# Updates to Generator Fuel System and Equipment Yard Access

## Generator Fuel System Updates

### Current Specification (TO BE REPLACED):

* 10,000 gal belly tanks per generator
* 118 hours runtime per unit
* Difficult to source, expensive

### NEW Specification:

**Belly Tanks:** - ~2,000 gallon belly tank per generator (cost-effective, easy to source) - Connected via common fuel manifold

**Bulk Fuel Storage:** - Separate above-ground or underground tank farm - **24-hour minimum runtime** (not 118 hours) - Phase 2 capacity: ~12,000 gallons (5 generators × 85 gal/hr × 24 hr + 10% reserve = ~11,250 gal) - Fill connections located just outside equipment yard perimeter - **Redundant fuel service contracts with SLAs** for 24-hour refueling

**Common Manifold:** - Connects all generator belly tanks to bulk storage - Allows fuel sharing across all units - Simplified refueling - single fill point to bulk storage

**Rationale:** - 24-hour runtime sufficient with redundant fuel contracts - 2,000 gal belly tanks readily available and cost-effective - Easier installation and maintenance - Bulk storage more economical than oversized belly tanks

## Equipment Yard Access Provisions

### Emergency/Maintenance Access:

* **East-west access points** in equipment yards for:
  + Emergency vehicle access
  + Escorted maintenance equipment ingress/deliveries
  + Temporary rental equipment (load banks, generators, chillers)

### Cable Pass-Through Doors:

* **Multiple small access doors** (~dog door sized) in building envelope
* Purpose: Pass cables from secure equipment yard into building
* Supports temporary/rental equipment connections:
  + Load banks
  + Temporary generators
  + Backup chillers
  + Testing equipment

## Chiller Piping Provisions

### Temporary Equipment Connection Points:

**Bypass Valves:** - Appropriate bypass piping on all chiller loops - Allows isolation of individual chillers for maintenance - Enables temporary chiller connection during repairs

**Quick-Connect Points:** - Camlock or similar quick-connect fittings - Located at strategic points on each cooling loop - Sized for temporary chiller capacity

**Rental Equipment Support:** - Connection points sized for standard rental chiller capacities - Pressure/temperature ratings compatible with facility systems - Access from equipment yard through cable pass-through doors or dedicated piping penetrations

**Documentation:** - As-built drawings showing all connection points - Rental equipment compatibility specifications - Emergency procedures for temporary equipment deployment

## Files to Update:

1. **7BOD - Electrical (CSI Div 26).md**
   * Generator fuel capacity: Change from “10,000 gal belly tank” to “~2,000 gal belly tank + bulk storage”
   * Add bulk storage details
   * Add equipment yard access provisions
2. \*\*\_BOD - Exec Summary and TOC.md\*\*
   * Update fuel capacity summary
   * Change from “118 hours” to “24-hour minimum runtime”
3. **5BOD - HVAC (CSI Div 23).md**
   * Add chiller bypass valve provisions
   * Add temporary equipment connection points
   * Document rental equipment support
4. **10BOD - Site and Infrastructure (CSI Divs 31-32).md**
   * Add equipment yard east-west access points
   * Add cable pass-through door locations

**Date:** 2025-10-30 **Status:** TO BE IMPLEMENTED