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CIVIL ENGINEER

OPERATIONS MANAGEMENT

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This instruction modifies the guidance provided by the 32 series of Air Force publications. This instruction formulates specific operational and procedural policy guidance to implement execution of installation and facility programs of Air National Guard Installations and Mission Support (NGB/A4). Ensure that all records created as the result of processes prescribed in this publication are maintained in accordance with the Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS).

SUMMARY OF CHANGES

This publication refines Civil Engineer Operations Management. It updates the Engineering Technical Letter for calculating work order shop rates and for work order capitalization. Updates to spare part strategies have been clarified. Hyperlinks to facilitate the Preventive Maintenance program and to make Real Property determinations have been added. Approval/Disapproval of work requests process is updated. The process of managing work requirements during loss of automated systems is standardized with the creation, adoption, and mandated use of BCE Work Order Record.

Chapter 1

POLICIES AND PROCEDURES

1.1. General Information. This Air National Guard Instruction (ANGI) provides the directive requirements for the facility operations and management duties of the Civil Engineer Squadron. Although the principal focus is facility operations, this publication applies to all ANG Civil Engineer personnel.

1.2. Purpose. This instruction provides direction to the Air National Guard Installations and Mission Support (NGB/A4), State Military Departments, Base Civil Engineers (BCE), and design and construction agents concerned with the facility maintenance and construction of ANG facilities. Policies, procedures, and criteria outlined in this instruction apply to all ANG facility operations and maintenance and minor construction projects, whether entirely or partially federally funded.

1.3. Applicability of Criteria and Standards. These criteria apply to all new construction, reconstruction, rehabilitation, alteration, modification, maintenance, and repair of existing facilities. The criteria will not be used solely as a basis for advancing standards of existing facilities, except where necessary to achieve a minimal acceptable level of safety, quality and performance, and energy conservation.

Chapter 2

OBJECTIVES

2.1. Defining. Ensure that ANG installations can support the mission, maintain real property facilities, and implement programs to accomplish these goals in a cost-effective manner.

2.2. Listing. The BCE and staff shall perform the following functions using either in-house or contract resources.

2.2.1. Utilize the Integrated Engineering Management System (iEMS) to manage all emergency, preventive maintenance, scheduled sustainment, scheduled enhancement, and U-Fix-It work. In addition, all Facility Operations and Maintenance Activities (FOMA/FO and FOMA/SRM) funding will be tracked in iEMS to capture work order and related operations data, to include utility costs. iEMS will be used to capture and report all fiscal transactions incurred within the FOMA agreement. Whenever practical, paper forms mentioned in this instruction should be stored electronically as an attachment to the appropriate record within an electronic program.

2.2.2. Operate, maintain, repair, and construct ANG Real Property (RP) and Real Property Installed Equipment (RPIE) to accomplish the mission most economically, considering both the total life cycle costs and the impact of facilities on the quality of life.

2.2.3. Maintain capability to be notified and action (if necessary) emergency conditions 24-hours a day. Establish and maintain a service call function during normal duty hours with an on-call or recall system for after hour emergency situations.

2.2.4. Conduct all activities in compliance with applicable US Air Force, Federal, State, and local requirements (i.e., safety, health, fire, environmental, security, accessibility, etc.).

2.2.5. Establish a system to provide a means for customers to accomplish work requirements using their own resources such as labor, materials, equipment, or funds (U-FIX-IT Program).

2.2.6. Track all associated work order costs and labor hours within the iEMS system. Annually calculate work order shop rates. Recalculate/verify shop rates annually or more often if significant change in wages occurs. (See ETL 22-12 Policies and Procedures for Calculating Work Order Shop Rates)

2.2.7. Develop a process for identifying major work requirements (i.e., roofing, pavements, protective coating, etc.). This requirement should address work for the next 3-5 years. Base Civil Engineer shall include these requirements in the base Sustainment, Restoration, Modernization (SRM) and Military Construction (MILCON) programs as prioritized by the Facilities Board.

2.2.8. Establish a customer feedback program to measure and continuously improve support of base missions. (T-3)

2.2.9. Establish and maintain a process for material requisition and issue. Process should consider stocking Preventive Maintenance (PM) parts, frequently used parts, and critical spare parts. Materials identified and/or purchased for specific work orders will not be used for other work, except for emergencies.

2.2.10. Maintain procedures for acquiring emergency materials/parts. Establish special levels for replacement parts on critical equipment (just in time purchasing and/or on-hand materials).

2.2.11. Establish a system to minimize the accumulation and to maximize the use of residual material. Residual materials must be used for work orders prior to acquiring new materials. All residual materials kept for more than one year must be authorized in writing by the Base Civil Engineer.

2.2.12. Provide trained Prime BEEF / RED HORSE engineering personnel to support ANG operations worldwide. Typically, ANG engineering teams are not assigned to a maintenance role within a civil engineer unit, but some projects are set aside for special training to enhance the skill level of the teams. (See AFI 10-209 Red Horse Program or AFI 10-210, Prime Base Engineer Emergency Force (BEEF) Program.

2.2.13. Establish and maintain an effective Preventive Maintenance (PM) program that complies with AFI 32-1001, Chapter 3. PM is a maintenance strategy based on equipment inspection and servicing (component replacement or overhaul) that are preplanned at a specific point in time. Usually, scheduled inspections are performed to assess the condition of an asset. PM tasks may require a follow-on work order to repair other discrepancies found during the PM. The operations flight must prioritize PM ahead of all other forms of scheduled work. (T-1). The operations flight will ensure the PM program is reviewed annually to ensure that assets identified as requiring PM are scheduled, 95% of scheduled work orders are complete, PMTLs are used when available, frequencies are tailored when necessary, and the PM program workload is balanced. Reference the PM Playbook for guidelines when building or updating the program.

2.2.14. Provide and establish an effective Building Manager Program. Real Property, Operations, and the Facility Manager should work together to effectively manage the program. Building Managers will be appointed in writing by their squadron commander or commander's representative. Building Managers shall utilize iEMS for all work requests unless an emergency dictates otherwise. Building manager records, training documents, and guidance must be kept current. The building manager is the Commanders liaison to CE and is responsible for ensuring no alterations are made to the real property without documented approval from the BCE.

2.2.14.1. The Building Manager program will include a Building Manager handbook, containing at a minimum, the Building Manager responsibilities, base energy policies, CE work request process, U-Fix-It procedures, health and safety requirements, and key control policies.

2.2.14.2. The Building Manager training program, with lesson plan, will be used to train building managers. Building Manager training will be conducted annually, or more frequently as required. An attendance roster for building manager training will be maintained by the BCE staff.

2.2.15. Establish and maintain an effective program to prevent the RP/RPIE items from having their warranty voided.

2.2.16. Establish and maintain facility folders for each facility to preserve historical records. Many of these items are maintained electronically within iEMS or other electronic file locations. The facility folders may include equipment inventories, equipment and roof

warranties, certifications (i.e., lightning protection, fire alarm and suppression systems, grounding systems), and inspection records (i.e., facility surveys, elevator, hoist inspections, etc.).

2.2.17. Establish and maintain a facility survey program. The Facility Manager, or their representative, will visit 20 percent of all buildings annually to ensure all buildings are surveyed in a five-year period. The primary purpose of these visits is to ensure the Facility Manager knows and understands how the buildings are being utilized, obtain feedback about potential issues not otherwise reported, and look for possible improvement areas.

2.2.18. **Roof Management.** The objective of a roof management program is to optimally manage roof systems over their life cycles to meet the required levels of service for Air Force real property. Roof management involves an asset management approach, considering performance measures, periodic inspections, routine maintenance and repair, and correct application of quality roofing products.

2.2.18.1. **Design, Maintenance, and Management.** Units must design and maintain roofs in accordance with mandatory requirements of UFC 3-110-03, *Roofing*.

2.2.18.2. BUILDER™ Sustainment Management System (SMS) is the enterprise approved Air Force SMS for roof system asset management and must be utilized, updated, and maintained by the installation.

2.2.18.3. Accomplish condition assessments in accordance with criteria in BUILDER™ SMS. If a roof section is not inventoried in the SMS, upload data as a part of the required PM inspection in accordance with DOD Standardizing Facility Condition Assessments memo.

2.2.19. **Key Management.** Establish and maintain base facility key program. All keys will be requested through the Building Manager. All keys will be tracked using a system that will ensure 100 percent accountability of all facility keys and will not compromise security requirements.

Chapter 3

WORK REQUIREMENTS

3.1. Integrated Engineering Management System. Must use the Air National Guard Integrated Engineering Management System (iEMS) to improve the ability of Civil Engineering to process data and access information concerning civil engineering operations and facility management.

3.1.1. Work Scheduling. CE Operations will establish work priorities and generate a weekly work schedule to be assigned to the state work force through the state maintenance supervisor or equivalent. iEMS will be used to identify work priorities waiting for scheduling. The previous work schedule will be reviewed to validate work completed.

3.2. Customer Work Requests. Customer requests will be submitted in iEMS by the assigned Building Manager through the Building Manager module in iEMS. Verbal requests can be made in emergency situations. Only those actions necessary to mitigate the emergency are accomplished on the initial work task.

3.3. Work Request Coordination Requirements. CE Operations will coordinate in iEMS with Safety, Fire Department, Environmental, Bio-Environmental, Communications, and/or Security prior to approving work requests if applicable. It is necessary to have coordinating officials add any Fire Safety Deficiency Code (FSDC) or Risk Assessment Code (RAC) on the Work Request at the time of coordination.

3.3.1. Coordinate fire hazards through the fire protection flight, or agency having jurisdiction, for assignment of a (FSDC). Fire protection must coordinate on all requested work when either life or safety of personnel is involved. This includes rating of materials, fire protection access to an area or facility, or fire protection criteria affected by the proposed work.

3.3.2. Coordinate worker health concerns through the base Bio-Environmental Engineering Technician (usually assigned to the base medical unit or host medical unit for tenant units) for evaluation of a (RAC).

3.3.3. Coordinate safety hazards through the base safety office for RAC assignment.

3.3.4. Coordinate environmental issues through the CE Environmental Manager for appropriate action. If the requested work involves environmental impacts the request for this evaluation is done on an AF Form 813, Request for Environmental Impact Analysis. This environmental impact evaluation needs to be provided with work request or DD Form 1391, Military Construction Project Data. The Environmental Manager will determine if the action qualifies for a categorical exclusion or requires further analysis such as an environmental assessment.

3.3.5. Coordinate with Base Communications to assess impact of facility renovations and major repairs that are initiated by BCE. Building Managers will coordinate with Base Communications on user requested facility projects.

3.4. Approval of Base Civil Engineer Work Request. The decision to approve or disapprove a work request should be made promptly. Approval authority should be assigned to the lowest level possible by the Base Civil Engineer (BCE) using the iEMS System Authorization Access Request (SAAR). User validation will be reviewed annually by the iEMS local administrator.

3.5. Priorities. There are four general priorities of work. They are categorized and prioritized for execution as seen in **Attachment 2**, **Table A2.1**.

3.5.1. Emergency work requires immediate response. Only those actions necessary to mitigate the emergency are accomplished on the initial work task. If additional work is required to restore complete functionality, a lower priority follow-on work requirement will be created and executed in a time and manner consistent with requirements of similar scope and nature. Emergency work must be identified by the quickest means possible, which may include verbal notifications. iEMS will be utilized for documentation after the call is received and a response dispatched.

3.6. Capitalization. Real Property personnel will establish a frequency to review completed work orders in iEMS to identify completed work affecting real property inventory and accountability. This includes capital improvement actions, changes to real property or changes to RPIE inventory. Reference ANGETL 21-14 ANG Capitalization and Construction in Progress (CIP).

3.7. Cancellation. Cancel work orders only by the same level of authority, or higher, which approved the original request.

3.8. Disapproved Work Requests. Disapproved work requests shall be communicated to the requestor with justification as to why the request was disapproved. Comments will be added in the iEMS record when disapproving any work requests.

3.9. Drawings Update. Forward all completed work orders that change facility or infrastructure to Engineering section to update as-built and utility drawings.

Chapter 4

MANAGEMENT CONCEPTS, CONTROLS, AND FORMS

4.1. Collection of Work Order Numbers (CWON). CWONs are used for daily and/or frequent tasks and should be kept to a minimum. Establish these numbers to accumulate hours and financial data for repetitive work. See **Attachment 3** for reserved CWON.

4.2. Loss of Automated Operation Management System. Shall utilize the ANG Form 1879, *BCE Work Order Record* to manage, control, plan, schedule, and program work requirements during the loss of the automated system due to power failure, equipment failure, or during contingency operations. This process will track all parts, equipment, and labor during emergency and contingency operations.

Chapter 5

SPECIAL CONSIDERATIONS

5.1. Precautionary Measures. Use AF Form 103, Base Civil Engineering Work Clearance Request, or locally developed equivalent form, for any work that may disrupt aircraft or vehicular traffic flow, base utility services, protection provided by fire or intrusion alarm systems, or routine activities of the installation. Process the AF Form 103 prior to the start of the work. If delays are encountered, or the conditions at the job site change, the form must be re-validated and re-approved.

5.2. Real Property Determination. Real Property determination will be made using the applicable Air Force Category Code (CATCODE) and modeled component list (CATCODE Module Home).

5.2.1. Real Property Similar Equipment (RPSE). RPSE is non-real property installed structures and equipment temporarily or permanently assigned to an installation as facility substitutes that support the installation mission. RPSE is not real property and does not earn sustainment funds for CE. The owning unit is responsible for the accountability, maintenance, and operation of RPSE.

5.3. Appliances. Management and maintenance of appliances is the responsibility of the owning organization. Government-owned appliances include commercial food service equipment in appropriated funded facilities, such as dining facilities and flight kitchens. Budgeting and funding to replace commercial food service equipment in appropriated funded facilities is the responsibility of the using organization. Utilize the modeled component list to determine if any applicable appliances are RP.

5.3.1. Emergency repair of unit owned appliances may be accomplished by CES at the discretion of the BCE, providing the unit that owns the appliance provides all costs for materials and contract labor.

5.4. Asset Management. Asset Management translates ANG objectives into asset-related decisions by understanding assets' physical attributes, condition, usage, and performance as well as the realized and potential value to the mission. When applied correctly, asset management balances risk, current and future ANG objectives, resource limitations, and lifecycle management. The BCE should:

5.4.1. Provide an understanding of how each asset contributes to mission accomplishment.

5.4.2. Manage and invest in assets to optimize mission accomplishment.

5.4.3. Focus on cost effective infrastructure management across the entire life cycle of assets.

5.4.4. Develop and grow a culture of effective, risk-based, mission-focused decision making through training, professional development, education, and leadership support at all levels.

5.4.5. Data Collection. Standard asset data collection and analysis supports effective asset management. CE Operations must analyze asset data to optimize, align, and de-conflict current and future resource allocation against RP and RPIE in coordination with the engineering flight. (T-2).

5.4.6. CE must use NGB/A4 approved information management systems to collect, manage, control, plan, schedule, and program work requirements in the most efficient means. (T-0). Data must be maintained for:

5.4.6.1. Operations Work Management (iEMS). (T-0).

5.4.6.2. Sustainment Management System (SMS) (e.g., BUILDER™, PAVER™, future designated sustainment management products, etc.). (T-0). For additional guidance on the SMS, reference the SMS Playbook. (T-0).

KIMBRA L. STERR, Brig Gen, USAF
Director of Logistics, Engineering, and Force Protection

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

OSHA 29 CFR 1910, Title 29 – Labor, Occupational Safety and Health Administration, Department of Labor

AFI 10-209, Red Horse Program

AFI 10-210, Prime Base Engineer Emergency Force (BEEF) Program

AFI 32-1001, Civil Engineer Operations

DAFI 32-1020, Planning and Programming Built Infrastructure Projects

DAFI 32-9005, Real Property Accountability

DAFMAN 91-203 Air Force Occupational Safety, Fire, and Health Standards

ANGI 32-1023 Criteria and Standards for Air National Guard Design and Construction

Prescribed Forms

ANG Form 1879, *BCE Work Order Record*

Abbreviations and Acronyms

BCE—Base Civil Engineer

BM—Building Manager (Synonymous with Facility Manager for RegAF)

CE—Civil Engineer

CWON—Collection Work Order Number

FSDC—Fire Safety Deficiency Code

FM—Facility Maintenance

FO—Facility Operations

MILCON—Military Construction Project

MCP—Military Construction Program

Prime (BEEF)—Prime (Base Engineer Emergency Force)

RAC—Risk Assessment Code

RED HORSE—Rapid Engineer Deployable Heavy Operation Repair Squadron Engineer

RP—Real Property

RPAO—Real Property Accounting Officer

RPIE—Real Property Installed Equipment

RPSE—Real Property Similar Equipment

SRM—Sustainment Restoration & Modernization

VCO—Vehicle Control Officer

Attachment 2

WORK PRIORITIES AND TYPES

Table A2.1. Work Priorities and Types.

Work Priority	Work Type	Definition
1	Emergency Corrective Maintenance Work	All/only unscheduled (24 hours) Needed to sustain/ensure continued mission operations; "Don't go home" type of work Work until emergency is mitigated/fixed
2A (High)	Preventive Maintenance (PM)/Physical Plant Operations	Right-sized PM (right work/frequency) Risk based and PDR PM approach
2B (Medium)	Contingency Construction Training	Multi-craft work orders Infused to meet AFI 10-210 requirements
3A (High)	Scheduled Sustainment Work (Corrective Maintenance)	High mission/equipment sustainment risk RAC 1-3 (unabated) FSD I and II High ROI corrective maintenance
3B (Medium)	Scheduled Sustainment Work (Corrective Maintenance)	Moderate mission/equipment sustainment risk Time sensitive requirements RAC 4 and 5 (unabated)
3C (Low)	Scheduled Sustainment Work (Corrective Maintenance)	Low mission/equipment sustainment risk RAC 4 and 5 (unabated)
4A	Scheduled Enhancement Work	Work defined and prioritized by base
4B	All other Enhancement Work	Work that is not mission priority, but potentially funded by other units

Attachment 3

RESERVED COLLECTION WORK ORDER NUMBERS

Table A3.1. Collection of Work Order Numbers.

Work Order FY00001	BENCH OR SHOP STOCK ISSUES
Work Order FY00002	BASE SERVICE STORE ISSUES
Work Order FY00003	BULK DELIVERY ITEMS SUCH AS SAND, GRAVEL AND LUMBER BY ACTUAL TIME ACCOUNTING (ATA) WORK CENTERS
Work Order FY00004	ISSUES FROM BASE SUPPLY INDIVIDUAL EQUIPMENT UNIT
Work Order FY00005	MOBILITY KITS AND OTHER PRIME BASE ENGINEER EMERGENCY FORCE (BEEF), EXPLOSIVE ORDNANCE DISPOSAL, RED HORSE, FIRE DEPARTMENT AND EMERGENCY MANAGEMENT SUPPLIES NOT CHARGED TO SPECIFIC MOBILITY DEPLOYMENT
Work Order FY00006	COMMON-USE TOOLS MAINTAINED IN A TOOL ISSUE CENTER
Work Order FY00007	TOOL KITS OBTAINED FROM BASE SUPPLY
Work Order FY00008	INDIVIDUAL TOOLS ISSUED FROM BASE SUPPLY
Work Order FY00009	EQUIPMENT AUTHORIZATION INVENTORY DATA AND SHOP EQUIPMENT
Work Order FY00010	RESIDUAL MATERIALS
Work Order FY00011	TRAINING
Work Order FY00012	AREA CLEANUP
Work Order FY00013	PHYSICAL TRAINING
Work Order FY00014	ADDITIONAL DUTIES
Work Order FY00015	MEETINGS
Work Order FY00016	LEAVE
Work Order FY00017	CE/BASE FUNCTIONS
Work Order FY00018	SUPERVISION
Work Order FY00019	GROUNDS MAINTENANCE
Work Order FY00020	CUSTODIAL
Work Order FY00021	RAMP / ROADS SWEEPING
Work Order FY00022	SNOW REMOVAL