ORDER

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WESTERN-PACIFIC REGION

WP 6010.5

8/10/92

SUBJ: THE ACCOMPLISHMENT OF F&E PROJECTS

1. PURPOSE: This order establishes a reference for Airway Facilities (AF) Sectors on what can be expected in the accomplishment of F&E projects by F&E or contractor personnel. It provides general guidance on roles and responsibilities.

2. DISTRIBUTION: This order is distributed to the Branch level and above in the Regional Airway Facilities Division, and to all AF Field Facilities with distribution to all Supervisors.

3. CANCELLATION: None.

4. BACKGROUND: The accomplishment of the Capital Investment Plan (CIP), formerly the National Airspace System (NAS) Plan is in its peak field implementation phase. The AF Sectors are seeing increasingly more F&E activity to complete the many required projects. Because of the amount of work and time frame for accomplishment, many F&E projects are done by contractors or contractor personnel are assisting F&E employees. Additionally, Operations personnel, both the Sectors and AWP-460, are increasingly involved in or are accomplishing traditionally F&E projects. To insure consistent quality, minimize delays and avoid confusion caused by misunderstandings and miscommunications, a document is needed to explain roles/responsibilities and delineate the expectations for F&E project accomplishment no matter what is the source of accomplishment. Therefore, this document addresses "What you can expect from AWP-450" and what is expected from other organizations that have a role in F&E project accomplishment.

5. GENERAL PHILOSOPHY: This document addresses the accomplishment of F&E projects in general with specific references to deviations or changes in procedures, policies or practices that may be justified because of the method of accomplishment. This document does not cover the F&E budgeting process.

a. It begins by assuming that:

(1) The project has been adequately justified.

(2) Sufficient funds have been received.

(3) The validation process has been completed, and scope defined.

(4) AWP-420 has assigned the project for accomplishment.

(5) It has been regionally prioritized and released for accomplishment by the Inter-Divisional Working Group (IDWG).

(6) If appropriate, a Deployment Readiness Review (DRR) has been accomplished per AAF-1 memorandum dated February 3, 1992.

b. From this point, an F&E project goes through several stages to completion, including; site visit/site survey, design/engineering, pre-construction/pre-installation meeting, construction/installation, Initial Operating Capability/ Operational Readiness Demonstration (IOC/ORD), Contractors Acceptance Inspection/Joint Acceptance Inspection (CAI/JAI), Commissioning, critique and close-out.

Each of these stages may include many steps or activities. The number of stages that are completed on a project and to what degree or detail will depend on the scope and complexity of the project. Steps are sometimes eliminated or abbreviated in emergencies, on small projects, on "fast track" or expedited projects requiring non-conventional means of accomplishment. However, the elimination of any steps in the process of F&E project accomplishment should be appropriately justified.

The quality of an F&E project must not be sacrificed based on who accomplishes it. High standards must be maintained whether it is done by the Establishment Engineering Branch, Operations, an outside contractor or a combination of these resources. To assure this quality, input must be requested from appropriate offices and individuals in the early planning stages. An integral part of a quality project includes generating and maintaining appropriate documents. This insures that a Facility Reference Data File (FRDF) can be readily established and the project can be properly and expeditiously capitalized and closed-out.

6. PROJECT ASSIGNMENT: After the F&E appropriation has been approved through the budgeting process, funds are made available from Headquarters through a Project Authorization (PA). The Resources and Planning Branch, AWP-420, generates a Project Assignment sheet that is issued to AWP-450 with basic information about the project. AWP-420 also generates a Project Release Review document that is approved by the Inter-Divisional Working Group (IDWG) consisting of all Branch managers in the Region. No stage of the project is started until the Release Review is approved by the IDWG.

a. Assignments to the Establishment Engineering Branch: As described above, AWP-450 receives notification of projects through the Project Assignment Sheet generated by AWP-420. In the event of an emergency project, such notification may be

verbal followed by the appropriate paperwork when practical.

b. Assignments to Operations:
Most F&E project assignments to operations personnel are accomplished via a Work Order. Such Work Orders are only issued by AWP-450 after appropriate coordination with and concurrence by the receiving Branch or Sector. In some cases, with the concurrence of AWP-420, AWP-450, and as appropriate, AWP-460 or AWP-480, a PA is issued directly to AWP-460, or AWP-480. In these instances, they are responsible for the project from initial planning through JAI and close-out.

A Work Order gives a description of work to be done, the resources (manpower and money) allocated and the time frame for completion. Additionally, Job Order Numbers (JONs) and accounting codes must be provided for completing Labor Distribution Reports (LDRs) and distributing travel and material costs. Also, the names and telephone numbers of persons involved in the assignment coordination must be listed. Depending on the scope and complexity of the assignment, additional details may be provided by a Project Transmittal, Engineering Package, drawings, etc. All forms that are required to be completed must accompany the Work Order.

An LDR and weekly progress report must be completed for all F&E work accomplished by operations personnel. However, operations personnel are expected to routinely participate in F&E project implementation activities as part of their operations responsibility rather than charging to LDR time. These activities include:

(1) Receiving/storing project material.

(2) Monitoring construction and installation activities.

(3) Participating in equipment tune-ups and flight checks.

(4) Assisting with Facility Record Data File (FRDF) data gathering.

(5) Certifying systems.

(6) Participating in CAIs, chairing JAIs, etc.

c. Assignments to the Technical Support Services Contractor (TSSC):
The purpose of the TSSC is to provide support to FAA's Establishment Engineering work force in implementing the CIP. It is not a requirements contract, thus the FAA has the option to use its in-house capability or other contractor resources.

However, because of the quantity of work and the shortfall in FAA staffing, there has been an increasingly greater use of TSSC to accomplish the workload.

From the Sector's point of view, projects accomplished by TSSC should be essentially no different than those accomplished by FAA F&E personnel. Although the assigned F&E project engineer is involved throughout a projects' life, TSSC has the role/ responsibility to conduct a project in a manner that should be transparent to the Sector as to personnel resources. They are expected to adhere to established FAA practices/procedures as related to: coordination/communication, schedules/timeframes, notification, engineering packages, site surveys, pre-construction/installation conferences, documentation, drawings, CAI/JAI, etc.

Work is assigned to TSSC via a Work Release. There are several steps or phases in the process that leads to a final work release (FWR). For planning purposes, prospective TSSC projects are initially identified in the Regional Project Management System (RPMS) much in advance of actual assignment. This planning allows Headquarters and TSSC to get an idea of the amount of TSSC resources that will be required in future years including Personnel Compensation, Benefits and Travel (PCB&T). This PCB&T funding for TSSC was referred to as "830" money. Starting in FY-93, "Activity 5" designation will be used. The other funds required for projects are contained in the individual Project Authorizations.

To assign a task to TSSC, first, a Procurement Request (PR) is generated by AWP-450 and sent to Headquarters, to fund the requested work. This PR contains a brief description of the types of work and site locations. Headquarters reviews the PR to ensure that the scope of work is within the scope of the contract. Headquarters approves the PR and a "contract modification" is executed and distributed to the Regional accounting office where the funds are obligated.

Next, a Preliminary Work Release (PWR) is generated by the F&E Project Engineer/Lead Project Engineer (PE/LPE). The PWR describes the scope of work that TSSC is to accomplish and target completion dates. It is transmitted to TSSC by the Associate Technical Officer (ATO). TSSC responds with a Work Plan that details how they plan to accomplish the assigned task and how much it will cost. FAA reviews this Work Plan and if approved, the Final Work Release (FWR) is generated. From the time of the PWR until the FWR, there are discussions, conferences, meetings, etc., between FAA's PEs/LPEs, their TSSC counterparts and Sector representatives. The number and extent of these meetings will depend on scope and complexity of the project and the issues requiring resolution. The issuance of the FWR includes the Notice To Proceed (NTP) date when work shall start.

It should be noted that TSSC is involved in both regional and national type work categories. The national type includes the accomplishment of major projects which are national in scope and/or cut across regional boundaries. Included in this category are such projects as; ASR-7/8 Leapfrog, DF, AWOS, and Mode-S. Headquarters produces the work releases for the national category work type. F&E remains fully responsible for all TSSC work whether regional or national.

d. Assignments to other contractors:
AWP-450 uses a variety of contractor types to accomplish its work, such as:

(1) Small Business Administration (SBA) Contractors.

(2) Large Architecture and Engineering (A&E) firms.

(3) Various size construction firms.

(4) Other government agencies, i.e., the Corps of Engineers (COE), to name a few.

The method used to establish a contract with the different organizations is largely dependent on the dollar amount of the work to be done as well as type of work (A&E vs construction, for example). For small construction type contracts, imprest funds, SF-44s, BANKCARD credit cards, or third party drafts may be used. Dollar amounts exceeding $1,000 require competitive bids. "Splitting" purchases to avoid a regulatory limit is prohibited. For purchases exceeding the delegated authority, arrangement must be made with a Sector Logistics Management Specialist (LMS), General Supply Specialist (GSS) or the Acquisition Management Branch, AWP-55. Contracts of less than $25,000 are set aside for small businesses. However, there can be exceptions to this with prior approval from AWP-55.

Most of the contractors used by AWP-450 are obtained through AWP-55 by bid solicitations for construction contracts. The process is initiated by PE/LPE submitting a PR to AWP-55. The PR is generated on the System for Acquisition Management (SAM). The PR is accompanied by a contract package that consists of all the documents required by the Logistics Division, AWP-50, to complete the contracting process. The tracking of the contracting progress is through the bi-weekly contract tracking meeting. PRs for land leases/purchases, utilities and material purchases are also tracked through these meetings. Attendance at the contract tracking/construction activities meeting includes representatives of AWP-450, 420, 460, 55, and 56.

The FAA is utilizing more and more "turnkey" contracts to implement the CIP. The responsibilities of AWP-450 on National "turnkey" projects may vary depending on the language of the

national contract. Generally it involves site prep work and duties of RE and/or TOR. No F&E responsibilities should be assigned to a Sector except through an AWP-450 work order. A national contract should not assign F&E duties directly to a Sector. The work order should clearly define Sector responsibilities and the schedule for accomplishment (coordinated with Sector). If not, please contact the Project or Lead Project Engineer.

7. Project Design/Engineering: The design/engineering phase of a project is crucial to its implementation and final success. The Establishment Engineering Branch, AWP-450, has the design/engineering responsibility to establish, relocate, replace or modernize facilities. As part of this effort, they solicit and incorporate, as appropriate, the comments and data from other Branches, Divisions, and AFSs.

a. Other organizations play a vital role also. Examples are:

(1) The NAS Program Coordination Staff, AWP-403, coordinates the reviews and prioritization of approved and proposed projects. They coordinate the reviews of Release Reviews for a project. AWP-403 also ensures fully coordinated program execution of significant projects.

(2) The F&E Program Section, AWP-422, manages the fiscal aspects of the F&E program. They approve or concur with changes in project scope and initiate reprogramming actions for funds adjustments. AWP-422 hosts the Regional Conceptual Design Reviews (RCDR) and coordinates the approval process with other Divisions and the Interdivisional Working Group (IDWG). Additionally, they chair the Program Control Meetings (PCM) where project progress is monitored and issues resolved.

(3) The System Maintenance Engineering Branch, AWP-460, provides comments/recommendations on a project's design based on operational needs. They may represent the Sectors at meetings the Sectors cannot attend. The Branch also conducts Obstruction Evaluations (OE) and reviews project drawings and specifications. AWP-460 manages the test equipment program and coordinates NAS Change Proposals (NCP). They are also the Division focal point for grounding, bonding, lightning protection, air conditioning systems, electrical power configuration, critical maintenance program, refurbish structures program as well as hazardous material management. They also accomplish some F&E projects through their own resources, TSSC or other contractors.

(4) The Telecommunications, Spectrum Management and Operations Branch, AWP-480, provides all leased telecommunications services. They also handle requests for

frequency assignment and investigate actual or potential frequency interference problems. AWP-480 coordinates with Headquarters for all port assignments for data going on the Radio Communications Link (RCL) or the Datamux Network (DMN). They also have a direct role in F&E projects, the extent of which is currently being defined.

(5) The Air Traffic Division's F&E Planning Section, AWP-510, provides a significant amount of data necessary to design/engineer facilities to meet Air Traffic's requirements. This data includes information on:

(a) equipment layout
(b) administrative space
(c) position equipment
(d) frequency usage
(e) telecommunications services
(f) radio and radar coverage
(g) shut down scheduling, etc.

This data is provided in close coordination and concurrence with Air Traffic field managers. They also participate in the F&E budget submission, Regional Conceptual Design Review (RCDR), Program Control Meetings (PCM), and the Interdivisional Working Group (IDWG).

(6) Logistics Division:

(a) The Material Management Branch, AWP-52, manages all equipment and material transactions with the Logistics Center. AWP-52 also handles transfers of materiel and excess property in coordination with the Sectors.

(b) The Acquisition Management Branch, AWP-55, obtains contractors and manages construction contracts as the Contracting Officer (CO) in coordination with the Resident Engineer (RE) and/or Contracting Officer Representative (COR). They are responsible for all procurements involving commercial sources.

(c) The Real Estate and Utilities Branch, AWP-56, purchases all land, obtains or extends leases, permits, and all utility services.

(7) Airway Facilities Sectors (AFS): Being intimately knowledgeable of their facilities, local requirements, and current conditions, the AFSs provide pertinent data for facility design/engineering. It is critical that Sectors provide input during the predesign and design/engineering phases of a project. This input should be presented during site surveys and site visits by Project Engineers for data gathering and before the Regional Conceptual Design Review (RCDR) meetings. AFS comments

are routinely obtained on drawings and specifications by AWP-450 during the review process. The Sectors work closely with AWP-450, AWP-460, and AWP-420 in addressing the operational and financial (i.e., scope change) aspects of a project. Request for changes in a project will have the greatest approval possibility the earlier it is presented, such as during the conceptual design phase and when supported with sufficient justification. Request for changes in scope should be addressed to AWP-420.

(8) Other Organizations: Other organizations that may be contacted for information that is important to the design/engineering effort include: Flight Standards, Airport District Office, airport sponsor, military, private or public organizations, etc.

(9) Regional Project Management System: Project networks are built by AWP-450/460/480 on RPMS and updated as necessary. Conceptual design packages are developed and design reviews held as well as necessary site selection reviews. Approval is obtained from higher level management (IDWG) and final design/engineering is completed. The Regional RPMS database is being made accessible to the AFSs via telephone lines and a PC modem. Schedule and cost data will be available. The Lead Project Engineer is responsible for the timely update of the database for his/her projects.

8. IMPLEMENTATION: The implementation phase of a project is usually marked by the beginning of on-site construction activities. For those projects not requiring Civil work, it starts with electronics site preparation. Thus, depending on the scope of the project, there will exist a requirement for a Resident Engineer (RE) and/or Technical On-Site Representative (TOR). These F&E (or contractor) personnel are necessary to coordinate the many activities with AF, AT, sponsor or others. Sometime Sector personnel are requested to perform the duties of RE or TOR and a Work Order is issued if they agree. To ensure that projects are implemented with minimum problems and service disruptions requires the commitment and teamwork of many organizations, including; the AF Sector, Air Traffic, AWP-420, 450, 460, and 480 as well as Headquarters.

a. Pre-Construction: A preconstruction conference is normally held just prior to the start of the construction work on a project. Depending on the scope and complexity of the project, this conference can range from a telephone conference between involved individuals to a formal meeting between all interested and responsible parties. A written notice should be provided to participants a week prior to the conference. If this is not possible, telephone notification should be made as much in advance as possible. AWP-55 is responsible for calling and chairing the Pre-Construction Conference. Participants at

the conference should include:

(1) Contracting Officer (CO).

(2) RE, LPE/PE, Environmental Construction Supervisory Engineer (ECSE).

(3) Local AF and AT.

(4) Regional AF and AT as required.

(5) Airport sponsor (also notify local Airport District Office.

(6) Where appropriate: military representatives, airline representatives (ATA/ALPA...), and land owners.

The CO chairs the meeting and designates the Contracting Officer Representative (COR), usually the RE. Topics for discussion include:

(7) Contract details with the contractor.

(8) Details of work accomplishment, including:

(a) Responsibilities.
(b) Schedule.
(c) Impact on operations.
(d) Tests and documentation requirements.
(e) Contractor Acceptance Inspection (CAI).

(9) Coordination procedures, access, ID badges, security, storage/disposal etc...

b. Pre-installation Conference: A pre-installation conference is held preceding the start of installation activities. It is usually conducted at the local AF field office or job site. For minor projects, a telephone conference between minimum participants suffices in lieu of a formal meeting. If possible, a one week written notice should be furnished, otherwise a telephone notification should be given to participants as early as possible. AWP-450 is responsible for calling and chairing the Pre-installation conference.

Based on the scope and complexity of the project, participants may include some or all of the following:

(1) TOR, LPE/PE, Crew Chief, Electronic Installation Area Supervisor (EIAS).

(2) Local AF and AT.

(3) Other regional office representatives as necessary.

(4) Turnkey contractor personnel where appropriate.

The conference will be chaired by an AWP-450 person, most likely the Project/Lead Project Engineer, Crew Chief, or EIAS. Subjects for discussion include:

(5) Detailed review of installation plan;

(a) Project scope.
(b) Schedule/Workhours, facility access.
(c) Shutdowns, impact on operations.
(d) Performance tests, data gathering, documentation.
(e) Facility cut-over/restoration of service.
(f) Preliminary JAI/final JAI.

(6) Responsibilities;

(a) Sector, local AF.
(b) Air Traffic.
(c) TOR.
(d) Contractor, etc.

(7) Coordination Procedures, contacts and local interface requirements;

(a) Security requirement
(b) AT and AF focal points

All aspects of the project should be discussed at this meeting. Sector and AT participation should be actively sought in planning necessary equipment outages to minimize disruptions or assure continuity of service. It is imperative that any Sector assistance is clearly identified and required commitments agreed upon.

c. Construction and Installation:
Meetings, formal or informal, should be held as necessary during the course of construction and installation. The purpose of such meetings would be to:

(1) Resolve problems.

(2) Make schedule changes or adjust plans.

(3) Coordinate outages/cutovers.

(4) Plan/arrange for flight checks, system tests, readiness demonstrations/reviews.

It is important that the RE, TOR or other responsible individuals keep all interested parties aware of status and progress of the project. Likewise, Sector personnel should keep F&E personnel informed of possible impacts to the project.

It should be noted that changes in project scope are not anticipated during the implementation phase. The scope has been defined, agreed upon and appropriately documented by all affected organizations during the various project reviews during the early planning and design phases. Changes in scope at this late date may have a major negative impact on the schedule and cost. When changes must occur, they must be adequately justified and approved at the appropriate management levels (AWP-420 and AWP-510 for scope changes).

Coordination with the contractor must only be done by the Contracting Officer (CO) or the officially designated on-site representative; the Contracting Officer Representative (COR). Involvement with the contractor by others could have a major negative impact on cost and schedule.

d. Participation of Operations personnel:
Paragraph 6b. lists some activities that Sector personnel are expected to participate in as part of their operations responsibility. If operations personnel are requested to accomplish work that is an F&E responsibility, an LDR must be completed. Such assistance is normally identified and requested in advance via Work Order. However, for small jobs, or instances of short notice, verbal requests may be used. Operations personnel must not charge LDR time to a project without prior F&E approval.

(1) Personnel Costs, Benefits and Travel (PCB&T):
Since FY-90, PCB&T costs for F&E are no longer included with the project monies. Instead, a specific amount of money, known as "Activity 8," or more recently "Activity 5" funds, is allocated each year. Previously, project money was good for five (5) years and since reduced to three (3) beginning with FY-92. However the amount of PCB&T received is based on the F&E staffing for that year and is good for only one (1) year. When operations, Air Traffic, or other non-F&E personnel charge to this fixed pot of money through LDR and travel vouchers, it has the effect of increasing F&E staffing and reducing the funds available for F&E to accomplish its' work. It is critical that operations personnel utilizing F&E funds be approved in advance, limited and closely monitored.

e. Contract and Joint Acceptance Inspections (CAI and JAI):
Except for small jobs, a CAI and JAI are usually held separately. A CAI is conducted for F&E to formally accept the facility, construction work or installation equipment from the

contractor. A JAI transfers such work, facility or equipment to the Sector for maintenance and operation. A JAI is required on all F&E projects including those accomplished by operations personnel.

During the course of project implementation, the RE, TOR, Crew Chief, etc., should work closely with local AF sector personnel to solicit their comments/advice on "punch list" items to avoid surprises/problems during the CAI/JAI. As many deficiencies as possible should be cleared from the "punch list" by the responsible party (contractor, F&E, Sector) prior to holding the CAI/JAI. Exception free acceptance is the goal.

(1) Scheduling/Notification: Scheduling and notification requirements for JAIs are covered in the current issue of Order 6030.45, Facility Reference Data File (FRDF). It is F&E's responsibility to notify the sector and other appropriate offices at least 10 workdays prior to the date the JAI is to be conducted. On short-term projects, notification of the JAI can be included in the work order. The AF sector representative is responsible for notifying the local Air Traffic facility manager.

(2) Conducting JAI: The AFS manager shall designate a representative, to serve as chairperson of the joint acceptance board and be responsible for completing and distributing the JAI report.

A JAI is conducted to gain consensus of the involved offices that the project(s) has been completed in accordance with applicable standards and specifications and the facilities are capable of providing the services required within established standards and tolerances. The type of JAI, Partial or Final, will depend on the size, complexity, and operational requirements of the facility. The JAI board members will make a determination of exception type, major or minor, and assign an office for clearance action.

(3) FRDF Requirements: The latest issue of Order 6030.45 provides details on the requirements for an FRDF. It states that "an FRDF shall be established at modernized, newly established, or upgraded facilities by the regional program office or the F&E personnel responsible for the construction and/or installation establishment project". Sector personnel are responsible for establishing the FRDF for existing facilities.

Much data is required for the FRDF. During the course of project implementation, good record keeping should be exercised to assure that any documentation required by the FRDF is readily available. Sector personnel may be requested to assist in data collection. F&E will provide a sectioned binder with

appropriate documents, records, and forms completed for those facilities that are their responsibility for establishing the FRDF.

9. Commissioning: Commissioning is formally placing a facility, system, equipment, or service into the NAS for operation. It occurs after the JAI and verification that the facility meets all established criteria and AF has the personnel, training, logistical support and/or other resources to adequately maintain its' operation.

Processes used to verify readiness for commissioning includes:

a. Commissioning flight checks

(1) F&E is responsible for scheduling any required flight inspections. Such scheduling must be closely coordinated with local AF and AT to assure the availability of personnel support and to arrange for flight inspection operating environment needs.

b. Initial Operating Capability (IOC)

c. Operational Readiness Demonstration (ORD)

d. Commissioning Readiness Review (CRR)

e. JAI documentation

The scope and complexity of the project will determine the number and depth of the verification process.

10. Closeout: Is the process of insuring all documentation for capitalization is completed and a closeout form is sent to AWP-451. Documentation includes Real Property Inventory forms, equipment installed list, equipment removed list, JAI forms, etc. The LPE/PE is responsible for expeditiously forwarding the project folder with closeout form to AWP-451 for processing after project completion. After a project is commissioned or placed into service, a number of these and other activities take place or continue in order to bring the project to a close, notably:

a. Project Critique is conducted with the intent of learning how to improve future projects. Valuable information is available through the critique process and all project participants should be solicited for input. The critique may be a formal meeting of involved parties or a written questionnaire where appropriate. The project critique shall look for things that went right as well as those that did not go well. Focus of the critique will be on information and data and not on individuals or personalities. Data from the critique should be

analyzed and used to improve the effectiveness and efficiency of future project accomplishment.

Projects that are to be critiqued during the year are identified near the beginning of the fiscal year by the Unit Supervisors within each AWP-450 Section. This list is approved by the Section and Branch Manager and distributed to Branch employees and the appropriate Sectors.

b. Transfer/disposition of excess equipment and insuring all materiel resources are accounted for.

c. Decommission/demolition of old facility including settling real property issues.

d. Clearing CAI/JAI exceptions in accordance with the procedures of current issue of Order 6030.45.

e. Capitalization is the process that assures that all records, property, material, and fiscal aspects of a project is properly documented, assigned, balanced, and inventoried. The capitalization process includes activities in the Accounting Division (AWP-52 and 56) as well as AWP-422 and AWP-451, and it would normally conclude F&E's involvement in a given project.

Henry A. Harris
Establishment Engineering Branch