

Administrative Change to OO-ALCI63-101, *Integrated Life Cycle Management*

OPR: 309 MXSG/EN

To bring the instruction into compliance with DAFMAN90-161, *Publishing Processes and Procedures*, paragraph 4.5.10.

The publication signature block is hereby changed to:

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24 JANUARY 2023



**14 DECEMBER 2020
Certified Current, 7 March 2025
Acquisition**

**INTEGRATED LIFE
CYCLE MANAGEMENT**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

ACCESSIBILITY: Publications and forms are available for downloading or ordering on the e-publishing website at www.e-Publishing.af.mil

RELEASABILITY: There are no releasability restrictions on this publication

OPR: 309 MXSG/EN

Certified by: 309MXSG/CL
(Mr. Jeffrey Wandrey)

Pages: 20

This instruction implements Ogden Air Logistics Complex (OO-ALC) local Depot Industrial Plant Equipment (DIPE) acquisition roles, responsibilities and procedures for obtaining, documenting and monitoring DIPE acquisitions. This instruction supports Air Force Instruction (AFI) 63-138, *Acquisition of Services*, and applies to the OO-ALC and subordinate groups, including the 309th Aerospace Maintenance and Regeneration Group, and all contracted personnel performing DIPE acquisitions or portions thereof. Ensure all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) AFI 33-322, *Records Management and Information Governance Program*, and disposed of IAW the Air Force (AF) Records Information Management System, Records Disposition Schedule. Refer recommended changes and questions about this publication to the Office of Primary Responsibility using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command.

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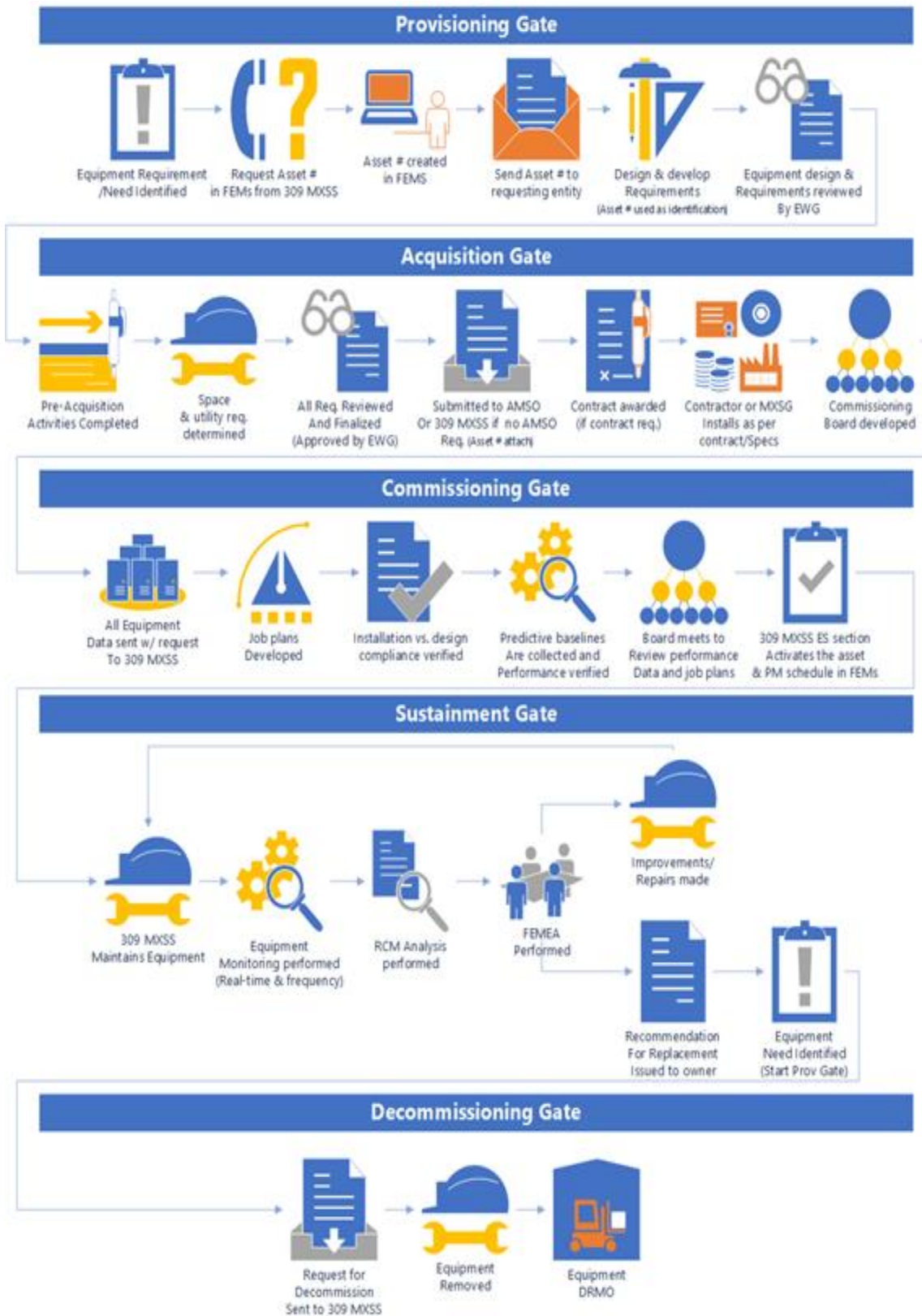
1. Integrate Life Cycle Management for DIPE.

1.1. This instruction contains the directive overarching processes and procedures required to deliver and sustain warfighting capabilities. Used in partnership with the non-directive best practices and procedures in Air Force Pamphlet (AFPAM) 63-128, *Integrated Life Cycle Management*, OO-ALC personnel can efficiently implement the concepts of Integrated Life Cycle Management (ILCM). ILCM governs all aspects of infrastructure, resource management, and business systems necessary for the successful acquisition of systems, subsystems, and services to satisfy validated warfighter requirements. Use this instruction in conjunction with AFI 10-601, *Operational Capability Requirements Development*, AFI 99-103, *Capabilities-Based Test and Evaluation*, AFI 63-138, and applicable 17-series documents to provide an integrated framework for the implementation of ILCM.

1.2. Applicability. This instruction applies to the management of all acquisition programs pertaining to DIPE within the OO-ALC in any phase of the lifecycle.

1.3. Integrate Life Cycle Framework for DIPE. Figure 1, *ILCM Framework for DIPE*, details the multi-functional collaborative effort among the requirements, acquisition and sustainment, test, and information operations necessary for system life cycle management required for acquisition of a system.

Figure 1. ILCM Framework for DIPE.



1.4. Compliance.

1.4.1. Compliance. Compliance "shall" and "will" statements have been reduced throughout this instruction. Consistent with Department of the Air Force Instruction (DAFI) 33-360, *Publications and Forms Management*, "the absence of 'punitive' language in a paragraph of a publication does not mean compliance is optional, or that a military member or civilian employee cannot be disciplined for violating non-punitive requirements in a publication. All AF personnel must comply with both punitive and non-punitive mandatory guidance in publications."

1.5. Roles and Responsibilities.

1.5.1. OO-ALC/CC shall:

1.5.1.1. Oversee the implementation of this instruction within the complex and geographically separated units.

1.5.2. OO-ALC Group CC/CL shall:

1.5.2.1. Oversee implementation of this instruction within their respective group.

1.5.2.2. Submit requested updates to this instruction to 309th Maintenance Support Group Engineering for consolidation and consideration.

1.5.3. OO-ALC Quality Assurance (QA). OO-ALC/QA shall provide surveillance per AFMCI21-100, *Depot Maintenance Management*, Chapter 8, Quality Assurance, 8.1.

1.5.4. OO-ALC Environmental, Safety, and Occupational Health (ESOH), and applicable group personnel shall.

1.5.4.1. Determine applicable ESOH requirements, including those imposed by the Environmental Protection Agency, Occupational Safety and Health Agency, AF Occupational Safety and Health, etc. Examples include:

1.5.4.1.1. Consider AFMC Form 299, *Safety, Fire, and Health Review*, to address major safety and industrial hygiene issues.

1.5.4.1.2. Consider AF Form 813, *Request for Environmental Impact Analysis*, permitting issues associated with air quality, water quality, and wastewater flow impacts.

1.5.4.1.3. Determine methods for machine guarding to protect operators and other personnel in the machine area from hazards such as those created by point of operation, in-running nip points, rotating parts, flying chips, power transmission, and sparks. Detailed safety guard instructions are contained in AFMAN 91-203, Chapter 11, *Air Force Occupational Safety, Fire, and Health Standards*.

1.5.4.1.4. Coordinate with the group System Safety Program Officer to ensure full compliance with safety-related requirements.

1.5.4.2. Review hazardous material, special handling, and licensing (if required).

1.5.4.3. Assist Production with workplace hazard analysis as required for new equipment acquisitions.

1.5.4.4. Assist Production with job safety analysis.

1.5.5. OO-ALC/EN.

1.5.5.1. Provide standardized practices and methodologies for DIPE acquisitions, updates, and modifications.

1.5.5.2. Perform oversight of procedures required for the acquisition of assets and services covered by this instruction.

1.5.5.3. Provide leadership to each group through interaction with their chief engineer and/or designated DIPE project manager.

1.5.5.4. Provide a co-chair for the Equipment Working Group (EWG) to assist in injecting standardized practices and methodologies into the acquisition of Industrial Plant Equipment (IPE).

1.5.6. 309th Maintenance Support Group (309 MXSG) EN.

1.5.6.1. Will organize and maintain oversight of EWG. The EWG will consist of participants most closely associated with the equipment, mission, or purpose as selected by their management.

1.5.6.2. Will also provide a co-chair for the EWG.

1.5.7. OO-ALC Group/EN chief shall.

1.5.7.1. Perform oversight of procedures required for the acquisition of equipment.

1.5.7.2. Ensure DIPE project managers are assigned for the acquisition of assets covered by this instruction.

1.5.7.3. Ensure proper documentation of DIPE acquisitions.

1.5.7.4. Ensure acquisitions are coordinated with the appropriate program office, supply chain or Defense Logistics Agency (DLA) authority.

1.5.7.5. Ensure purchase requests exceeding \$15K for new equipment or modifications to existing equipment are routed through 309th Maintenance Support Squadron (309 MXSS) for coordination. 309 MXSS needs to be notified of all equipment modifications to existing equipment. Coordination is accomplished with a self service request through the Facility and Equipment Management System (FEM), per AFSCMAN 21-102, *Depot Maintenance Management*.

1.5.7.6. Serve as representative to the OO-ALC EWG.

1.5.8. OO-ALC EWG shall:

1.5.8.1. Consolidate and integrate OO-ALC DIPE requirements for the complex.

1.5.8.2. Standardize DIPE assets, whenever feasible.

1.5.8.3. Consolidate/integrate DIPE contracting efforts to ensure equipment commonality and the appropriate inclusion of warranties, training, and long-term sustainment are established.

1.5.8.4. Validate workload demand to ensure all purchased DIPE is utilized to the greatest extent possible prior to purchasing additional DIPE.

1.5.8.5. Approve all DIPE requests >\$250K before submission for Capital Investment Program (CIP) prioritization.

1.5.9. DIPE project manager shall:

1.5.9.1. Follow the direction given by the group chief engineer regarding responsibilities listed within this section.

1.5.9.2. Act on behalf of the group chief EN to perform responsibilities described within the section above (as the group chief EN designates).

1.5.9.3. Utilize the acquisition process described within this instruction (reference section 1.3, and process flow chart **Figure 1**); as directed by the group's chief engineer.

1.5.9.4. Prepare documents and justification required for budget and programming of DIPE acquisitions.

1.5.9.5. Oversee coordination, implementation, and installation of DIPE acquisitions.

1.5.9.6. Document DIPE requirements IAW group chief engineer's guidance; including all aspects listed within this instruction.

1.5.9.7. Coordinate with 309 MXSS and submit the required documentation, FEM service request, and associated operation and maintenance manuals for all DIPE acquisitions, modifications, decommissions, etc.

1.5.9.8. Ensure appropriate equipment manager/custodian is aware of new DIPE coming into their respective area for accountability and tracking.

1.5.9.9. Coordinate with the equipment manager/custodian and 309 MXSS, regarding equipment leaving OO-ALC industrial areas for accountability and removal from associated data systems.

1.5.9.10. Submit appropriate documentation to Precision Measurement Equipment Laboratory (PMEL) on acquisitions of DIPE assets or components requiring calibration.

1.5.9.11. Coordinate with and execute equipment acquisition via the appropriate acquisition and engineering authorities (System Program Office), DLA Supply Chain Management, Acquisition Management Support Office (AMSO), etc.

1.5.9.12. Assist (when needed) with market research per Federal Acquisitions Regulation (FAR), Part 10 in support of FAR Part 6, *Competition Requirements*, and FAR Part 13, *Simplified Acquisition Procedures*.

1.5.9.12.1. Organizations may assign responsibility of market research based on established internal processes. All data will be provided to the DIPE project manager upon completion.

1.5.9.13. Support the development and submittal of sole source justifications, letters of urgency, performance work statements, and other documentation (e.g., business case analysis, process order, AFMC Form 299, AF Form 813, AF Form 332, *Base Civil Engineer Work Request*) required to support the PE acquisition process.

- 1.5.9.14. Ensure the cognizant technical order management activity receives a copy of all operation and maintenance manuals.
- 1.5.10. Group process engineer shall.
 - 1.5.10.1. Define requirements for the statement of work, ensuring requirements are specifically suited to the equipment to be acquired.
 - 1.5.10.2. Ensure that any additional requirements such as certifications (e.g., load testing certificates) are met.
 - 1.5.10.3. Ensure space for equipment maintainability is built into the system design.
- 1.5.11. Equipment manager/custodian shall:
 - 1.5.11.1. Maintain the addition and removal of equipment accountability via database input to the Custodian Authorization/Custody Receipt Listing (CA/CRL) accounts and a service request within FEM.
- 1.5.12. PMEL shall.
 - 1.5.12.1. Ensure standardization of calibration equipment.
 - 1.5.12.2. Ensure calibration procedures are acquired and accountability for their performance is assigned (including scheduling of associated resources).
 - 1.5.12.3. Ensure proper training necessary to perform assigned maintenance and calibration functions.
- 1.5.13. 309 MXSS/CL.
 - 1.5.13.1. Serve as representative on the EWG.
- 1.5.14. 309 MXSG Reliability Centered Maintenance (RCM) Program Manager shall.
 - 1.5.14.1. Serve as a data resource to EWG.
 - 1.5.14.2. Manage the 309 MXSG RCM Program and initiate Failure Mode and Effects Analysis (FMEA) efforts.
 - 1.5.14.3. Provide the EWG with RCM equipment analysis to include DIPE downtime, material costs, mean time between failures and mean time to repair.
 - 1.5.14.4. Provide the EWG detailed information on Failure Mode and Effects Analysis performed in efforts to extend equipment life.
 - 1.5.14.5. Process recommendation for replacement with owning organization.
- 1.6. Acquisition Methods.
 - 1.6.1. CIP, IAW AFSCMAN 21-102, Chapter 4.
 - 1.6.2. Government Purchase Card, IAW AFI 64-117, *Government Purchase Card Program*.
 - 1.6.3. General Services Administration (GSA), <\$250K IAW Part 501, GSA Acquisition Regulation System.
 - 1.6.4. Special Program Office (SPO).

1.6.4.1. Responsible for the 3020 funds to get an asset to activation/full operating capability IAW AFSCMAN 21-102, Chapter 4.

1.6.4.2. OO-ALC/Business Operations (OB) manages and approves related equipment purchases.

1.6.4.3. OO-ALC/OB establishes an activation integration product team as needed.

2. DIPE Provisioning.

2.1. Equipment Requirement/Need Identified. DIPE requirement or need can come from many different sources. Below are the most common methods used to identify or acquire new DIPE.

2.1.1. OO-ALC Depot Activation identifies DIPE requirement based on new workload.

2.1.2. OO-ALC group identifies need for additional capacity or the ability to meet current and future specifications.

2.1.3. 309 MXSG identifies equipment as being non-supportable or unable to meet mission.

2.1.4. Unit reactivates equipment from Defense Logistics Agency Disposition Services (DLA DS) .

2.1.5. Equipment is transferred from one installation to another.

2.1.6. SPO provided equipment to enhance mission support.

2.2. FEM Asset Number Generation. Due to the many databases and naming conventions within systems used to track and identify equipment, it is important to establish a consistent identifying number to track all life cycle activity. It is necessary to create the asset number in FEM at the earliest point possible to give visibility over the entire process of managing the equipment's usable life.

2.2.1. The DIPE Project Manager for the owning organization will create a service request in FEM to request an asset number be assigned for the new piece of DIPE. The information below is the minimum required:

2.2.1.1. Name for the DIPE being purchased. This may be changed as the equipment progresses through its life cycle, but needs to be identifiable for reporting purposes.

2.2.1.2. Owning organization of the equipment.

2.2.1.3. The asset number for the equipment it will be replacing. If applicable.

2.2.2. Once the 309 MXSS has generated the asset number in FEM, they will send an email to the requestor with the new number and set the asset status in FEM to provisioning. This number will be used in all systems/documents to identify the asset throughout its life cycle.

2.3. Equipment Design & Requirements Development.

2.3.1. Requesting organization engineering entities will accomplish due diligence to verify equipment capacity or capabilities are not already available within OO-ALC. This will also be reviewed with EWG.

2.3.2. All engineering documents and drawings filenames will reference the assigned asset number once stored in the COTS library or shared file locations.

2.3.3. Designs will be reviewed by the EWG to verify designs for proper equipment maintenance access and meet the fit, form, and function requirements for the supported workload.

2.3.3.1. The EWG will have 14 days to complete the design review and return results to the engineering entity.

2.3.4. Design space requirements will be forwarded to the complex Space Program Manager, 309 MXSG/MXDEI, to allow space and utility requirement research.

2.3.5. The EWG will notify 309 MXSS when the design and requirements have been accepted so the gate can be complete.

2.3.6. 309 MXSS equipment specialists will change the asset status in FEM to acquisition.

2.3.7. The requesting organization shall consider energy performance improvement opportunities and operational control in the design of new, modified and renovated facilities, equipment, systems and energy-using processes, IAW International Standard for Organization (ISO) 50001:2018E, para 8.2.

3. Acquisition of DIPE.

3.1. Pre-Acquisition Activities.

3.1.1. Requirement Definition/Documentation. DIPE Project Manager should engage with key stakeholders to define/document DIPE functional requirements/specifications and then ensure that planned DIPE acquisitions fully meet documented requirements/specifications. These stakeholders may include but are not limited to 309 MXSG, SPO, PMEL, Civil Engineering, ESOH representatives, DIPE installation support, production management, and AMSO, etc.

3.1.2. Equipment Constraints and Life Cycle/Technical Considerations IAW AFI 63-101/20-101, *Integrated Life Cycle Management*.

3.1.2.1. Identify equipment constraints such as: space, isolation pads, machine tool standard mounting, universal mounting for multiple chucks and fixtures, machine guarding and interlock features, cleanliness, ventilation, vibration, lighting, temperature, isolation, maintenance access, fall protection, etc.

3.1.2.2. Identify conditioned power requirements such as uninterrupted power supply, independent or isolated grounds, initial/recurring ground test requirements, static grounding requirements, and lightning protection system requirements.

3.1.2.3. When procuring energy using products, equipment and services that have, or can have, an impact on significant energy use, the organization shall inform suppliers that energy performance is one of the evaluation criteria for procurement in accordance with ISO 50001:2018E. Identify energy efficiency and reduced energy consumption by replacing equipment/systems with more advanced/efficient equipment/systems. Perform utility cost/benefit analysis in coordination with 309 MXSG/MXDEI (Energy Management).

- 3.1.2.4. Where applicable, choose electrically-powered devices operating at higher voltages (e.g., 480v vs. 208v) to achieve the same power ratings at reduced electrical cost; employ Variable Frequency Drive technologies.
- 3.1.2.5. Identify safety requirements. Prepare and coordinate AFMC Form 299, *Safety, Fire, and Health Review*.
- 3.1.3. Conduct Analysis of Alternative Solutions. Perform market research, which may include: temporary duty, trade studies, cost/benefit analyses, and significant interactions with government stakeholders and vendors. Analysis of alternatives shall at a minimum consider:
 - 3.1.3.1. The capability of each alternative to achieve documented DIPE requirements as described within section above.
 - 3.1.3.2. Commercial availability of the solution including the possibility for multiple sources and availability of replacement and service parts.
 - 3.1.3.3. The potential for adapting existing DIPE to meet documented requirements.
 - 3.1.3.4. Determine if facility/real property modifications are needed and what the cost of such modifications will be.
 - 3.1.3.5. Impacts to operational processes, documentation, and interfacing systems/subsystems.
 - 3.1.3.6. The application of available warranties; including expiration date/period and scope of warranty (e.g., coverage aspects such as parts, labor, and training).
 - 3.1.3.7. Life cycle costs, including initial purchase and installation, maintenance, repair, training, and energy/utility cost considerations.
- 3.2. Facility and Square Footage Requirements.
 - 3.2.1. DIPE project manager will submit space requirements to the complex Space Program Manager for approval.
 - 3.2.2. The complex Space Program Manager will review proposed equipment location and make proposals as necessary for alternative locations if space or environmental concerns exist.
- 3.3. Requirements Reviewed and Finalized. All design elements will be reviewed by the EWG to seek concurrence on acquisition as requested.
 - 3.3.1. Once the EWG has approved the acquisition as designed, the project will be submitted to the CIP Manager and be injected into the CIP prioritization process (if >\$250K) ensuring the asset number is used to identify the effort.
 - 3.3.2. If the purchase is <\$250K the EWG will communicate approval of design back to the owning organization for purchase through appropriate method.
- 3.4. Submit contract documents to AMSO.
 - 3.4.1. All required information will be provided to the AMSO for contract initiation.
 - 3.4.2. AMSO will enter the asset number for tracking purposes into all databases used to process contracting efforts for DIPE.

- 3.5. Acquisitions not required to be processed by AMSO.
 - 3.5.1. All purchase information will be provided to the 309 MXSS Equipment Specialist (ES) section for permanent record in FEM as directed in 4.1.1 of this publication.
- 3.6. Post-Award Activities.
 - 3.6.1. PZ notifies the contract requestor that contract has been awarded.
 - 3.6.2. Requestor reaches out to the contractor to establish kick off date.
 - 3.6.3. Contractor executes the activities.
- 3.7. Contractor or organic resources install equipment.
 - 3.7.1. Contractor/vendor will plan to deliver Commercial Off the Shelf (COTS) and technical data 30 days prior to commissioning.
- 3.8. Equipment commissioning board is developed.
 - 3.8.1. DIPE project manager establishes the appropriate personnel to complete commissioning equipment. Below are the minimum required members:
 - 3.8.1.1. Process engineer
 - 3.8.1.2. 309 MXSG Predictive Maintenance Technician
 - 3.8.1.3. Production process owner or representative
 - 3.8.1.4. Group safety representative
 - 3.8.1.5. 309 MXSG Environmental Office representative
 - 3.8.1.6. 309 MXSS Equipment Specialist
 - 3.8.1.7. 309 MXSS Maintenance representative
 - 3.8.1.8. DIPE vendor (if possible)
 - 3.8.1.9. DIPE installation representative
 - 3.8.1.10. PMEL technician, if calibration is required
 - 3.8.1.11. Contracting Officer Representative (COR)
 - 3.8.2. DIPE project manager sends specific project information to commissioning team for review and preparation for equipment commissioning meeting.
 - 3.8.3. DIPE project manager will work with selected team to develop commissioning test steps and the order the steps will be performed.
 - 3.8.4. 309 MXSS equipment specialist will change the asset status to commissioning in FEM.

4. Commissioning DIPE.

4.1. All equipment-specific data sent to 309 MXSG.

4.1.1. Final configuration documents sent to 309 MXSS Equipment Specialist (ES) via an “IPE New Asset” service request in FEM. This will ensure the DIPE Package Development (PD) will be completed in time for the asset commissioning.

4.1.2. Information to be added to FEM:

4.1.2.1. Engineering documents

4.1.2.2. Final engineering drawings

4.1.2.3. Contract documents

4.1.2.4. Commercial Off-The-Shelf (COTS) manuals

4.1.2.5. Internal Parts Breakdowns

4.2. Equipment Maintenance Plans Development

4.2.1. ES will develop maintenance job plans IAW AFSCMAN 21-102 and AFSCMAN 21-102_OO-ALCSUP.

4.2.2. ES will notify the DIPE Project Manager when the PD process is complete so the commissioning meeting can be scheduled.

4.3. Design Compliance Validation and Equipment Installation Baseline Creation.

4.3.1. DIPE project manager, process engineer, COR (if assigned to acquisition), and Production will review the installed DIPE to ensure the completed product meets all design specifications and matches final design drawing.

4.3.2. DIPE project manager will contact the 309 MXSS Help Desk at 777-8005 to request a baseline be performed on new DIPE once equipment is in an operational status where Predictive Maintenance (PdM) technologies can be applied to establish baseline data.

4.4. Installation Performance Baselines are Collected.

4.4.1. The 309 MXSG Predictive Maintenance team will use PdM technologies to establish initial performance reading where necessary and verify equipment is performing as designed and to industry standards.

4.4.2. The PdM team will report any problems with equipment performance or configuration to the DIPE Project Manager for correction by the vendor, contractor, or 309 MXSG Equipment Engineering.

4.4.3. The PdM team will document baseline reading in FEM.

4.5. Commissioning of DIPE.

4.5.1. The DIPE Project Manager will schedule a meeting with the Commissioning Team to meet at new DIPE for full review.

4.5.2. Predefined commissioning steps will be performed and needed corrections will be identified and assigned to appropriate personnel.

4.5.3. Once corrective actions have been completed the Commissioning Team will reconvene to complete commissioning steps.

4.5.4. Report commissioning results using Commissioning Report Form to ES for attachment in FEM.

4.5.5. The team will review the developed Planned Maintenance (PM) plans with all team members to verify maintenance actions are sufficient based on workload and equipment requirements.

4.5.6. ES will make changes to DIPE PM plan if required.

4.6. Equipment activated for service.

4.6.1. Once all corrective actions have been completed and verified by the commissioning team, the ES will change the asset status to Operating in FEM.

4.6.2. DIPE Program Manager will notify Production the equipment is ready for service.

4.6.3. Full Operational Capability and Defense Industrial Fund Management System form is submitted within 10 days of equipment being operable.

4.6.4. Owning organization equipment custodian will process required documents to add equipment to CA/CRL with asset number as reference.

5. DIPE Sustainment.

5.1. Equipment Maintained by 309 MXSS.

5.1.1. The 309 MXSS will perform PM, Corrective Maintenance (CM), and PdM in accordance with Chapter 15 of AFSCMAN 21-102 and AFSCMAN 21-102_OO-ALCSUP.

5.1.2. If equipment is replaced, modified, or changed in any manner during its sustainment; the 309 MXSS ES section will be notified via the FEM service request process.

5.1.2.1. If necessary, the commissioning process will be completed again to validate configuration, performance, and maintenance plans are correct.

5.2. Equipment Performance Monitoring.

5.2.1. The 309 MXSS will establish a live monitoring program for equipment or systems where equipment failure creates significant cost or safety risk. DIPE will be monitored by appropriate sensor systems and provide data directly to the FEM condition monitoring module.

5.2.2. 309 MXSS will recommend sensor installations as part of DIPE design when equipment monitoring is applicable for the equipment to be installed.

5.2.3. For high priority or facility critical systems without monitoring sensors installed at the time of installation, the 309 MXSG PdM team will perform testing and analysis using frequency-based PM routes to collect data using PdM test equipment.

- 5.2.3.1. If PdM test results are outside of determined thresholds, the team will create a CM work order in FEM to have 309 MXSS maintenance technicians make repairs as necessary.
- 5.3. RCM Program Manager is assigned.
 - 5.3.1. The RCM Program Manager conducts equipment performance analysis and provides data to the EWG as requested.
 - 5.3.2. The RCM Program Manager will manage the 309 MXSG RCM program and initiate FMEA work orders in FEM for the 309 MXSG/EN Equipment Engineering team to execute and improve equipment performance if possible. The RCM Program Manager shall:
 - 5.3.2.1. Perform data analysis.
 - 5.3.2.2. Close work orders in FEM ensuring all FMEA data has been collected in FEM.
 - 5.3.2.3. Make recommendations to equipment owner and EWG if equipment performance cannot be improved or if equipment is determined to be unsupportable.
 - 5.3.3. All OO-ALC DIPE will be analyzed and ranked from worst to best performing.
 - 5.3.3.1. The worst performing DIPE asset will be submitted to the 309 MXSG/EN Equipment Engineering team for FMEA as Work In Progress (WIP) allows.
 - 5.3.4. DIPE ranking for FMEA will be established based on the following information:
 - 5.3.4.1. Equipment priority
 - 5.3.4.2. Number of days out of service
 - 5.3.4.3. Count of out of service work orders
 - 5.3.4.4. Repair material costs
 - 5.3.4.5. Mean time between failure
 - 5.3.4.6. Mean time to repair
 - 5.3.4.7. Overall equipment effectiveness (not currently in use)
 - 5.3.4.8. Composite priority number
- 5.4. Failure Mode and Effects Analysis.
 - 5.4.1. When an asset is on the top of the DIPE ranking for poor performance, the RCM Program Manager will initiate a FMEA work order (as WIP allows) in FEM.
 - 5.4.1.1. The supervisor for the MXSG/EN Equipment Engineering team will assign an engineer to work the FMEA.
 - 5.4.1.2. The engineer assigned to the FMEA will perform a thorough effort to improve the performance of the DIPE based on performance data and identified deficiencies during the event.

5.4.1.3. All FMEA related documentation and data will be entered into FEM by the assigned engineer.

5.4.1.4. If configuration changes need to be made to the DIPE based on the outcome of the FMEA, the assigned FMEA engineer will notify Process Engineering of changes.

5.4.1.5. Configuration changes or improvements will be made and the DIPE Project Manager will submit a FEM service request to have the equipment maintenance package updated.

5.4.2. If the FMEA assigned engineer identifies the equipment's performance cannot be improved or is no longer parts supportable; they will notify the RCM Program Manager and initiate a recommendation for replacement letter.

5.4.2.1. The RCM Program Manager will communicate the recommendation for replacement with the equipment owner as well as the EWG.

5.5. New Equipment Need Identified.

5.5.1. If the DIPE owner agrees with 309 MXSG's FMEA recommendation for replacement and the workload is planned to remain, the DIPE replacement will be processed referencing **paragraph 2** of this instruction.

6. DIPE Decommissioning.

6.1. Equipment Decommission Request.

6.1.1. If the equipment is being removed due to workload changes or reductions and not due to unserviceability, equipment specifications will be sent to the EWG.

6.1.1.1. The EWG will validate the existing equipment does not fill the requirements of equipment on the replacement or acquisition listing.

6.1.1.2. If the equipment does meet the requirement, the EWG will request performance data from the RCM Program Manager and consider if equipment will be used to satisfy a requirement from the acquisition listing.

6.1.1.3. If the equipment is to be used to fill a new requirement, the EWG will notify the current and future owner so they can coordinate ownership transfer, equipment removal, and installation.

6.1.1.4. Once equipment has been planned for transfer, the receiving DIPE project manager will submit a FEM service request notifying the 309 MXSS of location changes for the equipment.

6.1.2. When equipment is identified to be removed from service, a FEM service request will be submitted by the equipment owner or representative.

6.1.2.1. A 309 MXSS ES will be assigned the request and change the asset status in FEM to decommissioned.

6.2. Equipment Removal.

6.2.1. The equipment owner will submit an OO-ALC Form 546, *Engineering Project Request*, to 309 MXSG requesting the equipment be removed from the facility.

6.3. Equipment processed through DLA DS.

6.3.1. The equipment owner is responsible for coordinating with DLA DS to turn in removed equipment.

ERIC E. FOX, NH-04, DAF
Vice Director, Ogden Air Logistics Complex

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 10-601, *Operational Capability Requirements Development*, 6 November 2013

AFI 33-322, *Records Management and Information Governance Program*, 23 March 2020

DAFI 33-360, *Publications and Forms Management*, 1 December 2015

AFI 63-101/20-101, *Integrated Life Cycle Management*, 30 June 2020

AFPAM 63-128, *Integrated Life Cycle Management*, 10 July 2014

AFI63-138, *Acquisition of Services*, 30 September 2019

AFI 64-117, *Government Purchase Card Program*, 22 June 2018

AFMAN 91-203, *Air Force Occupational Safety, Fire, & Health Standards*, 11 December 2018

AFI 99-103, *Capabilities-Based Test and Evaluation*, 18 November 2019

AFMCI21-100, *Depot Maintenance Management*, 6 September 2018

AFSCMAN 21-102, *Depot Maintenance Management*, 11 September 2020

AFSCMAN 21-102_OO-ALCSUP, *Depot Maintenance Management*, 30 July 2018

FAR Part 13, *Simplified Acquisition Procedures*

Part 501 – GSA Acquisition Regulation System

Adopted Forms

AFMC Form 299, *Safety, Fire, and Health Review*

AF Form 332, *Base Civil Engineer Work Request*

AF Form 601, *Equipment Action Request*

AF Form 813, *Request for Environmental Impact Analysis*

AF Form 847, *Recommendation for Change of Publication*

OO-ALC Form 546, *Engineering Project Request*

Abbreviations and Acronyms

AF—Air Force

AFI—Air Force Instruction

AFMC—Air Force Materiel Command

AFPAM—Air Force Pamphlet

AFSCMAN—Air Force Sustainment Center Manual

AMSO—Acquisition Management Support Office

CA/CRL—Custodian Authorization/Custody Receipt Listing

CIP—Capital Investment Program

CM—Corrective Maintenance

COR—Contracting Officer Representative

COTS—Commercial Off the Shelf

DIPE—Depot Industrial Plant Equipment

DLA—Defense Logistics Agency

DLA DS—Defense Logistics Agency Disposition Services

EN—Engineering

EWG—Equipment Working Group

ES—Equipment Specialist

ESOH—Environmental, Safety, and Occupational Health

FAR—Federal Acquisitions Regulation

FEM—Facility and Equipment Management System

FMEA—Failure Mode and Effects Analysis

GSA—General Services Administration

IAW—In Accordance With

ILCM—Integrated Life Cycle Management

IPE—Industrial Plant Equipment

ISO—International Standard for Organization

MIL—Military

OB—Business Operations

OO-ALC—Ogden Air Logistics Complex

PD—Package Development

PdM—Predictive Maintenance

PM—Planned Maintenance

PMEL—Precision Measurement Equipment Laboratory

QA—Quality Assurance

RCM—Reliability Centered Maintenance

SPO—System Program Office

STD—Standard

WIP—Work in Progress

309 MXSG—309th Maintenance Support Group

309 MXSS—309th Maintenance Support Squadron

Terms

Depot Industrial Plant Equipment—Plant equipment with a unit acquisition cost of \$15,000 or more. DIPE would include equipment items used for cutting, abrading, grinding, shaping, forming, joining, heating, treating, or otherwise altering the physical properties of materials, components or end items entailed in manufacturing, maintenance, supply, processing, assembly, or research and development operations.

Failure Mode and Effects Analysis—FMEA is a structured approach to discovering potential failures that may exist within the design of a product or process.