

**NATIONAL WEATHER SERVICE INSTRUCTION 30-4103**

**April 10, 2018**

**Facilities Management**

**NWSPD 30-41**

**FACILITIES CONSTRUCTION**

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**SUMMARY OF REVISIONS:** This directive supersedes NWS Instruction 30-4103, Facilities Management, dated November 22, 2011. Changes made to reflect the NWS Headquarters Reorganization effective April 1, 2015.

Signed

March 27, 2018

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Director, Office of Facilities

Date

Facilities Construction

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1. Introduction: This instruction implements National Weather Service Policy Directive (NWSPD) 30-41, Facilities Management. The NWS completed construction of Weather Forecast Offices (WFOs) over several years beginning in the early 1980s. The experience gained from the process of new design, construction, modification or built to suit and lease back is

summarized in this instruction. These processes include construction services procurement, construction administration services and move-in.

2. Purpose: The purpose of this document is to provide guidance for the construction phase contained in NAO 217-104, Facility Capital Planning and Project Management Policy.

3. Scope: Major and minor projects are contained in the OCAO's Facility Master Plan. It includes major investments approved by the Facility Investment Management Board. Major and minor investments in facility construction, renovation, and leases are reviewed under NOAA's integrated capital investment planning process. The construction phase includes activities such as signing of development/construction documents, acquisition of furniture, fixtures, and equipment, punch list resolution and logistics related to occupancy. This document provides guidance for NWS Headquarters (NWSH), Regional Headquarters, National Centers and field offices.

4. Construction Services Procurement: Construction documents are complete, coordinated between disciplines, biddable, readable and buildable, with no room for unreasonable additional subjective interpretation. The requesting office (i.e. NWSH, Regional Headquarters, National Center, or field office) provides clear requirements. Code criteria will be reviewed by each discipline to the degree of detail necessary to assure tasks accomplished meet codes and requesting office requirements.

4.1. Project Planning and Management Division (PPMD) Regional Centers (Eastern: Kansas City & Western: Seattle): Project management for construction projects is provided by the appropriate PPMD office. Ideally, the PPMD project manager has been involved in the project from the beginning, managed the design effort and will manage the construction. The PPMD project manager along with the NWS project manager and the acquisitions contract officer will establish the appropriate procurement method for each project.

4.2. Acquisition Management Division: Using the procurement method agreed upon, the NWS Project Manager will ensure funds are provided to the appropriate Acquisition Division Contract Officer (CO) via cRequest for the construction contract. The Acquisition Division will perform CO functions in accordance with the Federal Acquisition Regulations. The assigned CO and contract specialist will be members of the project team for construction including preparing the proposal, requesting bids, negotiating, and awarding and overseeing the construction contract. Only the CO can make changes to the contract. Generally speaking, there are two approaches to procurement.

4.2.1. Invitation for Bid: This is the fastest procurement process and the least expensive in terms of resources required. Such an approach requires complete and well coordinated construction documents to include drawings and specifications, which demonstrate full understanding and meet all project specifications.

4.2.2. Request for Proposal: This approach is more involved and requires more effort and time by the bidders (future contractor) and the government. Each bidder has to submit two documents: 1) the technical proposal outlining his technical qualifications and experience; and 2) financial proposal outlining his cost breakdown, overhead, and profit. The government will form a source selection board to establish selection criteria, review technical proposals, score the proposal and select the best proposal. Technical scores will be reconciled against the financial scores and the Best value proposal should be selected. This process is appropriate for special/unique projects that require unique experience and attention to details/quality workmanship.

4.2.3. Project Delivery Methods: There are two construction delivery methods and the appropriate method should be determined prior to requesting proposals.

1. Design/Bid/Build: This is the traditional project delivery approach for construction projects. In this approach, the government holds two contracts. One contract is with the Architect/Engineering (A/E) design firm. The other contract is with the contractor/builder with the best technical and cost proposal. The government first contracts for and approves the Design and then provides the specific Design to the contractor to build.
2. Design/Build: In this approach, the government has a single point of responsibility. The design/build contractor designs and builds the structure for the government based on the supplied requirements. This approach is usually a faster delivery method as compared with design/bid/build. However, the key is for the Government to spell out its requirements clearly for both the design and construction in order to avoid future problems/disputes. Depending on the complexity of the project, the Scope of Work statement could just be a written statement, or include up to a 35% design level of effort with outline specs. The more complex the project is, the more detail the government should provide to the design/build contractor to lower the risk. This approach is appropriate when time is limited and when the Government can provide very clear requirements. There are a lot of advantages to the design-build process and potential disadvantages when the contractor does not perform to expectations.
3. There are other project delivery methods, like Guaranteed Maximum Price, and Construction Manager-at-Risk that are beyond the scope of this document. Each project will be evaluated with the best delivery method selected.

4.3. Engineering Support during Construction (EDC): It is often necessary to plan for A/E support during construction. This EDC support can be to enable the selected construction contractor to obtain clarification on the A/E design documents and/or to use the A/E expertise for technical support to evaluate construction efforts or construction Requests for Information (RFI). The NWS project manager should budget for this phase of the work. It is best to engage the A/E

for this service at the 90% design submission in the design/bid/build method or as early as possible during the design/build process.

4.4. Pre-Bid Meeting/Site Visit: On a case-by-case basis some projects may benefit from a pre-bid meeting/site visit. The project manager, with input from the team, will determine if the funds are available and if such a meeting is necessary. This early exchange of information among all interested parties, can be fundamental to improve the understanding of Government requirements, industry capabilities, and overall project success.

4.5. Award/Pre-Construction Meeting: After award, the contractor, procurement officials, and government project managers will meet to review the project, explain the Government management process and expectations, and provide an opportunity for the winning contractor to ask questions. This meeting is an opportunity for the team to meet and is preferably at the contractor's office, but can also be via telecom due to distances and budget constraints. The Notice to Proceed (NTP) is normally issued during or immediately following this meeting. This is also the time to encourage the contractor to provide any suggestions on a cost effective alternative from the original design that could save project cost. If accepted, these suggestions result in approved changes to the construction drawings

4.6. Modifications: Changes during construction can be made by the government based on new requirements or by the contractor based on proposals for better or more economical solutions and/or changes to the period of performance. These modifications are submitted by the contractor as a change and approved by the government. Modifications include no cost changes, approved increased cost, no time extension, and time extension changes that are approved by the CO.

4.7. Disputes: In case of differences between drawings and specification, the specifications will govern. In case of discrepancies in the figures, in the drawings, or in the specifications, the contractor submits written requests for information to the CO.

5. Construction Administration Services: Services include processing requests for information, modifications, shop drawings and review of shop drawings and progress payments.

5.1. Submittal Review: Submittals are also referred to as Shop Drawings. Shop Drawings reflects the way a construction trade(s) will build a certain component of a building, based on the contractor's understanding of the construction drawings. The government will have to review the shop drawings and approve them within a specific period of time. This is necessary to avoid delays in construction progress. The government usually relies on the EDC and A/E to review shop drawings and check for consistency with design intent. Shop drawings are critical for the construction of a facility and need to be logged in and out of government custody. It is also important to keep a copy of the shop drawings with the as-built drawings for future reference.

5.2. Respond to Request for Information: The PPMD Regional Centers (RCs) process these requests from the construction contractor and will either answer the questions or forward to the

AE for resolution. Request for Information are issued to the contractor for clarification of intent and is more common during design-build.

5.3. Site Visits / Hold Points: The PPMD RCs can conduct site visits to the project site at key points in the construction process. The A/E may provide support to site visits, or complete site inspections.

5.4. Progress Payments: These payments are made following completion of key milestones in construction. Payment requests are reviewed by the government and the A/E and checked against actual progress at construction site. The contract is paid to the 90% level prior to Substantial Completion/Beneficial Occupancy..

5.5 Government Furnished Equipment (GFE): Normally, the government provides equipment to the contractor to install in the building. Equipment is identified prior to bidding or request for proposals to ensure that the Contractor fully understands the extent of the work related to the installation for the GFE. Coordinate delivery of the GFE to ensure that it does not delay the Contractor's construction progress or hamper their ability to complete the required work. The construction contractor is typically not responsible for furniture, telephones, Information Technology equipment and network cabling. These are coordinated and managed by the NWS Project Manager or specifically included in the construction requirements, if allowable.

5.6. Substantial Completion / Beneficial Occupancy Date (BOD): Agreement is reached on the criteria for declaring that the building is ready to occupy and a milestone date is set.

5.7. Punch List: Once a contractor notifies the CO that all construction activities are complete, per the specifications, the appointed representative will inspect the work performed by the contractor and note all work deficiencies on a punch list and assign dollar value to the each item of remaining work. The CO assigns a suspense date to the items in the punch list and forwards the list on to the contractor. Contract closeout cannot be completed until the punch list items are completed to the Government's satisfaction.

5.8. Operation and Maintenance (O&M) Manuals and Training: At the completion of any major construction project or building system retrofit/upgrade the contractor provides written documentation of all applicable operations and maintenance (O&M) procedures including O&M schedules (monthly and yearly). At a minimum, copies will be provided for the NWS staff and the appropriate Regional Headquarters. The contractor shall provide comprehensive training to building/regional maintenance and other staffs as required to ensure systems are properly maintained. The training shall include, but not be limited to, the following systems: Heating Ventilation and Air Conditioning (HVAC), HVAC controls, building automation systems, lighting, backup power generator, uninterrupted power supply (UPS), and fire controls.

5.9. As-Built and Equipment List: It is imperative as-built drawings and equipment lists are kept up to date and reflect the current state of the buildings. During construction projects numerous changes are made to facilities which need to be incorporated into the as-built drawings.

Building equipment that is replaced, made obsolete, or added to facilities also needs to be updated in a station equipment list to assist the building maintenance effort as addressed in NWSI 30-4104, Operations and Maintenance. A standard approach for as-built drawing upkeep is for contractors to maintain a master set of manually marked-up "red-line" record drawings. At the completion of construction transfer all red-line drawings should be converted to electronic Computer Aided Design (CAD) drawings using the designers' original design drawing files as the starting point. These CAD drawings are then considered the final as-builts and submitted to the Government as part of the project closeout process. Final submissions are in AutoCAD, Adobe pdf, and hardcopy prints (full size drawings).

5.10. Commissioning: Commissioning of buildings is the systematic process of ensuring the complex array of equipment providing heating, cooling, ventilation, lighting, and other amenities in buildings is designed, installed and tested to confirm design intent and the building owner's operational needs. Enhanced commissioning for Leadership in Energy and Environmental Design requires a commissioning agent involved during design, prior to the construction document phase of construction. It is NWSH's intent to retain the services of an independent building commissioning agent before assuming the beneficial occupancy of a new facility or close out a construction contract. A building commissioning agent can be an engineer or technician who specializes in building commissioning, building systems or a specific discipline of building systems. For example, a UPS system could be commissioned by a building commissioning agent, an electrical engineer, or an engineering technician whose specialty is UPS systems. The commissioning agent has no conflict of interest with the general contractor or equipment manufacturer unless a manufacturer's representative is the only individual qualified to satisfactorily test a building system or piece of equipment.

5.11. LEED Certification: The A/E is responsible for the entire LEED certification process which includes maintaining all necessary records during the design, construction and post construction phases. The A/E and construction contractor are responsible for developing, submitting, tracking progress, and responding to questions of the U.S Green Building Council (USGBC) on the LEED submission package.

5.12. Energy Star Rating: To align NWS with the requirements of the Energy Independence Security Act of 2007 (EISA), EO 13514 and DOC's Strategic Sustainability Performance Plan requirements, all new NWS buildings shall strive to obtain Environmental Protection Agency's **Energy Star** rating within 1-year of the BOD. This requirement shall be integrated into the LEED Gold energy credits, as well as the building commissioning requirements.

5.13. Other Sustainability Requirements: All new NWS construction projects shall include language requiring the supply or use of products and services that are energy efficient (ENERGY STAR® or Federal Energy Management Program designed), water efficient, biobased, environmentally preferable (excluding Electronic Product Environmental Assessment Tool® registered products), non-ozone depleting, contain recycled content, or are non-toxic or less-toxic alternatives. Beginning in FY13, all final projects shall incorporate 7.5% of its energy

consumption from renewable energy sources (either generated onsite or from the purchase of Renewable Energy Credits).

6. Move (Transition Management): The NWS user requesting this facility is responsible for planning the move and transition management to move into the new facility. The move to newly constructed buildings includes relocation of personnel, equipment and furnishings to new facilities or within existing facilities with minimum impact on operations. In general, this activity involves purchase and installation of furniture, telecommunications, network cabling, information technology, and security requirements. Typically construction only provides the conduits and associated wall boxes and plates and move-in management is often overlooked.

7. References: The following references contain greater detail:

1. NWS Policy Directive 30-41, Facilities Management.
2. NOA 217-104, Facility Capital Planning and Project Management Policy.
3. The Architects Handbook for Professional Practice.
4. DOC Strategic Sustainability Performance Plan.
5. Energy Independence and Security Act of 2007.
6. EO 13514, Federal Leadership in Environment, Energy, and Economic Performance.