BY ORDER OF THE CHIEF, NATIONAL GUARD BUREAU

AIR NATIONAL GUARD INSTRUCTION 32-1001

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CIVIL ENGINEER

OPERATIONS MANAGEMENT

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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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) under the authority of AFPD 32- 10, Installations and Facilities. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS).

SUMMARY OF CHANGES

This document has been substantially changed and must be reviewed in its entirety.



POLICIES AND PROCEDURES

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

1.2. Purpose. This instruction provides direction to the Air National Guard Installations and Mission Support (NGB/A7), 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.

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 are to perform the following functions using either in-house or contract resources:

2.2.1. Shall utilize the Integrated Engineering Management System (IEMS) to manage all emergency, preventative maintenance, scheduled sustainment, scheduled enhancement AND self-help work. In addition all Facility Operations (FO) funding shall 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 Facility Operations activities. Whenever practical, paper forms mentioned in this instruction should be stored electronically as an attachment to the appropriate record within the electronic program.

2.2.2. Operate, maintain, repair, and construct ANG real property 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 correct most 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. The service call function may serve as the Base Civil Engineering (BCE) command center during emergency operations. For this purpose, the following information must be readily available:

- 2.2.3.1. BCE Contingency Response Plan.
- 2.2.3.2. Comprehensive Emergency Management Plan.
- 2.2.3.3. Base/Wing Mobility Plans.
- 2.2.3.4. Snow Removal Plan (if applicable).
- 2.2.3.5. Equipment status.
- 2.2.3.6. Utility Contingency Plans.

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. Provide reliable, cost-effective utilities to meet readiness requirements, maintain quality of life, and satisfy installation needs.

2.2.6. Provide base support services (i.e., pest control, grounds maintenance, snow removal, etc.).

2.2.7. Establish a system to provide a means for customers to accomplish work requirements using their own resources such as labor, materials, equipment, or funds. (See ANGPAM 32-1002, Self Help).

2.2.8. Provide customers with the costs of work performed or services provided to their facilities when requested. (See ETL 14-14 Policies and Procedures for Calculating Work Order Shop Rates)

2.2.9. Develop and annually update a Facility Management Plan for 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.

2.2.10. Effectively allocate resources, including people, facilities, and equipment to meet mission and customer needs.

2.2.11. Periodically compare hours used to accomplish the work with estimated hours to improve estimate accuracy and maximize performance.

2.2.12. Track all associated work order costs and labor hours within the Integrated Engineering Management System (IEMS). Recalculate/verify shop rates annually or more often if 25% or greater turn-over of shop personnel occurs.

2.2.13. Establish a process to measure and continuously improve their support of base missions and customers through the use of a customer service program. Establish a customer feedback program.

2.2.14. Establish and maintain a work order holding area. This area will be controlled and secure at all times. Materials identified for specific work orders will not be used for other work except for emergencies.

2.2.15. Maintain procedures for acquiring emergency materials/parts. Establish special levels for replacement parts on critical equipment with long lead times for acquisition.

2.2.16. Establish a system to minimize the accumulation and to maximize the use of residual material. All residual materials must be inventoried and stored in a secure and controlled location. 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.

2.2.17. 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, AFI 10-210, Prime Base Engineer Emergency Force (BEEF) Program; AFI 10-211, Civil Engineer Contingency Response Planning).

2.2.18. Establish and maintain an effective Preventative Maintenance (PM) program that will identify, forecast and align maintenance actions to manage mission risks, ensure critical infrastructure components receive an appropriate level of PM and maximize the life cycle of existing and new equipment.

2.2.18.1. Establish and maintain an effective Preventative Maintenance (PM) program that will identify, forecast and align maintenance actions to manage mission risks, ensure critical infrastructure components receive an appropriate level of PM and maximize the life cycle of existing and new equipment.

2.2.19. Provide and establish an effective Building Managers Program. Real Property, Operations Specialist and the Facility Manager should work together to effectively manage the Building Manager Program. Building Managers will be an officer, NCO or civilian equivalent. They must be appointed in writing by their squadron commander or commander's representative. Building manager records, training documents and guidance must be kept current. The building manager is responsible for making sure no one makes alterations to the real property without documented approval from the BCE.

2.2.19.1. The Building Manger program will include a Building Manger handbook containing as a minimum; Building Manager responsibilities, base energy policies, CE work request process, self-help procedures, health and safety requirements, key control policies and a building manager facility inspection checklist.

2.2.19.2. The Building Manager training program with lesson plan (can use POWERPOINT briefing) will be used to train all new building managers. A Building Manager meeting will be conducted annually or more frequently as required. An attendance roster for building managers meeting will be maintained by the BCE staff.

2.2.20. Establish and maintain an effective Vehicle Control Program for all authorized vehicles assigned to the unit, to include maintenance and control of the vehicles. Commander/BCE should assign an NCO, or equivalent and officer as the Vehicle Control NCO and Vehicle Control Officer for the unit.

2.2.21. Establish and maintain facility folders for each facility to preserve historical records. The facility folders shall include completed work orders, 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 and hoist inspections, etc.). Many of these items will be maintained electronically within iEMS. However, original physical copies of equipment and roof warranties and any other legal documents must be maintained in an actual file. Note in the facility folder file the location of items found in iEMS or other electronic file locations.

2.2.22. Establish and maintain a facility management survey program to ensure the Facility Manager visits all of their facilities at least annually. The primary purpose of these visits are to ensure the Facility Manager knows and understands how the facilities are being utilized, obtain feedback about potential issues not otherwise reported and look for possible improvement areas. These visits do not replace any other required assessments, surveys or reviews and are necessary because of the unique nature of the ANG Civil Engineer facility operations full time staff.

2.2.23. 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% accountability of all facility keys and will not compromise security requirements.

2.2.24. Establish and maintain an effective warranty/guarantee program for RPIE installed equipment, to prevent RPIE items from having the warranty voided.

2.2.25. Provide cost data and status information on hazardous or deficiency abatement actions associated with real property facilities and RIPE.

2.2.26. Include hazardous abatement information in project submittals intended to abate hazardous conditions.

2.2.27. Obtain review and coordination on new construction, facility modification projects or work request documents from ground safety, fire protection, base communications, and environmental officials.

2.2.28. Ensure that designs for new construction, equipment, or modifications to existing facilities or equipment meet applicable US Air Force, Federal, State and local requirements (i.e. safety, health, fire, environmental, security, accessibility, etc.).

2.2.29. Ensure that all projects comply with energy directives and policies if cost effective and use Energy Star products where applicable.

WORK REQUIREMENTS

3.1. Integrated Engineering Management System. 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. Computerized Work Control Forms. The automated work control system (IEMS) contains embedded software/forms to control work requirements.

3.1.2. Accounting System. Use IEMS to record hours, costs to work orders and account codes. Perform periodic review of data to eliminate or minimize potential performance deficiencies.

3.1.3. Work Scheduling. The Facility Manager and Operations Specialist will work together to 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 required preventative maintenance work requirements and material complete work orders waiting for scheduling. The weekly work schedule will be reviewed the following week for work accomplished and rescheduling requirements.

3.1.4. Preventative Maintenance (PM). PM applies to real property, RPIE, or systems and equipment maintained by the BCE. The primary goal of PM is to prevent the failure of equipment before it actually occurs. PM activities include equipment checks, partial or complete overhauls at specified periods, oil changes, lubrication, belts, filters and so on. In addition, workers can record equipment deterioration so they know to replace or repair worn parts before they cause system failure. The PM program is managed within the IEMS automated tracking system to ensure that PM work is accomplished by reserving hours before other routine requirements are scheduled. Establish required maintenance action sheets (MAS) through the use of Operation and Maintenance (O&M) manuals, Air Force Instructions (AFI's), Air National Guard Engineering Technical Letters (ANGETL's), Air Force Technical Orders (T.O.'s) and trend analysis. The Facility Manager and Production Controller, along with shop personnel, are responsible for the annual assessment of the PM program; however the Facility Manager oversees the development and maintainability of the program.

3.2. Customer Requests/Work Classification. Customer requests can be electronic, verbal or written. Civil engineering personnel will ensure that a work order is created for all work requests, and that the appropriate type of work is assigned.

3.3. Work Request Coordination Requirements. The requester must coordinate with Safety, Fire Department, and Environmental prior to submitting work request, to Civil Engineering. This will ensure that no hazards are created and that any identified hazards are eliminated. Local CE personnel may opt to perform this coordination. CE personnel should also coordinate with local utility owners if necessary.

3.3.1. Coordinate fire hazards through the fire protection flight, or agency having jurisdiction, for assignment of a Fire Safety Deficiency Code. 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 BCE Environmental Manager for appropriate action.

3.3.5. If the requested work involves environmental impacts that must be evaluated, 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 to the environmental management office along 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.

3.3.6. Coordinate with Base Communications to assess impact of facility renovations and major repairs.

3.3.7. Coordinate with appropriate building managers and/or command structure to ensure that requests meet mission requirements and local unit needs.

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 delegated to the lowest level possible. The individual should be delegated in writing by the BCE. The delegation letter will identify the funding level and type of funding i.e., Operations and Maintenance (O&M), Facility Operations (FO) and Sustainment, Restoration, Modernization (SRM). The original letter shall be kept on file in the appropriate area and reviewed annually. When the work is likely to exceed the approval authority of the individual who originally approved the work requirement, the work order must be routed to the appropriate level for approval. All work requests should be approvals are annotated in the data base. This should be kept in the work order jacket. Refer to AFI 32-1032, Planning and Programming Real Property Maintenance Projects Using Appropriated Funds, and AFI 32-1022, Planning and Programming of NAF Facility Construction Projects, for guidance only on work classification and project approval authority levels.

3.5. Priorities. There are four general classifications of work. They are categorized and prioritized for execution as seen in **Table 3.1**.

Table 3.1. General Classification of Work.

Work Priority Work	с Туре	Definition
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		All/only unscheduled (24 hours) Neededtosustain/ensurecontinued mission operations
1	Emergency Corrective	"Don't go home" type of work
	Maintenance Work	Work until emergency is mitigated/fixed
2A (High)	Preventive Maintenance (PM)/Physical Plant Operations	Right-sized PM (right work/frequency) Risk based PM approach
2B (Medium)	Contingency Construction	Multi-craft work orders
	Training	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)	Lowmission/equipmentsustainment risk RAC 4 and 5 (unabated)
4A	Scheduled <u>Enhancement</u> Work	Work defined and prioritized by base
4B	All other Enhancement Work	Work that is not mission priority, but potentially funded by other units

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 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.

3.5.2. PM must be prioritized and have resources identified for execution ahead of all other forms of scheduled work.

3.6. Capitalization. Real Property personnel will 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.

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

3.8. Disapproved Work Requests. Disapproved work requests shall be returned to the requestor with full justification as to why the request was disapproved. Copies will be sent to all coordinated parties.

3.9. Drawings Update. Forward all completed work orders that change facility layout to BCE Facility Operations team to update as-built drawings and utility drawings.

MANAGEMENT CONCEPTS, CONTROLS, AND FORMS

4.1. General. Use NGB/A7 approved information management systems (IEMS) to manage, control, plan, schedule, and program work requirements in the most efficient means.

4.2. Collection of Work Order Numbers. Establish these numbers to accumulate hours and financial data for repetitious type work. See Attachment 2 for reserved Collection of Work Order Numbers (CWON).

4.3. Loss of Automated Operation Management System. Establish a redundant system 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. Establish a system to track all parts, equipment and personnel cost during emergency and contingency operations.

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 revalidated and re approved.

5.2. Real Property Similar Equipment (RPSE). RPSE is non-real property installed structures and equipment deployed 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 of appliances is the responsibility of the owning organization. Budgeting and funding to replace or repair commercial food service equipment in appropriated funded facilities is the responsibility of the using organization. The using organization is responsible to calibrate their equipment annually.

5.3.1. Appliances are not considered RPIE unless installed in Military Family Housing (MFH), in such case, the BCE shall ensure that an effective appliance program is developed in operations management. ANG currently has no MFH.

5.3.2. Management 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. The using organization is responsible to calibrate their equipment annually.

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

5.4. Bridges. The BCE Facility Operations Team must inventory and inspect bridges on Air National Guard installations according to Unified Facilities Criteria (UFC) 3-310-08, Bridge Inspection, Maintenance and Repair. This UFC implements the Surface Transportation Assistance Act of 1978, established by Public Law (PL) 95-599, in accordance with 23 CFR 650.315. The BCE Facility Operations Team must provide NGB/A7/OC with an update to the Federal Highway Administration National Bridge Inventory annually.

5.5. Dams. The BCE Facility Operations Team must inventory, inspect and provide the required reporting for dams on Air National Guard installations according to the Federal Guidelines for Dam Safety as established by the Federal Emergency Management Agency (FEMA) of the Department of Homeland Security and published in FEMA 93. This section implements PL 92-367, Dam Safety Act, as amended by PL 104-303, PL 107-310, and PL 109-460. Additional state or county laws may also be applicable. The BCE Facility Operations Team

must provide NGB/A7/OC with a biennial report on odd numbered years detailing the current status of the Air National Guard dam inventory, including updated inspection information. NGB/A7/OC must consolidate this information and provide a formal report to the United States Army Corps of Engineers.

5.6. Vehicle Final Denial Barrier. The BCE Facility Operations Team must execute maintenance, inspection, and testing to verify that the Vehicle Final Denial Barrier (FDB), FDB control systems, and supporting safety systems are in good working order and functioning properly. Maintenance of the FDB must be completed in accordance with the manufacture's recommendations, but the controls and supporting safety systems must be inspected and tested quarterly. Records of these inspections and tests must be documented in writing. The BCE Facility Operations Team must report quarterly status of FDBs through their BCE to NGB/A7/OC.

MICHAEL R. TAHERI, BGen, USAF Commander, NGRC

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

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

AFPD 32-10, Installations and Facilities

AFI 10-209, Red Horse Program

AFI 10-210, Prime Base Engineer Emergency Force (BEEF) Program AFI 10-211, Civil Engineering Contingency Response Planning

AFI 32-1001, Operations Management

AFI 32-1022, Planning and Programming Non-appropriated Fund Facility Construction Projects

AFI 32-1032, Planning and Programming Appropriated Fund Maintenance, Repair, and Construction Projects

AFI 32-9005, Real Property Accountability and Reporting

AFI 91-203 Air Force Consolidated Occupational Safety Instruction

ANGPAM 32-1002, Self Help Guide

ANGI 32-1002 Criteria And Standards For Air National Guard Design And Construction

Abbreviations and Acronyms

ACES—Automated Civil Engineer System

BCE—Base Civil Engineer

CE—Civil Engineer

CIP—Construction In Progress

CWON—Collection Work Order Number

FM—Facility Maintenance

FO—Facility Operations

MILCON—Military Construction Project

MCP-Military Construction Program

MFH—Military Family Housing

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

RAC—Risk Assessment Code

RED HORSE—Rapid Engineer Deployable Heavy Operation Repair Squadron Engineer

RPAO—Real Property Accounting Officer

RPIE—Real Property Installed Equipment

- **RPSE**—Real Property Similar Equipment
- **RWP**—Recurring Work Program
- SRM—Sustainment Restoration & Modernization
- **SCPS**—Survivable Collective Protective Systems
- VCO-Vehicle Control Officer

Attachment 2

RESERVED COLLECTION WORK ORDER NUMBERS

Table A2.1. 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, FORE
	DEPARTMENT AND DISASTER PREPAREDNESS (DP)
	DEDI OVMENT
Work Order FV00006	COMMON-LISE TOOLS MAINTAINED IN A TOOL
WORK Order 14100000	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	RESERVED
Work Order FY00012	RESERVED
Work Order FY00013	RESERVED
Work Order FY00014	RESERVED
Work Order FY00015	RESERVED
Work Order FY00016	RESERVED
Work Order FY00017	RESERVED
Work Order FY00018	RESERVED
Work Order FY00019	RESERVED
Work Order FY00020	RESERVED
Work Order FY00021	TRAINING
Work Order FY00022	AREA CLEANUP
Work Order FY00023	PHYSICAL TRAINING
Work Order FY00024	EXTRA DUTIES
Work Order FY00025	MEETINGS
Work Order FY00026	LEAVEANNUAL
Work Order FY00027	LEAVESICK
Work Order FY00028	LEAVEHOLIDAY

Work Order FY00029	LEAVELWOP
Work Order FY00030	LEAVEOTHER
Work Order FY00031	LEAVEMILITARY
Work Order FY00032	CE/BASE FUNCTIONS
Work Order FY00033	SUPERVISION
Work Order FY00034	GROUNDS MAINTENANCE
Work Order FY00035	CUSTODIAL
Work Order FY00036	RAMP / ROADS SWEEPING
Work Order FY00037	SNOW REMOVAL
Work Order FY00038	RESERVED
Work Order FY00039	RESERVED
Work Order FY00040	RESERVED