Subject: Scheduling Requirements for Testing of Mechanical Systems in Construction Contracts

Applicability: Information

1. Background: Most guidelines for determining construction contract duration do not include a check that addresses the mechanical systems testing requirements in a construction contract. The estimated construction time for mechanical systems testing will vary by the type of facility. Also, many contractors are not addressing or including all mechanical systems testing requirements on the Network Analysis System (NAS), especially the time necessary to perform Testing Adjusting and Balancing (TAB) and Commissioning (Cx) of HVAC systems. As a result contractors are not scheduling sufficient time during the contract for each phase of testing. This directly affects the time needed to perform a proper TAB and Cx of HVAC systems.

2. Purpose: The purpose of this bulletin is to provide information on the sequence of mechanical systems testing and the need for both the contractor and project delivery teams (PDT’s) to address funds and time duration to perform mechanical systems testing.

3. Recommendations: Mechanical systems testing requirements should be addressed in the guidance for determining construction contract durations. The testing requirements for HVAC systems also needs to be emphasized to the contractor during the Pre-construction Conference and discussed in detail during the Coordination Meeting Conference. It should be addressed during review of the contractors NAS submittal. The Area/Resident Engineer should carefully review the contractor’s progress schedule to ensure sufficient time and funds are assigned to each testing phase. Mechanical systems testing milestones should be confirmed during the Red Zone meeting. Appropriate progress payments must be retained and held until completion of this phase. See pages 2 and 3 for sample NAS that includes the normal testing requirements and sequence for testing of mechanical systems.

4. This bulletin supersedes ECB 2003-6. Point of contact for this bulletin is Gary Bauer, CECW-CE-D, 202-761-0505.
Subject: Scheduling Requirements for Testing of Mechanical Systems in Construction Contracts

**FIGURE 1**

- **SUB COMM. PROCEDURES & SCHD HVAC CONTROLS**
- **TEST & COMM ALSO PVT PROCEDURES FOR 15950/15951**
- **HVAC SYS READINESS**
- **CHECK DATE**
- **SUBMIT PANEL**
- **PROCEDURES, DRAWINGS, REPORT FORMS & INSTRU. INFO**
- **TAB RELATED HVAC SUBMITTALS**
- **TAB START DATE & READINESS REPORT**
- **MECH SYSTEMS TESTING FOR BOILERS, CHILLERS, COOLING TOWERS ETC.**
- **EMCS TESTING PER UFGS 13801 CAN BE DONE WITH TAB**
- **TAB REPORT & DATE FOR TAB VERIFICATION**

**NOTE:** CONTROLS COMM & TAB CAN BE CONCURRENT. THE PVT SHALL BE PERFORMED AFTER COMM AND TAB.

**SAMPLE**

- **ACTIVITY**
- **ACTIVITY NUMBER**
- **DURATION**

- **FS 60**
  - **TEST & COMM HVAC CONTROLS PER UFGS 15951**
  - **SUBMIT CONTROLS TEST REPORT**
  - **PERFORM PVT PER UFGS 15951**

- **FS 30**
  - **HVAC SYS READINESS**
  - **CHECK DATE**

- **FS 7**
  - **SUBMIT TAB, PROCEDURES, DRAWINGS, REPORT FORMS & INSTRU. INFO**
  - **PERFORM HVAC TAB**
  - **TAB REPORT & DATE FOR TAB VERIFICATION**

- **FS 21**
  - **MECH SYSTEMS TESTING FOR BOILERS, CHILLERS, COOLING TOWERS ETC.**

- **FS 14**
  - **SUB TAB IRM & SPECIALIST CERTIFICATE**

- **FS 21**
  - **TAB RELATED HVAC SUBMITTALS**

- **See Figure 2 on page 3 for continuation**
ECB 2005-10
Subject: Scheduling Requirements for Testing of Mechanical Systems in Construction Contracts

NOTE: PRE-COMMISSIONING CHECKLIST MAY BE DONE AT APPROPRIATE TIME DURING CONSTRUCTION

FROM TAB REPORT & VERIFICATION

TAB VERIFICATION

PLUMBING PERFORMANCE TEST PER 15400

FIRE DETECTION & ALARM TEST PER 13850/13851

(FROM EMCS TESTING)

O&M MANUALS APPROVED

PERFORM PRE-COMM CHECKLIST ITEMS

FUNCTIONAL PERFORMANCE TESTS

SUB./APPROVE COMM. TEST REPORT

FINAL INSPECTION

CONTRACT COMPLETION

FIGURE 2