

# **San Diego Metro Area-Wide Energy Management System (AWEMS)**

**Briefing for NAVFAC SW / OICC MCIWEST  
World Class Construction Forum  
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# Overview



- Elements Successful Project Managers Utilize
- Sequence of Work as a List
- System Acceptance as a Flow Chart
- What Needs Improving Most?
- Process Improvement – What's Next?

# Elements Successful PMs Utilize



- Pre-Controls Meeting: Seizes the opportunity, views as a meeting of the minds.
- Takes Ownership for Overall QC: Takes personal responsibility for ensuring QC is being done.
- Submittals: Personally pre-reviews for conformance with spec non-technical elements, and that previous comments are addressed and incorporated.
- Keeps Everyone on the Same Page: Stamps “APPROVED FOR CONSTRUCTION” on approved shop drawing set and distributes.

# Elements Successful PMs Utilize



- Avoids Duplicating Errors: Capitalizes on project meetings as venue for informal on-site installation checkouts, especially applicable for large repetitive system installations.
- Is Able to Engage Needed Team Members: Able to reach back to the DOR, able to get subs to coordinate, able to keep process moving.
- Performs Pre-PVT Inspections: Checks out the status of (especially hardware) installation prior to scheduling PVT with the Government.

# Elements Successful PMs Utilize



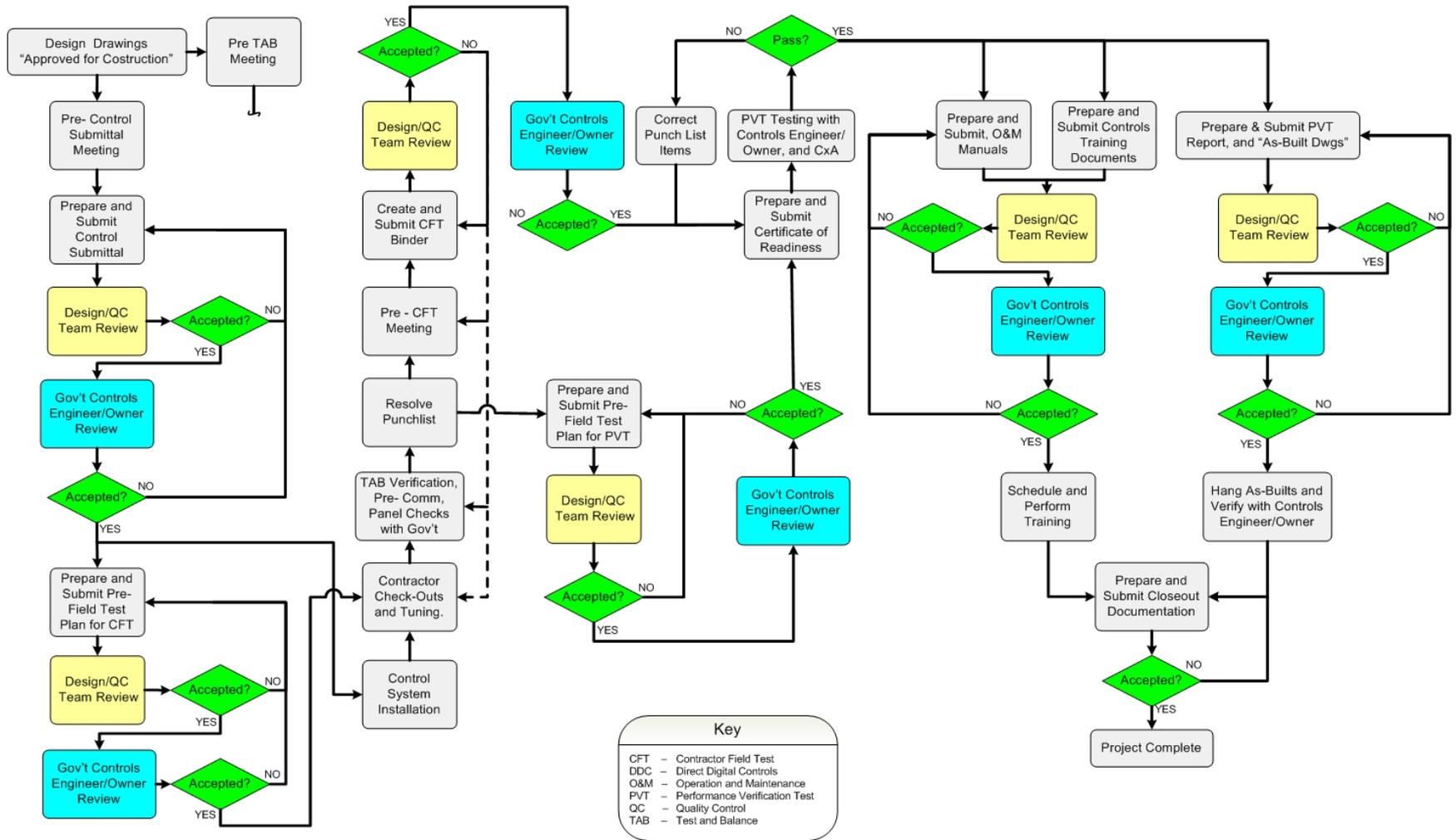
- Requires Mutual Respect Within the Team: Willing to agree to disagree, to table discussion to KO for resolution. Encourages sharing of ideas for added value or proposes alternative solutions that meet contract requirements.
- Understands the Process: Sees the end from the beginning. Drives the process to keep things moving forward. Doesn't confuse elements of controls acceptance with independent unrelated processes.

# Sequence of Work



- Pre-Controls Meeting
- SD-01 Contractor's Qualifications
- SD-02 Manufacturer's Product Specification Data
- SD-03 Shop Drawings
- Pre-field Test Plan for Contractor use during CFT
- Control system installation work: field check-outs, calibration, tuning, etc.
- SD-04 CFT Report
- Submit Pre-field Test Plan for Contractor use during PVT
- Submit Certificate of Test Readiness
- Conduct PVT with AWEMS Owner
- SD-05 PVT Report
- SD-06 Final Shop Drawings for review
- Final back-check to verify field installed "Laminated Final Shop Drawings"
- SD-07 Controls System Operator's Manual and Service Manuals
- SD-08 Training Documentation
- Opposite Season Test
- Schedule Training Phase I and II
- SD-09 Project Closeout Documentation

# HVAC Control System Acceptance Process



# Q) What Needs Improving Most?



## A) Definitely, the CFT Reports!

- Keep the purpose in mind . . .
  - CFT Report documents that the controls check-out and commissioning have been completed.
  - CFT Trends are run AFTER the mechanical systems work have been completed.
- 7 Elements, including:
  - Trends: Proving the sequence has been implemented, and stable control established.
  - Calibration: Conducted to a certified standard.

# Process Improvement - What's Next?



- Concurrent Paths: Allows for certain select submittals such as the submission of test procedures/training/etc. to be performed concurrently. The goal being to reduce the duration of controls acceptance process.
- Design Guide Update: Will define and address 3 HVAC system complexities - Simple, Moderate and Complex with specifics related to each.
- AWEMS Specification Update: Transition to BACnet including changes to material and installation standards.

# QUESTIONS and DISCUSSION

