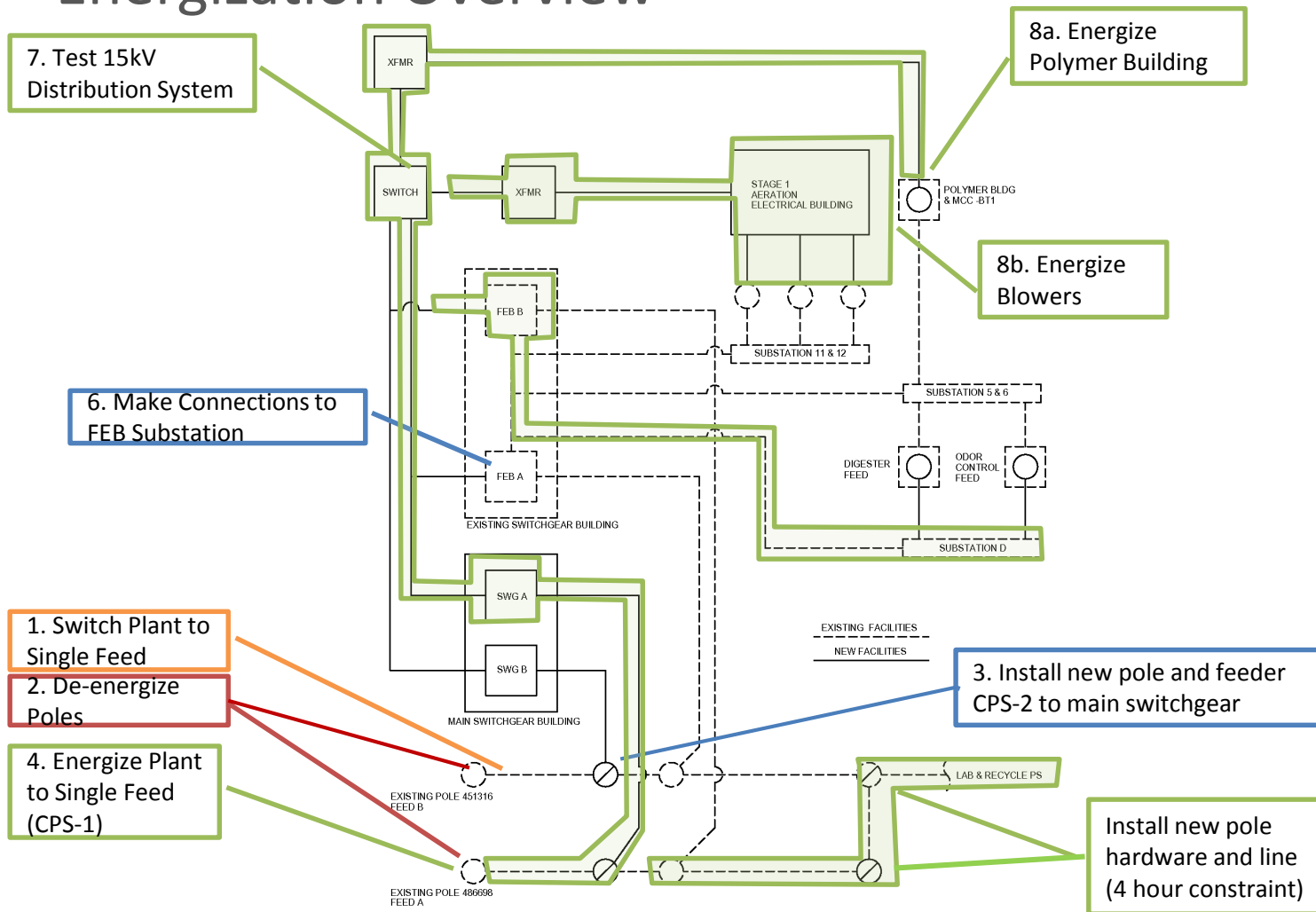
# Phase 3: Standby Generators No. 1 & 2 Replacement

To be completed after new feed has been energized



# Phase 4 Energization of CPS-2

## Energization Overview



# Construction Phase 5 - Demolition

After all equipment is powered from new switchgear

1. Demolition of Substations 11 & 12, switches, and existing conductors

# Critical Operational Shutdowns

To be confirmed by Owner

Critical Operation	Maximum Time Out of Operation	Hours Operation Can be Shut Down
Critical Plant Shut Down for incoming feed improvements from pole 451316	2 Hours	M-F: 9 am – 1 pm Low Flow Conditions
Stage 1 Aeration System Blowers (Optional)	4 Hours	M-F: 9 am – 1 pm
Digester MCC Feed (Isolation & Connection)	4 Hours	M-F: 9 am – 1 pm
Odor Control Building MCC (Isolation & Connection)	4 Hours	M-F: 9 am – 1 pm
Polymer Building MCC (Isolation & Connection)	4 Hours	M-F: 9 am – 1 pm
Laboratory Building Electrical Feed	2 Days	24 Hours/Day (Weekend Only)
Recycle Pump Station	12 Hours	Weekend Only

# Durations & Substantial Completion

## Phase Breakdown

Sequence & Phases	Duration (days)
1. Installation of New Buildings	365
2. Installation of 15kV Distribution System	105
3. Incoming Feed A Improvements	15
4. Generator Installation	60
5. Incoming Feed B Improvement	15
<b>Total Duration</b>	<b>560</b>

Task/Activity	Calendar Days from NTP
Odor Control Building Feeds and Digester Feeds	100 Days
Main Electrical Building and Stage 1 Aeration Electrical Building	365 Days
15kV Distribution System Installation	470 Days
Substantial Completion	560 Days
Final Completion	<b>600 Days</b>